LOADING PROCEDURES FOR BULK DELIVERY VEHICLES (EXCLUDING LPG)

Purpose:
To ensure that the correct procedures are followed when loading petroleum fuels into company-owned or contractor bulk delivery vehicles.

Safety:
It is of utmost importance to note that it is not required of anyone to endanger anybody's lives or property when carrying out this Standing Instruction.

Exception:
To the extent that a particular Standing Instruction has been devised for the facility concerned, then that particular Standing Instruction shall apply to the exclusion of this Standing Instruction, provided it does not compromise the standards set in this S.I.

General:
To ensure that quality products are delivered to our customers, the contamination of different products must be kept within the allowable limits as specified in SI 47 Annexure "A".

This is particularly critical when loading Illuminating Kerosene as contamination could cause a fatal explosion when used in any domestic appliance.

Of equal importance is the contamination of unleaded petrol as severe damage can be done to engines designed to run on unleaded petrol only, resulting in claims against the company. Stringent quality checks will be conducted at customer sites and plants on a regular basis.

Should a contamination occur, the loading must be stopped IMMEDIATELY and the Plant Manager advised.

For all loads, the Vehicle Loading Check list must be completed by the BTO. (Refer Annexure "C")

All vehicles loading must comply with SI 426 and display a valid Safe Loading Pass.

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4.1 **Customer Responsibilities**

**NOTE:** When a compartment which contained a product other than Illuminating Kerosene or Unleaded Petrol on the previous trip is to be loaded with either of these products, it must first be drained and then flushed with the product to be loaded through the appropriate meter. (Refer to loading section of this Standing Instruction for details of flushing procedure).

4. **Terminology:**

- **BTO**: Bulk Truck Operator (Bulk Truck Driver)
- **Responsibility**: Plant Manager (Depot Manager)
- **Role**: Plant Manager to ensure that all parties concerned in terms of this Standing Instruction are made aware of this Standing Instruction and understand his/her role & responsibilities.

**Instruction:**

1. **Truck loading preparation**

   1. When a truck returns from a trip, all remaining product must be dipped and recorded on the Trip Report and the Vehicle Loading Check List by the BTO (refer Annexure "G").

   2. The BTO must determine the next load required. Should the product to be loaded into any one compartment differ from that carried on the previous trip, it will be necessary to drain the compartments and pipelines affected as well as to remove the product identification markers.

   3. If the product to be loaded remains identical to that carried in the same compartments on the previous trip, it will not be necessary to drain these compartments before loading commences, and the product identification markers remain unchanged. The on-board volume in the compartments must be deduced from the volume to be loaded.

   **NOTE:** When a compartment which contained a product other than Illuminating Kerosene or Unleaded Petrol on the previous trip is to be loaded with either of these products, it must first be drained and then flushed with the product to be loaded through the appropriate meter. (Refer to loading section of this Standing Instruction for details of flushing procedure).

   4. The BTO must park the vehicle in a position at the loading rack, which will enable the loading arms to easily reach the loading points without placing undue strain on the couplings.

   5. Set the parkbrakes on the primemover and trailer/semi-trailer and place wheel chocks against the rear wheels as prescribed in SI 411.
6. The BTO must isolate the vehicle batteries by activating the master switch.

7. Vehicles must be capable of being driven from the loading rack in an emergency, therefore, no servicing or repairs may be carried out whilst the vehicle is at the loading rack.

8. Prior to connecting any loading arm or opening any manhole cover, the BTO or Loader (where applicable) must connect the earthing cable on the loading rack to the bonding lug/socket on the tanker or the point on the unpainted tank identified for this purpose.

8. Where the addition of fuel additive is not automated, the BTO must ensure the correct type and quantity is added to each compartment. The method of additive dosing may differ from plant to plant and the BTO must familiarise him/her self with the plant specific procedure. Refer to the plant specific work instruction where available.

**NOTE:** Where reference is made to either the BTO or Loader being responsible for a function to be performed, the Loader is to perform this function at Plants where Loaders are used, however, the BTO is ultimately responsible for the safety of the vehicle and therefore must ensure these procedures are correctly carried out and must remain with the vehicle during loading.

**Truck loading**

There are two methods of loading trucks namely;

*Top Loading:* General, unleaded petrol, Illuminating Kerosene

*Bottom Loading:* General, unleaded petrol, Illuminating Kerosene

2. **Top loading**

This can be achieved by using two systems, both of which require personnel on top of the tank:

Flexible hoses that are connected to the 75 mm fill pipes situated in each compartment.

Drop tubes, which are placed into the compartment in a vertical position and touch the bottom.

2.1 **General top loading procedures**

1. Before loading, the BTO or Loader must set the product selector where applicable (P/D Selector in the pneumatic control box) to the correct product per compartments. Lock positions once selected and seal. Generally semi-trailers have only one manifold, which is connected to two
meters via a series of valves. This valve manifold system must also be locked into selected positions.

2. Care must be taken with split loads and product tags must be used.

3. The BTO must keep all compartment valves, meter isolating valves and delivery meter valves closed during loading.

4. The BTO or Loader must only open the manhole cover of the compartment being loaded. All other covers must be kept closed.

5. The BTO or Loader must examine the interior of the tank compartments to ensure they are clean and empty, and that a static chain or cable is fitted to the marker and touches the bottom of the tank.

6. The BTO or Loader must make certain of the product to be loaded, and then connect the filler hose to the fittings provided on the vehicle.

7. Hoses must on no account be left suspended or hanging into manholes.

8. At terminals with drop tubes, the BTO or Loader must ensure that the tube is placed the maximum distance into the compartment in a vertical position and touches the bottom. However, the downspout must not rest "full circle" on the bottom. A deflector is normally fitted to the end of the fill pipe.

9. The BTO or Loader must insert the loading docket into the correct meter, where applicable.

10. The BTO or Loader must commence loading slowly until the bottom of the tube is covered with product i.e. 450 lpm for 80 mm loading arms or drop tubes and 230 lpm for 65 mm loading arms or drop tubes. Top loading is controlled from the top of the truck by using a deadman control valve which requires the handle to be held open during loading. If the valve handle is released, the valve closes automatically. The above method requires constant monitoring of product level until the required product marker setting is reached. On no account must the handle be tied in the open position.

11. When loading split loads, the Dispatch Supervisor and Loader/BTO must remember the correct discharge sequence - refer to SI 417b.

NOTE: Never suspend any object into the compartments, such as sample containers or thermometers, until at least two minutes after loading has elapsed as static discharge to the object may occur. Never remove loading arms until the two-minute period has elapsed.

12. On completion ensure that the compartments loaded are checked by a supervisor or checker. The maximum capacity per product is indicated by a marker in each compartment.
13. The BTO or Loader must remove the drop tube and/or disconnect filler pipe hoses and bonding cable after loading is completed.

14. The BTO must record the quantity loaded on the trip report and complete the Vehicle Loading Check List and remove the loading docket, where applicable, from the loading rack meter. All compartments must be dipped and dips recorded on the trip report, unless loading rack meters are fitted.

15. The BTO must close, secure and seal all manhole covers, valves, bridging/loading couplings and P/D selector on the pneumatic system.

NOTE: Where manhole cover locking-bars are fitted, a single seal may be used in lieu of one per manhole cover.

16. The BTO or Loader must set the delivery meter(s) on the loading rack to zero.

17. Night filling must only be done under proper safety floodlights or under emergency conditions with an approved flameproof safety torch.

18. Before leaving on a trip, BTOs must ensure that:
   (a) trucks have been loaded in accordance with loading instructions
   (b) product tags have been fitted as per the load
   (c) bottom outlet valves are closed
   (d) manhole covers are secured and sealed
   (e) bridging/loading coupling dust caps are fitted and sealed
   (f) product selector (where applicable) has been set and sealed

NOTE: Under no circumstances may spare seals be carried on the vehicle.

19. Before leaving the depot/terminal, the BTO must switch on the vehicles headlights on dipped beam and they must remain on while the vehicle is in motion (day and night).

METERLESS TANKERS

Top loading meterless tankers that do not have assized compartments may only be done using assized meters. After loading, the temperature must be taken and the volume corrected to 20 degrees using the tables provided. The corrected volumes must be recorded on the delivery documents.

ALL tanker outlets must be sealed and the seal numbers recorded on the delivery documents and checked by the dispatch supervisor.

ASSIZED COMPARTMENT TANKERS

Tankers, which have assized compartments, must be filled exactly to the marker. These tankers can be identified by the presence of towers on top of each compartment. The product markers in each compartment must be sealed.
with an assize seal. Should this seal be found to be broken or missing, the compartment must not be filled and must be reported to the Plant Manager.

The bottom outlet valve of assized compartments must remain open during loading as the assized volume includes the pipeline.

The assized volume of each compartment appears on a plate attached to each compartment. The temperature of the product must be taken and corrected to 20 degrees C using the tables provided. This corrected volume at 20 degrees C is the invoiced volume.

2.2 Top loading unleaded petrol (ULP)

These are additional steps to be taken to ensure a quality product and to avoid contamination.

1. The BTO must check if any product is remaining in any compartment. This product must be drained out through the drybreak couplings using the hose provided for this purpose. All bottom outlet valves must be open during this process.

Semi-trailers fitted with ME50 systems (without air-eliminators) and meters with air eliminators, must have their manifolds drained through the dry-break coupling even though the compartments may be empty.

2. The BTO or Loader must load the required volume of ULP into the compartments and identify the product loaded using the correct product tags.

**NOTE:** All compartment foot valves must remain closed during loading. ULP may only be delivered through a petrol meter.

2.3 Top loading Illuminating Kerosene (IK)

1. If a full load of IK is to be loaded, the BTO must first flush the vehicle as detailed in section 2.3.1.

2. If a full load of IK cannot be achieved, then the compartments to be loaded with IK must be flushed as detailed in section 2.3.1 and the compartments not required for IK must either be left empty or loaded with diesel. No other product except diesel may be carried in the same tanker.

3. On mixed diesel and IK loads, the **IK must be delivered first**, therefore the discharge sequence must be kept in mind when loading the compartments to avoid overloading individual axles after the IK has been delivered, i.e. compartments to be discharged first must be loaded with IK.

4. When a mixed load of Ik and diesel is carried on a rigid and draw-bar trailer combination, the IK must be loaded into the rigid vehicle and the
3. Bottom Loading

There are two basic systems, which can be used in bottom loading, both of which use dry break couplings:

**Without loading rack meters.** This necessitates the loading being controlled from the top of the truck via a "deadman" control.

**With loading rack meters.** This system requires each meter to be fitted with a preset - setstop counter and a setstop valve (mechanically or electronically controlled). Each compartment shall be loaded individually with the required quantity set on the preset counter.

Refer dip tables for maximum capacities and SI 421.

When using a loading rack meter, each compartment must be fitted with an additional vent and an overfill sensor, which, when activated will close the bottom outlet valve. Should this occur no other compartment can be opened until the level has been brought down to normal by using the manual override. If these vents and an overfill system are not fitted, the manhole cover must be opened during filling to prevent pressure build up and a second person must be stationed on top of the tank to monitor the level. Should the overfill protection system malfunction, it must be reported to the transport workshop and be repaired. **Loading the tanker with this system in override is not allowed.**

3.1 General Bottom Loading Procedures

1. Prior to entering the loading rack area, the BTO must examine the interior of the tank compartments to ensure they are clean and empty and that a static chain/cable is fitted to the marker and touches the bottom of the compartment.

2. The BTO must position the vehicle under the loading rack.

3. The BTO must isolate the vehicle batteries by activating the master switch.

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**LOADING PROCEDURES FOR BULK DELIVERY VEHICLES (EXCLUDING LPG)**

**Owner:** Transport. Technical & Maintenance Manager

**Approvers:** Customer Services and Operations Manager

**SME:** Transport. Technical & Maintenance Manager

**Date of last revision:** 31/05/2010

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4. The BTO or Loader must connect the earth bonding cable or socket to the identified earth point on the tank.

5. The BTO or Loader must connect the overfill protection (permissive) system, where fitted.

6. The BTO must connect the vapour recovery system to the vehicle when loading petrol (where applicable).

7. The BTO or Loader must connect the loading arm to the filler connection.

8. The BTO or Loader must set the P/D (petrol/diesel) selector and/or valves for the correct compartment and use product tags on all loads.

9. The BTO or Loader must keep all discharge valves (i.e. delivery meter outlet and meter isolating valves) closed during loading.

10. The BTO or Loader must insert the loading card into the card reader where applicable.

11. The BTO or Loader must insert the loading docket into the printometer, (where applicable) and set the meter preset counter to the required quantity per compartment. Refer dip tables or vehicle load plate for maximum capacities.

12. The BTO or Loader must pull the load (red) button in the pneumatic control box and the button for the compartment to be loaded. Only one compartment may be opened at a time.

   **NOTE:** Flood loading is only permitted on vehicles fitted with level or mass sensors in addition to the vents and overfill sensors. All compartments to be loaded can thus be opened.

13. The BTO or Loader must activate the set stop control to commence loading. On electronic meters press the appropriate key to commence loading. The flow control valve will ensure slow loading until compartment valve is covered with product.

   Remember correct discharge sequence for split loads.

14. Compartments must only be filled up to the calibrated markers. When the truck has been filled, the load must be checked by a supervisor or checker as being filled to the correct mark as well as for product identification.

   **NOTE:** Never suspend any metal or conductive object into the compartments, such as sample containers or thermometers, until at least two minutes after loading has elapsed as static discharge to the object may occur.

15. When the vehicle is correctly loaded, the BTO or Loader must disconnect the loading arm and earth bonding cable.
16. All compartments must be dipped and dips recorded in the loading register and on the Trip Report unless loading rack meters are fitted, when closing loading rack meter readings must be recorded. The BTO or Loader must remove the loading docket and card (if fitted) from the meter.

17. The BTO must close, secure and seal all manhole covers, valves, bridging/loading couplings and P/D selector on pneumatic system.

**NOTE:** Where a manhole cover locking-bar is fitted, a single seal may be used in lieu of one per manhole cover.

18. The BTO or Loader must set the delivery meter(s) on the loading rack to zero.

19. Night filling must only be done under proper safety floodlights or under emergency conditions with an approved flameproof safety torch.

20. Before leaving on a trip, BTOs must ensure that:
   (a) trucks have been loaded in accordance with loading instructions
   (b) product tags have been fitted as per the load
   (c) bottom outlet valves are closed
   (d) manhole covers are secured and sealed
   (e) bridging/loading coupling dust caps are replaced and sealed
   (f) product selector (where applicable) has been set.

**NOTE:** Under no circumstances may spare seals be carried on the vehicle. If loading without a meter, ensure quantity being loaded is monitored continuously from the top of the tank until the required product marker setting is reached.

21. Before leaving the depot/terminal, the BTO must switch on the vehicle’s headlights on dipped beam and they must remain on while the vehicle is in motion (day and night).

### 3.2 Assized Compartments Tankers

1. Tankers, which have assized compartments, must be filled exactly to the marker and therefore the manhole cover must be opened and a person placed on top of the tanker to monitor the level.

   These tankers can be identified by the presence of towers on top of each compartment.

2. The product markers in each compartment must be sealed with an assize seal. Should it be found to be broken or missing, the compartment must not be filled and must be reported to the Plant Manager.

3. The assized volume of each compartment appears on a plate attached to each compartment. The temperature of the product must be taken and
corrected to 20 degrees C using the tables provided. This corrected volume at 20 degrees C is the invoiced volume.

4. Meterless tankers which do not have assized compartments must be loaded through assized approved loading rack meters and if the product is to be delivered to customers the volume must be corrected to 20 degrees C. This can be done automatically if electronic meters are fitted to the loading rack, alternatively the temperature must be taken manually.

### 3.3 Bottom Loading Unleaded Petrol (ULP)

These are additional steps to be taken to ensure a quality product and to avoid contamination.

1. The BTO must check if any product is remaining in any compartment. This product must be drained out through the drybreak couplings using the hose provided. All bottom outlet valves must be open during this process.

   Semi-trailers fitted with ME50 systems (without air-eliminators) and meters with air eliminators, must have their manifolds drained through the loading coupling even though the compartments may be empty.

2. The BTO or Loader must load the required volume of ULP into the compartments and identify the product loaded using the correct product tags.

3. Only one compartment must be loaded at a time and therefore only the foot valve of the compartment being loaded must be open.

### 3.4 Bottom Loading Illuminating Kerosene (IK)

1. If a full load of IK is to be loaded, the BTO must first flush the vehicle as detailed in section 2.6.1 and then load the IK.

2. If a full load of IK cannot be achieved then the compartments not required for IK must either be left empty or loaded with diesel. No other product except diesel may be carried in the same tanker.

3. If a mixed load of IK and diesel is to be carried, the BTO or Loader must first load the compartments that will carry diesel, close the foot valves and then drain the manifold through the diesel pumping nozzle until no more product comes out of the nozzle.

4. The BTO must now flush the compartments that are to be loaded with IK as detailed in section 2.3.1 and then load the IK.

As the IK must be delivered first, the discharge sequence must be kept in mind when loading to avoid overloading individual axles after the IK has
been unloaded, i.e. compartments to be discharged first must be loaded with IK.

5. When a mixed load of IK and diesel is carried on a rigid and draw-bar trailer combination, the IK must be loaded into the rigid vehicle and the diesel into the trailer. This will create a problem should the load not be delivered to one customer, as an empty rigid may not pull a loaded trailer and IK may not be pumped from a trailer. In cases where a mixed load is destined for more than one customer, a single vehicle must be used.

7. Petrol may only be carried on the same trip with a rigid and drawbar trailer combination and the petrol may only be carried in the trailer. The truck/trailer transfer hose must remain stowed on the trailer. Again only deliveries to one customer may be done in this manner as explained above.

3.5 Meterless Loading Procedures - SCS

**NOTE:** These loading procedures are for loading meterless tankers fitted with the Metermatic SCS (sealed compartment system) and may only be bottom loaded.

**Duties to be performed by the bulk truck operator (BTO)**

1. Park vehicle under loading rack in order that the loading arms can reach all loading adaptors.

2. Apply park brake on primemover and trailer.

3. The BTO must isolate the vehicle batteries by activating the master switch.

4. Prior to loading, check that site glasses are empty and that display on the SCS (Sealed Compartment System) control reads ‘0’ for each compartment. If product is found in a compartment, the volume must be determined and reported to the supervisor. This product must be delivered to the previous customer.

5. Connect the API Optic identification and earth cable.

**NOTE:** At non-Engen plants, a separate earth cable may be required to be coupled to the vehicle. This must be done before coupling the loading arm.

5. Connect the correct loading arm for the product to be loaded. Starting from number 1 compartment. Two compartments may be loaded simultaneously.

6. Turn on the air supply to the SCS control, select “LOAD” option, select the product to be loaded from the options list and open the appropriate
compartment/s. Repeat this process until all compartments are loaded and then close the compartments.

**Under no circumstances may the tanker be loaded by selecting the “UNLOAD” option.**

7. On completion, disconnect the load arm/s, API Optic cable, earth cable where applicable and replace dust caps. Press STOP button on SCS and close off air supply.

8. On the older model 100 systems a ticket must be printed after loading. Switch on printer in the cab and press ‘print’ on SCS. The loading ticket must be attached to the trip report. Two copies will be printed, one for the customer and one for plant records. On the newer model 200 systems this ticket is automatically printed prior to delivery. This latter model can be identified by the presence of API adaptor sensors.

**NOTE:** After loading, the manhole cover locking bar must not be opened as this will “unseal” the system and a delivery will not be possible without resealing electronically by reconnecting to the loading gantry. A mechanical seal or padlock must be fitted to the locking bar to prevent unauthorised opening.

3.6 **Meterless Loading Procedures – NON SCS**

These procedures are for loading meterless tankers that are NOT fitted with a sealed compartment system.

This type of tanker may only be bottom loaded through temperature compensated assized loading rack meters. Compartments may either be independently loaded or collectively loaded through a manifold, but the entire metered volume must be sealed by means of numbered seals. These seal numbers must be recorded on the delivery documents and checked by the dispatch supervisor.

3.7 **Flushing for IK Loads**

When a compartment which contained a product other than IK on the previous trip, or if diesel was delivered through the meter on the previous trip, is to be loaded with IK, the following procedure must be followed:

1. The BTO must first drain each compartment completely and the manifold completely through the pumping delivery nozzle. The bottom outlet valves of the compartments to be loaded with IK must remain open during this process.

2. Load 100 litres of IK into the compartment that is to loaded with IK that is furthest from the meter.
3. This entire quantity must then be flushed through the pumping delivery meter. The system must be drained completely through the nozzle, i.e. until no more product comes out of the nozzle. This product must be pumped back into the diesel pump back system.

4. The flushing procedure must be witnessed by the BTO’s supervisor and Annexure “C” must be completed and filed with the loading documents.

5. The gravity discharge system (petrol and diesel) must be drained as well to remove as much product as possible.

IK may not be delivered with a semi-trailer unless it has been specifically designed for dual products. If a semi-trailer is used for bridging IK from one plant to another, then the complete manifold system must be drained through the drybreak couplings and then load 100 litres into the compartment furthest from the meter and flush this volume through the meter/s. The load must be bridged through the drybreak couplings and the meter isolating valves must remain closed. To reduce the amount of flushing required, it is recommended that a rigid and drawbar trailer be used for bridging IK.

**NOTE:** Under no circumstances may IK be delivered through a petrol meter.

Refer to SI 417 (b) for delivery procedures.

4. Special Loading Procedures to Mining Accounts

In addition to the loading procedures in this section, certain customers, in particular mine deliveries, require extra care to avoid contaminated product being delivered. The following procedures must be adhered to:

1. All compartments must be checked for cleanliness and product on hand by the BTO and verified by the dispatcher. Product on hand, if not the same as that to be loaded, must be drained. If the same as that to be loaded, a sample must be taken and tested as per item 5 below.

2. A loading advice is accurately completed by the dispatcher and handed to the BTO for loading.

3. Only one product may be loaded into a tanker. No mixed loads under any circumstances. Mixed loads may only be carried where a truck and trailer are used and different products may only be carried on the truck and trailer. Where petrol and diesel are carried, the petrol must be carried in the trailer and diesel in the truck.

4. The BTO must set the product selector and seal and the dispatcher must verify same. Product tags must be attached to the appropriate compartment operating buttons.

5. After loading, samples must be taken from each compartment and tested. The test results must be recorded on the appropriate form (refer to...
Annexure “B” and attached to the delivery note. Copy to be kept on a plant file for a minimum of 30 days.

6. BTO must accurately complete the “Loading Report” (refer to Annexure “G” of SI 417b) and his Trip Report.

4.1 Customer Responsibilities

1. Ensure tanks are numbered, identified with capacity, product name and colour coded.

2. Check for water in storage tanks.

3. Dip storage tanks to determine ullage and complete a “Delivery Instruction” and hand to the BTO on his arrival. Refer to annexure ‘E’ of Standing Instruction 417b.

4. Check BTOs delivery instructions to ensure correct product is being delivered.

5. Check vehicle meter readings before and after delivery to ensure correct volume is being delivered.

6. Check product sample test reports to ensure product being delivered is to correct specification.
ANNEXURE A – PRODUCT SAMPLE TEST

ENGEN PETROLEUM LTD

Product Sample Test

To Whom It May Concern:

This is to certify that this product has been tested and that it meets with the requirements of SABS 342.

The results are as follows:

Delivery Note #: ...........................................
Customer: ..............................................
Sample #: ..............................................
Product: ..............................................
Fleet #: ..............................................

**DIESEL**  RESULT  SPECIFICATION

| Flash Point, (PMCC), °C: | ........................................ | 55°C (min) |
| Density @ 20°C, kg/l: | ........................................ | 0.800 (min) |

**PETRIOL (LRP & ULP)**  RESULT  SPECIFICATION

| Density @ 20°C, kg/l: | ........................................ | 0.710 – 0.785 |
| Distillation, Furnal Boiling Point, °C: | ........................................ | 215°C (max) |

**Performance level: SANS 342**

**Performance level: SANS 1598**

Test done by: ........................................ Date ..................................
Signed: ........................................................................
ANNEXURE B – FLUSHING CERTIFICATE

FLUSHING CERTIFICATE

I . . . . . . . . . . . . . . . . . . . . . . . . . . . (Dispatch Supervisor) supervised the flushing and loading of ULP / IP into vehicle fleet # . . . . . . . . . . and certify that the procedures as prescribed in Standing Instruction 417(a) were complied with and the product is fit for delivery.

Loading docket # . . . . . . . . . . . . . . . .

BTO's name . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Dispatch Supervisor’s signature . . . . . . . . . . . . . . . . Date . . . . . . . . . . .

If this is a printed copy, please ensure latest revision.
ANNEXURE C – VEHICLE LOADING CHECK LIST & DRAIN/FLUSH CHART

Vehicle Loading Check List & Drain / Flush Chart to prevent product contaminations

To assist Drivers and Loaders to prepare, and fill, Bulk Truck compartments when the product to be loaded is different from the product on the previous trip.

<table>
<thead>
<tr>
<th>Compartment #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME of product on hand</td>
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<td></td>
</tr>
<tr>
<td>NAME of product to be loaded</td>
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<tr>
<td>Product change?</td>
<td>(YES/NO)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action taken as per chart above and standing instruction 417a (Driver’s initials)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All tags checked &amp; changed tags fitted</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All valves close</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample taken as instructed: eg. ULP</td>
<td>✓</td>
<td></td>
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<td></td>
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<tr>
<td>Sample no:</td>
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<td>Product selector locked and sealed: ?</td>
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<td>Manhole cover closed and sealed: ?</td>
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<td>Loading coupling caps replaced and sealed?</td>
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<td>*Meter flushed and tagged (if applicable) ?</td>
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Owner: Transport. Technical & Maintenance Manager
Approvers: Customer Services and Operations Manager
SME: Transport. Technical & Maintenance Manager
Date of last revision: 31/05/2010
Page 17 of 20
Version number:

If this is a printed copy, please ensure latest revision.
<table>
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<tr>
<th>REVISION NUMBER</th>
<th>SUMMARY OF CHANGE</th>
<th>CHANGED BY (person)</th>
<th>EFFECTIVE DATE</th>
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<tr>
<td>1</td>
<td>Flushing procedure changed for IK. Annexure C amended to suite</td>
<td>M B Knickelbein</td>
<td>12/07/2006</td>
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<td>2</td>
<td>“Exception” and “General” paragraphs amended. Safe Loading Pass requirement added.</td>
<td>M B Knickelbein</td>
<td>24/10/2008</td>
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<td>3</td>
<td>Clause 1 amended by adding paragraph 5. Apply parkbrakes and place wheelchocks before loading.</td>
<td>M B Knickelbein</td>
<td>31/05/2010</td>
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