Guidance on Trade Effluent Charging with no Sewerage Charges

1. Introduction

This note provides guidance on how to set up Trade Effluent (TE) volumetric charging within CMOS, with particular reference to the impact on volumetric sewerage charges. It describes three ways to deal with the scenario where a water meter at a premises is not used for sewerage volume calculation. Examples of the setups are included in the appendix.

2. Background

A Discharge Point is the point where responsibility for the Trade Effluent passes to the Wholesaler. A Discharge Point ID (DPID) identifies the Discharge Point, and within CMOS refers to the construct used to hold details about the Trade Effluent services. There may be volumetric charges, non-volumetric charges or both types of charges. DPIDs are always installed at a sewerage services Supply Point (SPID). Multiple DPIDs can be installed at the same SPID.

In the case of Trade Effluent volumetric charges, volumes can either be measured by a meter or estimated using a Calculated Discharge (CD). A CD is a calculation arrangement which Trading Parties can utilise when the premise discharging Trade Effluent doesn't have an appropriate meter installed or the meter arrangement is too complex to set up in the Central Systems (CMOS). This guidance document focuses on the case of metered volume, but the CD mechanism is discussed briefly in section 4 of this paper.

A meter used for calculating Trade Effluent volume can be of any meter treatment. There are six types: Potable Water, Non-Potable Water, Sewerage, Private Water, Private Trade Effluent and Crossborder. These meters can all be used to calculate Trade Effluent volume if they are associated to a DPID and the percentage of the volume associated with that meter which is discharged to the Discharge Point ("MDVol") is set to a non-zero value. The associations and values are set through the submission of the T123.W (Submit Discharge Point Meter Association) transaction.

The design expectation is that:

- Potable Water Meters and Non-Potable Water Meters measure water supplied by the Wholesaler at the paired water SPID;
- Private Water Meters and Crossborder Meters measure water at a sewerage SPID, where the water is not supplied by a water Wholesaler. Private Water Meters can also be used as sub-meters in a meter network at a sewerage SPID. Crossborder Meters apply to the special case of a Welsh water undertaker (e.g. Welsh Water) supplying water to premises which are not in the market for water, but the premises are in the market for sewerage because the sewerage service is provided by an English Wholesaler;
- Sewerage Meters and Private Trade Effluent Meters measure effluent.

All these meters, with the exception of Private TE, record sewerage volume, if the meter's Return to Sewer (RTS) attribute is a non-zero percentage. The value can be set when installing the meter in CMOS using T104.W (Submit Meter Details) or when updating chargeable meter details via T114.W (Update Meter Chargeable). The RTS for a Sewerage Meter must be set to 100% (in accordance with *CSD 0104: Maintain SPID Data*, section 15.1.4 (c)) and cannot be amended; the expectation being that it will thus measure 'sewerage effluent' rather than 'Trade Effluent'. As such, Sewerage Meters will not be considered further in this paper.

Private TE Meters do not directly record sewerage volumes. Their RTS values should be set to 0% (in accordance with *CSD 0104: Maintain SPID Data*, section 15.1.4 (d)). There is one case (refer to section 4.1) where the volume of Trade Effluent recorded may be subtracted from the calculated volume of sewerage.

The meters that should be considered in the solutions presented below are either

(i) Potable Water or Non-Potable Water meters installed at the water SPID; or
(ii) Private Water, Crossborder or Private TE Meters installed at the sewerage SPID.

Meters installed at sewerage SPIDs (Private Water or Crossborder) have no effect on water volume calculation. Their RTS values can be adjusted to reduce the amount of sewerage that is identified as being discharged to the sewer. It should be noted that where there is no public water supply to the premises but only a private supply exists, there will not be a water SPID as the Private Water Meter would be associated by the sewerage Wholesaler to the sewerage SPID.

Each DPID has a property called the Sewerage Volume Adjustment Method (SVAM) which determines the impact that a DPID has on the calculation of metered sewerage charges. There are three options: “None”, “DA” and “SUBTRACT”. This value must be correctly set for each DPID. If the SVAM is set to “DA”, then the Domestic Allowance parameter for the DPID must be set. There are two further DPID allowance parameters, Fixed Allowance and Percentage Allowance, which must also be set and affect the calculation of Trade Effluent volumes.

3. Scenario – Where the Meter is not Used for Sewerage Volume Calculation

This scenario can occur where the Trading Parties at a Supply Point wish to zero out the sewerage volume, i.e. all the volume passing through the water meter that ultimately goes to the sewer is discharged as Trade Effluent. This situation occurs in instances where 100% of the volume measured by a meter is Trade Effluent, such as car washes and swimming pool sites.

3.1 Solution One: Ensure there is no Metered Sewerage Service Component

If there is no metered sewerage service component (i.e. it is either not created, or it is discontinued) there will be no metered sewerage charges, either volumetric charges or related non-volumetric charges such as meter fixed charges (which depend on the meter’s sewerage chargeable meter size).

There will be no metered charges irrespective of either how the DPID’s SVAM parameter is set or the value of the RTS of any meter. However, it is recommended that the SVAM parameter is set to “None”, which means that the DPID will have no effect on metered sewerage charges.

3.2 Solution Two: Metered Sewerage Service Component and Use of Domestic Allowance

If there is a metered sewerage service component, any relevant fixed charges in the sewerage tariff (such as meter fixed charges or supply point fixed charges) will be applied. However, it is possible to zero out volumetric charges.

The DPID’s attribute SVAM must be set to “DA”. All the water meters must be associated with the DPID. The Domestic Allowance should then be set to zero. This allowance amount is split amongst all meters associated to the DPID which record sewerage volume, i.e. even where their RTS values are non-zero.

In essence, the metered volumes are replaced by the DA volume for the calculation of sewage charges. By specifying a DA value of zero, the Sewerage Wholesaler can zero out sewerage volumes

of all meters associated to the DPID (with any value of MDVol). The algebra for this calculation method is set out in *CSD 0207: Charge Calculation, Allocation and Aggregation* section A.7.9.

Should a DPID be terminated or erased, the DA set up would automatically be removed; thus, reverting all meters previously associated to the DPID to calculate sewerage volume as standard using the RTS on a meter.

3.3 Solution Three: Metered Sewerage Service Component and Use of the Meter's RTS

If there is a metered sewerage service component, any relevant fixed charges in the sewerage tariff will be applied. However, it is possible to zero out volumetric charges by setting the meter attribute, Return to Sewer (RTS) to zero. Setting the RTS to zero will also remove any meter fixed charges associated with the sewerage tariff, but not any supply point fixed charges.

The MDVol is used to specify the percentage of a meter's volume that is discharged to the sewer as Trade Effluent. If all of a meter's volume is to be used for the calculation of Trade Effluent, then the MDVol should be set at 100% and any losses set in the fixed and percentage allowances.

Should a DPID be terminated or erased, the RTS of any meters previously associated to the DPID would need to be changed to re-enable the calculation of sewerage from these meters.

The table below outlines the charges that are attributable to each of the three solutions discussed above.

	Metered Volumetric Charges	Meter Fixed Charges	Supply Point Charges
Solution 1: No Metered Service Component	No	No	No
Solution 2: DA = 0	No	Yes *(if in the tariff)*	Yes *(if in the tariff)*
Solution 3: RTS = 0	No	No	Yes *(if in the tariff)*

Table 1: charges that are attributable to the three different solutions

4. Additional Matters

4.1 Private TE Meters

As discussed in section 2 of the paper, Private TE Meters are meters which measure effluent and do not directly record sewerage volumes. The RTS on these meters must be set to 0% and cannot be amended. In order to measure Trade Effluent, these meters must be associated to DPIDs with positive MDVol values.

There is one mechanism through which Private TE Meters can affect the calculation of sewerage volume: the SVAM of "SUBTRACT". When this method is specified at a DPID, the Trade Effluent volumes that are measured through the Private TE Meters associated to this DPID are subtracted from the metered sewerage volumes at the premises. This caters for cases where double-counting of

sewerage volume is wished to be avoided. It should be noted that currently, only Private TE Meters should be associated against DPIDs which have an SVAM of "SUBTRACT". Where any other type of meter is associated to a DPID (due to historical data issues) with a SVAM of "SUBTRACT", incorrect settlement results will be generated. However, the settlement engine notifies Wholesalers and Retailers of this after the execution of a settlement run in the fourth part of the disaggregated settlement report.

4.2 Calculated Discharges

Calculated Discharges are a calculation arrangement which can be utilised by Wholesalers when Trade Effluent volumes being discharged at a premises cannot be derived from metered water supplied to the site and a Private TE Meter cannot be installed. In these cases, Wholesalers can create a Calculated Discharge and either,

(i) set a fixed annual volume; or
(ii) request Retailers submit monthly or bi-annually volumes against them.

This is similar in model to the creation and setup of meters; Wholesalers create the meters in CMOS and Retailers submit reads against them monthly or bi-annually

It should be noted that CD volumes at DPIDs which have an SVAM of "SUBTRACT" will be subtracted from any metered sewerage volumes at the premises.

5. Summary of TE and Sewerage Charge Calculations

A typical scenario is shown below where the Trade Effluent volumes are derived from a water meter which measures the input water volumes to the premises.

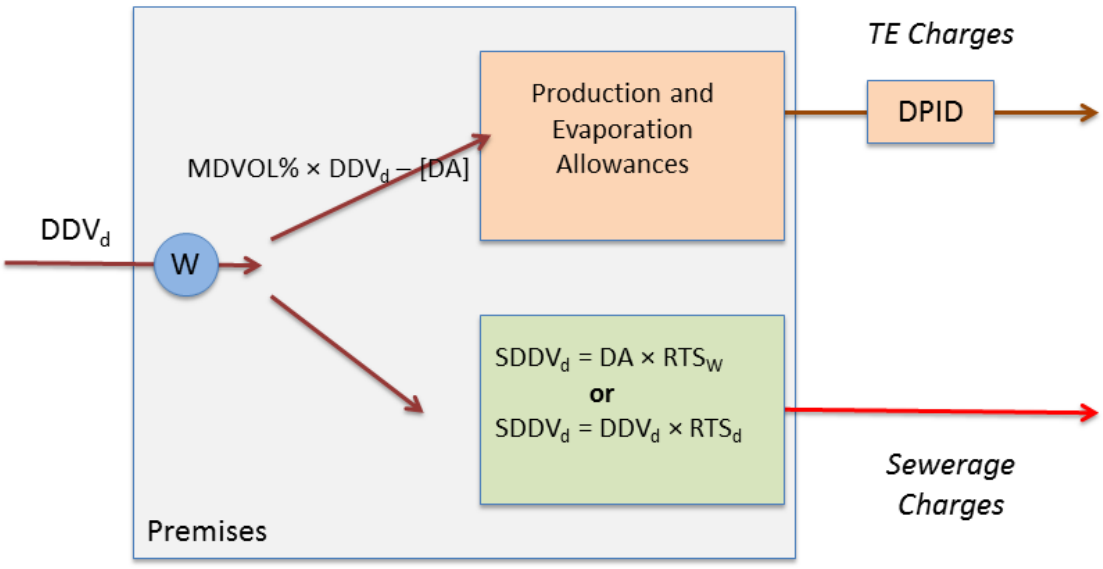

Figure 1: use of a meter and DPID to calculate sewerage and Trade Effluent charges

The use of the Domestic Allowance is optional. If it is set to "None", then the sewerage volume calculation is carried out using the normal RTS methodology, although an adjustment may have to

be made to the RTS to account for the water discharged to the DPID. If the Domestic Allowance is set to a positive value, then the Domestic Allowance is subtracted from the volume discharged to the DPID, and the sewerage calculation is replaced with $DA \times RTS_W$, where RTS_W is the sewerage Wholesaler's default value of Return to Sewer.

The SVAM should be set in conjunction with the choice made in the section above. There are two allowances which must be applied to account for production and evaporation allowance. These are the Fixed Allowance and the Percentage Allowance. These must always be set. CMOS always applies the Fixed Allowance before applying the Percentage Allowance.

Appendix A: Billing Examples

A.1 Private Water Supply and Calculated Discharge

This is the case where the water supply at a premises is provided privately and is measured through a Private Water Meter. There is no domestic sewerage, as all the water supplied is discharged as Trade Effluent due to operational processes (e.g. from a car wash set up in a supermarket car park). There may also be contaminated surface water from rainwater falling on uncovered wash areas.

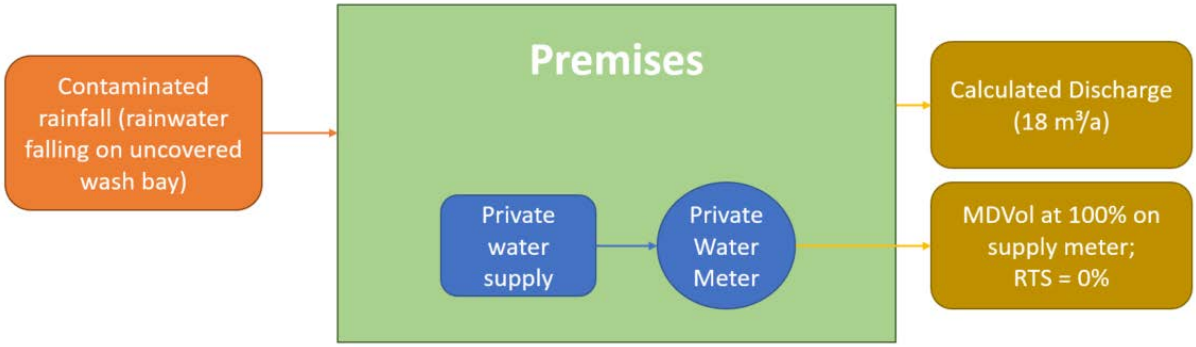

Figure 2: example of a private water supply and use of a Calculated Discharge

To create this setup in CMOS, the sewerage Wholesaler set the MDVol value to 100% and RTS value of the meter to 0%. The Central Systems' settlement engine would then use the meter's readings to apportion 100% of the volume of the Private Water Meter to be discharged as Trade Effluent, with no metered sewerage charges.

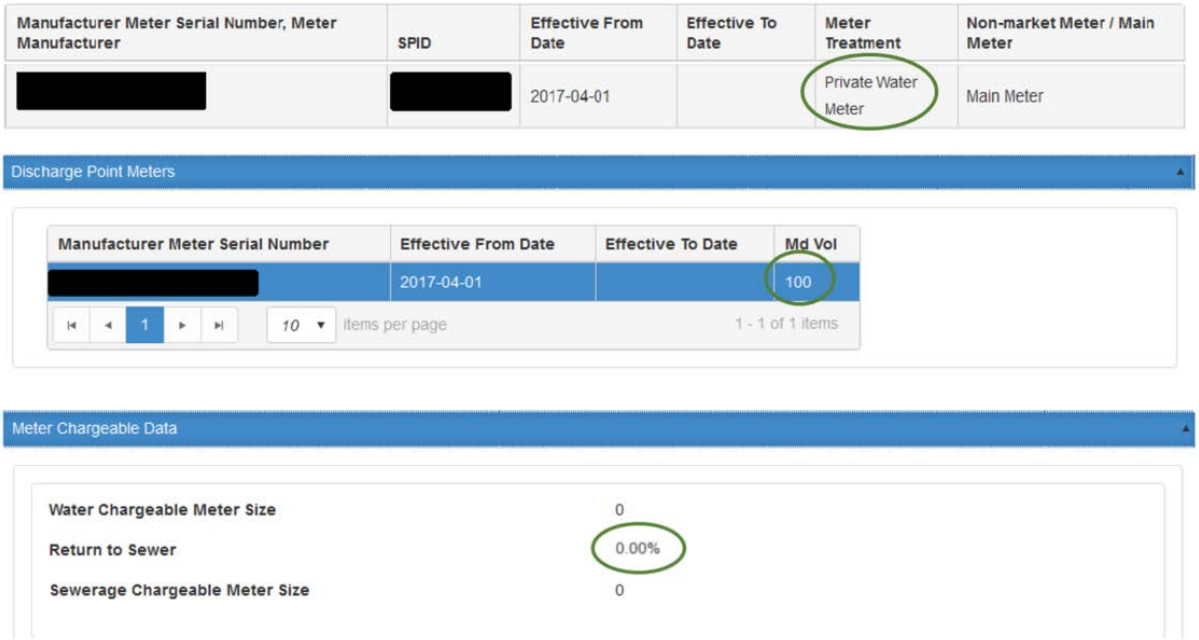

Figure 3: view of the CMOS Portal displaying the MDVol and RTS meter attributes

The sewerage Wholesaler also modelled the contaminated rainfall in CMOS as a Calculated Discharge, with a Yearly Volume Estimate of (YVE) of 18 cubic meters. The YVE of a meter or a CD

can be set by the Wholesaler and indicates the volume that is estimated to pass through the meter/CD on a yearly basis.

If the Wholesaler needs to change the YVE of the CD or wishes to set it up with Retailer submitted volumes, it can discontinue the Calculated Discharge through the T169.W (Discontinue Calculated Discharge Details) transaction and set up a new discharge.

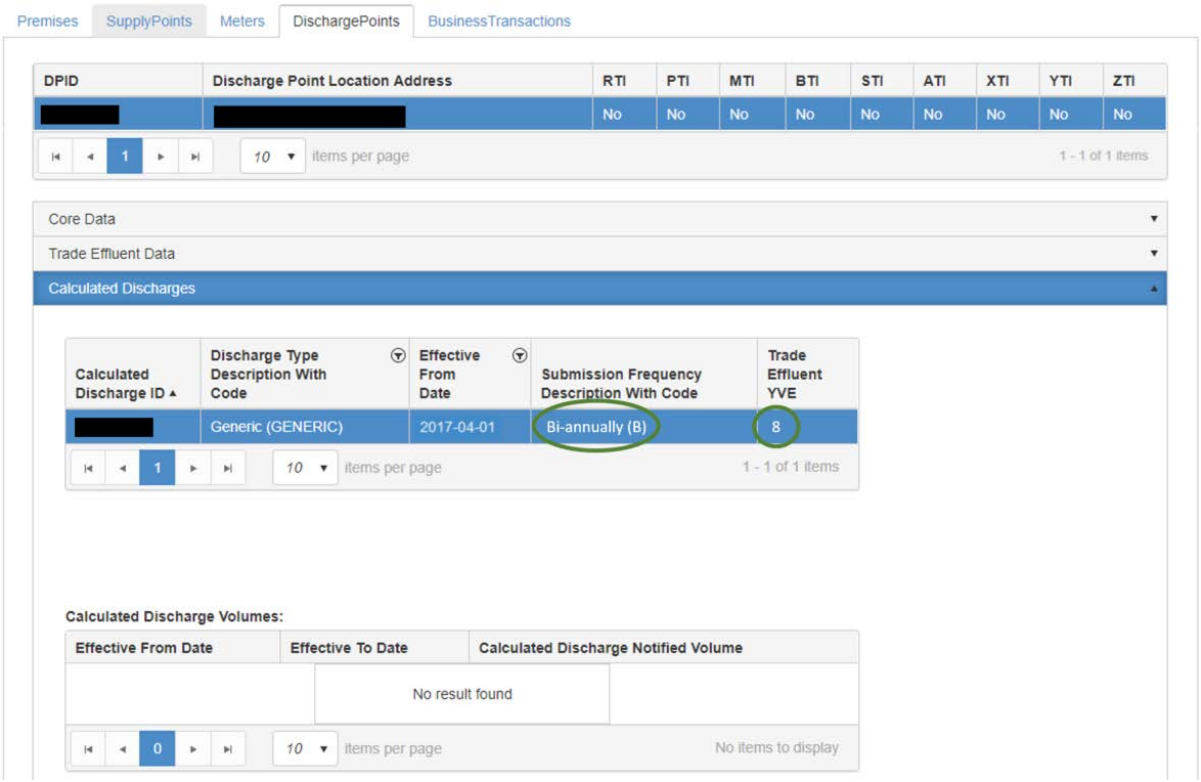

Figure 4: view of the CMOS Portal displaying the DPID and Calculated Discharge details

As discussed in section 3.2 of this paper, another method the sewerage Wholesaler could have utilised to nullify sewerage volumetric charges would have been to set the SVAM on the DPID to DA, with a value of zero. These attributes are shown under 'Core Data' of the Discharge Points tab.

A.2 Private Trade Effluent Meter Only

This is the case where there is no water supply at a premises nor domestic sewerage. All discharge from the premises is in the form of Trade Effluent; the premises could be a waste treatment facility and waste could be brought to the premises by tanker etc.

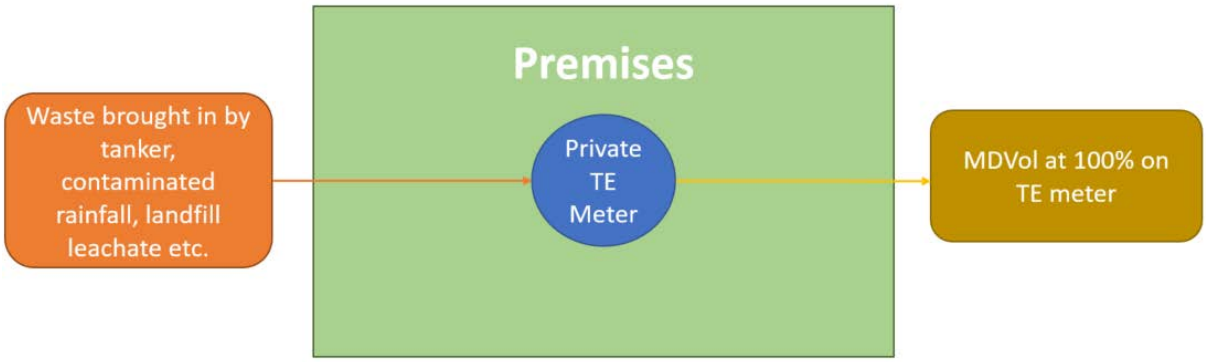

Figure 5: example of a premises where trade effluent discharged is measured through a Private TE meter

To create this setup in CMOS, the sewerage Wholesaler set the MDVol value to 100% in order for the settlement engine to allocate 100% of the Trade Effluent volume passing through the Private TE Meter to one discharge.

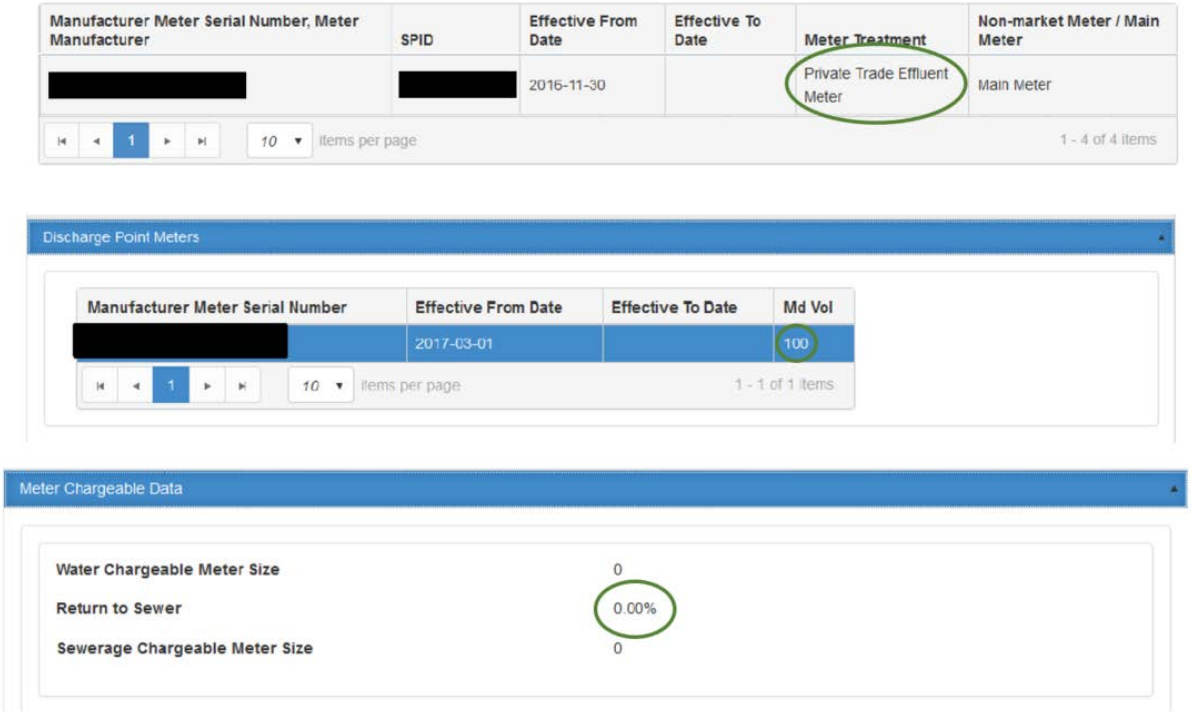

Figure 6: view of the CMOS Portal displaying the meter and meter-DPID association details

In this example, the sewerage Wholesaler set the SVAM to “None” as the two other methods were not required. This is because no metered sewerage service was ever provided to the premises, as only the Private Trade Effluent Meter was used to measure all discharge from the site as Trade Effluent.