

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

SOUTH WAIRARAPA DISTRICT COUNCIL  
AND MERCURY ENERGY LIMITED

NZBN: 9429037705305

Prepared by: Tara Gannon

Date audit commenced: 20 August 2024

Date audit report completed: 17 September 2024

Audit report due date: 1 October 2024

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## EXECUTIVE SUMMARY

This audit of the **South Wairarapa District Council (SWDC)** DUML database and processes was conducted at the request of **Mercury Energy Limited (Mercury)** in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

The RAMM database is owned by **SWDC**. **Power Services Wairarapa (PSW)** complete all fieldwork for the SWDC streetlights, with assistance from **Fulton Hogan** as required. Additions, removals, and changes to lights are updated using Pocket RAMM by PSW and Fulton Hogan.

Mercury reconciles this DUML load using the HHR profile. Mercury was granted exemption No. 233, which allowed them to provide HHR submission information instead of NHH submission information for DUML. Clause 8(g) of schedule 15.3 of the Code, which the exemption related to was removed from the Code in 2018, and the exemption is no longer valid. Mercury is planning to apply for a new profile which will allow them to continue to submit the DUML load as HHR.

Wattages are derived from an extract provided each month by SWDC, which are used to calculate the daily kW load. On and off times are derived from a data logger.

A field audit was conducted of a statistical sample of 143 items of load on 20 August 2024 which found that database accuracy was not within the  $\pm 5\%$  threshold. In absolute terms, total annual consumption is estimated to be 8,800 kWh lower than the DUML database indicates.

Some lamp information contained within the database is incomplete and/or inconsistent, including 131 items which have no lamp or gear wattage recorded and a further 12 items which also have no ICP recorded. The issue has been at least partly caused by new subdivisions which were not updated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

The SWDC Roading Manager intends to investigate and update all discrepancies found during the audit, and review processes to prevent recurrence of the accuracy issues. A full list has been provided.

This audit identified six non-compliances, and one recommendation was made. The future risk rating of 25 indicates that the next audit be completed in three months. I have considered this in conjunction with the impact of the non-compliances and that SWDC intends to resolve the issues, and recommend a ten month audit period to allow time for the issues to be resolved.

The matters raised are detailed below:

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>The DUML load is submitted using HHR profile, without an exemption in place.</p> <p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 8,800 kWh.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p>	Weak	Low	6	Investigating
ICP identifier and items of load	2.2	11(2)(c) and (d) of Schedule 15.3	<p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p>	Moderate	Low	2	Identified
Description and capacity of load	2.4	11(2)(c) (d) of Schedule 15.3	<p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and</p>	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p>				
All load recorded in database	2.5	11(2A) of Schedule 15.3	Seven additional lights found in the field of the sample of 143 items of load (4.8% error rate).	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B (b)	<p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 8,800 kWh.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p>	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Five items of load on Tuscan Lane have incorrect street names recorded.				
Volume information accuracy	3.2	15.2 and 15.37B (c)	<p>The DUML load is submitted using HHR profile, without an exemption in place.</p> <p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 8,800 kWh.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p>	Weak	Low	6	Investigating
Future Risk Rating						25	

<b>Future risk rating</b>	0	1-4	5-8	9-15	16-18	19+
<b>Indicative audit frequency</b>	36 months	24 months	18 months	12 months	6 months	3 months

## RECOMMENDATIONS

Subject	Section	Recommendation	Audited party comment
Database address accuracy	3.1	Check and update the street addresses for lights recorded on Tuscan Lane, Martinborough.	South Wairarapa DC have advised that they plan to check and update these.

## ISSUES

Subject	Section	Description	Issue
		Nil	

## 1. ADMINISTRATIVE

### 1.1. Exemptions from Obligations to Comply with Code

#### Code reference

*Section 11 of Electricity Industry Act 2010.*

#### Code related audit information

*Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.*

#### Audit observation

Current code exemptions were reviewed on the Electricity Authority website.

#### Audit commentary

Mercury were granted exemption No. 233, which allowed them to provide half-hour (“HHR”) submission information instead of non-half-hour (“NHH”) submission information for distributed unmetered load (“DUML”). Clause 8(g) of schedule 15.3 of the Code, which the exemption related to was removed from the Code in 2018, therefore the exemption is no longer valid.

Mercury currently submits the DUML load as HHR, which is non-compliant with clause 8(5) of schedule 15.3 of the Code, because the DUML load does not meet the requirements for use of the HHR profile:

For any unmetered load at an ICP for which it is responsible, regardless of the category of any metering installation at the ICP, a reconciliation participant must provide non-half-hour submission information to the reconciliation manager unless—

(a) the Authority has approved a profile for the unmetered load that allows the reconciliation participant to provide half hour submission information to the reconciliation manager for the unmetered load; and

(b) the reconciliation participant provides half hour submission information in accordance with the profile.

Mercury is planning to apply for a new profile which will allow them to continue to submit the DUML load as HHR.





### 1.3. Persons involved in this audit

Auditor:

Name	Title	Company
Tara Gannon	Auditor	Provera

Other personnel assisting in this audit were:

Name	Title	Company
Tim Langley	Roading Manager	South Wairarapa District Council
Chris Posa	Compliance Reconciliation Analyst	Mercury Energy

### 1.4. Hardware and Software

#### RAMM

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited. The database is commonly known as “RAMM” which stands for “Road Assessment and Maintenance Management”. The specific data used for DUML is held in the Streetlight tables. thinkproject New Zealand Limited backs up the database and assists with disaster recovery as part of their hosting service.

Access to the database is secure by way of password protection.

#### Mercury systems

Systems used by the trader to calculate submissions are assessed as part of their reconciliation participant audits.

### 1.5. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

### 1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0020906000WRDFA	STREET LIGHTING	GYT0331	HHR	911	31,665
Blank				191	22,345

All items of load have an ICP number recorded except:

- 179 State Highway lights (22,345W) which are the responsibility of NZTA and recorded in their own database, but are listed in the SWDC database for completeness, and
- 12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. SWDC confirmed that these are lights in new subdivisions which have not yet been updated in RAMM.

Some new subdivisions have missed having their light details populated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM. In the meantime they are manually adding wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

### 1.7. Authorisation Received

All information was provided directly by Mercury and SWDC.

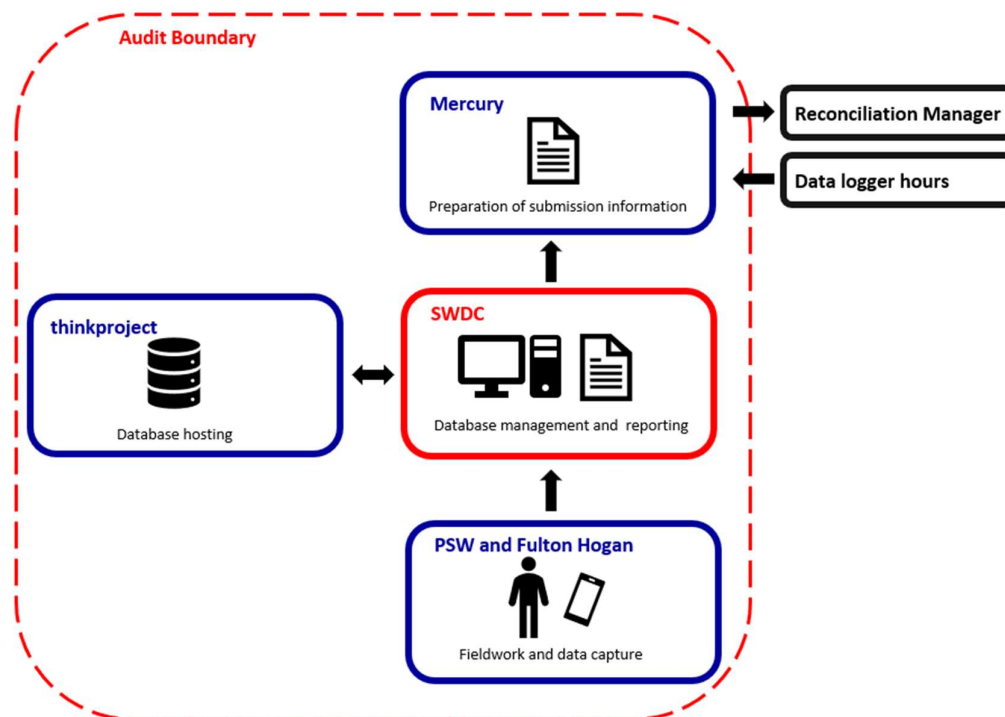
### 1.8. Scope of Audit

This audit of the SWDC DUML database and processes was conducted at the request of Mercury in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied. The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

The RAMM database is owned by SWDC. PSW complete all fieldwork for the SWDC streetlights, with assistance from Fulton Hogan as required. Additions, removals, and changes to lights are updated using Pocket RAMM by PSW and Fulton Hogan.

Mercury reconciles this DUML load using the HHR profile in accordance with exemption 233. This exemption expires on 31 October 2023, and Mercury is planning to apply for a new profile which will allow them to continue to submit the DUML load as HHR. Wattages are derived from an extract provided each month by SWDC, which includes the daily kW load. On and off times are derived from a data logger.

The scope of the audit encompasses the collection, security, and accuracy of the data, including the preparation of submission information based on the database reporting. The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 143 items of load on 20 August 2024.

## 1.9. Summary of previous audit

The previous audit of this database was undertaken by Tara Gannon of Provera in September 2023. The summary table below shows the statuses of the non-compliances raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 7,700 kWh.</p> <p>Pole ID 1879 has a 50W mercury vapour light installed with the gear wattage recorded as zero when 9W is expected resulting in estimated under submission of 9W or 38 kWh p.a.</p> <p>38 lights have a missing gear model and gear wattage. Assuming that the lights are LEDs there will be no wattage difference.</p> <p>39 lights have a missing light model and light wattage. Assuming that the lights are 28W Vizulo Mini Martin lights (the most common light type) the estimated under submission is 1,092W or 4,664 kWh p.a.</p>	Some exceptions still existing
Description and capacity of load	2.4	11(2)(c) (d) of Schedule 15.3	<p>Pole ID 1879 has a 50W mercury vapour light installed with the gear wattage recorded as zero when 9W is expected resulting in estimated under submission of 9W or 38 kWh p.a.</p> <p>38 lights have a missing gear model and gear wattage. Assuming that the lights are LEDs there will be no wattage difference.</p> <p>39 lights have a missing light model and light wattage. Assuming that the lights are 28W Vizulo Mini Martin lights (the most common light type) the estimated under submission is 1,092W or 4,664 kWh p.a.</p>	Some exceptions still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	Four additional lights found in the field of the sample of 157 items of load (2.5% error rate).	Some exceptions still existing
Database accuracy	3.1	15.2 and 15.37B (b)	<p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 7,700 kWh.</p> <p>Pole ID 1879 has a 50W mercury vapour light installed with the gear wattage recorded as zero when 9W is expected resulting in estimated under submission of 9W or 38 kWh p.a.</p> <p>38 lights have a missing gear model and gear wattage. Assuming that the lights are LEDs there will be no wattage difference.</p> <p>39 lights have a missing light model and light wattage. Assuming that the lights are 28W Vizulo Mini Martin lights (the most common light type) the estimated under submission is 1,092W or 4,664 kWh p.a.</p> <p>33 items of load have transposed GPS coordinates.</p>	Some exceptions still existing

Subject	Section	Clause	Non-compliance	Status
			Five items of load on Tuscan Lane have incorrect street names recorded.	
Volume information accuracy	3.2	15.2 and 15.37B (c)	<p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 7,700 kWh.</p> <p>Pole ID 1879 has a 50W mercury vapour light installed with the gear wattage recorded as zero when 9W is expected resulting in estimated under submission of 9W or 38 kWh p.a.</p> <p>38 lights have a missing gear model and gear wattage. Assuming that the lights are LEDs there will be no wattage difference.</p> <p>39 lights have a missing light model and light wattage. Assuming that the lights are 28W Vizulo Mini Martin lights (the most common light type) the estimated under submission is 1,092W or 4,664 kWh p.a.</p>	Some exceptions still existing

Subject	Section	Recommendation	Status
Database address accuracy	3.1	<p>Correct the 33 items of load that have transposed GPS coordinates, with the northing value recorded in the easting field and vice versa.</p> <p>Check and update the street addresses for lights recorded on Tuscan Lane, Martinborough.</p>	<p>Adopted.</p> <p>Re-raised.</p>

## 1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F)

### Code reference

Clause 16A.26 and 17.295F

### Code related audit information

Retailers must ensure that DUML database audits are completed:

1. by 1 June 2018 (for DUML that existed prior to 1 June 2017)
2. within three months of submission to the reconciliation manager (for new DUML)
3. within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.

### Audit observation

Mercury have requested Provera to undertake this streetlight audit.

### Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database within the required timeframe.

### Audit outcome

Compliant

## 2. DUML DATABASE REQUIREMENTS

### 2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

#### Code reference

Clause 11(1) of Schedule 15.3

#### Code related audit information

The retailer must ensure the:

- DUML database is up to date
- methodology for deriving submission information complies with Schedule 15.5.

#### Audit observation

The process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

#### Audit commentary

Mercury reconciles this DUML load using the HHR profile in accordance with exemption 233. Mercury were granted exemption No. 233, which allowed them to provide half-hour (“HHR”) submission information instead of non-half-hour (“NHH”) submission information for distributed unmetered load (“DUML”). Clause 8(g) of Schedule 15.3 of the Code, which the exemption related to was removed from the Code in 2018, therefore the exemption is no longer valid. Mercury is planning to apply for a new profile which will allow them to continue to submit the DUML load as HHR.

Wattages are derived from an extract provided each month by SWDC, which includes the daily kW load. On and off times are derived from a data logger.

I reviewed the submission information for August 2024 and confirmed that the calculation methodology was correct, with wattages based on database extract totals per day, and on hours based on data logger information.

Volume inaccuracy is present in the database as follows, and is described in more detail in **section 3.1**:

Issue	Estimated volume information impact (annual kWh)
The database is not confirmed as accurate with a 95% level of confidence.	Under submission of 8,800 kWh p.a.
12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. SWDC confirmed that these are lights in new subdivisions which have not yet been updated in RAMM.  SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.  Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but	Under submission of 239.2 kWh p.a.

Issue	Estimated volume information impact (annual kWh)
not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.	
131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.	Under submission of 4,552.25 kWh p.a.
Two items of load had unexpected zero gear wattages.	Under submission is 76.8 kWh p.a.

### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 2.1</p> <p>With: Clause 11(1) of Schedule 15.3</p> <p>From: 01-Oct-23</p> <p>To: 20-Aug-24</p>	<p>The DUML load is submitted using HHR profile, without an exemption in place.</p> <p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 8,800 kWh.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>
Audit risk rating	Rationale for audit risk rating
<b>Medium</b>	The controls are assessed to be weak overall because the field audit found that the database was not accurate with a 95% confidence level. The impact on settlement is medium based on the kWh differences identified.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Still working on the new profile applications to allow us to submit HHR for DUML. Delays caused due to lack of resource as other projects other prioritised, aiming to submit in coordination with our move from SAP to Robotron for LCOM which will be happening before the end of 2024.</p> <p>South Wairarapa DC are aware of the discrepancies and will be working to tidy up and ensure there is a process in place to avoid issues with database updates going forward.</p>	End of 2024	Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
We will continue to liaise with South Wairarapa DC to ensure that the database is as accurate as possible.	Ongoing	

## 2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

### Code reference

Clause 11(2)(a) and (aa) of Schedule 15.3

### Code related audit information

The DUML database must contain:

- each ICP identifier for which the retailer is responsible for the DUML
- the items of load associated with the ICP identifier.

### Audit observation

The database was checked to confirm an ICP was recorded against each item of load.

### Audit commentary

All items of load have an ICP number recorded except:

- 179 State Highway lights (22,345 W) which are the responsibility of NZTA and recorded in their own database, but are listed in the SWDC database for completeness, and
- 12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded and are expected to be 28W LEDs. SWDC confirmed that these are lights in new subdivisions which have not yet been updated in RAMM.

Road	Location	Serial Number	Make	Model	Light Shade	Lamp Wattage	Gear Wattage
1557	OATES PL	7	Greytown				0
1558	OATES PL	50	Greytown				0
1559	OATES PL	88	Greytown				0
1560	OATES PL	125	Greytown				0



Road	Location	Serial Number	Make	Model	Light Shade	Lamp Wattage	Gear Wattage
1561	OATES PL	167	Greytown				0
1562	FARLEY AVE	270	Greytown				0
1563	FARLEY AVE	291	Greytown				0
1564	FARLEY AVE	320	Greytown				0
1565	FARLEY AVE	368	Greytown				0
1566	FARLEY AVE	219	Greytown				0
1567	COTTERVILLE CRES	360	Greytown			None	0
1568	COTTERVILLE CRES	433	Greytown			None	0

Some new subdivisions have missed having their ICP numbers and light details populated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 2.2</p> <p>With: Clause 11(2)(c) and (d) of Schedule 15.3</p> <p>From: 01-Aug-24</p> <p>To: 31-Aug-24</p>	<p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	The controls are moderate. Most items of load have ICP numbers recorded but some subdivisions missed having their ICP numbers and wattage information updated in RAMM. The impact on settlement is low based on the kWh under submitted.

Actions taken to resolve the issue	Completion date	Remedial action status
South Wairarapa DC are aware of the discrepancies and will be working to tidy up and ensure there is a process in place to avoid issues with database updates going forward.	End of 2024	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
We will continue to liaise with South Wairarapa DC to ensure that the database is as accurate as possible.	Ongoing	

### 2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

#### Code reference

Clause 11(2)(b) of Schedule 15.3

#### Code related audit information

The DUML database must contain the location of each DUML item.

#### Audit observation

The database was checked to confirm the location is recorded for all items of load.

#### Audit commentary

SWDC uses AMDS and locations are recorded in the database. I confirmed all items of load connected to DUML ICP 0020906000WRDFA have a location recorded.

The previous audit found:

- 33 items of load had transposed GPS coordinates, with the northing value recorded in the easting field and vice versa. I confirmed that these issues have been resolved with the implementation of AMDS and all items of load have locations within the SWDC region.
- Some items of load had correct positions recorded but incorrect GPS coordinates. I checked previous exceptions and found they had been resolved, except for some lights on Tuscan Lane which are currently recorded with road names of Jellicoe St or Esther St. This is recorded as non-compliance in **section 3.1**.

#### Audit outcome

Compliant

### 2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

#### Code reference

Clause 11(2)(c) and (d) of Schedule 15.3

#### Code related audit information

The DUML database must contain:

- a description of load type for each item of load and any assumptions regarding the capacity
- the capacity of each item in watts.

### Audit observation

The database was checked to confirm that:

- it contained a field for light type and wattage capacity,
- wattage capacities include any ballast or gear wattage, and
- each item of load has a light type, light wattage, and gear wattage recorded.

### Audit commentary

A description of each light is recorded in the lamp make and model fields, and wattages are recorded in the lamp wattage and gear wattage fields.

I checked the database for missing or invalid zero lamp models, lamp wattages and gear wattages and found the following exceptions:

- **No ICP, lamp or wattage information**

12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded and are expected to be 28W LEDs. They are listed in **section 2.2**. SWDC confirmed that these are lights in new subdivisions which have not yet been updated in RAMM. Some new subdivisions have missed having their ICP numbers and light details populated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

- **Unexpected zero lamp wattage**

131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model.

Lamp make - lamp model - lamp wattage	Count with wattage of zero	Wattage recorded for other lights with this description
Betacom - GL500 - 0W	1	-
IBEX - Vizulo Mini Martin - 0W	1	28W
Italo - ITALO 1 STU-S 4.7-3M 61W - 0W	1	
Italo - ITALO 2 STU-4.7-5M 100W - 0W	2	
Windsor - Heritage - 0W	7	70W or 150W
Italo - Itron Zero 0C6 STA 3. 100-3M - 0W	8	-
Techlight - A2 LED - 0W	9	-
- - 0W	39	-
Betacom - GL520 - 0W	63	-

The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.

- **Unexpected zero gear wattage**

In addition to the 39 items of load with a blank lamp make and model and no wattage recorded where I was unable to confirm whether the zero gear wattage was valid, two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.

Gear wattage	Count with wattage of zero	Comment
Modus - Modus QR1254 - 50W	1	At time of the last audit these were thought to be HPS 50W and expected to have 9W gear. The one with zero is asset ID 115.
Betacom - GL500 - 0W	1	Expected to be HPS unsure of wattage. Asset ID 64.

The SWDC Rooding Manager intends to investigate and update these discrepancies, and review processes to prevent recurrence of the accuracy issues found in this audit. The accuracy of the recorded wattages is discussed in **section 3.1**.

**Audit outcome**

Non-compliant

Non-compliance	Description
<p>Audit Ref: 2.4</p> <p>With: Clause 11(2)(c) and (d) of Schedule 15.3</p> <p>From: 01-Aug-24</p> <p>To: 20-Aug-24</p>	<p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>
Audit risk rating	Rationale for audit risk rating
<p><b>Low</b></p>	<p>The controls are assessed to be weak because 14.5% of lights with a DUML ICP recorded in the database have missing light model and wattage information. Many of the issues appear to relate to new subdivisions and an internal audit is being conducted to check and update this information.</p> <p>The impact on settlement is low based on the kWh differences identified, and that SDWC populates some of the missing data before providing the extract to Mercury.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
South Wairarapa DC are aware of the discrepancies and will be working to tidy up and ensure there is a process in place to avoid issues with database updates going forward.	End of 2024	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
We will continue to liaise with South Wairarapa DC to ensure that the database is as accurate as possible.	Ongoing	

## 2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

### Code reference

Clause 11(2A) of Schedule 15.3

### Code related audit information

The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.

### Audit observation

The field audit was undertaken of a statistical sample of 143 items of load on 20 August 2024.

### Audit commentary

The field audit discrepancies are detailed in the table below:

Street	Database count	Field count	Light count difference	Wattage recorded incorrectly	Comments
BIRDIE WAY	4	3	-1	-	One 26W LED was not located on the street. Asset IDs 612 and 1154 had very close locations and only one light was present.
DANIEL ST	7	9	+2	2	Two L28 lights opposite 20 and outside 56 Brandon Street were not recorded in the database. Two L23 lights (asset IDs 1482 and 1483) were recorded in the database with 0W.
GREY ST	8	10	+2	-	Two L28 lights opposite 16 Grey Street and on the corner by the school were not recorded in the database.
MATAI GR	3	4	+1	3	One L27 outside 34 Matai Gr was not recorded in the database. Three L27 were recorded with 0W and no make and model information in the database.

Street	Database count	Field count	Light count difference	Wattage recorded incorrectly	Comments
MOORE ST	4	4	-	1	One L81 (asset ID 1552) was recorded in the database as 101W LED.
PANAMA ST	4	4	-	2	Two L81 lights (asset IDs 1550 and 1168) were recorded in the database as 101W LEDs.
SACKVILLE ST	6	8	+2	-	Two L28 lights 1 outside 1 and 41 Sackville St were not recorded in the database.
WAITE ST	10	10	-	2	Two L23 lights (asset IDs 284 and 1480) were recorded in the database as 114W and 0W.
WATT ST NO1	11	11	-	1	One L23 (asset ID 65) was recorded in the database with 0W.
WOODWARD ST NO 3	3	3	-	3	Three L28 lights are recorded in the database with 0W.
<b>Grand Total</b>	<b>143</b>	<b>149</b>	<b>8 (+7,-1)</b>	<b>14</b>	

The field audit found seven more lamps in the field of the 143 items of load sampled. This is recorded as non-compliance below.

The SWDC Roading Manager intends to investigate and update these discrepancies, and review processes to prevent recurrence of the accuracy issues found in this audit.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3  From: 20-Aug-24 To: 20-Aug-24	Seven additional lights found in the field of the sample of 143 items of load (4.8% error rate).  Potential impact: Low  Actual impact: Low  Audit history: Multiple times previously  Controls: Moderate  Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	The controls are rated as moderate as the processes in place will ensure that the data is recorded correctly most of the time.  The impact is low due to the small number of additional lights found in the field in relation to the overall count of the items of load.

Actions taken to resolve the issue	Completion date	Remedial action status
South Wairarapa DC are aware of the discrepancies and will be working to tidy up and ensure there is a process in place to avoid issues with database updates going forward.	End of 2024	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
We will continue to liaise with South Wairarapa DC to ensure that the database is as accurate as possible.	Ongoing	

## 2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

### Code reference

*Clause 11(3) of Schedule 15.3*

### Code related audit information

*The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.*

### Audit observation

The process for tracking of changes in the database was examined.

### Audit commentary

The RAMM database functionality achieves compliance with the code.

### Audit outcome

Compliant

## 2.7. Audit trail (Clause 11(4) of Schedule 15.3)

### Code reference

*Clause 11(4) of Schedule 15.3*

### Code related audit information

*The DUML database must incorporate an audit trail of all additions and changes that identify:*

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database.*

### Audit observation

The database was checked for audit trails.

### Audit commentary

RAMM records audit trail information of changes made.

### Audit outcome

Compliant

### 3. ACCURACY OF DUML DATABASE

#### 3.1. Database accuracy (Clause 15.2 and 15.37B(b))

##### Code reference

Clause 15.2 and 15.37B(b)

##### Code related audit information

Audit must verify that the information recorded in the retailer's DUML database is complete and accurate.

##### Audit observation

The DUML Statistical Sampling Guideline was used to determine the database accuracy. The table below shows the survey plan.

Plan Item	Comments
Area of interest	South Wairarapa DC streetlights
Strata	The database contains 911 items of load in the South Wairarapa DC region. The management process is the same for all lights. I created two strata: <ol style="list-style-type: none"> <li>1. Road names A-Malcolm, and</li> <li>2. Road names Massey to Z.</li> </ol>
Area units	I created a pivot table of the roads, and I used a random number generator in a spreadsheet to select a total of 31 sub-units.
Total items of load	143 items of load were checked, making up 13.4% of the total database wattage.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the database or in the case of LED lights against the LED light specification.

The change management process and timeliness of database updates was evaluated.

##### Audit commentary

##### Field audit findings

A field audit was conducted of a statistical sample of 143 items of load. The "database auditing tool" was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	106.5	Wattage from the survey is higher than the database wattage by 6.5%
R <sub>L</sub>	94.8	With a 95% level of confidence, it can be concluded that the error could be between -5.2% and +20.7%
R <sub>H</sub>	120.7	

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 1 February 2019. The table below shows that Scenario B (detailed below) applies. The conclusion from Scenario B is that the database is not accurate within  $\pm 5\%$  and the variability of the sample results across the strata means that:



- The true wattage (installed in the field) could be between 5.2% lower and 20.7% higher than the wattage recorded in the DUML database.
- There is a 95% level of confidence that the installed capacity is between 0 and 7 kW higher than the database.
- In absolute terms, total annual consumption is estimated to be 8,800 kWh lower than the DUML database indicates.
- There is a 95% level of confidence that the annual consumption is between 2,100 kWh p.a. lower to 28,000kWh p.a. higher than the database indicates.

Scenario	Description
<b>A – Good accuracy, good precision</b>	<p>This scenario applies if:</p> <p>(a) <math>R_H</math> is less than 1.05; and</p> <p>(b) <math>R_L</math> is greater than 0.95</p> <p>The conclusion from this scenario is that:</p> <p>(a) the best available estimate indicates that the database is accurate within +/- 5 %; and</p> <p>(b) this is the best outcome.</p>
<b>B – Poor accuracy, demonstrated with statistical significance</b>	<p>This scenario applies if:</p> <p>(a) the point estimate of R is less than 0.95 or greater than 1.05</p> <p>(b) as a result, either <math>R_L</math> is less than 0.95 or <math>R_H</math> is greater than 1.05.</p> <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level</p>
<b>C – Poor precision</b>	<p>This scenario applies if:</p> <p>(a) the point estimate of R is between 0.95 and 1.05</p> <p>(b) <math>R_L</math> is less than 0.95 and/or <math>R_H</math> is greater than 1.05</p> <p>The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %</p>

#### Light description and capacity accuracy

A description of each light is recorded in the lamp make and model fields, and wattages are recorded in the lamp wattage and gear wattage fields.

I checked the database for missing or invalid lamp models, lamp wattages and gear wattages and found the following exceptions:

- **No ICP, lamp or wattage information**

12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. They are listed in **section 2.2**. SWDC confirmed that these are lights in new subdivisions which have not yet been updated in RAMM. SWDC has found that some new subdivisions have missed having their ICP numbers and light details populated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

- **Unexpected zero lamp wattage**

131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model.

Lamp make - lamp model - lamp wattage	Count with wattage of zero	Wattage recorded for other lights with this description
Betacom - GL500 - 0W	1	-
IBEX - Vizulo Mini Martin - 0W	1	28W
Italo - ITALO 1 STU-S 4.7-3M 61W - 0W	1	
Italo - ITALO 2 STU-4.7-5M 100W - 0W	2	
Windsor - Heritage - 0W	7	70W or 150W
Italo - Itron Zero OC6 STA 3. 100-3M - 0W	8	-
Techlight - A2 LED - 0W	9	-
- - 0W	39	-
Betacom - GL520 - 0W	63	-

- **Unexpected zero gear wattage**

In addition to the 39 items of load with a blank lamp make and model and no wattage recorded, where I was unable to confirm whether the zero gear wattage was valid, three items of load had unexpected zero gear wattages.

Gear wattage	0	9	13	Comment
Modus - Modus QR1254 - 50W	1	5		At time of the last audit these were thought to be HPS 50W and expected to have 9W gear.
Betacom - GL500 - 0W	1			Expected to be high pressure sodium but wattage was not able to be confirmed.
Thorn - Piazza - 70W			1	Expected to be LED with gear wattage of zero.

All other lamp and gear wattages were checked and found to be consistent with expected values.

The SWDC Roading Manager intends to investigate and update these discrepancies and review processes to prevent recurrence of the accuracy issues.

#### Address location accuracy

The previous audit found:

- 33 items of load had transposed GPS coordinates, with the northing value recorded in the easting field and vice versa. I confirmed that these issues have been resolved with the implementation of AMDS and all items of load have locations within the SWDC region.
- Some items of load had correct positions recorded but incorrect GPS coordinates. I checked previous exceptions and found they had been resolved, except for some lights on Tuscan Lane which are currently recorded with road names of Jellicoe St or Esther St.



I have repeated the recommendation to check and update the street addresses for items of load on Tuscan Lane.

Recommendation	Description	Audited party comment	Remedial action
Database address accuracy	Check and update the street addresses for lights recorded on Tuscan Lane, Martinborough.	South Wairarapa DC have advised that they plan to check and update these.	Identified

### Change management process findings

PSW complete all fieldwork for the SWDC streetlights, with assistance from Fulton Hogan as required. Additions, removals, and changes to lights are updated using Pocket RAMM by PSW and Fulton Hogan.

The SWDC streetlights are located on Powerco’s network. When DUML new connections occur, the Powerco approved contractor makes an application to Powerco, who in turn ensures that Mercury accepts responsibility for the new streetlights.

New subdivisions are rare, due to SWDC’s waste water treatment system being at capacity. Developers are responsible for providing a plan (including streetlights) to SWDC for approval. Once approved, the developer arranges for the Powerco approved contractor to make an application to Powerco, who in turn ensures that Mercury accepts responsibility for the new streetlights. Once completion paperwork is received, RAMM is updated by SWDC.

Some new subdivisions have missed having their ICP numbers and light details populated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

Fulton Hogan and PSW have a maintenance contract with SWDC and complete outage patrols in one town per month, so each town is patrolled every four months. Any outages identified during patrols are passed to PSW, who complete the repairs, and this information is captured in the field using pocket RAMM.

### LED upgrade

SWDC’s LED upgrade project is mostly complete. There are a few non-LED lights remaining at intersections of state highways and at Parks and Council facilities. NZTA Waka Kotahi have recently indicated that they will assist SWDC to upgrade the lights near the highway intersections, and the Parks

and Council facility lights are expected to be replaced as part of the process to become a dark sky region. The existing LED lights installed are compliant with the dark sky region requirements.

SWDC has no plans to use dimming or a central management system.

### Festive and private lights

There are no festive or private lights in use in the SWDC region.

### Audit outcome

Non-compliant

Non-compliance	Description	
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)</p> <p>From: 01-Aug-24 To: 20-Aug-24</p>	<p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 8,800 kWh.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p> <p>Five items of load on Tuscan Lane have incorrect street names recorded.</p> <p>Potential impact: Low Actual impact: Low</p> <p>Audit history: Multiple times Controls: Weak Breach risk rating: 6</p>	
Audit risk rating	Rationale for audit risk rating	
<p><b>Medium</b></p>	<p>The controls are assessed to be weak because the field audit found that the database was not accurate with a 95% confidence level.</p> <p>The impact on settlement is medium based on the kWh differences identified.</p>	
Actions taken to resolve the issue	Completion date	Remedial action status
<p>South Wairarapa DC are aware of the discrepancies and will be working to tidy up and ensure there is a process in place to avoid issues with database updates going forward.</p>	<p>End of 2024</p>	<p>Identified</p>

Preventative actions taken to ensure no further issues will occur	Completion date
We will continue to liaise with South Wairarapa DC to ensure that the database is as accurate as possible.	Ongoing

### 3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

#### Code reference

Clause 15.2 and 15.37B(c)

#### Code related audit information

The audit must verify that:

- volume information for the DUML is being calculated accurately
- profiles for DUML have been correctly applied.

#### Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that the ICP has the correct profile and submission flag, and
- checking the database extract combined with the on hours against the submitted figure to confirm accuracy.

#### Audit commentary

Mercury reconciles this DUML load using the HHR profile in accordance with exemption 233. Mercury were granted exemption No. 233, which allowed them to provide half-hour (“HHR”) submission information instead of non-half-hour (“NHH”) submission information for distributed unmetered load (“DUML”). Clause 8(g) of Schedule 15.3 of the Code, which the exemption related to was removed from the Code in 2018, therefore the exemption is no longer valid. Mercury is planning to apply for a new profile which will allow them to continue to submit the DUML load as HHR.

Wattages are derived from an extract provided each month by SWDC, which includes the daily kW load. On and off times are derived from a data logger.

I reviewed the submission information for August 2024 and confirmed that the calculation methodology was correct, with wattages based on database extract totals per day, and on hours based on data logger information.

Volume inaccuracy is present in the database as follows, and is described in more detail in **section 3.1**:

Issue	Estimated volume information impact (annual kWh)
The database is not confirmed as accurate with a 95% level of confidence.	Under submission of 8,800 kWh p.a.
12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. SWDC confirmed that these are lights in new subdivisions which have not yet been updated in RAMM.  SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in	Under submission of 239.2 kWh p.a.

Issue	Estimated volume information impact (annual kWh)
<p>RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.</p> <p>Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p>	
<p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p>	Under submission of 4,552.25 kWh p.a.
<p>Two items of load had unexpected zero gear wattages.</p>	Under submission is 76.8 kWh p.a.

### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 3.2</p> <p>With: Clause 15.2 and 15.37B(c)</p> <p>From: 01-Oct-23</p> <p>To: 20-Aug-24</p>	<p>The DUML load is submitted using HHR profile, without an exemption in place.</p> <p>The database is not confirmed as accurate with a 95% level of confidence resulting in an estimated annual over submission of 8,800 kWh.</p> <p>12 lights on Oates Place, Farley Ave and Cotterville Cres in Greytown have no ICP, no lamp information or wattage information recorded. Wattages and ICP numbers are added to RAMM extracts before they are provided to Mercury for lights on Oates Place and Farley Ave, but not lights 1567 and 1568 on Cotterill Crescent. These are estimated to be 28W LEDs and resulting in 239.2 kWh of under submission.</p> <p>131 items of load have a zero lamp wattage, and 39 of those also have a blank light make and model. The wattage was unable to be confirmed but based on an average of 34.75 W across all items of load for ICP 0020906000WRDFA under submission of up to 4,552.25 kWh may have occurred.</p> <p>Two items of load had unexpected zero gear wattages. I estimate that the missing wattage is at least 18W or 76.8 kWh per annum.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>
Audit risk rating	Rationale for audit risk rating
<p><b>Medium</b></p>	<p>The controls are assessed to be weak overall because the field audit found that the database was not accurate with a 95% confidence level.</p> <p>The impact on settlement is medium based on the kWh differences identified.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Still working on the new profile applications to allow us to submit HHR for DUML. Delays caused due to lack of resource as other projects other prioritised, aiming to submit in coordination with our move from SAP to Robotron for LCOM which will be happening before the end of 2024.</p> <p>South Wairarapa DC are aware of the discrepancies and will be working to tidy up and ensure there is a process in place to avoid issues with database updates going forward.</p>	End of 2024	Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
We will continue to liaise with South Wairarapa DC to ensure that the database is as accurate as possible.	Ongoing	

## CONCLUSION

A field audit was conducted of a statistical sample of 143 items of load on 20 August 2024 which found that database accuracy was not within the  $\pm 5\%$  threshold. In absolute terms, total annual consumption is estimated to be 8,800 kWh lower than the DUML database indicates.

Some lamp information contained within the database is incomplete and/or inconsistent, including 131 items which have no lamp or gear wattage recorded and a further 12 items which also have no ICP recorded. The issue has been at least partly caused by new subdivisions which were not updated in RAMM. SWDC has an internal audit underway to identify all new subdivisions, check paperwork and ensure that all lights are correctly recorded in RAMM with an ICP number. In the meantime they are manually adding ICP numbers and wattages for known missing lights into the RAMM extract before it is provided to Mercury to calculate submission information.

The SWDC Roading Manager intends to investigate and update all discrepancies found during the audit, and review processes to prevent recurrence of the accuracy issues. A full list has been provided.

This audit identified six non-compliances, and one recommendation was made. The future risk rating of 25 indicates that the next audit be completed in three months. I have considered this in conjunction with the impact of the non-compliances and that SWDC intends to resolve the issues, and recommend a ten month audit period to allow time for the issues to be resolved.

## Participant response

Thanks to Tara for her work and support on this audit.