

**ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT**



For

**WAITOMO DISTRICT COUNCIL AND
MERIDIAN ENERGY LIMITED**

Prepared by: Steve Woods

Date audit commenced: 7 December 2021

Date audit report completed: 21 December 2021

Audit report due date: 1 November 2021

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EXECUTIVE SUMMARY

This audit of the **Waitomo District Council (WDC)** DUMML database and processes was conducted at the request of **Meridian Energy Limited (Meridian)** 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 DUMML audits version 1.1. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information.

A RAMM database is managed by Horizon on behalf of WDC and they provide the monthly reporting to Meridian. The database is remotely hosted by thinkproject Ltd. The field work, asset data capture and database population is conducted by Horizon.

The field audit found that in absolute terms total annual consumption is estimated to be 12,100 kWh lower than the DUMML database indicates.

On 18 June 2019, the Electricity Authority issued a memo clarifying the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUMML load and volumes.

The current monthly report is provided as a snapshot and is non-compliant. Meridian has not yet updated their processes to be consistent with the Authority's memo.

The database contains a "light install date" and a "lamp install date" but there is not a field for "liveness date" for newly connected lights. New connections are rare, and the last subdivision was created approximately ten years ago.

Horizon records the date that the fittings were changed directly into pocket RAMM, but new connections are likely to have the installation date populated, which may be different to the electrical connection date. No examples were identified during the audit of incorrect dates.

The future risk rating of 14 indicates that the next audit be completed in 12 months. I agree with this recommendation.

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	In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Moderate	Medium	4	Identified
All load recorded in database	2.5	11(2A) of Schedule 15.3	One additional light identified.	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Moderate	Medium	4	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Moderate	Medium	4	Identified
Future Risk Rating						14	

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

RECOMMENDATIONS

Subject	Section	Recommendation
		Nil

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

The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

There are no exemptions in place relevant to the scope of this audit.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Stacey Flintoff	Streetlight Project and Vegetation Administrator	Horizon Networks
Amy Cooper	Compliance Officer	Meridian Energy Limited

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject Ltd. The database is commonly known as “RAMM” which stands for “Roading Asset and Maintenance Management”. The specific module used for DUML is called RAMM Contractor.

thinkproject Limited backs up the database and assists with disaster recovery as part of their hosting service. Nightly backups are performed. As a minimum, daily backups are retained for the previous five working days, weekly backups are retained for the previous four weeks, and monthly backups are retained for the previous six months.

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

Systems used by the trader and their agent 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)
0001060300WMD10	SKATE PARK STREETLIGHT	HTI0331	DST	13	3,216
0008807413WMA59	Waitomo District Council	HTI0331	DST	796	30,526.5
NZTA Urban				101	16,400.5
Private				10	363.5
Total				1,038	66,467

NZTA lights

The NZTA lights in the database do not have an ICP. Waitomo DC advised they were notified by NZTA that NZTA had their own database of these lights, and they should be excluded from any reporting out of the Waitomo DC database. I have made enquiries and it appears these lights will be included in the Waikato area NZTA project, which is in progress and is expected to result in all NZTA lighting in the Waikato region being in one database.

Private lights

The issue of private lights is not resolved. The summary below is the same as the last audit.

The Lines Company (TLC) has been working with Waitomo District Council to determine the ownership of all known private streetlights. TLC contacted each of the affected owners, to arrange for standard unmetered load to be created. Most of the owners have responded that they believe the Waitomo District Council should be responsible for the street lighting. WDC accepts responsibility for one light on Ruaparaha St and is investigating taking responsibility for group of lights at Kaka St, but believes the other light is genuinely privately owned. TLC is awaiting further information from the Waitomo District Council, before resolving the issues.

1.7. Authorisation Received

All information was provided directly by Meridian, Horizon or Waitomo DC.

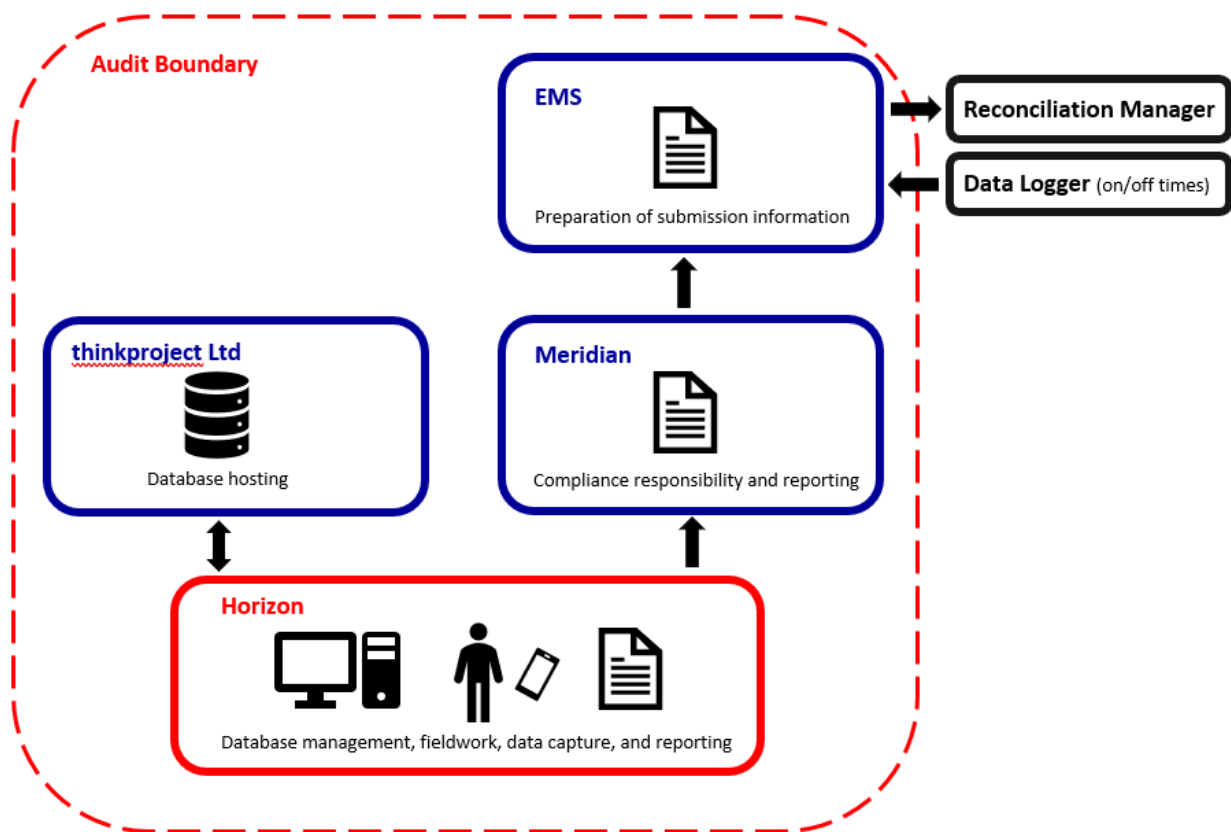
1.8. Scope of Audit

This audit of the Waitomo DC DUMML database and processes was conducted at the request of Meridian 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 DUMML audits version 1.1.

A RAMM database is managed by Horizon on behalf of WDC and they provide the monthly reporting to Meridian. The database is remotely hosted by thinkproject Ltd. The field work, asset data capture and database population is conducted by Horizon.

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 131 items of load.

1.9. Summary of previous audit

The previous audit of this database was undertaken by Steve Woods of Veritek Limited in October 2020. 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>In absolute terms, total annual consumption is estimated to be 11,700 kWh higher than the DUML database indicates</p> <p>Under submission of 1,553 kWh p.a. for private lights.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p> <p>Livening dates are not recorded for new connections, and lamp installation dates are replaced where lights change</p>	Still existing

Subject	Section	Clause	Non-compliance	Status
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	ICP numbers are not recorded in the database for 201 NZTA urban lights and ten private lights.	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	One additional light identified.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	<p>In absolute terms, total annual consumption is estimated to be 11,700 kWh higher than the DUML database indicates</p> <p>Under submission of 1,553 kWh p.a. for private lights.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p> <p>Livening dates are not recorded for new connections, and lamp installation dates are replaced where lights change</p>	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>In absolute terms, total annual consumption is estimated to be 11,700 kWh higher than the DUML database indicates</p> <p>Under submission of 1,553 kWh p.a. for private lights.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p> <p>Livening dates are not recorded for new connections, and lamp installation dates are replaced where lights change.</p>	Still existing

Subject	Section	Recommendation	Status
Database accuracy	3.1	Establish a change management process to ensure that additions, removals, and modifications to NZTA urban lights are correctly recorded in the database.	Cleared

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

Meridian have requested Veritek to undertake this streetlight audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database, but it was not completed by the required date due to COVID 19 pandemic travel restrictions, therefore I have recorded compliance as this was beyond Meridian's control.

Audit outcome

Compliant

2. DUMML 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:

- *DUMML 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

In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUMML database indicates.

Meridian reconciles this DUMML load using the DST profile, and on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figures for the ICPs and includes them in the relevant AV080 file. This process was audited during Meridian's reconciliation participant audit and EMS' agent audit.

I compared the RAMM extract to the capacities provided to EMS for October 2021 and found that they matched exactly.

Festive lights are correctly identified and managed.

On 18 June 2019, the Electricity Authority issued a memo clarifying the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUMML load and volumes.

The current monthly report is provided as a snapshot and is non-compliant. Meridian has not yet updated their processes to be consistent with the Authority's memo.

The database contains a "light install date" and a "lamp install date" but there is not a field for "livening date" for newly connected lights. New connections are rare, and the last subdivision was created approximately ten years ago.

Horizon records the date that the fittings were changed directly into pocket RAMM, but new connections are likely to have the installation date populated, which may be different to the electrical connection date. No examples were identified during the audit of incorrect dates.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Nov-20 To: 15-Dec-21	<p>In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUMML database indicates.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Twice</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is medium based on the kWh difference.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>We have advised Horizon Network of the inaccuracies and requested them to be corrected.</p> <p>We are considering the impact provision and use of database changes at a daily level will have on our processes and tools.</p>		<p>Completed</p> <p>30/06/2022</p>	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will follow up with Horizon Network regarding the inaccuracies, corrections, and improvement of maintenance processes</p>		31/03/2022	

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 DUMML database must contain:

- *each ICP identifier for which the retailer is responsible for the DUMML*
- *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

The database records an ICP group. All items of load have a valid ICP number recorded except for 10 private lights, which Waitomo DC do not believe are all their responsibility.

I've provided details of these lights below.

Waitomo Caves Hotel Access Road

The road below leads to the Waitomo Caves Hotel and Waitomo DC state this is a private road and therefore the light in the picture below is a private light.



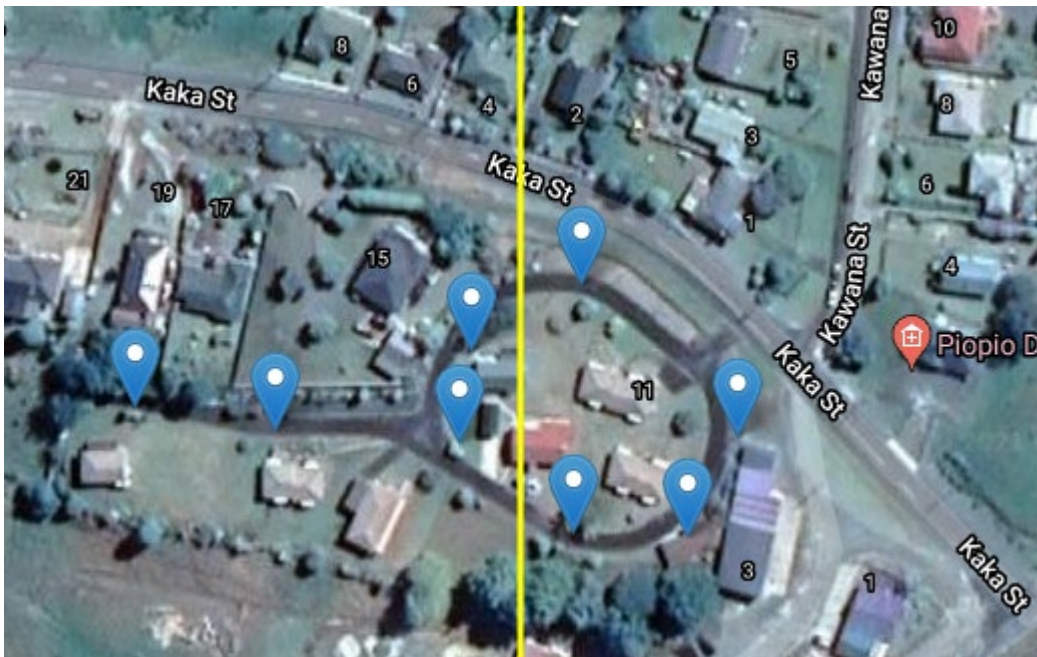
Ruaparaha Street, Marakopa

The light below appears to be on private property and should be shared unmetered load or standard unmetered load.



Kaka Street, Piopio

The lights below are in a private housing development and should be shared unmetered load or standard unmetered load.



I have not recorded non-compliance, because it is unclear who is responsible for these lights, however investigations are continuing.

Audit outcome

Compliant

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 DUMML database must contain the location of each DUMML item.

Audit observation

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

Audit commentary

The RAMM database contains road names, displacements, GPS coordinates and pole numbers.

All except two items of load have GPS coordinates, and for the other two items of load there is sufficient location information to enable them to be located.

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 DUMML 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 model field, and wattages are recorded in the lamp wattage and gear wattage fields.

All items of load have a lamp model, lamp wattage, and gear wattage populated. No lamp or gear wattages were invalidly recorded as zero.

The accuracy of the recorded wattages is discussed in **section 3.1**.

Audit outcome

Compliant

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 131 items of load. The sample was selected from four strata, as follows:

1. Council A-K,
2. Council L-R, and
3. Council S-Z.

Audit commentary

The field audit discrepancies are detailed in the table below.

Discrepancy	Quantity
Incorrect wattage	72

The previous audit found discrepancies on two roads:

- one was an NZTA road which is no longer part of the audit, and
- there was an additional light found on Nettie St which has not been corrected.

This clause relates to lights in the field that are not recorded in the database. No additional lights were identified by this field audit, but non-compliance still exists for the light on Nettie St that has not been corrected in the database from the last audit.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Jan-20 To: 16-Dec-21	One additional light identified. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We have advised Horizon Network of the inaccuracies and requested them to be corrected.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
We will follow up with Horizon Network regarding the inaccuracies, corrections, and improvement of maintenance processes	31/03/2022	

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 DUMML 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.

The change management process and the compliance of the database reporting provided to Meridian is detailed in **sections 3.1** and **3.2**.

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 DUMML 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

The database has a complete audit trail.

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

Meridian's submissions are based on a monthly extract from the RAMM database. A RAMM database extract was provided, and I assessed the accuracy of this by using the DUML Statistical Sampling Guideline. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Waitomo District Council Street Lights
Strata	The database contains the WDC items of load for the DUML ICPs in the Waitomo region. The processes for the management of all WDC items of load are the same. I split them into three strata based on street name. 1. Council A-K, 2. Council L-R, and 3. Council S-Z.
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 38 sub-units.
Total items of load	131 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the RAMM database.

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 131 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	91.6	Wattage from survey is lower than the database wattage by 8.4%
R _L	89.7	With a 95% level of confidence, it can be concluded that the error could be between -10.3% and -6.4%
R _H	93.6	

The variability of the sample results across the strata means that the true wattage (installed in the field) could be between 6.4% lower and 10.3% lower than the wattage recorded in the DUML database.

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, confirming the database is inaccurate, demonstrated with statistical significance.

In absolute terms the installed capacity is estimated to be 3.0 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 2.0 kW lower and 3.0 kW lower than the database.

In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 9,200 kWh p.a. lower and 14,900 kWh p.a. lower than the database indicates.

Scenario	Description
<p>A - Good accuracy, good precision</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 <p>The conclusion from this scenario is that:</p> <ul style="list-style-type: none"> (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
<p>B - Poor accuracy, demonstrated with statistical significance</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) the point estimate of R is less than 0.95 or greater than 1.05 (b) as a result, either R_L is less than 0.95 or R_H is greater than 1.05. <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level</p>
<p>C - Poor precision</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) the point estimate of R is between 0.95 and 1.05 (b) R_L is less than 0.95 and/or R_H is greater than 1.05 <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

As discussed in **section 2.4**, all lights have a lamp and gear wattage recorded. Lamp and gear wattages were compared to the expected values for the lamp description and found to match.

ICP number and owner accuracy

As discussed in **section 2.2**, NZTA lights are now excluded from the database. There are some private lights without ICPs, and it is not clear who is responsible for these. I've left in the commentary from the last audit report below.

Private lights

Private lights are recorded in the database with "Private" as the ICP group. They are recorded in the database for completeness only. WDC does not have responsibility for maintaining private lights and does not expect to be billed for them. End users are not billed for electricity consumption for private lights by WDC.

Slim Pole ID	Council Pole No	Road Name	Lamp Model	Lamp Wattage	Gear Wattage	Total Wattage
1839	L0056	KAKA ST	LED22NW	22	0	22
1842	L0063	KAKA ST	LED22NW	22	0	22
1843	L0062	KAKA ST	LED22NW	22	0	22
1844	L0061	KAKA ST	LED22NW	22	0	22
1845	L0060	KAKA ST	LED22NW	22	0	22
1847	L0058	KAKA ST	LED22NW	22	0	22
1849	L0057	KAKA ST	LED22NW	22	0	22
1850	L0059	KAKA ST	LED22NW	22	0	22
2190	L0372	RAUPARAHA ST	Itron Zero 0c6 STA 4.5-2M/D/NZ	19.5	0	19.5
1088	POLE 2	WAITOMO VILLAGE RD	150w HPS	150	18	168
Total				345.5	18	363.5

The Lines Company (TLC) has been working with Waitomo District Council to determine the ownership of all known private streetlights. TLC contacted each of the affected owners, to arrange for standard unmetered load to be created. Most of the owners have responded that they believe WDC should be responsible for the street lighting. WDC accepts responsibility for one light on Ruaparaha St and is investigating taking responsibility for group of lights at Kaka St, but believes the other light is genuinely privately owned. TLC is awaiting further information from the Waitomo District Council, before resolving the issues.

Change management process findings

Changes in the field are conducted by Horizon Network and recorded in RAMM using “pocket RAMM” which is a field version of RAMM allowing population of the database through hand-held devices. This process also plots the GPS coordinates.

The current monthly report is provided as a snapshot and this practice is non-compliant. When a wattage is changed in the database due to a physical change or a correction, only the record present at the time the report is run is recorded, not the historical information showing dates of changes.

The database contains a “light install date” and a “lamp install date” but there is not a field for “livening date” for newly connected lights. New connections are rare, and the last subdivision was created approximately ten years ago.

Horizon records the date that the fittings were changed directly into pocket RAMM, but new connections are likely to have the installation date populated, which may be different to the electrical connection date. No examples were identified during the audit of incorrect dates.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Nov-20 To: 15-Dec-21	In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: High Actual impact: Medium Audit history: Three times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is medium based on the kWh difference.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have advised Horizon Network of the inaccuracies and requested them to be corrected. We are considering the impact provision and use of database changes at a daily level will have on our processes and tools.		Completed 30/06/ 2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

We will follow up with Horizon Network regarding the inaccuracies, corrections, and improvement of maintenance processes	31/03/2022	
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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

In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates.

Meridian reconciles this DUML load using the DST profile, and on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figures for the ICPs and includes them in the relevant AV080 file. This process was audited during Meridian’s reconciliation participant audit and EMS’ agent audit.

I compared the RAMM extract to the capacities provided to EMS for October 2021 and found that they matched exactly.

Festive lights are correctly identified and managed.

On 18 June 2019, the Electricity Authority issued a memo clarifying the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The current monthly report is provided as a snapshot and is non-compliant. Meridian has not yet updated their processes to be consistent with the Authority’s memo.

The database contains a “light install date” and a “lamp install date” but there is not a field for “livening date” for newly connected lights. New connections are rare, and the last subdivision was created approximately ten years ago.

Horizon records the date that the fittings were changed directly into pocket RAMM, but new connections are likely to have the installation date populated, which may be different to the electrical connection date. No examples were identified during the audit of incorrect dates.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Nov-20 To: 15-Dec-21	In absolute terms, total annual consumption is estimated to be 12,100 kWh lower than the DUMML database indicates. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot. Potential impact: High Actual impact: Medium Audit history: Twice Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is medium based on the kWh difference.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have advised Horizon Network of the inaccuracies and requested them to be corrected. We are considering the impact provision and use of database changes at a daily level will have on our processes and tools.		Completed 30/06 2022	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will follow up with Horizon Network regarding the inaccuracies, corrections, and improvement of maintenance processes		31/03/2022	

CONCLUSION

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information.

A RAMM database is managed by Horizon on behalf of WDC and they provide the monthly reporting to Meridian. The database is remotely hosted by thinkproject Ltd. The field work, asset data capture and database population is conducted by Horizon.

The field audit found that in absolute terms total annual consumption is estimated to be 12,100 kWh lower than the DUML database indicates

On 18 June 2019, the Electricity Authority issued a memo clarifying the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

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The future risk rating of 14 indicates that the next audit be completed in 12 months. I agree with this recommendation.

PARTICIPANT RESPONSE

Meridian have reviewed this report and their comments are contained within the report. No further comments were provided.