ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

KAWERAU DISTRICT COUNCIL
AND GENESIS ENERGY LIMITED

Prepared by: Steve Woods

Date audit commenced: 20 May 2021

Date audit report completed: 3 June 2021

Audit report due date: 01-Jun-21

TABLE OF CONTENTS

Executive summary 3
Audit summary 4

Non-compliances 4
Recommendations 5
Issues 5

1. Administrative 6

1.1. Exemptions from Obligations to Comply with Code 6
1.2. Structure of Organisation 6
1.3. Persons involved in this audit 7
1.4. Hardware and Software 7
1.5. Breaches or Breach Allegations 7
1.6. ICP Data 7
1.7. Authorisation Received 7
1.8. Scope of Audit 8
1.9. Summary of previous audit 9
Non-compliances 9
Recommendations 9
1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F) 10

2. DUML database requirements 11

2.1. Deriving submission information (Clause 11(1) of Schedule 15.3) 11
2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3) 12
2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3) 13
2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3) 14
2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3) 15
2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3) 16
2.7. Audit trail (Clause 11(4) of Schedule 15.3) 16

3. Accuracy of DUML database 18

3.1. Database accuracy (Clause 15.2 and 15.37B(b)) 18
3.2. Volume information accuracy (Clause 15.2 and 15.37B(c)) 21

Conclusion 24

Participant response 25

EXECUTIVE SUMMARY

This audit of the **Kawerau District Council** (**KDC**) DUML database and processes was conducted at the request of **Genesis Energy Limited (Genesis**), 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 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 WPS (formerly Opus) on behalf KDC in relation to this load. The field work is carried out by Horizon. Horizon updates and maintain changes using desktop updates into RAMM.

A full field validation was recently conducted, and the results entered into RAMM. Genesis has been provided with a copy of the database and is using the output for submission. The data is much more accurate than previous information, but my field audit found a 12% error rate, suggesting the field validation may need to be repeated. My field audit concluded that over submission of 6,400 kWh per annum will occur due to the current database inaccuracy.

The database content is much more accurate, and the only errors found were:

- 22 items of load where the lamp description did not match the wattage, and
- three items of load with blank wattages.

This audit found six non-compliances and makes three recommendations. The future risk rating of 17 (down from 41 last year) indicates that the next audit be completed in six months, which should allow sufficient time to remedy the database inaccuracy issues.

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	Total annual consumption is estimated to be 6,400 kWh lower than the DUML database indicates, based on the field audit. Three items of load with blank wattages. Actual on and off times not used to calculate consumption.	Weak	Low	3	Investigating
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	Nine items of load with insufficient location details.	Moderate	Low	2	Identified
Description and capacity of each item of load	2.4	11(2)(c)&(d) of Schedule 15.3	22 items of load where the lamp description did not match the wattage. Three items of load with blank wattages.	Weak	Low	3	Identified
All load recorded in database	2.5	11(2A) of Schedule 15.3	Three lights not included in the database extract.	Weak	Low	3	Investigating
Database accuracy	3.1	15.2 and 15.37B(b)	In absolute terms the installed capacity is estimated to be 1.0 kW lower than the database indicates. 22 items of load where the lamp description did not match the wattage. Three items of load with blank wattages. Nine items of load did not have a street number or GPS coordinates. Festive lighting is connected but the volume is not recorded.	Weak	Low	3	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Total annual consumption is estimated to be 6,400 kWh lower than the	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			DUML database indicates, based on the field audit. Three items of load with blank wattages. Actual on and off times not used to calculate consumption.				
					Future Risk Rating	**17**	

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	Description	Recommendation
Database accuracy	3.1	Database accuracy	Record festive lights in RAMM.
			Review the new connection process.
			Repeat the full field audit with a pilot and a check before the entire database is checked.

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

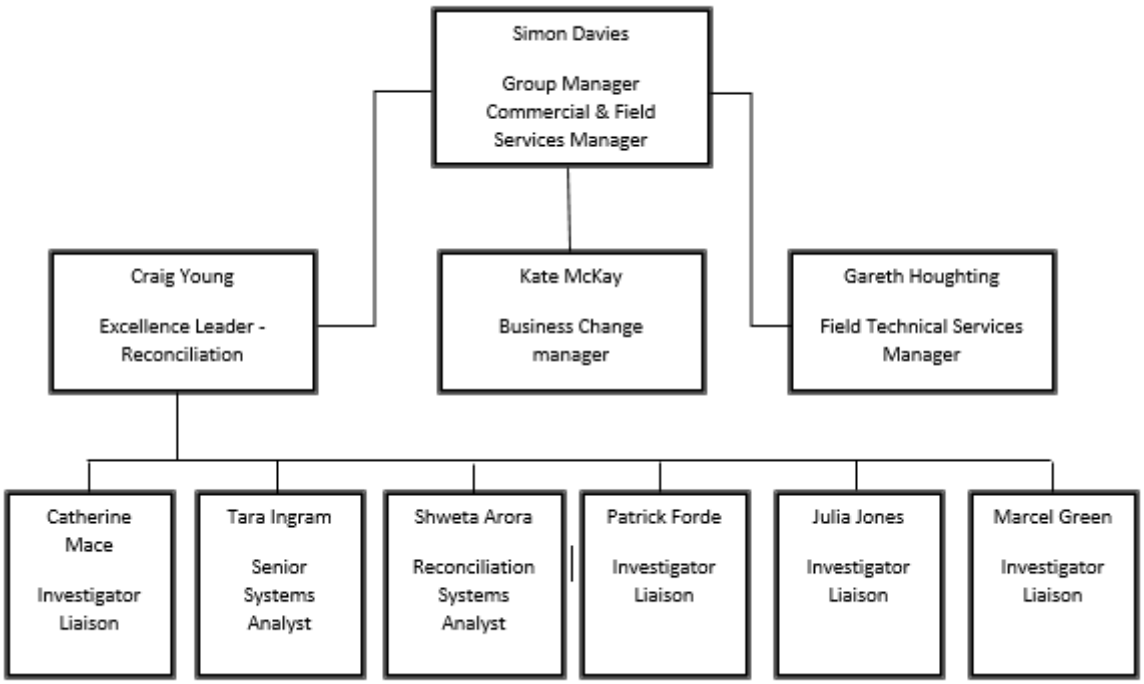
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Claire Stanley

Supporting Auditor

Veritek Limited

Other personnel assisting in this audit were:

Name	Title	Company
Craig Young	Excellence Leader - Reconciliation	Genesis Energy
Tina Mitchell	Asset and Contract Manager	Kawerau DC

1.4. Hardware and Software

The registry figures are used to calculate submission. KDC have a SQL database used for the management of DUML called RAMM. This is remotely hosted by RAMM Software Ltd. "RAMM" stands for "Roading Asset and Maintenance Management".

KDC confirmed that the database back-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection.

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	Profile	Number of items of load	Database wattage (watts)
1000023043BP177	Streetlights, KAWERAU	NST	938	47,950

1.7. Authorisation Received

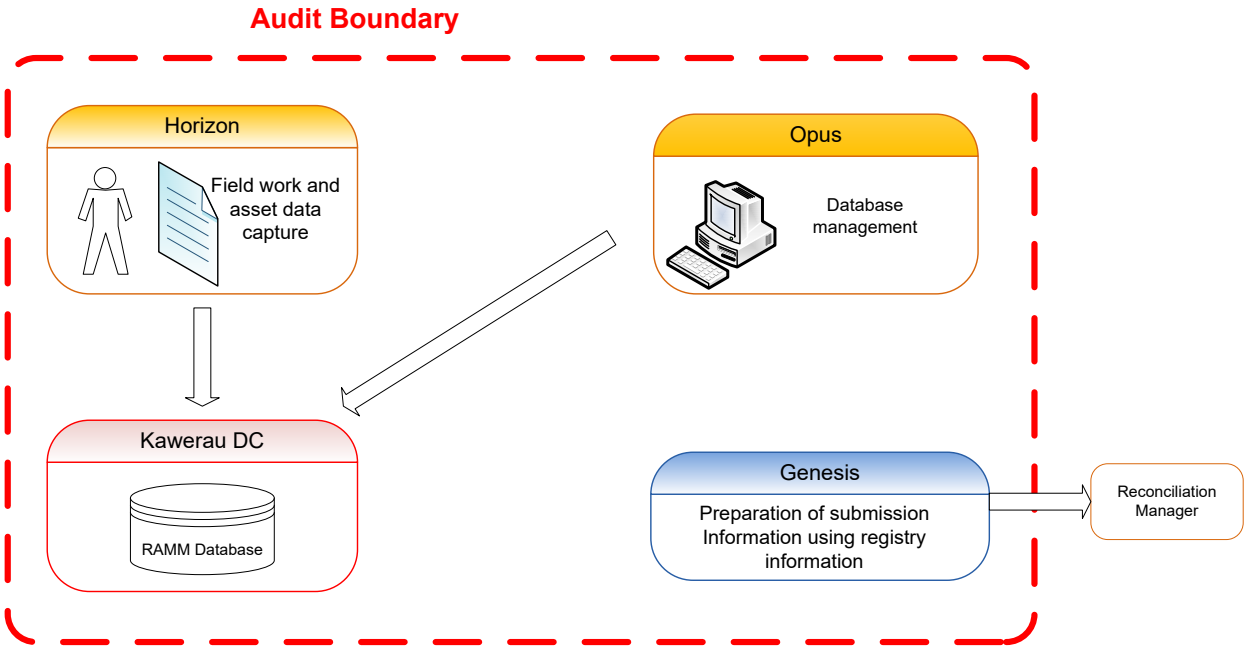
All information was provided directly by Genesis or KDC.

1.8. Scope of Audit

This audit of the **Kawerau District Council (KDC**) DUML database and processes was conducted at the request of **Genesis Energy Limited (Genesis**), 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.

Genesis uses the daily kWh figure recorded in the registry to reconcile this load. The registry figure was last changed on 10 May 2021 backdated to 1 May 2020. A RAMM database is managed by KDC in relation to this load. I compared the field findings to the database records.

The database is remotely hosted by RAMM Software Ltd. The field work is carried out by Horizon. The asset data capture and database population are conducted by Horizon. The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information. The diagram below shows the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 190 items of load.

1.9. Summary of previous audit

The previous audit was conducted by Steve Woods in September 2020. The findings are shown in the table below.

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Historic registry figure used for submission. RAMM database is not accurate.	Still existing
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	56 items of load with insufficient location details.	Cleared
Description and capacity of each item of load	2.4	11(2)(c)&(d) of Schedule 15.3	125 items of load with no lamp descriptions, lamp wattage and ballast detailed. 183 items of load with no lamp wattage or ballast wattage recorded.	Cleared except for one item of load
All load recorded in database	2.5	11(2A) of Schedule 15.3	29 lights not included in the database extract.	Still existing for a smaller number
Database accuracy	3.1	15.2 and 15.37B(b)	In absolute terms the installed capacity is estimated to be 3.0 kW higher than the database indicates. Lamp wattage is recorded as ballast wattage. 125 items of load with no lamp descriptions, lamp wattage and ballast detailed. 183 items of load with no lamp wattage or ballast wattage recorded. 56 items of load did not have a street number or GPS coordinates. Festive lighting is connected but the volume is not recorded.	Database more accurate but errors still exist
Volume information accuracy	3.2	15.2 and 15.37B(c)	Historic registry figure used for submission. RAMM database is not accurate.	Still existing

RECOMMENDATIONS

Subject	Section	Clause	Recommendation	Status
Tracking of load change	2.6	11(3) of Schedule 15.3	Record festive lights in RAMM.	Still existing

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

Genesis 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.

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

Genesis reconciles this DUML load using the NST profile. The registry daily kWh figure (assuming burn hours of 11.9) is used to calculate submission. I confirmed the calculation was correct. KDC has recently completed a full field audit and the results were updated into the database and a copy was provided to Genesis. The registry was updated on 10 May 2021 with the database wattage. This was backdated to 1 May 2020 to ensure revisions are conducted back to that date. The "on time" is based on 11.9 hours per day, assuming each day is the same. This will result in over submission in summer and under submission in winter.

The following database accuracy issues are present:

- 22 items of load where the lamp description did not match the wattage, and
- three items of load with blank wattages.

These issues are detailed in **section 2.4.**

The field audit found that in absolute terms, total annual consumption is estimated to be 6,400 kWh lower than the DUML database indicates.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 Clause 11(1) of Schedule 15.3 From: 01-Sep-20 To: 27-May-21	Total annual consumption is estimated to be 6,400 kWh lower than the DUML database indicates, based on the field audit. Three items of load with blank wattages. Actual on and off times not used to calculate consumption. Potential impact: High Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are rated as weak because there does not appear to have been any quality controls with regard to the full field audit. The impact is assessed to be low, based on the kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis energy engaged with KDC in 2020, the council contracted WSP to do a field audit of the assets. The field audit was to account for each lamp based off the information provided by genesis and what was held previously. Albeit there are still some exceptions the work carried out by WSP over a short period of time has made a vast improvement dropping the risk rating from 41 to 17. There is still some minor exceptions but a remarkable improvement overall.	01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis Energy continues to work with the council and third-party contractor. It has been advised that there will be the need to pilot a field validation of the asset to ascertain its type/make/model/ location etc	unknown	

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 the correct ICP was recorded against each item of load.

Audit commentary

All items of load have an ICP recorded against them.

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 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

The database contains fields for the street address and also GPS coordinates. Nine items of load did not have a street number or GPS coordinates.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 Clause 11(2)(b) of Schedule 15.3 From: 01-Sep-20 To: 27-May-21	Nine items of load with insufficient location details. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate as the location is recorded for all but nine items of load. The impact is assessed to be low as there are only nine items of load with insufficient location details.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis energy engaged with KDC in 2020, the council contracted WSP to do a field audit of the assets. The field audit was to account for each lamp based off the information provided by genesis and what was held previously. Albeit there are still some exceptions the work carried out by WSP over a short period of time has made a vast improvement dropping the risk rating from 41 to 17. There is still some minor exceptions but a remarkable improvement overall.	01/06/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Genesis Energy continues to work with the council and third-party contractor. It has been advised that there will be the need to pilot a field validation of the asset to ascertain its type/make/model/ location etc	unknown	

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 it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

The database contains fields for the manufacturers rated wattage and the ballast wattage. The extract provided has fields for lamp and gear make and model. Analysis found there were:

- 22 items of load where the lamp description did not match the wattage, and
- three items of load with blank wattages.

The accuracy of those with the lamp description, capacity and ballasts recorded is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 Clause 11(2)(c)&(d) of Schedule 15.3 From: 01-Sep-20 To: 27-May-21	22 items of load where the lamp description did not match the wattage. Three items of load with blank wattages. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak the data quality indicates a lack of quality control to check the data being loaded. The impact is assessed to be low based on the low proportion of missing data.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has supplied the mismatches based off the data being provided to Genesis Energy. WSP will be reviewing to confirm the asset information and make the necessary corrections.	01/06/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue to review data set and provide exception reporting back to the customer.	01/06/2021	

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 190 items of load.

Audit commentary

There were 23 field audit discrepancies, and a spreadsheet of the findings has been supplied with this report. The table below shows a summary of findings.

Finding	Quantity
Lights missing from the database	3
Lights missing from the field	0
Incorrect wattage	20

This clause relates to lights in the field that are not recorded in the database. The field audit found three additional lights. The accuracy of the field audit is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Sep-20 To: 27-May-21	Three lights not included in the database extract. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3

Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as weak the data quality indicates a lack of quality control to check the data being loaded. The impact is assessed to be low based on the low proportion of missing data.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
Genesis energy engaged with KDC in 2020, the council contracted WSP to do a field audit of the assets. The field audit was to account for each lamp based off the information provided by genesis and what was held previously. Albeit there are still some exceptions the work carried out by WSP over a short period of time has made a vast improvement dropping the risk rating from 41 to 17. There is still some minor exceptions but a remarkable improvement overall.		01/06/2021	Investigating
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Genesis Energy continues to work with the council and third-party contractor. And reiterate the necessity of completeness		unknown	

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 ability of the database to track changes was assessed and 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

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

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	Kawerau District Council streetlights in and around Kawerau
Strata	The database contains 938 items of load in the Kawerau DC area. The processes for the management of all Kawerau DC items of load is the same. I selected the following strata: • Roads A-H, • Roads I-O, and • Roads P-Z.
Area units	I created a pivot table of the roads in each database and used a random number generator in each spreadsheet to select a total of 37 sub-units.
Total items of load	190 items of load were checked.

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

Audit commentary

Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 190 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	96.9	Wattage from survey is lower than the database wattage by 3.1%
R_L	91.6	With a 95% level of confidence, it can be concluded that the error could be between -8.4% and 4.0%
R_H	104.0	

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 1 February 2019 and the table below shows that Scenario C (detailed below) applies.

The conclusion from Scenario C is that the variability of the sample results across the strata means that the true wattage (installed in the field) could be between 8.4% lower and 4.0% higher than the wattage

recorded in the DUML database. Non-compliance is recorded because the potential error is greater than 5.0%.

In absolute terms the installed capacity is estimated to be 1.0 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 4.0 kW lower to 2.0 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 6,400 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 17,200 kWh p.a. lower to 8,100 kWh p.a. higher than the database indicates.

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

Lamp description and capacity accuracy

The database was checked against the published standardised wattage table.

As detailed in **section 2.4**, analysis of the database found:

- 22 items of load where the lamp description did not match the wattage, and
- three items of load with blank wattages.

As recorded in the last audit, festive lights are connected to the unmetered streetlight circuits but are not tracked in RAMM. I was unable to determine the specific impact on reconciliation, but the volume of lights associated with this is small. I am repeating the recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Database accuracy	Record festive lights in RAMM.	Working with the council and WSP to have these included.	Investigating
Database accuracy	Review the new connection process.	Genesis has requested the council to advise what the new connection process is and whether its fit for purpose.	Investigating
Database accuracy	Repeat the full field audit with a pilot and a check before the entire database is checked.	The Council has noted the recommendation and Genesis has reiterated that a pilot to identify asset information would be required to ascertain accuracy levels prior to full field audit.	Investigating

NZTA lighting

NZTA lighting is included in the database for the urban area and was checked as part of the field audit.

ICP accuracy

An ICP is recorded in the database against all items of load.

Location accuracy

The database contains fields for the street address and also GPS coordinates. Nine items of load did not have a street number or GPS coordinates.

Change management process findings

The processes were reviewed for ensuring that changes in the field are captured. The field work is carried out by Horizon and database management is conducted by WPS (formerly Opus). There are two new areas where the lights are not yet all recorded against the new roads. The roads are Piripiri Cres and Tiwhatiwha Cres. I've repeated the recommendation above that the new connections process is reviewed to ensure the timely and accurate capture of new lights.

A full field audit was conducted, and the results updated into the database. The field audit identified 23 discrepancies, which is 12%. Given the high error rate, I recommend the field audit is repeated and that it starts with a pilot, where 100 lights are audited, then an accuracy check is conducted for the 100 before the entire database audit is completed.

KDC have weekly outage patrols in place. The frequency of these patrols is expected to be extended due to the lower failure rate of LED lights.

There are no known private lights connected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Sep-20 To: 27-May-21	In absolute terms the installed capacity is estimated to be 1.0 kW lower than the database indicates. 22 items of load where the lamp description did not match the wattage. Three items of load with blank wattages. Nine items of load did not have a street number or GPS coordinates. Festive lighting is connected but the volume is not recorded. Potential impact: High Actual impact: High Audit history: Once Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak because there does not appear to have been any quality controls with regard to the full field audit. The impact is assessed to be low, based on the kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue to work with quality improvements with the council and third party. The 22 items are being reviewed and the Genesis will continue to provide exception reporting to identify any further anomalies.	01/06/2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis and WSP have been proactive and although the field audit controls were rated weak, it was the intension to ascertain the completeness of the assets connected. Genesis believe WSP has managed to accomplish this. The next steps are to ensure the assets information is accurate.	WIP	

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 burn hours against the submitted figure to confirm accuracy.

Audit commentary

Genesis reconciles this DUML load using the NST profile. The registry daily kWh figure (assuming burn hours of 11.9) is used to calculate submission. I confirmed the calculation was correct. KDC has recently completed a full field audit and the results were updated into the database and a copy was provided to Genesis. The registry was updated on 10 May 2021 with the database wattage. This was backdated to 1 May 2020 to ensure revisions are conducted back to that date. The "on time" is based on 11.9 hours per day, assuming each day is the same. This will result in over submission in summer and under submission in winter.

The following database accuracy issues are present:

- 22 items of load where the lamp description did not match the wattage, and
- three items of load with blank wattages

These issues are detailed in **section 2.4.**

The field audit found that in absolute terms, total annual consumption is estimated to be 6,400 kWh lower than the DUML database indicates.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 Clause 15.2 and 15.37B(c) From: 01-Sep-20 To: 27-May-21	Total annual consumption is estimated to be 6,400 kWh lower than the DUML database indicates, based on the field audit. Three items of load with blank wattages. Actual on and off times not used to calculate consumption. Potential impact: High Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak because there does not appear to have been any quality controls with regard to the full field audit. The impact is assessed to be low, based on the kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
Continue to work with quality improvements with the council and third party. The 22 items are being reviewed and the Genesis will continue to provide exception reporting to identify any further anomalies.	01/06/2021	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Genesis and WSP have been proactive and although the field audit controls were rated weak, it was the intension to ascertain the completeness of the assets connected. Genesis believe WSP has managed to accomplish this. The next steps are to ensure the assets information is accurate.	WIP	

CONCLUSION

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 WPS (formerly Opus) on behalf KDC in relation to this load. The field work is carried out by Horizon. Horizon updates and maintain changes using desktop updates into RAMM.

A full field validation was recently conducted, and the results entered into RAMM. Genesis has been provided with a copy of the database and is using the output for submission. The data is much more accurate than previous information, but my field audit found a 12% error rate, suggesting the field validation may need to be repeated. My field audit concluded that over submission of 6,400 kWh per annum will occur due to the current database inaccuracy.

The database content is much more accurate, and the only errors found were:

- 22 items of load where the lamp description did not match the wattage, and
- three items of load with blank wattages.

This audit found six non-compliances and makes three recommendations. The future risk rating of 17 (down from 41 last year) indicates that the next audit be completed in six months, which should allow sufficient time to remedy the database inaccuracy issues.

PARTICIPANT RESPONSE

Genesis and Kawerau Dc have managed to vastly improve the database information. There is still some gain to be made and will continue to work with the customer to gain a higher level of compliance.