ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

For

UPPER HUTT CITY COUNCIL AND CONTACT ENERGY

Prepared by: Tara Gannon

Date audit commenced: 3 April 2018

Date audit report completed: 15 April 2018

Audit report due date: 1 June 2018

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EXECUTIVE SUMMARY

This audit of the Upper Hutt City Council (UHCC) DUML database and processes was conducted at the request of Contact Energy (Contact) 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, which became effective on 1 June 2017.

The RAMM database used for submission is managed by UHCC. New connection, fault and maintenance work is completed by Fulton Hogan. LED upgrades in residential areas are completed by Fulton Hogan, and LED upgrades on arterial routes are completed by PCL. Fulton Hogan and PCL update the database using Pocket RAMM. UHCC provide a monthly report to Contact from the database.

The future risk rating of seven indicates that the next audit be completed in 18 months. I recommend that the next audit be completed in 24 months, because the impact of the issues raised on submission is low. Contact Energy has put processes in place to ensure that profiles are correctly recorded on the registry, and the temporarily incorrect profiles have no impact on submission.

Four non-compliances were identified, and no recommendations were raised. 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	The database used to prepare submissions contains some inaccurate information. • The database accuracy is assessed to be 96.6% indicating an estimated over submission of 1,405 kWh per annum. • 109 lamps have incorrect ballast wattage recorded, and the errors will result in estimated under submission of 598 watts or 2,554 kWh per annum. • One lamp has missing wattage information. The expected wattage is 103 and expected under reporting is 439 kWh per annum. Incorrect profiles are recorded on the registry.	Moderate	Low	2	Identified
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	One lamp has some missing make and model information and no lamp wattage recorded.	Strong	Low	1	Identified

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Database accuracy	3.1	15.2 and 15.37B(b)	The database used to prepare submissions contains some inaccurate information. • The database accuracy is assessed to be 96.6% indicating an estimated over submission of 1,405 kWh per annum. • 109 lamps have incorrect ballast wattage recorded, and the errors will result in estimated under submission of 598 watts or 2,554 kWh per annum. • One lamp has missing wattage information. The expected wattage is 103 and expected under reporting is 439 kWh per annum.	Moderate	Low	2	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database used to prepare submissions contains some inaccurate information. • The database accuracy is assessed to be 96.6% indicating an estimated over submission of 1,405 kWh per annum. • 109 lamps have incorrect ballast wattage recorded, and the errors will result in estimated under submission of 598 watts or 2,554 kWh per annum. • One lamp has missing wattage information. The expected wattage is 103 and expected under reporting is 439 kWh per annum. Incorrect profiles are recorded on the registry.	Moderate	Low	2	Identified
Future Risk Rating						7	

Future risk rating	1-3	4-6	7-8	9-17	18-26	27+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	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.

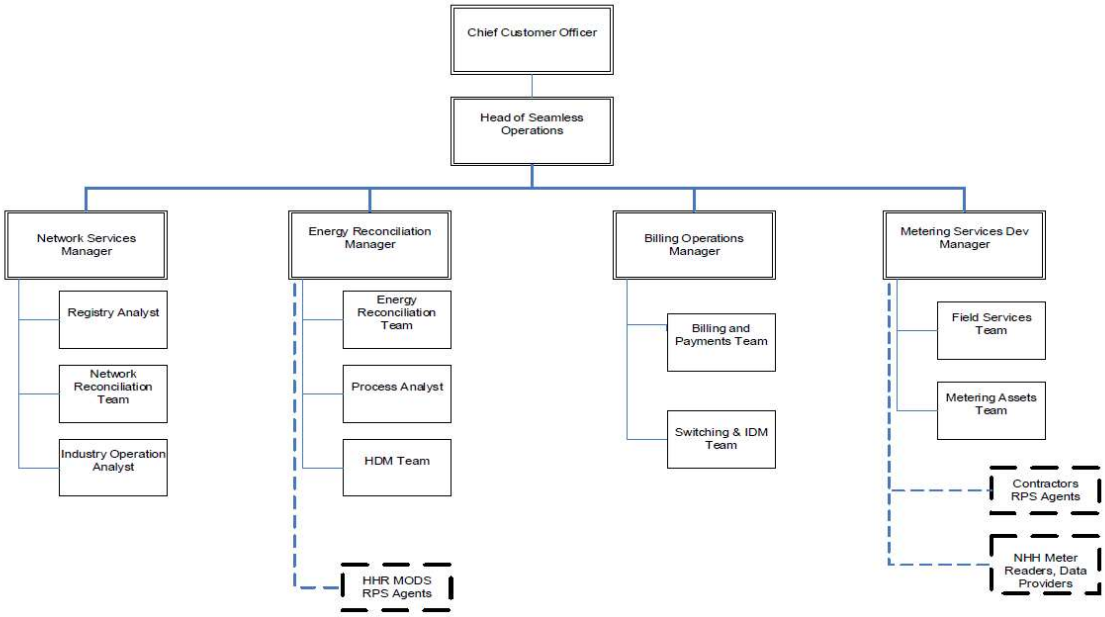
Audit commentary

There is one exemption in place relevant to the scope of this audit:

Exemption No. 177: Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 ("Code") in respect of providing half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires at the close of 31 October 2023.

1.2. Structure of Organisation

Contact Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Nir Kumar	Roading Contracts Engineer	Upper Hutt City Council
Bernie Cross	Energy Reconciliation Manager	Contact Energy

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by RAMM Software 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.

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

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)
0001255307UNA1A	SHP78 Hutt Road	UHT0331	HHR	2,416	174,872
0001256870UN363	SHP1 Hutt Road	HAY0111	HHR	375	16,577
0001256872UN3E6	SHP30 Hutt Road	HAY0331	HHR	1,301	86,252
Total				**4,092**	**277,701**

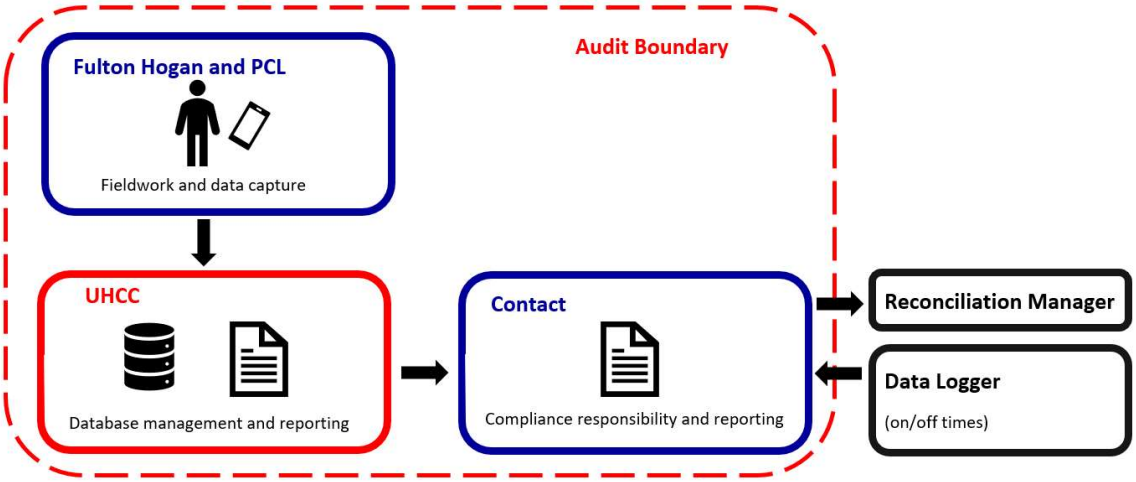
1.7. Authorisation Received

All information was provided directly by Contact and UHCC.

1.8. Scope of Audit

The RAMM database used for submission is managed by UHCC. New connection, fault and maintenance work is completed by Fulton Hogan. LED upgrades in residential areas are completed by Fulton Hogan, and LED upgrades on arterial routes are completed by PCL. Fulton Hogan and PCL update the database using Pocket RAMM. UHCC provide a monthly report to Contact from the database.

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

The field audit was undertaken of a statistical sample of 301 items of load on 3 April 2018.

1.9. Summary of previous audit

The previous audit was completed in August by Steve Woods of Veritek Limited. Two non-compliances were identified, and one recommendation was made. The statuses of the non-compliances and recommendation are described below.

Subject	Section	Clause	Non-compliance	Status
Deriving Submission Information	2.1	9(1)(b) of schedule 11.1	Incorrect profile on the registry	Still existing. Refer to **section 2.1**.
Tracking of load changes	2.3	11(3) of schedule 15.3	Some incorrect wattages in the database Three lights not in the database for approx. one year for Fairview Farm	Still existing. Refer to **section 3.1**. Cleared. Refer to **section 2.6**.

Subject	Section	Clause	Non-compliance	Status
Tracking of load changes	2.3	11(3) of schedule 15.3	Check the new connections process to ensure controls will identify items of load installed but not in the database.	Improvements have been made. Refer to **section 2.6**.

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 3 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

Contact 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 within the required timeframe. Compliance is confirmed.

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.

Audit commentary

Contact reconciles this DUML load using the HHR profile, in accordance with exemption number 177. This exemption is discussed further in **section 1.1**.

The registry shows HHR RPS profile for the UHCC ICPs but should show HHR. Contact usually manually corrects the profiles on business day four each month, but the corrections in recent months were missed due to a staff member being on leave. This is recorded as non-compliance below.

ICP Number	Registry Profile	Date
0001255307UNA1A	RPS HHR	01/12/2017-06/04/2018
0001256870UN363	RPS HHR	01/11/2017-06/04/2018
0001256872UN3E6	RPS HHR	01/12/2017-06/04/2018

Submissions are based on the database information, with on and off times derived from data logger information.

I recalculated the submissions for February 2018 for ICPs 0001255307UNA1A, 0001256870UN363, and 0001256872UN3E6 using the data logger and database information. I confirmed that the calculation method was correct. Festive lights were correctly excluded from the calculation because they were not connected.

There is some inaccurate data within the database used to calculate submissions. This is recorded as non-compliance and discussed in **sections 2.4, 3.1** and **3.2**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: unknown To: 06-Apr-18	The database used to prepare submissions contains some inaccurate information. • The database accuracy is assessed to be 96.6% indicating an estimated over submission of 1,405 kWh per annum. • 109 lamps have incorrect ballast wattage recorded, and the errors will result in estimated under submission of 598 watts or 2,554 kWh per annum. • One lamp has missing wattage information. The expected wattage is 103 and expected under reporting is 439 kWh per annum. Incorrect profiles are recorded on the registry. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, because they are sufficient to ensure that lamp information is correctly recorded most of the time. The impact is assessed to be low, based on the kWh differences described above. Profiles were recorded correctly on the registry for most of the audit period.

Actions taken to resolve the issue	Completion date	Remedial action status
Database accuracy impacting derivation of submission information Contact acknowledges that the database has some inaccurate records impacting the derivation of submission information and is working with UHCC to address these individual records issues caused in part by the mass deployment of LED streetlights replacing the legacy equipment. UHCC will undertake a clean-up of database anomalies as their LED mass deployment winds down **Incorrect profiles on Registry** Contact will reinstate the manual correction of profile code on business day 4 of each month so that our Submissions are correct There is a Change Request raised to have this issue fixed but this has not been approved yet	July 2018	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
As above	As above	

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 is recorded for each item of load.

Audit commentary

An ICP is recorded for each item of load.

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 the nearest street address, pole numbers and Global Positioning System (GPS) coordinates for each item of load and users in the office and field can view these locations on a mapping system.

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 lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

Lamp make, model, lamp wattage and ballast wattage are included in the database.

One lamp had missing lamp wattage and ballast wattage information. This is recorded as non-compliance below.

Light ID	Make	Make	Model	Model	Make	Lamp Wattage	Ballast
11766			103		Schereder TECEO		0

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clauses 11(2)(c) and (d) of Schedule 15.3 From: unknown To: 03-Apr-18	One lamp has some missing make and model information and no lamp wattage recorded. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong because only one of the 4092 lamps in the database had missing make, model and wattage information. The impact is low, the expected wattage for the lamp type is 103W.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact acknowledges that the database has some inaccurate records impacting the derivation of submission information and is working with UHCC to address this individual record issue	July 2018	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
As above	As above	

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 301 items of load on 3 April 2018.

Audit commentary

The field audit findings are detailed in the table below.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
Brown Owl					
DIAMOND GROVE	4	4	-	-	
QUARTZ PLACE	4	4	-	-	
ROBAND CRESCENT	6	6	-	-	
Clouston Park					
CLOUSTON PARK ROAD	30	28	-2	-	Two 70W sodium recorded in the database were not located.
CRUICKSHANK ROAD	9	9	-	-	
CUNNINGHAM ROAD	1	1	-	-	
Ebdentown					
HAY STREET	3	3	-	-	
HENRY STREET	10	10	-	2	Two 27W LEDs were recorded as 24W LEDs in the database.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
HUDSON AVENUE	7	7	-	-	
OXFORD CRESCENT	8	8	-	-	
WILLOW GROVE	2	2	-	-	
Heretaunga					
BARTON ROAD	12	12	-	-	
PERRY STREET	8	8	-	-	
TIWAKAWAKA GROVE	2	2	-	-	
Maidstone					
LYSTER SERVICE LANE	4	4	-	1	One 27W LED was recorded as 70W sodium in the database.
Maoribank					
OREGON DRIVE	9	9	-	-	
SEQUOIA PLACE	1	1	-	-	
Riverstone Terraces					
GRACE NICHOLLS GROVE	8	8	-	-	
PERCY KINSMAN CRESCENT	14	14	-	2	Two 70W sodium were recorded as 27W LEDs in the database.
RIVERSTONE DRIVE	34	34	-	-	
Silverstream					
STAFFORD STREET	5	5	-	2	Two 27W LEDs were recorded as 70W sodium in the database.
Te Marua					
MOLLOYS ROAD	7	6	-1	-	One 27W LED recorded in the database was not located

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
Timberlea					
SPEARGRASS GROVE	18	17	-1	-	One 70W sodium recorded in the database was not located
Totara Park					
KANSAS GROVE	2	2	-	-	
WYOMING GROVE	5	5	-	-	
Trentham					
BRENTWOOD STREET	12	12	-	-	
GLASGOW STREET	2	2	-	-	
JOHN STREET	7	7	-	-	
KEATS STREET	3	3	-	-	
MARY CRESCENT	9	9	-	1	One 27W LED was recorded as 50W MBF in the database.
NGATA GROVE	10	10	-	1	One 27W LED was recorded as 25W LED in the database.
RIMUTAKA STREET	7	7	-	-	
THACKERAY STREET	21	21	-	1	One 27W LED was recorded as 18W LED in the database.
Wallaceville					
MELROSE STREET	6	6	-	-	
RIMU STREET	2	2	-	-	
WILFORD STREET	9	9	-	-	
Total	**301**	**297**	**-4**	**10**	

I found four less lamps in the field than were recorded in the database, and ten lamp wattage differences.

The field data was 96.6% of the database data for the sample checked, and database accuracy is assessed to be 96.6%. The total wattage recorded in the database for the sample was 9,841 watts. The total wattage found in the field for the sample checked was 9,512 watts, a difference of 329 watts. This will result in estimated over submission of 1,405 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

These differences are recorded as non-compliance in **section 3.1**. I did not identify any load missing from the database.

Audit outcome

Compliant

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

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20 September 2012, the Authority sent a memo to retailers and auditors advising that tracking of load changes at a daily level was not required if the database contained an audit trail. I have interpreted this to mean that the provision of a copy of the report to Contact each month is sufficient to achieve compliance.

The RAMM database used for submission is managed by UHCC. New connection, fault and maintenance work is completed by Fulton Hogan. LED upgrades in residential areas are completed by Fulton Hogan, and LED upgrades on arterial routes are completed by PCL. The LED upgrade is expected to be complete in the middle of 2018. UHCC is installing a central management system and does not plan to use dimming.

Fulton Hogan and PCL both update the database using Pocket RAMM.

The new connection process for new subdivisions has improved since the previous audit. The roading and consent team now work closely together to ensure that new subdivision lights are identified and captured in RAMM. The lights are recorded in RAMM when an as built plan is provided to UHCC, and a field check by the Asset Engineer is completed as part of this process. I reviewed the process for a recent new subdivision in Wallaceville and noted the lights are recorded in RAMM and are ready to be livened.

NZTA, private and festive lights are included in the database. UHCC has advised Wellington Electricity of the NZTA and private lights. UHCC does not allow any new private lights to be connected. UHCC provides dates the festive lights are connected to Contact, so they can include or exclude the lights in

their submissions as appropriate. This process was checked in **sections 2.1** and **3.2** and found to be compliant.

Outage patrols occur fortnightly in the CBD, and monthly in other areas.

The contract with Fulton Hogan specifies turnaround times for lamp replacement. 24 hours for pedestrian crossings, three days for a single light and two days if two or more adjacent lights are out.

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

UHCC demonstrated a complete audit trail of all additions and changes to the database information.

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	UHCC region
Strata	The database contains items of load in Upper Hutt area. The processes for the management of all UHCC items of load are the same, and I decided to create one strata for all lights.
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 36 subunits.
Total items of load	301 items of load were checked.

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

Audit commentary

The database was found to contain some inaccuracies and missing data.

The field audit found:

- Four less lamps in the field than were recorded in the database.
- Ten lamp type and wattage differences.

The field data was 96.6% of the database data for the sample checked, and database accuracy is assessed to be 96.6%. The total wattage recorded in the database for the sample was 9,841 watts. The total wattage found in the field for the sample checked was 9,512 watts, a difference of 329 watts. This will result in estimated over submission of 1,405 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool).

Wattages for all items of load were checked against the published standardised wattage table produced by the Electricity Authority, and the manufacturer's specifications where they were not included in the standardised wattage table.

- One lamp was found to have some missing lamp model and wattage information. This is discussed further in **section 2.4**, and the affected lamp is expected to have a wattage of 103.
- Some ballast wattages were found to be incorrect, due to data entry errors. The differences are shown in the table below; 109 lamps are affected, and the errors will result in estimated under

submission of 598 watts or of 2,554 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool). Ballast and lamp information are loaded separately and can be inconsistent. UHCC completes periodic checks of the data reported from RAMM to identify and correct inconsistencies and plans to complete a full check once the LED upgrade project is complete.

Lamp Make and Model	Database ballast wattage	Expected ballast wattage	Number of lamps affected	Total wattage difference
LED 103	9	0	1	-9
LED 149	11	0	2	-22
LED 149	13	0	1	-13
LED 149	14	0	1	-14
LED 149	18	0	7	-126
LED 73	11	0	1	-11
LED 73	14	0	2	-28
MBF 40	11	10	5	-5
MBF 80	12	10	1	-2
MCF 40	11	10	38	-38
SON 100	0	14	3	42
SON 100	13	14	1	1
SON 110	0	11	1	11
SON 150	0	18	40	720
SON 150	13	18	1	5
SON 250	0	28	2	56
SON 70	0	13	1	13
SOX 90	12	30	1	18
		Total	**109**	**598**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: unknown To: 03-Apr-18	The database used to prepare submissions contains some inaccurate information. • The database accuracy is assessed to be 96.6% indicating an estimated over submission of 1,405 kWh per annum. • 109 lamps have incorrect ballast wattage recorded, and the errors will result in estimated under submission of 598 watts or 2,554 kWh per annum. • One lamp has missing wattage information. The expected wattage is 103 and expected under reporting is 439 kWh per annum. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, because they are sufficient to ensure that lamp information is correctly recorded most of the time. 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
Contact acknowledges that the database has some inaccurate records impacting the derivation of submission information and is working with UHCC to address these individual records issues caused in part by the mass deployment of LED streetlights replacing the legacy equipment. UHCC will undertake a clean-up of database anomalies as their LED mass deployment winds down	July 2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	As above	

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 all ICPs have the correct profile and submission flag
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Contact reconciles this DUML load using the HHR profile, in accordance with exemption number 177 discussed in **section 1.1**. The registry shows HHR RPS profile for the UHCC ICPs but should show HHR. Contact normally manually corrects the profiles on business day four each month, but the corrections were recently missed due to a staff member being on leave.

ICP Number	Registry Profile	Date
0001255307UNA1A	RPS HHR	01/12/2017-06/04/2018
0001256870UN363	RPS HHR	01/11/2017-06/04/2018
0001256872UN3E6	RPS HHR	01/12/2017-06/04/2018

Submissions are based on the database information, with on and off times derived from data logger information.

I recalculated the submissions for February 2018 for ICPs 0001255307UNA1A, 0001256870UN363, and 0001256872UN3E6 using the data logger and database information. I confirmed that the calculation method was correct. Festive lights were correctly excluded from the calculation because they were not connected.

There is some inaccurate data within the database used to calculate submissions. This is recorded as non-compliance and discussed in **sections 2.4** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: unknown To: 06-Apr-18	The database used to prepare submissions contains some inaccurate information. • The database accuracy is assessed to be 96.6% indicating an estimated over submission of 1,405 kWh per annum. • 109 lamps have incorrect ballast wattage recorded, and the errors will result in estimated under submission of 598 watts or 2,554 kWh per annum. • One lamp has missing wattage information. The expected wattage is 103 and expected under reporting is 439 kWh per annum. Incorrect profiles are recorded on the registry. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, because they are sufficient to ensure that lamp information is correctly recorded most of the time. The impact is assessed to be low, based on the kWh differences described above. Profiles were recorded correctly on the registry for most of the audit period.

Actions taken to resolve the issue	Completion date	Remedial action status
Database accuracy impacting derivation of submission information Contact acknowledges that the database has some inaccurate records impacting the derivation of submission information and is working with UHCC to address these individual records issues caused in part by the mass deployment of LED streetlights replacing the legacy equipment. UHCC will undertake a clean-up of database anomalies as their LED mass deployment winds down **Incorrect profiles on Registry** Contact will reinstate the manual correction of profile code on business day 4 of each month so that our Submissions are correct There is a Change Request raised to have this issue fixed but this has not been approved yet	July 2018	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
As above	As above	

CONCLUSION

The RAMM database used for submission is managed by UHCC. New connection, fault and maintenance work is completed by Fulton Hogan. LED upgrades in residential areas are completed by Fulton Hogan, and LED upgrades on arterial routes are completed by PCL. Fulton Hogan and PCL update the database using Pocket RAMM. UHCC provide a monthly report to Contact from the database.

The future risk rating of seven indicates that the next audit be completed in 18 months. I recommend that the next audit be completed in 24 months, because the impact of the issues raised on submission is low. Contact Energy has put processes in place to ensure that profiles are correctly recorded on the registry, and the temporarily incorrect profiles have no impact on submission.

PARTICIPANT RESPONSE

Contact Energy has reviewed this report and their comments are contained within its body.