

VERITEK

Gas Meter Owner Audit Report

For



GasNet Ltd

Prepared by: Tara Gannon – Veritek Ltd

Date of Audit: 29 September 2020

Date Audit Report Complete: 27 November 2020

Executive Summary

This Performance Audit was conducted at the request of the Gas Industry Company (GIC) in accordance with Rule 88 of the Gas (Switching Arrangements) Rules 2008 (GSAR) and rule 65 of the Gas (Downstream Reconciliation) Rules (GDRR), both in effect from 14 September 2015.

The purpose of this audit is to assess the systems, processes, and performance of **GasNet Ltd (GasNet)** in terms of compliance with these rules. The audit was conducted in accordance with terms of reference prepared by GIC.

The summary of report findings in the table below shows that GasNet's control environment is "effective" in all areas evaluated. The timeliness of initial metering updates for new connections has improved, and the validation process has been expanded since the previous audit.

One non-conformance occurred for registry management, in relation to setting of event dates. Six ICPs had incorrect meter event dates recorded on the registry, and one breach allegation is raised in relation to this.

I have made two recommendations to reduce the likelihood of future non-conformance, including:

- check consistency between connection statuses and meter identifiers at least monthly and follow up any exceptions, and
- GasNet should ask the retailers for the 36 ICPs with UNKN (unknown) meter locations to provide any meter location information that they hold, so that the meter locations can be updated.

The matters raised are shown in the tables below.

Summary of Report Findings

Issue	Section	Control Rating (Refer to Appendix 1 for definitions)	Compliance Rating	Comments
General obligations	2	Effective	Compliant	<p>GasNet's Registry participant register information is correct.</p> <p>Based on the information provided, GasNet has met their obligations to act reasonably and use Registry software competently.</p>
Accuracy of meter information	3	Effective	Compliant	<p>Based on the information provided, GasNet's processes for faults, maintenance and testing are robust and compliant.</p> <p>The TOU processes ensure that incomplete or inaccurate information is identified, and acted upon promptly.</p>
New connections	4	Effective	Compliant	<p>The timeliness of initial metering updates for new connections has improved since the previous audit.</p>

Issue	Section	Control Rating (Refer to Appendix 1 for definitions)	Compliance Rating	Comments
Registry information management	5	Effective	Not compliant	<p>GasNet's processes ensure that MIDaS and the Registry data match closely for all fields validated, and the validation processes have been expanded to encompass more fields during the audit period.</p> <p>Six meter events had incorrect event dates.</p> <ul style="list-style-type: none"> • New ICP 0000032419GN83C's meter was installed on 21/01/2020, but the event date recorded on the registry is 30/01/2020. • ICP 0000032121GN8D5's meter was replaced on 03/02/2020, but the event date for the new meter was entered as 03/03/2020. • ICPs 0000032277GN251, 0000032297GN8EB and 0000032435GN677 had a meter location corrections processed from the date that the update was created, instead of the meter installation date. • ICP 0000025644GN9E9's meter was replaced on 07/09/18, but the event date for the new meter was entered as 13/09/18 (the date the change was processed in MIDaS).
Metering price codes	6	Effective	Compliant	
Disclosure on application	7	Effective	Compliant	

Persons Involved in This Audit

Auditor:

Tara Gannon
Veritek Limited

GasNet personnel assisting in this audit were.

Name	Title
Craig Saunders	Supply Assistant
David Newell	Finance and Administration Manager
Fiona McMillan	Administration Assistant
Jim Coe	General Manager
Ryan Carter	Engineer

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1. Pre-Audit and Operational Infrastructure Information

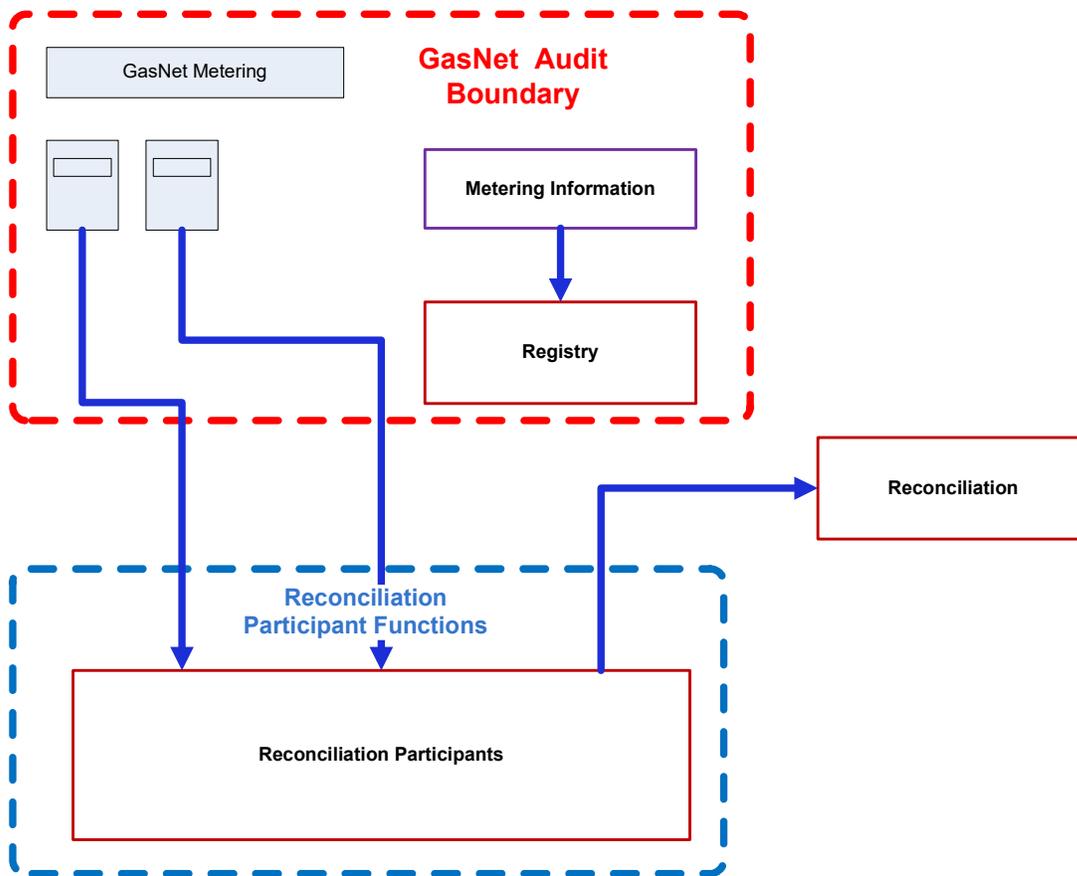
1.1 Scope of Audit

The purpose of this audit is to assess the systems, processes and performance of GasNet in terms of compliance with these rules.

The audit was conducted using a guideline prepared by Veritek.

The audit was carried out on 29 and 30 July 2020 at GasNet's office in Wanganui.

The scope of the audit includes the meter owner responsibilities only, as shown in the diagram below.



1.2 Audit Approach

As mentioned in **section 1.1** the purpose of this audit is to assess the performance of GasNet in terms of compliance with the rules, and the systems and processes that have been put in place to enable compliance with the rules.

This audit has examined the effectiveness of the controls GasNet has in place to achieve compliance, and where it has been considered appropriate sampling has been undertaken to determine compliance.

Where sampling has occurred, this has been conducted using the Auditing Standard 506 (AS-506) which was published by the Institute of Chartered Accountants of New Zealand. I have used my professional judgement to determine the audit method and to select sample sizes, with an objective of ensuring that the results are statistically significant.¹

Where compliance is reliant on manual processes, manual data entry for example, the sample size has been increased to a magnitude that, in my judgement, ensures the result has statistical significance.

Where errors have been found or processes found not to be compliant the materiality of the error or non-conformance has been evaluated.

1.3 General Compliance

The Market Administrator confirmed that no alleged breaches have been recorded for GasNet in the last two years.

1.4 Provision of Information to the Auditor (GSAR r91)

In conducting this audit, the auditor may request any information from GasNet, and any Registry participant or operator.

Information was provided by GasNet in a timely manner in accordance with this rule.

Information was not required from any other participant in relation to this audit.

¹ In statistics, a result is considered statistically significant if it is unlikely to have occurred by chance. (Wikipedia)

1.5 Breach allegations

As noted in the Summary of Report Findings, this audit has found one area of non-conformance. The following breach allegation is made in relation to this matter.

Breach Allegation	Rules	Section in this report
<p>Six meter events had incorrect event dates.</p> <ul style="list-style-type: none"> New ICP 0000032419GN83C's meter was installed on 21/01/2020, but the event date recorded on the registry is 30/01/2020. ICP 0000032121GN8D5's meter was replaced on 03/02/2020, but the event date for the new meter was entered as 03/03/2020. ICPs 0000032277GN251, 0000032297GN8EB and 0000032435GN677 had a meter location corrections processed from the date that the update was created, instead of the meter installation date. ICP 0000025644GN9E9's meter was replaced on 07/09/18, but the event date for the new meter was entered as 13/09/18 (the date the change was processed in MIDaS). 	GSAR 58.1	5

Two alleged breaches were recorded in relation to the 2018 meter owner audit, and the outcomes are recorded in the table below.

Breach Allegation	Breach No.	Rule	Section in this report	Outcome
<p>Initial metering information was not updated on the Registry within two business days of GasNet becoming aware that the meter was installed for the following ICPs:</p> <ul style="list-style-type: none"> 0000012929GN301 0000031864GNCD6 0000031896GNC44 0000014132GN2B5 0000031849GNED8 0000013694GN047 0000013853GNC69 0000031755GN864 0000031786GN9E6 0000031788GNA7D 0000031817GN54B; and 0000031864GNCD6. 	2018-051	GSAR r56	4	The Market Administrator did not raise any material issues.

Breach Allegation	Breach No.	Rule	Section in this report	Outcome
The registry was updated between four and 47 business days after the meter was installed.				
A small number of inaccuracies in TOU information, meter location and meter replacement dates were identified.	2018-052	GDRR r26.5	5	The Market Administrator did not raise any material issues

1.6 Draft Audit Report Comments

A draft audit report was provided to the industry body (GIC), the allocation agent, and allocation participants that I considered had an interest in the report. In accordance with rule 92 of the 2015 Amendment Version of the Gas (Switching Arrangements) Rules 2008, those parties were given an opportunity to comment on the draft audit report and indicate whether they would like their comments attached as an appendix to the final audit report. The following response was received.

Party	Response	Comments provided	Attached as appendix
GasNet	Yes	Yes	No

No changes were made to the report. GasNet's comments are included in each section where non-conformance or recommendations are recorded.

2. General obligations

2.1 Participant registration information (GSAR r7 and 10)

All Registry participants must supply registration information to the Registry operator. Registration information consists of:

- the name of the Registry participant,
- the Registry participant's telephone number, physical address, facsimile number, email address, and postal address, and
- identification as to which class, or classes, of Registry participant (Retailer, distributor or Meter Owner) that the Registry participant belongs.

Registration information must be given in the form and manner required by the Registry operator as approved by the industry body. Every person who is a Registry participant at the commencement date must supply the registration information within 20 business days of the commencement date. A person who becomes a Registry participant after the commencement date must supply the registration information within 20 business days of becoming a Registry participant.

GasNet's participant registration information was confirmed to be valid. Compliance is confirmed.

2.2 Obligation to act reasonably (GSAR r34)

Every Registry participant must act reasonably in relation to its dealings with the Registry and, in doing so, must use its reasonable endeavours to co-operate with other Registry participants.

Processes for managing queries and complaints about Registry information were reviewed. No examples of GasNet acting unreasonably were found. Compliance is confirmed.

2.3 Obligation to use Registry software competently (GSAR r35)

Each Registry participant must ensure that any software for the Registry is used in a proper manner by competent employees or by persons under the supervision of those employees.

No Registry participant may request, permit, or authorise anyone other than the Registry operator to provide support services in respect of any software for the Registry.

Each Registry participant must appoint a nominated manager to be responsible for all that Registry participant's communications with the Registry.

No examples of GasNet using Registry software incompetently were found. Access to modify Registry information is restricted and staff are appropriately trained. GasNet only uses Jade for Registry support services. Compliance is confirmed.

3. Accuracy of meter information

3.1 TOU downloads (GDRR r26.5)

TOU meter downloads provided to Retailers should be complete, accurate and converted to energy in accordance with NZS5259:2015 (if applicable).

GasNet have 15 ICPs with correctors fitted, all are temperature and absolute pressure corrected. GasNet does not convert the raw volumes to energy; compliance with the NZS5259:2015 gas conversion process was not assessed.

Data for six of the correctors is downloaded by GasNet monthly using Masterlink, and volume data is provided to the retailer via email on the first business day of the month. For the other nine ICPs, the retailer downloads the corrector data directly. I checked the raw downloads against the data provided to the retailer for three ICPs for July 2020 and confirmed that all values matched.

Processes are in place to monitor correctors and manage the data obtained from them:

- GasNet checks each corrector in the first and third week of each month, including checking the serial number, reading, battery, alarms, and event log,
- downloads are completed each Monday, Wednesday, and Friday and on the first day of the month for each corrector, these will identify any communications issues or missing data promptly so that issues can be resolved before month end, and
- GasNet has procedural documentation for corrector changes, meter rollovers, and battery changes to ensure that these events are processed consistently and accurately.

Downloads are checked for completeness by comparing the download to the expected number of intervals. Downloads are checked for reasonableness weekly by charting daily gas gate level TOU data and comparing it to the gate's TOU history, and reviewing daily ICP level TOU data. Any anomalies are investigated and checked with the retailer if necessary.

If data is missing from a monthly download provided to a retailer, the retailer is advised. GasNet's engineering team will provide additional information (such as mechanical readings) to assist the retailer to create an estimate for the missing periods. Typically, data will only be missing for part of a day or month because issues with missing data are identified through GasNet's monitoring and corrected as soon as possible. Two ICPs where GasNet provides a monthly download, had data missing over the past year, and the retailer was advised and supporting information was provided.

If data is missing where the retailer obtains their own download, GasNet will assist the retailer by re-attempting the download and providing any information they hold (including partial downloads and mechanical readings) on request.

Compliance is confirmed.

3.2 Meter accuracy (GDRR r26.5 and 27)

Processes must be in place to ensure meter accuracy, and compliance with NZS5259:2015.

GasNet's processes support compliance with NZS5259:2015 and NZS4944 for both new and existing GMS'.

Faults

Where a retailer or GasNet staff member identifies a possible meter accuracy issue, a job is raised in the FieldGo system to investigate. The jobs are allocated to technicians, who try to attend meter accuracy faults within one business day.

GasNet provided all faults relating to meter accuracy or the ability to read the GMS since late 2017. In all cases the work was completed within seven calendar days.

- Six faults related to condensation or water in the dial making it difficult to read the register. Five meters were replaced, and one was not replaced because the condensation issue was intermittent and not present when GasNet visited. Work was completed within four calendar days.
- Four faults related to difficulty reading the meter, and the meters were replaced within four calendar days.
- Eight faults related to stopped or slow meters and the faults were attended within four calendar days. Initially on site testing was conducted to determine whether there was a likely meter fault, and four of the meters were replaced and scrapped because faults were found.
- Seven faults related to customer complaints about high gas accounts. The faults were attended within three calendar days and on site tests were conducted to check the meters and identify any leaks. No genuine meter faults were identified and the meters were not replaced.

Meter selection

Meters are selected as part of the application approval process based on the installation requirements, according to GasNet's policies.

Meter maintenance, inspection and testing

A maintenance programme sets out how frequently meters should be inspected and maintained, and is compliant with NZS5259:2015. The maintenance procedures are set out in GasNet's Gas Measurement System Maintenance Procedure and Network and GMS Maintenance Plan.

GasNet has three maintenance categories², which have different maintenance and testing intervals. GasNet's current practices achieve compliance, because the testing intervals are not greater than those required by NZS 5259.

² **Category A** installations greater than 10,000 GJ and any installation with a corrector

For meter category C, statistical samples chosen according to NZS 4944 are used to confirm that meters with a fixed meter pressure factor and meter accuracy are within the maximum permissible errors allowed in NZS5259:2015. I confirmed that samples are randomly selected using Excel's random number generator function based on the meter purchase date, and the sample size is dependent on the total population. Test results for the samples are analysed, and the test failure rates are used to determine whether the population is compliant and the reverification period.

Acceptance testing is carried out in accordance with NZS5259:2015 before a GMS enters service, when an event that may affect accuracy has occurred (unless testing is not required because the meter is to be scrapped or testing is impractical), and if a meter is removed from service and intended to be redeployed (and it has been in service for more than 12 months since its last acceptance test).

As found testing is completed for any meter which is removed from service where the meter is intended to be redeployed (and it has been in service for more than 12 months since its last test), or there are concerns about meter accuracy (unless testing is not required because the meter is to be scrapped or testing is impractical).

Removed GMS' are not tested if they are to be scrapped (unless testing is specifically required by the retailer or GasNet due to a potential meter accuracy issue) or if damage or corrosion makes testing impractical.

I reviewed paperwork for a sample of meters which were installed, removed, and/or reinstalled, and found that the testing process was being followed as expected. Where defects are found during these inspection or maintenance processes, GasNet's defect process is followed.

Compliance is confirmed.

3.3 TOU upgrades (GDRR r29.1.1)

If a consumer installation is, or is expected to, consume more than 10 TJ per annum TOU metering should be installed. Under the Gas (Downstream Reconciliation) Rules 29.1 the Retailer must ensure that a TOU meter is installed as soon as practicable, and no more than three months after becoming aware that expected or actual consumption is over 10 TJ.

Upgrades from non TOU to TOU occur rarely; the last upgrade was on 16/03/2016.

GasNet is aware of the requirement to complete upgrades within three months, and have correctors in stock to support compliance.

Category B installations not in category A which are supplied from a GasNet intermediate pressure system, have a meter capacity over 25 SCMH, meter pressure over 7 kPa, have a rotary type meter or are located in a harsh environment

Category C installations not in category A or B.

4. New connections (GSAR r56)

Meter Owner information must be provided on the Registry within two business days of confirmation that a meter has been installed. If no responsible Meter Owner is populated, the Meter Owner who has installed the meter may populate the Registry to become the responsible Meter Owner.

Since September 15th, 2015, Meter Owners have been able to populate metering details without Retailer nomination of the responsible Meter Owner. However, if the Retailer has populated a different responsible Meter Owner, GasNet will be unable to update any metering details until the responsible Meter Owner is changed to GasNet. I did not identify any instances where the responsible meter owner was incorrectly recorded.

Applications for new connections are submitted to GasNet by customers or retailers. GasNet conducts a site visit to confirm the GMS requirements, including the GMS location. A quote is generated which sets out these specifications. Once the quote has been accepted, the installation work is scheduled and completed by GasNet's technicians and contractors. Fieldwork is managed using the FieldGo system. GasNet's technicians use hand held devices to record job details, and contractors keep paper records. Completion paperwork is returned and once all items on the engineering team's checklist are complete, the ICP's information pack is returned to the administration team who update MIDAS. Information is checked for reasonableness and accuracy on entry, and any discrepancies are queried with GasNet's engineering team and/or the retailer. Changed data flows from MIDaS to the Registry each day.

According to the registry list, 204 new ICPs were created between 14/08/2018 and 13/08/2020. There were no TOU new connections, one AG4 connection and the remainder were in AG6. 185 of the new ICPs had metering installed.

I reviewed the metering events on the event detail report for the new ICPs and found 151 records were updated within three business days of the event date, 182 were updated within ten business days and all were updated within 19 business days.

I reviewed the 15 latest updates for new connections (over five business days) to determine whether they had been made within two business days of the installation being confirmed. All 15 ICPs had metering details populated within two business days of installation confirmation being received. ICP 0000032419GN83C's meter event date was initially populated incorrectly and underwent multiple corrections; and is discussed in **section 5**.

5. Registry information management (GDRR r26.5 and GSAR r58)

The Meter Owner must use its reasonable endeavours to maintain current and accurate information in the Registry in relation to the ICPs and the ICP parameters for which it has responsibility.

New connections, meter changes, removals, pressure upgrades and downgrades are completed by GasNet's technicians and contractors. GasNet's technicians use hand held devices to record job details, and contractors keep paper records. Files from the devices, and scanned copies of

paperwork are received daily by the administration team, who update MIDaS. Sign off sheets are used to ensure that all applicable data is updated for each job completed.

When changes are made to MIDaS data which is also held on the registry, a registry update is automatically generated that evening. Where another participant requires an urgent change to registry data, the update may be manually processed on the registry. Event dates can be individually set for the meter number, meter pressure, and meter price category fields in MIDaS, and other changes are normally sent to the registry with the update date as the event date. Event dates can be manually adjusted if necessary.

Acknowledgement files received from the registry are saved and manually reviewed, to identify acknowledgements where action is required.

Notification files from the registry are received using FileZilla and imported into MIDaS. Reversals are not automatically processed; the administration team manually reviews the notification files and processes any reversals.

Fortnightly, data recorded in MIDaS is validated against a current registry list, and any discrepancies are checked and updated as necessary. A checklist is maintained for each validation performed and the task is scheduled in a calendar. The fortnightly validation includes all fields except the metering details "free text" field which is not recorded in MIDaS.

The validation focusses on ensuring the values in MIDaS and the registry are consistent with each other, supported by some consistency and reasonableness checks between fields and against expected values. I viewed recent reconciliations and found there were very few discrepancies, and action had been taken to investigate and resolve them.

Accuracy of Registry information

To test the accuracy of GasNet's registry information management, I checked the following registry event data against the source records, including meter docket and testing paperwork where available for:

- 23 meter installations for new connections,
- 20 meter changes,
- 20 meter removals,
- all eight meter reinstallations identified on the registry list with history and event detail report,
- all ten meter pressure changes identified on the registry list with history and event detail report, and
- ten meters which had been in service for more than 10 years.

I found that most information GasNet had recorded on the Registry matched the source information for the sample of records checked.

Six ICPs had incorrect meter event dates recorded on the registry, and are recorded as non-conformance:

- New ICP 0000032419GN83C's meter was installed on 21/01/2020. The registry was initially updated on time, and corrections were subsequently processed to update the meter number

and event date. The event date is currently recorded on the registry as 30/01/2020 but should be 21/01/2020.

- ICP 0000032121GN8D5's meter was replaced on 03/02/2020, but the event date for the new meter was entered as 03/03/2020.
- ICPs 0000032277GN251, 0000032297GN8EB and 0000032435GN677 had a meter location corrections processed from the date that the update was created, instead of the meter installation date.
- ICP 0000025644GN9E9's meter was replaced on 07/09/18, but the event date for the new meter was entered as 13/09/18 (the date the change was processed in MIDaS).

All other registry information was correctly recorded.

The following ICPs which underwent meter or pressure changes had pressures recorded on the registry which did not match the work completion paperwork. GasNet records the meter pressure at normal operating conditions, but sometimes this differs slightly from the pressure measured at the meter. The registry functional specification states that pressure should be recorded as "The pressure on which the volumetric measurement is based, measured as gauge, not absolute, pressure in kPa. Used to convert the measured volume of gas to the volume of gas at standard pressure." To determine whether the difference was material, I compared the pressure factor which the retailer would calculate based on the registry meter pressure to the pressure factor based on the paperwork. All differences were within the maximum permissible errors for pressure factors set out in NZS 5259:2015, and compliance is confirmed.

I also considered whether the pressure differences would have a material impact on either the altitude factor, compressibility factor, or temperature factor (where the Joule Thomson effect is applied). Because all the differences were less than ± 0.45 kPa they are unlikely to result in conversion factor differences outside the maximum permissible errors, and compliance is confirmed.

ICP	Event date	Registry pressure	Paperwork pressure	Pressure difference	Pressure factor based on registry pressure	Pressure factor based on paperwork pressure	Pressure factor difference
0000013482GN162	18/02/2020	1.25 kPa	1.3 kPa	0.05 kPa	1.0123	1.0128	0.05%
0000011564GN013	16/02/2020	1.25 kPa	1.7 kPa	0.45 kPa	1.0123	1.0168	0.44%
0000023158GNA98	07/08/2020	1.25 kPa	1.6 kPa	0.35 kPa	1.0123	1.0158	0.34%
0000012123GN19D	16/03/2020	2.5 kPa	2.7 kPa	0.20 kPa	1.0247	1.0266	0.19%
0000019452GN260	05/09/2019	2.5 kPa	2.3 kPa	-0.20 kPa	1.0247	1.0227	-0.19%

Non Conformance	Description	Audited party comment
<p>Regarding: GSAR 58.1</p> <p>Control Rating: Effective</p>	<p>Six meter events had incorrect event dates.</p> <ul style="list-style-type: none"> • New ICP 0000032419GN83C's meter was installed on 21/01/2020, but the event date recorded on the registry is 30/01/2020. 	<p>Response: Agreed</p> <p>Comments:</p> <ul style="list-style-type: none"> • GasNet staff will check data once data entry has been completed to ensure accuracy.

Non Conformance	Description	Audited party comment
	<ul style="list-style-type: none"> • ICP 0000032121GN8D5's meter was replaced on 03/02/2020, but the event date for the new meter was entered as 03/03/2020. • ICPs 0000032277GN251, 0000032297GN8EB and 0000032435GN677 had a meter location corrections processed from the date that the update was created, instead of the meter installation date. • ICP 0000025644GN9E9's meter was replaced on 07/09/18, but the event date for the new meter was entered as 13/09/18 (the date the change was processed in MIDaS). 	

There were no upgrades to TOU or downgrades to non-TOU, and GasNet did not have any multipliers greater than one, or meter registers with less than four or more than seven digits.

Each of the Meter Owner parameters are discussed individually in **sections 5.1 to 5.14** below.

Timeliness of Registry information

Timeliness of updates for new connections is discussed in **section 4**.

The timeliness and accuracy of metering updates for new connections is discussed in **section 4**. I evaluated the timeliness and accuracy of event updates between 14/08/2018 and 13/08/2020 not relating to new connections or status in this section. The rules do not specify a clear timeframe for update of metering information not related to new connections.

There were 897 meter events not relating to new ICPs. 857 updates were made within five business days of the event date, 883 within ten business days, 893 within 20 business days, all within 45 business days. I reviewed a sample of the ten latest updates to metering information which were between 15 and 45 business days after the event to determine why the registry updates were delayed:

- seven were delayed by late receipt of paperwork from the contractor, and the updates occurred 15-38 business days after the event date,
- one was a meter price category correction to resolve a data entry error, which occurred 45 business days after the event date, and
- two were corrections to "no meter" information, which were backdated to the meter removal date (the updates occurred 25 and 38 business days after the event date).

It is preferable to have a late update and correct information recorded on the Registry, to having no late updates with incorrect information recorded on the Registry.

5.1 Meter Identifier

Meter identifiers are populated based on the meter installation paperwork.

Fortnightly, the meter identifiers recorded in MIDaS are validated against a registry list. Any exceptions identified are investigated and resolved.

The registry list generated on 13/08/2020 was reviewed to identify any discrepancies between metering details and connection statuses.

- Five ICPs had connection statuses indicating that a GMS was present, but the GMS was recorded as removed on the registry. Two were timing differences and the retailer later updated their status to show the GMS was removed, and for the other three GasNet confirmed that the metering was removed but the retailer had recorded an incorrect status. The affected retailers were advised and asked to correct their statuses.
- ICP 0000013532GNAD4 had a GVM connection status with a meter recorded. GasNet confirmed that a meter was installed, and the retailer had recorded an incorrect status.

There is currently no consistency check to identify ICPs which have a status indicating that the meter is present, with a meter identifier indicating no meter is present, or a status indicating the meter is removed with a valid meter identifier. I recommend that this check is completed for meters on the GasNet network and other networks.

Recommendation	Audited party comment
<p>Check consistency between connection statuses and meter identifiers at least monthly and follow up any exceptions.</p> <p>Any ICP with meter identifier = removed or no meter is expected to have a connection status indicating the meter is removed (GDE or a code ending in "M").</p> <p>Any ICP with meter identifier ≠ removed or no meter is expected to have a removed meter connection status indicating the meter is present (not GDE or a code ending in "M").</p>	<p>Response: Agreed</p> <p>Comments:</p> <ul style="list-style-type: none">• GasNet will check on a fortnightly basis and will liaise with Retailers to confirm correct status

No meter identifier discrepancies were identified for the sample of meter details checked against job completion paperwork.

5.2 Meter Location Code

Meter locations are populated based on the meter installation paperwork. A restricted list of approved locations are available in MIDaS to support ongoing data consistency.

Fortnightly, the meter location codes recorded in MIDaS are validated against a registry list. Any exceptions identified are investigated and resolved.

Review of a registry list generated on 13/08/2020 found 36 ICPs with GasNet meters connected to the POCO network had meter location UNKN because locations were not provided at the time of installation. All other ICPs with GasNet meters had valid locations recorded.

Recommendation	Audited party comment
<p>GasNet should ask the retailers for the 36 ICPs with UNKN (unknown) meter locations to provide any meter location information that they hold, so that the meter locations can be updated.</p>	<p>Response: Agreed</p> <p>Comments:</p> <ul style="list-style-type: none"> • Retailers have been asked to provide correct locations of meters.

No meter location discrepancies were identified for the sample of meter details checked against job completion paperwork.

5.3 Meter Pressure

Meter pressures are populated based on the meter installation paperwork. As discussed in **section 5**, GasNet records the meter pressure at normal operating conditions.

Fortnightly, the meter pressures recorded in MIDaS are validated against a registry list. Any exceptions identified are investigated and resolved.

Meter pressures were checked against the meter price category (which indicates meter size) using a registry list generated on 13/08/2020, and no issues were identified.

Recorded meter pressures were checked against job completion paperwork for a sample of 61 meters, including new connections, meter changes, meter reinstallations and meter pressure changes. I found five meters where there was a difference between the meter pressure recorded on the job completion paperwork and the meter pressure recorded on the registry. To determine whether the difference was material, I compared the pressure factor which the retailer would calculate based on the registry meter pressure to the pressure factor based on the paperwork. All differences were within the maximum permissible errors for pressure factors set out in NZS 5259:2015, and compliance is confirmed.

I also considered whether the pressure differences would have a material impact on either the altitude factor, compressibility factor, or temperature factor (where the Joule Thomson effect is applied). Because all the differences were less than ± 0.45 kPa they are unlikely to result in conversion factor differences outside the maximum permissible errors, and compliance is confirmed.

5.4 Register Multiplier

Multipliers are populated based on the meter installation paperwork, and are expected to be one.

Fortnightly, the multipliers recorded in MIDaS are validated against a registry list. Any exceptions identified are investigated and resolved.

GasNet does not have any ICPs with multipliers greater than one. Review of the registry list generated on 13/08/2020 found all non TOU meters had a multiplier of one, and no discrepancies were identified for the sample of meter details checked against job completion paperwork.

5.5 Meter Pressure Operating at Network Pressure Flag

Meter operating at network pressure is not recorded in MIDaS' front end and all meter event files record NONE for this field.

Fortnightly, the meter operating at network pressure status recorded in MIDaS' back end is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found four ICPs with the same network and meter pressure. All had the meter pressure operating at network pressure flag correctly set to yes.

5.6 Register Reading Digits

Register reading digits are populated from meter installation paperwork.

Fortnightly, the number of dials recorded in MIDaS is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found all non TOU meters had between four and seven digits, which appears reasonable. No register reading digits discrepancies were identified for the sample of meter details checked against job completion paperwork.

5.7 Standard Meter

All GasNet meters are standard meters. The standard meter flag is not recorded in MIDaS' front end, and all meter event files record Y for this field if a meter is present.

Fortnightly, the standard meter status recorded in MIDaS' back end is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found all metered ICPs had standard meter set to yes.

5.8 Prepay meter

GasNet does not own any prepay meters. Prepay meter is not recorded in MIDaS' front end and all meter event files record N for this field.

Fortnightly, the prepay meter status recorded in MIDaS' back end is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found all metered ICPs had prepay meter set to no.

5.9 Advanced Meter & Advanced Meter Owner

GasNet does not have any advanced meters, all previously installed advanced meters have been removed. Advanced meter and advanced meter owner is not recorded in MIDaS' front end and all meter event files record N and NONE for these fields.

Fortnightly, the advanced meter status and owner recorded in MIDaS' back end is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found only removed meters had advanced meter owner set to yes.

5.10 TOU Meter

The TOU meter flag is hard coded in MIDaS and can only be updated by programmers.

Fortnightly, the TOU meter flag recorded in MIDaS is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found all ICPs with the TOU flag were as expected, and there were no discrepancies between the allocation group field populated by the retailer and TOU meter flag.

5.11 Logger Owner

GasNet does not own any data loggers. Logger owner is not recorded in MIDaS' front end and all meter event files record NONE for this field.

Fortnightly, the logger owner recorded in MIDaS' back end is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found all metered ICPs had the logger owner code set to NONE.

5.12 Corrector Owner

Corrector owner is hard coded in MIDaS and can only be updated by programmers.

Fortnightly, the corrector owner recorded in MIDaS is validated against a registry list. Any exceptions identified are investigated and resolved.

Review of the registry list generated on 13/08/2020 found the corrector owner was GNET for all metered TOU ICPs, and NONE for all metered non TOU ICPs.

5.13 Telemetry Owner

Telemetry owner is not recorded in MIDaS, and all TOU meters have telemetry installed. Meter event files record GNET if a meter and corrector is present, and NONE where only a meter is present.

Fortnightly the telemetry owner field is checked for discrepancies and any exceptions are investigated and resolved.

Review of the registry list generated on 13/08/2020 found the telemetry owner was GNET for all metered TOU ICPs, and NONE for all metered non TOU ICPs.

5.14 Metering Price Category

Metering price category is set based upon the meter type installed.

Fortnightly, the “tariff” recorded in MIDaS is validated against a registry list. Any exceptions identified are investigated and resolved.

I compared the network and meter pricing categories on the registry list generated on 13/08/2020 to identify any exceptions. All TOU meters had a TOU meter pricing code. Two ICPs connected to the Powerco network had network price category 3G11 (up to 15 SCMH) with meter price categories OM43 and OM23. Review of installation paperwork confirmed that GasNet’s metering price categories were consistent with the meter installation details and accepted quote.

No metering price category discrepancies were identified for the sample of meter details checked against job completion paperwork.

5.15 Registry validation and correction (GSAR r61.1, 61.2 and 62)

If the Meter Owner becomes aware that Registry information is incorrect or requires updating, the responsible Meter Owner must update or correct the Registry as soon as practicable.

The Meter Owner Registry report should be reviewed, and any corrections required should be entered on the Registry by 4pm on the 15th business day of the month.

GasNet carries out a fortnightly validation to identify and resolve discrepancies identified, using reports it has generated at the same time as the MIDaS report to eliminate timing differences. The validation focusses on ensuring the values in MIDaS and the registry are consistent with each other, supported by some consistency and reasonableness checks between fields and against expected values. The fortnightly validation includes all fields except the metering details “free text” field which is not recorded in MIDaS. I viewed recent reconciliations and found there were very few

discrepancies, and action had been taken to investigate and resolve them. I have recommended a new consistency check between connection statuses and meter identifiers in **section 5.1**.

The previous audit recommendation to add the meter flags, TOU equipment owners and meter pressure operating at network pressure to the fortnightly reconciliation has been implemented. No issues with data accuracy for these fields were identified during the audit.

The previous audit also suggested a monthly check of TOU ICP details to ensure that any replaced records are identified and corrected. No additional checks have been implemented, and review of the event detail report for 14/08/18 to 13/08/20 did not identify record reversals or replacements for TOU metered ICPs.

6. Metering Price Codes (GSAR r49)

Each Meter Owner must determine, publish and maintain a schedule of its meter price categories and the respective meter price category codes and, except where the Meter Owner requires disclosure on application in accordance with rule 50, the charges associated with each of those codes.

The pricing for each metering price code is adjusted effective from 1 October each year. Retailers are consulted on pricing changes, and final pricing is provided to Retailers by email by 31 July each year. I reviewed examples of the 2020 emails for all 11 retailers with ACTC and ACTV ICPs with GasNet meters and confirmed that confirmation that meter pricing would not change in 2020 was provided by 04/08/20.

Compliance is confirmed.

7. Disclosure on application (GSAR r50)

Disclosure on application may only be used where the participant does not have a reasonably practicable alternative method of protecting its commercial interest in that information, and to the extent necessary to reasonably protect that interest.

All meter price codes are available on the Registry; no meter price codes are subject to disclosure on application.

All meter prices are published and provided to retailers as described in **section 6** above. No requests for disclosure of metering information on application were received during the audit period.

Recommendations

As a result of this audit I recommend the following:

- check consistency between connection statuses and meter identifiers at least monthly and follow up any exceptions, and
- GasNet should ask the retailers for the 36 ICPs with UNKN (unknown) meter locations to provide any meter location information that they hold, so that the meter locations can be updated.

Appendix 1 – Control Rating Definitions

Control Rating	Definition
Control environment is not adequate	<p>Operating controls designed to mitigate key risks are not applied, or are ineffective, or do not exist.</p> <p>Controls designed to ensure compliance are not applied, or are ineffective, or do not exist.</p> <p>Efficiency/effectiveness of many key processes requires improvement.</p>
Control environment is adequate	<p>Operating controls designed to mitigate key risks are not consistently applied, or are not fully effective.</p> <p>Controls designed to ensure compliance are not consistently applied, or are not fully effective.</p> <p>Efficiency/effectiveness of some key processes requires improvement.</p>
Control environment is effective	<p>Isolated exceptions identified when testing the effectiveness of operating controls to mitigate key risks.</p> <p>Isolated exceptions identified when testing the effectiveness of controls to ensure compliance.</p> <p>Isolated exceptions where efficiency/effectiveness of key processes could be enhanced.</p>

Appendix 2 – Additional GasNet comments

All comments are recorded in the non conformance and recommendation boxes. No additional comments were provided.