



# **PIPELINE CAPACITY DISCLOSURE**

**Relating to  
Gas (Information Disclosure) Regulations 1997**

**Year Ending 30 June 2011**

**August 2011**

## 1. INTRODUCTION

This document comprises the Pipeline Capacity Disclosure of Vector Gas Limited ("Vector") [formerly NGC New Zealand Limited] pursuant to the Gas (Information Disclosure) Regulations 1997 (the "Regulations"), Schedule 1, PART 5, for the year ending 30 June 2011.

As far as practicable main section headings mirror those of Schedule 1, PART 5 of the Regulations. For additional clarity the relevant clause number of Schedule 1 PART 5 is given alongside each main section heading, and some sub-section headings.

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## Terminology

In this report terminology generally matches that in the Regulations. Some terms differ from those currently used in Vector's Transmission System Information Memorandum and transmission services agreements. For example:

Term in this Report:	Equivalent Vector Term:
Intake Point	Receipt Point
Offtake Point	Delivery Point
transmission system	pipeline (ie <i>part of</i> the "Transmission System")

## Exclusions

This report covers the transmission pipeline systems specified in the Regulations. Some parts of Vector's Transmission System, specifically minor laterals off the Maui pipeline, are not covered. These include the Te Awamutu North lateral, the Te Kuiti South and the Te Kuiti North laterals.

## Disclaimer

Except in the case of a pipeline with a single Intake Point supplying a single Offtake Point it is difficult to describe a pipeline's capacity in simple terms. Vector's pipelines serve multiple Offtake Points most of which are entirely independent of each other notwithstanding that they may supply similar loads, for example dairy factories, or be subject to similar influences, such as the weather.

In addition, since gas is a compressible fluid the quantity of energy stored within a pipeline ("line pack") may change significantly over time as pressures within the pipeline change. As a consequence the flow at a pipeline's Intake Point need not necessarily equate to the sum of the offtakes at any given time. This has a significant bearing on a pipeline's ability to supply the various Offtake Points.

It is the interaction of all the time-varying offtakes along its length that determines a pipeline's capacity to transport gas from the Intake Point to a given Offtake Point. Therefore capacity must generally be defined as the ability to transport gas from the Intake Point to a given Offtake Point *subject to* what is happening at other Offtake Points at the same time. Where there are multiple large Offtake Points a significant change at any one of them may materially affect the capacity available to the others.

Information contained in this report is presented in good faith in order to comply with the Regulations and to give an overview of the capacity of Vector's transmission systems.

However, shippers or potential shippers should not base their business decisions on the information contained in this report without consulting Vector.

Vector will accept no responsibility for the consequences of any misunderstanding, misinterpretation or misuse of information contained in this report.

While reasonable care has been taken in the preparation of this report, Vector takes no responsibility for the consequences of any errors that may be contained herein.

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## 2. TRANSMISSION SYSTEMS

(Ref. Schedule 1 Part 5, Clause 1)

The attached map and pipeline schematics (sheets 01 to 06) depict Vector's high-pressure gas transmission pipelines dealt with in this disclosure. They show all Intake and Offtake Points, other pipeline stations including compressor stations, pressure reductions stations and main line (ie line-break isolation) valves, pipe sizes and other information.

Distances between any two stations on the same pipeline (at the time of construction) can be calculated from the respective station numbers shown on the schematics, as follows:

The last 4 digits of each station number give the distance in km (ie wxy.z km) of that station from the origin of the particular pipeline or lateral on which it is located.

*Example 1:* Gisborne Sales Gate has the station number 5052013. This means that this station is on the 505 lateral, which starts at the Gisborne Offtake Station near Kawerau, and is 201.3 km downstream of that point.

*Example 2:* The distance between the Southdown and Henderson Delivery Points (on the North System) is found by subtracting the upstream station number from the downstream, ie:

Henderson station number	=	4300355
Southdown station number	=	4300015
Distance between these points	=	34.0 km

Tables 2.7.1, 2.7.2 and 2.7.3 show the station number, location and map grid reference of each Intake and Offtake Point.

Clause 23 (4) of the Regulations requires Vector to treat the following four transmission pipelines as separate transmission systems:

- North (ie north of Rotowaro)
- Central (ie Kapuni to Rotowaro including the Morrinsville sub-system)
- Bay of Plenty (ie east of Pokuru)
- South (ie south of Kapuni)

The Central System is currently divided into two sections, the Central (North) and Central (South). There is an interconnection between the Central (South) System and the Bay of Plenty System at Pokuru (No.2).

This report also includes the Frankley Rd to Kapuni transmission pipeline.

Therefore the transmission pipelines presented in this disclosure are:

- **North:** extending from the end of the Maui pipeline at Rotowaro (near Huntly) to Auckland, then through to Kauri north of Whangarei;
- **Central (North):** extending from Rotowaro to Hamilton (Temple View) and including the Morrinsville sub-system;

- **Central (South):** extending from the Kapuni Gas Treatment Plant to the interconnection to the Bay of Plenty System at Pokuru (“Pokuru No.2 Offtake”);
- **Bay of Plenty:** extending east from Pokuru (near Te Awamutu) on the Maui line to Tauranga, Taupo and Gisborne, etc;
- **South:** extending south from the Kapuni Gas Treatment Plant to Wellington and Hastings;
- **Frankley Rd to Kapuni:** extending from the Frankley Rd Offtake Station on the Maui pipeline near New Plymouth to the Kapuni Gas Treatment Plant, including laterals to the TCC Power Station and the Ammonia-Urea Plant.

For convenience a certain amount of information has been extracted from the attached schematics and presented in the following tables. Note that “MAOP” means the maximum allowable operating pressure of the pipeline.

## Table 2.1 North System

The pipeline consists of the following main sections (ie excluding minor laterals):

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Rotowaro - Papakura East Pressure Reducing Station	350	60.8	86
Papakura East Pressure Reducing Station - Southdown	350	28.4	66
Rotowaro - Papakura West	200	60.8	86
Ingram Rd - Glenbrook	150	23.0	86
Westfield - Henderson	200	35.5	66
Henderson - Whangarei Offtake	150	145.4	86
Whangarei - Kauri	100	21.5	86

## Table 2.2 Central (North) System

This pipeline consists of the following main sections

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Rotowaro - Te Kowhai	200	25.8	86
Te Kowhai - Te Rapa Offtake	150	6.3	86
Te Rapa lateral	200	1.3	86
Te Rapa Offtake - Horotiu East	150	1.0	86
Horotiu East - Kuranui Rd	100	24.8	86
Kuranui Rd - Cambridge	80	22.7	86
Kuranui Rd - Morrinsville	150	8.5	86
Morrinsville - Waitoa	100	9.4	86
Te Kowhai – Temple View	200	9.7	86

## Table 2.3 Central (South) System

This pipeline consists of the following main sections

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Kapuni - New Plymouth Offtake	200	52.9	86
New Plymouth lateral	80	10.5	86
New Plymouth - Mahoenui Compressor.	200	81.7	86
Mahoenui Compressor. – Pokuru No.2 Offtake	200	84.0	86
Pokuru No.2 Offtake – Temple View	200	24.5	86

## Table 2.4 Bay of Plenty System

This pipeline consists of the following main sections.

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Pokuru - Kinleith	300	78.8	86
Kinleith - Kawerau	200	103.1	86
Kawerau - Whakatane	100	13.7	86
Kawerau - Gisborne	100/200	184/17.3	86
Lichfield - Mt Maunganui Offtake	150/100	34.3/43.7	86
Taupo lateral	100/150	18.2/20.7	86
Rotorua lateral	80	18	86

## Table 2.5 South System

This pipeline consists of the following main sections. This system is extensively looped. Loops are tabulated separately.

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Kapuni GTP – Hawera	200	17.8	86
Hawera – Wanganui	200	79.9	86
Wanganui – Himatangi	200	51.4	86
Himatangi - Palmerston North O/T	150/80	23.8/23.8	86
Palmerston North – Hastings	150/200	5.8/123.5	86
Himatangi – Wellington	200	104.1	86

The looped sections of the system are:

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Hawera – Kaitoke Compressor	300	87.3	86
Otaki Tie-In – Belmont	300	55.7	86

## Table 2.6 Frankley Rd to Kapuni System

This pipeline consists of the following main sections.

Pipeline Segment	Nominal Bore (mm)	Length (km)	MAOP (bar g)
Frankley Rd - Derby Rd Compressor	500	22.3	66
Derby Rd – Pembroke Rd	500	5.5	66
Pembroke Rd – TCC Power Station	500	8.6	66
Pembroke Rd – Kapuni GTP	500	18.8	66
Kapuni – Ammonia Urea Offtake	100	0.5	86
Ammonia Urea Offtake - Lactose	100/200	1.5/1.3	86



**TABLE 2.7.1 LOCATION OF INTAKE AND OFFTAKE POINTS**

Ref. Schedule 1 Part 5, Clause 1 (1)

SYSTEM	INTAKE POINT	OFFTAKE POINT	STATION NUMBER	LOCATION		NZMS 260 GRID REFERENCE
<b>North</b>	Rotowaro		4002907	Waikokowai Rd	Huntly	S13 928027
		Alfriston	4190001	Phillip Rd	Manukau City	R11 842626
		Bruce McLaren	4380001	Bruce McLaren Rd	Glen Eden	R11 548763
		Drury 1 & 2	4003503	Waihoehoe Rd	Drury	R12 848533
		Flat Bush	4003677	131 Murphy's Rd	Flat Bush	R11 815670
		Glenbrook	4050230	Mission Bush Rd	Glenbrook	R12 642422
		Harrisville	2003197	Harrisville Rd	Harrisville	R12 838385
		Henderson	4300356	110 Amriens Rd	Taupaki	Q11 487837
		Hunua	4180001	Hunua Rd	Papakura	R12 848570
		Kauri	4350215	SH 1 (near Vinegar Hill Rd)	Kauri	Q06 283174
		Kingseat	4050141	Kingseat Rd	Patumahoe	R12 717453
		Marsden 1	4370069	Mair Rd	Marsden Point	Q07 459943
		Marsden 2	4370069	Mair Rd	Marsden Point	Q07 459943
		Maungaturoto DF	4330133	SH 12	Maungaturoto	Q08 343654
		Oakleigh	4301681	Whittle Rd	Oakleigh	Q07 316927
		Otahuhu B	4420025	Hellabys Rd	Otara	R11 762708
		Papakura	2003394	Hingaia Rd	Papakura	R12 817570
		Pukekohe	4050059	Butcher Rd	Pukekohe	R12 790452
		Ramarama	4170001	Ararimu Rd	Ramarama	R12 850489
		Southdown	4300015	Hugo Johnston Drive	Penrose	R11 731732
		Tuakau	2003168	Bollard Rd	Tuakau	R12 839356
		Waitoki	4310001	Kahikatea Flat Rd	Rodney	Q10 468064
		Waiuku	4050214	Glenbrook Rd	Glenbrook	R12 658422
		Warkworth	4320100	Woodcocks Rd	Warkworth	R09 585313
		Wellsford	4301075	Farmers Lime Rd	Wellsford	Q09 495466
		Westfield	4003810	Mt Wellington Highway	Westfield	R11 744738
Whangarei	4340091	Dyer St	Whangarei	Q07 294040		
<b>Central (North)</b>	Rotowaro		4002907	Waikokowai Rd	Huntly	S13 928027
		Cambridge	4070227	Bruntwood Rd	Cambridge	S15 269689
		Hamilton (Te Kowhai)	2080001	Limmer Rd	Hamilton	S14 008817
		Hamilton (Temple View)	2002431	Foster Rd	Temple View	S14 049733
		Horotiu	4020071	Horotiu Bridge Rd	Te Rapa	S14 048869
		Kiwitahi	4090014	Morrinsville - Walton Rd	Morrinsville	T14 348887
		Matangi	4080039	Tauwhare Rd	Matangi	S14 213747
		Morrinsville	4020406	Railway Yards	Morrinsville	T14 340907
		Morrinsville DF	4020406	Railway Yards	Morrinsville	T14 340907
		Tatuanui	4020470	SH 26	Tatuanui	T14 391942
		Tauwhare	4070131	Tauwhare Rd	Tauwhare	S14 237773
		Te Rapa	4100022	SH 1	Te Rapa	S14 054852
		Te Rapa Cogeneration	4100022	SH 1	Te Rapa	S14 054852
		Waitoa	4020500	Wood Rd	Waitoa	T14 422943
<b>Central (South)</b>	Kapuni		1000001	Palmer Rd	Kapuni	Q20 110918
		Eltham	2060076	North St	Eltham	Q20 213964
		Kaponga	2070053	Manaia Rd	Kaponga	P20 089976
		Inglewood	2010041	Tarata Rd	Inglewood	Q19 153267
		New Plymouth	2030105	195a Connett Rd East	New Plymouth	Q19 111409
		Stratford	2000192	Pembroke Rd	Stratford	Q20 157083
		Waitara	2030046	Waitara Rd	Waitara	Q19 168402

**TABLE 2.7.2 LOCATION OF INTAKE AND OFFTAKE POINTS**

Ref. Schedule 1 Part 5, Clause 1 (1)

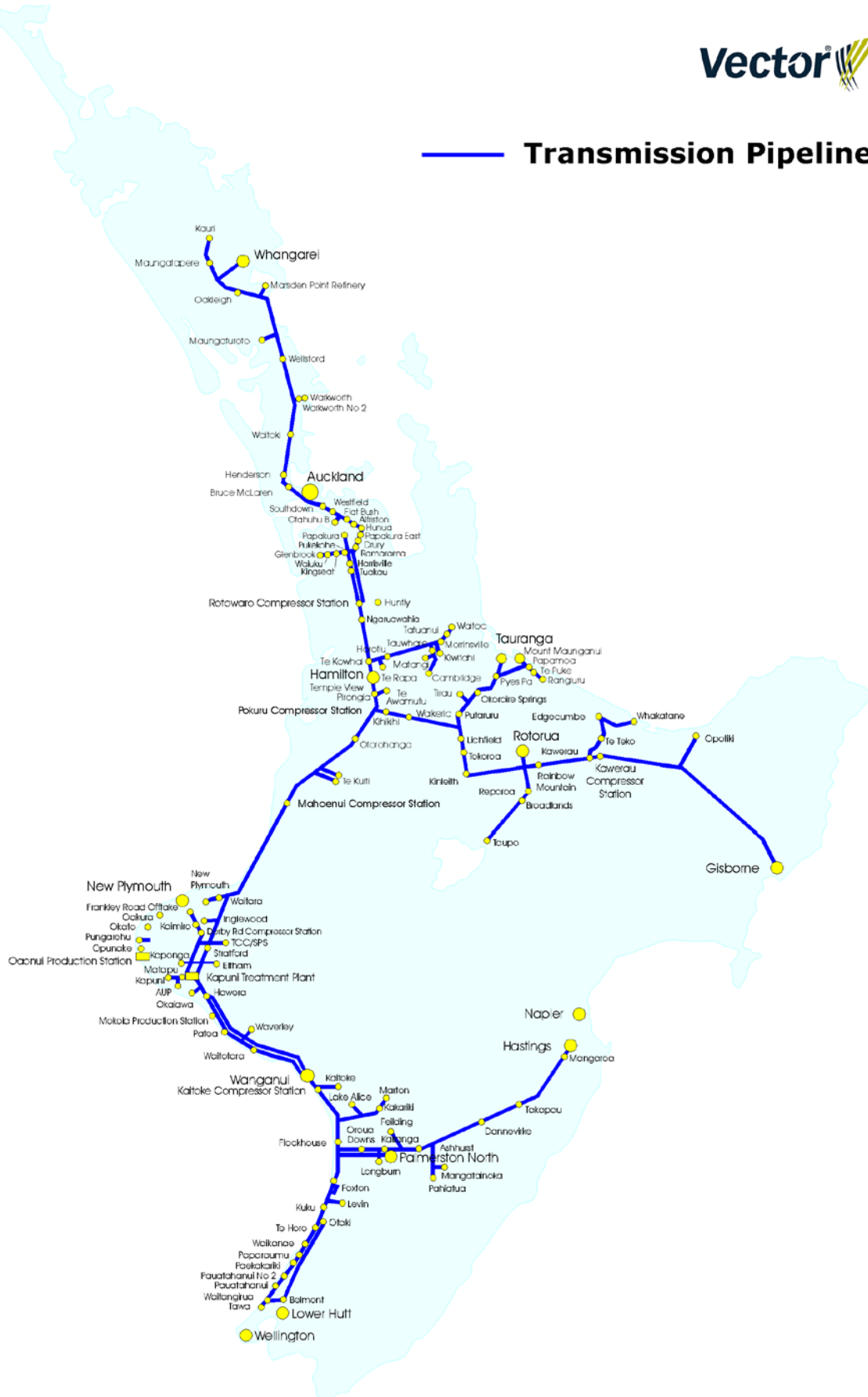
SYSTEM	INTAKE POINT	OFFTAKE POINT	STATION NUMBER	LOCATION		NZMS 260 GRID REFERENCE		
Bay of Plenty	Pokuru		4002308	Candy Rd	Te Awamutu	S15 040487		
		Broadlands	5100001	Broadlands Rd	Reporoa	U17 003944		
		Edgecumbe	5020192	Awakeri Rd	Edgecumbe	V15 470509		
		Edgecumbe DF	5020192	Awakeri Rd	Edgecumbe	V15 470509		
		Gisborne	5052013	Back Ormond Rd	Gisborne	Y18 442740		
		Kawerau	5001820	East Bank Rd	Kawerau	V15 361407		
		Kawerau (Caxton mill)	5001820	East Bank Rd	Kawerau	V15 361407		
		Kawerau (Tasman mill)	5001820	East Bank Rd	Kawerau	V15 361407		
		Kihikihi (Te Awamutu)	5000113	Brill Rd, Kihikihi	Te Awamutu	S15 148481		
		Kinleith	5010004	Off Old Taupo Rd	Kinleith	T16 618218		
		Kinleith (mill)	5000789	Off Old Taupo Rd	Kinleith	T16 618218		
		Lichfield DF	5090005	SH 1	Lichfield	T16 572370		
		Mt Maunganui	8040049	Truman Rd	Mt Maunganui	U14 951854		
		Okoroire Springs	8000175	Somerville Rd	Okoroire	T15 568568		
		Opotiki	5060044	Factory Rd	Opotiki	W15 848440		
		Papamoa	8000805	SH 2	Te Puke	U14 997818		
		Pyes Pa	8070001	Lakes Boulevard	Pyes Pa, Tauranga	U14 842802		
		Putaruru	8000044	SH 1	Putaruru	T15 549458		
		Rainbow Mountain	5001303	Okaro Rd	Rotomahana	U16 068167		
		Rangiuru	8050083	SH 2	Te Puke	U14 083734		
		Reporoa	5040182	SH 5	Parekarangi	U17 995034		
		Rotorua	5030180	SH 5	Rotorua	U16 948308		
		Taupo	5080389	269 Rakaunui Rd	Taupo	U18 812776		
		Tauranga	8030079	Birch Ave	Tauranga	U14 872843		
		Te Puke	8000888	Washer Rd	Te Puke	U14 023749		
		Te Teko	5020093	Matahina Rd	Te Teko	V15 432442		
		Tirau	8020020	Okoroire Rd	Tirau	T15 529549		
		Tirau DF	8020020	Okoroire Rd	Tirau	T15 529549		
		Tokoroa	5000720	Baird Rd	Tokoroa	T16 583270		
		Waikeria	5000176	Higham Rd	Kihikihi	S15 205474		
		Whakatane	5070137	Mill Rd	Whakatane	W15 580533		
		Frankley Rd to Kapuni	Frankley Rd		4000439	Frankley Rd	New Plymouth	P19 012304
				Ammonia-Urea Plant	3070002	Palmer Rd	Kapuni	Q20 105914
Kapuni (Lactose plant)	3060034			Manaia Rd	Kapuni	P20 079915		
Kapuni Gas Treatment Plant	1000001			Palmer Rd	Kapuni	Q20 110918		
TCC Power Station	3010002			189 East Rd	Stratford	Q20 237074		
Kupe	Kupe ICF Station		7590117	Palmer Road	Kapuni	Q20 113914		

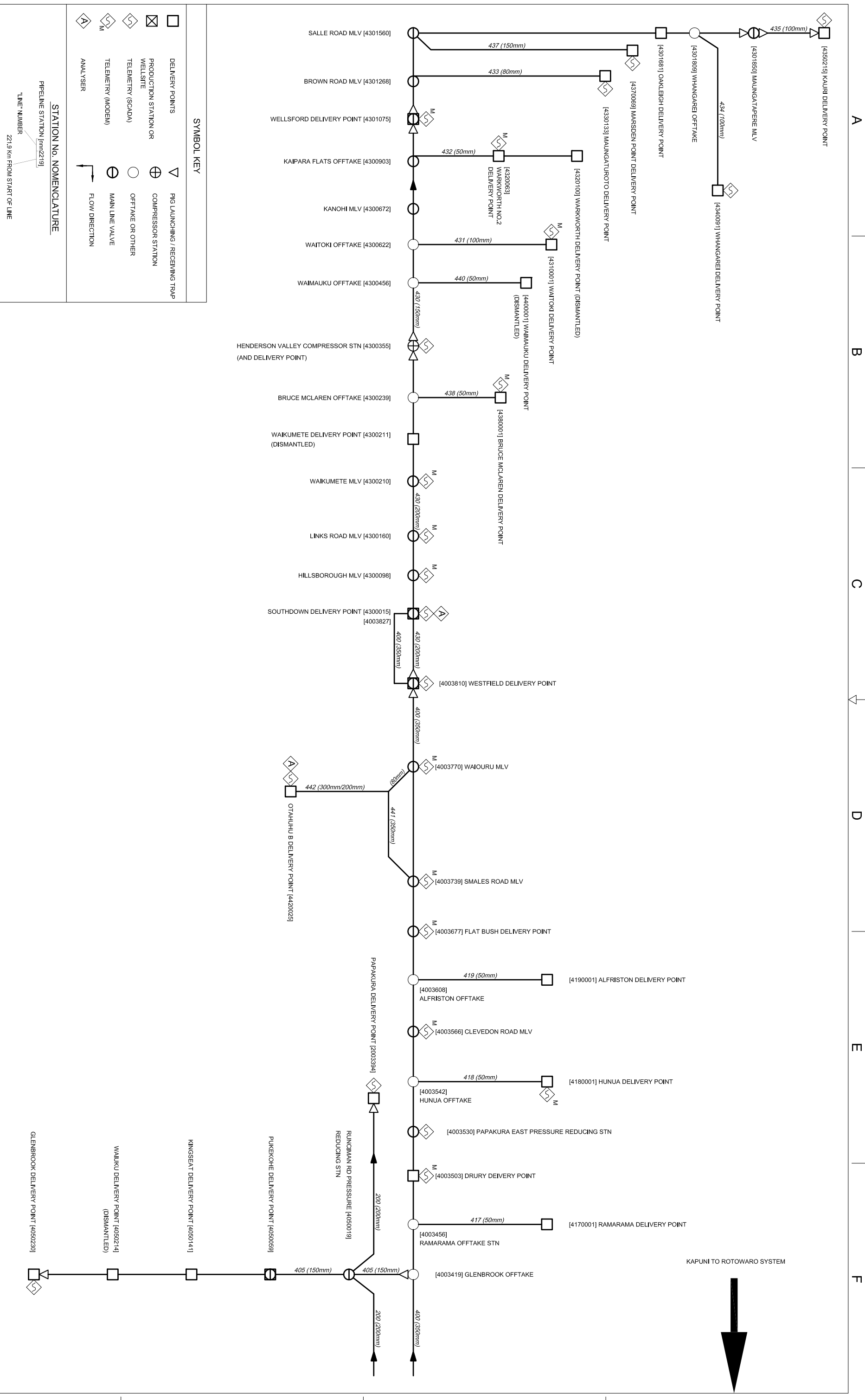
**TABLE 2.7.3 LOCATION OF INTAKE AND OFFTAKE POINTS**

Ref. Schedule 1 Part 5, Clause 1 (1)

SYSTEM	INTAKE POINT	OFFTAKE POINT	STATION NUMBER	LOCATION	NZMS 260 GRID REFERENCE	
South	Kapuni		1000001	Palmer Rd	Kapuni	Q20 110918
		Ashhurst	7050001	Saddle Rd	Ashhurst	T24 448993
	Belmont	1100028	Belmont Rd	Lower Hutt	R27 698033	
	Dannevirke	7000503	Rule Rd	Dannevirke	U23 721077	
	Feilding	1140087	Campbell Rd	Feilding	S23 044295	
	Flockhouse	1001420	Parewanui Rd	Bulls	S23 018001	
	Foxton	1001629	Foxton Beach Rd	Foxton	S24 021799	
	Hastings	7001531	Karamu Rd South	Hastings	V21 394660	
	Hawera	1000178	Fairfield Rd	Hawera	Q21 193769	
	Kairanga	1070244	Gillespies Line	Palmerston North	S24 278939	
	Kaitoke	1050041	Pauri Rd	Kaitoke	R22 055344	
	Kakariki	1150001	Cnr Makirikiri Rd & Goldings Line	Marton	S23 137200	
	Kuku	1160001	Kuku Beach Rd	Kuku	S25 934579	
	Lake Alice	1060013	Lake Alice Rd	Lake Alice	S23 093170	
	Levin	1090052	Hokio Beach Rd	Levin	S25 009621	
	Longburn	1080068	Reserve Rd	Longburn	S24 262889	
	Manaia	1010016	Kohiti Rd	Okaiawa	Q21 122857	
	Mangaroa	7001469	Bridge Pa Rd	Mangaroa	V21 339463	
	Mangatainoka	7030004	Kohinui Rd	Mangatainoka	T24 531832	
	Marton	1040212	Wings Line	Marton	S23 144208	
	Matapu	1000013	Skeet Rd	Kapuni	Q20 119907	
	Mokoia	1000266	Mokoia Rd	Mokoia	Q21 258715	
	Okaiawa	1010016	Kohiti Rd	Okaiawa	Q21 122857	
	Oroua Downs	1130051	SH 1 near Omanuka Rd	Oroua Downs	S24 087939	
	Otaki	1002005	off SH 1 next to Otaki River	Otaki	R25 892475	
	Paekakariki	1180001	SH 1	Paekakariki	R26 755231	
	Pahiatua	7020212	Mangahao Rd	Pahiatua	T24 491806	
	Palmerston North	1070272	Rangitikei Line	Palmerston North	T24 304934	
	Paraparaumu	1002236	Valley Rd	Paraparaumu	R26 793289	
	Patea	1000422	Victoria Rd	Patea	Q22 368589	
	Pauatahanui 1	1002455	Paekakariki Hill Rd	Paekakariki	R26 707117	
	Pauatahanui 2	1002423	Paekakariki Hill Rd	Pauatahanui	R26 730140	
	Takapau	7000844	SH 2 (Nancy St)	Takapau	U23 958266	
	Tawa A	1110077	Takapu Rd	Tawa	R27 635007	
	Tawa B	1190001	SH1	Tawa	R27 636008	
	Te Horo	1170001	Te Horo Beach Rd	Te Horo	R25 866438	
	Waikanae	1002164	Kauri Rd	Waikanae	R26 807347	
	Waitangirua	1002532	Track off Waihora Crescent	Porirua East	R27 684057	
	Waitotara	1000692	Waiinu Beach Rd	Waitotara	R22 586492	
	Wanganui	1000977	Karoro Rd	Wanganui	R22 824377	
	Waverley	1030058	Lower Okotuku Rd	Waverley	R22 536577	

**Transmission Pipelines**





**SYMBOL KEY**

	DELIVERY POINTS		PIG LAUNCHING / RECEIVING TRAP
	PRODUCTION STATION OR WELL SITE		COMPRESSOR STATION
	TELEMETRY (SCADA)		OFFTAKE OR OTHER
	TELEMETRY (MODEM)		MAIN LINE VALVE
	ANALYSER		FLOW DIRECTION

**STATION NO. NOMENCLATURE**

PIPELINE STATION [mm2219]

LINE NUMBER

221.9 km FROM START OF LINE

REV	AMENDMENT	DRAWN	CHKD	ENG	APPR	DATE
4	STATION NAMES & NUMBERS CHANGED	SKH	SKH	SKH		02/99
3	MURPHY'S RD REMOVED TO FLAT BUSH	SKH	SKH	SKH		09/99
2	WAITOKI LATERAL ADDED	SKH	SKH	SKH		08/99
1	430 LINE SIZE CORRECTED	SKH	SKH	SKH		02/2004
0	07AHUHU A DELIVERY POINT REMOVED	SKH	SKH	SKH		09/2000
0	07AHUHU B DELIVERY POINT REMOVED	SKH	SKH	SKH		09/2000
0	WARKWORTH NO. 2 DP ADDED	SKH	SKH	SKH		10/2006
0	MAUNGATUROTO DELIVERY POINT REMOVED	SKH	SKH	SKH		10/2006
0	REVISION FOR VECTOR RE-BRANDING	SKH	SKH	SKH		08/2006
0	WARKWORTH NO. 2 DP ADDED	SKH	SKH	SKH		10/2007
0	GENERAL REVISION	SKH	SKH	SKH		12/2007
0	GENERAL REVISION	SKH	SKH	SKH		08/2009
0	ADDITIONAL SECTION OF 400 LINE ADDED	SKH	SKH	SKH		07/2010

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PHONE 0800 734 567

ACTUAL DRAWING SIZE : A1 FRAME A1-ENGFR

**REFERENCE DRAWINGS**

BY	DATE
KCT	

**DISCLOSURE REGULATIONS**

**GENERAL**

PIPELINE SCHEMATIC - NORTH SYSTEM 200, 400, 430 LINES

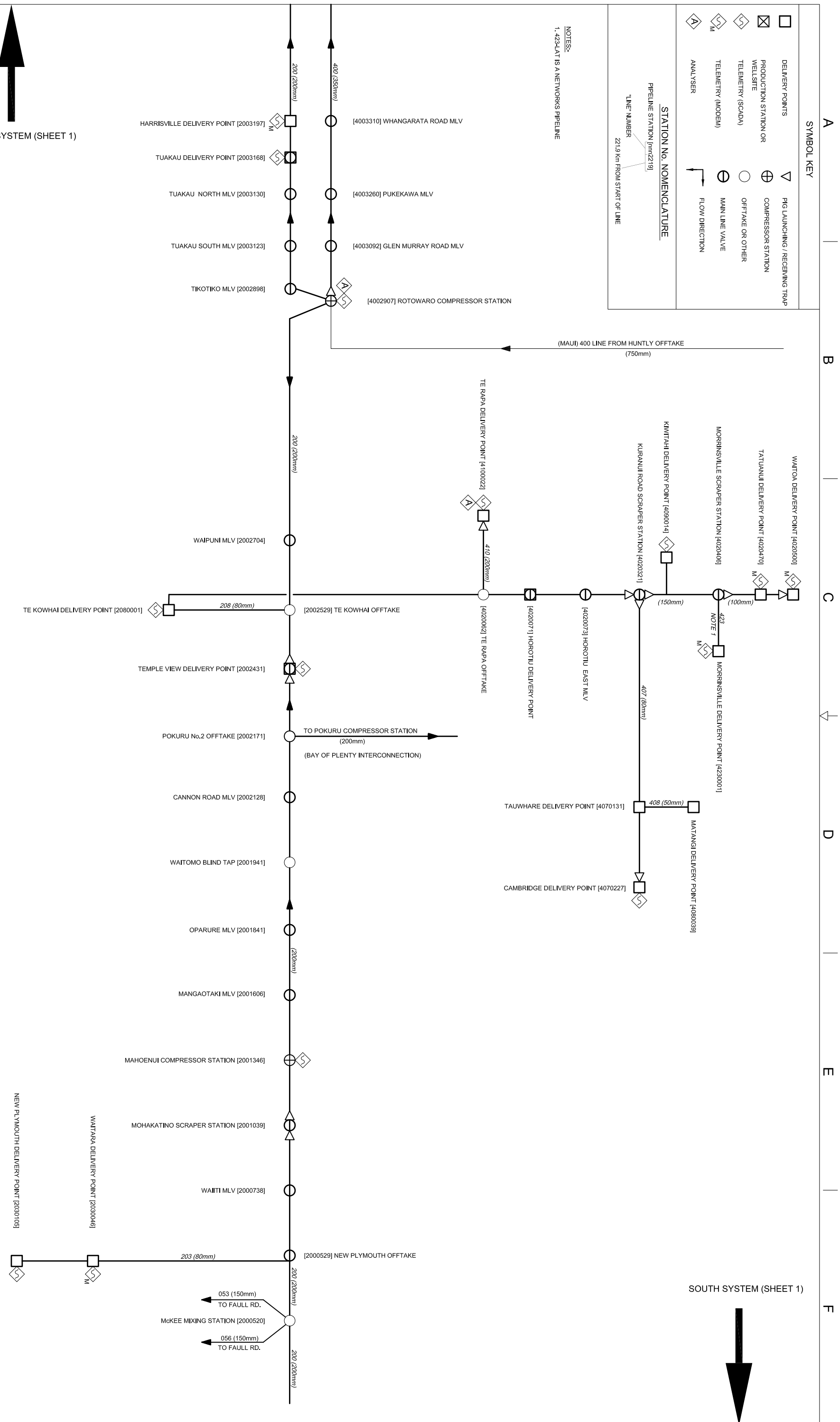
SCALES:	JOB NO.	SERIES	DRG NO.	SHT	REV
NTS	DIS-REG	0000	001	01	14

DO NOT SCALE OFF DRG

SYMBOL KEY	
	DELIVERY POINTS
	PRODUCTION STATION OR WELL SITE
	TELEMETRY (SCADA)
	TELEMETRY (MODEM)
	ANALYSER
	PIG LAUNCHING / RECEIVING TRAP
	COMPRESSOR STATION
	OFFTAKE OR OTHER
	MAIN LINE VALVE
	FLOW DIRECTION

STATION NO. NOMENCLATURE  
 PIPELINE STATION (mm2219)  
 LINE NUMBER  
 22.19 km FROM START OF LINE

NOTES:  
 1. 423-LAT IS A NETWORKS PIPELINE



REV	AMENDMENT	DRAWN	CHKD	ENG	APPR	DATE
1	TELEMETRY MODEM SITES INDICATED	SKH				02/99
2	STATION NAMES & NUMBERS CHANGED	SKH				02/99
3	POKURU No. 2 OFFTAKE ADDED	SKH				08/2000
4	TE RAPA SCADA REFERENCE ADDED	SKH				11/2003
5	STATION NAMES CORRECTED	SKH				02/2004
6	FLOW DIRECTIONS CORRECTED	SKH				08/2005
7	REVISED FOR VECTOR RE-BRANDING	SKH				08/2006
8	MODEM ADDED TO WAITARA DP	SKH				10/2007
9	GENERAL REVISION	SKH				12/2007
10	GENERAL REVISION	SKH				08/2009
11	GENERAL REVISION	SKH				07/2010

NORTH SYSTEM (SHEET 1)

SOUTH SYSTEM (SHEET 1)

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 NEW PLYMOUTH 4342  
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ACTUAL DRAWING SIZE : A1 FRAME A1-ENGFR

REFERENCE DRAWINGS

BY	DATE
KCT	

DISCLOSURE REGULATIONS

GENERAL

PIPELINE SCHEMATIC - KAPUNI TO ROTOWAROMORRINSVILLE SYSTEM

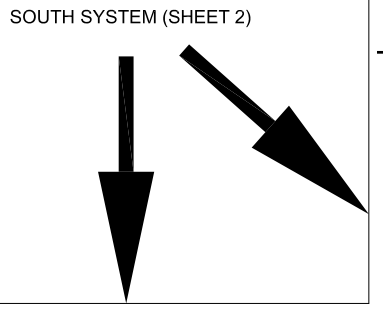
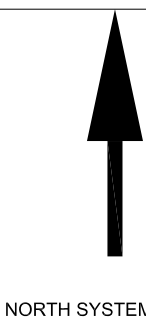
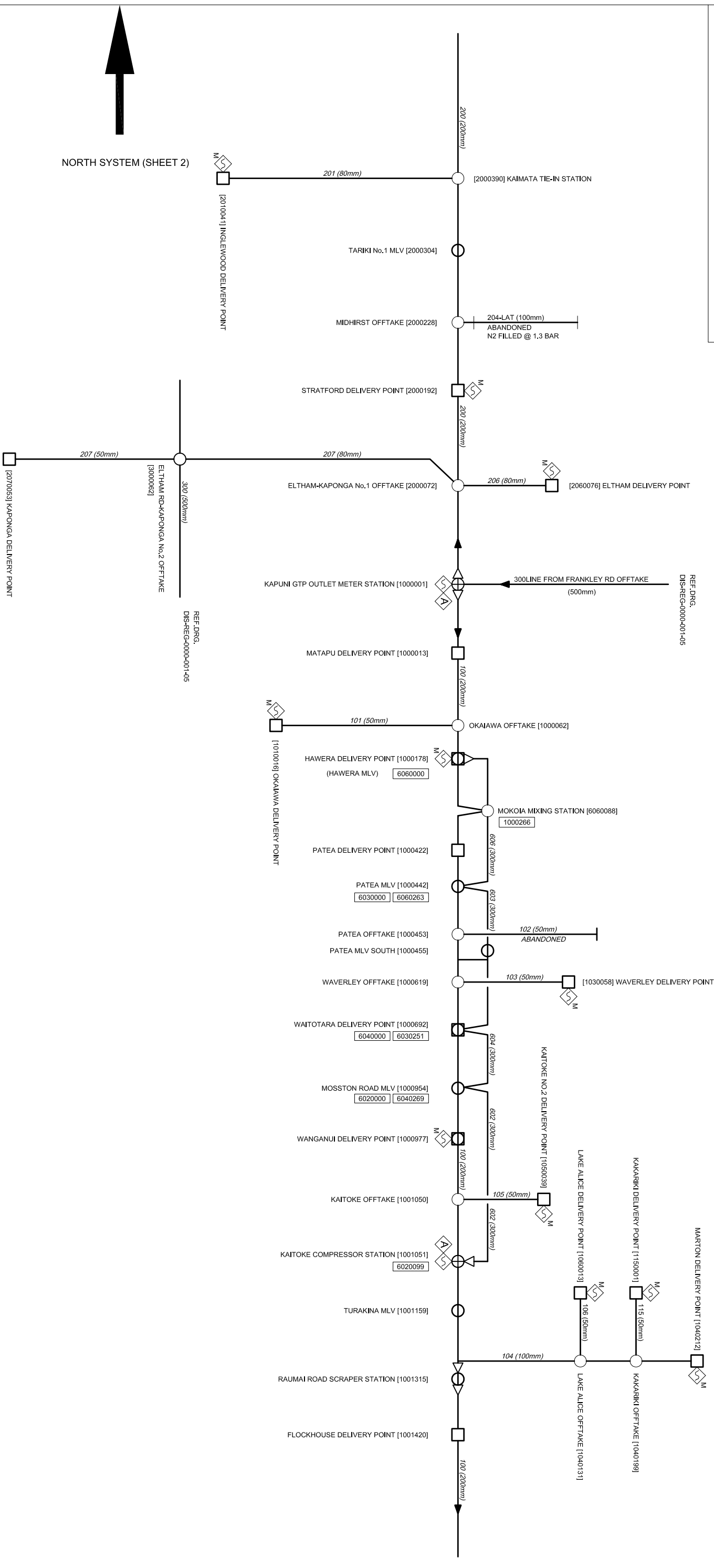
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NTS		0000	001	02 OF 06 SHTS	11

A B C D E F

**SYMBOL KEY**

	DELIVERY POINTS		PIG LAUNCHING / RECEIVING TRAP
	PRODUCTION STATION OR WELL SITE		COMPRESSOR STATION
	TELEMETRY (SCADA)		OFFTAKE OR OTHER
	TELEMETRY (MODEM)		MAIN LINE VALVE
	ANALYSER		FLOW DIRECTION

**STATION NO. NOMENCLATURE**  
 PIPELINE STATION [mm2219]  
 \*LINE NUMBER  
 22.19 km FROM START OF LINE



REV	AMENDMENT	DRAWN	CHKD	ENG	APPR	DATE
A	ISSUED FOR APPROVAL	SKH				07/06/96
1	TELEMETRY MODEM SITES INDICATED	SKH				09/98
2	STATION NAMES UPDATED	SKH				09/2000
3	NOTES ADDED	SKH				02/2004
4	MOKOIA MIXING STATION ADDED	SKH		RD/A		08/2005
5	INGLEWOOD OT CHANGED TO KAIMATA T/I	SKH				08/2006
6	REVISED FOR VECTOR RE-BRANDING	SKH				10/2007
7	MODEMS ADDED	SKH		HD		12/2007
8	GENERAL REVISION	SKH				08/2009
9	GENERAL REVISION	SKH				07/2010
10	GENERAL REVISION	SKH				

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**REFERENCE DRAWINGS**

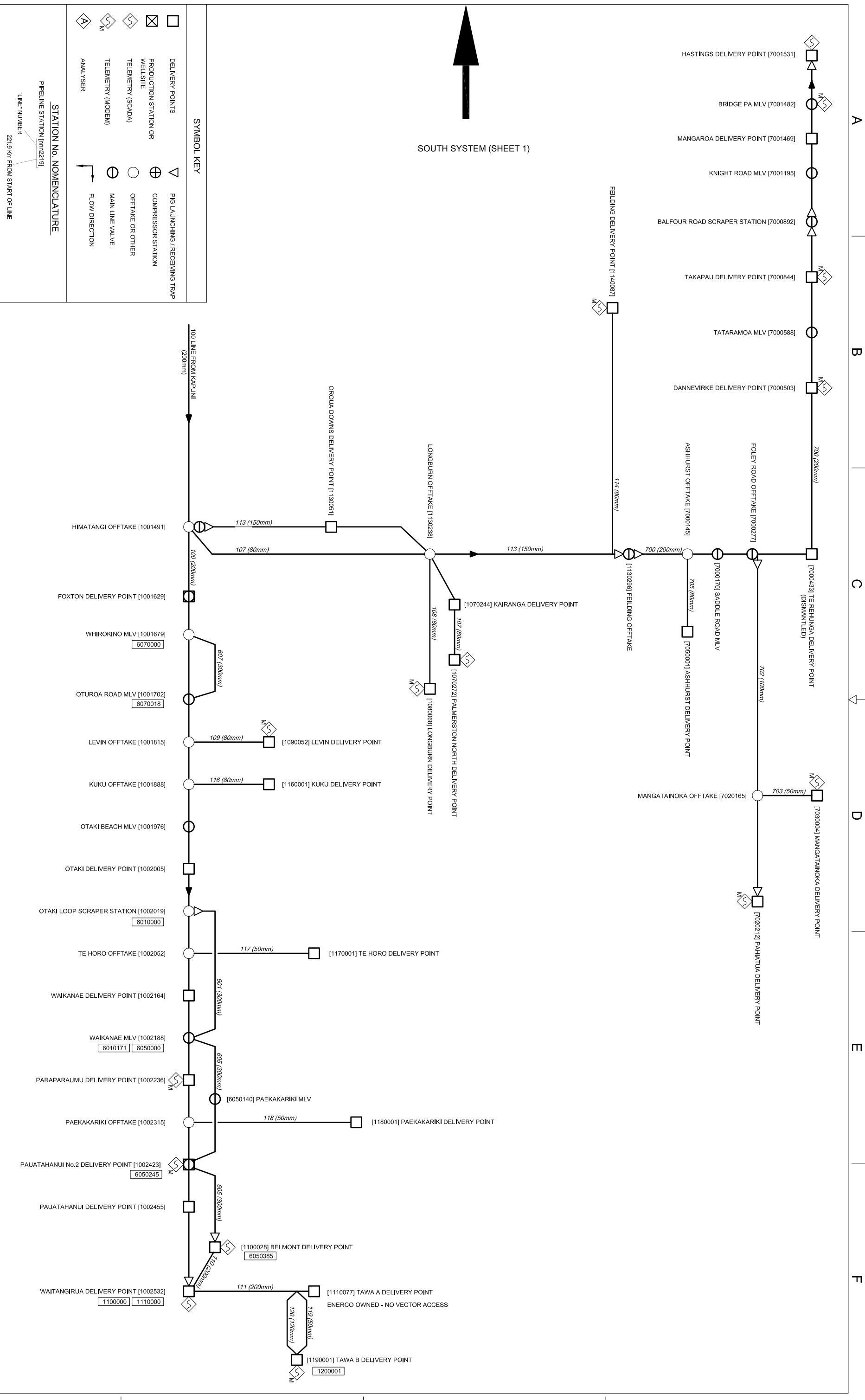
BY	DATE
KCT	

**DISCLOSURE REGULATIONS**

**GENERAL**  
 PIPELINE SCHEMATIC - SOUTH SYSTEM (SHEET 1)

SCALES:	JOB NO.	SERIES	DRG NO.	SHT OF	REV
NTS	DIS-REG	0000	001	03 OF 06	10

DO NOT SCALE OFF DRG



SOUTH SYSTEM (SHEET 1)

**SYMBOL KEY**

	DELIVERY POINTS		PIG LAUNCHING / RECEIVING TRAP
	PRODUCTION STATION OR WELL SITE		COMPRESSOR STATION
	TELEMETRY (SCADA)		OFFTAKE OR OTHER
	TELEMETRY (MODEM)		MAIN LINE VALVE
	ANALYSER		FLOW DIRECTION

**STATION NO. NOMENCLATURE**  
 PIPELINE STATION [mmzz19]  
 LINE NUMBER  
 221.9 km FROM START OF LINE

REV	AMENDMENT	DRAWN	CHKD	ENG	APPR	DATE
A	ISSUED FOR APPROVAL	KCT	.	.	.	07/06/96

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**REFERENCE DRAWINGS**

BY	DATE
KCT	

**DISCLOSURE REGULATIONS**

**GENERAL PIPELINE SCHEMATIC - SOUTH SYSTEM (SHEET 2)**

SCALES:	JOB NO.	SERIES	DRG NO.	SHT	REV
NTS	DIS-REG	0000	001	04	9

DO NOT SCALE OFF DRG

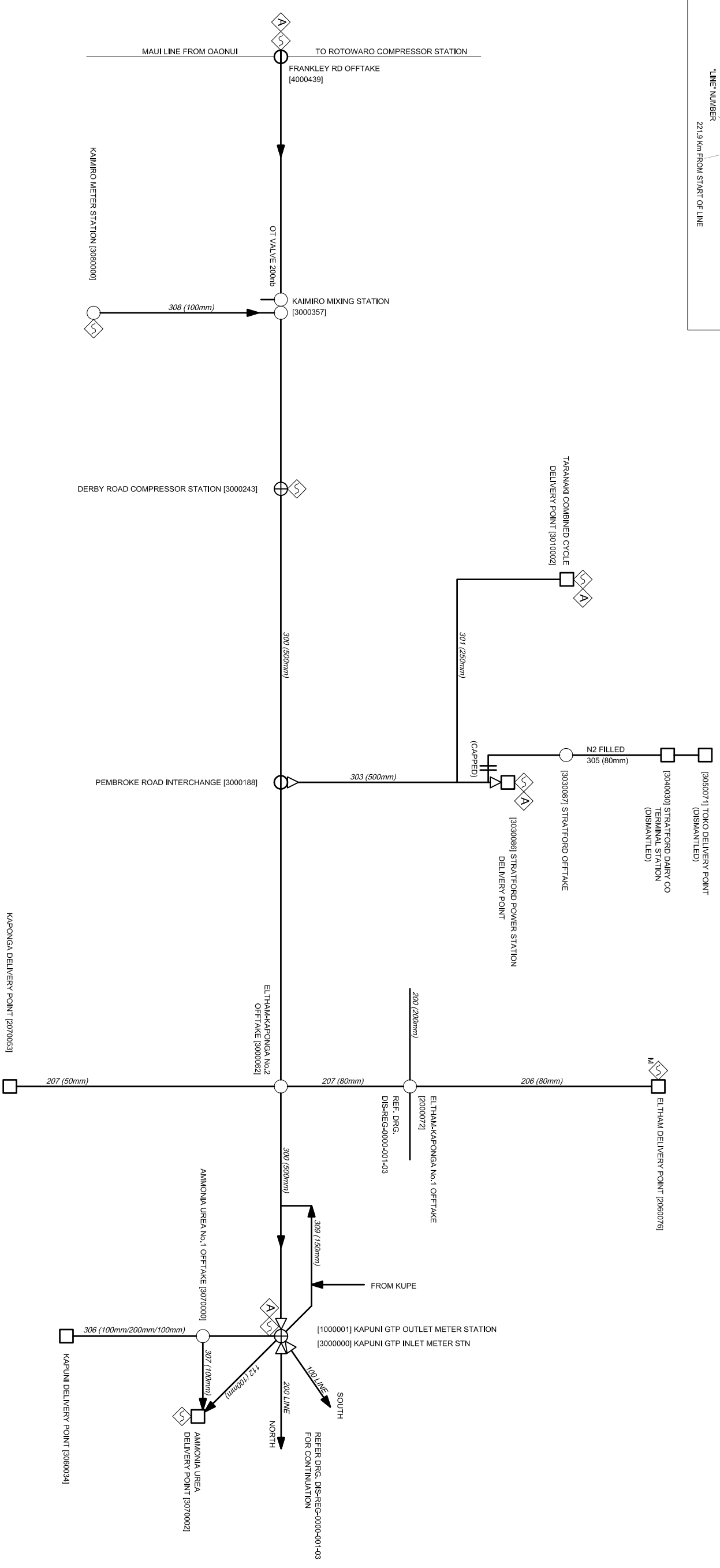


A B C D E F

**SYMBOL KEY**

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<input checked="" type="checkbox"/>	PRODUCTION STATION OR WELL SITE	<input type="checkbox"/>	COMPRESSOR STATION
<input type="checkbox"/>	TELEMETRY (SCADA)	<input type="checkbox"/>	OFFTAKE OR OTHER
<input type="checkbox"/>	TELEMETRY (MODEM)	<input type="checkbox"/>	MAIN LINE VALVE
<input type="checkbox"/>	ANALYSER	<input type="checkbox"/>	FLOW DIRECTION

**STATION NO. NOMENCLATURE**  
 PIPELINE STATION [mm2219]  
 LINE NUMBER  
 22.19 km FROM START OF LINE



REV	AMENDMENT	DRAWN	CHKD	ENG	APPR	DATE
A	ISSUED FOR APPROVAL	KCT	.	.	.	07/08/95
1	T.O.C. ADDED	SKH	.	.	.	09/98
2	STATION NAMES & NUMBERS CHANGED	SKH	.	.	.	02/99
3	FRANKLEY RD OFFTAKE ADDED	SKH	.	.	.	09/2000
4	KAPUNI COMPRESSOR STATION ADDED	AWJ	SKM	RD/A	SFI	02/2004
5	REVISED FOR VECTOR RE-BRANDING	SKM	AWJ	HD	SFI	08/2006
6	GENERAL REVISION	SKM	AWJ	DI	DI	12/2007
7	GENERAL REVISION	SKM	AWJ	.	DI	08/2009
8	KUPE CONNECTION ADDED	SKM	AWJ	DT	DI	07/2010

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**REFERENCE DRAWINGS**

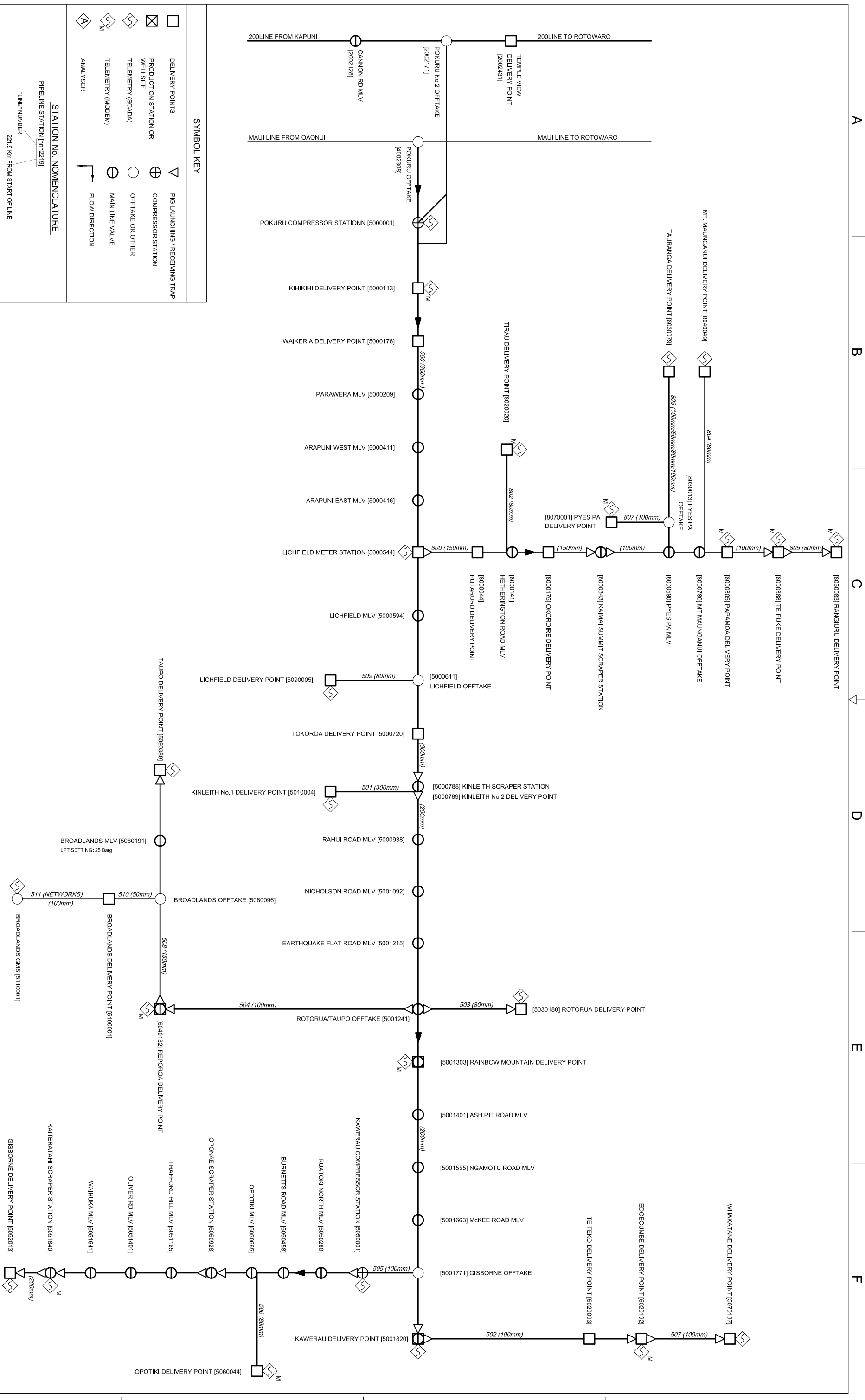
BY	DATE
KCT	
ENGINEER	
APPROVED	

**DISCLOSURE REGULATIONS**

**GENERAL**  
 PIPELINE SCHEMATIC - FRANKLEY ROAD TO KAPUNI

SCALES:  
 NTS  
 DO NOT SCALE OFF DRG

JOB NO.	SERIES	DRG NO.	SHT OF	REV
DIS-REG	0000	001	06 OF 05	8



**SYMBOL KEY**

	DELIVERY POINTS		PIG LAUNCHING / RECEIVING TRAP
	PRODUCTION STATION OR WELL SITE		COMPRESSOR STATION
	TELEMETRY (SCADA)		OFFTAKE OR OTHER
	TELEMETRY (MODEM)		MAIN LINE VALVE
	ANALYSER		FLOW DIRECTION

**STATION NO. NOMENCLATURE**

PIPELINE STATION [mm2219]

LINE NUMBER  
221.9 km FROM START OF LINE

**REVISIONS**

REV	AMENDMENT	DRAWN	CHKD	ENG	APPR	DATE
9	GENERAL REVISION	SKM	AWW	DT	DI	07/2010
8	GENERAL REVISION	SKM	AWW	-	DI	08/2009
7	GENERAL REVISION	SKM	AWW	HD	DI	12/2007
6	REVISED FROM SITE MARKUP W/O 980204	SKM	AWW	DT	PKR	05/2007
5	REVISED FOR VECTOR RE-BRANDING	SKM	AWW	SFI	SKM	08/2006
4	BROADLANDS OFFTAKE, DP & GMS ADDED	SKM	AWW	-	SKM	08/2005
3	200 LINE TIE-IN ADDED	SKH	-	-	-	09/2005
2	STATION NAMES CHANGED	SKH	-	-	-	02/99
1	TELEMETRY MODEM SITES INDICATED	SKH	-	-	-	03/98
A	ISSUED FOR APPROVAL	KCT	-	-	-	/ /

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ACTUAL DRAWING SIZE : A1 FRAME A1-ENGFR

**REFERENCE DRAWINGS**

BY	DATE
KCT	
CHECKED	DATE
ENGINEER	DATE
APPROVED	DATE

**DISCLOSURE REGULATIONS**

**GENERAL PIPELINE SCHEMATIC - BAY OF PLENTY SYSTEM**

SCALES:	JOB NO.	SERIES	DRG NO.	SHT OF	REV
NTS		0000	001	06	9
DO NOT SCALE OFF DRG	<b>DIS-REG</b>				

### **3. INTAKE POINTS** (Ref. Schedule 1 Part 5, Clause3)

In the year ending 30 June 2011 the Intake Points for Vector's transmission pipelines were as follows:

#### North System

In normal operation there is only a single Intake Point, at Rotowaro Compressor Station. All gas entering the North System there was received from the Maui Pipeline.

#### South System

There were two major Intake Points for the South System, namely the Kapuni Compressor Station and the Mokoia Mixing Station, South of Hawera. Mokoia has not been included in the analysis as a sole intake point due to its low injection volume into the system i.e. it cannot meet the peak week system demand by itself.

#### Central System

Rotowaro Compressor Station was the sole Intake Point for the Central (North) System.

The sole Intake Point for the Central (South) System was at the Kapuni Gas Treatment Plant.

#### Bay of Plenty System

Gas entered the Bay of Plenty System either through the Pokuru No.1 Intake Point (from the Maui pipeline) or the Pokuru No.2 Intake Point (from the Central (South) System).

The Pokuru No.1 and Pokuru No.2 Intake Points are located within a hundred metres or so of each other, adjacent to the Pokuru compressor station.

#### Frankley Rd System

Frankley Rd interchange is both an Intake Point and an Offtake Point as Frankley Rd has "bi-directional" two-way flow metering.

An additional injection point named Kupe now exists as a significant intake point for this system.

There is a minor intake point at Kaimiro which injects very low volumes and has not been included in the analysis as a sole injection point i.e. it cannot meet the peak week system demand by itself.

Gas from the KGTP may be able to enter the Frankley Rd system, on an interruptible basis.

Gas from the Ahuroa storage facility may also be able to enter the Frankley Road system but has not been included in the analysis as a sole injection point.

The analysis has been completed with the combined intake points of Kupe and Frankley Road only.

#### 4. OFFTAKE POINTS (Ref. Schedule 1 Part 5, Clause 4)

Tables 4.1 to 4.6, respectively, give the following information for each pipeline:

- Date of the system peak week
- The throughput of each Offtake Point in the system peak week
- For each Offtake Point with a throughput in the system peak week greater than 2,000 GJ, the dates of the Offtake Point's peak week
- For each Offtake Point with a throughput in the system peak week greater than 2,000 GJ, the Offtake Point's peak week throughput
- The average throughput in the system peak week of all Offtake Points with a throughput in the system peak week less than 2,000 GJ
- Total system throughput in the system peak week
- The theoretical numerical factor (ie multiplier) by which the throughput of each Offtake Point with a throughput in the system peak week greater than 2,000 GJ could have been increased, assuming:
  - the same load profile at each Offtake Point; and
  - no capital expenditure (ie no system expansion); and
  - no change in throughput at other Offtake Points
- The *increase* in weekly throughput after applying the above factor. (NB: If the factor is "x" the *increase* is  $(x-1) \times$  weekly throughput.)

**TABLE 4.1 NORTH TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 4 (4) (a) (b) and (c)

INTAKE POINT	OFFTAKE POINTS	SYSTEM PEAK WEEK		INCREASE WITH NO CAPEX <sup>1</sup>		OFFTAKE PEAK WEEK	
		Week Ending	Throughput (GJ)	(Factor)	(GJ)	Week Ending	Throughput (GJ)
Rotowaro		01-Aug-10	n/a	n/a	n/a	n/a	n/a
	<i>offtakes &gt; 2,000 GJ per week</i>						
	Otahuhu B power station	01-Aug-10	421,490	1.3	130,662	18-Jul-10	440,676
	Southdown power station	01-Aug-10	200,851	1.5	104,443	19-Dec-10	241,494
	Westfield	01-Aug-10	149,253	1.7	97,014	26-Sep-10	161,403
	Papakura	01-Aug-10	90,701	3.3	212,241	19-Jun-11	144,636
	Marsden <sup>2</sup>	01-Aug-10	42,365	n/a	n/a	22-May-11	67,843
	Glenbrook	01-Aug-10	38,576	4.1	118,429	19-Dec-10	48,956
	Henderson	01-Aug-10	31,984	4.1	98,190	18-Jul-10	32,726
	Harrisville	01-Aug-10	11,539	18.0	195,592	18-Jul-10	12,075
	Kauri	01-Aug-10	11,315	2.7	18,783	14-Nov-10	16,352
	Flat Bush	01-Aug-10	10,411	12.8	122,958	05-Sep-10	10,453
	Bruce McClaren	01-Aug-10	7,058	12.0	77,351	15-Aug-10	7,071
	Drury	01-Aug-10	6,319	35.6	218,776	01-Aug-10	6,319
	Hunua	01-Aug-10	5,969	21.0	119,499	19-Dec-10	8,310
	Warkworth	01-Aug-10	5,364	2.3	7,081	11-Jul-10	6,233
	Whangarei	01-Aug-10	3,350	11.4	34,944	11-Jul-10	3,369
	Waitoki	01-Aug-10	2,997	25.9	74,616	15-Aug-10	3,008
	Tuakau	01-Aug-10	2,957	62.3	181,243	22-May-11	3,659
			1,042,499				

<i>offtakes &lt; 2,000 per week</i>		
Pukekohe	01-Aug-10	1,113
Rama Rama	01-Aug-10	751
Alfriston	01-Aug-10	549
Kingseat	01-Aug-10	45
Wellsford	01-Aug-10	25
Oakleigh	01-Aug-10	0
Maungaturoto	01-Aug-10	0
		2,483

ie Average per Offtake < 2,000 GJ = 355

TOTAL THROUGHPUT 1,044,982

**Note:**

- Theoretical capacity assuming all other offtake points remain unchanged with no provision for operational 'headroom'. Factors do not take account of potential coincident peak flows from dominant generation load namely Otahuhu B & Southdown.
- This load was not included in the modelling to determine the factors for other Offtake Points.

**TABLE 4.2 CENTRAL (NORTH) TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 4 (4) (a) (b) and (c)

INTAKE POINT	OFFTAKE POINTS	SYSTEM PEAK WEEK		INCREASE WITH NO CAPEX <sup>1</sup>		OFFTAKE PEAK WEEK	
		Week Ending	Throughput (GJ)	(Factor)	(GJ)	Week Ending	Throughput (GJ)
Rotowaro		22-Aug-10	n/a	n/a	n/a	n/a	n/a
	<i>offtakes &gt; 2,000 GJ per week</i>		0				
	Te Rapa Cogeneration <sup>2</sup>	22-Aug-10	118,148	1.9	103,970	22-Aug-10	118,148
	Hamilton Temple View	22-Aug-10	23,805	4.0	70,226	18-Jul-10	29,097
	Hamilton Te Kowhai	22-Aug-10	13,572	6.4	73,287	25-Jul-10	17,697
	Morrinsville DF	22-Aug-10	10,212	4.2	32,474	07-Nov-10	12,381
	Cambridge	22-Aug-10	9,551	2.1	10,698	07-Nov-10	14,683
	Waitoa	22-Aug-10	7,190	4.3	23,438	22-May-11	8,602
	Kiwitahi (Peroxide)	22-Aug-10	6,204	6.5	34,121	05-Jun-11	6,761
	Tatuanui DF	22-Aug-10	5,153	6.6	29,012	31-Oct-10	6,549
			193,835				

<i>offtakes &lt; 2,000 per week</i>		
Morrinsville	22-Aug-10	1,295
Horotiu	22-Aug-10	1,257
Kiwitahi	22-Aug-10	161
Matangi	22-Aug-10	20
		2,733

ie Average per Offtake < 2,000 GJ = 683

TOTAL THROUGHPUT 196,568

**Note:**

1. Theoretical capacity assuming all other offtake points remain unchanged with no provision for operational 'headroom'.
2. Actual Te Rapa Cogeneration load has dominant impact on available capacity

**TABLE 4.3 CENTRAL (SOUTH) TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 4 (4) (a) (b) and (c)

INTAKE POINT	OFFTAKE POINTS	SYSTEM PEAK WEEK		INCREASE WITH NO CAPEX <sup>1</sup>		OFFTAKE PEAK WEEK	
		Week Ending	Throughput (GJ)	(Factor)	(GJ)	Week Ending	Throughput (GJ)
Kapuni		15-Aug-10	n/a	n/a	n/a	n/a	n/a
	<i>offtakes &gt; 2,000 GJ per week</i>						
	Pokuru 2 <sup>2</sup>	n/a	0	n/a	n/a	n/a	n/a
	New Plymouth	15-Aug-10	20,989	1.8	16,371	15-Aug-10	20,989
	Eltham	15-Aug-10	3,208	14.6	43,753	27-Mar-11	3,506
	Waitara	15-Aug-10	1,944	15.0	27,301	18-Jul-10	2,532
	Stratford	15-Aug-10	1,981	33.0	63,377	11-Jul-10	2,182
			28,122				

<i>offtakes &lt; 2,000 per week</i>		
Inglewood	15-Aug-10	750
Kaponga	15-Aug-10	52
		802

ie Average per Offtake < 2,000 GJ = 401

TOTAL THROUGHPUT 28,924

Notes:

1. Theoretical capacity assuming all other offtake points remain unchanged with no provision for operational 'headroom'.
2. The throughput for Pokuru 2 represents a flat profile of 0 scm/s during the Central South peak week.

**TABLE 4.4 BAY OF PLENTY TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 4 (4) (a) (b) and (c)

INTAKE POINT	OFFTAKE POINTS	SYSTEM PEAK WEEK		INCREASE WITH NO CAPEX <sup>1</sup>		OFFTAKE PEAK WEEK	
		Week Ending	Throughput (GJ)	(Factor)	(GJ)	Week Ending	Throughput (GJ)
Pokuru		12-Sep-10	n/a	n/a	n/a	n/a	n/a
	<i>offtakes &gt; 2,000 GJ per week</i>						
	Kinleith (Mill)	12-Sep-10	71,595	2.4	100,233	18-Jul-10	79,285
	Edgecumbe DF	12-Sep-10	29,834	2.0	30,729	24-Oct-10	32,896
	Reporoa	12-Sep-10	14,069	5.2	59,088	07-Nov-10	16,348
	Whakatane <sup>2</sup>	12-Sep-10	12,773	2.9	23,631	24-Apr-11	15,951
	Kawerau (Tasman)	12-Sep-10	11,360	10.1	102,804	26-Jun-11	12,549
	Lichfield DF	12-Sep-10	10,543	15.6	153,934	24-Oct-10	12,180
	Mt Maunganui	12-Sep-10	10,340	3.4	24,919	24-Oct-10	10,989
	Rotorua	12-Sep-10	9,310	2.6	15,175	01-Aug-10	11,871
	Tirau DF	12-Sep-10	8,620	10.2	79,560	07-Nov-10	9,578
	Kawerau (Caxton)	12-Sep-10	7,061	9.8	61,785	15-Aug-10	12,473
	Tauranga	12-Sep-10	5,200	3.4	12,428	01-Aug-10	6,416
	Gisborne	12-Sep-10	4,915	4.5	17,301	20-Mar-11	12,638
	Taupo	12-Sep-10	3,012	13.1	36,323	11-Jul-10	4,104
	Papamoa	12-Sep-10	2,593	9.0	20,692	11-Jul-10	2,887

201,224

<i>offtakes &lt; 2,000 per week</i>		
Putaruru	12-Sep-10	1,935
Tokoroa	12-Sep-10	1,833
Rangiuru	12-Sep-10	1,456
Broadlands	12-Sep-10	1,322
Kihikihi	12-Sep-10	1,321
Waikeria	12-Sep-10	739
Pyes Pa	12-Sep-10	646
Te Puke	12-Sep-10	554
Kinleith	12-Sep-10	391
Kawerau	12-Sep-10	209
Opotiki	12-Sep-10	154
Tirau	12-Sep-10	112
Okoroire Springs	12-Sep-10	13
Te Teko	12-Sep-10	92
Edgecumbe	12-Sep-10	10

10,787

ie Average per Offtake < 2,000 GJ = 719

TOTAL THROUGHPUT

212,011

**Note:**

1. Theoretical capacity assuming all other offtake points remain unchanged with no provision for operational 'headroom'.
2. The throughput for Whakatane offtake includes the Board Mills since they are downstream of the offtake point.



**TABLE 4.5 FRANKLEY RD TO KAPUNI TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 4 (4) (a) (b) and (c)

INTAKE POINT	OFFTAKE POINTS	SYSTEM PEAK WEEK		INCREASE WITH NO CAPEX <sup>1</sup>		OFFTAKE PEAK WEEK	
		Week Ending	Throughput (GJ)	(Factor)	(GJ)	Week Ending	Throughput (GJ)
Frankley Rd + Kupe		15-Aug-10	n/a	n/a	n/a	n/a	n/a
	<i>offtakes &gt; 2,000 GJ per week</i>						
	TCC power station	15-Aug-10	361,715	1.4	151,920	19-Dec-10	432,197
	Kapuni GTP/Maui Bypass	15-Aug-10	254,847	1.6	158,005	26-Sep-10	300,298
	Ammonia-Urea Plant	15-Aug-10	65,606	3.0	131,212	07-Nov-10	72,483
			682,168				

*offtakes < 2,000 per week*

Lactose	15-Aug-10	254
		254

ie Average per Offtake < 2,000 GJ = 254

TOTAL THROUGHPUT 682,422

Note:

1. Theoretical capacity assuming all other offtake points remain unchanged with no provision for operational 'headroom'.

**TABLE 4.6 SOUTH TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 3 and Clause 4 (4) (a) (b) and (c)

INTAKE POINT	OFFTAKE POINTS	SYSTEM PEAK WEEK		INCREASE WITH NO CAPEX <sup>1</sup>		OFFTAKE PEAK WEEK	
		Week Ending	Throughput (GJ)	(Factor)	(GJ)	Week Ending	Throughput (GJ)
Kapuni + Rimu		11-Jul-10	n/a	n/a	n/a	n/a	n/a
	<i>offtakes &gt; 2,000 GJ per week</i>						
	Tawa A+B	11-Jul-10	75,387	1.8	63,325	11-Jul-10	75,387
	Belmont	11-Jul-10	47,502	2.3	63,178	18-Jul-10	47,991
	Hastings	11-Jul-10	40,040	2.4	56,457	10-Apr-11	47,963
	Palmerston Nth	11-Jul-10	28,701	2.2	33,580	01-Aug-10	30,038
	Wanganui	11-Jul-10	18,755	3.6	48,763	22-May-11	22,415
	Waitanguru (AGL)	11-Jul-10	8,500	8.2	61,200	01-Aug-10	8,857
	Okaiawa	11-Jul-10	8,329	4.9	32,317	19-Dec-10	9,799
	Levin	11-Jul-10	7,474	5.7	35,052	11-Jul-10	7,474
	Hawera	11-Jul-10	6,289	10.3	58,488	17-Oct-10	14,305
	Marton	11-Jul-10	5,044	12.1	56,086	17-Oct-10	5,120
	Feilding	11-Jul-10	4,947	8.4	36,655	11-Jul-10	4,947
	Paraparaumu	11-Jul-10	4,835	14.4	64,744	11-Jul-10	4,835
	Longburn	11-Jul-10	4,202	11.3	43,241	24-Oct-10	6,609
	Pauatahanui 1	11-Jul-10	2,127	32.7	67,311	11-Jul-10	2,127
	Takapau	11-Jul-10	2,223	23.0	48,904	12-Dec-10	3,292
			264,355				

<i>offtakes &lt; 2,000 per week</i>		
Waikanae	11-Jul-10	1,843
Dannevirke	11-Jul-10	1,294
Kakariki	11-Jul-10	1,086
Lake Alice	11-Jul-10	894
Foxton	11-Jul-10	789
Waverley	11-Jul-10	748
Manaia	11-Jul-10	696
Patea	11-Jul-10	685
Mangaroa	11-Jul-10	660
Otaki	11-Jul-10	632
Kaitoke	11-Jul-10	612
Waitotara	11-Jul-10	491
Oroua Downs	11-Jul-10	474
Pahiatua	11-Jul-10	380
Ashhurst	11-Jul-10	227
Kairanga	11-Jul-10	225
Mangatainoka	11-Jul-10	208
Pauatahanui 2	11-Jul-10	30
Kuku	11-Jul-10	25
Te Horo	11-Jul-10	17
Matapu	11-Jul-10	11
Flockhouse	11-Jul-10	4
		12,029

ie Average per Offtake < 2,000 GJ = 547

TOTAL THROUGHPUT 276,384

Note:

1. Theoretical capacity assuming all other offtake points remain unchanged with no provision for operational 'headroom'.

## **5. FURTHER DISCLOSURE: OFFTAKE POINTS WITH THROUGHPUT LESS THAN 2,000 GJ/WEEK**

(Ref. Schedule 1 Part 5, Clause 5)

Tables 4.1 to 4.6, respectively, also show for each pipeline the following information in respect of each Offtake Point with a throughput in the system peak week less than 2,000 GJ:

- Throughput of each such Offtake Point in the system peak week
- Total throughput of all such Offtake Points in the system peak week
- Average throughput of all such Offtake Points in the system peak week

## 6. CRITICAL POINTS OF TRANSMISSION SYSTEMS

(Ref. Schedule 1 Part 5, Clause 6)

Tables 6.1 to 6.6, respectively, show for each pipeline the following information in relation to each Offtake Point with a throughput in the system peak week greater than 2,000 GJ:

- The factor by which the throughput of the Offtake Point could have been increased in the system peak week assuming no capital expenditure on the Offtake Point for the increased throughput.
- The critical point or section of pipeline providing the first or principal constraint on increased throughput at the Offtake Point in the system peak week.
- A brief statement of *a* possible means to remove the constraint.
- An estimate of the increase in throughput at the Offtake Point given the removal of the constraint.
- An estimate of the capital cost to remove the system constraint on the estimated increased throughput excluding upgrade of the intake or offtake points.

**TABLE 6.1 NORTH TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 6 (2) (a) (b) and (c)

**SYSTEM PEAK WEEK: Week Ending 1 August 2010**

OFFTAKE POINTS	INCREASE WITH NO CAPEX		CRITICAL POINT(S) LIMITING THROUGHPUT	MEANS TO REMOVE LIMITATION	CAPITAL COST <sup>1</sup> (\$000)	INCREASE (Limit removed)	
	(Factor)	(GJ)				(Factor)	(GJ)
Otahuhu B power station	1.3	130,662	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	1.7	286,613
Southdown power station	1.5	104,443	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	2.1	224,953
Westfield	1.7	97,014	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	2.4	214,924
Papakura	3.3	212,241	Runciman Rd to Papakura pipeline	Runciman Rd to Papakura pipeline loop (11.8 km)	13,300	3.7	241,266
Glenbrook	4.1	118,429	Runciman Rd to Glenbrook DP	Loop Runciman Rd to Glenbrook DP	22,000	5.7	179,379
Henderson	4.1	98,190	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	5.8	152,883
Harrisville	18.0	195,592	Runciman Rd to Glenbrook DP	Loop Runciman Rd to Glenbrook DP	22,000	18.6	203,093
Kauri	2.7	18,783	Kauri Delivery Point	Loop Kauri DP	7,000	3.0	22,064
Flat Bush	12.8	122,958	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	25.2	251,851
Bruce McClaren	12.0	77,351	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	14.5	95,066
Drury	35.6	218,776	Ingram to papakura East	Ingram to papakura East Loop (10 km)	11,000	49.0	303,329
Hunua	21.0	119,499	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	35.0	202,945
Warkworth	2.3	7,081	Warkworth lateral pipeline	Loop Warkworth Lateral	5,300	3.7	14,537
Whangarei	11.4	34,944	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	12.9	40,003
Waitoki	25.9	74,616	Papakura East to Smales Rd pipeline	Loop Papakura East to Smales Rd MLV	40,000	32.1	93,195
Tuakau	62.3	181,243	Runciman Rd to Glenbrook DP	Loop Runciman Rd to Glenbrook DP	22,000	64.4	187,451

Note:

1. Capital Cost estimates exclude the cost of upgrading the Intake or Offtake Points (if required) for the increased throughput.

Reinforcement unit costs have been updated based on recent studies.

**TABLE 6.2 CENTRAL (NORTH) TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 6 (2) (a) (b) and (c)

**SYSTEM PEAK WEEK: Week Ending 22 August 2010**

OFFTAKE POINTS	INCREASE WITH NO CAPEX		CRITICAL POINT(S) LIMITING THROUGHPUT	MEANS TO REMOVE LIMITATION	CAPITAL COST <sup>1</sup> (\$000)	INCREASE (Limit removed)	
	(Factor)	(GJ)				(Factor)	(GJ)
Te Rapa Cogeneration	1.9	103,970	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	2.7	200,852
Hamilton Temple View	4.0	70,226	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	6.8	138,548
Hamilton Te Kowhai	6.4	73,287	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	11.7	145,081
Morrinsville DF	4.2	32,474	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	4.6	36,967
Cambridge	2.1	10,698	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	2.3	11,939
Waitoa	4.3	23,438	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	4.6	25,954
Kiwitahi (Peroxide)	6.5	34,121	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	7.2	38,650
Tatuanui DF	6.6	29,012	Te Kowhai to Te Rapa pipeline	Loop Te Kowhai to Te Rapa pipeline	7,900	7.4	32,928

Note:

1. Capital Cost estimates exclude the cost of upgrading the Intake or Offtake Points (if required) for the increased throughput.

**TABLE 6.3 CENTRAL (SOUTH) TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 6 (2) (a) (b) and (c)

**SYSTEM PEAK WEEK: Week Ending 15 August 2010**

OFFTAKE POINTS	INCREASE WITH NO CAPEX		CRITICAL POINT(S) LIMITING THROUGHPUT	MEANS TO REMOVE LIMITATION	CAPITAL COST <sup>1</sup> (\$000)	INCREASE (Limit removed)	
	(Factor)	(GJ)				(Factor)	(GJ)
<i>Pokuru 2</i>	<i>n/a</i>		<i>Kapuni - Mahoenui - Pokuru pipeline</i>				
New Plymouth	1.8	16,371	New Plymouth lateral	Loop New Plymouth lateral (4.6 km)	4,216	2.3	26,656
Eltham	14.6	43,753	Eltham lateral	Loop Eltham lateral	5,600	32.0	99,278
Waitara	15.0	27,301	New Plymouth lateral	Loop New Plymouth lateral (4.6 km)	4,216	34.9	65,918
Stratford	33.0	63,377	Kapuni compressor	Upgrade Kapuni compressor + loop Stratford to Eltham	24,400	65.0	126,755

Note:

1. Capital Cost estimates exclude the cost of upgrading the Intake or Offtake Points (if required) for the increased throughput.

**TABLE 6.4 BAY OF PLENTY TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 6 (2) (a) (b) and (c)

**SYSTEM PEAK WEEK: Week Ending 12 September 2010**

OFFTAKE POINTS	INCREASE WITH NO CAPEX		CRITICAL POINT(S) LIMITING THROUGHPUT	MEANS TO REMOVE LIMITATION <sup>2</sup>	CAPITAL COST <sup>1</sup> (\$000)	INCREASE (Limit removed)	
	(Factor)	(GJ)				(Factor)	(GJ)
Kinleith (Mill)	2.4	100,233	Pokuru compression	Upgrade Pokuru	16,555	3.2	156,077
Edgecumbe DF	2.0	30,729	Pokuru compression	Upgrade Pokuru	16,555	2.3	39,978
Reporoa	5.2	59,088	Pokuru compression	Upgrade Pokuru	16,555	5.9	69,358
Whakatane 2	2.9	23,631	Pokuru compression	Upgrade Pokuru	16,555	3.4	30,529
Kawerau (Tasman)	10.1	102,804	Pokuru compression	Upgrade Pokuru	16,555	12.3	128,704
Lichfield DF	15.6	153,934	Pokuru compression	Upgrade Pokuru	16,555	17.4	172,386
Mt Maunganui	3.4	24,919	Pokuru compression	Upgrade Pokuru	16,555	3.9	29,778
Rotorua	2.6	15,175	Rotorua Lateral + Pokuru compression	Loop Rotorua lateral and upgrade Pokuru	24,450	5.7	44,129
Tirau DF	10.2	79,560	Pokuru compression	Upgrade Pokuru	16,555	11.4	89,645
Kawerau (Caxton)	9.8	61,785	Pokuru compression	Upgrade Pokuru	16,555	11.9	77,108
Tauranga	3.4	12,428	Tauranga Lateral	Loop Tauranga lateral and upgrade Pokuru	21,745	7.5	33,748
Gisborne	4.5	17,301	Gisborne lateral + Pokuru compression	Loop Gisborne and Upgrade Pokuru (10km)	28,555	5.5	22,216
Taupo	13.1	36,323	Taupo Lateral + Pokuru compression	Loop Taupo lateral and upgrade Pokuru	28,000	16.9	47,918
Papamoa	8.98	20,692	Papamoa Pipeline	Loop Papamoa to Te Puke	4,350	11.0	25,930

Note:

1. Capital Cost estimates exclude the cost of upgrading the Intake or Offtake Points (if required) for the increased throughput.
2. The increased flow through some laterals would approach the limit of acceptable velocity. If the laterals were to be looped even larger increases would be possible, provided also that Pokuru compression was upgraded accordingly.



**TABLE 6.5 FRANKLEY RD TO KAPUNI TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 6 (2) (a) (b) and (c)

**SYSTEM PEAK WEEK: Week Ending 15 August 2010**

OFFTAKE POINTS	INCREASE WITH NO CAPEX		CRITICAL POINT(S) LIMITING THROUGHPUT	MEANS TO REMOVE LIMITATION	CAPITAL COST <sup>1</sup> (\$000)	INCREASE (Limit removed)	
	(Factor)	(GJ)				(Factor)	(GJ)
TCC power station	1.4	151,920	Pressure at Kapuni	Build new compressor station at Frankley Rd	35,000	5.8	1,721,763
Kapuni GTP/Maui Bypass	1.6	158,005	Pressure at Kapuni	Build new compressor station at Frankley Rd	35,000	7.1	1,554,568
Ammonia-Urea Plant	3.0	131,212	Pressure at Kapuni	Build new compressor station at Frankley Rd	35,000	10.6	626,536

Note:

1. Capital Cost estimates exclude the cost of upgrading the Intake or Offtake Points (if required) for the increased throughput.

**TABLE 6.6 SOUTH TRANSMISSION SYSTEM**

Ref. Schedule 1 Part 5, Clause 6 (2) (a) (b) and (c)

**SYSTEM PEAK WEEK: Week Ending 11 July 2010**

OFFTAKE POINTS	INCREASE WITH NO CAPEX		CRITICAL POINT(S) LIMITING THROUGHPUT	MEANS TO REMOVE LIMITATION	CAPITAL COST <sup>1</sup> (\$000)	INCREASE (Limit removed)	
	(Factor)	(GJ)				(Factor)	(GJ)
Tawa A+B	1.8	63,325	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	2.8	131,927
Belmont	2.3	63,178	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	3.8	134,906
Hastings	2.4	56,457	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	3.1	83,684
Palmerston Nth	2.2	33,580	Palmerston North Lateral	Upgrade Kaitoke compressor and loop Palmerston North Lateral	9,600	3.3	66,012
Wanganui	3.6	48,763	Kapuni to Hawera (unlooped) pipeline	Loop Kapuni to Hawera and upgrade Kaitoke compressor	21,400	10.0	168,797
Waitanguruua (AGL)	8.2	61,200	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	16.1	128,265
Okaiawa	4.9	32,317	Okaiawa Lateral	Upgrade Kaitoke compressor and loop Okaiawa Lateral	12,900	10.0	75,128
Levin	5.7	35,052	Levin Lateral	Upgrade Kaitoke compressor and loop Levin Lateral	11,100	9.4	62,407
Hawera	10.3	58,488	Kapuni to Hawera (unlooped) pipeline	Loop Kapuni to Hawera and upgrade Kaitoke compressor	21,400	25.0	150,936
Marton	12.1	56,086	Marton Lateral	Upgrade Kaitoke compressor and loop Marton Lateral	19,230	22.4	108,137
Feilding	8.4	36,655	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	10.1	45,015
Paraparaumu	14.4	64,744	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	29.5	137,757
Longburn	11.3	43,241	Longburn Lateral	Upgrade Kaitoke compressor and loop Longburn Lateral (6.6 km)	11,900	18.4	73,288
Pauatahanui 1	32.7	67,311	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	68.3	143,022
Takapau	23.0	48,904	Kaitoke to Himatangi pipeline	Upgrade Kaitoke compressor and loop from Kaitoke to Himatangi	40,900	39.0	84,471

Note:

1. Capital Cost estimates exclude the cost of upgrading the Intake or Offtake Points (if required) for the increased throughput.

## **7. METHODOLOGIES** (Ref. Schedule 1 Part 5, Clause 7)

### **Intake Points** (Ref. Clause 3)

#### South System

The actual flow rates in the system peak week for Kapuni was not used in the modelling, instead a fixed pressure replaced the load profile. When determining the numerical factors for possible throughput increases with Kapuni as the Intake Point, the Kapuni supply pressure was fixed at 84barg, and the Mokoia flow intake was set at the actual profile during the system peak week.

### **Offtake Points** (Ref. Clause 4)

Information disclosed as required by Clause 4 (4) of the Regulations was determined as set out below.

### **Peak Week Dates** (Ref. Clause 4 (4) (a))

#### For Systems

For all Offtake Points with metering incorporating electronic data storage capability (the vast majority) reports are available showing the daily throughput at each Offtake Point.

For each transmission system a spreadsheet was compiled showing the daily throughput of all Offtake Points for the whole year. Aggregate daily and weekly throughputs were then calculated.

In all cases, the system peak week was taken to be the week, ie 00:00 hours on Monday to 24:00 hours on Sunday, in which the aggregate offtake was greatest.

#### For Individual Offtake Points

The date of each Offtake Point's *individual* peak week was obtained from the spreadsheets of daily throughput for each system referred to above.

### **Peak Week Throughput** (Ref. Clause 4 (4) (b))

#### For the System

In all cases, system peak week throughputs were obtained from the spreadsheets of daily throughput for each system referred to above.

#### For the Offtake Points

Individual Offtake Point peak throughputs were obtained from the spreadsheets of daily throughputs for each system referred to above.

## Throughput Increase in System Peak Week

(Ref. Clause 4 (4) ( c ))

### General Considerations

The numerical factor (theoretical multiplier) by which the throughput of each Offtake Point could have been increased in the system peak week was determined using Vector's transient flow model (the "Model", as defined below). In accordance with the requirements of the Regulations this was done (i) assuming no capital investment to increase existing system capacity and (ii) no change in throughput at other Offtake Points on the system (iii) in addition there is no provision for operational headroom necessary to ensure reliability of supply.

- Using data from SCADA/OATIS or metering as applicable, flow rates (in standard m<sup>3</sup>/s) were calculated for each hour of the system peak week for each Offtake Point. The data was assembled into "flow profiles" of the form required by the Model, then loaded into the model. (A hard copy of each flow profile is included in Appendix 1).
- For the few Offtake Points for which hourly data was not available (those having metering without electronic data storage capability, ie generally sites with very small throughput) an average flow rate was calculated from meter readings and entered into the Model.
- Each of the defined transmission systems was modelled separately. The Model was first run with actual loads in the system peak week to generate appropriate starting conditions for subsequent simulations.
- An Offtake Point was then selected and a multiplier applied to its flow profile. This factor affected only the hourly flow rates for the chosen Offtake Point.
- Each simulation was continued until it became evident either that the increased load was unsustainable or conversely a larger factor could be applied. A new factor was selected and the simulation repeated. This process was continued until the maximum factor consistent with the relevant limiting criterion (see below) was identified.
- The above process was applied in turn to each Offtake Points on the system with a throughput greater than 2,000 GJ in the system peak week.
- The limiting criterion applied to determine whether the increased throughput would have been achievable or not was whether the pipeline pressure at the most critical point of the system remained above the minimum acceptable value. For the Northland section of the North System, this was taken as 25 bar g. A lower pressure criterion would have resulted in only an insignificant increase in throughput. No account was taken of the rate of pressure decay to the minimum acceptable value or the "volatility" of the pressure at the critical point resulting from the increased throughput or other provision for operational headroom necessary to ensure reliability of supply.
- Where the pressure drop in a lateral or section of pipeline was

observed to be exceptionally high given the increased throughput the maximum velocity of gas in the pipeline was checked. In some cases this constituted the limit on increased throughput.

- Where compression at the Intake Point was not modelled (see below) the maximum flow rate through the Intake Point during each simulation was noted. This was later checked against the known capacity of the existing compression to verify the adequacy of such compression.
- The Model is set up to model only high pressure pipelines. Offtake Points are not modelled. Attempting to simulate flow through the heater, regulators or control valves, piping and meter of each Offtake Point on the system would result in an unwarranted increase in complexity and simulation running time. As a consequence no account was taken of the ability of an existing Offtake Point to handle increased throughput. It was assumed that an Offtake Point could be upgraded if required. *(This is a significant assumption in view of the possibility of additional land being required and/or more stringent operating restrictions being imposed by statutory authorities as a condition of any significant upgrade being permitted. Readers of this report should take note.)*
- Modelling was undertaken without regard to shippers' current capacity reservations or the probability of the increased capacity ever being required at any particular Offtake Point.

#### System Specific Considerations

##### *North System*

- Capacity of the Rotowaro compressor station, Intake Point for the North System, is directly proportional to the pressure available from the Maui pipeline. The Rotowaro compressor station comprises two gas turbine-driven centrifugal units plus two gas engine-driven 4-cylinder reciprocating units. These units are able to run with a suction pressure corresponding to the minimum contractual Maui delivery pressure, ie 30 bar g, and depending on the magnitude of the flow required, are still able to achieve a discharge pressure up to the maximum working pressure of the downstream pipelines (86 bar g).
- For the sake of simplicity compression at Rotowaro was not modelled. Instead a fixed pressure of 84 bar g was assumed in all simulations. The peak throughput of the Rotowaro Intake Point was noted in each simulation. This was added to the peak throughput of the Central (North) System for which Rotowaro is also the Intake Point. The total peak Rotowaro throughput was compared to the capacity of the compression installed there to check that the latter would have been sufficient.
- Additional criteria applied in the case of the North System were that pipeline pressures at the Otahuhu B and Southdown Offtake Points be not less than 35 and 49 bar g, respectively, in order that contractual delivery pressure obligations could be met.
- In the system peak week, NZ Refinery Company was using gas. However, because the supply to NZRC is interruptible, the refinery's

load was removed from the system while modelling other offtake points.

#### *Central (North) System*

- Rotowaro is the Intake Point for the Central (North) System. As noted above, compression at Rotowaro was not modelled. A fixed pressure of 84 bar g at the Intake Point was assumed in all simulations.

#### *Central (South) System*

- Installed compression at the Kapuni Gas Treatment Plant, Intake Point for the Central (South) System, is adequate to meet current requirements but could limit pipeline capacity at flows above 560,000GJ/week. Therefore for simplicity compression at Kapuni was not modelled. A fixed pressure of 84 bar g at the Intake Point was assumed in all simulations albeit that available suction pressure may constrain the compressor discharge pressure/capacity.
- The only existing "Offtake Point" north of New Plymouth is the interconnection to the Bay of Plenty System, ie Pokuru. Compression at Mahoenui was modelled and a fixed pressure of 84 bar g was assumed. A flat load profile was assumed for the interconnection to BOP. This BOP flat load was calculated from the average value of Pokuru #2 flow load at the time of Central South system peak week.
- The Pokuru Offtake incorporates piping connections to both the suction side and the discharge side of the Pokuru compressors. Simulations to determine the maximum throughput were based on a discharge-side connection.

#### *Bay of Plenty System*

- For simplicity compression at Pokuru was not modelled but could limit pipeline capacity at flows above 260,000GJ/week. A fixed pressure of 74 bar g at the system Intake Point was assumed in all simulations.

#### *South System*

- As noted in Central South above, installed compression capacity at the Kapuni Gas Treatment Plant is adequate for current requirements but could limit pipeline capacity at flows above 560,000GJ/week. Therefore for simplicity compression at Kapuni was not modelled. A fixed pressure of 84 bar g at the Intake Point was assumed in all simulations albeit that available suction pressure may constrain compressor discharge pressure/capacity.
- In simulations of the existing system requiring compression at Kaitoke the larger (No.2) unit was modelled.
- The discharge pressure set point at Kaitoke was 84 bar g. The No.1 unit was able to maintain this pressure during most simulations.
- The Offtake Points that supply Wellington city are Tawa A (for Powerco's distribution network) and Tawa B (for Nova's distribution network). However many years ago the South transmission system was reconfigured to end at Waitangirua, some 7.7 km north of Tawa.

Since then the section of the original (200 mm) transmission pipeline from Waitangirua to Tawa has operated at a nominal pressure of 19bar. Factors for Tawa A and B, respectively, therefore technically apply at Waitangirua.

#### *Frankley Rd to Kapuni System*

- A fixed pressure of 44 bar g was assumed to be available from the Maui pipeline at the Frankley Rd Intake Point. This pressure is typical of pressure available from the Maui line, which operates to maintain a Taranaki target pressure between 42 and 48 bar g. Currently Derby Rd compressor station is not operational and will require significant work to enable it to be brought back to service.
- An additional criterion in all simulations was to maintain a minimum delivery pressure of 41 bar g to the Kapuni Gas Treatment Plant.
- The actual flow for Kupe intake point was used during the Frankley Rd system peak week.

### **Further Disclosure Relating to Transmission Systems**

(Ref. Clause 5)

Throughputs for Offtake Points with a throughput less than 2,000 GJ in the system peak week were determined in the same way as those for Offtake Points with throughputs greater than 2,000 GJ. (See above.)

### **Critical Points of Transmission Systems**

(Ref. Clause 6 (2))

- During modelling pursuant to Clause 4 (4) (c) of the Regulations the critical point or section of each system constraining further increases in throughput at each Offtake Point was noted.
- For each Offtake Point in turn a reinforcement option was selected capable of removing the constraint. The appropriate Model files were then amended accordingly.
- For each Offtake Point in turn further simulations were carried out to determine the increased throughput deliverable from the reinforced system. Essentially the same methodology as described earlier (see "Throughput Increase in System Peak Week (Ref. Clause 4 (4) ( c ))" above) was followed.
- In all simulations a fixed pressure was modelled at the Rotowaro, Pokuru, and Kapuni Intake Points, respectively. The throughput displayed by the Model for each of these Intake Points was noted. In the case of Rotowaro the *existing* flow into the Central (North) System was added to the *increased* flow into the North System. In the case of Kapuni the *existing* flow into the Central (South) System was added to the *increased* flow into the South System. Additional compression

requirements (if any) were then calculated from the flow, suction and discharge pressure.

- Estimates of the cost to remove the constraint affecting each Offtake Point contained in Tables 6.1 to 6.6 were developed using historic average construction rates for pipelines and other facilities. Please note: on no account does Vector wish to imply that the means of increasing system capacity identified in these tables would necessarily be the optimum, taking into account the requirements of the system as a whole, or that Vector would necessarily employ such means. The costs are “order of magnitude” only; Vector does not warrant their accuracy.
- No account was taken of RMA-related issues in identifying means to remove constraints on the transmission system. Vector does not have any special rights of access to private land for the purposes of constructing new pipelines and related facilities.
- Values for the numerical factor by which the throughput of each Offtake Point could have been increased are set out in Tables 6.1 to 6.6 respectively, which were in all cases determined through further modelling.

## **Transient Flow (Capacity Simulation) Model**

(Ref. Clause 7 (2))

Modelling of pipeline systems undertaken pursuant to this disclosure was carried out using SynerGEE Gas version 4.4.2 software, written by Germanischer Lloyd Group. This new software replaced the previous Stoner Pipeline Simulator software during 2010.

A hard copy of the input data (a flow profile for each Offtake Point) is provided in Appendix 1 of this disclosure. This data will be provided on request in Microsoft Excel spreadsheet format.



## 8. GAS (CAPACITY) HELD OR RESERVED IN TRANSMISSION SYSTEMS (Ref. Schedule 1 Part 5, Clause 8)

Tables 8.1 to 8.6, respectively, show the following information in relation to Intake and Offtake Points on each pipeline for the first, third and fifth financial years after the financial year to which this report refers. The data has been extracted from OATIS in respect of standard transmission contracts, otherwise from the relevant non-standard contracts.

- *Aggregate* MDQ held or reserved at each Offtake Point by Vector-owned, and non-Vector companies, respectively.
- *Aggregate* MHQ at each Offtake Point for both Vector-owned and non-Vector companies. (NB: Under standard transmission contracts  $MHQ = MDQ \div 16$ ; non-standard contracts may differ from this.)
- Delivery pressures, where non-standard.

The tables include capacity held or reserved by shippers under Vector's standard transmission contracts and under non-standard transmission contracts.

Shippers reserve capacity under standard transmission contracts annually prior to the start of the contract year. They are under no obligation to reserve the same level of capacity from year to year. In any year a Shipper may:

- (a) transfer capacity between Offtake Points;
- (b) trade capacity with other shippers for periods as short as a day;
- (c) purchase additional capacity from Vector (if available); and/or
- (d) apply to cancel capacity it no longer needs,

subject to the terms and conditions of the Vector Transmission Code.

While Vector's financial year ends on 30<sup>th</sup> June, the contract year for transmission services ends on 30<sup>th</sup> September annually. As at the date of this report shippers have not yet confirmed their capacity requirements for the next contract year. Therefore capacity held or reserved under both standard and non-standard transmission contracts in the next financial year has been taken as the actual capacity held or reserved by shippers as at the end of the financial year to which this report refers.

The same assumption has been made in respect of the third and the fifth financial years after the financial year to which this report refers.

**TABLE 8.1 NORTH TRANSMISSION SYSTEM CAPACITY RESERVATIONS**

Ref. Schedule 1 Part 5, Clause 8 (2)

INTAKE POINT	OFFTAKE POINTS		y/e 30 June 2012		y/e 30 June 2014		y/e 30 June 2016		NON-STD DELIVERY PRESSURE
			CAPACITY RESERVED BY:						
			Vector	Others	Vector	Others	Vector	Others	
Rotowaro	<b>Over 2,000 GJ per week</b>		- all numbers are GJ -						<b>bar g</b>
	Drury 2	MDQ	800	108	800	108	800	108	Nominal 48  Minimum 49
		MHQ	50	7	50	7	50	7	
	Flat Bush	MDQ	-	1,825	-	1,825	-	1,825	
		MHQ	-	114	-	114	-	114	
	Glenbrook	MDQ	7,500	-	7,500	-	7,500	-	
		MHQ	469	-	469	-	469	-	
2	Greater Auckland	MDQ	12,600	40,943	12,600	40,943	12,600	40,943	
		MHQ	788	2,559	788	2,559	788	2,559	
	Harrisville	MDQ	1,900	16	1,900	16	1,900	16	
		MHQ	119	1	119	1	119	1	
3	Hunua	MDQ	140	2,458	140	2,458	140	2,458	
		MHQ	9	154	9	154	9	154	
	Kauri DF	MDQ	2,500	-	2,500	-	2,500	-	
		MHQ	125	-	125	-	125	-	
	Otahuhu B Power Station	MDQ	-	60,000	-	60,000	-	60,000	
		MHQ	-	2,727	-	2,727	-	2,727	
	Southdown Power Station	MDQ	-	37,800	-	37,800	-	37,800	
		MHQ	-	1,784	-	1,784	-	1,784	
	Tuakau	MDQ	200	586	200	586	200	586	
		MHQ	13	37	13	37	13	37	
	Waitoki	MDQ	-	381	-	381	-	381	
		MHQ	-	24	-	24	-	24	
	Warkworth	MDQ	1,855	84	1,855	84	1,855	84	
		MHQ	80	5	80	5	80	5	
	Whangarei	MDQ	187	728	187	728	187	728	
		MHQ	12	45	12	45	12	45	
	TOTAL	MDQ	27,682	144,927	27,682	144,927	27,682	144,927	
		MHQ	1,663	7,456	1,663	7,456	1,663	7,456	
4	<b>Under 2,000 GJ per week</b>	MDQ	470	589	470	589	470	589	
		MHQ	29	37	29	37	29	37	

Notes:

1 Firm transmission capacity only: interruptible capacity excluded

2 Includes Bruce McClaren, Henderson, Papakura & Westfield

3 Includes Hunua, Hunua (Nova) & Hunua 3

4 Includes Alfriston, Drury 1, Kingseat, Marsden 2, Maungaturoto DF, Oakleigh, Papakura 3, Pukekohe, Ramarama & Wellsford

**TABLE 8.2 CENTRAL (NORTH) TRANSMISSION SYSTEM CAPACITY RESERVATIONS**

Ref. Schedule 1 Part 5, Clause 8 (2)

INTAKE POINT	OFFTAKE POINTS		y/e 30 June 2012		y/e 30 June 2014		y/e 30 June 2016		NON-STD DELIVERY PRESSURE
			CAPACITY RESERVED BY:						
			Vector	Others	Vector	Others	Vector	Others	
Rotowaro	<b>Over 2,000 GJ per week</b>		- all numbers are GJ -						<b>bar g</b>
	Cambridge	MDQ	-	2,130	-	2,130	-	2,130	Nominal 22.5
		MHQ	-	133	-	133	-	133	
2	Greater Hamilton	MDQ	1,600	7,131	1,600	7,131	1,600	7,131	
		MHQ	100	446	100	446	100	446	
	Kiwitahi (Peroxide)	MDQ	-	950	-	950	-	950	
		MHQ	-	59	-	59	-	59	
	Morrinsville DF	MDQ	-	1,789	-	1,789	-	1,789	
		MHQ	-	112	-	112	-	112	
	Tatuanui DF	MDQ	-	928	-	928	-	928	
		MHQ	-	58	-	58	-	58	
	Te Rapa Cogeneration	MDQ	-	25,500	-	25,500	-	25,500	
		MHQ	-	1,200	-	1,200	-	1,200	
	Waitoa	MDQ	-	2,012	-	2,012	-	2,012	
		MHQ	-	137	-	137	-	137	
	TOTAL	MDQ	1,600	40,439	1,600	40,439	1,600	40,439	
		MHQ	100	2,145	100	2,145	100	2,145	
3	<b>Under 2,000 GJ per week</b>	MDQ	35	1,160	35	1,160	35	1,160	
		MHQ	2	73	2	73	2	73	

Notes:

- 1 Firm transmission capacity only: interruptible capacity excluded
- 2 Includes Hamilton Te Kowhai & Hamilton Temple View
- 3 Includes Horotiu, Kiwitahi 2, Matangi, Morrinsville

**TABLE 8.3 CENTRAL (SOUTH) TRANSMISSION SYSTEM CAPACITY RESERVATIONS**

Ref. Schedule 1 Part 5, Clause 8 (2)

INTAKE POINT	OFFTAKE POINTS		y/e 30 June 2012	y/e 30 June 2014	y/e 30 June 2016	CAPACITY RESERVED BY:		NON-STD DELIVERY PRESSURE	
			Vector	Others	Vector	Others	Vector		Others
			- all numbers are in GJ -						
Kapuni	<b>Over 2,000 GJ per week</b>								<b>bar g</b>
	Eltham	MDQ	240	455	240	455	240	455	
		MHQ	15	28	15	28	15	28	
	New Plymouth	MDQ	700	3,258	700	3,258	700	3,258	
		MHQ	44	204	44	204	44	204	
	TOTAL	MDQ	940	3,714	940	3,714	940	3,714	
		MHQ	59	232	59	232	59	232	
2	<b>Under 2,000 GJ per week</b>	MDQ	90	1,026	90	1,026	90	1,026	
		MHQ	6	64	6	64	6	64	

Notes:

- 1 Firm transmission capacity only: interruptible capacity excluded
- 2 Includes Inglewood, Kaponga, Stratford (Town) & Waitara

**TABLE 8.4 BAY of PLENTY TRANSMISSION SYSTEM CAPACITY RESERVATIONS**

Ref. Schedule 1 Part 5, Clause 8 (2)

INTAKE POINT	OFFTAKE POINTS		y/e 30 June 2012		y/e 30 June 2014		y/e 30 June 2016		NON-STD DELIVERY PRESSURE
			CAPACITY RESERVED BY:						
			Vector	Others	Vector	Others	Vector	Others	
Pokuru 1, Pokuru 2	<b>Over 2,000 GJ per week</b>		- all numbers are in GJ -						<b>bar g</b>
	Edgecumbe DF	MDQ	-	4,874	-	4,874	-	4,874	
		MHQ	-	246	-	246	-	246	
	Gisborne	MDQ	1,530	1,459	1,530	1,459	1,530	1,459	
		MHQ	82	91	82	91	82	91	
2	Greater Mt Maunganui	MDQ	70	2,743	70	2,743	70	2,743	
		MHQ	4	170	4	170	4	170	
3	Greater Tauranga	MDQ	250	1,072	250	1,072	250	1,072	
		MHQ	16	67	16	67	16	67	
	Kawerau (ex-Caxton)	MDQ	1,940	-	1,940	-	1,940	-	
		MHQ	121	-	121	-	121	-	
	Kawerau (ex-Tasman)	MDQ	1,750	-	1,750	-	1,750	-	
		MHQ	109	-	109	-	109	-	
	Kinleith (paper mill)	MDQ	11,150	-	11,150	-	11,150	-	
		MHQ	697	-	697	-	697	-	
	Lichfield DF	MDQ	-	110	-	110	-	110	
		MHQ	-	7	-	7	-	7	
	Reporoa	MDQ	-	763	-	763	-	763	
		MHQ	-	48	-	48	-	48	
	Rotorua	MDQ	450	1,441	450	1,441	450	1,441	
		MHQ	28	90	28	90	28	90	
	Taupo	MDQ	7	711	7	711	7	711	
		MHQ	0	44	0	44	0	44	
	Tirau DF	MDQ	-	726	-	726	-	726	
		MHQ	-	45	-	45	-	45	
	Whakatane	MDQ	2,431	102	2,431	102	2,431	102	
		MHQ	152	6	152	6	152	6	
	<b>TOTAL</b>	MDQ	<b>19,578</b>	<b>14,001</b>	<b>19,578</b>	<b>14,001</b>	<b>19,578</b>	<b>14,001</b>	
		MHQ	<b>1,210</b>	<b>814</b>	<b>1,210</b>	<b>814</b>	<b>1,210</b>	<b>814</b>	
4	<b>Under 2,000 GJ per week</b>	MDQ	<b>1,900</b>	<b>2,440</b>	<b>1,900</b>	<b>2,440</b>	<b>1,900</b>	<b>2,440</b>	
		MHQ	<b>100</b>	<b>153</b>	<b>100</b>	<b>153</b>	<b>100</b>	<b>153</b>	

Notes:

- 1 Firm transmission capacity only: interruptible capacity excluded
- 2 Includes Mt Maunganui & Papamoa
- 3 Includes Pyes Pa & Tauranga
- 4 Includes Broadlands, Edgecumbe, Kawerau, Kihikihi, Kinleith, Okoroire Springs, Opotiki, Putaruru, Rangiuuru, Te Puke, Te Teko, Tirau, Tokoroa & Waikeria

**TABLE 8.5 FRANKLEY RD TRANSMISSION SYSTEM CAPACITY RESERVATIONS**

Ref. Schedule 1 Part 5, Clause 8 (2)

INTAKE POINT	OFFTAKE POINTS		y/e 30 June 2012		y/e 30 June 2014		y/e 30 June 2016		NON-STD DELIVERY PRESSURE
			CAPACITY RESERVED BY:						
			Vector	Others	Vector	Others	Vector	Others	
Frankley Rd, Kupe, Kaimiro, TAW, Kapuni	<b>Over 2,000 GJ per week</b>		- all numbers are in GJ -						<b>bar g</b>
	2 Ammonia-Urea Plant	MDQ	-	22,500	-	22,500	-	22,500	Nominal 31
		MHQ	-	1,010	-	1,010	-	1,010	
	Kapuni GTP	MDQ	-	48,754	-	48,754	-	48,754	
		MHQ	-	2,797	-	2,797	-	2,797	
	TCC Powerstation	MDQ	-	64,000	-	64,000	-	64,000	
		MHQ	-	2,840	-	2,840	-	2,840	
	TOTAL	MDQ	-	135,254	-	135,254	-	135,254	
		MHQ	-	6,647	-	6,647	-	6,647	
	3 <b>Under 2,000 GJ per week</b>	MDQ	-	195,240	-	195,240	-	195,240	
MHQ		-	9,140	-	9,140	-	9,140		

Notes:

- 1 Firm transmission capacity only: interruptible capacity excluded
- 2 Includes Ballance 8201 & Ballance 9626
- 3 Includes Frankley Road out to Maui, Kapuni Lactose & Stratford 2

**TABLE 8.6 SOUTH TRANSMISSION SYSTEM CAPACITY RESERVATIONS**

Ref. Schedule 1 Part 5, Clause 8 (2)

INTAKE POINT	OFFTAKE POINTS		y/e 30 June 2012		y/e 30 June 2014		y/e 30 June 2016		NON-STD DELIVERY PRESSURE
			CAPACITY RESERVED BY:						
			Vector	Others	Vector	Others	Vector	Others	
Kapuni & Mokoia	<b>Over 2,000 GJ per week</b>		- all numbers are in GJ -						<b>bar g</b>
	Belmont	MDQ	935	6,025	935	6,025	935	6,025	
		MHQ	58	377	58	377	58	377	
	Feilding	MDQ	15	1,060	15	1,060	15	1,060	
		MHQ	1	66	1	66	1	66	
2	Greater Waitangirua	MDQ	95	1,542	95	1,542	95	1,542	
		MHQ	6	96	6	96	6	96	
3	Hastings	MDQ	5,860	5,772	5,860	5,772	5,860	5,772	
		MHQ	367	361	367	361	367	361	
4	Hawera	MDQ	1,560	1,246	1,560	1,246	1,560	1,246	
		MHQ	98	78	98	78	98	78	
	Levin	MDQ	407	968	407	968	407	968	
		MHQ	25	61	25	61	25	61	
	Longburn	MDQ	400	622	400	622	400	622	
		MHQ	25	39	25	39	25	39	
	Marton	MDQ	721	285	721	285	721	285	
		MHQ	45	18	45	18	45	18	
	Okaiawa	MDQ	-	1,680	-	1,680	-	1,680	
		MHQ	-	70	-	70	-	70	
	Palmerston North	MDQ	900	4,026	900	4,026	900	4,026	
		MHQ	56	252	56	252	56	252	
	Paraparaumu	MDQ	40	606	40	606	40	606	
		MHQ	3	38	3	38	3	38	
	Takapau	MDQ	-	609	-	609	-	609	
		MHQ	-	38	-	38	-	38	
5	Tawa	MDQ	1,150	10,198	1,150	10,198	1,150	10,198	
		MHQ	72	637	72	637	72	637	
	Wanganui	MDQ	130	4,201	130	4,201	130	4,201	
		MHQ	8	263	8	263	8	263	
	<b>TOTAL</b>	MDQ	12,213	38,840	12,213	38,840	12,213	38,840	
		MHQ	764	2,393	764	2,393	764	2,393	
6	<b>Under 2,000 GJ per week</b>	MDQ	1,504	2,251	1,504	2,251	1,504	2,251	
		MHQ	94	141	94	141	94	141	

Notes:

- 1 Firm transmission capacity only: interruptible capacity excluded
- 2 Includes Waitangirua & Pauatahanui 1
- 3 Hastings includes Hastings (Nova)
- 4 Hawera includes Hawera (Nova)
- 5 Tawa includes Tawa A and Tawa B (Nova)
- 6 Includes Ashhurst, Dannevirke, Flockhouse, Foxton, Kairanga, Kaitoke, Kakariki, Kuku, Lake Alice, Manaia, Mangaroa, Mangatainoka, Matapu, Mokoia, Oroua Downs, Otaki, Pahiatua, Patea, Pauatahanui 2, Te Horo, Waikanae Waitotara & Waverley

## **APPENDIX 1**

### **FLOW PROFILES**

Note: Associated with the flow profile for each Offtake Point is the weekly load in TJ. These weekly loads are for checking purposes only and are not used in the Model. They were calculated by multiplying the hourly flow rates by a typical average CV.

The resulting values may therefore differ somewhat from those shown in Tables 4.1 – 4.6, which were determined using daily average CV's.

Rounding of flow rates to two decimal places may also have contributed slight differences.

All figures are in standard cubic meters.



BAY OF PLENTY

Date	Time	Broadlands	Edgelymbie	Edgelymbie DF	Gladstone	Kawerau	Kawerau (Cavon Mill)	Kawerau (Pasman Mill)	Kihikahi	Kinleith	Kinleith Mill	Lichfield DF	Mt Maunganui	Okoroira Springs	Opoitiki	Papamoa	Pokuru	Puaruru	Rangiora	Rapara	Rotomua	Taupo	Tauranga	Te Puke	Te Teko	Tirau	Tirau DF	Tokoroa	Wakaroa	Whakarone	Pyes Pa
6/09/2010	1:00	138	0	4315	443	0	1400	1608	70	15	7697	1159	1299	2	24	173	24380	310	321	1959	720	149	359	25	13	0	842	80	101	1787	24
6/09/2010	2:00	133	0	4205	444	10	1381	1610	40	20	8405	1234	1200	2	24	122	24180	310	273	1885	645	133	325	23	13	0	724	70	93	1843	20
6/09/2010	3:00	138	0	4131	425	10	1379	1603	51	20	9245	1083	1476	2	24	157	25052	302	454	1860	645	133	291	23	13	0	649	70	98	1972	15
6/09/2010	4:00	134	0	4213	463	9	1357	1610	61	20	7729	1104	1572	2	35	157	25412	298	182	1864	645	151	336	25	13	0	753	70	97	2063	39
6/09/2010	5:00	138	0	4177	481	10	1371	1602	79	15	8286	1238	1652	2	34	191	25564	351	61	1889	719	166	348	27	13	12	693	81	101	2115	39
6/09/2010	6:00	134	0	3935	480	30	1373	1603	177	15	11080	1289	1534	2	56	236	26236	410	133	1973	1055	212	427	42	13	21	683	126	96	2061	60
6/09/2010	7:00	137	5	3816	790	77	1373	1602	333	0	15253	1229	1748	2	74	482	29916	430	0	2042	1790	539	815	77	13	44	1098	351	114	2063	119
6/09/2010	8:00	134	0	3791	1311	68	1386	1626	395	47	14803	1429	1923	2	64	584	32476	431	311	2011	2491	785	1436	167	13	32	1307	617	122	1974	192
6/09/2010	9:00	137	0	3714	1198	78	1426	1626	351	90	12602	1665	1940	2	74	512	34500	411	46	2057	2224	754	1246	153	13	43	1366	583	146	2209	155
6/09/2010	10:00	50	5	3735	1006	58	2045	1630	300	57	9273	1736	1982	2	65	462	33324	379	0	1940	1918	629	1026	115	13	32	1442	550	152	2357	131
6/09/2010	11:00	307	0	3551	925	29	1941	1639	258	15	8159	1477	2039	2	64	393	31724	417	0	1937	1749	574	994	82	13	22	1399	520	151	2150	131
6/09/2010	12:00	314	0	3053	851	30	1549	1633	256	15	6759	1618	2098	2	66	428	30580	390	98	1986	1769	588	959	86	13	33	1409	521	154	2231	115
6/09/2010	13:00	318	4	3112	797	29	1543	1439	266	0	9425	1420	2155	2	34	394	30424	370	0	1913	1792	522	893	87	13	32	1199	522	147	2174	105
6/09/2010	14:00	313	0	3185	724	19	1575	1532	247	33	9297	1355	2136	2	12	394	31260	371	217	2037	1790	504	837	84	13	32	1166	510	160	1268	101
6/09/2010	15:00	332	0	3419	671	19	2037	1624	266	29	10683	1176	2082	2	0	376	30980	365	0	2021	1698	468	782	71	13	32	1237	499	142	706	101
6/09/2010	16:00	324	0	3706	672	30	1972	1664	265	61	16360	1682	1923	2	0	411	32944	380	402	1995	1679	486	792	95	13	33	1149	499	155	1404	112
6/09/2010	17:00	340	0	4353	763	48	1958	1665	350	53	18299	1592	1747	2	0	460	36220	403	349	1816	1773	627	868	103	13	32	1245	542	130	2117	127
6/09/2010	18:00	319	5	4330	928	48	1939	1713	367	53	17201	1358	1959	2	0	581	37556	401	395	1904	1997	774	1069	135	13	33	1348	521	104	1954	152
6/09/2010	19:00	292	0	4590	982	58	1933	1760	420	48	16379	867	1961	2	24	631	37920	392	353	1883	2013	808	1256	151	13	22	1370	508	109	1645	171
6/09/2010	20:00	199	0	4636	890	49	1902	1758	375	52	12479	861	1902	2	12	597	37304	350	327	1958	1878	754	1123	138	13	23	1368	488	96	1696	142
6/09/2010	21:00	174	4	4415	689	48	1949	1764	298	53	8715	1201	1726	2	11	529	34664	317	228	2014	1669	664	947	116	13	11	1369	274	96	1661	112
6/09/2010	22:00	138	9	4626	563	40	1916	1779	227	53	7171	1372	1671	2	12	426	32152	268	375	1908	1331	486	759	76	13	12	1376	189	88	1680	88
6/09/2010	23:00	137	5	4503	419	29	1951	1822	131	48	7443	1429	1355	2	0	291	30824	256	375	1951	994	272	492	48	13	10	1357	134	92	1644	54
7/09/2010	0:00	137	4	4287	329	21	1945	1823	67	52	6727	1530	1377	2	45	206	29580	236	374	1997	790	162	357	27	13	12	1220	102	84	1663	30
7/09/2010	1:00	138	5	4791	275	19	1939	1766	58	48	7979	1512	1318	2	23	188	28508	213	322	1940	735	111	402	25	13	0	914	69	84	1625	19
7/09/2010	2:00	137	4	4734	276	19	1921	1732	39	53	7141	1597	1257	2	35	155	27880	212	305	1985	697	130	268	21	13	11	913	68	84	1716	10
7/09/2010	3:00	138	5	4741	330	19	1935	1753	60	48	7558	1698	1278	2	44	172	27472	213	305	1896	697	113	258	20	13	0	861	58	89	1754	14
7/09/2010	4:00	133	4	4588	348	10	1943	1740	60	170	6719	1717	1356	2	45	189	26704	211	296	1950	735	113	281	20	13	0	736	58	84	1752	20
7/09/2010	5:00	128	0	4336	347	0	1945	1729	80	188	9364	1871	1417	2	56	206	27680	234	335	1935	792	147	336	23	13	11	776	70	89	1882	38
7/09/2010	6:00	129	0	4375	401	38	1921	1717	159	184	6966	2033	1552	2	55	273	27476	233	458	2155	1090	198	447	33	13	22	767	114	89	2030	60
7/09/2010	7:00	129	0	4186	651	69	1964	1695	337	99	7536	2317	1653	2	74	461	28212	233	25	2032	1806	538	870	70	13	33	1220	467	101	2065	135
7/09/2010	8:00	50	5	4168	1070	68	1980	1695	381	71	6988	1871	1943	2	64	565	29096	253	69	1852	2337	765	1401	162	13	32	1198	604	122	1789	202
7/09/2010	9:00	207	0	3938	885	60	1952	1683	363	93	6979	1689	2028	2	73	529	30028	225	0	2012	2167	683	1246	172	13	33	1929	559	143	2044	166
7/09/2010	10:00	269	0	4087	885	48	1964	1688	259	136	7543	1961	1964	2	64	476	30624	225	0	2004	1919	609	1013	146	13	22	1456	506	151	2139	127
7/09/2010	11:00	153	5	4153	831	30	1942	1693	149	81	6404	1328	1844	2	56	443	30028	223	98	1919	5028	1054	116	13	33	1396	460	134	2098	138	
7/09/2010	12:00	363	0	4172	798	19	1239	1686	143	65	4970	1627	2039	2	23	427	29016	318	0	2012	1558	450	947	89	13	21	1455	386	134	2060	121
7/09/2010	13:00	349	0	4259	721	19	535	1678	126	52	5255	1458	1803	2	0	393	28192	338	0	2012	1444	411	915	90	13	32	1445	344	113	2129	111
7/09/2010	14:00	288	0	4130	684	19	470	1680	118	52	5839	1722	1844	2	0	394	27464	316	98	1939	1370	1384	378	79	13	22	1393	356	125	1954	101
7/09/2010	15:00	336	0	4413	684	10	442	1675	152	57	6551	1722	1787	2	0	341	28128	254	0	1903	1387	377	792	69	13	33	1311	356	125	1953	102
7/09/2010	16:00	297	0	4335	614	18	487	1681	135	52	5988	1578	1552	2	0	375	27712	221	470	1873	1426	359	715	65	13	21	1070	356	126	2077	101
7/09/2010	17:00	283	4	4228	612	30	476	1686	152	112	5848	1901	1533	2	0	461	27308	211	387	1976	1409	412	826	101	13	33	1567	356	113	1771	126
7/09/2010	18:00	147	0	4367	777	30	322	1686	215	111	5853	1912	1688	2	24	545	30412	261	405	1988	1504	500	970	113	13	22	1196	389	93	1681	135
7/09/2010	19:00	128	0	4257	904	29	92	1685	331	113	5432	1732	1806	2	12	616	29724	273	427	1954	1736	661	1114	140	13	22	1554	432	97	1717	150
7/09/2010	20:00	133	0	4230	1035	40	566	1686	338	113	5292	1603	1630	2	11	596	28724	273	424	1897	1758	695	1113	127	13	12	1418	442	93	1715	146
7/09/2010	21:00	129	0	4257	814	30	487	1693	297	134	5296	1565	1533	2	25	527	28164	264	424	2043	1684	626	957	109	13	10	1313	293	90	1752	116
7/																															

**BAY OF PLENTY**

Date	Time	Brooklands	Edgewater	Edgewater DF	Gladstone	Kawarau	Kawarau (Cayton mill)	Kawarau (Pasman mill)	Kihikahi	Kiwieth	Kiwieth Mill	Litchfield DF	Mt Maunganui	Okoroira Springs	Oporohi	Papaioea	Pokuru	Puaruru	Rangiora	Rapara	Rotorua	Taupo	Tauranga	Te Puke	Te Teko	Tirau	Tirau DF	Tokoroa	Wakaroa	Whakarara	Pyres Pa	
9/09/2010	9:00	73	0	4073	1536	69	1955	1646	352	90	6999	1698	1930		2	45	548	30668	370	137	1585	2182	683	1245	166	13	32	1460	546	135	1806	160
9/09/2010	10:00	97	0	4052	1246	69	1940	1615	244	89	6989	1664	2092	2	47	498	30360	351	121	126	1970	574	1138	139	13	32	1685	486	143	1687	147	
9/09/2010	11:00	138	0	4285	969	60	1951	1209	202	85	7270	1694	1849	2	13	463	30272	328	159	1699	1855	554	1082	111	13	32	1212	454	147	1819	139	
9/09/2010	12:00	271	0	4065	1095	50	1958	497	179	85	7144	1625	1460	2	0	446	29392	288	146	1441	1834	539	1083	125	13	32	1253	454	138	1756	122	
9/09/2010	13:00	281	0	4113	1285	39	1955	496	182	84	7278	1756	1360	2	0	465	29376	324	132	1729	1854	534	1125	142	13	22	1343	435	134	1784	139	
9/09/2010	14:00	298	5	4273	1042	40	1318	697	180	85	8263	1611	1594	2	0	444	29328	331	120	2088	1835	542	1073	128	13	32	1372	424	129	1791	138	
9/09/2010	15:00	310	0	4370	984	39	925	1332	190	80	8132	1672	1694	2	0	430	29836	335	299	2074	1740	520	1027	131	13	33	1415	402	138	1458	138	
9/09/2010	16:00	332	0	4582	1095	40	1438	1578	217	70	7863	1487	1994	2	0	515	29728	313	382	2124	1892	556	996	132	13	33	1327	412	129	1344	138	
9/09/2010	17:00	306	0	4824	1038	68	1333	1738	270	80	11746	1506	1998	2	0	602	30264	295	425	2119	1968	722	1161	150	13	32	1338	340	117	1808	168	
9/09/2010	18:00	267	0	4769	1131	59	760	1719	338	70	17624	1532	2063	2	12	666	36052	312	420	2218	2117	850	1325	159	13	32	1439	477	105	1737	186	
9/09/2010	19:00	157	4	5012	1171	69	569	1865	400	84	13472	1415	1946	2	24	703	36596	368	424	2175	2135	867	1414	167	13	23	1451	469	99	1836	191	
9/09/2010	20:00	124	0	5027	1115	49	575	1858	336	85	11670	1361	1932	2	25	650	35976	346	394	1776	1945	798	1238	147	13	22	1408	403	92	1764	157	
9/09/2010	21:00	129	0	4664	928	48	508	1850	272	75	10240	1127	1611	2	12	547	32860	330	415	1825	1791	689	1071	126	13	12	1415	219	88	1706	143	
9/09/2010	22:00	129	0	4722	784	40	1118	1862	217	80	10072	1074	1438	2	12	446	26656	287	432	1617	1377	504	851	83	13	11	1403	177	84	1677	102	
9/09/2010	23:00	129	0	4840	801	29	1169	1857	138	75	9951	1246	1278	2	0	258	28888	310	421	2050	980	290	581	53	13	0	1434	112	84	1739	65	
10/09/2010	0:00	128	0	4720	729	21	1162	1853	58	71	8131	1522	1163	2	0	171	28072	287	401	2122	775	183	391	30	13	11	1435	80	85	1591	24	
10/09/2010	1:00	129	0	4683	674	0	1158	1835	60	76	8840	1186	1338	2	0	139	27744	287	380	2060	681	130	347	24	13	0	1287	46	80	1718	19	
10/09/2010	2:00	129	0	4535	640	9	1156	1779	40	71	8004	1403	1337	2	23	156	27044	277	384	2071	626	132	313	22	13	0	1119	58	80	1680	10	
10/09/2010	3:00	142	0	4520	492	10	1170	1650	60	71	8422	1557	1336	2	12	157	26628	289	330	2068	625	112	315	22	13	0	769	46	85	1737	10	
10/09/2010	4:00	200	0	4553	491	0	1194	1709	61	72	8549	1938	1336	2	24	156	26936	265	312	2098	645	128	348	22	13	0	949	58	85	2057	19	
10/09/2010	5:00	182	0	4476	420	10	1158	1660	78	67	8408	2152	1299	2	66	173	27180	288	304	2053	681	145	370	27	13	0	1002	59	89	1949	30	
10/09/2010	6:00	173	0	4514	456	39	1162	1583	177	72	8132	1807	1278	2	55	208	41860	279	283	2147	1035	216	460	39	13	34	801	103	89	2039	50	
10/09/2010	7:00	268	5	4218	730	79	1107	1587	326	67	10924	1426	1414	2	75	465	35040	278	292	2142	1738	548	892	78	13	32	1089	481	106	2274	114	
10/09/2010	8:00	217	6	4154	1168	58	1158	1595	494	71	8438	1478	1787	2	84	583	34260	288	499	2134	2218	754	1315	150	13	43	1480	574	119	2202	172	
10/09/2010	9:00	212	0	3614	1037	58	1209	1595	316	72	10947	1518	1766	2	73	489	33756	278	297	2151	1928	666	1204	127	13	32	1531	487	139	2115	151	
10/09/2010	10:00	357	0	3753	949	47	1227	1644	254	66	12291	1509	1709	2	73	410	35104	267	147	2026	1601	539	983	96	13	21	1753	431	146	2132	137	
10/09/2010	11:00	377	0	3799	836	39	1170	1693	243	71	12444	1260	1671	2	64	360	34572	255	117	2122	1463	434	993	78	13	33	1403	399	147	2136	121	
10/09/2010	12:00	368	4	3750	777	19	1140	1737	188	70	13243	1384	1668	2	53	325	34124	245	137	2092	1464	378	896	68	13	20	1401	356	142	2133	119	
10/09/2010	13:00	363	0	4059	724	9	820	1820	154	55	16813	1580	1801	2	34	343	36948	235	108	2059	1429	361	861	73	13	33	1324	333	137	2241	118	
10/09/2010	14:00	376	0	3790	760	18	492	1858	120	56	12681	1608	1728	2	0	327	35028	210	137	2070	1273	381	784	67	13	11	1360	302	129	2395	109	
10/09/2010	15:00	359	0	3919	633	29	490	1812	110	56	14799	1467	1787	2	0	308	34584	265	231	2093	1125	323	639	63	13	11	1370	303	121	2408	76	
10/09/2010	16:00	228	0	4017	544	19	507	1783	120	66	17022	1812	1629	2	0	257	36392	256	321	2145	1068	306	572	64	13	11	1242	314	128	2352	71	
10/09/2010	17:00	233	0	4494	583	38	470	1789	138	43	17699	1833	1473	2	0	309	37308	266	310	2156	1088	390	581	60	13	0	1328	303	117	1916	77	
10/09/2010	18:00	133	0	4624	709	19	442	1781	177	43	14544	1493	1398	2	0	343	36328	279	297	2023	1186	566	681	77	13	11	1341	105	1969	88		
10/09/2010	19:00	129	0	3980	858	40	507	1760	350	49	10910	1740	1356	2	11	480	32680	279	74	2036	1624	679	815	13	13	11	1075	389	108	1958	118	
10/09/2010	20:00	124	0	3862	822	40	507	1762	321	40	14236	1557	1376	2	12	497	44220	224	64	2043	1762	997	926	110	13	11	1108	377	98	1916	114	
10/09/2010	21:00	128	0	4324	693	39	501	1767	304	39	14509	1578	1296	2	12	462	35068	212	83	2173	1724	660	881	94	13	23	1309	229	93	902	109	
10/09/2010	22:00	129	0	4484	621	41	458	1772	267	40	15194	1682	1277	2	12	410	34828	252	214	2130	1575	571	804	74	13	11	928	207	94	612	94	
10/09/2010	23:00	129	0	4559	532	30	483	1758	178	35	15065	1609	1181	2	13	273	34864	280	93	2180	1175	395	615	55	13	12	853	156	90	685	76	
11/09/2010	0:00	130	0	4811	460	21	491	1747	109	30	14657	1712	1160	2	0	206	34004	266	26	2171	930	269	447	32	13	0	716	124	94	867	51	
11/09/2010	1:00	129	0	4740	424	21	491	1763	71	30	14113	1621	1179	2	0	173	33224	268	0	2144	836	182	391	25	13	0	705	102	94	1865	35	
11/09/2010	2:00	130	0	4819	387	21	405	1754	53	30	15636	1750	1181	2	0	156	30664	268	101	2159	818	181	324	25	13	0	791	80	99	2153	35	
11/09/2010	3:00	125	0	4838	388	0	536	1766	63	25	7553	1850	1198	2	0	157	28212	269	0	2101	781	184	335	26	13	11	1153	93	94	2111	35	
11/09/2010	4:00	130	0	4887	388	10	454	1760	82	30	8952	1446	1278	2	0	156	27700	204	72	2143	817	181	325	28	13	0	1354	70	95	2210	35	
11/09/2010	5:00	129	0	4900	406	10	442	1772	92	25	8681	1477	1278	2	0	156	28052</															

**BAY OF PLENTY**

Date	Time	Broadlands	Edgewater	Edgewater DF	Gisborne	Kawerau	Kawerau (Cawton mill)	Kawerau (Rasman mill)	Kihikihi	Kiwiwhiri	Kiwiwhiri Mill	Lichfield DF	Mt Maungamau	Okoroire Springs	Oporiki	Papamoa	Pokuru	Puaruru	Rangituru	Rapara	Rotoma	Taupo	Tauranga	Te Puke	Te Teko	Tirau	Tirau DF	Tokoroa	Waikeria	Whakaramea	Pyes Pa
12/09/2010	17:00	204	0	4808	505	10	444	1678	121	0	25024	1449	1179	2	0	275	37452	198	361	2239	964	391	547	59	13	0	1284	314	104	2179	63
12/09/2010	18:00	128	0	4831	704	18	454	1689	192	0	22035	1511	1139	2	0	341	38768	208	322	2162	1284	467	667	85	13	11	1264	356	97	2143	82
12/09/2010	19:00	128	5	4767	724	30	432	1701	259	0	21775	1616	1177	2	11	464	39408	228	323	2178	1377	570	867	105	13	11	1542	379	88	2180	112
12/09/2010	20:00	128	0	4699	669	29	446	1701	266	0	20282	1536	1257	2	12	493	39768	226	336	2103	1451	538	868	108	13	23	1361	357	88	2182	97
12/09/2010	21:00	127	0	4451	470	30	580	1723	247	0	16452	1602	1276	2	11	392	38416	231	419	2116	1340	500	767	85	13	11	755	197	84	2235	88
12/09/2010	22:00	128	0	4429	433	20	527	1747	169	0	15890	1753	1196	2	12	306	36808	199	360	2116	1173	381	633	54	13	0	724	144	84	2126	64
12/09/2010	23:00	124	0	4453	398	21	519	1755	102	0	10207	1858	1179	2	0	206	34368	199	370	2102	878	253	468	44	13	11	670	112	84	2108	35
13/09/2010	0:00	128	0	4291	469	0	505	1745	62	0	9251	1660	1059	2	34	69	31040	168	361	2035	639	146	357	25	13	0	638	79	80	2092	9

NORTH

Date	Time	Alfriston	Bruce McClaren	Drury	Fiat Bush	Glenbrook	Harrisville	Henderson	Hunua	Kauri	Kingsseat	Marsden	Maungaturoto	Oakleigh	Otahuhu B	Papakura	Pukekohe	Rama Rama	Southdown	Tuakau	Waitoki	Warkworth	Wellsford	Westfield	Whangarei
26/07/2010	1:00	148	540	1246	900	3236	1093	1003	453	410	10	7465	0	0.0775	58492	10987	106	216	22232	225	693	946	4	10584	250
26/07/2010	2:00	148	564	1355	1049	2874	1264	1032	488	825	10	7478	0	0.0775	57760	10790	103	222	22229	145	715	836	4	10690	262
26/07/2010	3:00	137	563	1190	935	3306	1686	841	508	1690	11	7896	0	0.0775	54792	9981	65	152	22219	8	321	824	4	10660	250
26/07/2010	4:00	138	575	1238	895	3564	2250	705	556	1705	10	8013	0	0.0775	51056	9993	77	165	22216	0	87	733	4	10823	250
26/07/2010	5:00	143	632	1192	967	3047	2504	835	627	1690	11	8008	0	0.0775	52336	10591	111	192	22208	0	93	900	4	11191	287
26/07/2010	6:00	106	955	963	1267	3496	2402	2168	762	1644	10	8028	0	0.0775	59720	12397	142	85	22216	7	245	1273	4	14207	350
26/07/2010	7:00	158	1377	776	1864	3729	2399	5111	561	1564	6	8045	0	0.0775	65556	13397	201	129	23063	170	508	1453	4	23149	611
26/07/2010	8:00	117	1622	1115	2008	3473	2363	8314	1203	1501	10	8030	0	0.0775	66704	14800	311	127	33490	343	808	1589	4	36389	872
26/07/2010	9:00	127	1650	1075	2157	3568	2431	9124	1338	1436	11	7955	0	0.0775	66500	15024	271	84	37640	386	681	983	4	35507	873
26/07/2010	10:00	5	1468	795	2160	3745	2414	7718	1275	1594	5	7906	0	0.0775	66516	14431	277	47	37645	322	511	852	4	31248	786
26/07/2010	11:00	0	1443	625	2183	3557	2597	6540	948	2236	5	7762	0	0.0775	66476	14215	263	48	37765	319	355	1233	4	28242	700
26/07/2010	12:00	0	1446	684	2017	3309	2593	5546	825	2579	0	7752	0	0.0775	66008	13582	263	52	37583	341	472	1289	4	27375	585
26/07/2010	13:00	0	1300	687	2119	2870	2525	4778	694	2594	0	7272	0	0.0775	66408	13395	256	37	37798	255	387	1270	4	27369	550
26/07/2010	14:00	0	1177	673	2127	3565	2475	4368	606	2670	0	7473	0	0.0775	62004	13197	209	36	37728	317	610	1116	4	26317	548
26/07/2010	15:00	0	1076	628	1915	4611	2401	3718	703	2736	0	5801	0	0.0775	64040	13195	211	45	37765	311	246	1074	4	25033	523
26/07/2010	16:00	6	974	683	1880	5115	2144	3821	680	2795	0	5690	0	0.0775	64116	13387	200	43	37904	277	211	580	4	23299	487
26/07/2010	17:00	10	1086	835	1964	5566	1593	4432	925	2509	0	5692	0	0.0775	65120	14020	-229	58	37906	309	307	671	4	24188	499
26/07/2010	18:00	55	1213	661	1811	7195	260	5697	1381	1486	10	5658	0	0.0775	65120	14416	168	101	37898	442	636	565	4	27967	624
26/07/2010	19:00	76	1232	427	1764	7538	177	7312	1474	658	5	5661	0	0.0775	66464	15015	158	106	36707	355	870	411	4	32956	636
26/07/2010	20:00	116	1221	496	1825	3307	175	7986	1412	530	10	5675	0	0.0775	66556	14625	178	116	34571	444	819	399	4	31824	599
26/07/2010	21:00	153	1243	612	1709	4699	258	8139	778	592	10	5711	0	0.0775	66568	14848	223	161	34628	626	735	382	4	29599	550
26/07/2010	22:00	120	1087	591	1748	4598	491	7486	723	512	11	5776	0	0.0775	66184	14849	179	114	29423	752	607	366	4	26988	476
26/07/2010	23:00	132	941	1116	1665	4707	558	5936	713	1180	5	5785	0	0.0775	62164	14048	141	171	22240	793	426	213	4	22442	374
27/07/2010	0:00	147	887	1107	1543	3568	587	3188	718	1215	5	5778	0	0.0775	61600	13245	163	165	11753	800	250	419	4	17372	275
27/07/2010	1:00	116	832	1262	1365	2876	649	2081	723	1262	5	5791	0	0.0775	57468	13040	165	181	11021	877	200	769	4	15307	263
27/07/2010	2:00	149	751	1226	1399	2362	1273	1994	698	1232	5	6632	0	0.0775	54152	13046	90	133	11015	688	180	1119	4	14338	237
27/07/2010	3:00	128	752	1327	1269	2972	1909	1668	652	1262	11	7408	0	0.0775	49436	12850	66	186	11026	616	154	745	4	14071	238
27/07/2010	4:00	143	694	1280	1267	3587	1790	1631	790	1327	5	7403	0	0.0775	49232	13037	81	192	11023	693	165	766	4	13530	237
27/07/2010	5:00	138	831	1266	1524	3311	2053	2078	708	1390	10	7417	0	0.0775	49320	12856	148	176	11275	701	175	744	4	14358	288
27/07/2010	6:00	143	980	1245	1660	3066	2642	2752	592	1359	5	7416	0	0.0775	58476	13223	140	202	20506	775	312	1232	4	18153	399
27/07/2010	7:00	116	1356	1204	1828	3323	3077	5446	949	1375	10	7665	0	0.0775	63988	14233	182	104	23407	827	602	1174	4	25598	599
27/07/2010	8:00	148	1577	1442	1970	3138	2669	8520	1436	1390	16	7899	0	0.0775	66552	15442	292	151	37208	561	910	1432	4	38449	936
27/07/2010	9:00	69	1594	1220	2056	4256	2542	9394	1411	1468	10	7677	0	0.0775	66560	15420	348	102	38146	515	794	1093	4	38129	885
27/07/2010	10:00	5	1548	836	2205	4619	2548	7977	806	1071	5	7700	0	0.0775	64932	14615	318	27	38097	408	539	776	4	32087	838
27/07/2010	11:00	0	1469	937	2143	4083	2565	6541	792	738	0	7666	0	0.0775	66304	14219	246	44	38178	405	458	1032	4	29770	773
27/07/2010	12:00	0	1471	951	2150	6058	2665	5832	659	706	0	6852	0	0.0775	66520	14210	278	35	38224	360	412	943	4	28761	674
27/07/2010	13:00	0	1381	933	2182	4089	2367	5462	633	1041	0	6738	0	0.0775	64724	14214	286	36	38133	426	382	1126	4	28359	663
27/07/2010	14:00	0	1281	980	2003	3751	2156	5029	844	1926	0	7154	0	0.0775	64176	13608	242	33	38082	365	337	1076	4	27298	638
27/07/2010	15:00	5	1154	895	1966	3817	2247	4586	766	2493	0	8029	0	0.0775	66488	13628	243	45	38099	253	333	1125	4	26053	587
27/07/2010	16:00	0	1054	926	1842	3748	2159	4380	675	2553	0	7441	0	0.0775	62320	13805	214	37	38080	365	322	621	4	23967	525
27/07/2010	17:00	27	1121	992	1978	4968	2042	4955	661	2522	5	7698	0	0.0775	64316	13832	219	62	38063	368	408	398	4	24177	524
27/07/2010	18:00	61	1201	824	2087	7724	265	6157	1259	2474	5	8346	0	0.0775	64812	14655	177	79	38008	425	676	535	4	28439	661
27/07/2010	19:00	86	1336	579	2079	7640	169	7545	1391	2473	5	6711	0	0.0775	66452	15251	206	148	37981	328	864	445	4	32844	723
27/07/2010	20:00	134	1266	551	2023	6783	177	8261	1321	2425	10	5656	0	0.0775	66356	15058	189	88	38080	502	839	398	4	33212	673
27/07/2010	21:00	110	1185	528	1872	5411	447	8408	1300	2399	10	5659	0	0.0775	66360	15071	225	180	38052	614	699	337	4	31252	611
27/07/2010	22:00	126	1084	517	1852	5229	459	7854	1323	2380	10	5658	0	0.0775	66384	14879	160	104	26157	682	562	367	4	27506	499
27/07/2010	23:00	127	928	514	1835	7550	489	5967	1414	2362	5	5645	0	0.0775	66132	14066	127	114	22309	781	328	291	4	21971	376
28/07/2010	0:00	126	873	622	1937	6949	548	3631	1331	2347	5	5629	0	0.0775	64820	13289	119	167	22174	642	174	339	4	17155	288
28/07/2010	1:00	115	786	1126	1758	6357	607	2530	689	2458	6	5644	0	0.0775	65896	12854	98	149	11997	708	118	509	4	14450	263
28/07/2010	2:00	133	657	1338	1549	5911	1314	1890	612	1707	10	5780	0	0.0775	66232	12886	78	134	10989	686	83	684	4	12879	237
28/07/2010	3:00	122	726	1352	1476	6190	1877	1814	535	1533	5	6720	0	0.0775	64412	12848	62	182	10986	623	93	658	4	13077	237
28/07/2010	4:00	153	726	1274	1459	5817	2194	1820	510	1532	5	6150	0	0.0775	61640	12446	73	107	10991	651	93	627	4	12993	

NORTH

Date	Time	Alfriston	Bruce McClaren	Drury	Fiat Bush	Glenbrook	Harrisville	Hemberson	Hunua	Kauri	Kingseat	Marsden	Maungaturoto	Oakeleigh	Otāhuhu B	Papakura	Pukekohe	Rama Rama	Southdown	Tuakau	Waitoki	Warkworth	Wellsford	Westfield	Whangarei
28/07/2010	19:00	147	1262	543	1836	6935	35	7410	1401	882	10	6300	0	0.0775	66476	15041	205	143	38172	304	884	412	4	32373	687
28/07/2010	20:00	114	1158	556	1846	6943	75	8283	1528	769	10	7112	0	0.0775	66524	15256	171	150	38260	499	849	380	4	33193	674
28/07/2010	21:00	146	1137	511	1883	6775	311	8339	1624	1247	10	7161	0	0.0775	66544	15265	155	146	38238	680	741	350	4	31322	612
28/07/2010	22:00	130	1092	556	1824	6513	333	8020	1513	1515	11	7505	0	0.0775	66392	15054	165	181	38218	804	596	380	4	28001	500
28/07/2010	23:00	85	924	497	1733	4716	560	5948	1653	2362	5	5784	0	0.0775	66236	14671	130	156	31632	923	422	423	4	22331	387
29/07/2010	0:00	153	826	1253	1635	5043	1039	3716	1673	2489	5	5220	0	0.0775	64196	13470	113	138	21512	937	235	346	4	18436	288
29/07/2010	1:00	147	715	1412	1517	6250	1412	2443	1065	2111	5	5207	0	0.0775	53160	13253	80	162	22219	891	159	605	4	15231	262
29/07/2010	2:00	128	693	1352	1444	6507	1358	1970	826	1549	5	5212	0	0.0775	49416	13269	56	163	22266	808	140	881	4	13664	250
29/07/2010	3:00	148	727	1325	1521	6327	1356	2033	635	1517	6	5215	0	0.0775	46448	13048	73	87	22269	843	118	803	4	13167	250
29/07/2010	4:00	138	750	1541	1291	5993	2129	2232	942	1486	10	5211	0	0.0775	49448	12857	86	159	22263	828	129	957	4	13097	251
29/07/2010	5:00	143	806	1301	1276	5311	2309	2808	790	1408	5	5223	0	0.0775	49468	13249	71	156	22258	736	130	1061	4	13499	287
29/07/2010	6:00	138	1015	1390	1375	7023	2527	3099	700	1155	10	5234	0	0.0775	59704	13255	118	201	24336	708	251	1258	4	17334	387
29/07/2010	7:00	133	1391	1228	1998	7114	2510	5857	958	515	16	5242	0	0.0775	66420	14425	220	104	26469	626	616	1316	4	26212	637
29/07/2010	8:00	147	1644	1505	2077	7621	2622	8784	1506	451	10	5256	0	0.0775	66384	15831	305	166	38069	599	1110	1533	4	38241	899
29/07/2010	9:00	100	1650	1007	2232	7201	2543	9555	1552	500	11	5230	0	0.0775	66388	15639	295	122	38078	371	1133	1162	4	38883	886
29/07/2010	10:00	5	1542	597	2144	7513	2725	8441	1471	529	5	5186	0	0.0775	66444	15035	296	50	38107	285	877	958	4	34549	826
29/07/2010	11:00	0	1416	903	2128	7347	2799	7036	1623	705	0	5154	0	0.0775	66524	14423	261	29	38161	418	573	1115	4	31592	713
29/07/2010	12:00	0	1526	971	2059	7429	2665	6319	1682	1391	0	4355	0	0.0775	67512	14200	292	46	38551	504	513	1108	4	29673	601
29/07/2010	13:00	0	1428	924	2001	7359	2604	5764	1636	1596	5	4721	0	0.0775	66704	14210	263	42	38596	335	507	1091	4	29442	601
29/07/2010	14:00	5	1304	973	2063	7360	2480	5707	1720	1470	0	4433	0	0.0775	66136	14031	253	46	38179	468	389	1244	4	28742	575
29/07/2010	15:00	0	1249	954	2012	6592	2432	5068	1791	1595	5	4483	0	0.0775	66136	13825	246	45	38086	414	317	898	4	25862	526
29/07/2010	16:00	0	1183	980	1944	4963	2206	5007	1432	1502	0	5082	0	0.0775	66100	14019	207	39	37995	453	303	487	4	25005	462
29/07/2010	17:00	0	1172	1006	1819	5212	1852	5066	1467	1547	0	5142	0	0.0775	66208	13637	174	20	38001	350	347	441	4	24017	500
29/07/2010	18:00	44	1174	740	1822	4790	321	5654	1466	1534	5	5241	0	0.0775	66368	14433	209	127	38079	320	555	412	4	27289	601
29/07/2010	19:00	117	1253	442	1768	3747	230	7418	1486	1438	5	5233	0	0.0775	66664	15034	234	98	38285	410	783	428	4	31778	674
29/07/2010	20:00	74	1127	356	1675	3486	230	7905	1523	1375	10	4968	0	0.0775	66816	15033	196	116	38460	440	767	443	4	31358	637
29/07/2010	21:00	111	1172	482	1573	3405	359	8163	1505	1294	16	5366	0	0.0775	66536	15053	188	145	38372	693	687	457	4	29302	588
29/07/2010	22:00	152	1084	472	1516	4172	513	7889	1487	1546	10	5528	0	0.0775	66352	15071	188	188	31111	756	572	381	4	26008	499
29/07/2010	23:00	142	997	558	1629	6160	704	6695	1531	1972	5	5594	0	0.0775	64440	14263	133	198	22004	874	382	632	4	21732	388
30/07/2010	0:00	136	853	1261	1740	5639	1142	4394	1388	1484	11	6063	0	0.0775	59240	13678	76	200	22344	796	220	525	4	16425	313
30/07/2010	1:00	154	796	1183	1606	6263	1157	3333	1411	1422	5	6282	0	0.0775	53248	13251	47	152	22329	857	165	736	4	13708	288
30/07/2010	2:00	121	866	1174	1477	6244	1360	2880	1410	1817	11	5696	0	0.0775	49880	13070	65	144	22332	730	134	931	4	13283	262
30/07/2010	3:00	148	810	1473	1372	5135	1606	2508	1384	2418	5	5701	0	0.0775	49892	13037	60	193	22293	751	118	972	4	12878	262
30/07/2010	4:00	153	810	1415	1419	6333	2571	2506	1402	2499	5	5708	0	0.0775	49916	12458	45	142	22295	650	140	1003	4	12527	250
30/07/2010	5:00	148	866	1373	1395	4624	2587	2572	1531	2468	11	5714	0	0.0775	49908	13037	113	210	22315	714	139	866	4	12609	299
30/07/2010	6:00	143	1098	1523	1445	5563	2866	3161	1403	2486	10	5715	0	0.0775	58652	13649	132	228	22664	860	242	1200	4	16245	413
30/07/2010	7:00	163	1402	1570	1796	6847	2901	5420	1344	2506	11	5729	0	0.0775	66656	14637	226	226	35572	687	582	1354	4	23994	623
30/07/2010	8:00	143	1714	1640	1925	7103	2697	8712	1351	2749	15	5829	0	0.0775	66812	15852	307	224	37820	531	917	1581	4	36382	885
30/07/2010	9:00	106	1742	1180	2134	6862	2606	9524	1463	2616	11	5710	0	0.0775	66796	16064	334	151	38210	467	1079	1248	4	36622	898
30/07/2010	10:00	10	1672	629	2000	8220	2677	8163	1400	2927	5	5643	0	0.0775	66828	15035	339	50	38347	267	1027	836	4	30706	811
30/07/2010	11:00	0	1490	788	2012	6085	2727	6490	1508	2934	5	5604	0	0.0775	66840	14622	317	27	38497	299	473	1363	4	28940	676
30/07/2010	12:00	0	1490	967	2051	5910	2590	5537	1363	2721	0	5623	0	0.0775	66712	13795	300	30	38506	390	332	1284	4	27476	612
30/07/2010	13:00	6	1390	1001	1988	6082	2537	4671	1439	2459	0	5264	0	0.0775	66728	13399	272	44	38393	341	307	1145	4	25431	601
30/07/2010	14:00	0	1278	1007	1897	4266	2363	4154	1340	913	0	4662	0	0.0775	66820	13820	248	19	38510	304	412	1272	4	23466	501
30/07/2010	15:00	0	1165	967	1788	4784	2414	3641	1359	786	0	4663	0	0.0775	66400	13422	243	21	38431	245	266	1012	4	22995	463
30/07/2010	16:00	5	1088	988	1764	3907	2291	2968	1326	1577	0	4679	0	0.0775	66376	12423	187	39	38313	316	211	641	4	21748	476
30/07/2010	17:00	22	1066	1077	1693	4089	1615	3175	1343	1786	5	4681	0	0.0775	66364	12203	166	34	38265	293	312	445	4	22150	513
30/07/2010	18:00	81	1158	810	1518	6662	335	4641	1371	1927	0	4691	0	0.0775	66092	14021	184	108	38289	268	521	414	4	24827	588
30/07/2010	19:00	149	1248	528	1654	7020	203	6451	1332	2354	11	4709	0	0.0775	66480	14448	199	140	38328	275	666	413	4	27641	700
30/07/2010	20:00	116	1111	533	1577	6929	205	6923	1205	2528	10	4713	0	0.0775	66640	14643	184	155	38486	379	681	430	4	26664	662
30/07/2010	21:00	157	1143	407	1547	6855	250	7207	1315	2549	10	4718	0	0.0775	66680	14636	180	159	38509	484	610	412	4	25139	599
30/07/2010	22:00	126	1099	633	1421	8048	564	6809	1199	2405	10	4645	0	0.0775	64752										

NORTH

Date	Time	Alfriston	Bruce McClaren	Drury	Fiat Bush	Glenbrook	Harrisville	Henderson	Hunua	Kauri	Kingseat	Marsden	Maungaturoto	Oakeleigh	Otanuhu B	Papakura	Pukekohe	Rama Rama	Southdown	Tuakau	Waitoki	Warkworth	Wellsford	Westfield	Whangarei
31/07/2010	13:00	0	839	832	1180	7421	2304	3804	376	1362	0	4675	0	0.0775	66640	11407	111	47	25995	265	285	1078	4	18738	440
31/07/2010	14:00	5	806	799	1084	5736	2159	3272	224	1347	0	4685	0	0.0775	62104	11380	109	36	26014	276	281	876	4	16951	426
31/07/2010	15:00	0	737	848	1099	7092	2090	2870	180	1363	5	4720	0	0.0775	58448	11388	96	20	26025	305	271	777	4	14932	427
31/07/2010	16:00	0	738	855	1001	7455	1898	2448	276	1457	0	4695	0	0.0775	61904	11816	73	32	26019	144	321	485	4	14753	452
31/07/2010	17:00	16	713	877	1009	4848	1642	2963	426	2006	0	4671	0	0.0775	61868	13007	82	34	26477	0	378	331	4	19388	489
31/07/2010	18:00	33	827	621	879	7535	358	3904	255	2599	6	4688	0	0.0775	64084	12447	89	98	37714	0	572	347	4	18233	589
31/07/2010	19:00	108	895	436	811	8734	167	5529	219	2463	10	4700	0	0.0775	66520	12611	163	136	38465	25	701	327	4	21526	614
31/07/2010	20:00	85	814	366	870	8725	177	5645	232	2331	10	6579	0	0.0775	66504	12857	139	101	38431	17	646	310	4	20120	577
31/07/2010	21:00	107	769	365	758	7452	181	5070	217	1608	15	7605	0	0.0775	64316	12423	116	129	35645	16	557	280	4	18160	501
31/07/2010	22:00	85	691	286	725	5988	290	5058	214	1503	10	7714	0	0.0775	58920	12444	86	108	23202	0	486	265	4	16376	439
31/07/2010	23:00	70	554	359	675	3844	678	3428	202	740	15	7718	0	0.0775	52668	12052	58	112	22317	8	382	157	4	13295	351
1/08/2010	0:00	107	520	322	741	4520	1140	2041	175	627	6	7723	0	0.0775	49376	10822	60	73	11649	0	275	49	4	11500	314
1/08/2010	1:00	70	438	305	735	5302	1139	1200	187	801	10	7721	0	0.0775	49188	9584	63	105	11115	9	164	428	4	10367	263
1/08/2010	2:00	92	426	380	800	5641	1130	604	239	1488	5	7717	0	0.0775	47912	8962	36	102	11123	0	108	744	4	8547	238
1/08/2010	3:00	91	380	1062	752	7359	1135	533	182	1455	5	7723	0	0.0775	45844	8983	32	98	11124	17	73	447	4	7871	225
1/08/2010	4:00	87	345	1069	747	6595	1183	504	178	1425	10	7723	0	0.0775	41772	8748	56	122	11113	0	77	744	4	7133	213
1/08/2010	5:00	102	401	863	758	8135	1614	250	161	1393	5	7720	0	0.0775	42128	8562	140	104	11096	0	83	625	4	7341	225
1/08/2010	6:00	86	412	1071	809	8312	2280	97	155	1331	11	7718	0	0.0775	41540	8745	86	95	11083	0	98	1283	4	8332	251
1/08/2010	7:00	108	576	877	868	5997	2303	0	155	1442	5	7710	0	0.0775	48584	9369	64	91	11075	42	154	1113	4	10062	277
1/08/2010	8:00	70	657	1027	823	7370	2294	1152	141	1537	5	7706	0	0.0775	57964	10980	75	103	11084	247	281	1295	4	12403	327
1/08/2010	9:00	44	771	839	871	7715	2496	3269	145	1649	5	7693	0	0.0775	65984	12193	87	83	15350	240	463	764	4	16531	427
1/08/2010	10:00	0	932	710	1004	7808	2527	4345	154	1505	5	7665	0	0.0775	66476	12420	96	33	22354	374	526	687	4	19348	463
1/08/2010	11:00	5	918	878	896	6162	2586	4795	130	1698	10	7670	0	0.0775	66420	12181	86	67	22365	288	506	874	4	20278	501
1/08/2010	12:00	0	954	778	749	4095	2492	4884	139	2292	10	7687	0	0.0775	58724	12415	107	81	22807	221	486	1004	4	19568	488
1/08/2010	13:00	11	931	804	573	3833	2408	4742	136	2560	10	7682	0	0.0775	55196	12399	100	82	34552	451	476	1001	4	18810	477
1/08/2010	14:00	6	908	785	565	5307	1745	4646	144	2267	5	7656	0	0.0775	55248	12627	96	79	33104	543	471	621	4	18637	451
1/08/2010	15:00	5	862	792	625	7364	1816	4245	161	1615	10	7647	0	0.0775	61792	12413	129	83	22715	698	431	685	4	17982	414
1/08/2010	16:00	27	849	831	665	7118	1806	4014	164	1615	5	7655	0	0.0775	65984	12416	101	57	34600	655	436	358	4	17686	401
1/08/2010	17:00	32	940	884	712	6936	1421	4510	135	1853	5	7663	0	0.0775	66712	12420	98	63	38612	509	546	387	4	19050	476
1/08/2010	18:00	71	1019	508	672	6427	321	5391	160	2773	10	7668	0	0.0775	66556	12602	114	90	38747	405	691	327	4	21596	527
1/08/2010	19:00	49	961	300	673	5988	236	5551	242	2610	10	7664	0	0.0775	66576	12827	111	85	38680	403	764	328	4	22721	550
1/08/2010	20:00	81	848	287	805	6515	242	5490	228	2466	10	7669	0	0.0775	66424	12820	104	98	39958	509	685	328	4	21462	489
1/08/2010	21:00	55	836	244	759	6008	400	4907	227	2385	10	7657	0	0.0775	65920	12438	129	92	38650	769	540	358	4	19053	426
1/08/2010	22:00	71	619	295	787	4086	690	3848	299	1975	10	7655	0	0.0775	62784	12425	91	96	31789	649	401	357	4	16325	363
1/08/2010	23:00	60	539	711	795	3409	972	2211	284	1567	5	7656	0	0.0775	59920	12045	77	100	23087	376	245	264	4	13040	263
2/08/2010	0:00	43	482	714	775	3575	1437	835	318	1377	5	7657	0	0.0775	57224	10823	67	84	17138	88	122	125	4	11663	214

## CENTRAL (NORTH)

Date	Time	Kiwitahi (Peroxide)	Tatuanui	Cambridge	Hamilton Te Kowhai	Horotiu	Kiwitahi	Matangi	Morrinsville	Morrinsville DF	Waitoa	Hamilton	Te Rapa
16/08/2010	1:00	881	922	879	925	0	4	3	89	1178	298	1281	15716
16/08/2010	2:00	862	900	989	913	0	5	3	111	1105	426	1106	15398
16/08/2010	3:00	882	811	1006	914	183	9	3	134	1062	445	1187	15818
16/08/2010	4:00	881	989	1097	935	415	4	3	145	1037	445	1456	16244
16/08/2010	5:00	880	968	1023	945	570	18	3	189	1525	574	1842	16462
16/08/2010	6:00	880	946	1185	1111	373	14	3	144	1557	519	2845	16610
16/08/2010	7:00	859	983	1405	2253	571	30	3	288	1231	556	4956	16820
16/08/2010	8:00	879	1075	1457	3657	362	95	3	331	1218	502	7068	16744
16/08/2010	9:00	858	1106	1239	3255	397	18	3	286	1538	447	6420	21552
16/08/2010	10:00	857	1090	1258	2650	443	46	3	220	1569	464	5517	22028
16/08/2010	11:00	877	1101	1184	2103	303	77	3	175	1548	595	4711	21924
16/08/2010	12:00	857	1011	1186	1858	362	17	3	186	1495	577	4306	16928
16/08/2010	13:00	859	1019	1204	1735	269	13	3	176	1528	634	3838	16514
16/08/2010	14:00	879	1039	987	1527	328	22	3	209	1539	466	3555	16398
16/08/2010	15:00	936	926	914	1518	280	22	3	186	1551	429	3350	16256
16/08/2010	16:00	917	862	896	1530	222	26	3	187	1552	707	3386	16718
16/08/2010	17:00	918	610	968	2035	106	30	3	285	1509	912	4433	16306
16/08/2010	18:00	916	513	1601	2691	35	14	3	362	1527	1001	5617	21494
16/08/2010	19:00	916	835	1962	3370	12	13	3	460	1534	1112	6672	22134
16/08/2010	20:00	916	780	1763	3107	12	13	3	415	1554	1182	6229	21782
16/08/2010	21:00	914	881	1724	2784	0	13	3	350	1607	1237	5830	22022
16/08/2010	22:00	935	898	1635	2272	0	14	3	285	1555	1401	4727	17148
16/08/2010	23:00	876	822	1313	1626	0	13	3	231	1054	1364	3080	16580
17/08/2010	0:00	895	721	1204	1353	0	18	3	222	937	1384	1732	15916
17/08/2010	1:00	897	658	1223	1140	0	5	3	167	937	1436	1176	15172
17/08/2010	2:00	879	764	1134	1096	0	4	3	122	971	1384	953	15620
17/08/2010	3:00	898	815	1025	1095	103	9	3	112	1352	1438	958	16060
17/08/2010	4:00	898	809	752	1120	386	0	3	77	1137	1221	1081	16226
17/08/2010	5:00	880	817	805	1119	501	22	3	134	1070	1206	1221	16226
17/08/2010	6:00	862	772	951	1273	316	5	3	123	1071	1184	2221	16288
17/08/2010	7:00	860	843	1170	1865	467	13	3	288	1167	1187	4478	16252
17/08/2010	8:00	859	778	1261	3166	408	17	3	320	1422	1074	6379	21272
17/08/2010	9:00	859	723	1042	2495	445	94	3	275	1367	1020	5068	21360
17/08/2010	10:00	860	539	1188	1936	479	9	3	196	1345	1078	4149	21612
17/08/2010	11:00	839	523	1241	1642	385	18	3	186	1452	999	3448	18412
17/08/2010	12:00	879	598	1334	1586	468	34	3	163	1494	836	3202	15020
17/08/2010	13:00	881	561	1169	1438	398	34	3	129	1580	1023	2999	15832
17/08/2010	14:00	879	561	1205	1482	386	42	3	86	1636	1149	2919	15880
17/08/2010	15:00	842	828	1280	1483	281	30	3	108	1627	1112	2747	16172
17/08/2010	16:00	859	715	1223	1463	70	30	3	132	1768	1150	2688	16090
17/08/2010	17:00	861	713	1516	1540	83	26	3	175	1564	1257	3072	16306
17/08/2010	18:00	899	706	1605	2008	104	8	3	242	1713	1274	4367	21996
17/08/2010	19:00	898	737	1691	2518	70	14	3	264	1531	1330	5252	22740
17/08/2010	20:00	917	773	1839	2536	36	13	3	253	1442	1401	4884	22704
17/08/2010	21:00	919	818	1532	2236	36	13	3	243	1260	1419	4637	22872
17/08/2010	22:00	916	753	1333	2033	12	13	3	210	850	1566	3977	16844
17/08/2010	23:00	918	742	1169	1597	0	13	3	145	465	1473	2716	15872
18/08/2010	0:00	898	806	915	1274	0	13	3	111	533	1200	1340	15306
18/08/2010	1:00	918	775	952	1071	0	14	3	101	797	1329	1086	15678
18/08/2010	2:00	919	763	988	1059	0	4	3	67	1224	1421	888	16308
18/08/2010	3:00	900	699	952	1167	91	5	3	44	1204	1439	867	15748
18/08/2010	4:00	918	802	731	973	377	9	3	45	1160	1383	949	15994
18/08/2010	5:00	879	706	697	815	513	13	3	100	1354	1475	1465	16066
18/08/2010	6:00	880	666	603	1411	387	9	3	101	1484	1367	1975	15996
18/08/2010	7:00	863	358	969	2090	503	40	3	279	1356	1435	4601	16184
18/08/2010	8:00	840	268	1221	3361	328	61	3	366	1189	1312	6417	16884
18/08/2010	9:00	861	383	1243	2910	422	102	3	278	1038	1253	5574	16316
18/08/2010	10:00	860	343	1784	2276	515	75	3	198	981	1238	4640	16388
18/08/2010	11:00	860	350	1296	2035	377	65	3	198	1208	1145	3844	16748
18/08/2010	12:00	842	377	1279	2065	317	39	3	199	1384	1055	3995	17028
18/08/2010	13:00	900	413	1188	1903	493	43	3	187	1553	1058	3628	16884
18/08/2010	14:00	899	506	1550	1871	211	34	3	142	1770	1276	3605	16964
18/08/2010	15:00	918	530	1657	1752	12	35	3	154	1729	1167	3510	16484
18/08/2010	16:00	935	864	1587	1729	0	77	3	188	1726	1165	3524	16144
18/08/2010	17:00	954	1015	1949	2057	104	69	3	243	1641	1219	4282	16440
18/08/2010	18:00	915	903	2231	2785	105	18	3	330	1614	1293	5798	22298
18/08/2010	19:00	915	902	2463	3875	48	81	3	427	1640	1456	7207	22898
18/08/2010	20:00	894	924	2426	3715	36	14	3	350	1491	1472	6793	17242
18/08/2010	21:00	875	828	2301	3472	36	86	3	297	1074	1564	6154	16550
18/08/2010	22:00	876	822	2054	3041	0	13	3	243	1032	1745	5028	15486
18/08/2010	23:00	895	716	1622	2124	0	82	3	167	1056	1672	3319	15266
19/08/2010	0:00	877	705	1206	1634	0	18	3	100	1189	1544	1617	16076
19/08/2010	1:00	879	655	1133	1262	0	69	3	57	1322	1710	1147	16296
19/08/2010	2:00	879	848	1152	1229	0	22	3	34	1859	1674	950	17068
19/08/2010	3:00	860	888	970	1288	104	9	3	22	1893	1547	1121	16958
19/08/2010	4:00	861	965	988	1225	379	9	3	34	1818	1476	1280	16634
19/08/2010	5:00	860	987	988	1298	514	40	3	112	1785	1548	1588	16424
19/08/2010	6:00	861	838	1025	1489	292	13	3	111	1871	1475	2706	15870
19/08/2010	7:00	841	666	1406	2642	470	23	3	343	1761	1420	5154	16026
19/08/2010	8:00	860	394	2003	4125	375	83	3	440	1468	1313	7515	21564
19/08/2010	9:00	878	474	1588	3633	504	106	3	362	1452	1147	6409	22248
19/08/2010	10:00	918	541	1353	2598	457	70	3	262	1249	1097	4562	16740
19/08/2010	11:00	920	478	1192	2198	447	102	3	252	1702	1020	3845	16290
19/08/2010	12:00	901	517	1207	2214	470	47	3	261	1619	967	3808	15946
19/08/2010	13:00	902	584	1227	2212	389	30	3	218	1521	840	3383	15800
19/08/2010	14:00	921	617	1376	2215	435	105	3	186	1632	965	3378	15820
19/08/2010	15:00	982	616	1228	2142	295	43	3	153	1678	933	2942	16210
19/08/2010	16:00	980	979	1353	2073	329	70	3	154	1796	1004	3134	16142
19/08/2010	17:00	961	918	1281	2327	94	106	3	186	2019	1258	3836	16274
19/08/2010	18:00	960	830	1444	3096	71	8	3	254	1879	1257	5587	22168
19/08/2010	19:00	937	913	1389	3835	36	78	3	308	1652	1205	6677	22420
19/08/2010	20:00	937	795	1316	3679	36	31	3	330	1564	1238	6400	23014
19/08/2010	21:00	955	833	1187	3415	12	62	3	319	1305	1278	6022	23044
19/08/2010	22:00	936	895	1223	2959	0	38	3	266	1294	1461	5116	16536
19/08/2010	23:00	936	857	1259	2054	0	39	3	210	1308	1459	3370	15688

CENTRAL (NORTH)

Date	Time	Kiwitahi (Peroxide)	Tatuanui	Cambridge	Hamilton Te Kowhai	Horotiu	Kiwitahi	Matangi	Morrinsville	Morrinsville DF	Waitoa	Hamilton	Te Rapa
20/08/2010	9:00	937	850	1675	3649	456	44	3	342	1690	1167	6481	22404
20/08/2010	10:00	916	677	1569	2791	502	4	3	242	1712	1059	5436	22940
20/08/2010	11:00	917	653	1045	2464	469	9	3	208	1849	1078	4742	22444
20/08/2010	12:00	977	758	1620	2529	434	4	3	208	1819	1007	4587	16586
20/08/2010	13:00	957	783	2095	2474	458	5	3	186	1842	1001	4083	15610
20/08/2010	14:00	957	815	1659	2540	458	4	3	254	1879	929	4071	15956
20/08/2010	15:00	977	770	1549	2565	270	18	3	220	1782	1002	4160	15972
20/08/2010	16:00	977	906	1499	2783	259	9	3	254	1557	1002	4370	16404
20/08/2010	17:00	958	1067	1805	3204	107	9	3	364	1591	1040	5755	16472
20/08/2010	18:00	977	1002	1894	3636	106	0	3	333	1524	1131	6534	21830
20/08/2010	19:00	975	948	1768	3729	48	9	3	331	1555	1150	6828	22278
20/08/2010	20:00	975	852	1694	3431	36	4	3	287	1392	1168	6432	22572
20/08/2010	21:00	955	900	1712	2963	12	4	3	264	1476	1186	5850	21776
20/08/2010	22:00	935	894	1530	2540	0	5	3	209	1604	1441	4888	16536
20/08/2010	23:00	897	861	1296	1832	0	9	3	166	1564	1513	3168	16450
21/08/2010	0:00	937	837	1208	1319	0	4	3	89	1600	1401	1955	16800
21/08/2010	1:00	898	889	1224	1241	0	5	3	77	1622	1403	1205	16930
21/08/2010	2:00	898	891	935	1156	0	9	3	56	1560	1368	851	16336
21/08/2010	3:00	919	873	1243	1183	104	0	3	57	1540	1454	568	16270
21/08/2010	4:00	919	901	1153	1194	391	4	3	33	1541	1237	543	16566
21/08/2010	5:00	902	806	1226	1095	514	9	3	57	1542	1184	646	16038
21/08/2010	6:00	922	755	1389	1251	516	5	3	56	1566	1150	806	16650
21/08/2010	7:00	921	633	1301	1271	470	43	3	78	1564	1204	1881	15984
21/08/2010	8:00	901	433	1299	1506	294	43	3	134	1541	1204	3159	16168
21/08/2010	9:00	923	693	1225	1906	388	35	3	145	1561	1168	4018	16116
21/08/2010	10:00	902	440	1136	1903	389	44	3	144	1551	983	3592	15612
21/08/2010	11:00	923	422	1736	1894	305	34	3	143	1592	913	3549	15596
21/08/2010	12:00	923	455	1428	1733	153	18	3	165	1291	912	3204	16222
21/08/2010	13:00	903	467	1101	1520	12	17	3	143	1291	984	2949	16014
21/08/2010	14:00	904	449	1083	1467	11	21	3	144	1422	1003	2672	15804
21/08/2010	15:00	923	870	1556	1315	12	4	3	143	1259	895	2245	15764
21/08/2010	16:00	903	849	1663	1487	0	5	3	143	1678	690	1927	15536
21/08/2010	17:00	902	699	1663	1550	0	8	3	188	1734	689	2718	15066
21/08/2010	18:00	922	621	2063	1848	0	0	3	220	1809	766	3925	15074
21/08/2010	19:00	902	626	2076	2119	0	5	3	254	1679	855	4615	15588
21/08/2010	20:00	919	638	2098	2183	0	9	3	243	1527	856	4478	15928
21/08/2010	21:00	919	664	2005	2088	0	4	3	221	1539	856	4006	16204
21/08/2010	22:00	899	676	1838	1833	0	5	3	189	1539	837	3558	16184
21/08/2010	23:00	918	662	1659	1587	0	4	3	155	1529	800	2739	16320
22/08/2010	0:00	900	663	1354	1514	0	5	3	111	1616	744	1669	16566
22/08/2010	1:00	920	678	1534	1349	0	9	3	78	1618	744	1238	16242
22/08/2010	2:00	901	684	1717	1265	0	5	3	78	1640	798	954	15954
22/08/2010	3:00	921	684	1716	1241	0	0	3	90	1673	817	905	16378
22/08/2010	4:00	901	647	1700	1228	0	9	3	79	1650	780	1057	16412
22/08/2010	5:00	920	602	1720	1314	0	4	3	90	1641	780	996	16444
22/08/2010	6:00	920	632	1768	1265	0	9	3	78	1661	819	1259	16648
22/08/2010	7:00	920	724	1735	1319	0	5	3	112	1393	873	2116	16632
22/08/2010	8:00	901	561	1861	1574	0	0	3	179	1368	872	3506	16940
22/08/2010	9:00	920	649	1825	2149	0	9	3	233	1375	817	4793	16532
22/08/2010	10:00	901	342	1499	2193	0	4	3	243	1676	744	4865	16256
22/08/2010	11:00	920	316	1430	1857	0	5	3	221	1376	560	4045	16166
22/08/2010	12:00	922	556	1594	1698	0	8	3	176	1312	410	3675	16004
22/08/2010	13:00	902	513	1408	1563	0	0	3	177	1172	185	3226	16144
22/08/2010	14:00	924	468	1539	1298	0	9	3	165	1268	148	2605	15898
22/08/2010	15:00	924	591	1667	1256	0	4	3	143	1648	167	2179	15704
22/08/2010	16:00	905	992	1649	1185	0	5	3	133	1738	166	2022	16044
22/08/2010	17:00	924	1087	1632	1311	0	8	3	110	1684	186	2604	15012
22/08/2010	18:00	921	1028	1736	1881	0	5	3	200	1683	224	3966	15140
22/08/2010	19:00	901	993	1862	2544	0	0	3	233	1690	259	5329	16440
22/08/2010	20:00	921	929	1714	2640	0	9	3	233	1658	335	5450	16288
22/08/2010	21:00	901	1125	1081	2355	0	4	3	200	1627	463	4754	16168
22/08/2010	22:00	882	1078	825	1996	0	5	3	156	1648	483	3860	16008
22/08/2010	23:00	902	985	623	1551	0	9	3	90	1640	353	2643	16080
23/08/2010	0:00	904	924	988	1420	0	0	3	67	1631	335	1275	16024



CENTRAL (SOUTH)

Date	Time	Inglewood	Waitara	Eltham	Kaponga	New Plymouth	Stratford
9/08/2010	1:00	18	166	474	0	1705	115
9/08/2010	2:00	9	156	477	4	1566	128
9/08/2010	3:00	14	158	383	4	1537	132
9/08/2010	4:00	9	156	319	4	1532	115
9/08/2010	5:00	9	208	397	0	1765	149
9/08/2010	6:00	79	304	684	4	2146	188
9/08/2010	7:00	194	379	714	8	3294	435
9/08/2010	8:00	313	488	736	8	4812	574
9/08/2010	9:00	273	462	658	16	4989	583
9/08/2010	10:00	225	346	658	15	3906	518
9/08/2010	11:00	171	293	679	12	3422	475
9/08/2010	12:00	200	299	678	8	3249	488
9/08/2010	13:00	201	325	678	4	3639	408
9/08/2010	14:00	189	294	594	8	3468	330
9/08/2010	15:00	171	284	595	7	3143	365
9/08/2010	16:00	84	332	517	12	2960	454
9/08/2010	17:00	118	347	504	12	3042	465
9/08/2010	18:00	189	512	531	12	4052	454
9/08/2010	19:00	218	553	529	19	5247	520
9/08/2010	20:00	213	513	548	16	5409	540
9/08/2010	21:00	182	474	482	11	5183	406
9/08/2010	22:00	147	400	479	8	4399	308
9/08/2010	23:00	83	326	459	4	3368	229
10/08/2010	0:00	41	261	455	5	2653	150
10/08/2010	1:00	19	236	428	4	2309	128
10/08/2010	2:00	14	211	437	4	2253	149
10/08/2010	3:00	13	209	175	4	2105	137
10/08/2010	4:00	19	192	281	4	2181	148
10/08/2010	5:00	14	247	331	0	2201	160
10/08/2010	6:00	88	312	722	4	2467	213
10/08/2010	7:00	241	413	772	8	3579	436
10/08/2010	8:00	314	545	780	12	5399	681
10/08/2010	9:00	271	477	732	12	5862	670
10/08/2010	10:00	210	363	711	8	4535	473
10/08/2010	11:00	133	274	713	8	3638	339
10/08/2010	12:00	136	233	617	4	3048	305
10/08/2010	13:00	115	178	596	3	3021	328
10/08/2010	14:00	78	166	628	4	2824	307
10/08/2010	15:00	58	209	609	4	2680	239
10/08/2010	16:00	62	267	493	8	2563	319
10/08/2010	17:00	83	336	473	7	2795	305
10/08/2010	18:00	152	441	499	12	3609	338
10/08/2010	19:00	205	522	535	16	4900	405
10/08/2010	20:00	207	513	523	16	5108	371
10/08/2010	21:00	174	461	533	11	4788	347
10/08/2010	22:00	128	391	504	8	4126	292
10/08/2010	23:00	78	293	474	8	3277	203
11/08/2010	0:00	36	212	418	4	2558	135
11/08/2010	1:00	23	177	281	4	2233	103
11/08/2010	2:00	18	221	280	4	2088	114
11/08/2010	3:00	19	226	243	4	2085	137
11/08/2010	4:00	18	231	273	0	1989	138
11/08/2010	5:00	19	231	382	4	2162	139
11/08/2010	6:00	96	287	679	4	2434	160
11/08/2010	7:00	232	388	725	8	3660	457
11/08/2010	8:00	287	512	756	13	5353	612
11/08/2010	9:00	263	459	726	11	5397	620
11/08/2010	10:00	205	332	667	12	4105	464
11/08/2010	11:00	154	277	678	4	3267	366
11/08/2010	12:00	150	224	646	3	3141	321
11/08/2010	13:00	126	225	625	4	3015	319
11/08/2010	14:00	136	199	576	4	2844	286
11/08/2010	15:00	74	173	593	4	2663	274
11/08/2010	16:00	63	241	495	4	2519	286
11/08/2010	17:00	71	310	475	3	2824	262
11/08/2010	18:00	145	425	493	12	3598	418
11/08/2010	19:00	208	520	523	16	4789	442
11/08/2010	20:00	201	481	522	12	5024	496
11/08/2010	21:00	188	472	520	16	4750	486
11/08/2010	22:00	138	409	561	8	4404	341
11/08/2010	23:00	75	323	472	4	3403	218
12/08/2010	0:00	36	244	442	4	2743	162
12/08/2010	1:00	19	245	305	4	2258	160
12/08/2010	2:00	9	221	128	4	2157	191
12/08/2010	3:00	10	221	119	4	1968	195
12/08/2010	4:00	14	208	263	0	2018	172
12/08/2010	5:00	33	221	452	4	2039	150
12/08/2010	6:00	125	276	800	5	2493	206
12/08/2010	7:00	227	379	779	4	3489	519
12/08/2010	8:00	276	477	826	12	5072	625
12/08/2010	9:00	287	476	783	12	5605	579
12/08/2010	10:00	231	371	786	15	4516	458
12/08/2010	11:00	165	350	735	8	4086	424
12/08/2010	12:00	147	311	698	8	3710	473
12/08/2010	13:00	113	270	690	11	3450	449
12/08/2010	14:00	109	229	657	8	3269	358
12/08/2010	15:00	146	244	637	8	3131	413
12/08/2010	16:00	189	310	545	8	3161	447
12/08/2010	17:00	189	399	536	11	3635	433

CENTRAL (SOUTH)

Date	Time	Inglewood	Waitara	Eiwham	Kaponga	New Plymouth	Stratford
12/08/2010	18:00	209	496	574	16	4474	535
12/08/2010	19:00	209	493	583	19	5132	444
12/08/2010	20:00	189	475	552	15	4960	388
12/08/2010	21:00	171	426	564	12	4502	354
12/08/2010	22:00	134	352	385	12	3850	309
12/08/2010	23:00	70	251	357	4	3004	207
13/08/2010	0:00	31	184	228	8	2454	153
13/08/2010	1:00	19	170	118	0	2150	109
13/08/2010	2:00	13	143	147	8	2024	152
13/08/2010	3:00	9	156	127	0	1798	144
13/08/2010	4:00	14	157	110	3	1752	171
13/08/2010	5:00	9	172	228	4	1815	182
13/08/2010	6:00	93	227	681	4	2081	179
13/08/2010	7:00	188	265	735	8	3167	377
13/08/2010	8:00	220	418	687	12	4631	558
13/08/2010	9:00	216	382	672	11	4751	567
13/08/2010	10:00	213	357	702	19	4025	433
13/08/2010	11:00	168	289	651	8	3841	343
13/08/2010	12:00	170	278	572	12	3777	335
13/08/2010	13:00	130	251	456	7	3599	322
13/08/2010	14:00	176	297	521	8	3373	325
13/08/2010	15:00	182	366	435	12	3445	351
13/08/2010	16:00	152	407	207	11	3227	367
13/08/2010	17:00	143	414	191	12	3795	371
13/08/2010	18:00	170	463	195	15	4354	338
13/08/2010	19:00	161	418	214	16	4667	361
13/08/2010	20:00	158	363	209	11	4492	324
13/08/2010	21:00	131	322	197	16	4053	290
13/08/2010	22:00	110	267	196	8	3413	255
13/08/2010	23:00	72	235	177	7	2915	199
14/08/2010	0:00	40	151	134	4	2103	127
14/08/2010	1:00	22	134	111	4	1878	89
14/08/2010	2:00	9	120	101	0	1738	102
14/08/2010	3:00	5	103	88	4	1523	99
14/08/2010	4:00	4	118	86	0	1429	85
14/08/2010	5:00	0	118	156	4	1354	84
14/08/2010	6:00	0	134	340	0	1394	108
14/08/2010	7:00	27	147	341	4	1827	138
14/08/2010	8:00	65	213	552	8	2406	216
14/08/2010	9:00	88	279	579	8	3053	274
14/08/2010	10:00	96	277	581	8	3208	273
14/08/2010	11:00	87	237	589	3	3024	261
14/08/2010	12:00	65	224	560	8	2681	240
14/08/2010	13:00	71	170	561	4	2478	196
14/08/2010	14:00	53	169	542	8	2241	161
14/08/2010	15:00	53	171	472	4	2129	137
14/08/2010	16:00	57	172	402	7	2219	172
14/08/2010	17:00	71	185	433	12	2319	207
14/08/2010	18:00	108	265	440	8	2992	262
14/08/2010	19:00	116	332	452	11	3548	286
14/08/2010	20:00	113	295	303	8	3423	262
14/08/2010	21:00	99	268	283	8	3223	217
14/08/2010	22:00	87	241	124	4	2846	182
14/08/2010	23:00	62	213	103	4	2401	172
15/08/2010	0:00	40	174	106	4	1891	138
15/08/2010	1:00	22	146	95	4	1654	105
15/08/2010	2:00	14	148	95	0	1569	96
15/08/2010	3:00	13	134	96	4	1415	84
15/08/2010	4:00	9	149	109	0	1222	85
15/08/2010	5:00	14	135	285	4	1409	97
15/08/2010	6:00	13	135	653	0	1406	120
15/08/2010	7:00	64	148	634	0	1709	142
15/08/2010	8:00	102	220	625	4	2174	175
15/08/2010	9:00	160	246	575	8	3120	266
15/08/2010	10:00	161	242	586	7	3245	310
15/08/2010	11:00	92	214	595	8	2921	310
15/08/2010	12:00	53	214	506	12	2383	277
15/08/2010	13:00	50	159	577	8	2392	242
15/08/2010	14:00	44	160	538	12	2096	255
15/08/2010	15:00	31	146	428	8	1891	219
15/08/2010	16:00	45	176	427	12	1847	209
15/08/2010	17:00	63	191	435	16	1804	267
15/08/2010	18:00	119	303	494	12	2447	322
15/08/2010	19:00	151	355	455	16	3392	333
15/08/2010	20:00	156	367	454	12	3403	321
15/08/2010	21:00	135	326	454	12	3277	287
15/08/2010	22:00	96	272	443	8	2709	231
15/08/2010	23:00	55	218	422	0	2104	173
16/08/2010	0:00	27	177	383	4	1927	128

FRANKLEY RD

Date Time		TCC	Kapuni	Ammonia Urea	Kapuni GTP/Maui Bypass	Kupe
9/08/2010	1:00	48816	42	10375	23799	57112
9/08/2010	2:00	48328	48	10379	23807	56920
9/08/2010	3:00	47432	42	10363	22098	56488
9/08/2010	4:00	45848	48	10343	21985	55848
9/08/2010	5:00	42800	49	10379	21961	56184
9/08/2010	6:00	46328	49	10371	21953	56600
9/08/2010	7:00	56984	55	10343	21945	57048
9/08/2010	8:00	66616	55	10323	21937	57144
9/08/2010	9:00	66824	48	10315	22146	56696
9/08/2010	10:00	67288	54	10307	13818	56976
9/08/2010	11:00	67152	41	10272	23710	56944
9/08/2010	12:00	67040	47	10284	28112	57016
9/08/2010	13:00	67056	47	10272	30410	56920
9/08/2010	14:00	67192	39	10230	31007	56840
9/08/2010	15:00	67328	40	10224	31015	60096
9/08/2010	16:00	67464	41	10162	31015	67536
9/08/2010	17:00	67504	40	10270	32168	68496
9/08/2010	18:00	67480	42	10295	32990	68264
9/08/2010	19:00	66608	48	10254	34618	68056
9/08/2010	20:00	67632	41	10266	34635	69048
9/08/2010	21:00	67776	49	10307	34635	71184
9/08/2010	22:00	67728	41	10339	34618	72056
9/08/2010	23:00	67712	42	10303	34626	69304
10/08/2010	0:00	67624	48	10335	35497	59824
10/08/2010	1:00	59112	42	10337	38333	68776
10/08/2010	2:00	58760	49	10362	39301	72144
10/08/2010	3:00	58680	49	10382	40116	72296
10/08/2010	4:00	58632	42	10366	40141	72312
10/08/2010	5:00	58624	56	10378	40141	72208
10/08/2010	6:00	63000	49	10329	40116	72520
10/08/2010	7:00	68256	56	10297	40092	72136
10/08/2010	8:00	68656	56	10307	40084	64016
10/08/2010	9:00	68768	56	10251	40076	46544
10/08/2010	10:00	68352	55	10118	40084	45624
10/08/2010	11:00	67656	47	9988	40076	45672
10/08/2010	12:00	67648	38	10171	40076	45816
10/08/2010	13:00	67648	39	10301	40124	45928
10/08/2010	14:00	67592	38	10217	40157	48744
10/08/2010	15:00	67576	32	10080	40149	73848
10/08/2010	16:00	67512	39	10241	40133	75072
10/08/2010	17:00	67400	33	10313	40100	76144
10/08/2010	18:00	68712	33	10132	40100	75384
10/08/2010	19:00	68784	42	10165	40092	75472
10/08/2010	20:00	64152	49	10108	40108	75840
10/08/2010	21:00	68072	41	10020	40092	75621
10/08/2010	22:00	68808	42	9943	40124	75545
10/08/2010	23:00	58112	41	9992	40116	75789
11/08/2010	0:00	53096	35	9951	41375	76704
11/08/2010	1:00	48328	42	9803	45312	72612
11/08/2010	2:00	48160	42	9052	47387	70892
11/08/2010	3:00	48288	49	8489	47387	71537
11/08/2010	4:00	48376	41	8413	47387	71688
11/08/2010	5:00	48296	49	8072	47395	71763
11/08/2010	6:00	52856	48	7885	45232	71754
11/08/2010	7:00	62688	48	7716	41922	71740
11/08/2010	8:00	68384	49	7979	41922	71531
11/08/2010	9:00	68208	55	8132	41930	71792
11/08/2010	10:00	67912	41	8100	41938	71849
11/08/2010	11:00	67208	33	8076	41922	71812
11/08/2010	12:00	66928	32	7967	41785	71790
11/08/2010	13:00	66616	33	8078	41188	71879
11/08/2010	14:00	66408	25	8025	40970	71884
11/08/2010	15:00	66544	32	7786	38645	71849
11/08/2010	16:00	66352	26	7907	36950	64324
11/08/2010	17:00	66224	33	7907	34594	22
11/08/2010	18:00	67272	33	7963	34852	23513
11/08/2010	19:00	62432	42	8015	36434	298
11/08/2010	20:00	65000	41	8242	36426	430
11/08/2010	21:00	67824	42	8200	36410	391
11/08/2010	22:00	68096	42	8417	36450	315
11/08/2010	23:00	68192	42	8572	36498	457
12/08/2010	0:00	68160	43	8640	36498	5953
12/08/2010	1:00	58744	42	8860	36601	423
12/08/2010	2:00	58304	42	9704	36553	309
12/08/2010	3:00	58248	49	10229	36545	80
12/08/2010	4:00	58208	49	10483	36561	453
12/08/2010	5:00	58072	56	10407	36561	436
12/08/2010	6:00	62416	49	10325	36561	372
12/08/2010	7:00	67704	49	10253	36556	234
12/08/2010	8:00	67888	56	10285	36565	31
12/08/2010	9:00	66848	48	10333	36559	0
12/08/2010	10:00	62960	41	10265	36559	0
12/08/2010	11:00	53664	41	10337	36570	0
12/08/2010	12:00	41168	32	10385	36557	54
12/08/2010	13:00	48264	39	10307	36536	279
12/08/2010	14:00	48416	33	10227	36656	49878
12/08/2010	15:00	48400	32	10076	36564	76562
12/08/2010	16:00	48336	33	9636	36546	76362
12/08/2010	17:00	48296	33	9259	37377	76372

FRANKLEY RD

Date Time	TCC	Kapuni	Ammonia Urea	Kapuni GTP/Maui Bypass	Kupe
12/08/2010 18:00	48304	41	9724	41458	76172
12/08/2010 19:00	48280	34	9866	44906	75713
12/08/2010 20:00	48264	33	9704	45633	75905
12/08/2010 21:00	48280	33	9640	45645	76053
12/08/2010 22:00	48288	34	9742	45646	75766
12/08/2010 23:00	48304	33	9636	45644	75577
13/08/2010 0:00	48280	34	9563	45952	76153
13/08/2010 1:00	48264	26	9575	48851	71610
13/08/2010 2:00	48304	34	9583	48503	71029
13/08/2010 3:00	40904	41	9658	49260	71124
13/08/2010 4:00	40544	33	9633	49247	71971
13/08/2010 5:00	40560	33	9621	49253	71755
13/08/2010 6:00	44320	34	9621	49248	71604
13/08/2010 7:00	48392	33	9635	49254	71715
13/08/2010 8:00	48368	40	9631	49247	71706
13/08/2010 9:00	48368	34	9601	49246	71660
13/08/2010 10:00	52616	26	9706	49245	71670
13/08/2010 11:00	65696	27	9708	50823	71670
13/08/2010 12:00	65888	26	9589	52878	70535
13/08/2010 13:00	65968	27	9714	55906	70139
13/08/2010 14:00	65840	26	9740	56445	70766
13/08/2010 15:00	65856	20	9549	54692	70763
13/08/2010 16:00	65848	26	9692	54693	70346
13/08/2010 17:00	65960	27	9684	50106	70427
13/08/2010 18:00	66184	26	9714	45643	72218
13/08/2010 19:00	66168	27	9732	42402	71784
13/08/2010 20:00	66032	20	10028	41947	71911
13/08/2010 21:00	65672	26	9986	41944	73256
13/08/2010 22:00	64952	27	9831	41951	73556
13/08/2010 23:00	58040	20	9674	41952	73476
14/08/2010 0:00	57888	26	9573	41949	73232
14/08/2010 1:00	38936	27	9544	36668	63465
14/08/2010 2:00	34832	20	9606	33982	61324
14/08/2010 3:00	40280	27	9528	32931	61384
14/08/2010 4:00	40584	26	9598	32790	61421
14/08/2010 5:00	39800	27	9473	29431	61551
14/08/2010 6:00	36264	27	9505	29168	61774
14/08/2010 7:00	40336	33	9471	29018	61793
14/08/2010 8:00	40128	34	9355	27395	62006
14/08/2010 9:00	40256	33	9279	29158	62044
14/08/2010 10:00	39816	33	9471	29166	61881
14/08/2010 11:00	43408	26	9636	29353	61925
14/08/2010 12:00	47376	33	9660	30843	62382
14/08/2010 13:00	47552	27	9548	33385	62192
14/08/2010 14:00	47768	26	9528	36384	62249
14/08/2010 15:00	41864	32	9560	36403	62482
14/08/2010 16:00	40680	26	9524	36428	62120
14/08/2010 17:00	40792	27	9536	36398	62010
14/08/2010 18:00	41640	26	9451	34983	62243
14/08/2010 19:00	41640	27	9359	34578	62282
14/08/2010 20:00	40208	33	9479	34595	61060
14/08/2010 21:00	40176	27	9590	34612	61082
14/08/2010 22:00	40272	33	9598	34605	61010
14/08/2010 23:00	40320	34	9596	35839	61036
15/08/2010 0:00	40344	26	9600	36425	60675
15/08/2010 1:00	34984	34	9546	36388	61391
15/08/2010 2:00	35088	26	9522	36379	61920
15/08/2010 3:00	35128	27	9492	36379	61881
15/08/2010 4:00	34968	27	9496	36389	61930
15/08/2010 5:00	35032	27	9526	36386	61848
15/08/2010 6:00	35080	33	9550	35995	61870
15/08/2010 7:00	35064	33	9560	34578	61940
15/08/2010 8:00	39864	41	9584	34576	61815
15/08/2010 9:00	40056	33	9640	34587	61788
15/08/2010 10:00	40448	41	9608	34574	61908
15/08/2010 11:00	40288	33	9568	34563	62049
15/08/2010 12:00	40144	33	9564	34567	61964
15/08/2010 13:00	40344	41	9560	33525	62000
15/08/2010 14:00	40328	33	9552	32736	61920
15/08/2010 15:00	40280	33	9580	28946	61958
15/08/2010 16:00	40056	33	9596	27336	61914
15/08/2010 17:00	40144	34	9628	27335	61900
15/08/2010 18:00	40504	33	9600	27329	62540
15/08/2010 19:00	40616	33	9554	27332	62213
15/08/2010 20:00	40464	34	9492	27327	62056
15/08/2010 21:00	40440	33	9478	27325	62078
15/08/2010 22:00	40280	33	9470	27323	62144
15/08/2010 23:00	40240	34	9429	27445	62041
16/08/2010 0:00	40232	34	9548	28420	61771

SOUTH

Date	Time	Rimu Injection	Ashhurst	Belmont	Dannevirke	Feilding	Flockhouse	Foxton	Hastings	Hawera	Pauatahanui #2	Kairanga	Kaitoke	Kakariki	Kuku	Lake Alice	Levin	Longburn	Mangia	Mangaroa	Mangatainoka	Marton	Matapu	Okaiawa	Oroua Downs	Ohaki	Pahiatua	Palmerston Nth	Paraparaumu	Paatea	Pauatahanui #1	Takapau	Te Horo	Waikanae	Waitanguru	Tawa	Waitotara	Wanganui	Waverley
5/07/2010	1:00	1888	8	2890	26	468	0.625	44	3503	201	4	0	69	39	4	4	515	522	76	81	0	811	2	1401	0	30	107	1774	206	111	173	119	2	70	305	3915	35	1085	58
5/07/2010	2:00	1920	0	2601	24	468	0.625	55	3289	222	4	0	69	49	4	0	507	491	77	81	0	830	2	1080	0	26	121	1677	179	93	174	107	2	61	245	4053	36	1105	88
5/07/2010	3:00	1920	9	2439	24	485	0.625	45	3615	203	4	0	70	39	4	0	475	498	102	84	0	835	2	657	0	30	120	1706	194	120	159	119	2	55	265	4265	31	1174	91
5/07/2010	4:00	1920	8	2616	18	594	0.625	33	4270	204	4	0	70	49	4	0	466	502	101	81	0	820	2	781	0	39	92	1812	193	106	177	120	2	60	266	4390	32	1206	86
5/07/2010	5:00	1920	0	2834	18	503	0.625	79	4738	393	4	0	70	57	4	28	672	503	102	82	0	844	2	646	0	55	105	2004	275	92	172	264	2	70	408	5036	31	1408	86
5/07/2010	6:00	1920	9	3818	14	606	0.625	129	5464	950	4	0	73	86	4	48	997	816	91	91	0	867	2	722	0	50	107	2922	515	110	210	361	2	141	636	7825	68	2008	39
5/07/2010	7:00	1952	26	7471	60	914	0.625	128	6834	1249	4	0	92	114	4	143	1449	799	109	100	0	904	2	709	0	72	106	4632	824	142	352	543	2	240	1601	12869	174	2879	39
5/07/2010	8:00	1888	73	9378	223	1120	0.625	159	7357	1370	4	0	92	103	4	187	1734	908	124	126	0	1036	2	841	0	172	53	6218	1120	110	403	521	2	375	2210	18799	172	4030	39
5/07/2010	9:00	2720	65	9452	243	1159	0.625	258	8446	1714	4	0	116	102	4	196	1969	864	128	132	0	1043	2	810	182	173	55	6296	1251	119	359	455	2	480	2093	18805	167	4088	34
5/07/2010	10:00	1952	45	8440	259	1154	0.625	257	8212	1926	4	61	124	120	4	195	2150	869	142	123	0	897	2	891	199	161	42	5914	1193	96	325	565	2	436	1825	16908	171	4072	29
5/07/2010	11:00	1920	45	7476	175	1058	0.625	166	8110	1823	4	56	112	146	4	213	1878	727	138	121	0	855	2	708	199	117	56	5452	894	52	266	692	2	326	1482	15309	175	3547	34
5/07/2010	12:00	1984	44	6898	232	1059	0.625	115	7915	1764	4	27	114	128	4	201	1714	657	137	112	0	922	2	739	200	92	42	5032	677	37	264	686	2	239	1267	13676	170	3356	34
5/07/2010	13:00	1856	36	6226	190	1015	0.625	134	8178	1803	4	49	109	120	4	188	1562	710	146	104	0	885	2	684	193	104	68	5006	610	69	251	678	2	188	1181	12830	171	3862	39
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5/07/2010	15:00	2400	44	5695	208	1073	0.625	231	7293	1718	4	55	109	218	4	192	1573	737	141	108	0	710	2	607	197	100	67	4938	623	77	239	607	2	212	1015	11828	105	3650	40
5/07/2010	16:00	2172	27	6083	174	1031	0.625	195	7381	1439	4	56	102	244	4	185	1608	719	122	107	0	440	2	549	202	113	79	5018	713	118	266	524	2	208	1078	12128	40	3583	33
5/07/2010	17:00	2244	44	7432	242	1060	0.625	196	6941	1326	4	55	108	234	4	185	1541	708	80	102	0	670	2	521	196	142	54	5392	911	109	350	416	2	334	1367	13295	27	4028	34
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5/07/2010	23:00	1920	27	5069	203	571	0.625	54	5341	878	4	50	75	163	4	151	630	580	127	79	0	765	2	1462	197	80	90	3167	501	73	252	233	2	208	800	7336	54	2563	151
6/07/2010	0:00	1888	8	3500	180	476	0.625	43	4985	664	4	56	71	172	4	151	502	554	73	79	0	767	2	1653	193	45	79	2235	255	55	187	167	2	101	441	4997	31	1863	132
6/07/2010	1:00	1824	0	2814	160	454	0.625	33	5242	539	4	56	74	154	4	145	433	562	55	79	0	786	2	1820	194	30	78	1755	177	95	161	221	2	57	283	3730	70	1559	117
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6/07/2010	3:00	1792	0	2400	300	438	0.625	23	5123	474	4	51	68	57	4	143	398	481	94	79	10	790	2	1914	189	32	91	1613	165	80	166	238	2	47	244	4038	71	1214	109
6/07/2010	4:00	1824	8	2478	199	382	0.625	34	5303	474	4	55	68	47	4	126	393	563	90	79	57	830	2	1897	196	48	65	1630	167	19	167	237	2	53	284	4056	71	1215	101
6/07/2010	5:00	1760	8	2812	178	422	0.625	66	5440	512	4	56	71	68	4	118	582	550	103	76	56	854	2	1918	190	30	65	1726	194	116	167	203	2	78	304	4607	79	1311	97
6/07/2010	6:00	1824	8	3988	205	486	0.625	118	6210	1035	4	51	75	95	4	141	1183	748	121	86	34	896	2	1860	191	24	79	2770	449	73	221	307	2	128	632	6480	108	1767	92
6/07/2010	7:00	1792	17	7588	290	731	0.625	234	7637	1229	4	56	91	102	4	156	1453	795	112	103	11	916	2	1878	195	94	104	4502	713	112	361	567	2	197	1629	12205	169	2909	87
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6/07/2010	9:00	1824	44	9207	217	1091	0.625	284	8212	1793	4	57	109	216	4	207	1849	807	132	123	79	1013	2	1478	195	142	42	6227	1097	126	341	658	2	405	1851	18320	168	3706	79
6/07/2010	10:00	1824	44	8664	332	1122	0.625	284	7985	1850	4	56	125	245	4	222	1773	834	142	120	68	1046	2	1291	200	175	42	6033	1043	92	311	718	2	373	1756	16475	171	3630	74
6/07/2010	11:00	1792	60	8078	274	1078	0.625	254	7436	1826	4	50	114	253	4	195	1719	768	135	124	46	1083	2	996	190	127	54	5176	881	73	267	623	2	319	1625	15563	165	3389	70
6/07/2010	12:00	1824	44	7883	386	917	0.625	237	7730	1776	4	56	110	236	4	199	1590	720	145	115	44	1050	2	824	189	114	54	4738	786	33	280	635	2	279	1496	15341	180	3024	129
6/07/2010	13:00	1984	51	7336	306	907	0.625	242	8123	1752	4	49	104	209	4	209	1634	722	149	118	44	1107	2	689	188	101	42	4546											

SOUTH

Date	Time	Rimu Injection	Ashhurst	Belmont	Dannevirke	Feilding	Flockhouse	Foxton	Hastings	Hawera	Papatohanui #2	Kairanga	Kaitoke	Kakariki	Kuku	Lake Alice	Levin	Longburn	Mania	Mangaroa	Mangatainoka	Marton	Matapu	Okaiawa	Oroua Downs	Otaki	Pahiatua	Palmerston Nth	Paraparaumu	Paatea	Papatohanui #1	Takapau	Te Horo	Waikanae	Waitanguru	Tawa	Waitotara	Wanganui	Waiverley	
9/07/2010	13:00	1600	26	8541	341	792	0.625	151	7549	1361	4	57	110	238	4	194	1406	644	132	117	47	1049	2	1620	187	112	54	5494	745	47	308	543	2	281	1614	15797	189	3288	101	
9/07/2010	14:00	1664	44	8578	233	719	0.625	133	7516	962	4	51	106	230	4	178	1218	438	129	113	34	1031	2	1339	189	103	66	5274	705	69	294	531	2	257	1529	15308	170	3086	96	
9/07/2010	15:00	1664	52	8559	298	725	0.625	172	6943	946	4	57	89	193	4	179	1176	520	131	119	40	937	2	994	185	91	69	4818	690	100	312	524	2	207	1431	14736	104	3028	117	
9/07/2010	16:00	1664	36	8967	195	774	0.625	190	6789	934	4	51	103	238	4	175	1093	649	85	117	22	914	2	914	189	124	105	4628	780	90	339	502	2	248	1552	14843	32	3008	161	
9/07/2010	17:00	1664	44	9473	217	791	0.625	165	6340	979	4	52	117	230	4	184	1172	636	71	107	37	883	2	879	148	153	93	5437	963	121	406	490	2	380	1757	15905	18	3454	140	
9/07/2010	18:00	1664	63	10912	210	862	0.625	126	6318	1080	4	58	110	210	4	149	1400	589	81	108	57	842	2	1059	0	158	70	6532	1238	123	490	453	2	511	2152	17073	18	4191	137	
9/07/2010	19:00	1664	55	11579	132	907	0.625	117	6724	1104	4	52	101	230	4	140	1514	676	84	108	11	791	2	1420	0	165	42	6649	1345	177	529	416	2	559	2309	16805	44	4326	123	
9/07/2010	20:00	1664	64	10965	55	881	0.625	117	6104	1121	4	58	97	229	4	186	1380	629	89	95	0	722	2	1402	0	169	66	6423	1302	131	515	367	2	587	2180	15475	46	4192	123	
9/07/2010	21:00	1600	55	10025	52	904	0.625	105	6099	995	4	53	88	230	4	198	1202	643	89	96	0	306	2	1427	0	148	54	5981	1211	133	473	341	2	523	1985	14620	27	3806	175	
9/07/2010	22:00	1536	37	8719	48	816	0.625	96	6104	817	4	59	88	219	4	180	1106	559	143	89	0	263	2	1682	0	114	55	5150	1034	133	420	269	2	450	1721	12794	31	3452	173	
9/07/2010	23:00	1536	29	6713	42	685	0.625	75	6352	622	4	53	77	201	4	160	797	455	97	86	0	202	2	1854	0	81	41	4115	740	137	327	220	2	298	1273	9879	40	2811	173	
10/07/2010	0:00	1408	18	4952	36	554	0.625	56	5128	434	4	54	78	166	4	158	592	428	92	88	0	206	2	1855	0	51	44	3089	411	91	261	255	2	144	785	6984	40	2090	169	
10/07/2010	1:00	1408	9	3795	35	456	0.625	57	5227	307	4	54	77	103	4	144	490	443	105	85	0	189	2	1848	0	41	29	2411	242	94	209	255	2	78	506	5267	50	1790	163	
10/07/2010	2:00	1344	9	3129	34	460	0.625	34	4952	271	4	0	74	104	4	160	409	438	101	85	0	73	2	1868	0	40	31	2111	216	123	211	172	2	64	386	4634	76	1600	142	
10/07/2010	3:00	1216	9	2970	27	466	0.625	47	4630	235	4	0	77	193	4	146	421	439	101	85	0	92	2	1798	0	44	30	1966	219	121	185	124	2	64	345	4490	31	1681	148	
10/07/2010	4:00	1088	9	3186	25	480	0.625	35	4435	219	4	0	78	113	4	138	384	399	93	85	0	74	2	1560	0	49	30	1898	219	109	202	149	2	89	366	4401	55	1586	172	
10/07/2010	5:00	960	9	3243	26	459	0.625	47	3908	239	4	0	77	85	4	140	429	391	97	81	0	92	2	1730	0	49	31	2011	259	105	204	1730	148	2	92	428	4732	27	1633	168
10/07/2010	6:00	1088	8	3595	31	459	0.625	57	3732	239	4	0	87	110	4	44	500	594	98	96	0	554	2	1287	0	49	30	2252	377	136	216	137	2	117	511	5228	17	1800	169	
10/07/2010	7:00	1088	9	4929	97	526	0.625	56	4166	311	4	0	90	250	4	19	619	526	99	91	0	654	2	1144	0	53	30	2813	497	156	271	160	2	182	737	7036	19	2129	143	
10/07/2010	8:00	1024	37	6785	202	655	0.625	88	3996	484	4	0	98	240	4	39	827	612	112	101	0	718	2	1397	0	77	29	3951	787	128	328	173	2	336	1151	10167	18	2800	82	
10/07/2010	9:00	1024	47	9106	233	847	0.625	174	4537	727	4	0	101	257	4	123	1110	607	128	112	0	748	2	1314	6	118	45	5305	1132	96	426	171	2	503	1736	13485	14	3720	78	
10/07/2010	10:00	1152	46	10294	177	808	0.625	168	4305	748	4	42	101	205	4	110	1043	566	126	112	0	738	2	1609	0	117	43	5686	1157	64	497	87	2	531	2058	14604	18	3487	73	
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10/07/2010	15:00	2048	26	6945	171	505	0.625	97	2939	358	4	45	85	275	4	10	474	429	28	105	0	814	2	750	193	64	52	3723	554	19	298	0	2	246	1067	10646	18	1632	117	
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11/07/2010	0:00	1600	20	5168	39	474	0.625	66	2318	609	4	0	77	57	4	4	656	459	78	84	0	916	2	973	0	71	29	3114	461	143	268	17	2	175	855	6658	27	1651	170	
11/07/2010	1:00	1600	9	4150	35	442	0.625	0	2547	355	4	0	73	48	4	0	547	502	78	90	0	913	2	907	0	62	45	2510	279	139	229	17	2	105	580	5377	24	1414	158	
11/07/2010	2:00	1536	9	3560	31	434	0.625	0																																