

Origin Energy Resources NZ Limited
Rimu Production Station
Monitoring Programme
Annual Report
2015-2016

Technical Report 2016-22

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Executive summary

Origin Energy Resources NZ Limited (Origin Energy) operates a petrochemical production station located on Mokoia Road at Mokoia, in the Manawapou catchment. This report for the Rimu Production Station describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Origin Energy's environmental performance during the period July 2015 to June 2016. The report also details the results of the monitoring undertaken and assesses the environmental effects of their activities.

Origin Energy holds six resource consents, which include a total of 58 conditions setting out the requirements that Origin Energy must satisfy. Origin Energy holds three consents to allow it to take and use water, one consent to discharge stormwater onto and into land and into an unnamed tributary of the Manawapou River, and two consents to discharge emissions into the air at this site.

During the monitoring period, Origin Energy demonstrated an overall high level of environmental performance.

The Council's monitoring programme for the year under review included five inspections and three water samples collected for physicochemical analysis.

The monitoring showed that the stormwater discharge was not having a significant adverse effect on the water quality of the unnamed tributary of the Manawapou River and that there were no adverse effects noted as a result of the exercise of the air discharge permits at the Rimu Production Station.

During the year, Origin Energy demonstrated an overall high level of both environmental performance and administrative compliance with the resource consents. A small spill was contained onsite at the Rimu Production Station and did not breach consent conditions. The production station and associated wellsites were well managed and maintained.

For reference, in the 2015-2016 year, 71% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 24% demonstrated a good level of environmental performance and compliance with their consents.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance remains at a high level.

This report includes recommendations for the 2016-2017 year.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is for the period July 2015 to June 2016 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by Origin Energy Resources NZ Limited (Origin Energy). Origin Energy operates a petrochemical production station situated on Mokoia Road at Mokoia, in the Manawapou catchment.

The report includes the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to abstractions and discharges of water within the Manawapou catchment, and the air discharge permit held by Origin Energy to cover emissions to air from the site.

One of the intents of the *Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the Company's use of water, land and air, and is the 15th combined annual report by the Council for the Rimu Production Station. Previous reports also included the results of monitoring at the Waihapa Production Station on Bird Road at Stratford in the Patea catchment. This facility and associated wellsites are no longer owned by Origin Energy and are reported upon separately.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about:

- consent compliance monitoring under the RMA and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the Company in the Manawapou catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted at the Rimu Production Station.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretations, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2016-2017 monitoring year.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act 1991 and monitoring

The RMA primarily addresses environmental ‘effects’ which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

- (a) the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
- (b) physical effects on the locality, including landscape, amenity and visual effects;
- (c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
- (d) natural and physical resources having special significance (for example recreational, cultural, or aesthetic); and
- (e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of ‘effects’ inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with Section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region’s resources.

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the Company, this report also assigns them a rating for their environmental and administrative performance during the period under review.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. **Administrative performance** is concerned with the Company’s approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

Environmental Performance

- **High:** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.
- **Good:** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.
- **Improvement required:** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.
- **Poor:** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

- **High:** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.
- **Good:** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided

for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

- **Improvement required:** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.
- **Poor:** Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2015-2016 year, 71% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 24% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Process description



Photo 1 Rimu Production Station

The Rimu Production Station receives oil and gas recovered from the Rimu, Kauri and Manutahi wells and includes condensate, gas and LPG processing plants. The oil and gas are separated and treated to produce condensate suitable for export from the site; gas suitable for export into Vector's pipeline; and LPG suitable for sale and export.

Construction started in May 2001 and the plant was commissioned between February and April 2002.

The Rimu Production Station is situated on Mokoia Road, between the coast and State Highway 3, south east of Hawera. The production station covers approximately 6 hectares on an area of 9.5 hectares of land leased by Origin Energy. The land is situated on top of a coastal terrace. The closest residential dwelling is approximately 800 metres from the production station. The surrounding land use is largely pastoral.

Stormwater from the production station, including potentially contaminated stormwater from the production area and tank storage area, is treated through an API separator and then directed into a polyethylene lined storage pond located at the southern edge of the site. The pond has a storage capacity of 3,600 m³ and it serves as a settlement pond and a fire water source in the event of an emergency. Water from the stormwater pond is discharged by pipe onto land to the east of the site where it flows into an unnamed tributary of the Manawapou River.

1.3 Resource consents

1.3.1 Water abstraction permits

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14.

Origin Energy held water permit **5749-1** to take water from the Manawapou River for hydrostatic testing of pipelines and crude oil tanks. This permit was issued by the Council on 24 January 2001 as a resource consent under Section 87(d) of the RMA to Swift Energy NZ Ltd (Swift). It was transferred to Origin Energy on 11 April 2008 and expired on 1 June 2016. Origin Energy has chosen not to renew this consent.

Condition 1 imposed limits upon the volume abstracted.

Condition 2 required the use of a measuring and recording device and provides for the supply of abstraction data to the Council.

Condition 3 allowed the Council to temporarily suspend or reduce abstraction during times of extreme low flow.

Condition 4 was a review provision.

Origin Energy also held water permit **5891-1** to take up to 4,000 m³ of water from the Tangahoe River for the purpose of hydrostatic testing of crude oil tanks and filling of an onsite firewater pond; to take up to 1,000 m³ a month from the Tangahoe River to top up the fire water pond during dry periods; and to take up to 4,000 m³ of water from the Tangahoe River for the purpose of refilling the fire water pond in the event it is depleted during fire fighting activities. This permit was issued by the Council on 10 October 2001 as a resource consent under Section 87(d) of the RMA to Swift. It was transferred to Origin Energy on 11 April 2008 and expired on 1 June 2016. Origin Energy has chosen not to renew this consent.

Condition 1 required the consent holder to notify the Council 48 hours prior to abstraction taking place.

Condition 2 required the consent holder to adopt the best practicable option to prevent or minimise any adverse effects.

Condition 3 limited the abstraction to 2,160 m³ a day.

Condition 4 required the consent holder to ensure the intake structure is screened to avoid the entrapment of fish.

Condition 5 required the consent holder to maintain records of abstraction, and make records available to Council.

Condition 6 was a review provision.

Origin Energy also held water permit **5946-1** to take and use groundwater from a bore within the Manawapou catchment for on-site purposes at the Rimu Production Station. This permit was issued by the Council on 18 January 2002 as a resource consent under Section 87(d) of the RMA to Swift. It was transferred to Origin Energy on 11 April 2008 and expired on 1 June 2016. Origin Energy has chosen not to renew this consent.

Condition 1 required the adoption of the best practicable option.

Condition 2 imposed limits upon the volume extracted.

Condition 3 required that there is no intrusion of saltwater into any freshwater aquifers.

Condition 4 required the recording of abstraction data and provides for the supply of this data to Council.

Condition 5 was a review condition.

These permits are attached to this report in Appendix I.

1.3.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Origin Energy holds water discharge permit **5744-1** to discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River. This permit was issued by the Council on 24 January 2001 (varied 2 February 2001) as a resource consent under Section 87(e) of the RMA to Swift. It was transferred to Origin Energy on 11 April 2008 and expired on 1 June 2016. The consent is currently in the process of being renewed. Under Section 124 of the RMA, the consent holder can continue to operate under the conditions of the expired consent until a decision is made on the renewal application.

Condition 1 requires the adoption of the best practicable option.

Condition 2 imposes a limit on the stormwater catchment area.

Condition 3 requires the preparation of a contingency plan.

Condition 4 requires that the design, management and maintenance of the stormwater system be in accordance with the information submitted in support of the application.

Condition 5 deals with storage of hazardous substances.

Condition 6 imposes limits on significant potential contaminants in the discharge.

Condition 7 protects the receiving water from adverse effects.

Condition 8 deals with reinstatement of the site.

Condition 9 is a review provision.

The permit is attached to this report in Appendix I.

1.3.3 Air discharge permits

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Origin Energy held air discharge permit **5745-1** to discharge emissions into the air from combustion involving the flaring of petroleum products incidental to the treatment of gas at the Rimu Production Station. This permit was issued by the Council on 24 January 2001 (varied 3 June 2005) as a resource consent under Section 87(e) of the RMA to Swift. It was transferred to Origin Energy on 11 April 2008 and expired on 1 June 2016. This consent is in the process of being renewed, however its purpose and conditions will be incorporated into **5745-2**. Meanwhile, the consent holder will continue to operate under the expired consent as allowed by Section 124 of the RMA.

Conditions 1 and 2 required the adoption of the best practicable option.

Condition 3 required the treatment of flaring gas to reduce smoke emission.

Condition 4 dealt with reporting requirements.

Condition 5 required maintenance of equipment.

Condition 6 prohibited off-site offensive or objectionable odours.

Condition 7 required consultation with the council prior to alterations.

Conditions 8, 9, and 14 dealt with notification requirements.

Conditions 10 and 13 set out records which needed to be kept.

Condition 11 required flaring to be minimised as much as practicable.

Condition 12 dealt with depressurisation of the plant.

Condition 15 required an analysis of the gas and crude oil stream.

Conditions 16, 17 and 18 required the consent holder to control emissions from the flare.

Condition 19 was a review provision.

Origin Energy also holds air discharge permit **5746-1** to discharge emissions into the air from the Rimu Production Station. This permit was issued by the Council on 24 January 2001 (varied 3 June 2005) as a resource consent under Section 87(e) of the RMA to Swift. It was transferred to Origin Energy on 11 April 2008 and expired on 1 June 2016. This consent is currently being renewed, and will include activities previously covered by **5746-1**. The consent holder may continue to operate under the conditions of the expired consent under Section 124 of the RMA.

Conditions 1 and 2 require the adoption of the best practicable option.

Condition 3 details reporting requirements.

Condition 4 requires maintenance of equipment.

Condition 5 prohibits discharge of offensive odours or dust beyond the site boundary.

Conditions 6, 7, and 8 deal with notification requirements.

Conditions 9 to 13 require the consent holder to control emissions from the flare.

Condition 14 requires the preparation of a report on treatment and/or reduction of BTEX emissions from the site.

Condition 15 is a review provision.

The permits are attached to this report in Appendix I.

1.3.5 Related consents

Origin Energy also hold consents for production activities at wellsites associated with the Rimu Production Station. Details of these consents are summarised in Table 1.

Table 1 Consents for production activities at wellsites associated with the Rimu Production Station

Wellsite	Consent number	Purpose	Issue date	Expiry
Kauri-A	5730-1	To discharge treated stormwater and treated site water from hydrocarbon exploration and production operations at the Kauri Te Pakakohi-A wellsite onto and into land	01/12/2000	2022
	5731-1	To discharge emissions into the air from the flaring of hydrocarbons and miscellaneous emissions associated with hydrocarbon exploration and production testing operations involving up to 32 zones and from production flaring at the Kauri Te Pakakohi-A wellsite	01/12/2000	2022
Kauri-A & F	6129-1	To discharge emissions to air from flaring (at either the Kauri-F or Kauri Te Pakakohi-A wellsites) associated with production activities and miscellaneous emissions at the Kauri-F wellsite	06/03/2003	2022
Kauri-B	5921-1	To discharge treated stormwater, uncontaminated treated site water, and uncontaminated treated production water from hydrocarbon exploration and production operations at the Kauri-B wellsite onto and into land and into an unnamed tributary of the Mangaroa Stream	30/11/2001	2016*
	5923-1	To discharge emissions into the air from long-term hydrocarbon processing facilities and miscellaneous emissions at the Kauri-B wellsite	30/11/2001	2016*
Kauri-C	5928-1	To discharge treated stormwater, uncontaminated treated site water, and uncontaminated treated production water from hydrocarbon exploration and production operations from the Kauri-C wellsite onto and into land in the vicinity of the Kaikura Stream	07/12/2001	2016^
Kauri-C	5930-1	To discharge emissions into the air from long-term hydrocarbon processing facilities and miscellaneous emissions at the Kauri-C wellsite	07/12/2001	2016*
Kauri-D	5951-1	To discharge treated stormwater, uncontaminated treated site water, and uncontaminated treated production water from hydrocarbon exploration and production operations at the Kauri-D wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	28/01/2002	2016^
	5953-1	To discharge emissions into the air from long-term hydrocarbon processing facilities and miscellaneous emissions at the Kauri-D wellsite	28/01/2002	2016*
Kauri-F	6130-1	To discharge emissions to air from flaring associated with production activities and miscellaneous emissions at the Kauri-F wellsite	26/02/2003	2022
Kauri-E	6140-1	To discharge treated stormwater, uncontaminated treated site water and uncontaminated treated production water from hydrocarbon exploration and production operations at the Kauri-E wellsite onto and into land and into the Waikaikai Stream	24/04/2003	2022
	6141-1	To discharge treated stormwater, uncontaminated treated site water and uncontaminated treated production water from hydrocarbon exploration and production operations at the Kauri-E Wellsite onto and into land and into the Mangaroa Stream	22/04/2003	2022
Manutahi-A	6299-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-A wellsite	05/04/2004	2022

Wellsite	Consent number	Purpose	Issue date	Expiry
	6300-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-A wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	05/04/2004	2022
Manutahi-B	6305-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-B wellsite	21/04/2004	2022
	6306-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-B wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	20/04/2004	2022
Manutahi-C	6311-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-C wellsite	06/04/2004	2022
	6312-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-C wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	06/04/2004	2022
Manutahi-D	6317-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-D wellsite	20/04/2004	2022
	6318-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-D wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	20/04/2004	2022
Manutahi-E	6323-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-E wellsite	08/06/2004	2022
	6324-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-E wellsite onto and into land in the vicinity of the Mangaroa Stream and Lake Kaikoura	13/07/2004	2022
Manutahi-F	6329-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-F wellsite	09/06/2004	2022
	6330-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-F wellsite onto and into land in the vicinity of the Mangaroa Stream and Lake Kaikoura	16/07/2004	2022
Manutahi-G	6335-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-G wellsite	01/06/2004	2022
	6336-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-G wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	01/06/2004	2022
Manutahi-H	6341-1	To discharge emissions to air during flaring from well workovers and in emergency situations associated with production activities at the Manutahi-H wellsite	02/06/2004	2022
	6342-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Manutahi-H wellsite onto and into land in the vicinity of an unnamed tributary of the Mangaroa Stream	02/06/2004	2022

Wellsite	Consent number	Purpose	Issue date	Expiry
Rimu-A	5322-1	To discharge treated stormwater and treated produced water from hydrocarbon exploration and production operations at the Pohutakawa-A wellsite onto and into land in the vicinity of the Waikaikai Stream	28/05/1998	2016 [^]
	5324-1	To discharge emissions to air during flaring from well workovers and in emergency situations and miscellaneous emissions associated with production activities at the Pohutakawa-A wellsite	28/05/1998	2016 [^]
Rimu-B	5625-1	To discharge up to 50 m ³ /day of treated stormwater from hydrocarbon exploration and production operations into an unnamed tributary of the Manawapou River	27/06/2000	2022
	5626-1	To discharge emissions into the air from the flaring of hydrocarbons and miscellaneous emissions associated with hydrocarbon exploration and production testing operations involving up to 19 zones and from production flaring at the Rimu-A wellsite	27/06/2000	2022
Pohutakawa-A	6749-1	To discharge emissions into the air from the flaring of hydrocarbons and miscellaneous emissions associated with hydrocarbon exploration and production testing operations involving up to 10 zones and from production flaring at the Rimu-B wellsite	28/11/2005	2022
	6751-1	To take water from the unnamed southern tributary of the Mangaroa Stream for pipeline testing purposes	28/11/2005	2022

* Origin Energy has chosen not to renew these consents

[^] These consents are in the process of being renewed

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations and seek information from consent holders.

The monitoring programme for the Rimu Production Station consisted of three primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans; and

- consultation on associated matters.

1.4.3 Site inspections

The Rimu Production Station was visited five times during the monitoring period. With regard to consents for the abstraction of or discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the Company were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

1.4.4 Chemical sampling

The Council undertook sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and mixing zone.

The production station discharge was sampled on one occasion, and the sample analysed for hydrocarbons, conductivity, pH and suspended solids. The unnamed tributary of the Manawapou River was sampled on one occasion, and the samples analysed for the same constituents.

2. Results

2.1 Water

2.1.1 Inspections

Five inspections were carried out at the Rimu Production Station and associated wellsites in the 2015-2016 year. The following was found during the inspections:

30 July 2015

The plant was operating routinely during the inspection and was observed to be tidy and well managed. The fire water ponds and separators were clean, while ring drains and stormwater systems were clear and free of contaminants and obstructions. A clean flare was noted, without smoke or noticeable odours.

10 December 2015

The site was found to be neat and tidy during the inspection. The stormwater system was functioning well, with frogs in the separator system indicative of good water quality. Ring drains and bunds were all observed to be secure and clear of contaminants. Some flaring was noted during the inspection, no odours or smoke were observed.

9 March 2016

The site was neat and tidy. The separator was clear of contaminants and contained resident frogs. Ring drains and bunds were all observed to be clear. Various banded areas securely contained drum storage. Minimal flaring was observed, this was clean with no smoke or odours.

30 May 2016

The site was inspected during a 'shutdown' of the plant and no flaring was being undertaken. However some odours (mercaptan) were detected off site and this was as a result of purging of the flare line prior to start-up. The stormwater system was working well despite recent heavy rainfall, with separators all clear of contaminants. An inspection of the flooded Manawapou River showed no effects of any discharge from the site.

2 June 2016

Annual wellsite inspections were undertaken with a representative from Origin Energy. The weather was fine at the time of the inspection, but followed a long period of inclement weather consisting of strong winds and high rainfall.

The sites were generally observed to be neat and tidy. Stormwater systems were in place on each site. It was agreed with Origin Energy that some checks needed to be carried out during rainfall at the Rimu Production Station and Manutahi-C wellsite in order to confirm the integrity of the stormwater system contours and flow.

No flaring was being carried out at any of the sites and no odours were noted. The sites were all well organised and neat and tidy, with bunds and ring drains in place. All sites were enclosed by secure fencing. There was no evidence of any off site effects and no environmental concerns were noted.

2.1.2 Results of discharge monitoring

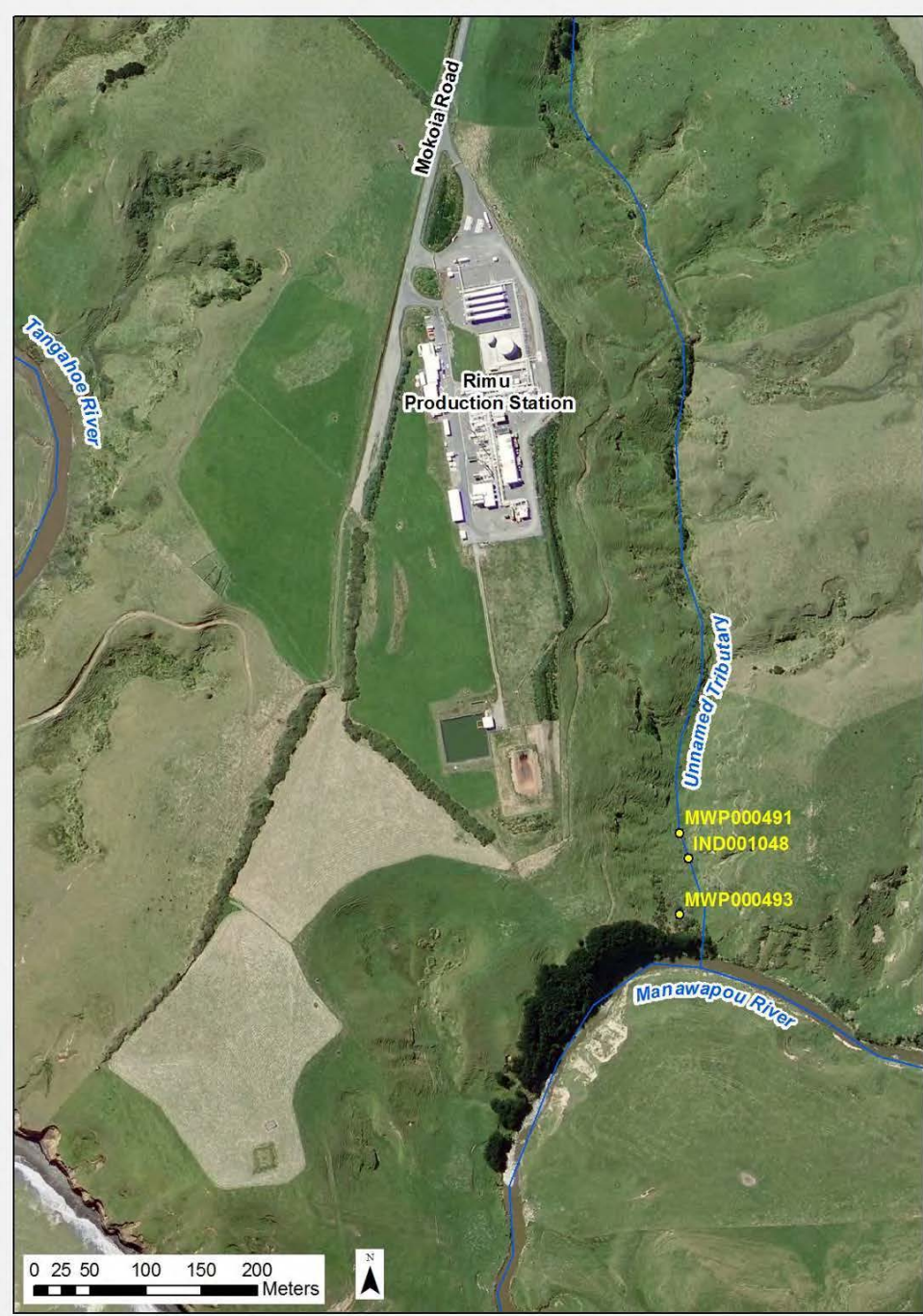


Figure 1 Location of the Rimu Production Station and associated sampling sites

A sample was collected of the stormwater discharge from the production station once during the year under review. Table 2 presents the results from this sample. The location of the sampling site (IND001048) is shown in Figure 1 above.

Levels of hydrocarbons, suspended solids and pH complied with the limits prescribed by consent 5744-1.

Table 2 Results for Rimu Production Station stormwater discharge (site IND001048)

	Conductivity mS/m	Hydrocarbons g/m ³	pH	Suspended solids g/m ³
Consent 5744-1 limits	-	15	6.5 - 8.5	100
17 May 2016	11	<0.5	7.8	39

2.1.3 Results of receiving environment monitoring

Chemical water quality sampling of the receiving waters of the unnamed tributary of the Manawapou River was undertaken in conjunction with the discharge monitoring on 17 May 2016. The results are presented in Table 3. The sampling sites are shown in Figure 1.

Table 3 Results for receiving water sampling

Parameter	Units	17 May 2016	
		Upstream site (MWP000491)	Downstream site (MWP000493)
Conductivity	mS/m	32.5	32.3
Hydrocarbons	g/m ³	<0.5	<0.5
pH	pH	7.9	7.9
Suspended solids	g/m ³	44	49

The results indicate that the discharge was having negligible effect on the water quality of the tributary of the Manawapou River and was in compliance with all applicable consent conditions at the time of sampling.

2.2 Air

2.2.1 Inspections

Air inspections were carried out in conjunction with site inspections as discussed in section 2.1.1 above. No issues regarding air quality were noted during the monitoring year.

2.2.2 Annual flaring report

Origin Energy provided the Council with an annual report on flaring and emissions as required by consents 5745-1 and 5746-1. Emission data for the Rimu Production Station were provided to the Council, expressed as total gas flared and total fuel gas over a one day period. Monthly summaries of these datasets are graphically presented in Figure 2 below.

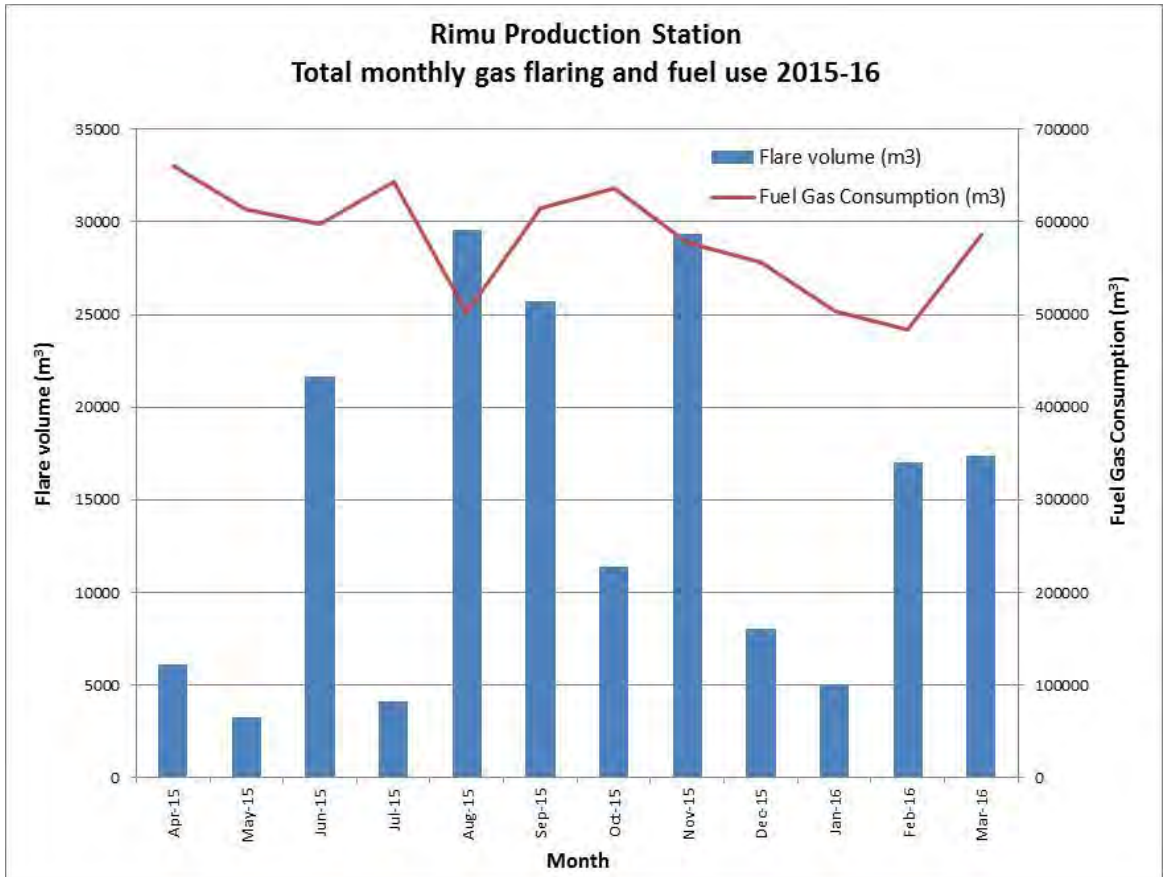


Figure 2 Monthly flare volumes and fuel gas consumption for April 2015 to March 2016

There were five wellsites feeding the Rimu Production Station by pipeline during the reporting period. These were Rimu-A and B, Kauri Te Pakakohi-A, Kauri-E and Kauri-F. No flaring was undertaken at any of the wellsites. Flaring events at the production station occurred intermittently. However, a pilot flare is maintained at all times for safety purposes, meaning a small amount of gas is continually flared.

The quantities flared each month vary depending on activity at the site. Generally the pilot flare uses around 82 m³ per day, with increases due to things like off-spec gas, issues with equipment, and plant restarts. For example, the high volume flared in November 2015 was recorded mostly over three separate days due to breakdowns in the sales gas compressor. No complaints were received in relation to flaring or emissions to air at the Rimu Production Station in the year under review.

2.3 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance

with consents, which may damage the environment. The incident register includes events where the Company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

In the 2015-2016 period, the Council was required to record one incident, in association with the Company's conditions in resource consents or provisions in Regional Plans.

Self-notification was received from Origin Energy regarding a spill of a mixture of crude oil and produced water at the Rimu Production Station on 31 December 2015. Investigation found that the spill had been contained on site and did not reach the receiving environment. Notification and remedial actions were undertaken in accordance with consent conditions.

3. Discussion

3.1 Discussion of site performance

Monitoring of the Rimu Production Station during the 2014-15 year found that the site was well managed. All consent conditions relating to site operations and management were complied with.

A small spill during the monitoring period was contained onsite and no breach of consent conditions occurred.

3.2 Environmental effects of exercise of consents

Results of samples collected of the discharge and receiving waters were within the limits prescribed by the consent and indicated that the discharge was not having a significant adverse effect on the water quality of the unnamed tributary of the Manawapou River.

There were no adverse effects noted as a result of the exercise of the air discharge permits at the Rimu Production Station.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 4 to 9.

Table 4 Summary of performance for Consent 5744-1

Purpose: To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects	Site inspections	Yes
2. Limit on stormwater catchment area	Site inspections	Yes
3. Preparation of contingency plan	Up-to-date as of 6 October 2014	Yes
4. Design and maintenance of stormwater system in accordance with information supplied	Site inspections	Yes
5. Bunding of above ground hazardous substances storage areas	Site inspections	Yes
6. Concentration limits upon potential contaminants in discharge	Physicochemical sampling of discharge	Yes
7. Effects not to occur in receiving waters beyond the established mixing zone	Physicochemical sampling of receiving waters	Yes
8. Notification of Council prior to reinstatement of site and reinstatement to minimise effects	Site still active	N/A

Purpose: To discharge treated stormwater from the Rimu Production Station onto and into land and into an unnamed tributary of the Manawapou River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
9. Optional review provision re environmental effects	Consent expired 1 June 2016	N/A
Overall assessment of environmental performance and compliance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 5 Summary of performance for Consent 5745-1

Purpose: To discharge emissions into the air incidental to the treatment of gas at the Rimu Production Station		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects	Site inspections	Yes
2. Minimise emissions by appropriate selection, operation, supervision, control, and maintenance of equipment	Site inspections	Yes
3. Treatment of flaring gas by effective liquid separation and recovery	Site inspections	Yes
4. Provision of annual report on flaring to council	Annual report received May 2016	Yes
5. Appropriate maintenance and operation of equipment	Site inspections	Yes
6. No offensive, obnoxious or objectionable odours beyond site boundary	Site inspections	Yes
7. Consultation with Council prior to significant alterations to plant, processes, or operations	Site inspections and liaison with consent holder	Yes
8. Notification of flaring more than five minutes in duration	Notifications received	Yes
9. Notification to Council of incidents or hazardous situations	Liaison with consent holder	Yes
10. Maintenance of log of continuous flaring incidents	Site inspections and liaison with consent holder	Yes
11. All practicable steps taken to minimise flaring	Site inspections and liaison with consent holder	Yes
12. Depressurisation of plant to prevent dense black smoke being discharged from the flare	Site inspections and liaison with consent holder	Yes

Purpose: To discharge emissions into the air incidental to the treatment of gas at the Rimu Production Station		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
13. Provision of record of smoke emitting events to Council	Liaison with consent holder	Yes
14. Notification of neighbours of flaring and smoke emissions and provision of 24 hour contact telephone number	Liaison with consent holder	Yes
15. Provision of analysis of typical gas and crude oil stream	Not requested	N/A
16. Limit on maximum ground level concentration of carbon monoxide	Not monitored during period under review	N/A
17. Limit on maximum ground level concentration of nitrogen dioxide	Not monitored during period under review	N/A
18. Limit on maximum ground level concentration for any contaminant	Not monitored during period under review	N/A
19. Optional review provision re environmental effects	Consent expired 1 June 2016	N/A
Overall assessment of environmental performance and compliance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

Table 6 Summary of performance for Consent 5746-1

Purpose: To discharge emissions into the air from the Rimu Production Station		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option	Site inspections	Yes
2. Minimise emissions by appropriate operation, control and maintenance of equipment	Site inspections	Yes
3. Provision of annual report on flaring	Annual report received May 2016	Yes
4. Appropriate maintenance and operation of equipment	Site inspections	Yes
5. No offensive, obnoxious or objectionable odours or dust beyond site boundary	Site inspections	Yes
6. Consultation with Council prior to significant alterations to plant, processes, or operations	Site inspections and liaison with consent holder	Yes
7. Notification of Council of incidents or hazardous situations	Liaison with consent holder	Yes

Purpose: To discharge emissions into the air from the Rimu Production Station		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Provision of record of smoke emitting events to Council	Liaison with consent holder	Yes
9. No dangerous levels of airborne contaminants at or beyond the site boundary	Not monitored during period under review	N/A
10. No noxious or toxic levels of airborne contaminants at or beyond the site boundary	Not monitored during period under review	N/A
11. Limit on maximum ground level concentration of carbon monoxide	Not monitored during period under review	N/A
12. Limit on maximum ground level concentration of nitrogen oxides	Not monitored during period under review	N/A
13. Limit on maximum ground level concentration for any contaminant	Not monitored during period under review	N/A
14. Provision of a report on treatment / reduction of BTEX emissions from the site within six months	Report received October 2001	Yes
15. Optional review provision	Consent expired 1 June 2016	N/A
Overall assessment of environmental performance and compliance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 7 Summary of performance for Consent 5749-1

Purpose: To take water from the Manawapou River for hydrostatic testing of pipelines and crude oil tanks		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limit on abstraction rate and volume	Consent not exercised in monitoring year	N/A
2. Provision of abstraction data	Consent not exercised in monitoring year	N/A
3. Right of Council to temporarily suspend or reduce abstraction during extreme low flow events	Consent not exercised in monitoring year	N/A
4. Optional review provision re environmental effects	Consent has expired	N/A
Overall assessment of environmental performance and compliance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

Table 8 Summary of performance for Consent 5891-1

Purpose: To take water from the Tangahoe River for the purposes of hydrostatic testing of crude oil tanks and filling of an onsite fire water pond		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Notify the Council 48 hrs prior to abstraction	Consent not exercised in monitoring year	N/A
2. Adoption of best practicable option	Consent not exercised in monitoring year	N/A
3. Limit on abstraction volume and rate	Consent not exercised in monitoring year	N/A
4. Screening of intake	Consent not exercised in monitoring year	N/A
5. Provision of abstraction data	Consent not exercised in monitoring year	N/A
6. Optional review provision re environmental effects	Consent expired 1 June 2016	N/A
Overall assessment of environmental performance and compliance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 9 Summary of performance for Consent 5946-1

Purpose: To take and use groundwater from a bore within the Manawapou catchment for onsite purposes at the Rimu Production Station		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to prevent adverse effects	Bore no longer in use	N/A
2. Limit on abstraction rate and volume	Bore no longer in use	N/A
3. Abstraction not to cause saltwater intrusion	Bore no longer in use	N/A
4. Provision of abstraction data	Bore no longer in use	N/A
5. Optional review provision re environmental effects	Consent expired 1 June 2016	N/A
Overall assessment of environmental performance and compliance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

During the year, Origin Energy demonstrated a high level of both environmental and administrative performance with the resource consents as defined in Section 1.1.4. The Rimu Production Station was well managed and maintained.

3.4 Recommendations from the 2014-2015 Annual Report

In the 2014-2015 Annual Report, it was recommended:

1. THAT monitoring of consented activities at the Rimu Production Station in the 2015-2016 year remain unchanged from 2014-2015.

This recommendation was implemented.

3.5 Alterations to monitoring programmes for 2016-2017

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information made available by previous authorities;
- its relevance under the RMA;
- its obligations to monitor emissions/ discharges and effects under the RMA;
and
- to report to the regional community.

The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere/ discharging to the environment.

It is proposed that for 2016-2017 the monitoring programme remains the same as that undertaken in 2015-2016.

4. Recommendation

1. THAT monitoring of consented activities at the Rimu Production Station in the 2016-2017 year continue at the same level as in 2015-2016.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Bund	A wall around a tank to contain its contents in the case of a leak.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
g/m ³	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
Incident Register	The Incident Register contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
L/s	Litres per second.
m ²	Square Metres.
mS/m	Millisiemens per metre.
Mercaptan	A harmless but pungent-smelling gas which is often added to natural gas, which is colourless and odourless, to make it easier to detect.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	<i>Resource Management Act 1991</i> and including all subsequent amendments.

SS Suspended solids.
UI Unauthorised Incident.

For further information on analytical methods, contact the Council's laboratory.

Bibliography and references

- Taranaki Regional Council (2016): Origin Energy Resources NZ Limited Rimu Production Station Monitoring Programme Annual Report 2014-2015. Technical Report 2015-100
- Taranaki Regional Council (2014): Origin Energy Resources NZ Limited Rimu Production Station Monitoring Programme Annual Report 2013-2014. Technical Report 2014-40
- Taranaki Regional Council (2013): Origin Energy Resources NZ Limited Rimu & Waihapa Production Stations Monitoring Programmes Biennial Report 2011-2013. Technical Report 2013-55
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- Taranaki Regional Council (2011): Origin Energy Resources NZ Ltd Rimu Pipeline Leak October 2010: Cause, Remediation and Learning Points. Incident Report
- Taranaki Regional Council (2010): Origin Energy Resources NZ Ltd Rimu and Waihapa Production Stations Monitoring Programmes Annual Report 2009-2010. Technical Report 2010-94
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- Taranaki Regional Council (2005): Swift Energy NZ Ltd Monitoring Report 2004-2005. Technical Report 05-58
- Taranaki Regional Council (2004): Swift Energy NZ Ltd Monitoring Report 2003-2004. Technical Report 04-73
- Taranaki Regional Council (2003): Swift Energy NZ Ltd Monitoring Report 2002-2003. Technical Report 03-79
- Taranaki Regional Council (2002): Swift Energy NZ Ltd Monitoring Report 2001-2002. Technical Report 02-66

Appendix I

Resource consents held by Origin Energy Resources NZ Ltd

**(For a copy of the signed resource consent
please contact the TRC consent department)**

Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Origin Energy Resources NZ [Rimu] Limited
Private Bag 2022
NEW PLYMOUTH 4342

Change To 2 February 2001 [Granted: 24 January 2001]
Conditions Date:

Conditions of Consent

Consent Granted: To discharge treated stormwater from the Rimu Production
Station onto and into land and into an unnamed tributary of
the Manawapou River at or about (NZTM)
1715752E-5610471N

Expiry Date: 1 June 2016

Review Date(s): June 2004, June 2010

Site Location: Rimu Production Station, Mokoia Road, Mokoia
[Property owner: Geoffrey Hawken Limited]

Legal Description: Sec 586 Patea Dist Blk XIV Hawera SD

Catchment: Manawapou

General conditions

- a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in the Resource Management Act 1991, to prevent or minimise any adverse effects of the discharge on the receiving environment.
2. The maximum stormwater catchment area shall be no more than 15.53 hectares.
3. Prior to the exercise of this consent, the consent holder shall prepare a contingency plan to be approved by the Chief Executive, Taranaki Regional Council, outlining measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not licensed by this consent and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.
4. The design, management and maintenance of the stormwater system shall be generally undertaken in accordance with the information submitted in support of the application.
5. Any above ground hazardous substances storage areas shall be bunded with drainage to appropriate recovery systems and discharged only after testing to ensure the conditions of the consent can be met.
6. The following concentrations shall not be exceeded in the discharge:

Component	Concentration
pH (range)	6.5-8.5
suspended solids	100 gm ⁻³
total recoverable hydrocarbons [infrared spectroscopic technique]	15 gm ⁻³

This condition shall apply prior to the discharge of the treated stormwater into the receiving environment, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

7. After allowing for reasonable mixing, within a mixing zone extending 80 metres downstream of the discharge point, the discharge shall not give rise to any of the following effects in the receiving waters of the Manawapou River:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.
8. The Chief Executive, Taranaki Regional Council, shall be advised 48 hours prior to the reinstatement of the site and the reinstatement shall be carried out so as to minimise effects on stormwater quality.
9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2010, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 1 December 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Origin Energy Resources NZ [Rimu] Limited
Private Bag 2022
NEW PLYMOUTH 4342

Change To 3 June 2005 [Granted: 24 January 2001]
Conditions Date:

Conditions of Consent

Consent Granted: To discharge emissions into the air from combustion
involving the flaring of petroleum products incidental to the
treatment of gas at the Rimu Production Station at or about
(NZTM) 1715752E-5610471N

Expiry Date: 1 June 2016

Review Date(s): June 2004, June 2010

Site Location: Rimu Production Station, Mokoia Road, Mokoia
[Property owner: Geoffrey Hawken Limited]

Legal Description: Sec 586 Patea Dist Blk XIV Hawera SD

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall adopt the best practicable option [as defined in section 2 of the Resource Management Act 1991] to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants into the environment from the flare emission.
2. The consent holder shall minimise the emissions and impacts of air contaminants discharged from the flare by the selection of the most appropriate process equipment, process control equipment, emission control equipment, methods of control, supervision and operation, and the proper and effective operation, supervision, control and maintenance of all equipment and processes.
3. All gas being flared must first be treated by effective liquid separation and recovery, as far as is practicable, to ensure that smoke emission during flaring is minimised.
4. The consent holder shall provide to the Taranaki Regional Council during May of each year, for the duration of this consent, a report:
 - i) detailing gas combustion in the flare;
 - ii) detailing smoke emissions as required under condition 13;
 - iii) detailing any measures to reduce smoke emissions;
 - iv) detailing any measures to reduce flaring; and
 - v) addressing any other issue relevant to the minimisation or mitigation of emissions from the flare.
5. All equipment used to avoid, remedy or mitigate any effect on the environment from the discharge of emissions into the air shall be maintained in good condition and shall be operated within design parameters at all times that the flare is in operation.
6. The discharges authorised by this consent shall not give rise to any offensive or obnoxious or objectionable odour at or beyond the site boundary in the opinion of an enforcement officer of the Taranaki Regional Council.

7. Prior to undertaking any alterations to the plant, processes or operations, which may significantly change the nature or quantity of contaminants emitted to air from the flare, the consent holder shall first consult with the Chief Executive and shall obtain any necessary approvals under the Resource Management Act 1991.
8. The consent holder shall, whenever practicable, notify the Chief Executive whenever the continuous flaring of hydrocarbons [other than purge gas] is expected to occur for more than five minutes in duration.
9. Any incident having an environment impact or potential impact which has caused or is liable to cause substantiated complaint or a hazardous situation beyond the boundary of the consent holder's premises, shall be notified to the Taranaki Regional Council, as soon as possible, followed by a written report to the Chief Executive within one week of the incident, with comment about the measures taken to minimise the impact of the incident and to prevent re-occurrence.
10. The consent holder shall keep and maintain a log of all continuous flaring incidents longer than 2 minutes and any intermittent flaring lasting for an aggregate of 4 minutes or longer in any 60-minute period. Such a log shall contain the date, the start and finish times, the quantity and type of material flared, and the reason for flaring. This log shall be made available to the Chief Executive upon request, and summarised annually in the report required under condition 4.
11. All practicable steps shall be taken to minimise flaring.
12. Other than in emergencies, depressurisation of the plant, or sections of the plant, shall be carried out over a sufficient period of time to prevent dense black smoke from being discharged from the flare.
13. The consent holder shall keep and make available to the Chief Executive, upon request, a record of all smoke emitting incidents, noting time, duration and cause. The consent holder shall also keep, and make available to the Chief Executive, upon request, a record of all complaints received as a result of the exercise of this consent.
14. At least 3 days before the commissioning of the plant, the consent holder shall undertake all practicable measures to notify owners or occupiers of properties within 1 kilometre of the site of the possibility of flaring and smoke emissions. The consent holder shall include in the notification a 24-hour contact telephone number for a representative of the consent holder.
15. The consent holder shall make available to the Chief Executive an analysis of a typical gas and crude oil stream from the field, covering sulphur compound content and the content of carbon compounds of structure C₆ or higher number of compounds.
16. The consent holder shall control all emissions of carbon monoxide to the atmosphere from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of carbon monoxide arising from the exercise of this consent measured under ambient conditions does not exceed 10 mg/m³ [eight-hour average exposure], or 30 mg/m³ one-hour average exposure] at or beyond the boundary of the site.

17. The consent holder shall control all emissions of nitrogen oxides to the atmosphere from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration of nitrogen dioxide arising from the exercise of this consent measured under ambient conditions does not exceed 30 µg/m³ [24-hour average exposure], or 95 µg/m³ [4-hour average exposure] at or beyond the boundary of the site.
18. The consent holder shall control emissions to the atmosphere from the flare of contaminants other than carbon dioxide, carbon monoxide, and nitrogen oxides from the flare, whether alone or in conjunction with any other emissions from the site arising through the exercise of any other consent, in order that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent measured at or beyond the boundary of the site is not increased above background levels:
 - a) by more than 1/30th of the relevant Occupational Threshold Value-Time Weighted Average, or by more than the Short Term Exposure Limit at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992, Department of Labour]; or
 - b) if no Short Term Exposure Limit is set, by more than three times the Time Weighted Average at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992 Department of Labour].
19. Subject to the provisions of this condition, the Council may within six months of receiving a report prepared by the consent holder pursuant to condition 4 of this consent, or in June 2004 and/or June 2010, serve notice that it intends to review the conditions of this resource consent in accordance with section 128(1)(a) of the Resource Management Act 1991 for the purposes of:
 - a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered or which it was not appropriate to deal with; and/or
 - b) requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by the discharge; and/or
 - c) to alter, add or delete limits on mass discharge quantities or discharge or ambient concentrations of any contaminant or contaminants.

Transferred at Stratford on 1 December 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

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Production Station at or about (NZTM)
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Review Date(s): June 2004, June 2010

Site Location: Rimu Production Station, Mokoia Road, Mokoia
[Property owner: Geoffrey Hawken Limited]

Legal Description: Sec 586 Patea Dist Blk XIV Hawera SD

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall adopt the best practicable option [as defined in section 2 of the Resource Management Act 1991] to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants into the environment from the site.
2. The consent holder shall minimise the emissions and impacts of air contaminants discharged from the site by the selection of the most appropriate process equipment, process control equipment, emission control equipment, methods of control, supervision and operation, and the proper and effective operation, supervision, control and maintenance of all equipment and processes.
3. The consent holder shall provide to the Taranaki Regional Council during May of each year, for the duration of this consent, a report:
 - i) detailing gas combustion at the site;
 - ii) detailing any measures that have been undertaken by the consent holder to improve the energy efficiency of the plant;
 - iii) detailing any measures to reduce smoke emissions; and
 - iv) detailing any measures to reduce flaring.
4. All equipment used to avoid, remedy or mitigate any effect on the environment from the discharge of emissions into the air shall be maintained in good condition and shall be operated within design parameters at all times that the plant is in operation.
5. The discharges authorised by this consent shall not, whether alone or in conjunction with any emissions from the flare, give rise to any levels of odour or dust that are offensive or obnoxious or objectionable at or beyond the site boundary in the opinion of an enforcement officer of the Taranaki Regional Council.

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6. Prior to undertaking any alterations to the plant, processes or operations, which may significantly change the nature or quantity of contaminants emitted to air from the site, the consent holder shall first consult with the Chief Executive and shall obtain any necessary approvals under the Resource Management Act 1991.
7. Any incident having an environment impact or potential impact which has caused or is liable to cause substantiated complaint or a hazardous situation beyond the boundary of the consent holder's premises, shall be notified to the Taranaki Regional Council, as soon as possible, followed by a written report to the Chief Executive within one week of the incident, with comment about the measures taken to minimise the impact of the incident and to prevent re-occurrence.
8. The consent holder shall keep and make available to the Chief Executive, upon request, a record of all smoke emitting incidents and all relief valve releases, noting time, duration and cause. The consent holder shall also keep, and make available to the Chief Executive, upon request, a record of all complaints received as a result of the exercise of this consent.
9. The discharges authorised by this consent shall not, whether alone or in conjunction with any emissions from the flare, give rise to any dangerous levels of airborne contaminants at or beyond the boundary of the property including but not limited to any risk of fire or explosion.
10. The discharges authorised by this consent shall not, whether alone or in conjunction with any emissions from the flare, give rise to any noxious or toxic levels of airborne contaminants at or beyond the boundary of the site.
11. The consent holder shall control all emissions of carbon monoxide to the atmosphere from the site, whether alone or in conjunction with any emissions from the flare, in order that the maximum ground level concentration of carbon monoxide arising from the exercise of this consent measured under ambient conditions does not exceed 10 mg/m³ [eight-hour average exposure], or 30 mg/m³ one-hour average exposure] at or beyond the boundary of the site.
12. The consent holder shall control all emissions of nitrogen oxides to the atmosphere from the site, whether alone or in conjunction with any emissions from the flare, in order that the maximum ground level concentration of nitrogen dioxide arising from the exercise of this consent measured under ambient conditions does not exceed 30 µg/m³ [24-hour average exposure], or 95 µg/m³ [4-hour average exposure] at or beyond the boundary of the site.
13. The consent holder shall control emissions to the atmosphere from the site of contaminants other than carbon dioxide, carbon monoxide, and nitrogen oxides, whether alone or in conjunction with any emissions from the flare, in order that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent measured at or beyond the boundary of the site is not increased above background levels:

- a) by more than 1/30th of the relevant Occupational Threshold Value-Time Weighted Average, or by more than the Short Term Exposure Limit at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992, Department of Labour]; or
 - b) if no Short Term Exposure Limit is set, by more than three times the Time Weighted Average at any time [all terms as defined in Workplace Exposure Standards and Biological Exposure Indices for New Zealand, 1992 Department of Labour].
14. The consent holder shall within 6 months of the granting of this consent provide to the Chief Executive a report on options for the treatment and/or reduction of BTEX emissions from the site.
15. Subject to the provisions of this condition, the Council may within six months of receiving a report prepared by the consent holder pursuant to condition 3 of this consent, or in June 2004 and/or June 2010, serve notice that it intends to review the conditions of this resource consent in accordance with section 128(1)(a) of the Resource Management Act 1991 for the purposes of:
- a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
 - b) requiring the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by the discharge; and/or
 - c) to alter, add or delete limits on mass discharge quantities or discharge or ambient concentrations of any contaminant or contaminants.

Transferred at Stratford on 1 December 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Origin Energy Resources NZ [Rimu] Limited
Private Bag 2022
NEW PLYMOUTH 4342

Consent Granted 24 January 2001
Date:

Conditions of Consent

Consent Granted: To take water from the Manawapou River for hydrostatic
testing of pipelines and crude oil tanks at or about (NZTM)
1716152E-5609871N

Expiry Date: 1 June 2016

Review Date(s): June 2004, June 2010

Site Location: Rimu Production Station, Mokoia Road, Mokoia
[Property owner: Geoffrey Hawken Limited]

Legal Description: Sec 586 Patea Dist Blk XIV Hawera SD

Catchment: Manawapou

General conditions

- a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The abstraction shall not exceed a total of 3,120 cubic metres, at a maximum abstraction rate of 25 litres/second, from the Manawapou River.
2. The resource consent holder shall accurately record total volumes and rates of abstraction and make such records available to the Chief Executive, Taranaki Regional Council, upon request.
3. The Taranaki Regional Council reserves the right to temporarily suspend or reduce the abstraction during extreme low flow events in accordance with section 329 of the Resource Management Act 1991.
4. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2010, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 1 December 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Origin Energy Resources NZ [Rimu] Limited
Private Bag 2022
NEW PLYMOUTH 4342

Consent Granted
Date: 10 October 2001

Conditions of Consent

Consent Granted: To take up to 4000 cubic metres of water from the
Tangahoe River for the purposes of hydrostatic testing of
crude oil tanks and filling of an onsite fire water pond; to
take up to 1000 cubic metres of water per month from the
Tangahoe River for top up of the fire water pond during dry
periods; and to take up to 4000 cubic metres of water for
the purpose of refilling the fire water pond in the event that
it is depleted during fire fighting activities at or about
(NZTM) 1715352E-5610170N

Expiry Date: 1 June 2016

Review Date(s): June 2004, June 2010

Site Location: Rimu Production Station, Mokoia Road, Mokoia

Legal Description: Sec 586 Patea Dist Blk XIV Hawera SD

Catchment: Tangahoe

*For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document*

General conditions

- a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The consent holder shall notify the Taranaki Regional Council in writing at least 48 hours prior to any abstraction activity.
2. At all times the consent holder shall adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of water from the Tangahoe River, including, but not limited to, the efficient and conservative use of water.
3. The volume of water abstracted shall not exceed 2,160 cubic metres/day, at a rate no greater than 25 litres per second.
4. The consent holder shall ensure that the intake structure is appropriately screened to avoid the entrapment of freshwater fish.
5. The resource consent holder shall maintain records of abstraction including date, pumping rates and volumes abstracted, and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.
6. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2010, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 1 December 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Origin Energy Resources NZ [Rimu] Limited
Private Bag 2022
NEW PLYMOUTH 4342

Consent Granted 18 January 2002
Date:

Conditions of Consent

Consent Granted: To take and use groundwater from a bore within the
Manawapou catchment for on-site purposes at the Rimu
Production Station at or about (NZTM)
1715752E-5610471N

Expiry Date: 1 June 2016

Review Date(s): June 2004, June 2010

Site Location: Rimu Production Station, Mokoia Road, Mokoia
[Property owner: Geoffrey Hawken Limited]

Legal Description: Lot 2 DP 9677 Sec 586 Patea Dist Blk XIV Hawera SD

Catchment: Manawapou

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. At all times the consent holder shall adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of groundwater from a bore within the Manawapou catchment, including, but not limited to, the efficient and conservative use of groundwater.
2. The volume of water abstracted shall not exceed 150 cubic metres/day, at a rate no greater than 2 litres per second.
3. The abstraction shall be managed so not to cause the intrusion of saltwater into any freshwater aquifers.
4. The resource consent holder shall maintain records of abstraction including date, pumping rates and volumes abstracted, and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.
5. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2010, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 1 December 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management