

**REVIEW OF
HYDRAULIC
FRACTURING
(FRACKING)
IN
TARANAKI**

Table of contents

Page

1. New Zealand's clean green image is important	4
2. The dairy industry and the oil and gas industry	5
3. The tourism industry and the oil and gas industry	6
4. Drilling, <u>fracking</u> , producing, regulations and regulators-concerns	7
5. Taranaki Regional Council (TRC) Risk Assessment Report of Hydraulic Fracturing-Disclaimer and 3 versions	8
6. Map of 65 hydraulically fractured wells in 39 sites (1993-2011)	9
7. 13 recent hydraulic fracturing consents	10
8. Concern about lack of environmental monitoring of fracked wells	11
9. Todd Energy hydraulic fracturing data for North Taranaki	12
➤ Review of 8 fracks at 3 wells and missing frack	
➤ Mangahewa-3 environmental report and visual monitoring	
➤ New Zealand Petroleum and Minerals website update-removal of information	
10. Shell Todd Oil Services Ltd hydraulic fracturing data for Kapuni	14
➤ South Taranaki District Council water intake and BTEX screening	
➤ TRC water intake consents for municipal supply at Kapuni	
➤ Review of 13 fracks at 6 wells and groundwater contamination	
➤ Shell Todd KA 18 environmental monitoring and visual monitoring	
➤ Subsurface fracking and concern about link to above surface discharge consent	
11. Swift Energy hydraulic fracturing data for South Taranaki	19
➤ Diesel hydraulical fracking	
➤ Review of 18 fracks	
➤ Discharge consents into water	
➤ Rimu Pipeline leak	
12. TAG Oil Ltd and Austral Pacific hydraulic fracturing data for Central Taranaki	21
➤ Review of 4 fracks	
➤ Discharge permits with parameters for chromium 6+, Chromium 3+, copper, and other contaminants and no testing	

13. Greymouth Petroleum hydraulic fracturing data for Central and North Taranaki	23
➤ Review of 20 fracks	
➤ Bridge Petroleum Limited Radnor environmental report and visual monitoring	
➤ Concern about TRC discharge consents to water at Ngatoro-A Production Station, fracking at Ngatoro-A, and water intake consents for Inglewood municipal supply	
14. Flaring - concerns	27
15. Contaminated produced water and stormwater-concerns	31
16. Landfarming - concerns	32
17. ‘Independent environmental regulators’- concens	35
➤ Basil Chamberlain, CEO Taranaki Regional Council	
➤ Fred McLay, Director of Resource Management	
➤ Port Taranaki Limited	
➤ www.oilandgas.co.nz	
18. Expansion of the oil and gas industry	38
19. Conclusion	40

NEW ZEALAND'S CLEAN GREEN IMAGE IS IMPORTANT

Current Prime Minister John Key and Minister of Tourism said in 2007: *New Zealand's clean green environment is vital to our unique kiwi lifestyle, and National is committed to preserving that lifestyle for future generations. Our environment is also vital to the clean green brand that New Zealand sells to the world.*

Business leader Stephen Tindall has spoken about the commercial importance of being clean and green: *Unless we hold true to the ideals of New Zealand's clean, green image, we could lose our reputation, which could mean hundreds of millions of dollars' worth of exports and our whole standard of living could drop.*

Parliamentary Commissioner for the Environment (Lignite and climate change, 2010, p.17)

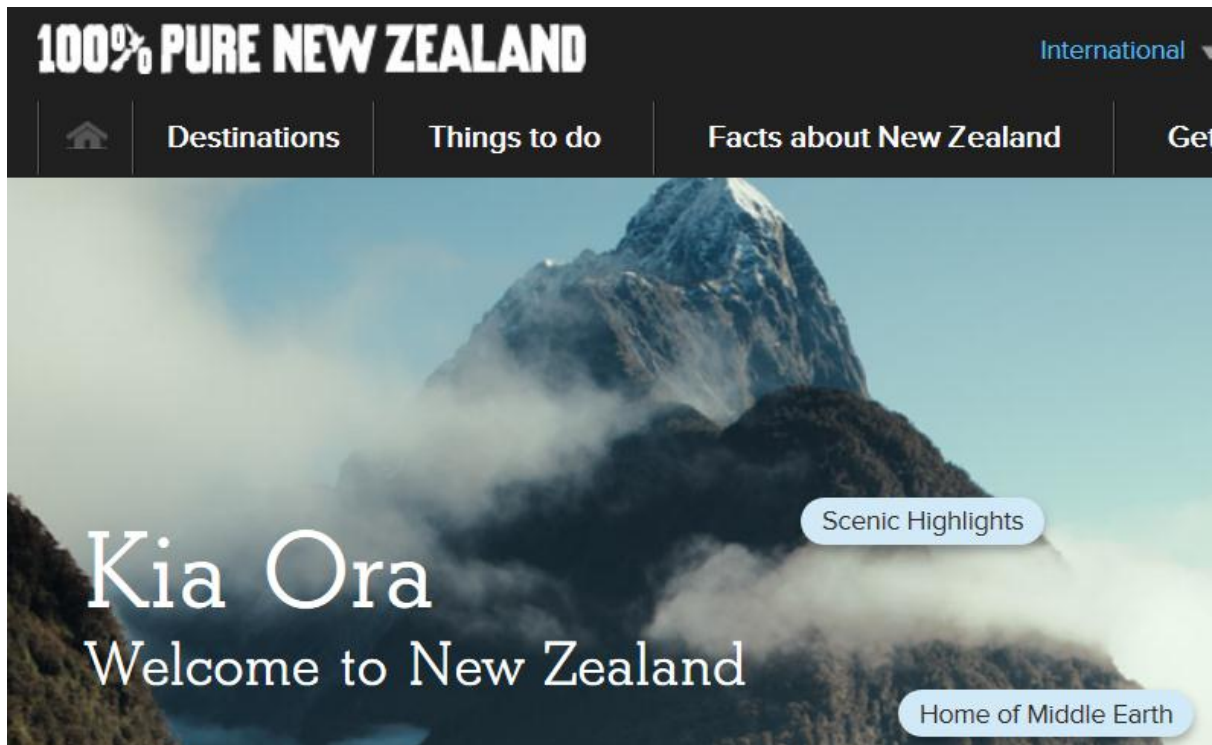
The dairy industry relies on this clean green image...



Many of the fracked wellsites are situated on or beside dairy farms and have consent to discharge contaminants into the waterways, onto land and into the air.

Greymouth Petroleum Drilling Waste Landfarm on Rifle Range Road, Hawera is on the Fonterra Research Farm

The tourism industry relies on this clean green image





TAG Oil at Cheal B

(courtesy Pip Guthrie, The Listener, January 2012)

In this economic context and the context of our health and safety and that of the animals and environment, we are concerned about...

the drilling, the fracking, the producing, the regulations and the regulators of oil and gas in Taranaki

Hydrogeologic Risk Assessment of hydraulic Fracturing for Gas Recovery in the Taranaki Region Report

Disclaimer (p.2)

“the hydraulic fracturing and geologic information in this report has largely been supplied by oil and gas companies in the region and is believed to be accurate and reliable. However, no liability is accepted for any opinions expressed or for any errors or omissions in the information supplied.”

There are three versions of this scientific, peer-reviewed Taranaki Regional Council (TRC) report in risk assessment of hydraulic fracturing.

In **November 2011** there were “a total of 42 hydraulic fracturing activities in 28 wells (TRC Risk Assessment report, p.17).

In **February 2012** the Executive Summary stated the report had been “updated to include all hydraulic fracturing data” ...and “oil and gas companies ... have undertaken hydraulic fracturing operations from 1993 to mid-2011...a total of 60 hydraulic fracturing events were undertaken in 33 wells”.

In **May 2012** the Executive Summary states the report includes “an assessment of all hydraulic fracturing data” and “the data provided shows that during the period 1989 to mid-2011 a total of 65 hydraulic events were undertaken in 39 wells”.

<http://www.trc.govt.nz/assets/Publications/guidelines-procedures-and-publications/hydraulic-fracturing/hf-may2012-main.pdf>

The updated Hydrogeologic Risk Assessment of Hydraulic Fracturing for Gas Recovery in the Taranaki Region Report was spoken to by Mr A D McLay at the Taranaki Regional Council Policy and Planning Committee meeting on 19th July 2012.

The updated report included “all fracturing data available to the Council to date”. Currently the Council “ had issued 13 resource consents for deep hydraulic fracturing in the region.”

<http://www.trc.govt.nz/assets/Uploads/pp1907.pdf> (p.4)

65 wells in 39 sites in onshore oil and gas fields have been hydraulically fractured between 1993 and 2011 .

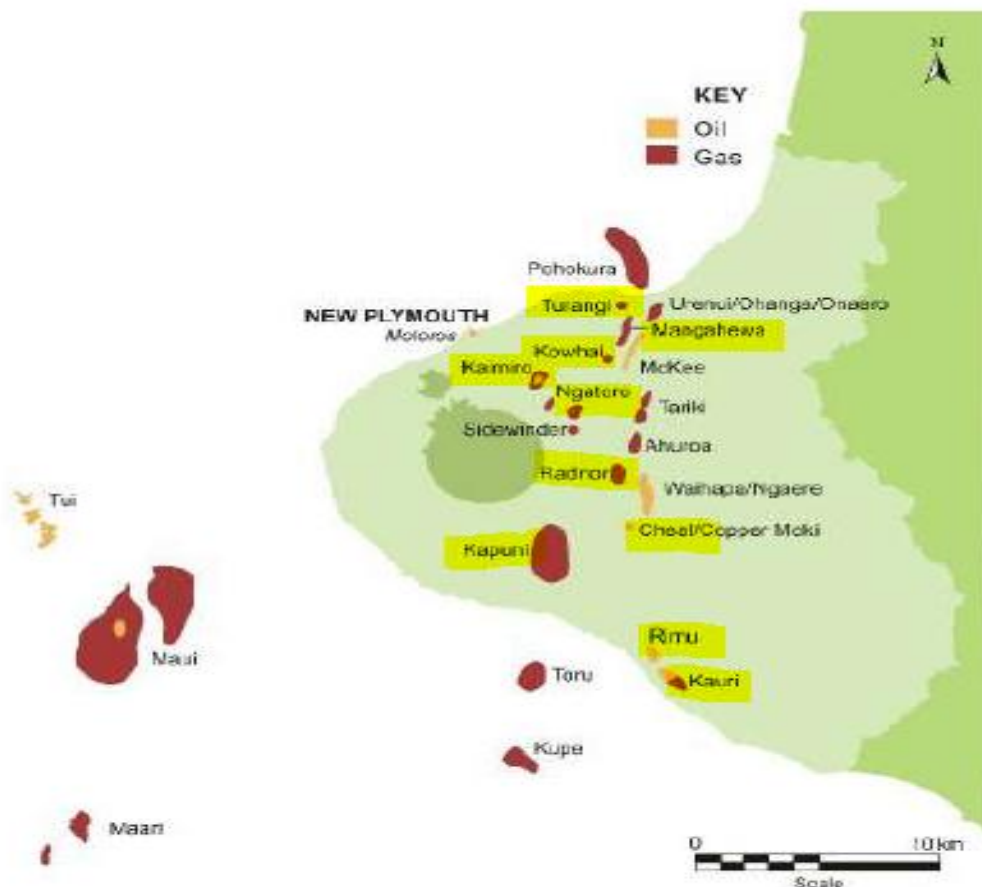


Figure 1 Map illustrating the location of the oil and gas fields, and production facilities in Taranaki.

The 13 recent hydraulic fracturing non-notified consents have been granted since mid- 2011:

Many of these consents relate to wellsites with multiple wells.

Todd Energy Limited:

Manghewa-A wellsite, Otaraoa Road, Tikorangi

Mangahewa-C wellsite, Tikorangi Road East Waitara

Mangahewa-D wellsite, Rimutauteka Road, New Plymouth

Greymouth Petroleum:

Turangi-B wellsite, Main North Road, Motunui

Onaero-1R wellsite, Mataro Road, Urenui

Ohanga A wellsite, Onaero

Kowhai-B wellsite, Ngatimaru Road, Tikorangi

Epiha-A, Upper Epiha Road, Motunui

Ohanga-3 wellsite, Waiiau Road, Urenui

Shell Todd Oil Services:

KA 1,7,19 and 20 wellsite, Palmer Road, Kapuni

KA 4/14 wellsite, Palmer Road, Kapuni

KA 8/12/15/18 wellsite, Eltham Road, Kapuni

KA 6/11/17 wellsite, Ahipaipa Road, Kapuni

The Taranaki Regional Council fracking report and the GNS review support the conclusion there was little risk from the current or proposed hydraulic fracturing operations on the region's aquifers.

But how do they know?

And what about the effect of discharges to water, land and air of fracking contaminants?

- There are 65 fracked wells in 39 wellsites.
- Some of those wellsites have documented contamination.
- Only 3 of those 65 wells have published 'comprehensive' environmental monitoring reports conducted at the same time as the hydraulic fracturing operations. These public reports show good to high levels of environmental performance and compliance with consents in their executive summaries. Those three reports consist of visual monitoring only.

This is happening next to us!

The drilling and fracking operations include the discharge of contaminants to land in the vicinity of waterways or directly into the water, onto the land, and into the air ...

- 1. Immediately next to our municipal supplies**
- 2. Beside our families and farms**
- 3. Beside our schools and communities**

Todd Energy Ltd Hydraulic fracturing data for North Taranaki

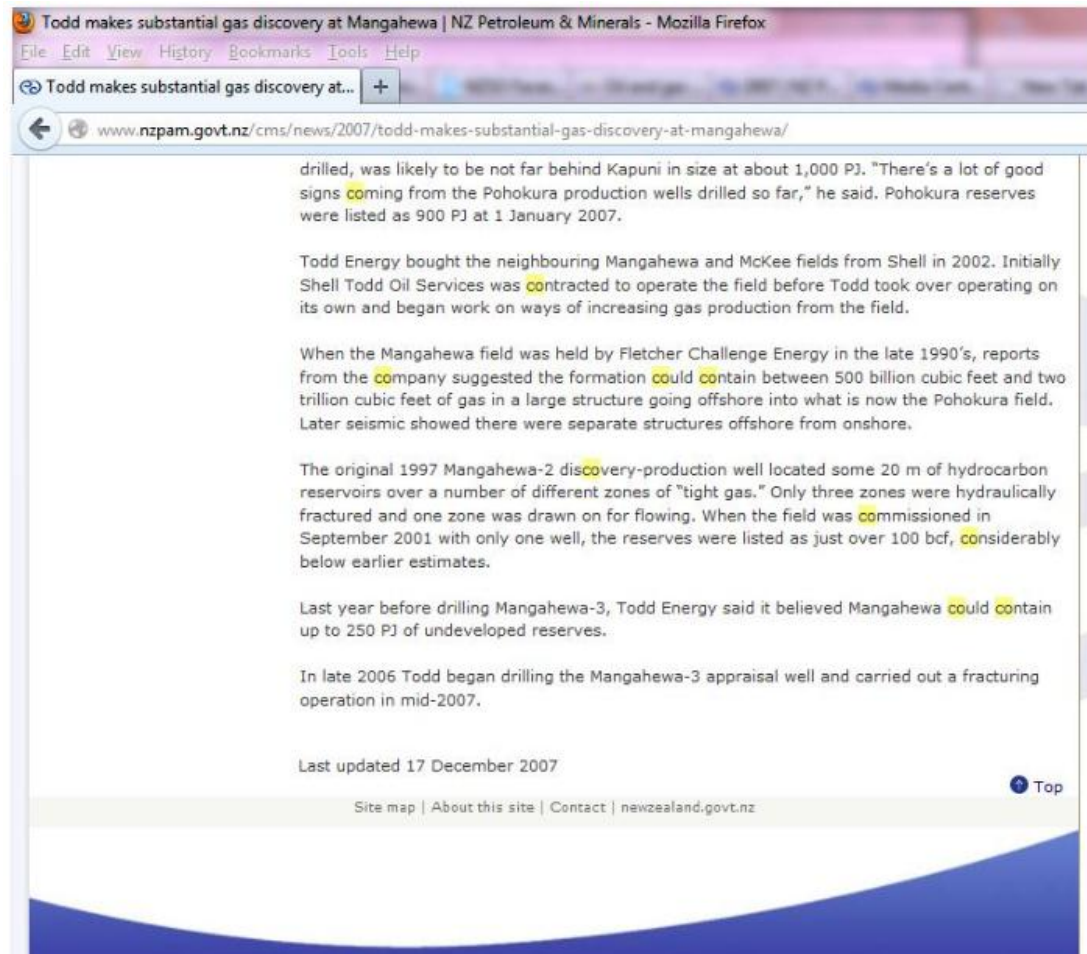


A review of the 4 wells subject to 9 hydraulic fracturing operations in this area found no environmental monitoring reports published for 3 of the 4 wells and only visual monitoring occurring at the other.

There are 3 more fracking consents recently granted for Mangahewa A, C and D wellsites.

- **Mangahewa-2** 5 May 1997; 21 May 1997; 31 May 1997
No compliance monitoring reporting history published for this well.
<http://www.trc.govt.nz/oil-and-gas-compliance-monitoring-reports/#oil>
- **Waitui-1** 28 April 2011
No compliance monitoring reporting history published for this well.
<http://www.trc.govt.nz/oil-and-gas-compliance-monitoring-reports/#oil>
- **Mangahewa-6** 29 January 2010; 5 March 2010; 10 March 2010; 18 March 2010
No compliance monitoring reporting history published for this well.
<http://www.trc.govt.nz/oil-and-gas-compliance-monitoring-reports/#oil>
- **Mangahewa-3** Tikorangi Road East, Waitara (**Not in TRC Fracking Report, 2012**)
However “Todd ...carried out a fracturing operation in mid-2007...”
Compliance monitoring reported **visual inspection only**. Mangahewa-3 has discharge consents for up to 8 wells. Water take was low due to the use of synthetic based muds. Consent was granted for discharging drilling muds, cuttings and wastes from hydrocarbon exploration onto and into land. The unnamed tributary of the Waiiau Stream is nearby.
(<http://www.nzpam.govt.nz/cms/news/2007/todd-makes-substantial-gas-discovery-at-mangahewa>).
<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/317804.pdf>

The New Zealand Petroleum and Minerals website was changed on 24th July 2012 and the reference to “Todd...carried out a fracturing operation on mid-2007” at Mangahewa-3 was removed.



The original 1997 Mangahewa-2 discovery-production well located some 20 m of hydrocarbon reservoirs over a number of different zones of "tight gas." Only three zones were hydraulically fractured and one zone was drawn on for flowing. When the field was commissioned in September 2001 with only one well, the reserves were listed as just over 100 bcf, considerably below earlier estimates.

Last year before drilling Mangahewa-3, Todd Energy said it believed Mangahewa could contain up to 250 PJ of undeveloped reserves.

Last updated 24 July 2012

Site map | About this site | Contact | newzealand.govt.nz

Top

Shell Todd Oil Services Ltd Hydraulic fracturing data for Kapuni



The South Taranaki District Council water intake is from Kapuni Stream and bores beside Kapuni Production Station and near wellsites. This water supplies 10,000 people. A number of wells were subject to hydraulic fracturing. The groundwater below many wellsites is contaminated with benzene. These are on farms, beside houses and the Kapuni Stream. There is currently on-going screening for BTEX chemicals in this water supply by South Taranaki District Council. It does not address what is to occur if BTEX is found. There are 4 more fracking consents recently granted for multiple wells at KA1, 7, 19, 20 wellsite; KA4/14 wellsite; KA8/12/15/18 wellsite; and KA6/11/17 wellsite.



<http://www.trc.govt.nz/taranaki-regional-xplorer/>

Consent 0146-2

Taranaki Regional Council

47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number
on all correspondence

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA 4640



Change To
Conditions Date: 28 October 2008 [Granted: 7 June 2000]

Conditions of Consent

Consent Granted: To take and use water from the Kapuni Stream for
municipal water supply purposes at or about (NZTM)
1701447E-5630678N

Consent 7002-1

FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number
on all correspondence

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA 4640



Change To
Conditions Date: 10 February 2009 [Granted: 2 November 2006]

Conditions of Consent

Consent Granted: To take and use up to 4,320 m³/day of groundwater at a
maximum rate of 50 l/s as a combined total from up to
three water bores in a bore field at the Kapuni reservoir site
for municipal, rural, industrial, and recreational supply
purposes at or about (NZTM) 1701067E-5629178N

The review of the environmental monitoring and reporting on 6 wells subject to 13 hydraulic fracturing operations at Kapuni has found either evidence of related environmental problems, no specific reports published outlining environmental monitoring for these wells, and one environmental report stating only visual monitoring of the consents.

*“In a report published by the TRC in June last year, groundwater beneath well “blowdown” pits at five Kapuni well sites was described as unsuitable for drinking or stock use, and unsuitable for irrigation at two sites. Benzene, ethylbenzene, xylene and petroleum hydrocarbons at levels above Ministry for the Environment guidelines were recorded at several sites, many of which are close to farmhouses. **Until 2006, the pits were used without resource consents. Rob Jager, general manager of Shell Todd Oil Services (STOS), which owns the Kapuni operation, says some of the pits have been used to receive fluids from fracked wells, but that this is unlikely to be the source of the contamination.** He says STOS no longer uses the pits, and describes the contamination as a “legacy issue” about which the company is seeking advice.”*

<http://www.listener.co.nz/current-affairs/fracking-in-new-zealand/>

- **KA 15 well** Kaponga-Eltham Road, Kapuni Fracked 23 July 1993
Groundwater contamination –Benzene, ethylbenzene, xylene and petroleum hydrocarbons
<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/854309.pdf>
- **KA 8 well** Kaponga-Eltham Road, Kapuni Fracked 8 March 1995
Groundwater contamination -Benzene, ethylbenzene, xylene and petroleum hydrocarbons
<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/854309.pdf>

- ❖ In an email on 9th September 2011 Mr Chamberlain states as of “**29th July 2011 the Council has required resource consent for underground hydraulic fracturing discharges**”.

Taranaki Regional Council recently consented for several wellsites to be fracked subsurface at Kapuni. Many of these wellsites have historical consents to legally discharge above ground.

- treated stormwater and treated site water from hydrocarbon and production stations onto and into land at KA 1/7 (6200-1), issued 2003;
- treated stormwater (250 litres/second) from KA 4/14 into an unnamed tributary of Kapuni Stream (2365-2), issued 1993;
- treated stormwater (250 litres/second) from KA 6/11 into an unnamed tributary of the Inaha Stream (3266-2), issued 1993;
- and treated stormwater (250 litres/second) from KA 8/12/15 into an unnamed tributary of the Inaha Stream (3265-2), issued 1993. The two latter wellsites still have legal consent to discharge liquids into well blowdown pits.

How will fracking contaminants be monitored in the above ground discharges? Will the historic consents be amended to include testing for these?





17 of the 18 wells were hydraulically fractured with diesel between 2001 and 2005. There is no published Taranaki Regional Council environmental monitoring reports for any of these listed fracked wells from 2001 to 2004. There is one report for Rimu Production Station stating “On 5 September 2005 all producing wellsites associated with the production station were also inspected. There were some minor works required at the Kauri E wellsite, involving the removal of contaminated soil, tidying up of ring drains and spraying.” There is no chemical testing of water reported at these sites. There is less than 300m between the fracking depth and the freshwater at Manutahi A and B in October 2005.

All of these sites have consent to discharge treated stormwater, uncontaminated treated site water and uncontaminated treated production water from hydrocarbon exploration and production operations onto and into land, in the vicinity of streams, or directly into streams. These include: Rimu-A onto and into land in the vicinity of the Waikaikai Stream; Kauri –A onto and into land; Kauri -E onto and into land and into the Waikaikai Stream or into the Mangaroa Stream; Manutahi-A and Manutahi- B onto and into land and in the vicinity of an unnamed tributary of the Mangaroa Stream.

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/1000353w.pdf> (pgs 3.-6)

Origin Energy NZ Ltd Rimu Pipeline Leak, October 2010: Cause, remediation and Learning Points

<http://www.trc.govt.nz/assets/Publications/guidelines-procedures-and-publications/industry/rimu-leak-report2011.pdf>

“In the incident, a small pipeline was found to be leaking oil into the unnamed tributary of the Manawapou Stream. The immediate effects of the spill were adequately mitigated and an extended mitigation programme was proposed including riparian planting”.

Day 32: Leak point finally found.

Day 105: Visited site and pleased how stream had recovered.

24th May 2011: Sample collected 130m downstream smelt of hydrocarbons... stream was showing signs of recovery 7 months after the incident.

There was no serious non-compliance or fault found so no prosecution. In the conclusion it is stated “the outcome of this regrettable incident will be safer operations and protection of industry personnel, the public and the environment”.

“If it had not been for the neighbour who had first noticed the leak, the environmental effects would have been a lot more severe with oil possibly reaching the Manawapou River and ultimately the beach. “



Powerpoint slide as part of a presentation ‘Taranaki- the Energy Capital of New Zealand’ by Fred McLay ‘Rimu Pipeline Leak’ at New Zealand Resource Management Conference November 2011
http://www.nzarm.org.nz/documents/2011%20Conference/TRC_Fred_McLay_energy.pdf

TAG Oil Ltd and Austral Pacific

Hydraulic fracturing data for Central

Taranaki



TAG Oil fracked Cheal A7 (2010), Cheal B3 (2010), Cheal BH1 (2010). There are no specific environmental monitoring reports published for these well sites since 2008 (Cheal A) and 2007 (Cheal B) even though they have been drilling, **fracking**, and producing from these well sites.

Austral Pacific Cardiff 2A was fracked in 2005. There was one environmental monitoring report published and the water was tested twice in June 2006.

There are Taranaki Regional Council discharge permits to water specifying parameters for chromium 6+ (0.01), chromium 3+ (0.10), and copper (0.01) amongst other contaminants. Chromium 6+ is also known as hexavalent chromium and is a known carcinogen. The testing for discharge and receiving waters by Taranaki Regional Council does not include these contaminants.

(Cheal Production Station- reporting period July 2009- June 2010, published August 2011.)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/861554.pdf>



<http://www.trc.govt.nz/taranaki-regional-explorer/>

Consent 4727-1

Conditions of Consent

Consent Granted: To discharge up to 100 cubic metres/day [1.2 litres/second] of treated stormwater and treated production water from hydrocarbon exploration and production operations onto and into land in the vicinity of an unnamed tributary of the Mangawharawhara Stream in the Waingongoro catchment at or about (NZTM) 1712364E-5639488N

Many of contaminants were **not tested** for during the environmental monitoring period

The discharge shall not cause the receiving waters to exceed the following limits outside of the mixing zone established in special condition 1 above at any time:

chloride	50 mg/L
un-ionized ammonia	0.02 mg/L
total zinc	0.05 mg/L
total vanadium	0.10 mg/L
total chromium 6+	0.01 mg/L
total chromium 3+	0.10 mg/L
total copper	0.01 mg/L
pH range	6.5 - 8.5
temperature increase	2 deg C
biochemical oxygen demand increase	2.00 mg/L

Greymouth Petroleum Hydraulic fracturing data for Central and North Taranaki

There are limited wellsite environmental monitoring reports published for the wells listed as having hydraulic fracturing operations.

One report that coincides with fracking, refers to visual monitoring for contaminants.

There are 6 more fracking consents recently granted for Greymouth Petroleum at Motunui, Tikorangi, Urenui and Onaero.



Bridge Petroleum Limited Radnor 1 (B) Wellsite (Exploration) Monitoring Programme Report (TRC, October 2011)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/722166w.pdf>

Location: Radnor Road, Midhurst

The Executive Summary states the Company demonstrated a high level of environmental performance and compliance with the resource consents.

However there was **no water samples** collected for physiochemical analysis. There was **no sampling of water quality upstream or downstream**. ‘Production testing’ was underway on 2nd June 2010 and the eastern flare pit contained drilling fluids and muds to be cleaned up. There was a complaint received regarding the disposal of drilling muds however TRC found it unsubstantiated. There was a leak of light hydraulic oil so an additional skimmer pit was constructed.

Greymouth Petroleum Kaimiro and Ngatoro Production Stations Monitoring

Programme Annual Report 2010- 2011

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/994516w.pdf>

Location: Upper Dudley Road, Inglewood

The Inglewood (New Plymouth District Council) water intake is below the Ngatoro Production Station (A) on the Ngatoro Stream. This water supplies over 3,000 people. For the past few years the testing of the discharge before it enters the stream show high levels of contaminants however the legally consented discharge into the Ngatoro Stream is above the legally consented water intake on the Ngatoro Stream. A well-site (Ngatoro-1) at this production station was subject to hydraulic fracturing. The water intake consent was originally granted in 1994 by Basil Chamberlain (now CEO of TRC) and renewed in 2009 by TRC's Mr McLay, Director of Resource Management. The discharge consent for contaminants from Ngatoro-A Production Station was granted in 1998 by Taranaki District Council and continues today.

Ngatoro 1 Well (TRC HF Report, p.21-22)

- Well drilled to a vertical depth of 4119m TVD.
- A water based frac fluid was used.
- Total volume water and fracture chemicals were about 68 cubic metres plus 11600 kilograms of sand proppant.
- KCL, Clayfix II, WG-19, HYG-3, Be-5, Lo Surf 357 were used as additives with

Fracking chemical list provided for Cheal A and B by TAG Oil

EC6395A	Biocide	Acute human health hazard
Re-solv EC2045A	Demulsifier	Acute human health hazard
Nalco 780	Liquid Oxygen scavenger	Acute human health hazard
EC1447A	Corrosion Inhibitor	Acute human health hazard
EC6023A	Water clarifier	Acute human health hazard
Solvent 500	Solvent	Acute human health hazard
XC29393	Biocide	Harmful if swallowed.
XLFC-1B	Gelling agent	Hazardous. Acutely toxic
X-Cide 102	Biocide	Hazardous. Acutely toxic
Wax-check 5222	Paraffin inhibitor	Hazardous. Acutely toxic
US-40	Solvent	Hazardous. Acutely toxic
Saraline 185V	Solvent	Hazardous. Acutely toxic
GBW-12CD	Enzyme	Hazardous
CXB-6	Crosslinking agent	Hazardous. Acutely toxic
Clay master-5C	Clay control	Hazardous
BF-7L	Buffer	Hazardous. Acutely toxic



<http://www.trc.govt.nz/taranaki-regional-xplorer/>

Name of Consent Holder: Greymouth Petroleum Acquisition Company Limited
P O Box 3394
Fitzroy
NEW PLYMOUTH

Consent Granted Date: 4 February 1998

Conditions of Consent

Consent Granted: To discharge up to 100 cubic metres/day of treated stormwater, treated production water and treated wastewater from oil well drilling and production operations and a truck turning area into the Ngatoro Stream a tributary of the Manganui River in the Waitara Catchment at or about GR: Q19:110-217

Expiry Date: 1 June 2015



Consent Granted:

TO CONSTRUCT AND MAINTAIN A WATER SUPPLY INTAKE INFILTRATION GALLERY IN AND ADJACENT TO THE NGATORO STREAM A TRIBUTARY OF THE MANGANUI RIVER IN THE WAITARA CATCHMENT AND TO CONSTRUCT A PIPELINE FROM THE GALLERY TO THE WATER TREATMENT STATION FOR INGLEWOOD URBAN WATER SUPPLY PURPOSES AT OR ABOUT GR: Q19:112-220



Consent Granted:

TO TAKE UP TO 4850 CUBIC METRES/DAY [70 LITRES/SECOND] OF WATER FROM THE NGATORO STREAM A TRIBUTARY OF THE MANGANUI STREAM IN THE WAITARA CATCHMENT, FOR INGLEWOOD URBAN WATER SUPPLY PURPOSES AT OR ABOUT GR: Q19:112-220

And this is flaring...

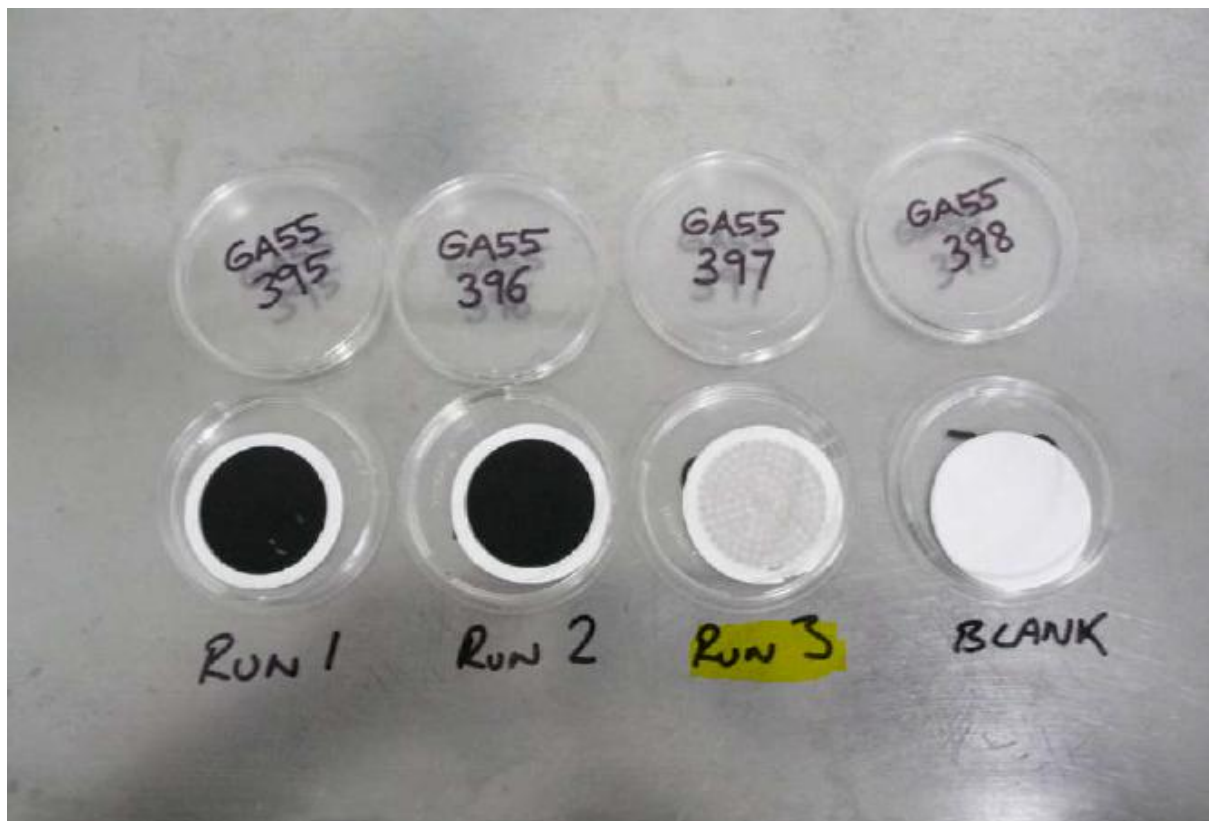
Taranaki Regional Council (TRC) recently released a report about flaring fracking fluids.

The report describes a single simulation of fracturing fluids.

1/3 of the flaring samples were lost as the wind changed direction during the simulation.

” However, over the duration of the day the wind direction changed forcing the gas flare to vary in its location. As a result, less of the combustion gases were able to be collected by the sampling system. Examination of the particulate filters (depicted in Figure 7) clearly shows the differences caused by the varying flare locations.”

<http://www.trc.govt.nz/assets/Publications/guidelines-procedures-and-publications/hydraulic-fracturing/Flaring2012-appendices.pdf> (p.21 of 86)



The Executive Summary clearly states “It should be noted that all results relate to a field study carried out under specific source, topographic, and meteorological conditions. Therefore they cannot and must not be applied universally”.

HOWEVER Taranaki Regional Council draws the following conclusions from one simulation in their recommendations:

- 1. There are minimal effects upon ambient air quality in the vicinity of flares being employed for the destruction of emissions from fracking fluids, in the context of prevailing air quality within the region and nationwide.**
- 2. The report can be referenced for “contingency flaring”.**
- 3. The report can be referenced to any review of the ‘Regional Air Quality Plan for Taranaki (2011).**
- 4. The report can be referenced to support oil and gas companies to support their applications for air discharge permits.**

We feel this is very concerning.

“The selected flare pit was surrounded by an earth wall bund approximately 10 m long by 8 m wide elevated approximately 2 m above ground level. Within the pit the gas flare produced a ball of flame approximately 3 to 5 m in diameter.

<http://www.trc.govt.nz/assets/Publications/guidelines-procedures-and-publications/hydraulic-fracturing/Flaring2012-appendices.pdf> (p.9of 86)

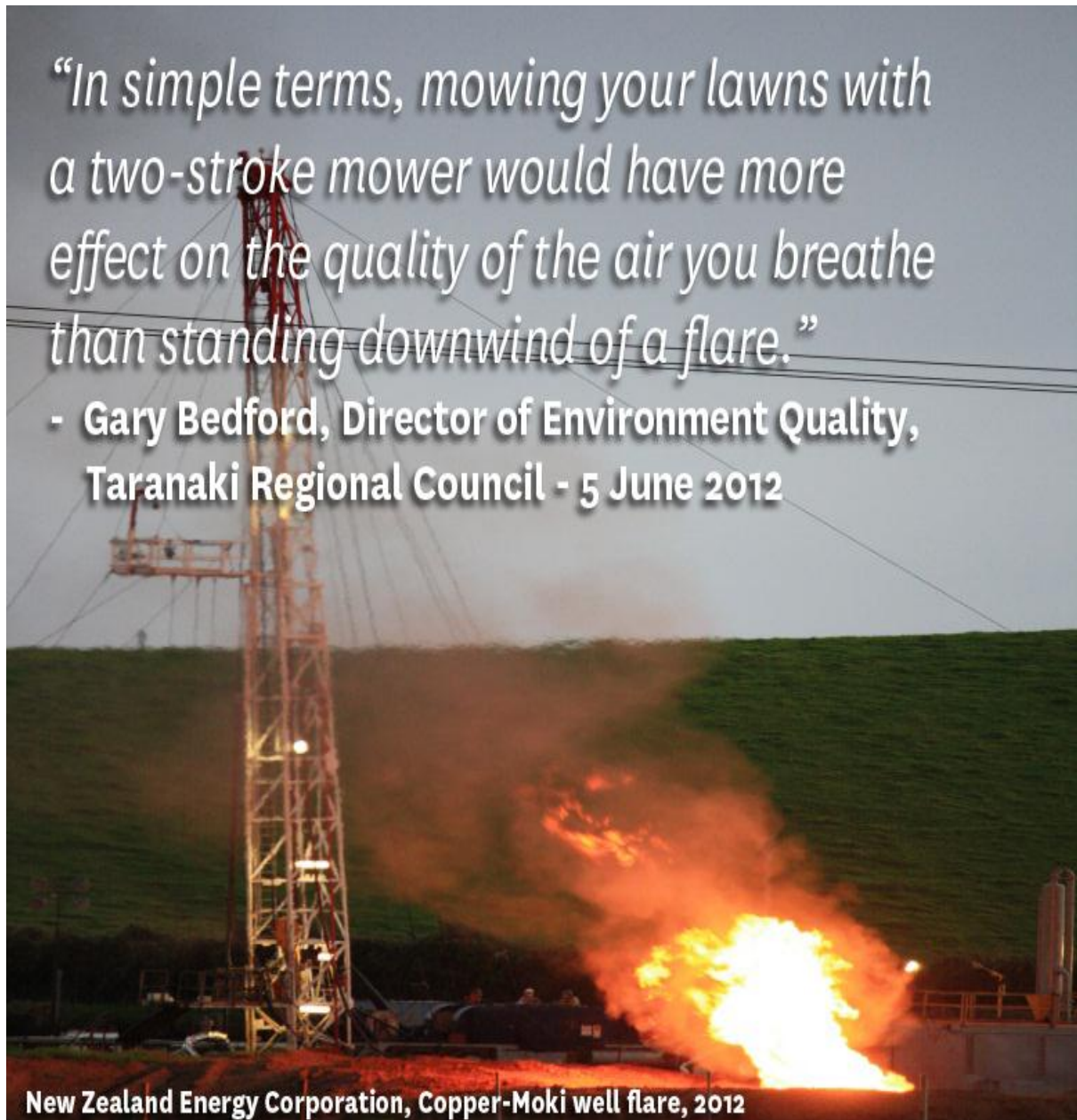


<http://www.trc.govt.nz/assets/Publications/guidelines-procedures-and-publications/hydraulic-fracturing/Flaring2012-report.pdf> (p.15)

However Cheal A (TAG Oil) and Copper- Moki (New Zealand Energy Corporation) have been flaring for months near us. We have made several complaints and sent photos. We have been told there are no concerns and been referred to the recent flaring report. This flare is much larger than the 3m by 5m simulation flare and has been burning for a long time.

“In simple terms, mowing your lawns with a two-stroke mower would have more effect on the quality of the air you breathe than standing downwind of a flare.”

**- Gary Bedford, Director of Environment Quality,
Taranaki Regional Council - 5 June 2012**



New Zealand Energy Corporation, Copper-Moki well flare, 2012

And this is treating the contaminated produced water and stormwater...

“General stormwater from the site is discharged to the Mangahewa Stream via a skimmer pit. Stormwater which may contain hydrocarbon is treated by settling in the “swimming pool” prior to discharge to the Waitara River. Hydrocarbons are skimmed off.

Photo 2 shows the “swimming pool” where contaminated stormwater is treated before being discharged to the Waitara River.”



Photo 2 Treated stormwater ‘swimming pool’ STW002007

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/231940.pdf> (p.12-13)

And this is Landfarming ...



C Boyd – Drilling Waste Disposal Monitoring Programmes Annual Report 2009-2010

- Taranaki Regional Council (TRC) has issued resource consent based on limited research to use sites around Taranaki to discharge wastes from oil and gas companies. Many are described as having good to high levels of environmental performance. **However** many of them have issues with contamination.
- A number of these landfarms are used to discharge wastes from fracked wells identified in the TRC fracking report. The process can involve removing topsoil, spreading waste, topsoil removed, grass seeded and cows graze.
- Oil and gas companies have further resource consents to discharge onto and into land at well-sites next to streams, to discharge into waterways, and to use a process called mix-bury-cover in the area of the well-sites.

A R Geary drilling waste land treatment site (2008)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/548593.pdf>

Location: Geary Road, Manutahi

The Executive Summary states the consent holder demonstrated a high level of environmental performance and compliance with resource consents.

However disposals at the site were completed in March 2006 and the area has since been reinstated to productive dairy farmland. The only adverse environmental effects

were the negative impacts on the earthworm populations and soil ecosystem health. The Council states these are likely to subside over time. Five disposal areas still have hydrocarbon concentrations which exceed the Ministry for Environment guidelines.

Origin Energy Resource NZ Ltd drilling wastes landfarms (2011)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/829868.pdf>

Location: Geary Road Manutahi and Spence Road Kakaramea

The Executive Summary states the Company has a high level of environmental performance. **However** “previous monitoring at landfarming sites has shown the loading limits were seldom complied with. In coastal locations, adverse effects on groundwater due to leaching of chloride and nitrogen are expected to be minimal. The Council allowed landfarm operators at such sites to vary their consent conditions” (p.17). Two examples of overloading are Ahuroa B WBM by over 3 times the consent limit of 50,000 mg/kg of total hydrocarbons and Kauri F by over 7 times the consent limit of 200 kg/ha for nitrogen.

Boyd (February 2010, March 2011)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/662396.pdf>

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/548593.pdf>

Location: Derby Road North and Surrey Road, near Inglewood and on the boundaries of the National Park.

The Executive Summary in 2010 states the monitoring showed there appears to be no adverse environmental effects resulting from activities at the sites even though the consent holder’s level of environmental performance was improvement desirable and there was a significant non-compliance.

In 2011 the consent holder achieved a good level of compliance with the resource consents even though the monitoring indicated that there was an occasion when there were adverse effects on the environment. There were a total of four incidents that were associated with drilling waste disposal activities. It was noted in the report improvement is required for environmental performance, particularly for activities not complying with the rules for permitted activities.

Todd Taranaki Ltd, Todd Exploration Ltd, Todd Pohokura Ltd, Shell Todd Oil Services Ltd and Shell Exploration Ltd Mix-Bury-Cover and landfarm Monitoring Programme Annual Report (TRC, February 2009)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/540609.pdf>

Location: Airport Drive, Bell Block

The Executive Summary states the companies demonstrated a good level of environmental performance and compliance with the resource consents.

However there was only sampling done once during the year and only at one site (Terrace-A) although there are several sites. The hydrocarbons levels were at 10,000 mg/kg instead of 4,000. The Council comments that “it is expected hydrocarbons present in the surface soil layer will continue to degrade naturally to below the consented level at some stage in the near future” (p.12).

Greymouth Petroleum Hawera Land Farm Monitoring Programme Annual Report (October 2011)

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/931224w.pdf>

Location: Rifle Range Road, Hawera situated on a Fonterra Research Farm

The Executive Summary states during the year, the Company demonstrated a high level of environmental performance and compliance with the resource consent.

Greymouth operates a drilling waste landfarm on a site owned by Fonterra and serves as part of their research farm.

However “the site was not active during the monitoring year under review, there were no disposals of drilling waste. The permanent establishment of pasture on parts of the site remain an issue. The monitoring indicated there were no adverse environmental effects resulting from past discharges of drilling wastes at the site.”

And these are the ‘independent environmental regulators’...



New Zealand Petroleum Summit September 2012

Basil Chamberlain, CEO of the environmental regulators of oil and gas in Taranaki presents “Taranaki today and lessons along the way...how we earned our ‘social licence’ to operate...advice for new regions”

Taranaki Regional Council

Fred McLay (Director of Resource Management)

- 18 years with TRC as water resource officer and consents manager TRC
- Shell Todd Oil Services for 2 years dealing with consent process for the Pohokura Development
- Back at TRC as Director overseeing Pohokura and other Shell Todd Oil sites





- **Taranaki Regional Council (TRC), the environmental regulators, own 100% of Port Taranaki (PTL).**
- **TRC Chairperson David McLeod is a Director of Port Taranaki Ltd with councillor Peter Horton.**
- **TRC regulates Port Taranaki. <http://www.porttaranaki.co.nz/>**

According to the Economic Impact of Port Taranaki 2007, Business and Economic Research Limited:

“In the oil and gas industry, the link with Port Taranaki is inextricable... The Port has enabled the oil and gas industry in the region, and vice-versa.”

Oil and gas exports in 2006 through Port Taranaki were \$500 million. Imports for oil and gas including closely related chemical and engineering industries were \$200 million.

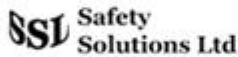
100% of oil and gas consents have been granted.

<http://oilandgas.co.nz/>

Port Taranaki Ltd is a member of Oil and Gas Specialist Technologies (OGST).

“The Oil and Gas Specialist Technologies group is a multi-disciplined group of New Zealand companies providing a dynamic range of technical specialist and support services to the oil, gas and energy sectors and is facilitated by Venture Taranaki Trust.”

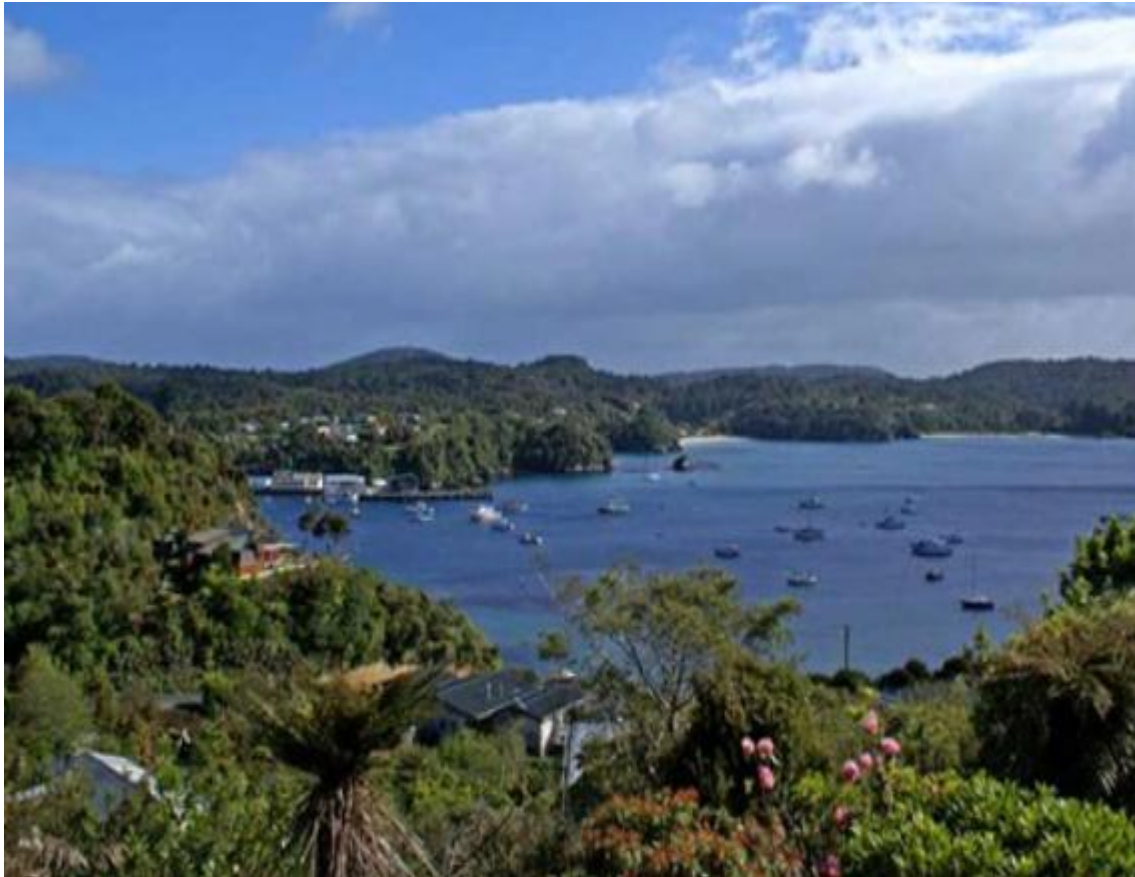
The Petrochemicals and Security Manager of Port Taranaki is the Chair of OSGT and on the Board of Taranaki Chamber of Commerce.



And this is the expansion of the oil and gas industry across Taranaki and New Zealand since August last year

- TAG Oil (Canadian-owned) drilling and producing from up to 30 wells at Cheal A and B
- TAG Oil drilling from up to 10 wells at Cheal C under the Stratford District Council 1991 landuse consent
- TAG Oil expanding at Sidewinder and purchasing land under the OIA
- Shell Todd increasing fracking operations at Kapuni
- Todd Energy increasing fracking operations at Mangahewa
- Greymouth Petroleum increasing fracking operations at Turangi, Onaero, Ohanga, Kowhai and Epiha
- New Zealand Energy Corporation (Canadian-owned) expanding at Copper-Moki and purchasing Waihapa Production Station under the OIA
- TAG Oil and Apache on the East Coast
- New Zealand Energy Corporation on the East Coast

And now Greymouth Petroleum on Stewart Island!



Conclusion

Our regulators are an integral functioning part of the oil and gas industry. They are working in the industry. We believe they are not monitoring the environment independently.

They are the ‘gamekeeper’ and the ‘poacher’.

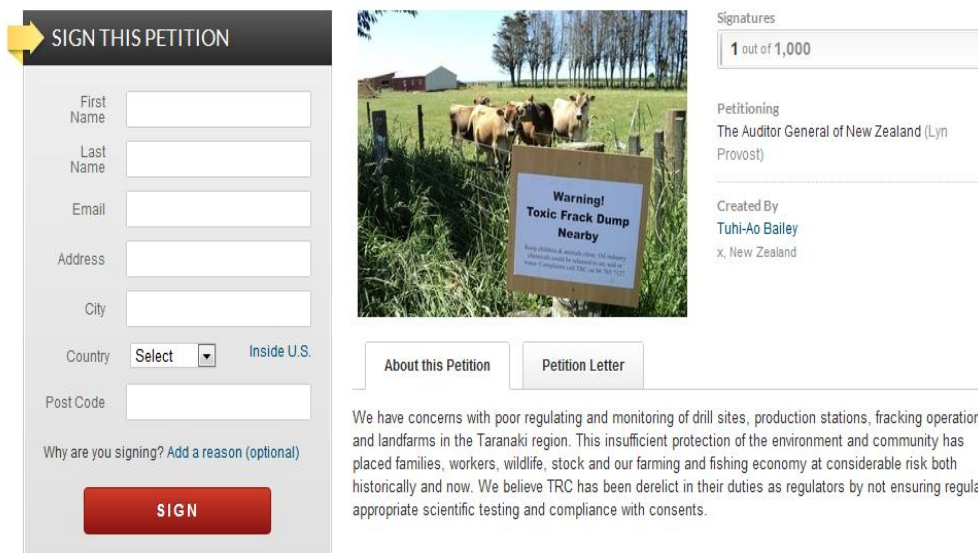
They are the examiner who sets their own exam.

They are the surgeon operating on themselves.

They have had little scrutiny for many years.

We ask the Auditor General of New Zealand to investigate the consenting, monitoring and regulation of the oil and gas industry in Taranaki urgently.

Audit Taranaki Regional Council's regulation of oil and gas activities



The screenshot shows a petition page with a sign-up form on the left, a central image of a farm with a warning sign, and a signatory list on the right. The form includes fields for name, email, address, city, country, and post code, along with a 'SIGN' button. The central image shows a sign that reads 'Warning! Toxic Frack Dump Nearby'. The signatory list shows one signature: 'The Auditor General of New Zealand (Lyn Provost)'.

SIGN THIS PETITION

First Name

Last Name

Email

Address

City

Country [Inside U.S.](#)

Post Code

Why are you signing? [Add a reason \(optional\)](#)

SIGN

Warning! Toxic Frack Dump Nearby

Signatures: 1 out of 1,000

Petitioning: The Auditor General of New Zealand (Lyn Provost)

Created By: Tuhi-Ao Bailey, x, New Zealand

[About this Petition](#) [Petition Letter](#)

We have concerns with poor regulating and monitoring of drill sites, production stations, fracking operations and landfarms in the Taranaki region. This insufficient protection of the environment and community has placed families, workers, wildlife, stock and our farming and fishing economy at considerable risk both historically and now. We believe TRC has been derelict in their duties as regulators by not ensuring regular appropriate scientific testing and compliance with consents.

<http://www.change.org/en-AU/petitions/audit-taranaki-regional-council-s-regulation-of-oil-and-gas-activities>