

Myth Buster

Community Meeting

28th June 2014, Opunake

www.ClimateJusticeTaranaki.info



www.LockTheGate.org.nz



Myth 1:

The industry
in NZ is world
leader in
safety

Fact:

61 **dangerous** petroleum incidents recorded by the High Hazards Unit in just seven months: 2 fires at installations, 6 **uncontrolled releases** of hydrocarbons, 15 events that saw **emergency** response plans activated and 3 incidents with potential to cause a **major accident**. Most were at onshore wells.

<http://www.3news.co.nz/Report-shows-61-dangerous-petroleum-incidents/tabid/423/articleID/339150/Default.aspx>

Fire
Drill
Safety

SEEMS
LOGICAL.

YEAH, SAFETY
FIRST!

I PROPOSE THAT
ALL DAY, EVERY DAY
AT NEWTON NORTH IS
A FIRE DRILL. WITH
STUDENTS EVACUATED
FROM THE BUILDING AT
ALL TIMES, THIS
SYSTEM WILL
GUARANTEE THAT THIS
SCHOOL IS PREPARED
FOR EMERGENCIES
100% OF THE TIME!

Lee

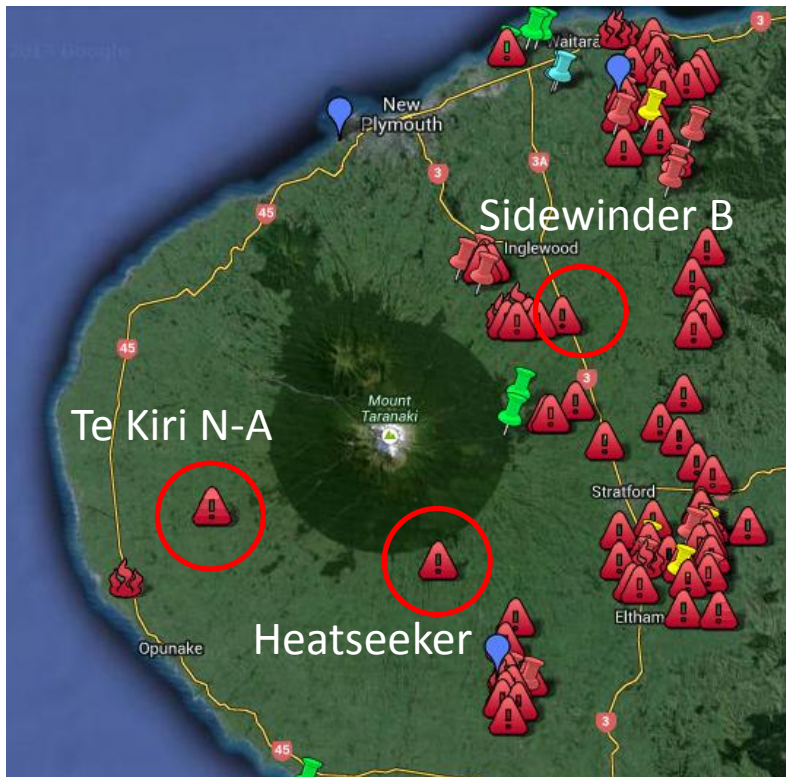
Myth 2:

The oil and gas industry in NZ follows world-class best practice and is well regulated

Fact:

Parliamentary Commissioner for the Environment: *“regulators scrambling to catch up... councils unprepared... rules in plans...inadequate... extraordinarily permissive... clearly out of step with international ‘best practice’... not acceptable...”*

*“...it is the cumulative effect of many wells on the landscape, on the risk to groundwater, and so on, that matters most. The Resource Management Act has never been well-suited to managing **cumulative effects** because of the way precedents are created”* PCE, June 2014.



<http://climatejusticetaranaki.wordpress.com/resources/fact-sheets-presentations>



Aerial view of Jonah Field, Wyoming, by Bruce Gordon, EcoFlight Sky Truth 2006

Todd Energy Te Kiri North-A wellsite (Kina Rd, Oaonui) a case of unbundled consenting

- Proposed to drill **one** exploration well on Kina Road. Depending on results, up to **8** wells might be drilled...
- *“If well results indicate **hydraulic fracturing** is beneficial a discharge consent would be sought from TRC ...”*
- If successful, **production facilities, pipelines and deep well injection** (DWI) will likely be required... Consents will be sought at that time...

Source: Todd Energy AEE for Te Kiri North-A wellsite, March 2014.

Drilling for oil to take place in Kina Road area

Tag Oil, the oil and gas production exploration company is drilling for oil on a farm in Kina Road, Oaonui near the intersection of Wiremū and Kina Roads.

Residents from the 54 homes in the area were invited to learn about the drilling process in a PR exercise last Thursday night hosted jointly by Tag Oil and Shell Todd which included refreshments, a slide show and then supper. Around a dozen attended the evening.

"We very much value transparency, openness while we're doing it," remarked Winfred Boeren, who has been the General Manager of Development at Todd Energy for 20 years, who is clearly wanting to allay any fears locals might have about the operation.

There will no fracking involved, he assured explaining that fracking requires a special licence which they haven't applied for. He said afterwards he was a fracking expert though and believes that the process is safe, especially how it is practised in New Zealand.

Explaining that Todd Energy is "one hundred percent New Zealand owned", he remarked that they "see themselves as part of the community - not here



Winfred Boeren speaking to Kina Road residents Len Pentelow (right) and Robert Mugeridge.

just to make a quick buck."

The operation needs to be completed by the end of the year as the 6 year permit, which they applied for from the government expires at the end of the year.

It is anticipated that they will start mid to late June beginning with some work on the roads in the area. Construction will take 12 weeks with drilling timed to take place late September.

Mr Boeren seemed keen to reassure those in the area that

there would be a minimum of disruption to them with heavy vehicles used only during daylight hours, "except in the unlikely event of an emergency".

They would also make sure that the roads are maintained.

"The noise generated during drilling at night has been raised as a concern in other operations. Hamish said the rig was completely encased unlike in other drilling around Taranaki such as at Tikirangi. "All the generators are encased in

soundproof units."

Other potential irritations like beeping to indicate reversing vehicles are now replaced by flashing lights.

The slide show gave an interesting insight into just what is involved in drilling for oil.

The process begins with the exploration of areas using seismic surveys. This involves looking for underground structures

Continued page 3.

Concerns expressed

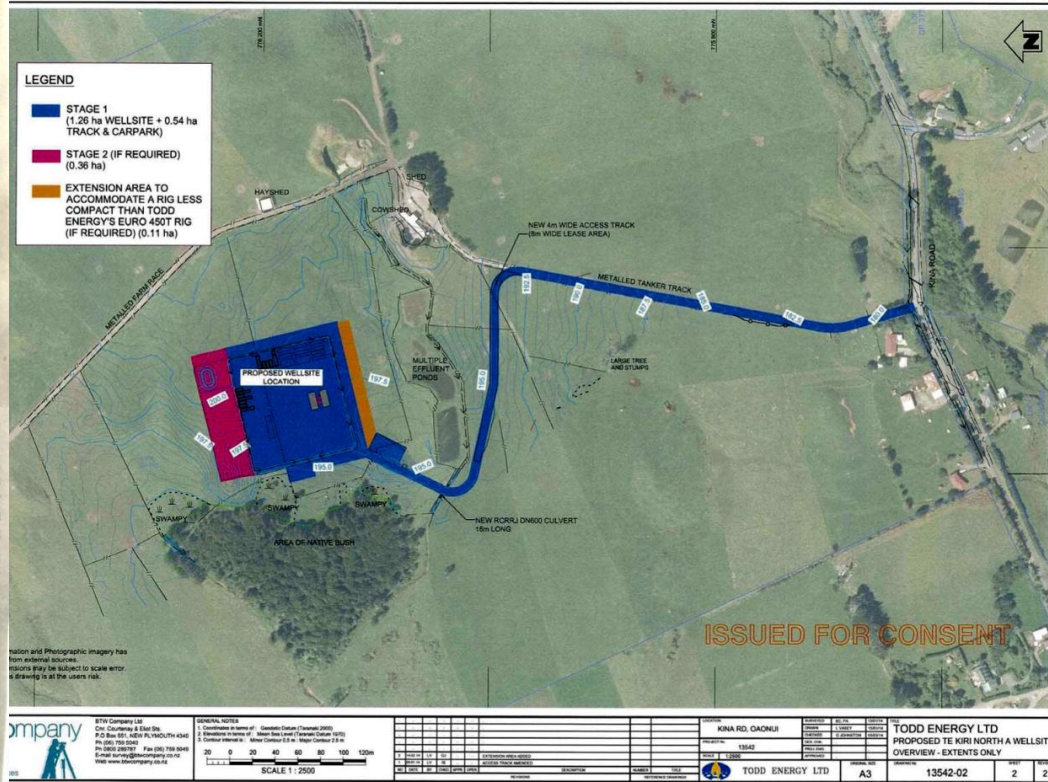
Not everyone however was happy at the prospect of drilling occurring on farmland. Grant Bishop who owns a neighbouring farm which has been in the family since 1919 for generations had concerns about water contamination.

In the 1950s when his father owned the farm there had been drilling on the farm and 60 years on,

they had a problem with "3-4 holes" seismic holes. "Something triggers it and water bubbles out and they were left with a swamp, said Grant. This had happened 3 or 4 times in the 35 years he'd owned the farm. He was also concerned about water contamination and the long term consequences of what they were doing. Once asbestos was

considered OK he remarked. He also expressed concern about the proximity of the drilling to a faultline which was just half a kilometre away. Len Pentelow who owns a farm on Kina Road said he had concerns about traffic. "Don't ruin our brand new roads," was another comment. Another person present Irene Mullan however said they had had people on their farm and there were no problems at all. Robert Mugeridge whose farm borders Keith Harvey's farm said he was "OK about it".

"We very much value **transparency, openness while we're doing it,**" remarked Winfred Boeren, Todd Energy. ... **There will [be] no fracking** involved, he assured explaining that fracking requires a special licence which they haven't applied for.



Map: Todd Energy AEE for Te Kiri North-A wellsite, March 2014.

“Calculation of the **Hazards Effect Ratios** ... [HFSP] ... given the volumes and nature of substances on the site, resource consent will be required [from STDC]... It is possible that the substances listed could be swapped for other similar **proprietary products**...”

Todd Energy AEE for Te Kiri North-A wellsite, March 2014.

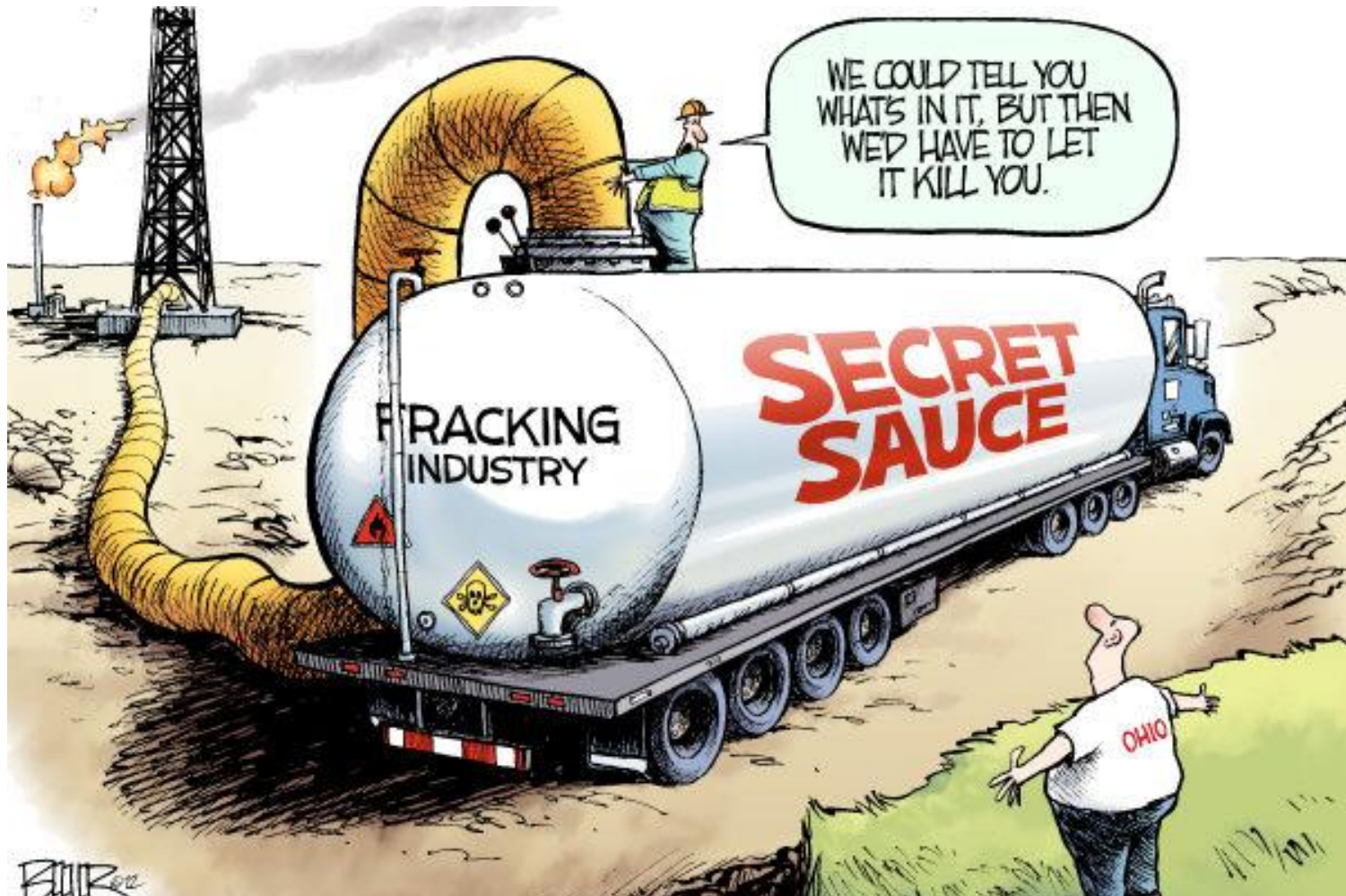


Table 2: Drilling Phase Hazardous Substance Inventory

Substance Name	Form	Conc (%)	Specific Gravity	Proposed Quantity (in known units)	Proposed Quantity (in t or m3)	UN No.	UN Class	HSNO CLASS	Storage or Use	Distance from site boundary
Barite (Halliburton and MI)	Powder	100		40000kg	40t			6.1D, 6.7A, 6.9A, 9.3C	Storage	>30m
Class Cement G	Powder	100	3.15	5.1MT 5100kg	5.1t			6.1D, 6.5A, 6.5B, 8.2C, 8.3A	Storage	>30m
Diesel	Liquid	100	0.85	20000L	17t			3.1D, 6.1E, 6.3B, 6.7B, 9.1B	Storage	>30m
Ecotrol RD	Solid	100		1225kg	1.2t			3.1C, 6.1C, 6.1E, 6.3B, 6.4A, 6.6B, 6.8B, 6.9B, 9.1D	Storage	>30m
Frac Attack*	Powder	100		5000kg	5t			6.3B, 6.4A, 6.7B	Storage	>30m
Gacscon 469	Liquid	100	1.1	2000L	2.2t			6.1E, 6.3A, 6.4A, 6.7A, 6.9A	Storage	>30m
G-Seal	Powder	100		4000kg	4t			6.1E, 6.3B, 6.4A, 9.1D	Storage	>30m
HZ-20	Liquid	100		1200L				9.1B	Storage	>30m
KCl (Halliburton and MI)	Powder	100		24075kg	24t			6.1E, 6.3B, 6.4A, 9.3B	Storage	>30m
Lime	Powder	100		2000kg	2t			8.2C, 8.3A, 9.1D	Storage	>30m
LPG	Gas	100	1.6	100m3	100m3	1075	2.1	2.1.1A	Storage	>30m
Methanol	Liquid	100	0.79	1500L	1.185t	1230	3(II)	3.1B, 6.1D, 6.4A, 6.8B, 6.9A, 9.3C	Storage	>30m

carcinogenic →

acute toxicity →

flammable →

mutagen →

reproductive →

toxicity

skin corrosion →

eye damage →

aquatic toxicity →

ecotoxic →

Source: Todd Energy AEE for Te Kiri North-A wellsite, March 2014.

Substance Name	Form	Conc (%)	Specific Gravity	Proposed Quantity (in known units)	Proposed Quantity (in t or m3)	UN No.	UN Class	HSNO CLASS	Storage or Use	Distance from site boundary
MIX II (Coarse & Fine)	Powder	100		4000kg	4t			6.7A, 6.9A	Storage	>30m
Monoethylene Glycol	Liquid	100	1.15	1500L	1.75t			6.1D, 6.4A, 6.9A 9.3C	Storage	>30m
Na Formate	Liquid	100	1.92	13,500 gals 51104L	98t			6.1E	Storage	>30m
Novamul	Liquid	100	0.95	3200L	3t			3.1D	Storage	>30m
Novatec F	Liquid	100	1.01	4095L	4.1t			6.1D, 6.5A, 6.5B 8.2C, 8.3A, 9.3C	Storage	>30m
OS1-L	Liquid	100	1.34	1000L	1.34t			8.2C, 8.3A	Storage	>30m
Produced Hydrocarbons	Liquid	100	0.85	127,000L	149t			3.1B, 6.6A, 6.7A 6.9B, 9.1C	Storage	>30m
SSA-1	Solid	100		9900kg	9.9t			6.7A, 6.9A	Storage	>30m
Tuned Spacer III	Solid	100		2268kg	2.26t			6.7A, 6.9A	Storage	>30m

*Frac Attack is a drilling fluid additive used to seal permeable sands, micro-fractured shales, and vulgular formations. It is not used for fracking in this context.

Note: Guidance from STDC District Plan, Appendix II

- A substance that is taken from a container and used in small amounts while its bulk continues to be stored would be rated as being storage; unless the processing is permanently connected to the bulk storage.
- Small packages generally treated same as bulk quantities.

Source: Todd Energy AEE for Te Kiri North-A wellsite, March 2014.

“...the produced water coming out of wells in the east of the North Island would almost certainly contain greater concentrations of heavy metals, salts, and **radioactive** substances” PCE, June 2014



Taranaki Daily News, 21 Dec 2012

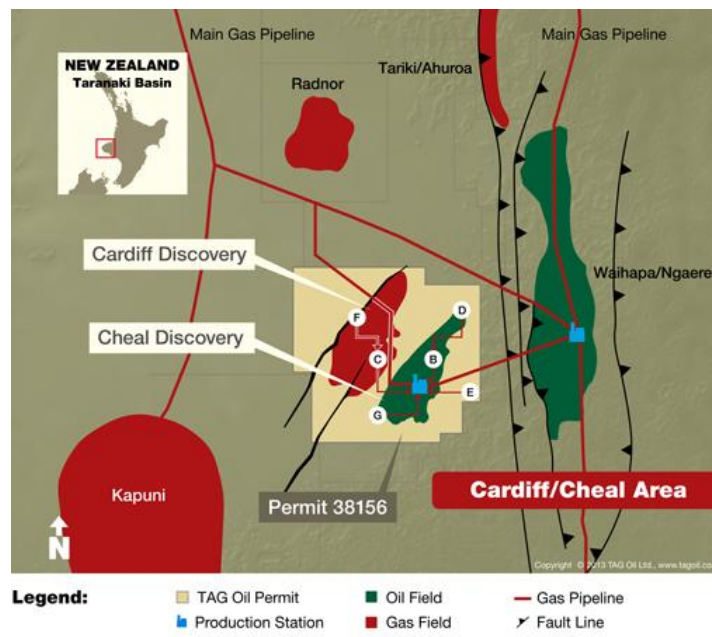
Myth 3:
Technological
advance
means that oil
and gas wells
are fail-safe

Fact:

All well casing leaks. Even new wells can leak.

e.g. Tag Oil recently drilled, cased and fracked Cardiff-3 well, but “... *either the fracture stimulation was affected by a **poor cement bond** ... or **skin damage** must exist ... restricting flow. ... TAG is now planning to move uphole and initiate testing on the second of the three identified potential zones, where there is a competent cement bond in place...*”

<http://www.tagoil.com/20140507-TAG-Announces-FY2015-Drilling-Program-Operations-Update.asp>



Myth 3:
Technological
advance
means that oil
and gas wells
are fail-safe



Wells Cheal 1, 2, 3 & 4 at Cheal A wellsite.

Fact:

In 20 years, over half of the wells will leak.

e.g. Two Cheal-A production wells have been **losing power fluids** since 2007 but only notified TRC in Sept 2009. *“The discharge to the Urenui Formation was ...due to **integrity issues with casing patch seals** within the wells”*. Consent was then changed to allow for the discharge and provide *“a regulatory response to the reported well leakages.”*

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/717351.pdf>

Myth 3:

Technological
advance
means that oil
and gas wells
are fail-safe

Fact:

*“The likelihood of an **abandoned well leaking** increases with its age. ... once a well has been abandoned and ‘signed off’ by the High Hazards Unit and the councils, any leaks from the well become the **responsibility of the owner** or occupier of the land.”*

PCE, June 2014

<http://www.pce.parliament.nz/publications/all-publications/drilling-for-oil-and-gas-in-new-zealand-environmental-oversight-and-regulation/>



Myth 4:

Drilling and fracking are safe – they do not pollute the air or contaminate **water, soil or food**

Fact:

*“In a recent incident at an exploration well site in Taranaki, equipment failure led to oil collecting in a flare pit, leaching into a tile drain, through a manhole, and into a stream...In another... hundreds of litres of **oil and produced water** leaked from a pipeline **into a stream** and was detected when noticed by a local Farmer.”* PCE, June 2014.

<http://www.pce.parliament.nz/publications/all-publications/drilling-for-oil-and-gas-in-new-zealand-environmental-oversight-and-regulation/>

Fact:

Shallow **groundwater** below five STOS Kapuni wellsites is **not fit for potable or stock** water use. Two sites do not meet the criteria for **irrigation**.

Table 26 Summary of blow-down pit groundwater monitoring result exceedences

Wellsite	Monitoring well	No. of times sampled	Year last sampled	Compounds exceeding MfE criteria		
				Potable	Irrigation	Stock water
KA-1/7	PDP2	4	2004	B, X	-	N
KA-4/14	MWH1	1	2007	B, X	-	N
	MWH3			B, X	-	N
KA-5/10	-	1	2007	-	-	-
KA-6/11	MWH1	2	2007	B, X	-	N
	MWH2			B	-	N
	MWH3			-	-	N
	MWH4			B	-	N
KA-8/12/15	MWH1	2	2008	C7-C9, B, E, X, BAP	B, X, N, BAP	X, N, BAP
KA-13	PDP2	5	2008	B, E, X	B, N	N
	PDP3			B, E, X	-	N

B=benzene
 E=ethylbenzene
 X=total xylenes
 N=naphthalene
 BAP=benzo(a)pyrene

<http://www.trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/854309.pdf>

Myth 4: Drilling and fracking do not contaminate water or soil

Fact:

Four flare/blowdown pits at STOS Kapuni wellsites have heavily **contaminated soil**. From KA2, **>350 tonnes** sent to BTW Brown Road landfarm and **>100 tonnes** sent to Wellington for treatment, then landfill. *“These pits were used, infrequently, for temporary containment, and were unlined ... In the past, some pits were used to take fluids from **fracked wells**”* STOS, 2012.

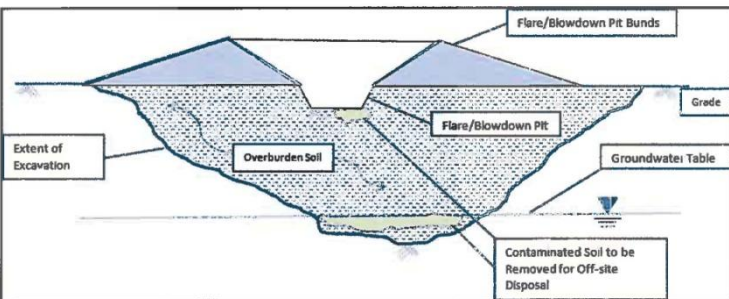
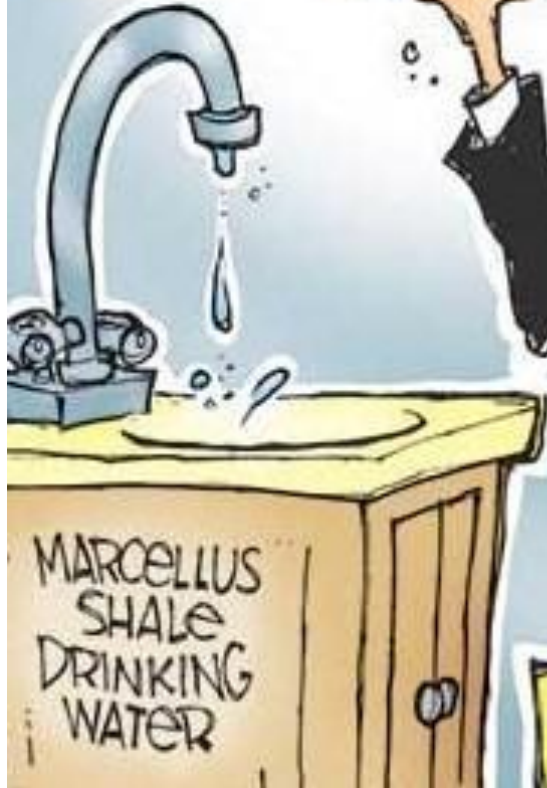


Figure 3: diagrammatic representation of proposed excavation works

<http://climatejusticetaranaki.files.wordpress.com/2011/04/stdc-information-report-re-consents-for-kapuni-contaminated-soil-2012-08-7.pdf>

<http://www.stuff.co.nz/taranaki-daily-news/news/7704340/Contaminated-soil-removed>

blincoe
©HETMES-TEBULE
SANTONIA-
C@ELECTRONS.COM



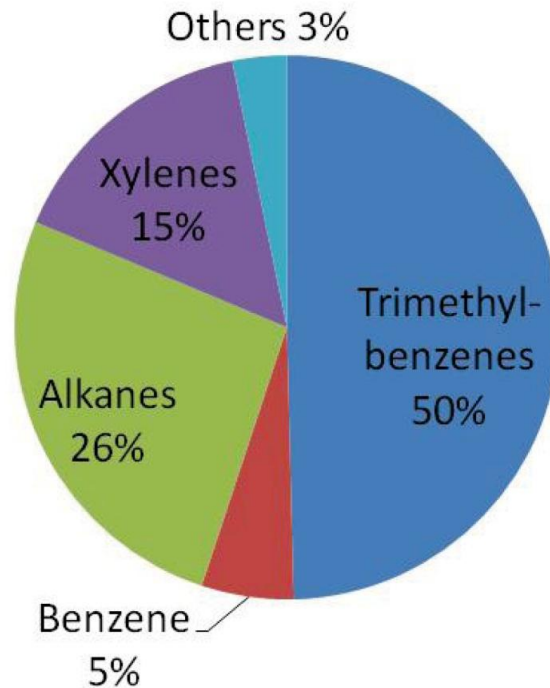
LOOK AT IT
THIS WAY:
THE GLASS
IS HALF-
CLEAN...

the OPTIMIST...

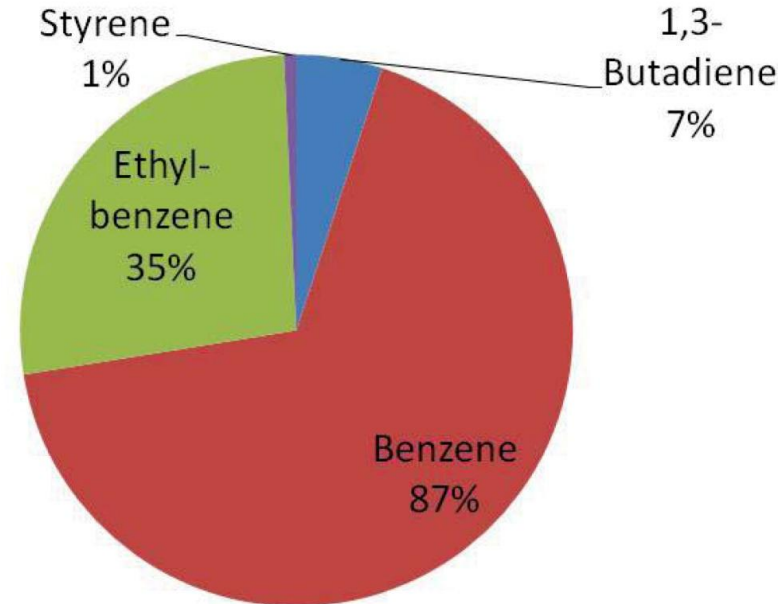
Human health risk assessment of air emissions from development of unconventional natural gas resources

Residents living $\leq \frac{1}{2}$ mile (800 metres) from wells are at greater risk for health effects from NGD. Cumulative cancer risks were 10 in a million vs 6 in a million.

Non-Cancer Risk Drivers



Cancer Risk Drivers



Dr. Lisa McKenzie, Colorado School of Public Health, University of Colorado, 2012

<https://www.bouldercounty.org/doc/landuse/mckenzie2012study.pdf>

Association between density and proximity of natural gas wells within a 10-mile [16km] radius of maternal residence and prevalence of congenital heart defects and possibly neural tube defects.

McKenzie et al. 2014

<http://dx.doi.org/10.1289/ehp.1306722>



"FRACK TO SCHOOL"

Norfolk School is <700m from Tag Oil's proposed Sidewinder B wellsite.

<http://www.norfolk.school.nz/?p=1957>

Myth 5:

The oil/gas industry brings jobs and wealth – we need them

Fact:

Green energy creates **4x more jobs** than oil.

Tax takes from oil industry:

NZ = **46%**

World = 70% (average)

In an article about Taranaki Electricity Trust, area from Eltham to Waitara was described as “**economically inert**”

<http://www.greenpeace.org/new-zealand/en/campaigns/climate-change/The-Future-is-Here/>

http://awsassets.wwfnz.panda.org/downloads/wwf_fossil_fuel_finance_nz_subsidies_report.pdf

<http://www.stuff.co.nz/taranaki-daily-news/news/10004352/How-Taranaki-trust-was-rewarded>

A GLOBAL SNAPSHOT

In 2011 the world invested US\$280 billion in renewable energy and the global market for clean technologies is valued at more than US\$5 trillion.

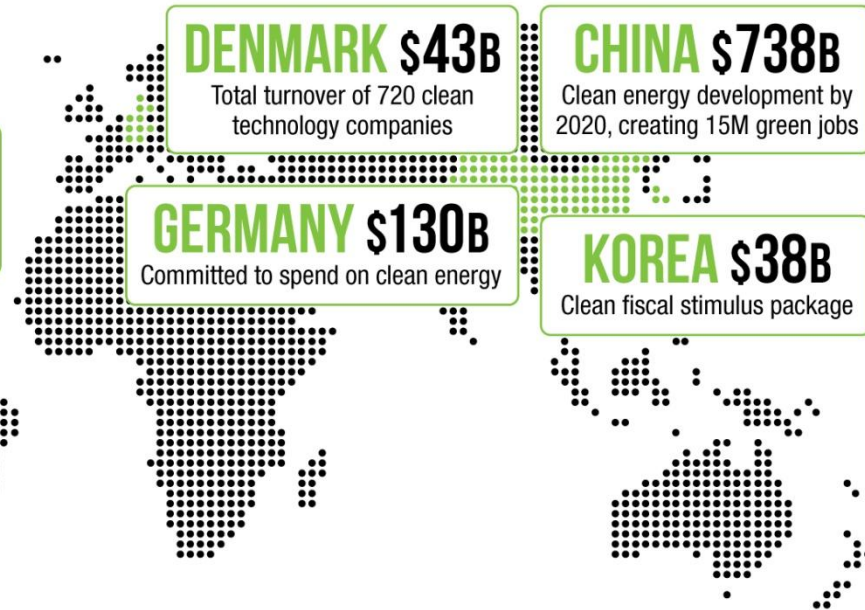
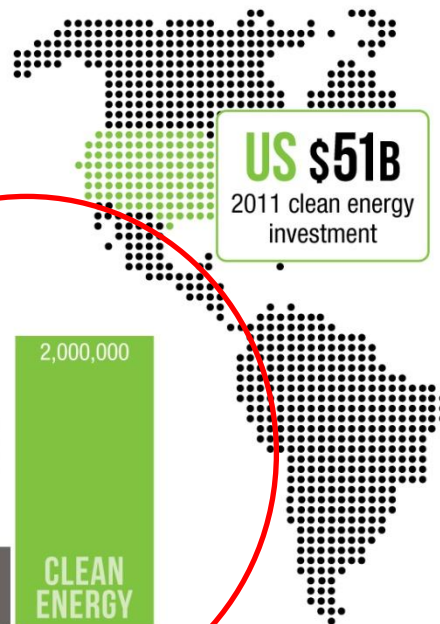
INVESTMENT

In Clean Energy
(\$ Billions)



JOBS

Created With
\$100 Billion
Investment



<http://www.greenpeace.org/new-zealand/en/campaigns/climate-change/The-Future-is-Here/>

THE RIGHT ENERGY PATH FOR NZ

GEOTHERMAL

SMART ELECTRICITY

SMART TRANSPORT

A cleaner, smarter economy will bring us future prosperity. Pollution will decrease and our global clean green reputation will be strengthened. Our energy supply and economy will be improved and huge local job opportunities will be gained.



NZ IS A WORLD LEADER IN GEOTHERMAL ENERGY



GEOTHERMAL GENERATION



WIND POWER GENERATION



PV PANELS / SOLAR WATER



OCEAN ENERGY



BIOMASS GENERATION



SMART GRID UPGRADE



BUILDING EFFICIENCY & RETROFITTING



MORE PUBLIC TRANSPORT



FUEL EFFICIENCY IMPROVEMENTS



MORE ELECTRIC TRANSPORT



BIOFUELS FROM WOOD BIOMASS



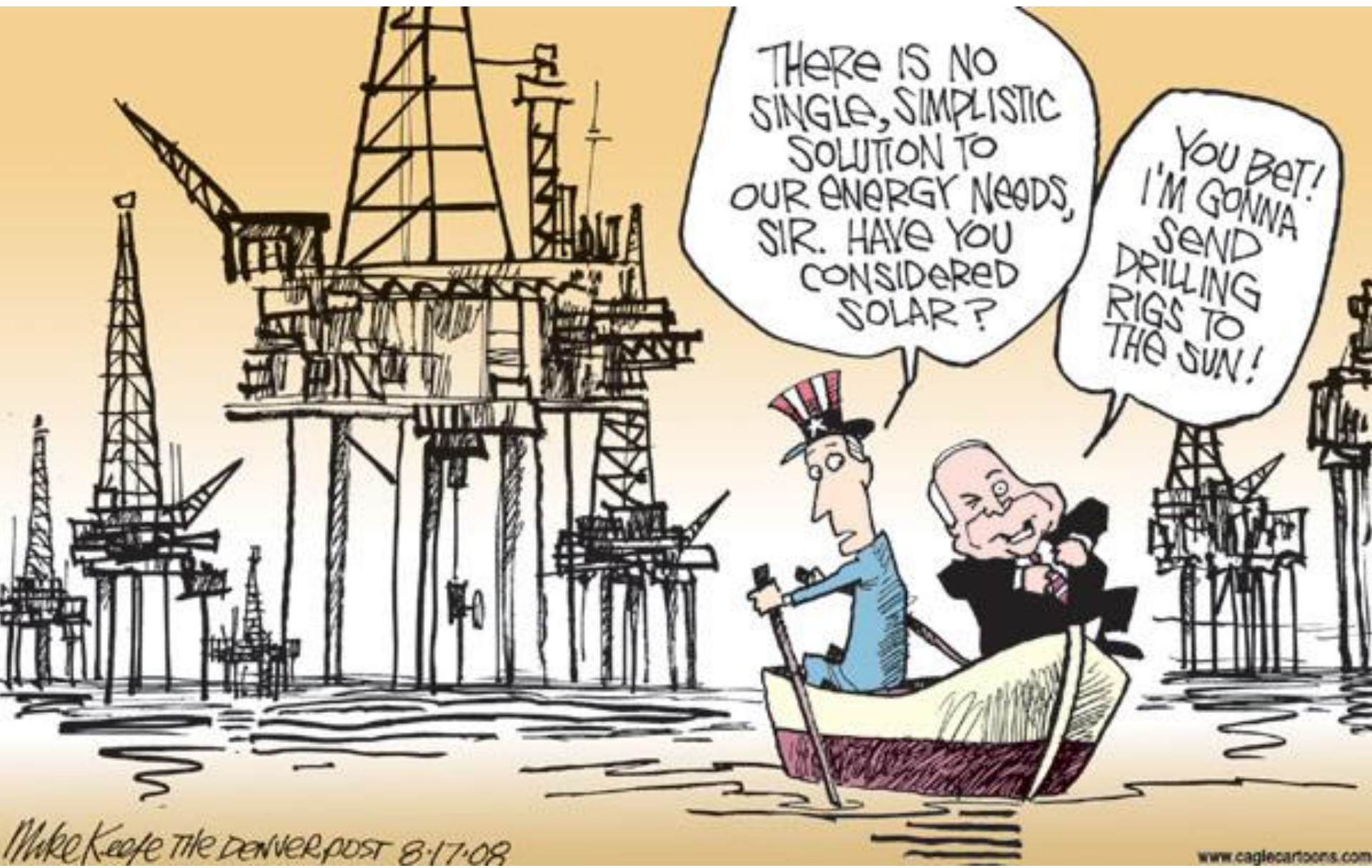
50% OF JOBS RELY ON NZ'S CLEAN GREEN REPUTATION



70% OF EXPORTS RELY ON NZ'S CLEAN GREEN REPUTATION



GREEN ENERGY CREATES **4X MORE JOBS** THAN OIL



Mike Keefe THE DENVER POST 8-17-08

www.caglecartoons.com

Myth 6:

You drive a petrol car and cook with gas, you are a hypocrite to speak against fossil fuels.

Fact:

You've inherited a fossil-fuel dependent society. But it's time to **change**, by speaking out and taking actions: call for oil-free future, seek/support **alternatives**, build sustainable communities...



*“The oil and gas reserves being targeted are **finite** resources...the most efficient use of these resources is as an **energy** source... the proposal will achieve the single purpose of the RMA 1991 to promote the **sustainable** management of natural ...resources ”* Todd Energy AEE for Te Kiri North-A wellsite, March 2014



By Alexei Talimonov

SOLAR
POWER

SHINE,
BABY,
SHINE!



Myth 7:

We're just little people, there's nothing we can do.

Fact:

*“Never doubt that a small group of thoughtful, committed citizens can **change the world**; indeed, its the only thing that ever has.”* Margaret Mead, 1958

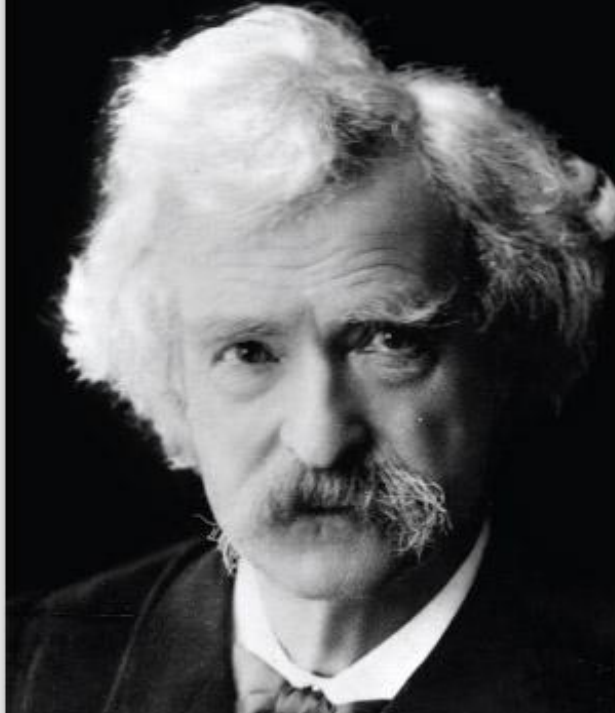
**You should never
let your fears
prevent you from
doing what you
know is right.**

Aung San Suu Kyi



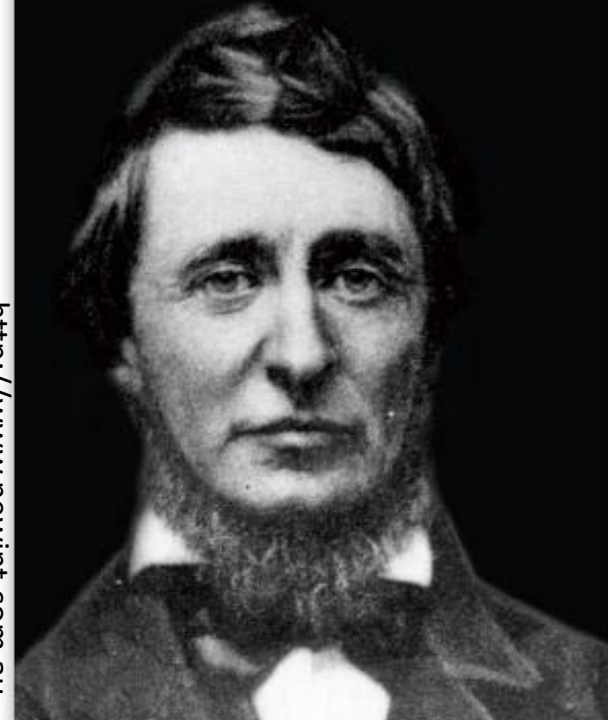
**Whenever you
find yourself
on the side of
the majority
it is time to
pause and reflect.**

Mark Twain



**What's the use
of a fine house if
you haven't got a
tolerable planet
to put it on?**

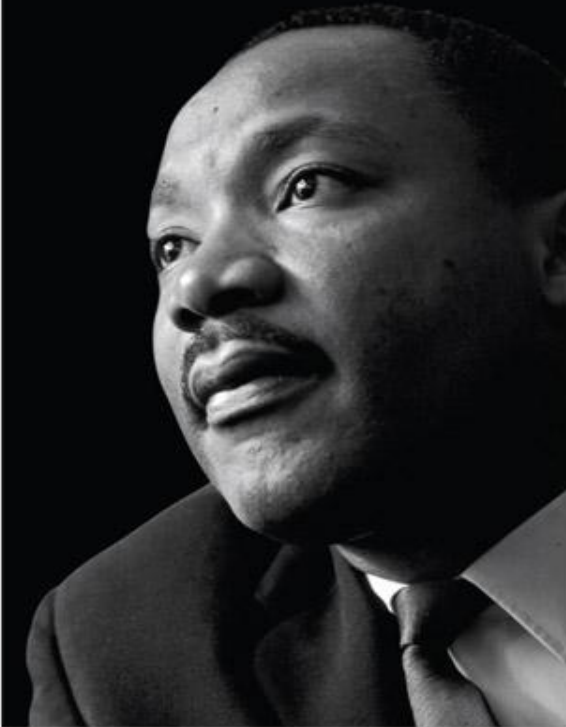
Henry Thoreau



<http://www.newint.com.au>

**Our lives
begin to end
the day we
become silent
about things
that matter.**

Martin Luther King Jr.



**Only when the last
tree has died and the
last river been
poisoned and the
last fish been caught
will we realise we
cannot eat money**

based on Cree saying

eat money?



**Live simply
so others may
simply live.**

Core principle of Vandana Shiva





www.ClimateJusticeTaranaki.info



www.LockTheGate.org.nz