

BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of a hearing by the
Canterbury Regional
Council Hearing Panel
on the proposed
Canterbury Land and
Water Regional Plan

**STATEMENT OF EVIDENCE OF MARTIN JAMES ROBERTSON FOR
Z ENERGY LIMITED, BP OIL NEW ZEALAND LIMITED AND MOBIL OIL NEW
ZEALAND LIMITED (The Oil Companies)**

4 February 2013

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1. INTRODUCTION

Qualifications and experience

- 1.1 My full name is Martin James Robertson. I am the Environmental Manager at Z Energy New Zealand Limited and have been in this role since 2004. Prior to my role at Z Energy, I was a consultant, predominantly to the Oil Industry since 1990. I contributed to and project managed the production of the 1998 Ministry for the Environment Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand. I have been responsible for hundreds of contaminated site investigations over the last 22 years. My current role includes responsibility for monthly review of stock reconciliations and HSNO compliance.
- 1.2 I have the following academic qualifications and professional memberships or affiliations:
- (a) Bachelor of Science in Geology, Victoria University Wellington, 1987;
 - (b) Honours First Class Earth Science, Victoria University Wellington, 1989; and
 - (c) Chair of the Waste Management Institute of New Zealand Contaminated Land Sector Group 2012 to present.
- 1.3 Although I work for Z Energy, this evidence is presented on behalf of Z Energy Limited, BP Oil New Zealand Limited and Mobil Oil New Zealand Limited (**Oil Companies**)
- 1.4 I have seen and read the relevant parts of the Council's section 42A report (**Officers' Report**).

Scope of evidence

1.5 My evidence focuses on the rules in the proposed Canterbury Land and Water Regional Plan (**pLWRP**) that address contaminated land and hazardous substances. These are Rules 5.162 to 5.165.

Code of Conduct for Expert Witnesses

1.6 I have read the Environment Court's code of conduct for expert witnesses and agree to comply with it. I have prepared my statement of evidence accordingly. I confirm that my evidence is within my area of expertise and that I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

2. EXECUTIVE SUMMARY

2.1 With the exception of Rule 5.164, I am largely satisfied with these rules, provided the definition of Portable Container is added in relation to Rule 5.162.

2.2 In relation to Rule 5.164, in my opinion the conditions in (4)(a), (b) and (c), which relate to reconciliations, largely duplicate HSNO requirements and procedures. The Officers' Report has recognised some duplication and recommended some deletions but, in my view, further parts of the rule duplicate HSNO requirements.

2.3 It is accepted that the requirement to advise the Regional Council of any anomaly in the stock reconciliation is reasonable, provided a physical loss has been confirmed.

3. OIL COMPANIES WITHIN CANTERBURY

3.1 The Oil Companies operate throughout New Zealand and have a range of operations and interests in the Canterbury region. They have commercial, shore and marine based, and aviation and bulk storage facilities which are defined in the Canterbury Regional Policy Statement (**RPS**) as *regionally significant infrastructure*. The Oil

Companies are also owner of retail outlets and suppliers of petroleum products.

- 3.2 In Canterbury, the regionally significant infrastructure includes the bulk storage tanks at the Port of Lyttelton, Christchurch airport and Woolston, and associated wharflines and pipelines.

4. HAZARDOUS SUBSTANCES RULES

- 4.1 Upon considering the notified version of the pLWRP, the Oil Companies were concerned about the proposed rules in relation to Contaminated Land and Hazardous Substances. I attended a consultation meeting with Council officers to express industry concerns. Subsequently the Oil Companies prepared a submission seeking relief in relation to a number of matters including the hazardous substances rules. The Oil Companies sought the following relief in relation to the rules:

Retain Rules 5.162 to 5.165 without further modification except delete those matters that duplicate HSNO requirements and in particular condition 4 of 5.165.

- 4.2 The reference to Rule 5.165 in the quote above, should be to Rule 5.164.
- 4.3 I note that the Officers' Report has largely adopted the submissions by the Oil Companies on these rules. I now address each rule individually.

Rule 5.162

- 4.4 Rule 5.162 provides for the use of land for the storage in a portable container and use of a listed hazardous substance as a permitted activity, provided certain conditions are met.
- 4.5 The Officers' Report has recognised¹ that this rule was only intended to apply to portable containers as the term is defined in the

¹ Officers' Report, R5.162, page 433.

Canterbury Natural Resources Regional Plan (**NRRP**). That definition limits portable containers to those storing petrol, kerosene or diesel, which is used for refuelling. A definition of portable container has been recommended for adoption in the pLWRP. I accept this recommendation as an appropriate response to the Oil Companies' submission on this rule.

Rule 5.163

- 4.6** Rule 5.163 is the restricted discretionary rule for the use of land for the storage in a portable container and use of a listed hazardous substance, that does not meet one of the permitted activity conditions in Rule 5.162.
- 4.7** The Officers' Report has recommended² no changes to this rule. This, in my opinion, satisfies the Oil Companies' submission.

Rule 5.164

- 4.8** Rule 5.164 provides for storage, other than by portable containers, and use of hazardous substances as a permitted activity. The rule will therefore apply to all of the Oil Companies' facilities (such as, truck stops, retail sites and storage systems at customer sites). In my opinion, the principal concern with this rule is that conditions 3 and 4 overlap and duplicate HSNO requirements, for example the requirement to complete stock reconciliations and regular inspections. I am particularly concerned with the reporting thresholds for reconciliation discrepancies.
- 4.9** Stock reconciliations are completed at petroleum storage sites to identify any discrepancy between the volume of product stored in the tank and the volume sold. At service stations this process is generally completed daily.
- 4.10** Reconciliation discrepancies arise from a number of sources including:

² Officers' Report, R5.163, page 434.

- (a) manual dipping errors (accuracy limitations of dip sticks);
- (b) dip stick calibration;
- (c) dispenser discrepancies (although calibration is strictly controlled);
- (d) evaporative losses through vents; and
- (e) thermal expansion and contraction.

4.11 Under HSNO legislation there has been an improvement in equipment standards, including requirements for double containment. Actual physical losses have certainly become less frequent in my time in this industry. Many modern sites (including all of Z Energy's service stations and truck stops) have automatic tank gauges providing very accurate reconciliation. The ability to quickly detect losses has improved with the advent of automatic tank gauges which remove the inaccuracies that used to be created by manual dipping errors.

4.12 HSNO guidelines set the threshold for product loss investigations at 0.5% of throughput. This level has been set based on a long history of reconciliation review by the oil industry. At this level many sites require review, but few of these are found to have actual physical losses.

4.13 The Oil Companies are experienced in assessing data trends and identifying when reconciliation losses are related to physical loss of containment. The Oil Companies are happy to provide reconciliation data to the Regional Council in the event of confirmed physical product loss. Providing reconciliation data for every reconciliation discrepancy would however simply swamp the Council with data that would be difficult for it to interpret in isolation.

4.14 In Canterbury, petrol is delivered by ship to terminals and then typically transported via pipeline to Woolston for storage in above ground tanks. It is then trucked out to sites and placed in

underground storage tanks. Thermal expansion and contraction during this process can result in minor stock reconciliation discrepancies.

- 4.15** Petroleum storage tanks vent hydrocarbon to the atmosphere when a tanker delivery displaces air from the tank. This air is rich in vapour. In addition the tanks passively breath through the vents during normal operation and this may drive greater discrepancies at sites with low throughput. This is because product has longer to evaporate before sale.
- 4.16** Warmer product will result in greater evaporative losses though vents. Many sites will exceed the investigation threshold of 0.5% of throughput in October and will continue to exceed the limit until April. The median for Christchurch Z Energy retail sites in February 2012 was 0.63% of throughput. I also consider it relevant that extensive tank integrity testing of Z Energy sites after the Christchurch earthquakes, showed that systems with reconciliation discrepancies of this order are not leaking.

Rule 5.164(3)

- 4.1** HSNO certification of "stationary containers" requires the owner of the storage vessel to demonstrate compliance with a large number of conditions including maintenance and reconciliations. I do not believe that any greater environmental protection is afforded by duplicating requirements for maintenance inspections as required under rule 5.164(3), which provides:

For hazardous substances stored or held on or over land, all areas or installations used to store or hold hazardous substances are inspected at least once per month and repaired or maintained if any defects are found that may compromise the containment of the hazardous substance.

- 4.2** In my opinion, this condition should be deleted because it duplicates HSNO requirements.

Rule 5.164(4)

4.3 Reconciliations are addressed in condition 4 of (Permitted activity) Rule 5.164, which states:

(4) *For hazardous substances stored or held in a container located in or under land, stock reconciliation is undertaken:*

(a) *for service stations storing or holding fuel:*

If the stock reconciliation of product volumes stored in each container located in or under land at a service station shows a discrepancy of greater than 0.5% over three consecutive days or greater than a 1,000 litre loss in a single day, a Product Loss Investigation Procedure shall be implemented immediately. This procedure shall involve the following key steps:

(i) *Site Level check, including review of data and calculations and reconciliation actions;*

(ii) *Where the cause of concern has not been identified by (i), an Engineering Check of the reconciliation equipment and observation wells;*

(iii) *Where the cause of concern has not been identified by (ii), a Container Test;*

(iv) *A copy of the procedure shall be kept on site at all times;*

(v) *If there has been any physical loss of product identified by the above procedure, CRC shall be notified within 2 working days unless the loss occurred from a container in any area listed in condition (5), in which case notification shall occur within 24 hours of confirmation of the loss;*

(b) *for all other sites storing any hazardous substances:*

Stock reconciliation is undertaken within 24 hours of a substance being delivered and thereafter on a fortnightly basis. If the stock reconciliation shows a discrepancy for the measurement period of more than 100 litres or 0.5%, whichever is the smaller, the CRC shall be notified within 2 working days unless the loss occurred from a container in any area listed in condition (5), in which case notification shall occur within 24 hours; and

- (c) *records of stock reconciliation over the past three months shall be made available to the CRC upon request. If requested, a copy of the stock reconciliation and the most recent certification of the container shall be provided to the CRC within five working days.*

- 4.4** There are a number of problems I have with this rule.
- 4.5** As adhered to above, the Rule follows the HSNO and industry standard threshold of 0.5% of throughput for investigation of reconciliation discrepancies. This threshold is often exceeded in summer and accordingly the Oil Companies, when consulted on the pLWRP, advised that the Regional Council would potentially be inundated with reconciliation exceedance reports.
- 4.6** The Rule does attempt to avoid such inundation by adopting a staged investigation, with *reporting* to the Regional Council only required if a reconciliation discrepancy is found to correlate to a physical loss of product. This is not unreasonable and the Oil Companies could accept this, with respect to service stations only.
- 4.7** However, if there is no physical evidence of a loss occurring, the Rule appears to still require a tank integrity test to confirm a discrepancy (I believe the intent was for testing only to be required if the checks performed in (i) and (ii) revealed a potential issue). For the reasons set out above, it will be common for a reconciliation to exceed 0.5% and for checks to not reveal a reason. Rule 5.64(4)(a)(iii) then implies that a Container Test, otherwise known as a tank integrity

test, must be conducted. It is thus possible that a tank integrity test could be required every three days at a site in summer. Tank testing a site can cost \$5,000.

4.8 I also note that reconciliation and investigation records are often reviewed and stored independent from the site. For example Z Energy stores its records centrally. In addition there are unmanned sites where records are unlikely to be stored on-site. Accordingly they would not always be available on site as required under condition (4)(a)(iv).

4.9 Customer sites and, in particular, sites connected to heating/process boilers or emergency generators may have less frequent use and accordingly less frequent reconciliation. The proposed reconciliation limits for commercial/customer sites are too onerous. A discrepancy of only 100 litres must be reported to the Regional Council. If commercial sites store petrol they will frequently exceed the reporting threshold in summer due to evaporative losses and could be providing the Regional Council with reconciliation data every fortnight. Diesel reconciliations tend to remain within the 0.5% tolerance because evaporative losses are lower, but dipping accuracy is limited and 100 litre discrepancies would be expected to be relatively common. Again this would result in a high level of reporting to the Regional Council when there is little risk and a correspondingly low tangible environmental benefit.

4.10 In the event of an actual and verified product loss, Z Energy will willingly share reconciliation data with the Regional Council. However, there is a high level of commercial sensitivity around sales volumes at individual sites and provision of three months of reconciliation data on request seems unnecessary and of little value for the reasons I have set out above.

Officers' Report and its recommendations on Rule 5.164

4.11 The Oil Companies sought in their submission that all conditions that duplicate the HSNO requirements be deleted. The Officers' Report recommends deletion of the conditions in 4(a) (except for (v)) and (b).

The Oil Companies support this change. The Oil Companies are comfortable with the notification requirement proposed in 4(a)(v), to provide recent (rather than three months' worth) of reconciliation data *only* if a physical loss has been confirmed.

Rule 5.165

4.12 This rule provides discretionary activity status for the use of land for the storage, other than in a portable container, and use of a listed hazardous substance, that does not meet one or more of the permitted activity conditions in Rule 5.164.

4.13 This rule is considered appropriate and I support its retention, as recommended in the Officers Report.

Martin James Robertson

4 February 2013