

IN THE MATTER of the Resource Management Act 1991 (the Act)

AND

IN THE MATTER of a submission to Horizons Regional Council on its Proposed One Plan by CPG New Zealand Ltd.

EVIDENCE OF HAMISH TIMOTHY LOWE

INTRODUCTION

My qualifications/experience

1. I hold the qualifications of a Bachelor of Agricultural Science (Honours) and a Master of Agricultural Science (Honours in Agricultural Engineering). I am a Principal and Senior Environmental Scientist with CPG New Zealand Limited (CPG).
2. I have worked in the area of soil, water and waste engineering for over 17 years. I am a member of the New Zealand Water and Waste Association, New Zealand Hydrology Society and Soil Science Society of New Zealand. I am a past Chairman of the New Zealand Land Treatment Collective technical committee, an elected position I held for four years, and am currently serving a third term on the technical committee. I am currently serving on the Biowaste Material National Research Programme advisory board.
3. At a national level, I have been actively involved in various industry debates about the appropriateness and management of on-site and small community wastewater systems and their appropriateness for their application in a range of environments. This includes providing on-site and small community wastewater guidance to Regional and District Councils and the Ministry for the Environment. I consider that my expertise is acknowledged nationally.
4. I have read, and agree to comply with, the current Code of Practice for Expert Witnesses in the Environment Court. Except where I state that I am relying on the specified evidence of another person, my evidence in this statement is within my area

of expertise. I have not omitted to consider material facts known to me that might detract from or alter the opinions that I express in this statement.

5. I am familiar with hearing procedures, being certified as a Hearing Commissioner in accordance with the Ministry for the Environment's Making Good Decisions programme.

Involvement with One Plan

6. Through the notification of the One Plan CPG have had an opportunity to submit and comment on the proposed rules. The scope of submissions and the hearing presentation has been covered by Peter Hill.

Background

7. We as a company and myself personally have been historically active in the onsite wastewater industry.
8. This has included undertaking site investigations, system designs and providing guidance to regional and district councils throughout the country on management, contamination, environmental effects and policy related issues.
9. I have been involved in many of the preliminary discussions leading to the establishment to the Onsite Effluent Testing (OSET) programme being run in Rotorua and have subsequently been involved in the preparation and revision of the protocols for the site. I have also been involved in the revision of the joint Australian and New Zealand Standard for Onsite Wastewater Management (ASNZS 1547), with a contribution to the technical debate on site investigations and soil hydraulic loading rates.
10. With regard to the Ministry for the Environments (MfE) National Environmental Standard (NES) for onsite systems, colleagues in our Dunedin office were responsible for the initial scoping report of the notified NES. Following submissions, I was invited to a workshop of 12 people from councils, central government, and industries to discuss the limitations of the notified NES and to suggest a means for it to be salvaged or alternatives developed.
11. Subsequent to the MfE workshop, CPG under my guidance has been engaged by MfE to undertake a revised scoping investigation with the potential for a second

version of a NES to be developed. This work is in progress, with delivery of this report intended to be next week.

SUGGESTED CHANGES

12. In September 2007 CPG submitted on Rules 13-10 and 13-11. Our submission was in support. We acknowledged the huge step forward that Council was making, but suggested a number of changes to assist with consistency around the country and interpretation within this region. By and large most suggestions were acknowledged and appeared to be incorporated into the revised changes. This was following us requesting a meeting with the Council to discuss our issues. Subsequent to the revised rules, we initiated another meeting, where we commented on the initial revisions. More recently we had a further meeting on 9 February 2010 to discuss the proposed rules. During this meeting we were made aware of yet further changes, this being the 'Pink Version' you are working from.

13. While our comments may seem late in the day, repeating and analysing history I see serves no further purpose or benefit.

14. I would now like to make comment on the latest version to, in my view, enhance the more recently revised rules. Specific comments and points are covered below, with suggested changes contained in Annex A.

Point 1: Use of the term disposal

15. Nationally there is a move to try and create a culture where used material is no longer considered as a waste. This requires the elimination of the term disposal and its replacement with beneficial use, further treatment or discharge. Avoiding the term disposal assists with the ownership of a problem and helps to create more sustainable environmentally acceptable options for management. I have made this suggestion to Council staff on a number of occasions and by and large all appropriate changes have been made. Exceptions are:

- Rule 13-10 - Activity description
- Rule 13-11 - Activity description

Point 2: Clarification

16. Regardless of the degree of treatment, wastewater will be discharge directly onto the ground. Rule 13-10 (d) requires clarification to imply 'untreated' wastewater.

Point 3: Buffer to surface waterways

17. Rule 13-10 (e)(ii) currently specifies a 20 m buffer distance to surface waterways. I support a buffer requirement, but question the implications for such a buffer, especially for existing systems. The reality is that in the Manawatu District alone, many systems will currently discharge within 20 m of a drain. For example, on a 5 km section of local road, being Kairanga Bunnythorpe Road between Rangitikei Line and Rongotea Road, there are currently 33 houses. Of those houses 14 would have their discharge system within or close to 20 m from the Kairanga Bunnythorpe Road drain. I am only aware of one having a resource consent, with the rest potentially needing a consent.
18. I am not questioning the need to control discharges in close proximity to waterways, but the mechanics of managing the current rule. Will consents be sought from all properties? Who will do this work and who will pay? Potentially this buffer should be limited to new or upgrade systems. Suggested wording is provided in Annex A. If there is concern about controlling effect by the removal of this provision, I believe it is covered by other provisions, including Rule 13-10 (g).

Point 3: Operation and Maintenance Guidance

19. Operation and maintenance is a critical element of any onsite wastewater system. The need to keep records is critical and in my view essential. To assist with making this happen it is recommended that a template or draft operation and maintenance form be generated and included as part of the Manual for on-site wastewater system – Design and Management (Horizons Regional Council 2009), referred to in this evidence as the Manual. This will assist with making Rules 13-10(h) and 13-11(l) more effective.
20. I have some serious reservations about the fulfilment of the maintenance requirements within the Rules and requirements specified in the Manual. I do not see a clear direction as to what needs to be done and who will make things happen. It appears that the onus is put onto the system owner to comply, of which I believe is potentially the major stumbling block. Many property owners will not know what their responsibilities are. This was highlighted in a recent poster presentation I gave at a Land Treatment Collective conference which clearly showed a lack of knowledge by system owners, extending to the point that some property owners believe they discharge to a council system despite being in rural Manawatu.

21. Further, as systems are likely to be treated as permitted activities the Regional Council will not know they exist. This may mean that the District Council will have to take on a responsibility for ensuring the compliance. It is unclear if they will be prepared to do so.

22. Clear leadership is needed by the Council to take the management of onsite wastewater systems seriously, which I believe has not occurred.

Point 4: Lots per title

23. The current rules do not provide a restriction on the number of onsite wastewater systems per lot. I suggest that such a restriction is included, and have added additional provisions at 13-10 (da)(iv) and (db)(v), as in Annex A.

Point 5: Land area requirements

24. The current rules require differing treatment systems for four different sets of land area groupings. I question this and suggest that four is too many. I suggest that the groupings should be over 10 ha (large properties), 10 to 1 ha (life style properties) and less than 1 ha (semi urban). Rule 13-11(d) should be removed. This will assist with the streamlining of the treatment requirements which I will discuss below. Should it be decided to retain the existing structure, then some of the comments below should be applied to Rule 13-11(d).

Point 6: Treatment requirements for system on land less than 10 ha and greater than 1 ha

25. I believe it is appropriate to require an effluent standard that specifies a nitrogen target. This was included but has been removed (Rule 13-11(da)(i)). A nitrogen concentration of 45 g/m³ was initially stipulated. To accommodate most systems which work adequately I believe this should be increased to 60 g/m³, as is suggested in Annex A.

Point 7: Subsurface drip emitters

26. The wording of rule 13-11(da)(ii) specifies the need for subsurface drip line placement. This contradict requirements in Rule 13-11(f)(ii) and (g)(ii). The same applies to Rule 13-11(db)(ii). The rules require modification and are suggested in Annex A.

Point 8: Maximum discharge rates

27. Rule 13-11(da)(iii) suggests a maximum discharge rate of 5 mm/d. Rule 13-11(db)(iii) suggests a maximum discharge rate of 3 mm/d. For many soils in the Manawatu this is too high. While the rule does not preclude the use of lesser rates, it should be stated that the rate should be adjusted to reflect soil investigations and the resulting maximum application rates as suggested in the Manual.

Point 9: Treatment requirements for system on land less than 1 ha

28. Small land areas require higher quality effluent to assist with managing cumulative effects. In particular nutrient effects should be more stringently managed. A nitrogen limit has been recently removed. I am of the opinion this should be reinserted and the limit should be set at 60 g/m³. A limit of 60 g/m³ I consider to be a value reflective of correctly functioning secondary wastewater treatment systems.

Point 10: Covering of drip emitters

29. In many cases drip irrigation lines are placed on the soil surface and covered. This is standard and acceptable practice, providing the covering material is maintained at least 150 mm. Further, surface application with no covering is possible. The wording of rule 13-11(f)(ii) would preclude surface drip line placement, despite the manual suggesting it is possible. It is also important that the word 'maintained' is inserted as many coverings, including mulches, break down over time and need topping up. The rule requires modification and is suggested in Annex A. The same wording suggestion should also be applied to Rule 13-11(g)(ii).

Point 11: Separation distances

30. Table 2.2 in the Manual provides for sliding scales for separation distances to boundaries and water bodies. While the scale is appropriate, it is contrary to the fixed value used in the Rules, including Rules 13-10(e), 13-11 (f)(i) and (g)(i). I am of the opinion that the fixed values should have narration added which allows for alternatives in accordance with the Manual. Alternatively Rule 13-11 (f) and (g) could be replaced with acknowledgement of Table 2.2 in the Manual. This would also pick up on Point 3 above regarding the surface water separation in Rules 13-10(e). It could also help to clarify the covering requirement as alluded to in Point 9 above. Annex A proposes new rules (fa) and (fb) as alternatives.

Point 12: Suitability of the Manual

31. I was initially apprehensive about the use of the Manual, seeing it as repetition of existing industry guidance (ASNZS:1547:200 and ARC TP58). On reflection, I consider it has value, firstly as it serves as a guide for the design of non pressure compensating drip systems, but it also provides an opportunity for the inclusion and development of regional specific requirements. Table 2.2 is an example. I would like to see it further refined to reflect area constraints, including specialist requirements that may be needed in areas such as the Horowhenua and other small coastal communities eg the need for nitrogen reduction. It could also contain a strategy for dealing with cumulative effects in low decile communities; an issue which I feel has been neglected in the Rules and Manual. This issue was raised in our submission; with parallels drawn to land management in sensitive catchments. This concept appears to have been given no consideration.

Point 13: Regulation of designers, installers, systems and service agents

32. The most hotly debated national issue with regard to onsite systems is how the service providers and systems are regulated. There are few controls nationally and even less regionally. I believe that additional rules are required that specify and require performance criteria to be met for systems. This could be the need for systems (at a model level) to have demonstrated attainment of a minimum standard at a national testing facility or in some other form of independent regional testing facility/programme.

33. A similar issue applies to designers, installers and maintenance providers. A minimum level of attainment should be required. This should also be extended to council staff who have the responsibility of vetting and approving systems.

34. The Rules and to a large extent the Manual are silent on the above issue, to the effect that no limitations can be placed on systems or people. Further Rules are required. Draft suggestions are included as Rule 13-11 (m) and (n) in Annex A. These would require modifications and changes to the Manual.

35. Further, it is suggested that a period of time is given to allow system developers, designers and installers to attain certification. A date of 31 January 2011 is suggested.

Point 14: Upgrading of the Manual

36. Manuals are evolving documents. This is evident when considering that there have been 2 versions of ASNZ 1547 in the last 10 years and three versions of TP58 in the last 15 years. It is unclear how changes will be communicated with the 'masses', especially as communication on the current documents has been poor, as will be demonstrated in the presentation to be provided by the Manawatu Onsite Wastewater User Group.

37. If Manuals are to be locked to plan changes, it could be 10 to 15 years away before any changes are made, and given past changes within the industry I question if this is too long, or if the right process is being used to manage industry best practice in the region. Is an alternative method of providing regional best practice possible?

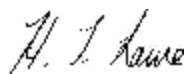
SUMMARY

38. The proposed rules for onsite wastewater management in the region are a significant improvement under those of which the previous regional plan provided for. The proposed rules are robust and would be comparable to most onsite wastewater rules around the country, if not superior.

39. I would like to hope that the modifications as suggested in our submission and the evidence above helps to refine the rules to make them more appropriate and useable within this region.

40. I have reservations about the ongoing operation and maintenance of systems in this region given the currently proposed rules, especially in the absence of the suggested certification process.

41. I would like to conclude that our submission is in support and I would like to hope that what the Council has prepared forms the basis of workable rules going forward.



Hamish Lowe

24 February 2010

Notes for track changes. Recommendations made by the Historic Heritage officer are shown in **Blue**. Recommendations made by the Water officer are shown in **Green**. Recommendations made by the Water officer in the supplementary report are shown in **Red**. Sentences shown in ~~black~~ strikethrough or are recommended within the officer’s report to be relocated to other parts of the document, those sentences that have been relocated are shown in black underline. Words recommended to be added are shown in underline, words recommended to be removed are shown in ~~strike through~~

Terms defined within the Proposed One Plan Glossary are *italicised* and marked with an asterisk (*) symbol. Terms defined in the Resource Management Act 1991 are *italicised* and marked with a caret (^) symbol.

Suggested additions and deletions in **purple** have been made by CPG (24 February 2010).

Annex A: Proposed Rules for Discharge of Onsite Wastewater

Rule [^]	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
13-10 Existing discharges [^] of domestic wastewater*	The <i>discharge[^]</i> of domestic wastewater [^] into or onto land [^] pursuant to ss15(1), 15(2) or 15(2A) RMA from an on-site wastewater treatment and disposal discharge system lawfully in existence at the time that this rule [^] comes into effect is made operative [^] . <u>New and upgraded discharges[^] of domestic wastewater[^] are controlled by Rule[^] 13-11.¹</u>	Permitted	(a) The design flow <u>as specified in Section 3 of the Manual for on-site wastewater system – Design and Management (Horizons Regional Council 2009)</u> , shall be no greater than 2 m ³ /d (2,000 litres per day). (b) The flow allowance used to calculate the system design flow shall be no less than 145 litres per person per day where the water supply is provided by roof water collection, or 180 litres per person per day for other sources of water supply. (c) The <i>discharge[^]</i> shall consist only of <i>contaminants[^]</i> normally associated with domestic sewage and greywater. (d) There shall be no direct <i>discharge[^]</i> of <u>untreated</u> wastewater to groundwater. (e) The <i>discharge[^]</i> shall comply with the following separation distances: (i) at least 3 20 m from any <u>portable water supply bore[*]</u> (ii) at least 20 m from any river[^], lake, natural wetland[^] or artificial watercourse, or the Coastal Marine Area[^]. (f) The <i>discharge[^]</i> shall not cause any offensive or objectionable odour to the extent that causes an adverse <i>effect[^]</i> beyond the <i>property[*]</i> boundary. (g) There shall be no increase in the concentration of pathogenic	

¹ Water officers report - recommendation WTR 91

Rule [^]	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			<p>organisms in any surface <i>water_body[^]*</i> as a result of the <i>discharge[^]</i>.</p> <p>(h) The wastewater treatment and <i>disposal-system land application system</i> shall be maintained in accordance with the manufacturer's instructions, <i>or if no manufacturer's instructions exist in accordance with the best management practice as described in the Manual for On -Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009).</i>¹ <i>a</i> schedule of <i>maintenance[*]</i> shall be kept, and this schedule shall be available for inspection by the <i>Regional Council</i> upon request.</p>	
<p>13-11 New and upgraded <i>discharges[^] of domestic wastewater[*]</i></p>	<p>The <i>discharge[^]</i> of domestic wastewater[*] into or onto <i>land[^]</i> pursuant to <i>ss15(1), 15(2) or 15(2A) RMA</i> from a <i>new or upgraded</i> on-site wastewater treatment and <i>disposal discharge</i> system <i>that is controlled by Rule 13-10. which either:</i></p> <p>(a) <i>is newly established after this rule becomes operative[^], or</i></p> <p>(b) <i>involves the upgrade[*] of a system that existed prior to this rule coming into effect.</i>²</p>	<p>Permitted</p>	<p>(a) The activity shall comply with <i>conditions[^]</i> (a) to (g) of Rule 13-10.</p> <p>(b) All aspects of the wastewater treatment and <i>disposal land application</i> system, including <i>soil assessment</i>, design, installation and operation, shall be in accordance with the <i>Manual for On-site Wastewater Systems – Design and Management[^]</i> (Horizons Regional Council, 2009)²</p> <p>(c) Where the <i>property[*]</i> within which the <i>discharge[^]</i> occurs is 10 ha or greater:</p> <p>(i) septic tanks shall be fitted with effluent outlet filters, unless the equivalent level of treatment is provided within a <i>aerobic secondary or advanced secondary wastewater</i> treatment system</p> <p>(ii) the areal loading rate within the wastewater <i>disposal-field land application field</i> shall be no greater than <i>5 mm/d (5 litres per m² per day)</i> the least conservative rate provided in the <i>Manual for On-site Wastewater Systems – Design and Management[^]</i> (Horizons Regional Council, 2009) .</p> <p>(d) <i>Where the property[*] within which the discharge[^] occurs is less than 10 ha but greater than 14ha:</i></p> <p>(i) <i>the property shall cover an area of at least either 5000 m² for properties created by subdivision after this rule comes into effect, or 2500 m² for properties that existed prior to this rule coming into effect²</i></p>	

² Water officers report - recommendation WTR 92

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			<p>(ii) the treatment system shall be either include secondary treatment which shall achieve, as a minimum, the following discharge quality standards: 20 g/m³ Biochemical Oxygen Demand, and 30 g/m³ Suspended Solids, and 30/45 g/m³ Total Nitrogen, or an improved primary (septic tank and outlet filter).</p> <p>(iia) The land application system shall be via pumping to dose load subsurface pressure compensating dripper irrigation lines for secondary or advanced secondary treated effluent and shallow LPED trenches for primary treated effluent.</p> <p>(iii) The areal loading rate within the wastewater land application area disposal field shall be no greater than 35 mm/d (35 litres per m² per day) for secondary treated effluent and 3mm/d (3mm per day) for primary treated effluent.²</p> <p><u>(da) Where the property within which the discharge occurs is between 1ha: and 10.4ha</u></p> <p><u>(i) the treatment system shall include at least secondary treatment which shall achieve, as a minimum, the following discharge quality standards: 20 g/m³ Biochemical Oxygen Demand, 30 g/m³ Suspended Solids and 60 g/m³ Total Nitrogen, and 45 g/m³ Total Nitrogen.</u></p> <p><u>(ii) The land application system shall be via pumping to dose load subsurface pressure compensating dripper irrigation lines.</u></p> <p><u>(iii) The areal loading rate within the wastewater land application system shall be no greater than 5mm/d (5 litres per m² per day), or lesser rate as identified by investigations undertaken in accordance with that prescribed in the Manual for for On -Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009)</u></p> <p><u>(iv) Only one permitted onsite wastewater treatment and discharge system will be allowed per property title..</u></p> <p><u>(db) Where the property within which the discharge occurs is less than 1 ha:</u></p>	

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			<p>(i) <u>the property shall cover an area of at least either 5,000 m² for properties created by subdivision after this rule comes into effect, or 2,500 m² for properties that existed prior to this rule coming into effect</u></p> <p>(ii) <u>the wastewater treatment system shall include secondary treatment which shall achieve, as a minimum, the following discharge quality standards: 20 g/m³ Biochemical Oxygen Demand, 30 g/m³ Suspended Solids, and 30 g/m³ Total Nitrogen. and 60 g/m³ Total Nitrogen.</u></p> <p>(ii) The land application system shall be comprise subsurface pressure compensating drip irrigation. The land application system shall be via pumping to dose load subsurface pressure compensating dripper irrigation lines.</p> <p>(iii) <u>The areal loading rate within the wastewater land application system shall be no greater than 3mm/d (3 litres per m² per day) or lesser rate as identified by investigations undertaken in accordance with that prescribed in the Manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009).²</u></p> <p>(v) <u>Only one permitted onsite wastewater treatment and discharge system will be allowed per property title..</u></p> <p>(e) The disposal system shall comprise a pressure compensating drip irrigation <u>land</u> application disposal system.</p> <p>(f) For disposal <u>land application</u> systems underlain by clay- or silt-predominant soils:</p> <p>⊕ <u>there shall be at least 600 mm depth in accordance with the separation distances specified in Table 2.2 of the manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009) , between the base of the land application system and the highest winter groundwater permanent water table level (excluding high transient groundwater associated with extreme storm events) effluent discharge^ and the highest groundwater level</u></p> <p>(ii) <u>Where the land application is placed on the ground surface</u></p>	

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			<p>there shall be at least 200 150 mm depth of topsoil, bark or compost cover maintained placed over beneath the pressure compensating drip irrigation lines, <u>or alternatively no covering but access to the area limited as described in manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009) .</u></p> <p>(g) For disposal <u>land application</u> systems underlain by sand- or gravel-predominant soils:</p> <p>(i) there shall be at least 900 mm depth <u>in accordance with the separation distances specified in Table 2.2 of the manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009) .</u> between the <u>base of the land application system and the highest winter groundwater permanent water table level (excluding high transient groundwater associated with extreme storm events) effluent discharge and the highest groundwater level</u></p> <p>(ii) Where the land application is placed on the ground surface there shall be at least 300 200 150 mm depth of topsoil, bark or compost cover maintained placed over beneath the pressure compensating drip irrigation lines, <u>or alternatively no covering but access to the area limited as described in manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009) .</u></p> <p><u>Alternative suggestion to (f) and (g) above could be:</u></p> <p>(fa) Separation distances to water bodies and property boundaries shall be in accordance with those specified in Table 2.2 of the manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009) .</p> <p>(fb) The placement, burial, covering and exclusion of the land application area shall be as described in manual for for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009).</p>	

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			<p>(h) For secondary treatment systems there There shall be at least a 400-50% ²reserve disposal area allocation. For primary treatment systems this reserve area allocation shall be not less than 100%.</p> <p>(i) The activity shall not take place in any rare habitats* Error! Bookmark not defined. or threatened habitat* or in any at-risk habitat*.</p> <p>(j) The activity shall not be to any archaeological site, waahi tapu or kōiwi remains <i>Historic heritage</i>[^] as identified in any District or Regional plan Schedule or database, or proposed plan^, in the New Zealand Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where Historic Places Trust approval has been obtained.</p> <p>(k) In the event of an archaeological site, waahi tapu, or kōiwi remains being discovered or disturbed while undertaking the activity, the activity shall cease and the Regional Council shall be notified as soon as practicable such that the Regional Council will provide advice regarding the appropriate authorities to be contacted. The activity shall not be recommenced without the approval of the Regional Council.</p> <p>(l) There shall be a programmed maintenance* contract by a manufacturers approved contractor in accordance with the supplier's specifications or the requirements of the Code of Practice for the Manual for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009) of On site Wastewater Systems, ²whichever are the more stringent, and All records of each <i>maintenance*</i> action shall be retained and made available for inspection by the Regional Council or its agents upon request.</p> <p>(m) From 31 January 2011, all systems installed in accordance with provision 13-11 (da) and (db) shall have passed a testing regime approved by the Regional Council. Details of that testing regime are provided in the Manual for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009).</p> <p>(n) From 31 January 2011, all system designers, installers and maintenance providers involved with systems required in</p>	

Rule^_	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			<p><u>accordance with provision 13-11 (da) and (db) shall have passed a certification or attained a competency level as approved by the Regional Council. Details of the certification and competency levels are provided in the Manual for On –Site Wastewater Systems - Design and Management (Horizons Regional Council, 2009).</u></p>	