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06 April 2018

**Richard and Alison Morriss** 36 Pukenui Road Queen Charlotte Drive By Email

Dear Richard and Alison,

## Existing Wastewater Assessment at 36 Pukenui Road

Our Reference: 6564

At your request, we have carried out an existing wastewater system assessment to determine its suitability for resource consent renewal. The existing consent which is to be renewed is under reference U030673. Table 1 below serves to assess the existing wastewater system suitability.

Performance and Design Inspection Checklist	Notes from inspection
Property details (owner, location, lot size).	Richard and Alison Morris (same owners since construction) 36 Pukenui Road Legal land area: 0.2964ha.
	The subject property is accessed via Pukenui Road, a sealed road of Queen Charlotte. The property has a three-bedroom dwelling overlooking Mahakipawa Arm.
	The installed wastewater system was designed in accordance with AS/NZS1547:2000 by Davidson Partnership Ltd in May 2003.
	In 2003, the proposed wastewater system was deemed compliant with the appropriate standards and Resource Consent was granted for 15 years.
	The resource consent is due for renewal so the clients contacted Smart Alliances Ltd to assess the existing system suitability.
Treatment unit type	Primary treatment system which includes a concrete septic tank, filter and pump chamber. The pump chamber has an alarm fitted to alert the owners of any pump failure.

## Table 1: Existing wastewater system WOF checklist

Land application system (type and configuration)	Primary treated effluent pumped to four x 20m long trenches that are 500mm wide and 300mm deep.
Inspection details (inspector, last pump out and/or service)	Inspection was undertaken on 23 February 2018.
Sludge/scum monitoring and pump out of septic tank, inspection of tank condition	Regularly inspected by the same owners since installation. No issues to date and regularly clean the filter to reduce the risk of clogging.
	Pumped out on 18 January 2018.
Walkover inspection (treatment /unit; land application area, system environmental conditions)	Septic tank, pump chamber and alarm all appeared to be in good working order. The recent service and pump out in January 2018 confirmed that it is working appropriately.
	Evidence that the trenches were installed and are operating effectively was apparent during the walkover.
	No foul smells which may indicate a failed wastewater bed was noticed.
	The clients which have lived there permanently since it was installed highlighted that the system has been working without any noticeable issues.
Treatment and land application system	The bauce has three badrooms and was
design check	designed for 5 people with a loading rate of 145 litres/person/day which equates to 725 litres/day. Whist this in line with the 2000 wastewater standards, it does not meet the 2012 standards.
	The house was inspected to confirm the usage of full water reduction fixtures. It was confirmed to have dual flush toilets, aerator taps, front loaded washing machine, one shower and one bath.
	It was confirmed during the inspection that there are no additional bedrooms, sleepouts or rooms which could be used as bedrooms. All toilets, fixtures and appliances were of water conserving nature.
	The original soil investigations by Davidson Group Ltd found the subsurface soils to consist of clay silts (Cat 3). This is due to the area is formed from old fan deposits from slip debris originating in the head and sides of a steep gully to the west of the area above Queen Charlotte Drive. The recent investigations concur with this category rating.

	The discharge has been assessed against AS/NZS 1547:2000 and is considered consistent with the provisions in this standard.
	Whilst the system was designed in accordance with the NZS1547:2000 standards, it is apparent that the daily loading rates for the category 3 soils (18mm/day) are in line with the 2012 standards which range between 15 to 25mm/day.
Environmental performance review (on-site/ off-site effects, quality checks on groundwater, soil and vegetation).	If the pump chamber failed an alarm would alert the owners of its malfunction. Furthermore, the pump chamber acts as emergency storage.
	No wells used for water abstraction are in proximity to the discharge.
	No watercourse within 50m of the discharge area.
	Sea is in excess of 70m east from the discharge point.
	The risk to groundwater is minor as a good separation distance from the point of discharge (1.5m minimum separation) is provided. A functioning system provides little risk to water sources.
	Cumulative effects are not considered to be a risk as the sections in the area are relatively large and adequate separation distances are in effect.
	Risks to human health are considered to be less than minor as the effluent will be assimilated within the bed area.
	Failure of the system would inhibit the usage of the dwelling and require immediate attention to fix it.



## Summary

On the basis of the foregoing assessment, it is considered that the system was installed as per the original design and has been working appropriately since its installation.

If the system was to fail it is very unlikely to cause any environmental issues due to the setback from any watercourses and failure of the pump would be immediately evident due to the alarm. Furthermore, a failure would inhibit the occupancy of the building and require immediate attention.

Continual inspection and maintenance by the owner or registered plumber will help keep the system operating correctly.

It is therefore recommended that Council renew the consent for this wastewater system for a minimum of 15 years.

Regards,

## Richard Evans Engineer



Photograph of the septic tank pump out undertaken on 18 January 2018

