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**Committee**            **Environment Committee**  
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## **Sheep dips in selected areas of Porirua and Wellington**

### **1. Purpose**

To inform the committee about the finding of an investigation to locate sheep dip sites within selected areas of Porirua and Wellington.

### **2. Background**

The dipping of sheep to control ectoparasites has taken place in New Zealand for as long as sheep have been in the country. The Ministry for the Environment (MfE) has estimated that there may be as many as 50,000 sheep dip sites in New Zealand. Originally, the dips were used to control scab until it was eradicated in the late 19<sup>th</sup> century. The purpose of dipping then shifted to controlling lice, ked and other parasites affecting sheep. In 1908, it became compulsory to dip sheep annually with fines being imposed on those owners who did not comply.

Different chemicals have been used in dip formulae, the most common of which is arsenic. Arsenic was used from the mid to late 1800s until 1980s. Other chemicals used in sheep dips include sulphur, lime, nicotine, tar, derris, phenol, copper, pyrethroids, organophosphates and organochlorines.

Some of these chemicals are now of significant concern due to their toxicity and persistence in the soils. The chemicals of most concern are arsenic and organochlorines such as DDT, dieldrin, BHC and aldrin.

After a change in the legislation in 1993, the dipping of sheep was no longer required. Therefore, the dips are now being dismantled and removed from farms. There is no way to identify the sites once the dips have been removed as there was no requirement to record the location of sheep dips through building permits or land use consent.

### **3. Methodology**

Consultants, URS New Zealand Ltd, were engaged to locate sheep dips in selected areas of the Wellington City and Porirua City Councils. The areas selected were those considered to be under pressure from development in the near future.

The consultants used a variety of techniques to locate the sheep dip sites. They studied aerial photographs for structures such as shearing sheds and yard areas that would indicate sheep farming activities had taken place. The older photographs were particularly useful to identify sites where the land use has already changed.

The consultant undertook site visits to the locations identified as potential sites of a sheep dip where possible using the information gathered from the aerial photography. Finally, the consultant interviewed landowners to identify sheep dip locations on their property and to identify others they knew of in the locality. The sites identified were inspected, and the location of the sheep dips recorded by taking photograph and GPS co-ordinates.

### **4. Results**

The areas included in the study were Aotea Block, Judgeford, Ohariu Valley, Takapu Valley, Makara, Valley and Takarau Gorge. The study confirmed the location of 22 sheep dip sites and identified a further five probable sites.

No sampling was undertaken at the sites where sheep dips were identified. Therefore, the risks posed to the environment and occupants of the sites are unknown. Investigations undertaken in other parts of New Zealand have shown that sheep dips have the potential to create heavily contaminated hotspots in and around the sheep dip structure.

The consultants received varying responses from owners of sites on which sheep dips were potentially located, from the very co-operative to the very unco-operative who refused access to their land.

### **5. Conclusions**

The study indicates that there is potential for a large number of sheep dips to exist in the region and that identifying the location of all these sites will be extremely difficult and potentially expensive. It was determined that the use of historical aerial photography to locate possible sites in combination with interviewing the people in the locality was the best method for identification of sites.

MfE has recognised the difficulties in identifying sites and the significant risks posed by the chemicals used in sheep dips. MfE is working with Crown Research Institutes, Federated Farmers, Waikato Pesticides Awareness Group and Environment Waikato to produce a best practice guideline on the identification and management of sheep dips sites.

The toxicity and persistence of sheep dip chemicals present a number of problems. Sheep dip chemicals are either slow to breakdown or do not breakdown at all and can be toxic at very low concentrations and this can limit the disposal options for any contaminated soils. The risks are not limited to contamination of land, but could result in the contamination of groundwater, surface watercourses and sediments.

The chemicals used in sheep dips, especially the organo-chlorines do not only pose a risk to the environment and human health, but also to the food export industry. If any residues of these chemicals are found during the routine food analysis undertaken in Europe and the USA, there could be significant implications for the export markets.

It is therefore important to identify these sheep dip sites before they are destroyed and removed to make way for residential buildings or lifestyle blocks.

## **6. Further work**

Historically large areas of the region were used to rear sheep, the dipping of sheep was compulsory, and therefore it is expected that sheep dips will be present throughout the region. However, no further work is programmed until MfE publishes the Guideline for the Management of Contaminated Sheep Dip Sites. MfE has stated that the guideline is due for release later this year. Once the guideline has been published and appropriate resources are made available, further work may be undertaken. In the interim, if the Council is made aware of a sheep dip location, the site will be investigated. The location of the dip will be confirmed and details recorded on the Selected Land Use Register. The landowners of sites which have already been identified have been notified of their inclusion on the register.

## **7. Communications**

The location of the known sheep dip activities have been recorded on the Selected Land Use Register. This information is available to the Territorial Authorities via the recently developed web based Selected Land Use Register search facility. This information will assist territorial authorities to determine whether sites are suitable for use when considering subdivision and building permit applications. The methods used to identify sheep dip locations during the study have been shared with MfE to assist them in the preparation of the best practice guideline.

## 8. Strategic context

This work gives effect to the following Take 10 targets:

By 2013:

“no overall deterioration in the health of our soils”

“no significant deterioration of water quality in our key streams and rivers”.

## 9. Recommendations

*It is recommended that the Committee*

1. *receive the report; and*

2. *note the contents*

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