

## EM Soil Surveying and Sampling

Electromagnetic (EM) soil surveying has been used for many years to map soil salinity. The technology can also be used to map soil texture as well as the distribution of soil nutrients and soil moisture.

FSA Consulting are able to provide EM surveying and mapping services for intensive livestock, irrigation and broad-acre agriculture. This is the perfect tool to complement other precision agriculture technology.

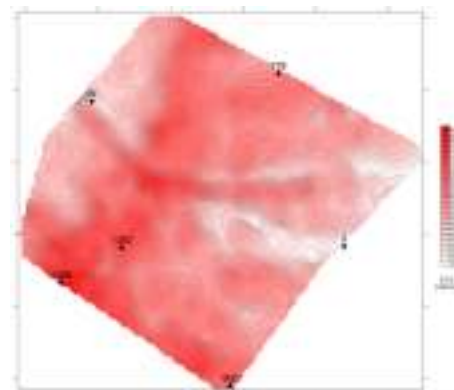
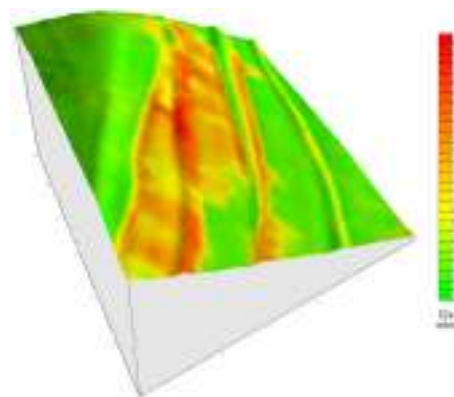
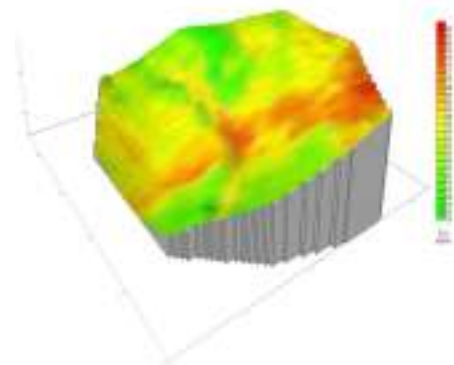
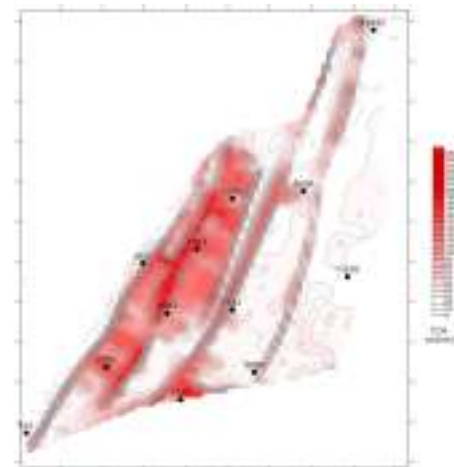
EM soil surveying can be used to assess and rectify 'problem' effluent reuse areas and improve manure management. The EM map can be used to create nutrient and salt distribution maps with a high degree of accuracy. In an irrigation context, an EM map can help to identify potential high seepage areas in storages and distribution networks. This can assist targeted soil investigations and remediation work to improve the efficiency of irrigation systems.

### Electromagnetic (EM) soil surveying and sampling can:

- **Accurately assess soil salinity, sodicity and nutrient status across paddocks**
- **Identify seepage from irrigation storages**
- **Determine soil limitations and improve production**
- **Determining the uniformity of effluent irrigation and manure applications**

### FSA Consulting offers:

- **Professional Service**  
Our staff are professional agricultural and environmental engineers and scientists.
- **Experience**  
FSA Consulting has extensive experience in EM surveying, soil assessment and sampling.
- **Independence**  
FSA Consulting is not linked to any contractor or product.
- **Accreditation**  
FSA Consulting staff hold appropriate accreditations, including CPSS, CPAG and RPEQ.
- **Personal Service**



**FSA Consulting can do your EM surveying today.**

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## Why Do Soil Conductivity Mapping?

Sustainable irrigation relies on maintaining and improving soil health. Irrigation, particularly with bore water or effluent can result in non-uniform application of salts and nutrients onto paddocks. Over time this will reduce crop performance and irrigation efficiency. EM soil surveying can identify this and allow cost effective solutions to the problem.

EM soil surveying can be used to identify seepage zones from irrigation fields, channels and storages. Seepage often accounts for some of the largest losses in an irrigation system, and remediation works can be cost prohibitive when applied on a large scale. EM soil surveying can recognize areas of differing moisture conditions, allowing individual 'problem' areas to be targeted for further investigation or rehabilitation.

In dryland agriculture, EM soil surveying can identify patterns in soil texture and subsoil sodicity which may limit crop growth, allowing you to create management zones based on soil types to supplement other precision agriculture applications.

For intensive agriculture and other effluent or manure users, EM soil surveying offers an innovative solution to the problems associated with non-uniform effluent and manure applications by identifying the extent of the problem and the required solutions.

## How Does it Work?

Electromagnetic (EM) soil surveying operates by sending out an electromagnetic current to assess the conductivity of the soil as the machine travels over the soil surface. The survey can be done rapidly with an ATV and can cover several paddocks per day.

By taking a series of strategically located soil tests, it is possible to map nutrients and salt levels across a paddock by correlating the soil tests with the  $EC_a$  reading. Once the field surveying and soil sampling are completed, the information is analysed to provide a report on factors that contribute to conductivity such as salinity, seepage and soil nutrient levels. Our staff can then provide practical solutions to improve performance of the system.

**For further information, contact the following staff:**

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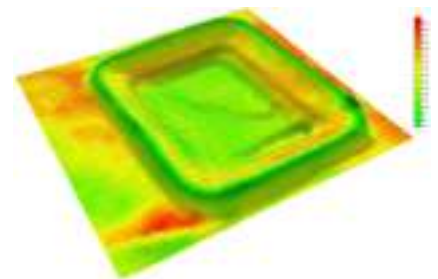
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