



# FSA Update

**FSA Consulting**  
**FSA Environmental**  
**FSA Irrigation**  
Feedlot Services Australia P/L

**FSA Update**

**October-December 2005**

## Merry Christmas!

*FSA Consulting would like to thank you for your support throughout 2005.*

*We wish you a happy and healthy Christmas and a prosperous and successful year in 2006.*



*Want a new career for Christmas? See page 4 for positions we need to fill.*

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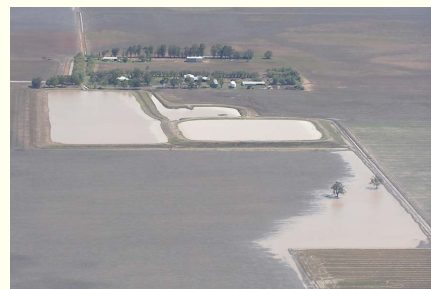
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## FSA Consulting Contracted to Prepare Overland Flow Certification Guidelines

FSA Consulting has been contracted by the Queensland Department of Natural Resources and Mines (NR&M) to prepare recommendations for Overland Flow Certification Guidelines. Currently a number of moratoria prohibit the collection of any additional overland flow. In future, Water Resource Plans (WRP) will be implemented for each catchment across the state. Most plans require infrastructure that captures overland flow to be notified.

A simple form will need to be filled out with data to the best of your knowledge (eg estimates are fine). However, if in the future, you would like to reconfigure your infrastructure or increase your take of overland flow (if permitted by the WRP for your catchment) certification would be required. Certification authorised by a Registered Professional Engineer of Queensland (RPEQ). FSA Consulting is making recommendations for the guidelines that these RPEQs must follow. These guidelines are to be state wide and therefore

staff have been travelling around the state, talking to irrigators, to gain a better understanding of how overland flow is captured in different areas.



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**Visit us @ [www.fsaconsulting.net](http://www.fsaconsulting.net)**



## Wine Environmental Guidelines

FSA Consulting has been engaged by the Environmental Protection Agency (EPA) to develop a Best Practice Guideline for the Wine Industry in Queensland.

In December 2004, the Minister for Tourism, Fair Trading and Wine Industry Development produced the *Queensland Wine Industry Development Strategy*. This *Strategy* provides a framework for consolidating current activities within the wine and related tourism sectors and for supporting new industry-based initiatives, with the overall objective of developing a sustainable, diverse and innovative Queensland wine industry.

The Strategy sets out a schedule of actions, timeframes and lead agencies responsible for working in partnerships with the industry to deliver the actions. The EPA has been tasked with developing, in co-operation with industry, guidelines on best practice in relation to water use in production and waste disposal under the *Environmental Protection Act 1994*.



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## Don't Forget...Overland Flow Works

Just a reminder that all existing works that collect overland flow, except Stock and Domestic dams (but including feedlot holding ponds), must be notified under the new Water Resource Plans. The dates for notification vary for each catchment. Catchments with upcoming deadlines are listed below:

Condamine-Balonne Catchment	1 February 2006
Fitzroy Catchment	22 July 2006
Georgina-Diamantina Catchment	5 August 2006

For further information, please contact:  
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Or go to: <http://www.nrm.qld.gov.au/water/management/pdf/w2g019.pdf>

## PAE-FSA Consulting Collaboration

Odours and dust remain significant issues for intensive livestock enterprises. As the issues become more complex, the need for better investigation and analysis is greater. While FSA Consulting has significant expertise in livestock odours, primarily research, measurements and emission modeling, there is a need for increased expertise in dispersion modeling and odour nuisance assessment. To provide a better service for clients, FSA Consulting and Pacific Air and Environment (PAE) ([www.pae.net.au](http://www.pae.net.au)) have agreed to strengthen ties. The FSA Consulting / PAE team can provide the best livestock odour modeling and dispersion expertise in Australia.



## GHG Emissions from Intensive Livestock Wastes

FSA Consulting has always been at the leading edge of the environmental management of intensive livestock systems. Because of this background FSA Consulting was selected to prepare **Chapter 5: Managing emissions from intensive livestock wastes** of the *Greenhouse Best Practice for Agriculture Workbook for the Australian Greenhouse Office*.

Businesses operating in land-based sectors often have low greenhouse emission signatures associated with energy, transport and waste, but emit significant quantities of non-carbon dioxide greenhouse gases through their land management activities. These sources are often diffuse and therefore difficult to measure or estimate. This generates particular challenges for these businesses in managing and reporting on their emissions.

This workbook is the first of its type and will provide an understanding of greenhouse issues, productivity and other likely impacts of different management practices on gas emissions to land based enterprises. It will assist in the new

agriculture-specific reporting framework for the Greenhouse Challenge program which is currently being developed.

This framework addresses the specific difficulties of land-based enterprises in reporting on greenhouse gas abatement. Reporting under this framework will be largely action-based. It will encourage participants to adopt management practices which, based on the best available knowledge, are expected to minimise greenhouse gas emissions from their operations.

Chapter 5 - Managing emissions from intensive livestock wastes provides a comprehensive account of current knowledge of greenhouse gas emissions from livestock waste and cost-effective abatement opportunities.

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## Automatic Weather Station Service

FSA Consulting provides a range of services in relation to Automatic Weather Stations. This includes the design of an appropriate system, equipment selection, equipment installation, staff training and support. Annual maintenance visits, emergency response callouts, data analysis and interpretation and data file backup can also be undertaken.

An Automatic Weather Station (AWS) is a stand alone, self powered device that provides site-specific, accurate and continuous monitoring of environmental parameters. Automatic Weather Stations have a number of advantages over conventional manual recording. They are more consistent in their measurement, provide data at a much greater frequency (every minute, hourly etc) and provide data in all weather, day and night, 365 days a year.

The most common parameters measured include air temperature, relative humidity, solar radiation, barometric pressure, wind speed, wind direction and rainfall. Additional parameters which can be measured include soil moisture, soil temperature and water depths.

The weather station is driven by a programmable data logger which is responsible for making measurements, calculating results and storing data at user defined intervals. Calculations performed by the data logger include potential evaporation, dewpoint, sunshine hours, degree days, chill days and frost.

Stations can be configured for direct download via a continuous communications link or remotely. Remote access can use a dial-up connection to the weather station through a GSM/CDMA data module or having a landline modem fitted to the weather station. For remote access where no mobile phone coverage or landline phone is available, a pair of radio modems can be used to negotiate a link between computer and weather station is available. For

completely remote access a satellite phone can be fitted to the weather station.

This information can be used by the agricultural community interested in environmental monitoring, for example by: irrigators to aid in irrigation scheduling decisions, crop sprayers to monitor spray drift, intensive livestock operations to monitor environmental conditions (i.e. animal health, information for regulatory requirements) or researchers for studying climate and odour modelling.

Costs of AWS depend on the requirements of the user. Each AWS purchase needs to be considered in the context of these requirements.



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## Ready Reckoner for Evaporation Reduction

FSA Consulting's dedication to reducing evaporation and seepage losses from farm water storages in the past has been demonstrated. This work has continued with funding from the CRC for Irrigation Futures and the National Program for Sustainable Irrigation to develop an economic 'Ready Reckoner' for evaporation reduction systems. The Ready Reckoner integrates all variables allowing site-specific assessment of evaporation reduction options. This will be a valuable tool for irrigators to assess site-specific viability of evaporation control methods.

The Ready Reckoner uses the widely available Microsoft Excel™ software and is simple to use. The Ready Reckoner requires the user to input data about their storage, amount and time that water is stored and the selected evaporation reduction option. The user is prompted to download evaporation data (specific to the user's site) from the internet and this can be input into the Ready Reckoner. A comprehensive guidance manual which includes Case Study

sites to demonstrate the program is included to assist the user.

The Ready Reckoner utilises the site-specific information and returns the amount of water saved and the cost associated with saving this water. The Ready Reckoner can be run numerous times and the user is encouraged to vary input parameters to gain an understanding of the cost range of evaporation reduction systems for their site.

The Ready Reckoner will be available for download from the internet in the near future. Watch this space!

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## Staff Profile – Wesley Nielsen

Growing up on a grazing property 25 km west of Toowoomba, and with relatives in the cotton, grain, sugar and pasture industries, Wesley gained an insight into some of the challenges of agriculture. Having also worked with Thompson Longhorn, a livestock handling equipment manufacturer based near Warwick, Wesley has had some valuable exposure to both intensive and extensive livestock industries.

With two brothers already working in the profession, it was no surprise Wesley chose to study engineering. Wesley has just completed his third year of study in Agricultural Engineering at University of Southern Queensland, and has taken on work experience at FSA Consulting as an undergraduate.

In addition to his work experience, Wesley has also organised to undertake his final year research project under the supervision of FSA Consulting, looking at seepage losses from farm ring tanks.

Future Work Interests: Water resource engineering and hydraulics, irrigation modelling and optimisation.

Leisure Time Interests: Wakeboarding, waterskiing, photography and motor sport.



## Writing Winning Reports

FSA Consulting has a continuing commitment to developing the skills of its staff. Recently Nathan Heinrich attended a two day course titled 'Writing Winning Technical Documents'. The course aimed to improve and develop attendee's skills in writing technical documents. Through a series of exercises and group activities, specific writing skills and approaches to writing were developed.

Attendees were taught a process that must always be used in technical writing. First the intended audience must be identified, which influences the readability and tone of the document. The structure of the document is then set allowing the document to be written. Finally, the layout of the document is defined with particular attention to the use of white space, figures and tables.

The training was very worthwhile and will further improve the quality of FSA Consulting reports.

## Positions Available

We are looking for some more quality staff to add to our growing team. Specifically we are looking for:

**Agricultural / Environmental Engineer (Consulting)** with experience in water use efficiency, hydrology and hydrological modeling. Experience in CivilCad, or AutoCad or pipeline design would be an advantage.

**Agricultural Consultant (Agronomy/Soils)** with experience in pasture and crop agronomy and soils. Experience in composting and organic waste reuse would be an advantage.

**Research Scientist / Engineer (Environmental)** with experience in environmental management, undertaking research and environmental monitoring. Experience with intensive livestock or abattoirs would be an advantage.

*If you are interested, or know someone who may be, please call Peter Watts on 0409—623 590.*

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