Submission

No 18

INQUIRY INTO MANAGEMENT OF DOMESTIC WASTEWATER

Organisation: NSW Farmers

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NSW Farmers welcomes the opportunity to provide input to the Inquiry into Domestic Wastewater by the NSW Committee on Environment and Regulation. The regulation of domestic wastewater is an area that NSW Farmers have been extensively seeking improvement across for a number of years.

The lack of effective management practices and accountability surrounding domestic wastewater is an impacting issue for both horticulture and oyster growers across NSW.

The contamination of food products with domestic wastewater impedes farmers' ability to produce safe food, posing a severe threat to human health as well as negatively impacting the sustainability of their farming businesses. As such, we ask that the concerns of primary producers be considered as part of the inquiry.

This submission addresses the terms of reference surrounding the inquiry into the Management of Domestic Wastewater in regards to horticulture and oyster production systems in NSW. Case studies will be used to demonstrate the severity of the impacts of poorly managed domestic wastewater.

NSW Farmers will address the following areas of the inquiry:
1) Management of On Site Sewer Management Systems (OSMS) by Local Councils;
2) Accountability and legislative definition for pollution incidents with reference to OSMS and Sewage Treatment Plants (STP's);
3) Notification and documentation of inspection procedures and pollution incidents.

SUBMISSION TO THE COMMITTEE ON ENVIRONMENT AND REGULATION INQUIRY INTO THE MANAGEMENT OF DOMESTIC WASTEWATER

16 December 2011

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NSW Farmers' Association Background
The NSW Farmers' Association (the Association) is Australia's largest State farmer organisation representing the interests of its farmer members – ranging from broad acre, Livestock, wool and grain producers, to more specialised producers in the horticulture, dairy, egg, poultry, pork, oyster and goat industries.

Executive Summary

NSW Farmers seeks to have the concerns of farming businesses considered in the inquiry into the Management of Domestic Wastewater. Poorly managed domestic wastewater has a negative impact on the horticulture and oyster industries.

The issue of poorly managed wastewater systems poses a significant threat to human health, whilst threatening the success and livelihoods of farming enterprises. This external source of pollution is inadequately regulated and monitored, and ineffectively managed.

As the outcomes of this inquiry will determine future regulation of domestic wastewater and in particular how the risk of entry into the food chain will be assessed and managed, NSW Farmers makes the following recommendations:

RECOMMENDATION 1: Develop a sustainable waste management campaign to educate Local Government and citizens about sustainable sewerage management.

RECOMMENDATION 2: Undertake a benchmarking study to identify Local Councils that do not effectively manage their OSMS.

RECOMMENDATION 3: Identify a best practice method for managing OSMS and enforce the implementation of this best practice by Local Councils.

RECOMMENDATION 4: Tighten licence conditions to prevent the bypass of any waste products that will impede a farmers' capacity to produce a reliable source of safe food.

RECOMMENDATION 5: A guaranteed flow/discharge commitment detailing components of the proposed discharge from the STP's and for STP's to be monitored and held accountable for all infringements.

RECOMMENDATION 6: All water licence holders and aquaculture lease permit holders be notified immediately in the event of a sewage pollution event.

RECOMMENDATION 7: A continual audit process be mandatory for STP's and that Local Councils ensure best management practices are being implemented

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1. Introduction

NSW Farmers is Australia's largest state farming organisation representing the interests of the majority of commercial farm operations throughout the farming community in NSW. Through its commercial, policy and apolitical lobbying activities it provides a powerful and positive link between farmers, the Government and the general public.

NSW Farmers welcomes the opportunity to provide input to the Inquiry into Domestic Wastewater by the NSW Committee on Environment and Regulation. The regulation of domestic wastewater is an area that NSW Farmers have been extensively seeking improvement across for a number of years.

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2. On Site Sewer Management Systems

2.1 Introduction

Diffuse source water pollution is a key contributor to water contamination. On-site Sewer Management Systems (OSMS) maintained by Local Councils have proven to be poorly maintained, posing a significant food safety threat.

Fifty percent or 97,129, of the NSW's OSMS are located in coastal catchments. The management of this risk is the responsibility of the relevant Local Council, however this if often debated due to a lack of legislative definition, leaving farmers negatively impacted due to an external pollution source. More often than not, sewage spills occur due to negligence on the part of authorities responsible for the proper operation and maintenance of the sewer systems.

Oyster growers enter into a lease agreement with the NSW State Government with the understanding that they will be able to receive a clean waterway to produce a saleable product. The oyster producers do not have any control over what occurs on the land situated within the catchment. This responsibility lies with both Local and State Government through the development process.

The NSW State Government established the Oyster Industry Sustainable Aquaculture Strategy (OISAS), in a vision to achieve a sustainable product across NSW. OISAS identifies key water quality parameters necessary for sustainable oyster aquaculture and establishes a mechanism to maintain and where possible improve the environmental conditions required for sustainable oyster production. OISAS also aims to ensure water quality requirements for oyster growing are considered in the states land and water management and strategic planning framework.

Sewage spills in any estuary leads to the closure of that estuary for 21 days or more to prevent human virus particles entering the waterway and contaminating the oysters. During this period, oyster farmers are unable to harvest their product due to restrictions placed upon them by the NSW Food Authority to ensure food safety.

The cumulative effects from the failure of large numbers of OSMS, particularly in sensitive coastal locations, can result in significant water quality impacts to downstream receptors.

For instance, the highly publicised occurrence of the protozoan parasites Cryptosporidium and Giardia in the Sydney water supply in 1998 were linked to the inadequate management of faecal waste material in these catchments.

While the oyster industry is the first to be affected, deteriorating sanitary water quality affects the safety of consumers, swimmers, recreational anglers and the tourism industry, significantly impeding the economic viability of a region.

There has been a large amount of supporting research into the impacts of sewage contamination on waterways conducted over the past 15 years.

The Healthy Rivers Commission Report[1] highlights that oysters have an enormous potential to concentrate in their gut large numbers of micro-organisms and are therefore particularly susceptible in faecally contaminated waters.

White[2], in commissioned advice to the Healthy Rivers Commission, stated that one of the principal threats to oyster production is the human faecal contamination of oyster growing waters and the ingestion of those oysters by humans.

Hackney and Pierson[3] state that failing septic systems are frequently cited as one of the major sources of faecal contamination in shellfish growing waters.

A report produced following the Public Inquiry into the Management of Sewage and Sewage By-products in the NSW Coastal Zone by Codd[4], not only reported failure rates in the range of from 50-90%, but also stated that all on-site facilities may experience failure at some stage during their operational life. The inquiry also found that an *"effective whole-of-government co-ordination and leadership was essential to long term strategies for management of sewage in the coastal zone".*

This public inquiry into the management of sewage and sewage by-products in NSW coastal zone revealed that that there is no effective whole-of-government coordination to manage sewer spills.

RECOMMENDATION 1: Develop a sustainable waste management campaign to educate Local Government and citizens about sustainable sewerage management.

2.2 Current Safeguards

The NSW shellfish industry is regulated by NSW Food Authority under the *Food Regulation 2010*.

All oysters and mussels harvested in NSW are done so in conjunction with the NSW Shellfish Program, which is aligned with the Australian Shellfish Quality Assurance Program (ASQAP) as a minimum standard.

The NSW Food Authority classifies each oyster producing harvest area across the state to determine the most appropriate method of harvesting oysters from that section of the river. The following defines each harvest classification:

- Conditionally approved – shellfish can be directly harvested
- Conditionally restricted – shellfish must be depurated for a minimum of 36 hours before being sold for human consumption
- Prohibited - shellfish cannot be harvested for human consumption

[1] Healthy Rivers Commission, 2003. Oysters Independent Review of the relationship between Healthy Oysters and Healthy Rivers, Final Report March 2003, Healthy Rivers Commission, Sydney.

[2] White, I. 2001, Safeguarding Environmental Conditions for Oyster Cultivation in New South Wales, Centre for Resource and Environmental Studies, ANU, Canberra, Report to Healthy Rivers Commission, Occasional Paper OCP 1004 Sydney.

[3] Hackney, C.R. and Pierson, M.D. (eds) 1994, *Environmental Indicators and Shellfish Safety*, Chapman and Hall, New York.

[4] Codd, M. 1997, Public inquiry into the management of sewage and sewage by-products in the NSW coastal zone, NSW Environment Protection Authority

There are a total of 72 classified harvest regions across NSW. Of these areas, 56% (or 40 areas) are classified as conditionally restricted and 2 harvest areas are classified as prohibited, with a number of others at risk of being downgraded, predominantly due to poor OSMS.

The NSW Food Authority classifies the waterways using 2 risk assessments. One involves looking at the numbers (i.e. faecal indicator bacterial results) against the standard and the second involves looking at the potential source(s) of the faecal indicator bacteria results and assessing the public health risk.

There are some Local Councils which have demonstrated effective OSMS are attainable. However, a number of these Local Councils have demonstrated their inability to effectively manage these OSMS, which poses a threat to not only aquatic health, but also human health and the viability of oyster farming, tourism and recreational users of the waterways.

There are 3 councils that are leading the reform for effective OSMS. Hornsby Shire, Great Lakes and Port Stephens Councils have demonstrated their commitment to the management of OSMS in their local regions.

The Councils that observe best practice in OSMS regulations have invested in training their inspection staff. They also have excellent structures in place, to ensure that systems are audited regularly and that system maintenance is tracked.

RECOMMENDATION 2: Undertake a benchmarking study to identify Local Councils that do not effectively manage their OSMS.

RECOMMENDATION 3: Identify a best practice method for managing OSMS and enforce the implementation of this best practice by Local Councils.

Box 1: CASE STUDY – WALLIS LAKE HEPATITIS OUTBREAK

The 1997 outbreak of Hepatitis A in Wallis Lake resulted in more than 444 people contracting hepatitis after eating oysters harvested from Wallis Lake. One person died due to this contamination event[5].

The public health and environmental health implications of on-site systems have been brought to the fore with concerns over the possible contribution of on-site systems to elevated nutrient loadings and algal blooms. According to Atherholdt et al[6] the 1996 outbreak of hepatitis in Wallis Lake, NSW has resulted in close scrutiny of poorly performing on-site systems as a potential source of microbiological contamination.

[5] http://www.dpiw.tas.gov.au/inter,nsf/Attachments/MCAS-7RH8ER/$FILE/Primary%20Industries%20Food%20Safety%20Legislation%20Discussion%20Paper1.pdf

[6] Atherholdt, T., Le Chavallier, M., Norton, W. and Rosen, J., 1998. Effect of Rainfall on *Giardia* and *Cryptosporidium,Journal AWWA*, September.

Box 1 (cont)
A sanitary survey by Brooker[7] of on-site systems and other potential sources of faecal pollution reported on-site system failure rates of approximately 33% in the Wallis Lake catchment. However, other human activities, including waste from boating activities, were also considered possible sources of the faecal pollution responsible for the oyster contamination.

[7] Brooker, B. 1999, The source of Faecal Coliforms in Wallis Lake, *Proceedings of 9th NSW Annual Coastal Conference*, Forster, NSW Coastal Council

3. Accountability and Legislative Arrangements for Pollution Incidents

3.1 Current Regulatory Arrangements

3.1.1. On Site Sewer Management Systems

Councils are required to manage the cumulative impact of sewage pollution for all OSMS in their local government area. This process includes the approval of the installation and operation of the OSMS.

"The on-site sewage management regulations are flexible so that councils may determine the most appropriate sewage management strategy for local circumstances. Councils have wide discretion to determine the level of supervision of on-site systems to accommodate variation between high, medium and low risk areas, to minimise costs and to maximise community benefits. Councils have been encouraged to develop on-site sewage management strategies[8]

This transect taken from the NSW Department of Local Government website highlights that it is at the Council's discretion to implement and supervise OSMS in their local government area. There is no legislative definition to ensure local councils are held accountable for their OSMS.

Box 2: CASE STUDY – THE KALANG RIVER NOROVIRUS OUTBREAK

Sewage from properties on Newry Island on the Kalang River was suspected to be the source of Human Norovirus in July 2008. The Kalang River has been closed for oyster harvest for 3 years and 5 months as the NSW Food Authority will not reopen the river for oyster harvest until improvements have been made to the islands sewage systems.

As there is no legislative framework to hold Council's accountable for this ongoing pollution event, Oyster farmers in the Kalang River have suffered severe financial losses and human safety is at risk to those consumers who frequently consume wild catch.

3.1.2 Sewage Treatment Plants

Farmers throughout NSW, particularly in Metropolitan Sydney, are frustrated by the lack of responsibility held by Sewage Treatment Plants (STP's). It has been evident in the past that STP's have no legislative requirement to report pollution incidents. Similarly, there has been no audit system in place to ensure water quality is not compromised by these STP's.

NSW Farmers understands there have been discharges of untreated effluent from the West Camden STP. Bypassed/untreated effluent entering the River has ramifications for all water users from farmers using water to produce, to recreational users either swimming or inadvertently drinking the water.

In the instance of a bypass or a severe alteration in output from the STP it is crucial that all water license holders below the discharge point be advised as far in advance as possible as this will have a bearing on the day-to-day activities of water users in the region. Primary

[8] http://www.dlg.nsw.gov.au/dlg/dlghome/PublicTopicsIndex.asp?mi=0&ml=10&id=10

producers need to be able to ensure food safety and prevent crop losses. Given notice, producers will have the capacity to manage their response and water application accordingly. Producers whose water supply is temporarily unfit for irrigation purposes should be compensated by way of a supplementary water supply, given the water licence conditions have not been met by external parties.

3.1.3 Protection of the Environment Legislation Amendment Bill 2011

The recent *Protection of the Environment Legislation Amendment Bill 2011*, requires licence holders to notify a list of government authorities in the event of a pollution incident that causes or threatens material harm to the environment. Under this new legislation, the authorities must be notified immediately, rather than as soon as practicable, as previously required.

This piece of legislation also identifies circumstances in which mandatory environmental audits can be imposed. These circumstances identify only repeat offenders or those under reasonable suspicion of a contravention. In the case of a sewage contamination, the audit process will have occurred post contamination. This is not acceptable when food producers are at risk of unknowingly contaminating their product, jeopardising their quality assurance programs and possibly harming consumers. STP's must undergo regular audit processes to ensure their sites are maintained and at a low risk of polluting waterways.

RECOMMENDATION 4: Tighten licence conditions to prevent the bypass of any waste products that will impede a farmers' capacity to produce a reliable source of safe food.

NSW Farmers is concerned the current licence agreements for STP's are not stringent enough to ensure environmental sustainability and human health. In the year 1 July 2007- 30 June 2008, Sydney Water reported that the West Camden STP experienced 10 bypasses, equalling a total of 198.3 megalitres of bypassed effluent entering the Nepean River. Water licence holders do not know if this figure is correct as the system was reported to have failed at the time of the bypass, suggesting this figure is a conservative estimate by Sydney Water.

Growers utilise the Hawkesbury Nepean River for irrigation in the knowledge that it is a reliable, safe water source. NSW Farmers questions the licence agreement which allows this STP to pump large quantities of pollution into the Upper Hawkesbury Nepean River without consequence. Box 3 outlines a specific example of a pollution event in the Upper Hawkesbury-Nepean River.

Box 3: CASE STUDY – POLLUTION OF THE UPPER HAWKESBURY-NEPEAN RIVER

In November 2008, NSW Farmers members lodged an official complaint with the then NSW Department of Environment & Climate Change (DECC) regarding pollution, suspected from the West Camden Sewage Treatment Plant (STP) of the Upper Hawkesbury Nepean River.

This complaint was discussed amongst growers in the region when each farmer recognised severe affects to their plants (*See Appendix 1*).

Some of the local horticulture growers affected by this pollution incident took samples above and below the Camden weir along the Hawkesbury Nepean River in early December 2008. The analysis of

these samples showed significantly elevated levels of bacteria, sodium and chloride below the weir, downstream from the STP. These results showed a significant difference in water samples taken from above the weir.

DECC also conducted tests following the above mentioned lodgement of a complaint by growers. However, these tests did not take place until approximately April 2009, approximately 5 months post-contamination. The results of these tests did not show any significant elevation in water pollutants linked with the West Camden STP. Given these results, the department suggested the West Camden STP was not the source of the pollution into the Upper Hawkesbury Nepean River.

Given the delay between when the pollution incident occurred and when testing took place, it is expected the water tested by DECC 5 months post-contamination would be clear of any contaminants. NSW Farmers would contend that West Camden STP cannot be ruled out as the cause of the contamination.

NSW Farmers has been advised by Sydney Water (personal communication, January 2009) that there are restrictions in place not to supply the nursery at Mt Annan Botanic Gardens when bypasses occur as the water is not suitable for their non-native species. NSW Farmers believes that commercial enterprises producing fresh food for human consumption were not advised of same precautions.

Additionally, West Camden STP has a testing process in place to ensure they are within the limits of their licence agreement. During a site visit to the West Camden STP in January 2009, NSW Farmers was informed that the West Camden STP tests samples once every 6 days. Annually, 6 out of 60 samples are allowed to exceed permit limits due to unforeseen circumstances such as a power failure. NSW Farmers believes there should be mechanisms in place to prevent any waterway pollution incidents and would like to see the allowable content limits of discharges from STP's to be minimal.

RECOMMENDATION 5: A guaranteed flow/discharge commitment detailing components of the proposed discharge from the STP's and for STP's to be monitored and held accountable for all infringements.

3.1.4 Discharge of Effluent from Vessels

Under the *Protection of the Environment Operations Act 1997* and the *Marine Pollution Regulation 2006,* it is an offence to pollute any waters unless permitted under a licence issued by the Environment Protection Authority. NSW Maritime officers issue infringement notices to offenders of $750 to an individual, or $1500 to a corporation where cases of pollution from vessels are detected[9].

[9] http://www.maritime.nsw.gov.au/rec_boating/sewage.html

There are currently no specific requirements for recreational vessels[10]. Most recreational vessels do not have the facilities on board to cater for the correct methods of effluent disposal. NSW Maritime provides off shore amenities and encourages boat users to plan their trip. However, these precautions are often not used and the oyster industry is the first to be affected by effluent discharge in close proximity to an oyster lease.

The *Marine Pollution Regulation 2006* outlines that it is an offence to discharge any treated sewage within 500 metres of an area where aquaculture occurs. Given a single oyster can filter up to 50 litres of water a day from a tidal river[11], NSW Farmers believes this measurement should be increased to ensure consumer safety.

[10] http://www.maritime.nsw.gov.au/rec_boating/sewage.html
[11] http://www.uq.edu.au/news/index.html?article=7123

4. Public Notification and Documentation of Inspection Procedures and Pollution Incidents

4.1 Notification of Pollution Incidents

Water licence holders and agricultural users of waterways must be notified in the event of a pollution incident. This is essential to ensure farmers have the best ability to prevent any food contamination and to ensure they are able to protect their farming business.

As mentioned above, the recent *Protection of the Environment Legislation Amendment Bill 2011*, requires licence holders to notify a list of government authorities in the event of a pollution incident that causes or threatens material harm to the environment. This process must be extended to the primary producers relying on the water source.

Farmers across all industries have quality assurance programs in place to ensure safe food production. However if sewage contaminations are not reported, farmers are unable to implement precautions to prevent product contamination.

RECOMMENDATION 6: All water licence holders and aquaculture lease permit holders be notified immediately in the event of a sewage pollution event.

4.2 Documentation of Inspection Procedures

4.2.1 On Site Sewer management Systems

There are no current requirements for Local Councils to document their inspection procedures of their OSMS.

Under the *Local Government (General) Regulation 2005* all landowners with OSMS must seek approval from their Local Council to operate the system. It is the responsibility of the landowner to maintain and manage their OSMS to meet various performance standards.

Some of these performance standards include: prevention of the spread of disease; prevention of the spread of foul odours; prevention of the contamination of water; and ensuring that people do not come into contact with untreated sewage.

NSW Farmers believes the responsibility must lie with the Local Council to enforce landholders to maintain their OSMS based on a risk based process, within which areas where OSMS' are located within proximity of estuaries and catchments connected to estuaries are considered high risk. Within these high risk areas, the systems adopted by Local Councils should include an inspection and audit process which is clearly documented on a central database. Results of this process should then be communicated back to landholders so they are aware of any improvements and management strategies they need to implement.

Currently, audits of OSMS conducted by Local Councils are assessed on the performance of the system at the time of inspection. Oyster harvest areas are at high risk during periods of rainfall, as a number of these systems do not adequately function in periods of high rainfall.

4.2.2 Sewage Treatment Plants

As highlighted in the Camden STP case study, agricultural users of waterways are currently not notified by STP's when a pollution event occurs. NSW Farmers believes that to safeguard food production across horticulture and aquaculture industries, farmers must be notified in the event of a pollution event.

RECOMMENDATION 7: A continual audit process be mandatory for STP's and Local Councils to ensure best management practices are being implemented.

Conclusion

Domestic wastewater has the potential to cause a significant impact on human health. Poorly managed wastewater has proven to negatively impact farmers' abilities to produce safe food and the sustainability of their farming businesses. Water contamination by sewage is unacceptable. Regulations are required to ensure polluters are held accountable for their discharge into waterways.

Discharge of sewage into waterways has the potential to cause death in the event of consumption of these contaminated fresh food products, particularly of those whose immunity is compromised (e.g. the elderly, young and sick). Australian farmers, across all industries, have some of the most stringent quality assurance programs in the world which seek to minimise risk and ensure safe food production. However if sewage contaminations are not reported, farmers are unable to set precautions to prevent contaminations. Farming businesses are also at risk of losing their market if they fail quality assurance testing and audits.

Current licence arrangements and permits for STP's need to be tightened to minimise the level of discharge entering waterways. Similarly, requirements need to be enforced to ensure all STP's and Local Councils undergo frequent audits to encourage best practice and minimise any unexpected sewage discharge.

Appendices

1. Photo taken at *Downes Wholesale Nursery*, 111 Stanhope Road, Theresa Park NSW 2570 before the suspected sewage pollution event.

2. Photo taken at *Downes Wholesale Nursery*, 111 Stanhope Road, Theresa Park NSW 2570 in November 2008, after the suspected sewage pollution event.

3. Photo taken at *Downes Wholesale Nursery*, 111 Stanhope Road, Theresa Park NSW 2570 in November 2008, after the suspected sewage pollution.