

# CSG/LNG Compliance Plan 2011

Prepared by:

Coal Seam Gas Regulatory Project

Department of Environment and Resource Management

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# Foreword

The coal seam gas (CSG) to liquefied natural gas (LNG) industry in Queensland is rapidly expanding. The Department of Environment and Resource Management (DERM) is committed to ensuring that the environmental and natural resource impacts of the CSG to LNG industry are appropriately managed. To this end, the Government has developed a robust regulatory and legislative framework to manage environmental and natural resource impacts.

At the heart of DERM's approach to compliance is the goal of encouraging people to voluntarily comply with their obligations. DERM does this by actively engaging with companies and individuals subject to environmental regulation—through activities such as education and awareness raising, and planned inspections and audits. However, it is important that this activity is complemented by a strong compliance and enforcement framework to act as a deterrent to legislative non-compliance.

The department recognises that the community expects active compliance action when breaches occur and DERM will not hesitate to act. Operators in this industry are aware that they face significant penalties, and ultimately, the loss of their licence to operate if they fail to meet their environmental and natural resource obligations.

The CSG/LNG Compliance Plan 2011 advises Queenslanders of DERM's key compliance activities to address the key areas of the CSG to LNG industry that have the potential to affect our environment and natural resources. By publishing this compliance plan, and advising both the community and industry what can be expected in 2011, DERM is giving effect to its commitment to ensure compliance activities are carried out in a transparent manner.

DERM has significantly increased its compliance activities in relation to this industry. In particular the focus has been on establishing strong monitoring programs and ensuring effective management of reports or complaints concerning the impacts of the CSG to LNG industry. A new LNG Enforcement Unit has been established within the area of CSG operations in the Surat Basin and DERM is committed to ensuring CSG operators comply with new laws and policies affecting the industry.

DERM will monitor 300 bores across the area of CSG operations. As part of the process, departmental staff will be not only monitoring groundwater levels and sampling water quality but also auditing the sampling and monitoring techniques of CSG companies as well as validating the data that is provided by the companies as part of their monitoring programs.

Potential impacts on agricultural land, rivers and groundwater supplies, and public health are being assessed before approvals are granted; and to ensure CSG operators comply with stringent operating conditions, compliance inspections will focus on land disturbance and rehabilitation, water and wastewater management, and the performance of dams used to store CSG water and brine waters.

The publication of this CSG/LNG Compliance Plan, and the key compliance activities within it, provides an opportunity for companies and individuals to access support to improve their performance levels as well as helping deliver the vision of a green, strong and sustainable Queensland.

John Bradley  
Director-General

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# Introduction

## Regulatory coverage

The Department of Environment and Resource Management (DERM) conserves and manages the environment and natural resources for the benefit of all Queenslanders. DERM's key areas of regulatory responsibility are:

- **Protecting and conserving the natural environment and cultural heritage**

This includes pollution control and waste management, managing vegetation loss and the state's coastline, conserving ecosystems, landscapes and native wildlife, and conserving Indigenous and built heritage.

- **Managing water for Queensland's future**

This includes managing water resource use, protecting unspoiled rivers and maintaining sufficient flow for healthy ecosystems, monitoring surface and groundwater levels and quality, and providing safe and reliable water supplies.

## Regulatory framework

The *Environmental Protection Act 1994* (EP Act) regulates the environmental impacts of the CSG to LNG industry through the licensing framework. All CSG operators are subject to rigorous environmental assessment processes and must be issued an environmental authority (EA) from DERM before they can commence operations.

Environmental assessments occur through specialised Environmental Impact Statement (EIS) processes for large scale or significant developments (such as large-scale CSG fields, gas pipelines and LNG processing plants), and also as part of the assessment process for EA applications. As part of this assessment process, new CSG activities are required to develop an environmental management plan (EMP). The EMP identifies and manages potential impacts on the surrounding environment.

Under DERM's guideline, when preparing an EMP for CSG activities, CSG operators must consider:

- impacts on air quality
- CSG water management, treatment and disposal
- mapping and protection of remnant vegetation and other important areas of habitat for native wildlife
- nuisance noise impacts
- testing methods to ensure that companies remain within the required limits
- impacts on the local communities
- impacts on native plants
- management and disposal of wastes.

Where potential risks or impacts are identified, conditions are included in the EA to ensure that the activity is properly managed to minimise environmental harm. The health of the surrounding environment is regularly monitored and reported to ensure the EA conditions are met.

This framework sits within an adaptive management regime that is focussed on allowing best practice environmental management to be implemented as technologies develop over time. Rather than persisting with the 'best practice' of the time until such time that it is no longer appropriate, adaptive management formally involves a plan for learning through the continual evaluation and analysis of evidence. Within the context of the *Environmental Protection Act 1994* (EP Act), this means that environmental authorities are constantly adapted to recognise new technologies and incorporate improved knowledge and understanding. In particular, this adaptive regime will be utilised to appropriately manage the impacts of disposing CSG water.

The *Nature Conservation Act 1992* (NCA) also regulates the environmental impacts of the CSG to LNG industry through the use of industry clearing permits and Species Management Programs.

The NCA protects native plants indigenous to Australia (protected plants) and regulates the clearing of individual protected plants. A clearing permit is required to clear protected plants unless an exemption applies. In general, exemptions will only apply to the clearing of least concern protected plant species. Clearing of endangered, vulnerable, rare or near threatened protected plants will require a clearing permit. Clearing permit applications received by DERM will be assessed on a case by case basis and approvals will be subject to conditions.

Where CSG activities necessarily involve tampering with animal breeding places, the tampering may be authorised by application to DERM for an approved species management program. It is a reasonable excuse for a person to tamper with an animal breeding place if the tampering happened in the course of a lawful activity that was not directed towards the tampering and the tampering could not have been reasonably avoided.

Holders of relevant resource authorities are able to apply to DERM to operate under the protected plant class exemption and in accordance with an approved Species Management Program.

The impacts of the CSG industry on water and the use of CSG produced water is currently regulated under a number of different pieces of legislation including the *Petroleum Act 1923*, the *Petroleum and Gas (Production and Safety) Act 2004*, the EP Act, the *Water Act 2000* (Water Act) and the *Water Supply (Safety and Reliability) Act 2008* (Water Supply Act).

The Water Act has recently been amended and provides requirements in relation to groundwater management in response to CSG operations. Many of these requirements will trigger action to assess and/or ensure compliance. Primarily these would be in relation to the impacts of CSG water extraction on groundwater resources through the following mechanisms:

- discharge to streams
- injection to aquifers
- impacts on groundwater extraction
- underground water impact reports (UWIR)
- baseline bore assessments
- bore assessments
- chief executive directions (where relevant).

In addition, emergency powers are available under various statutes which contain directive powers. Where these powers are utilised, compliance may also be triggered.

New amendments to the Water Supply Act establish purpose-built rigorous requirements for CSG recycled water that impacts on town drinking water supply sources to ensure, and provide assurance, that public health is protected.

Under the Water Supply Act, CSG operators producing or supplying CSG recycled water (CSG recycled water providers) must prove that their treatment processes and supporting management arrangements will consistently deliver water of the quality required. CSG recycled water providers are required to develop a Recycled Water Management Plan (RWMP) and have it approved by DERM, except in cases where there is no material impact on a town drinking water supply source.

Once an RWMP is approved specific requirements apply, these include:

- complying with water quality standards
- monitoring in accordance with a water quality monitoring program
- incident notification and water quality reporting
- managing water quality incidents.

CSG recycled water providers will also be required to review their plans; conduct internal audits; engage suitably qualified third party auditors to audit compliance with the plan; make water quality information publicly available; and produce annual reports containing details on any water quality incidents, reviews or audits that occurred during the year.

Consistent with the regulatory framework, the use of state-owned quarry material requires an authority under the *Forestry Act 1959* (Forestry Act) and compliance with its terms and conditions, including the payment of royalty for the quarry materials used. The holder of an entitlement under the *Petroleum Act 1923* or the *Petroleum and Gas (Production and Safety) Act 2004* cannot use state owned quarry material without holding an appropriate authority under the Forestry Act.

Similarly, CSG and LNG activities that are carried out on State Forests must also comply with requirements of the Forestry Act about matters including occupying the land and the liability to pay stumpage to the State for any timber cut or interfered with.

## Compliance program

DERM's regulatory compliance program is founded on a targeted and transparent approach to compliance, supported by a modern and strong enforcement program.

DERM's approach is to:

- ensure clients understand Queensland's environmental and natural resource management obligations
- encourage voluntary compliance with those obligations
- work with government, business, industry and the community to improve performance
- establish a strong monitoring program to assess compliance with Queensland's environmental and natural resource management obligations
- where necessary, take consistent and proportionate responses to non-compliance, in accordance with the Enforcement Guidelines, to achieve environmental and natural resource outcomes and deter further non-compliance;
- use the information from the compliance program to feed into the adaptive management framework which has been established for the CSG industry
- ensure public and stakeholder confidence in the transparency and effectiveness of the regulatory framework.

A key output of the regulatory compliance program is developing an overarching compliance strategy and publishing compliance plans annually. It is intended that the CSG Compliance Plan enable participation and information exchange and help build capacity for compliance, by transparently outlining all the compliance activity to occur in a given year, both proactive and reactive.

The role of the CSG Compliance Plan is to identify the key compliance areas for DERM and to establish the activities that DERM will focus on to ensure appropriate levels of compliance within the CSG to LNG industry.

DERM acknowledges that there are a range of other regulatory partners which conduct compliance activities in the CSG to LNG industry. For instance, the new LNG Enforcement Unit combines the regulatory activities of both DERM and the Department of Employment, Economic Development and Innovation (DEEDI). DERM seeks to co-ordinate its activities with other regulators to ensure a cohesive approach to compliance.

DERM's Compliance Strategy 2010–14, annual compliance plans, and enforcement guidelines, which set out how DERM selects matters for enforcement, are available at <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>.

## Compliance activity

### Types of compliance activity

The two main types of compliance activity DERM carries out to ensure environmental risks are being managed appropriately are outlined below:

1. DERM **responds** to reports or complaints about incidents or issues with the CSG to LNG industry that impact on the environment or natural resources. These reports can come from members of the public, industry self-reporting or from monitoring programs. This responsive work drives remedial and/or enforcement action on a site-by-site or incident basis.
2. DERM **plans** key compliance activities throughout the year aimed at addressing potential risks associated with the CSG to LNG industry. Activities include:
  - a. Strategic response to non-compliance
 

These projects target issues that require immediate attention because they are threatening the environment or natural resources that DERM protects and manages. These projects drive compliance outcomes and remedial action.
  - b. Strategic response to compliance risks
 

These projects target key areas of potential impact upon the environment or natural resources. They focus on issues such as establishing baseline compliance performance, the effectiveness of current regulatory frameworks, strategies to improve compliance performance and identifying best practice. These projects drive improved regulatory systems and tools, and compliance outcomes.
  - c. Ongoing compliance monitoring and assistance to clients to ensure adherence to legislation, environmental authority conditions and other regulatory instruments.

### CSG/LNG Compliance Plan 2011

The CSG/LNG Compliance Plan 2011 sets out DERM's compliance approach in each of the following areas that it regulates:

- environmental management
- vegetation management
- wildlife and ecosystems
- underground water management
- water supply – water use and service provision
- protected plants
- usage of State-owned quarry material.

There are a range of potential risks to both the environment and to natural resources. For each of these key compliance areas this plan; provides a brief overview; identifies any key risks; sets out DERM's general approach to ensuring compliance for that area; and outlines any specific, planned compliance projects that will be carried out in 2011. Some projects will continue past December 2011. It is noted that this plan does not identify the full range of compliance activities undertaken by DERM. The plan identifies the key areas that will be the focus of the next year, and the activities DERM will undertake in these key areas.

It is acknowledged that this plan does not address every potential impact of the CSG to LNG industry. DERM has focussed on those which will be most relevant over the next year. For example, as LNG production is yet to be operational, the focus of this plan will be on the CSG operators and the construction of LNG operations.

The key compliance areas for the CSG/LNG Compliance Plan 2011 are:

- audits and inspections of CSG/LNG operations (CSG operators), including the CSG Water Management Plans developed under environmental authorities (EA) and sales permits to use State-owned quarry material;
- stimulation including hydraulic fracturing (fracking) activities:
  - including the chemicals used during this process
  - the regulation of the use of benzene, toluene, ethyl-benzene and xylene (BTEX)

- notification requirements under both the EP Act and EAs
- notification requirements under the Water Act
- notification requirements under the Water Safety Act
- discharges to waters (both groundwater and surface water) – including impacts to drinking water
- monitoring programs.

Specific compliance activities for 2011 include:

- the development and implementation of a modern and robust monitoring regime that is designed to:
  - review and assess baseline information, cumulative impacts and groundwater impacts (as provided by the CSG operators and the Queensland Water Commission (QWC))
  - identify and audit water quality impacts of CSG operations
  - audit the monitoring data collected and provided by CSG operators
  - audit the monitoring techniques by CSG operators.
- the development and implementation of a complaint management framework specifically designed for CSG to LNG related issues
- the design and implementation of a compliance portal to release compliance related information to the general public
- the development of key compliance indicators for the CSG to LNG industry to measure and report on the level of compliance and research into mechanisms to encourage the CSG to LNG industry to go 'beyond compliance' and continually improve its environmental performance

## **Audits and inspections of CSG operators**

### **General *Environmental Protection Act 1994***

The primary mechanisms to regulate the CSG/LNG industry are through the licensing framework under the EP Act. CSG operators must apply and be issued an EA before commencing operations. EA holders are required to operate under strict environmental conditions to prevent environmental harm being caused or threatened. CSG/LNG activities are broken into two categories under the EP Act. Level 1s have higher environmental risk associated with the activity. Level 2s have lower environmental risk associated with the activity.

DERM will be conducting a range of planned audits and inspections, concerning compliance with the EA conditions and with the EP Act, as described below.

Key focus areas for these inspections and audits include:

- compliance with the CSG Water Management Plan
- assessment of EA conditions to ensure environmental risk is adequately addressed
- sampling techniques and monitoring programs
- adequate bunding and fencing for wildlife protection
- vegetation clearing restrictions
- rehabilitation
- notification obligations.

The main commitments to be undertaken by DERM are:

- 25 inspections of level 1 activities and 30 inspections of level 2 activities
- 24 audits of the construction phase of LNG facilities
- unscheduled audits and inspections.

### **General *Water Supply (Safety and Reliability) Act 2008***

The Water Supply Act is the primary mechanism to ensure the provision of safe recycled water, and the protection of drinking water supplies from the potential impacts of CSG recycled water. The Water Supply Act contains a framework for regulating CSG recycled water that impacts on town drinking water supply sources. Generally, an RWMP is required before supply of CSG recycled water commences (unless the CSG recycled water provider proves there is no material impact on a drinking water supply source and an exclusion decision is made by DERM).

DERM will be conducting a range of planned audits and inspections, concerning compliance with approved CSG RWMPs or exclusion decision conditions with the Water Supply Act, as described below. Key focus areas for these inspections and audits include:

- compliance with the relevant CSG RWMP

- assessment of any RWMP or exclusion conditions to ensure public health risk is adequately addressed
- sampling techniques and monitoring programs
- notification obligations.

The main commitments to be undertaken by DERM are:

- respond to incident reporting and monitor industry responses and reporting obligations
- respond to complaints or intelligence provided to the regulator that would trigger a spot audit
- review quarterly reporting information against RWMP or exclusion conditions
- contribute to planned DERM joint inspections and audits.

## **General Water Act 2000**

The Water Act requires that an Underground Water Impact Report (UWIR) be prepared by the QWC for any declared Cumulative Management Area (CMA) or by the relevant petroleum tenure holder for any other area. The UWIR must contain certain information, but must also set out a spring impact management strategy and a water monitoring strategy. Responsible tenure holders identified in the UWIR must then comply with the strategy requirements which relate to them.

In addition, the Water Act requires that baseline assessments be undertaken to determine the condition of water bores prior to undertaking activities, the results of which will be provided to the QWC. Where a UWIR identifies that a bore is likely to be affected in the future, a bore assessment must be undertaken (the results of which are also provided to the QWC) to contribute to the development of make good agreements. A final report is also required to be submitted prior to the closure of a tenure detailing with how the tenure holder has complied with all make good obligations.

DERM will need to ensure that all of these requirements are being met, including:

- water monitoring and spring management commitments in approved UWIRs
- baseline assessments are undertaken within the approved timetables or as directed by the chief executive and in compliance with the baseline assessment guideline (when published)
- bore assessments are undertaken when required through UWIR predictions or as directed by the chief executive and in compliance with the bore assessment guideline (when published)
- reaching make good agreements for bores with impaired capacity
- complying with chief executive directions (such as providing information, undertaking monitoring activities and emergency directions).

## General Forestry Act 1959

The *Forestry Act 1959* is the mechanism to ensure that the use of State owned terrestrial quarry material is appropriate and compensated in the community interest. DERM will be conducting a range of desktop and field inspections to verify that the use of State quarry material by CSG operators are authorised and in compliance with the terms and conditions of their authorisations.

The main commitments to be undertaken by DERM are:

- the education of CSG operators (and their contractors) on the requirement to hold a sales permit issued under the *Forestry Act 1959* to get and use State owned quarry material
- responding, where possible within required timeframes, to applications from CSG operators for sales permits to get and use State owned quarry material
- investigation of complaints and/or undertaking audits of any unauthorised take and/or use of State owned quarry material and to take appropriate action where there is established non-compliance.

## General compliance monitoring/assistance

- Continue to deliver education to both industry and the community about the obligations which exist under the:
  - EP Act and EAs
  - Water Act and UWIR
  - Water Supply Act and RWMP
  - Forestry Act.
- notify relevant landholders once the audit has been finalised
- continued management of emergent, critical and maintenance issues
- respond to public reports

## Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Planned audits and inspections	To track and manage the environmental performance of the CSG industry and impacts on Queensland's environment	<p>To ensure industry holds and complies with the correct level of environmental authority for the activity being carried out</p> <p>To improve outcomes for protecting receiving waters, including groundwater, from discharge impacts, and protecting environmentally sensitive areas and</p>	<p>An assessment of compliance by the CSG operators commenced in August 2010 and will continue until December 2011</p> <p>Level 1 and 2 CSG operators, as well as UCG trials, will be proactively inspected</p> <p>DERM will conduct 25 inspections of level 1</p>	<p>Minimise harm to high value conservation areas, namely Category A, B and/or C environmentally sensitive areas</p> <p>Manage risk of dams failing so as to prevent contaminant</p>

		<p>important agricultural land</p> <p>To increase awareness of rehabilitation practices, challenges faced and success rates</p> <p>To ensure that residual salt is managed and not allowed to contaminate the landscape</p> <p>To minimise and ensure remediation of impacts to other water users from CSG water extraction activities</p> <p>To minimise the impacts on the amenity of the community</p> <p>To monitor compliance with the CSG Water Management Plan</p> <p>To ensure that the correct sampling techniques are being utilised and that the monitoring programs are adequately measuring environmental impacts</p> <p>To ensure that notification requirements are being met for both landholders and DERM</p> <p>To ensure that sampling results are being analysed in a timely manner</p>	<p>activities and 30 level 2 activities</p> <p>DERM will conduct 12 dredging inspections (i.e. 1 per month) of the construction phases of LNG facilities</p> <p>DERM will conduct 12 island inspections of the construction phases of LNG facilities</p> <p>DERM will conduct monitoring and analysis of 300 bores by December 2011</p> <p>Compliance inspections will assess disturbance to land, water management and releases, dam management including hazard assessment and reporting, and rehabilitation of completed activities</p> <p>Compliance inspections of construction activities will include assessment of compliance with the marine species monitoring program, management of sediment plumes, disposal of dredge spoil</p> <p>Community concerns about CSG activities will be responded to, and landowner opportunities and access to information on CSG activities on their properties will be enhanced</p>	<p>releases to land and/or waters</p> <p>Rehabilitation successfully undertaken to restore the land after activities cease</p> <p>Increased compliance with EA conditions</p> <p>Promotion of vigilance and/or awareness in terms of notification requirements and monitoring regimes</p> <p>Monitoring information provided by CSG operators is independently verified</p> <p>Increased level of information provided to the community</p>
<p>Unscheduled audits and inspections</p>	<p>To track and manage the environmental performance of the CSG industry and impacts on Queensland's environment</p>	<p>As above</p>	<p>Unscheduled audits and inspections will be conducted when triggered by intelligence received from the community, planned inspections or other sources</p>	<p>As above</p>

Further information – *Environmental Protection Act 1994*, *Environmental Protection (Water) Policy 2009*,

## CSG water management – discharge/injection

One of the key activities regulated by DERM is the discharging of CSG water to groundwater and surface waters by CSG operators, with a focus on impacts to drinking water supplies and environmental values. In addition to the comprehensive audits undertaken on CSG operators discussed above, DERM will also conduct some compliance activities which focus in on the discharge operations of the CSG industry to ensure they are complying with the relevant environmental and public health requirements. It is noted that most operations are yet to commence production, so discharge activities will increase, as will the Department's compliance focus on this activity, in the coming years.

DERM will be conducting a range of planned audits and inspections as described below. Key focus areas for these inspections and audits include:

- compliance with the CSG Water Management Plan
- compliance with a CSG RWMP or exclusion decision conditions (where relevant)
- assessment of operational procedures, control systems, and contingency plans
- auditing sampling techniques and monitoring programs.

The main commitments to be undertaken by DERM are:

- inspections of 5 water discharges to surface water sites for level 1 activities
- inspections of 5 injection sites (including trials)
- 5 audits of well construction and completion reports
- water quality test results and incident reports.

### General compliance monitoring/assistance

- continue to deliver education to both industry and the community about potential impacts of CSG operations on groundwater and surface waters, with a focus on impacts to drinking water supplies and environmental values
- notify relevant landholders once the audit has been finalised
- respond to public reports.

### Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Planned audits and inspections	To track and manage the performance of the CSG industry and	To improve outcomes for protecting receiving waters, including groundwater, from discharge impacts, and protecting	An assessment of compliance by the CSG operators will commence in Jan 2011 and	Minimise harm to high value conservation areas, namely Category A, B and/or C

	its impacts on receiving environment and public health	<p>environmentally sensitive areas</p> <p>To promote operational planning in relation to potential environmental impacts caused during wet seasons</p> <p>To protect public health and safeguard town drinking water supplies, by ensuring appropriate systems and procedures are in place to manage CSG water activities</p> <p>To ensure that appropriate systems and procedures are in place to manage discharge activities</p> <p>To ensure that the CSG Water Management Plan is being complied with</p> <p>To ensure that the CSG RWMP or exclusion conditions are being complied with</p> <p>To ensure that the correct sampling techniques are being utilised and that the monitoring programs are adequately measuring any potential impacts</p> <p>To ensure that sampling results are being analysed in a timely manner</p> <p>To ensure compliance with the RWMP (or Interim RWMP), including public health standards</p>	<p>continue until December 2011</p> <p>DERM will conduct inspections of 5 water discharges to surface water sites for level 1 activities*</p> <p>DERM will conduct inspections of 5 water discharges to groundwater (i.e. injection) sites, including trials*</p> <p>DERM will also conduct 5 audits of well construction and completion reports**</p> <p>Community concerns about CSG activities will be responded to, and landowner opportunities and access to information on CSG activities on their properties will be enhanced</p> <p>DERM will conduct 5 audits of operations to check compliance against RWMP, interim RWMP or exclusion decisions***</p>	<p>environmentally sensitive areas</p> <p>Increased compliance with EA conditions</p> <p>Promotion of vigilance and/or awareness in terms of sampling techniques and monitoring regimes</p> <p>Monitoring information provided by CSG operators is independently verified</p> <p>Increased level of information provided to the community</p>
Post supply requirements	To ensure safe and reliable drinking water supply even after operations have ceased	Post supply conditions could include requirements for monitoring water quality, reporting to the regulator and for on-going procedures and capacity to deal with incidents and respond in an emergency	DERM will audit compliance against any post supply conditions	
Review exclusion decisions under the Water Supply Act	To identify any potential impacts on drinking water supply sources	<p>To review monitoring data from CSG operators on water quality and quantity</p> <p>To assess the potential for cumulative impacts on drinking water supply sources</p>	To ensure that if circumstances change, indicating potential for impacts on drinking water supply sources, then exclusion decisions will be revoked and an RWMP required	<p>Any potential impacts on drinking water supply sources and water quality are identified to ensure protection of public health</p> <p>Improved data available on water quality</p>
Review quarterly reporting	To identify any potential impacts on	To review data collected and provided for quarterly reporting requirements to ensure	Ensure quarterly reporting is consistent with the operational requirements of the RWMP	Ensure transparency and accuracy in quarterly reporting

obligations	drinking water supply sources	accuracy and conditions adherence	or exclusion conditions	and incident reporting The risks to public health are minimised and correctly managed
Reporting requirements	To ensure compliance	Recycled water providers (including CSG recycled water providers) will be required to make a report publically available, including water quality monitoring results and details of any incidents given to the regulator	DERM will check that reports are made publically available	Increased compliance with reporting requirements

\* It is noted that the number of inspections conducted will be dependant upon the number of discharges that occur.

\*\* It is noted that the number of audits will be dependant upon the number of wells completed.

\*\*\* It is noted that the number of audits conducted will be dependant upon the number of RWMPs, interim RWMPs or exclusion decisions in existence.

Further information – *Environmental Protection Act 1994, Water Supply (Safety and Reliability) Act 2008.*

## CSG water management – impacts of groundwater extraction

One of the key activities regulated by DERM is the impacts of groundwater extraction on the groundwater levels and quality, and on groundwater users. In addition to the comprehensive audits undertaken on CSG operators discussed above, DERM will also conduct compliance activities which focus on the Water Act requirements. In particular, in relation to the baseline assessment plans, UWIR, baseline assessments, bore assessments, water monitoring strategy and spring impact strategy obligations and any chief executive directions.

Assessments of compliance will be required when triggered by either a chief executive requirement or the UWIR and any requirements associated with:

- water monitoring strategy
- spring impact management strategy
- baseline assessment plans
- outcomes of baseline and bore assessments
- make good agreements.

### General compliance monitoring/assistance

- assess and monitor compliance with UWIRs; respond to public reports.
- continue to deliver education to both industry and the community about potential impacts of CSG operations on groundwater, with a focus on impacts on aquifers and other bore water users impacted by the CSG activity.

### Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Underground Water Impact Reports	To track and manage the environmental performance of the CSG industry and impacts on groundwater management	<p>To improve outcomes for managing groundwater impacts of activities</p> <p>To assess the UWIR provided to DERM including if the report is adequate, if and how it must be modified</p> <p>To assess compliance with the requirements of the UWIR including compliance with the water monitoring strategy and the spring impact strategy contained in the report</p> <p>To ensure compliance with the UWIR includes that responsible tenure holders within an <i>immediately affected area</i> engage</p>	<p>An assessment of the UWIR, whether it is received on time and whether the content is appropriate</p> <p>Assessment of compliance with UWIRs will commence in Jan 2012 when the first UWIRs are scheduled to be considered by the chief executive. The exact scope of the work will depend upon the requirements of the UWIR on CSG operators, but is likely to principally include ensuring water monitoring and spring management commitments in approved UWIRs are met</p>	<p>Ensure long term management of underground water is achieved</p> <p>Increased level of information provided to the community</p> <p>Increased accuracy of groundwater modelling and understanding of aquifer interconnectivity</p>

		with relevant landholders to undertake a bore assessment and negotiate a make good agreement	Community concerns about the impact of CSG operations on underground water will be responded to, and landowner opportunities and access to information on CSG activities on their properties will be enhanced	
Baseline assessment and baseline assessment plans	To collect information and establish a water supply bore's condition	<p>Ensure baseline assessments plans have been prepared where legislatively required and according to any guidelines</p> <p>Baseline assessments have been conducted in line with the approved timetable and according to any guidelines</p> <p>Ensure bore owners are notified of outcomes of baseline assessment</p> <p>Ensure that a copy of the baseline assessment is supplied to the QWC in the approved form</p> <p>Ensure compliance with any chief executive directions to undertake a baseline assessment</p>	<p>Assess any submitted baseline assessment plan for consistency with legislative requirements, including the baseline assessment table</p> <p>Assess compliance with any conditions attached to a Baseline Assessment Plan approval</p> <p>Assess compliance of baseline assessments undertaken with the requirements of the baseline assessment guideline (when published)</p>	<p>Increased level of compliance with baseline assessment guidelines</p> <p>Increased level of information provided to bore owners and the QWC</p> <p>Ensuring accurate baseline information is obtained to assist bore owners in the negotiation of make good agreements in the future</p>
Make good agreements	Facilitate make good agreements between bore owners and tenure holders	Ensure that supply of water is maintained for owners of water bores that are impaired or likely to be impaired by petroleum tenure operations	Ensure companies have negotiated make good agreements where required	Increased level of compliance with make good obligations
Chief executive directions	Dependant on directions given	Dependant on directions given	<p>Assess compliance with chief executive directions (provided through a notice)</p> <p>Includes compliance with chief executive direction in relation to restoring water supply or preventing or minimising the likelihood of a bore having an impaired capacity</p> <p>If tenure holder doesn't comply, and chief executive takes the action, then tenure holder must cover the cost</p> <p>Also includes directions to provide information and undertake monitoring activities</p>	High level of compliance with chief executive directions

Further information – *Water Act 2000*

## Stimulation (including hydraulic fracturing activities) – including BTEX

Stimulation (including hydraulic fracturing) activities have been identified by DERM as a key compliance area due to the potential impacts to the environment, including water resources. DERM will undertake a range of compliance activities to ensure that fracking activities are undertaken in accordance with the regulatory framework.

New regulations for BTEX were inserted into the EP Act in 2010. Key compliance activities have been identified in this area to ensure that the new requirements regarding the use of BTEX are being complied with.

The main commitments to be undertaken by DERM are:

- to attend and audit 15 fracking activities
- 15 unplanned audits of 10 fracking activities
- conducting a desktop audit of all fracking activities.

### General compliance monitoring/assistance

- audit the reporting requirements of fracking activities
- continue to educate both the community and industry concerning legislative requirements and the expectations of government regarding fracking activities
- carry out increased levels of education for the CSG industry concerning the use of BTEX
- develop information sheets for public concerning BTEX.

### Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Planned audits and inspections	To track and manage the environmental performance of the CSG industry in relation to fracking activities	<p>To ensure that CSG operators are appropriately managing the fracking process including the use of chemicals in this process</p> <p>To ensure adequate monitoring is being done of the fracking process, including DERM undertaking its own monitoring of this process</p> <p>To ensure that the reporting requirements concerning this process are being complied</p>	Attend and audit 15 fracking activities	<p>Increased compliance with EA conditions</p> <p>Promotion of vigilance and/or awareness in terms of fracking requirements and monitoring regimes</p> <p>Increased environmental performance of CSG operators in relation to fracking</p>

		with.		Monitoring information provided by CSG operators is independently verified  Increased level of information provided to the community
Unscheduled audits and inspections	To track and manage the environmental performance of the CSG industry in relation to fracing activities	As above	Attend and audit 10 fracing activities	As above
Desktop audits	To track and manage the environmental performance of the CSG industry in relation to fracing activities	To ensure adequate monitoring is being done of the fracing process, including DERM undertaking its own monitoring of this process  To ensure that the reporting requirements concerning this process are being complied with	Conduct a desktop audit of all fracing activities to ensure reporting requirements have been completed and activities are in accordance with fracing risk assessments and environmental management plans	Promotion of vigilance and/or awareness in terms of fracing requirements and monitoring regimes  Increased environmental performance of CSG operators in relation to fracing

Further information – *Environmental Protection Act 1994*, Environmental Protection (Water) Policy 2009

## Beneficial use approvals

CSG water may be used for a number of beneficial uses under a Beneficial Use Approval (BUA) including aquaculture and human consumption of aquatic foods, coal washing, dust suppression, industrial use, washing down and cleaning of flood affected infrastructure, irrigation and livestock watering. DERM will undertake audits and inspections to ensure that beneficial use activities are being conducted in accordance with the conditions of the BUA.

The main commitments to be undertaken by DERM are:

- 5 audits of beneficial use approvals.

## General compliance monitoring/assistance

- continue to deliver education to both industry and the community about the benefits and potential uses of BUAs
- notify relevant landholders once the audit has been finalised
- respond to public reports regarding beneficial use approval activities.

## Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Planned audits and inspections	To track and manage the environmental performance of the CSG industry and the impacts on Queensland's environment in relation to BUAs	<p>To ensure industry holds and complies with BUAs</p> <p>To improve outcomes for protecting receiving waters, including groundwater, from discharge impacts, and protecting environmentally sensitive areas and important agricultural land</p>	<p>BUAs related to CSG activities will be proactively assessed.</p> <p>DERM will conduct 5 audits of BUAs*</p> <p>Compliance inspections will assess level of compliance with BUA conditions and environmental impacts</p>	<p>Minimise harm to high value conservation areas, namely Category A, B and/or C environmentally sensitive areas</p> <p>Increased compliance with BUA conditions</p> <p>Promotion of vigilance and/or awareness in terms of notification requirements and monitoring regimes</p> <p>Monitoring information provided by CSG operators is independently verified</p> <p>Increased level of information provided to the community</p>

\* It is noted that the number of audits conducted will be dependant upon the number of beneficial use approvals issued.

Further information – *Environmental Protection Act 1994*, Coal Seam Gas Water Management Policy.

## Monitoring regime

The cornerstone of DERM's compliance activities in the CSG to LNG industry is a robust monitoring regime that ensures that any impacts of the industry on various receiving environments are identified. DERM has a range of activities identified in this key compliance area. Some activities are immediate; others are directed at looking at establishing a program which will allow for the assessment of impacts, including cumulative impacts, over the longer term. This is a key component to support DERM's compliance activities and the adaptive management framework in moving towards an improved understanding of groundwater modelling systems and impacts.

The main commitments to be undertaken by DERM are:

- monitoring and analysis of 300 bores by December 2011
- roll out of the Point Source Database to CSG operators by December 2011
- the development of an ongoing system of bore monitoring
- desktop audits of the sampling techniques of 4 projects
- 8 physical audits of sampling techniques.

### General compliance monitoring/assistance

- DERM will conduct a range of proactive monitoring and reactive monitoring for incidents
- continue to educate industry about sampling techniques and appropriate monitoring regimes
- results from DERM monitoring will be proactively released to the public.

### Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Monitoring program for bores	To track and manage the environmental performance of the CSG industry in relation to groundwater impacts	<p>To ensure monitoring undertaken by CSG operators is independently verified</p> <p>To review and assess baseline information, cumulative impacts and groundwater impacts (as provided by the CSG operators and QWC)</p> <p>To identify water quality impacts of CSG operations</p> <p>To audit the monitoring data provided by CSG operators and the monitoring</p>	DERM will conduct monitoring and analysis of 300 bores by December 2011	<p>Improved data available on groundwater in Surat basin</p> <p>Improved level of information provided to community on groundwater monitoring</p> <p>Any potential impacts on water quality (contaminants), water quantity, levels and groundwater impacts by CSG operators are identified</p> <p>Monitoring information provided</p>

		techniques of CSG operators		by CSG operators is independently verified
Roll out of the Point Source Database to CSG operators	To track and manage the environmental performance of the CSG industry in relation to potential environmental impacts on water (surface water and ground water)	<p>To ensure monitoring undertaken by CSG operators is assessed and audited</p> <p>To ensure baseline information is available</p> <p>To gather information to inform the adaptive management framework</p> <p>To gather data to assist with cumulative environmental impact assessment</p>	<p>Re-design of the Point Source Database to include CSG information</p> <p>Working with industry to set up the provision of information to the database</p> <p>Produce automated reports to assist with DERM compliance checking and broader public reporting system</p> <p>System operational by December 2011</p>	<p>Improved data available on environmental releases and potential impacts</p> <p>Any potential non-compliance by CSG operators is identified</p> <p>Monitoring information provided by CSG operators is assessed and audited</p> <p>Improved data available to help assess cumulative impacts</p> <p>Improved data available to inform adaptive management framework</p>
Monitoring Regime (licensee data)	<p>To track and manage the environmental performance of the CSG industry in relation to potential environmental impacts on water (surface water and ground water)</p> <p>To track and manage impacts on drinking water supplies</p>	<p>To review and assess baseline information, cumulative impacts and groundwater impacts, impacts on drinking water supplies (as provided by the CSG operators and QWC)</p> <p>To identify water quality impacts of CSG operations</p> <p>To audit the monitoring data provided by CSG operators and the monitoring techniques of CSG operators</p> <p>To ensure monitoring undertaken by CSG operators is independently verified</p>	<p>Review and risk assessment of licensee monitoring data:</p> <ul style="list-style-type: none"> <li>(i) review of near-field impacts from discharge data</li> <li>(ii) broad risk assessment of cumulative impacts for Condamine (surface water only)</li> </ul> <p>The development of an ongoing system of bore monitoring will be based on a review of the success of the program and the initial results/data from the monitoring program administer by QWC</p>	<p>Potential near-field impacts by CSG operators identified</p> <p>Monitoring information provided by CSG operators is assessed</p> <p>Potential for cumulative impacts of Condamine assessed</p> <p>Improved knowledge of suitability of current discharge licensing approach.</p> <p>Increased knowledge of potential environmental impacts</p>
Audit of sampling techniques	To track and manage the performance of the CSG industry in relation to sampling techniques	To ensure that appropriate methodology and expertise is used by CSG companies in their sampling activities	<p>Desktop audit of the sampling techniques of 4 projects</p> <p>DERM will conduct 25 physical audits of sampling techniques of CSG companies including observation of processes and duplicate sampling and independent analysis</p>	<p>Improved level of expertise in sampling undertaken by CSG companies</p> <p>Improve the reliability of data collected by industry</p>

Further information – *Environmental Protection Act 1994*, Environmental Protection (Water) Policy 2009, *Water Act 2000*

## Regular reviews

An adaptive management regime is the cornerstone of DERM's compliance activities in the CSG to LNG industry. To ensure that adjustments and amendments are made as necessary, reviews of decisions or conditions may be required at regular intervals, particularly following receipt of new information or monitoring results.

The main commitments to be undertaken by DERM are:

- regularly reviewing an exclusion decision under the Water Supply Act
- regularly reviewing EA conditions when new information becomes available
- utilising the monitoring information received under the UWIR and baseline assessment plans to assess the underground water impacts.

### Information to be reviewed and adaptations to be made

DERM will conduct a range of review of information including:

- monitoring data received from tenure holders
- monitoring data received from bore assessments and baseline assessments
- analysing data received from DERM bore monitoring
- emerging scientific data from Healthy Headwaters and other research programs.

### Key review activities

Activity	Goal	Objectives	Scope	Expected outcomes
Monitoring data and scientific research	To ensure the effective and appropriate operation of the adaptive management regime	To ensure regulation responds to what is happening on-the-ground and that the environment and landholders are protected, even in unforeseen circumstances	Regular review and analysis of monitoring data and scientific research Amendment of review decisions and environmental authority conditions (as necessary)	To ensure that best practice environmental management is continually implemented as technologies and knowledge develop over time
Review Exclusion Decision	To protect public health	To ensure that RWMPs are required where impacts on public health may occur To identify water quality impacts of CSG operations To audit the monitoring data provided by CSG operators and the monitoring techniques of CSG operators	To ensure that if circumstances change that indicate that a RWMP needs to be developed, exclusion decisions are amended	Improved data available on groundwater in Surat basin Monitoring information provided by CSG operators is independently verified

<p>Monitoring Regime (licensee data)</p>	<p>To track and manage the environmental performance of the CSG industry in relation to potential environmental impacts on water (surface water and ground water)</p> <p>To track and manage impacts on drinking water supplies</p>	<p>To review and assess cumulative impacts and groundwater impacts, impacts on drinking water supplies (as provided by the CSG operators)</p> <p>To identify water quality impacts of CSG operations</p> <p>To audit the monitoring data provided by CSG operators and the monitoring techniques of CSG operators</p> <p>To ensure monitoring undertaken by CSG operators is independently verified</p>	<p>Review and risk assessment of licensee monitoring data:</p> <ul style="list-style-type: none"> <li>(i) review of near-field impacts from discharge data</li> <li>(ii) broad risk assessment of cumulative impacts for Condamine (surface water only)</li> </ul> <p>The development of an ongoing system of bore monitoring will be based on a review of the success of the program and the initial results/data from the monitoring program administer by QWC</p>	<p>Potential near-field impacts by CSG operators identified</p> <p>Monitoring information provided by CSG operators is assessed</p> <p>Potential for cumulative impacts of Condamine assessed</p> <p>Improved knowledge of suitability of current discharge licensing approach</p> <p>Increased knowledge of potential environmental impacts</p>
<p>Audit of sampling techniques</p>	<p>To track and manage the performance of the CSG industry in relation to sampling techniques</p>	<p>To ensure that appropriate methodology and expertise is used by CSG companies in their sampling activities</p>	<p>Desktop audit of the sampling techniques of 4 projects</p> <p>DERM will conduct 25 physical audits of sampling techniques of CSG companies including observation of processes and duplicate sampling and independent analysis</p>	<p>Improved level of expertise in sampling undertaken by CSG companies</p> <p>Improve the reliability of data collected by industry</p>

Further information – *Environmental Protection Act 1994, Environmental Protection (Water) Policy 2009, Water Act 2000, Water Supply (Safety and Reliability) Act 2008*

## Strengthening the compliance framework

There are a range of actions that DERM will undertake to strengthen the existing compliance framework to cater specifically for the CSG to LNG industry.

The main commitments to be undertaken by DERM are:

- complaints management framework to be developed and implemented by the start of the plan
- CSG Compliance Portal operational and accessible by June 2011
- development of compliance indicators and reporting regime by June 2011
- development of options to encourage industry to go beyond compliance by September 2011.

### General compliance monitoring/assistance

- annual review of CSG Regulatory Framework including relevant legislation, policies, guidelines etc
- developing and publishing CSG guidelines, fact sheets and policies
- continue to work with stakeholders to improve understanding of the CSG Regulatory Framework
- continual update of information available to the public through DERM's website.

### Key compliance activities

Activity	Goal	Objectives	Scope	Expected outcomes
Improved complaint management	To ensure complaints and requests for information are dealt with promptly and efficiently by DERM	<p>To provide an individual case manager to each complaint or request for information</p> <p>To ensure that DERM's response to complaints and information requests is co-ordinated through the case manager and provide a single point of contact between the complainant and DERM</p> <p>To develop, maintain and assist with open and constructive communication between complainants and the relevant CSG companies</p> <p>To facilitate a formal dispute resolution process where required</p>	<p>New business unit to be created and staff placed in operational centres within the area of CSG operations by 1 November 2010</p> <p>Complaints management framework developed and implemented by 1 November 2010</p> <p>Regular attendance by staff to community and stakeholder meetings as required</p> <p>Case managers to co-ordinate responses from various areas within DERM to ensure that a single, clear and concise response is provided to all complaints and requests for information received in relation to CSG activities</p> <p>Database of all complaints and information</p>	<p>Improved client satisfaction in regards to complaint and information request handling</p> <p>Staff based in regional and local centres to enable personalised attention and resolution of received complaints</p> <p>Complaints and issues are recorded and reported against to highlight recurring issues and input into future policy development</p> <p>Better provision of CSG related information to community and stakeholders</p>

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			requests is maintained	
Compliance Portal	To inform the community about the compliance activities undertaken by DERM	To develop a compliance portal of information that links to the government LNG portal	CSG Compliance Portal operational and accessible by June 2011	Increased level of information being made available to the community  Increased transparency in the regulation and performance of the CSG industry
Compliance Indicators	To track the environmental performance of industry	To develop indicators which will allow for meaningful discussion about the performance of the CSG industry over time	Develop indicators and reporting regime by June 2011	Meaningful measurement of and reporting on the performance of the CSG industry over time
Beyond Compliance	To improve the environmental performance of the CSG industry	To develop regulatory options to encourage operators to go beyond compliance and continually improve their environmental management by reducing environmental and natural resources impacts	Development of regulatory options by August 2011	Development of policy responses to encourage CSG operators to continually improve their environmental management

Further information – *Environmental Protection Act 1994, Water Act 2000, Water Supply (Safety and Reliability) Act 2008*

## **More information**

To view this plan, DERM annual compliance plan, the Enforcement Guidelines or the Compliance Strategy 2010–14, visit <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>.

For general enquiries call 13 QGOV 13 74 68.

To provide feedback on this plan, visit <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)> to lodge a comment or complaint.