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LANDHOLDER CSG PROJECT



CHINCHILLA

CSG GROUNDWATER FIELD DAY

2015



These workshops are delivered by AgForce Projects' CSG team with the support of the Queensland Government, the GasFields Commission Queensland, Queensland Resources Council and Australian Petroleum Production and Exploration Association.



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➤ **Landholder CSG and Mining Project**
(Funded in partnership with the Queensland State Government, Queensland Resources Council (QRC), Australian Petroleum Production and Exploration Association (APPEA) and the GasFields Commission Queensland.)

- Landholder CSG negotiation preparation sessions
- CSG industry technical field days
- Property computer mapping workshops


Assistance and workshops available to all landholders across Queensland.

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Topics


- Overview of hydrogeology and predictions for groundwater impacts
- Surat Basin Underground Water Impact Report (UWIR)
- Water regulation, compliance and enforcement provisions
- Make good framework and an update on make good agreements so far
- Landholder rights under the Make Good Framework and what to consider

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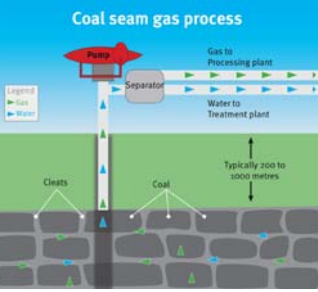
Note: these sessions provide an overview of information and should not be used in lieu of legal and other professional advice.

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What is CSG?

Coal seam gas process



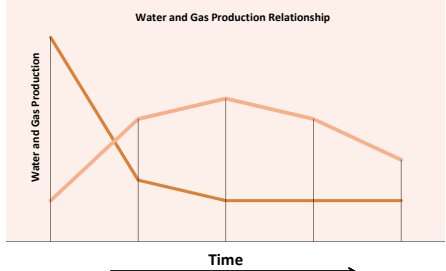
- Wells are drilled into coal seam (generally 300-1000m)
- Water is pumped out to lower the pressure (depressurize seam)
- CSG is released from the coal as pressure is reduced
- Water is separated from gas at the surface

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Typical water production curve

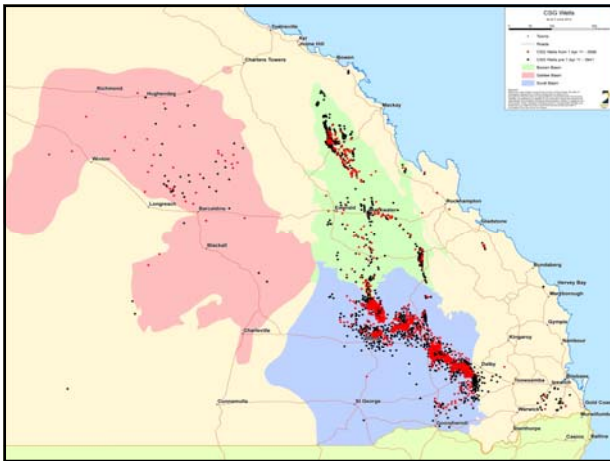
Water and Gas Production Relationship

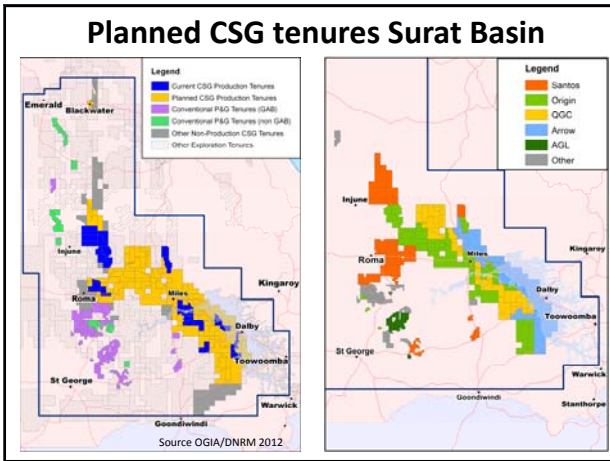


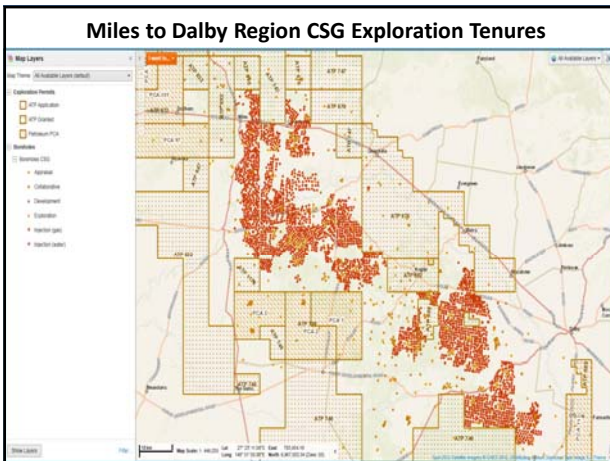
Water and Gas Production

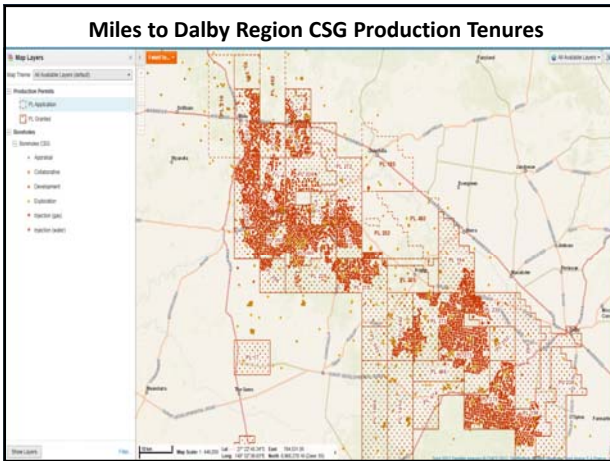
Time

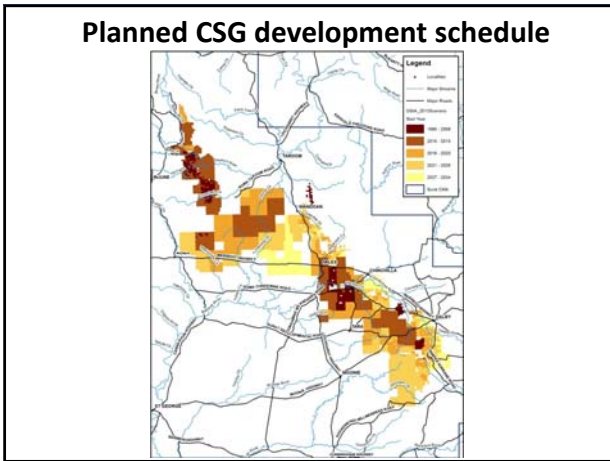
— Water
— Gas











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Water management

- UWIR Groundwater impacts
- Make Good (MG)
- Baseline assessments
- OGIA update

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Surat Basin Cumulate Management Area

- Surat Basin CMA declared in 2010
- Covers a boundary of 50km outside nearest CSG tenure
- Landholder rights on tenure are the same as those off tenure inside CMA

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Groundwater management – what is it?

CMA

- Declaration of Cumulative Management Area (CMA)
- Requires UWIR be developed by OGIA with data from CSG companies and DNRM

UWIR

- Immediately Affected Area (IAA)- impacts within 3yrs
- Long-term Affected Area (LTAA)- impacts past 3yrs

Make Good

- IAA bores must negotiate a MG agreement now
- LTAA bores need to develop a MG agreement before impacts occur

UWIR is reviewed every three years with a new model due in 2015

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Groundwater impacts and make good

The **Immediately Affected Area (IAA)** for an aquifer is the area within which water level impacts are predicted to exceed the trigger threshold within three years.

85 registered bores identified in UWIR to be in **IAA**. Water sourced from Walloon Coal Measures.

MG agreements will be entered into and further bore assessments completed. Seek legal advice.

QLD CSG Globe - Underground Water Immediately Affected Area (IAA)

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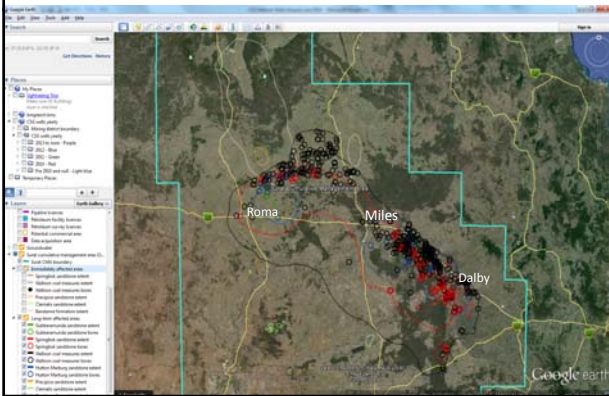
Groundwater impacts and make good

The **Long-term Affected Area (LTAA)** for an aquifer is an area within which impacts are predicted to exceed trigger threshold at any time in the future.

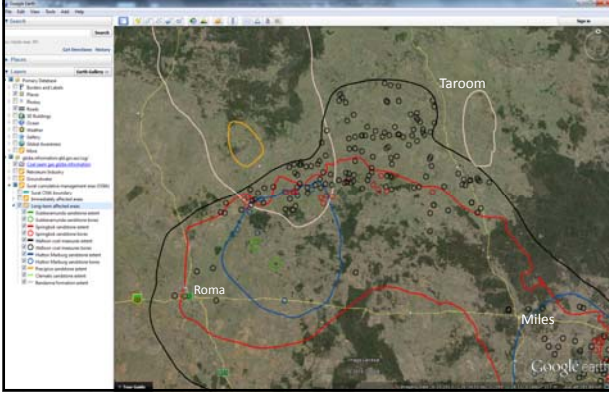
528 registered bores identified in the **LTAA**. These bores are in the Walloon Coal Measures, Springbok Sandstone and Hutton Sandstones.

In **LTAA** the tenure holder can be directed by the regulators (DEHP) to undertake a baseline assessment and if necessary enter into a 'Make Good' agreement with the bore owner.

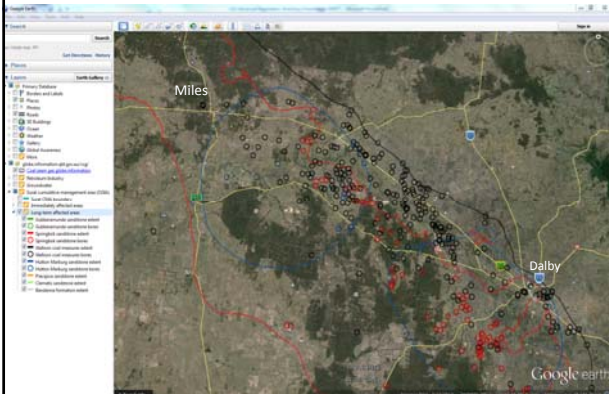
QLD CSG Globe - Underground Water Long-Term Affected Area (LTAA)



QLD CSG Globe - Underground Water Long-Term Affected Area (LTAA)



QLD CSG Globe - Underground Water Long-Term Affected Area (LTAA)



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Make Good – What is it?

A **'Make Good'** agreement is separate to a CCA and refers to a resource company's obligation to make good where there is, or predicted to be, **impaired capacity** of a bore due to CSG activities.

For example, MG provisions could include:

- Deepening the bore
- Drilling a new bore into another aquifer
- Compensation
- Lowering the pump
- Increasing pump size/capacity
- Surface water

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Make Good Agreement process

- 1. UWIR identifies IAA bores**
 - Bores identified by the model
 - All affected landholders have been contacted
- 2. Bore assessments**
 - Confirming baseline bore test results
 - Not necessarily undertaken unless requested by the landholder
 - Intent is to confirm modelled UWIR impact
 - Landholder needs to ensure adequacy of bore assessment
- 3. Negotiations**
 - Get legal advice
 - Legal and other professional costs "necessarily and reasonably" incurred are met
 - Utilise groundwater expertise within the CSGCU
 - Need to understand modelled impact in order to negotiate remedial provisions
 - Consider enforcement mechanisms
 - ADR mechanism in place
- 4. 'Make Good' agreement made**
 - If bore assessment models no future impact – a 'Make Good' agreement will be signed to confirm this
 - If impacted then impacts/projections reviewed every 3 years upon update of UWIR
 - Enforcement mechanisms contained in legislation and UWIR
- 5. Considerations**
 - Release company of future liability – if plug and abandon, removed from UWIR
 - Monitoring and review clauses for future impacts, develop your own triggers
 - Licensing requirements for new bores
 - 'Make Good' agreements are not listed on title and are binding on potential future parties
 - Increased costs and infrastructure required for changes to bores due to agreement

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Make Good Landholder Considerations

New / replacement bore	Compensation
Have you considered the difference in water characteristics of other aquifers? Including; water temp, pressure, mineral content, TDS, DO?	Taking compensation over a replacement water supply; how might this affect the value of the property or future use/productivity -Consider the importance/value of back up supplies
Will you require any new infrastructure or increased power? Such as cooling ponds/tanks or larger pump/pipes?	Taking compensation to drill your own bore- have you sort appropriate advice to confirm the desired aquifer is present and to confirm quote- what happens if it is more expensive after commencing drilling?
Are there any licensing requirements to move a bore or entitlement- check with DNRM before signing agreements this can be done	



Baseline Assessments


Stage of development	Responsibility for assessment
Before there is any activity in your area/on property	Recommended landholder undertake assessment - consider regional activities i.e. CSG field down the road or 100kms away
CSG company is granted an Authority To Prospect (ATP) (i.e. is conducting exploration)	Landholder should negotiate with CSG company to conduct or pay for baseline assessment prior to gaining access and negotiate ongoing monitoring/testing
CSG company obtains a Petroleum Lease (PL) (i.e. is going into production)	CSG company has an obligation to undertake a baseline assessment of each water bore in the tenure area. Company must, at least 10 business days before undertaking the assessment, give the landholder a notice and 30 days after completion, a copy of the report



When an agreement can be changed

When there is:

- A material change in circumstance
- Make good measures are ineffective
- Another effective and more efficient measure available



Make Good Update

- Initially 85 bores were identified in the IAA – via the Surat Underground Water Impact Report (Surat UWIR).
- Where there are questions about a particular bore, EHP, the CSG Compliance Unit and OGIA contribute to a determination whether the bore is in the IAA via groundwater assessments and investigations.
- As a result:
 - 25 bores (of the original 85) have been determined as not being IAA bores; and
 - 9 bores, which were not included in the Surat UWIR have been identified as IAA bores.
- **As a result of these investigations, the revised total is 69 registered bores located in the IAA.**


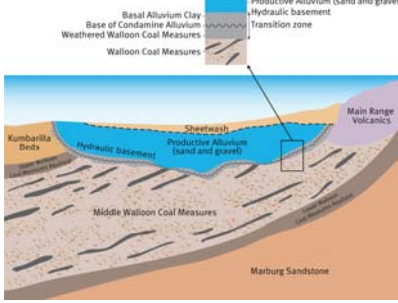
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OGIA Research

- Undertaking a research project designed to identify potential connectivity of the Condamine Alluvium (CA) with the Walloon Coal Measures.
- This study forms part of the requirements under the UWIR.
- Includes drilling monitoring bores and conducting pump tests.
- So far 130 bores have been surveyed to collect water level and hydrochemical data in the CA.
- Arrow Energy will undertake the activities on behalf of OGIA.

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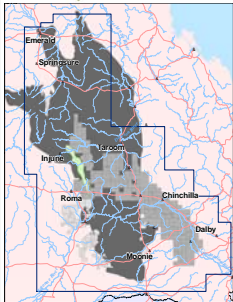
OGIA Update

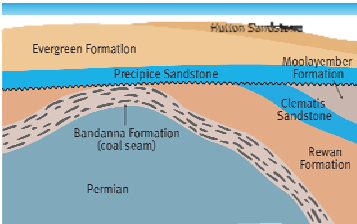
Thickness of the weathered zone under the Condamine Alluvium

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OGIA Update



There is an area near the production fields where the Precipice Sandstone is in direct contact with the Bandanna Formation.




Source OGIA/DNRM 2013



Impacts outside model predictions


- If a bore is impacted by CSG (regardless of being within or outside in the IAA or LTAA's) landholder rights are the same:
 - *Complaint made to the CSG company or DNRM*
 - *Bore investigation may be directed by DEHP or CSGCU*
 - *Make good agreement if required*
 - *Suitable water supply negotiated*
- Contact the CSG Compliance Unit Groundwater Investigation Team on (07) 4529 1500 or csq.enquiries@dnrm.qld.gov.au.



Environmental Impacts

- Make Good only refers to groundwater impacts, not surface water or most groundwater quality impacts.
- Negative impacts to surface water mostly covered by the Environmental Protection Act (1994).
- This includes:
 - Contamination of surface water (i.e. run off or spillage);
 - Unauthorised discharge to surface water systems; and
 - Fracking and any other potential environmental issues such as dust, light, noise, clearing vegetation and other environmental values.

Baseline	Conditions to consider
Groundwater supplies	Baseline bores prior to activities - <i>see AgForce bore checklist</i> . Consider ongoing monitoring and future uses/property development.
Surface water sources	Especially near roads or settling dust areas. Seek professional advice about testing requirements - many guidelines available.
Roads	Pre-development condition and understand the level of activity and anticipated road use by CSG company and highlight erosion prone areas. Insert wet weather access clauses in CCAs. Consider ongoing monitoring and condition reporting.
Weeds	Identify and locate all weeds of concern (declared or not) on property or neighbouring properties. Survey/baseline current burden and note CSG activity areas (well site, access road, wash down area).
Productivity	Consider Grazing BMP (or similar program) to benchmark your property against industry and provide baseline before any impact occurs. Seek professional advice (grazing consultants, agronomists, land valuer, etc).
Noise – if concerned	Consider sensitive areas including bores, yards, breeding paddocks and houses. Ask that noise modelling be provided by companies and/or review EA conditions.



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Monitor and review

- Review impacts
- Utilise professional advice
- Stay informed



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Issues and complaints

- Contact your company representative first;
- If no progress is made, contact the CSG Compliance Unit:
(07) 4529 1500 csg.enquiries@dnrm.qld.gov.au

or

AgForce Projects CSG Team
(07) 3236 3100 csg@agforceprojects.org.au

AGFORCE PROJECTS CSG IMPACT ASSESSMENT

AgForce Projects has compiled an impact assessment and list of considerations and possible conduct provisions for landholders to review before negotiating a conduct and compensation agreement (CCA) with a CSG company. The table below and list of further considerations in the appendix have been designed as a guide only and should be used in conjunction with consideration of your individual circumstances, specific concerns and legal advice. Any questions you highlight should be addressed through negotiations with your gas company representative.

Important: This is not an exhaustive list and each individual enterprise may operate different farming management systems. You will still require legal and other professional advice before signing a CCA.

AgForce Projects recommends that a property map and plan be used in negotiations with resource companies and many of the suggested considerations will refer to this. Please contact AgForce Projects to enquire about participating in free property computer mapping workshops or visit www.agforceprojects.org.au.

*Landholders should also include in their agreement the ability for each provision to be reviewed periodically, and if necessary, renegotiated.

Risk	Activity creating risk	Conduct and/or compensation	Considerations	Evidence	Ongoing
Spread of weeds	<ul style="list-style-type: none"> Vehicle travel Equipment entering and exiting 	Conduct	<ul style="list-style-type: none"> Wash down certificates Vehicle inspections (See appendix 2 for more weed considerations)	Baseline assessments and photo monitoring of current weed areas and weed burden	<ul style="list-style-type: none"> Assess weed condition on property Review wash down procedure and other weed mitigation measures Ensure ability, or a trigger in place, to review this consideration periodically*
Groundwater contamination	<ul style="list-style-type: none"> Well drilling Fracking 	Conduct	<ul style="list-style-type: none"> Pre-fracking report Baseline assessment of bore condition prior to CSG activity Make good provision in CCA (See appendix 3 for more water considerations)	Independent bore baseline assessment	<ul style="list-style-type: none"> Consider requirements for ongoing bore monitoring (see bore monitoring checklist, CSG workbook) Ensure ability, or a trigger in place, to review this consideration periodically*

Risk	Activity creating risk	Conduct and/or compensation	Considerations	Evidence	Ongoing
Erosion	<ul style="list-style-type: none"> Vehicle travel Construction of well pad,dams and roads Clearing 	Conduct	<ul style="list-style-type: none"> Flood control and erosion measures Property maps to determine preferred route. Highlight different road types to minimise disturbance and damage Building contour banks or bunding sites to control erosion (including rehabilitation) Flood plains/overland flow <p>(See appendix 4 for more road considerations)</p>	<ul style="list-style-type: none"> Baseline of road conditions (including photos) Current overland flow direction Natural contour banks 	<ul style="list-style-type: none"> Monitor risk areas for erosion Monitor cropping areas for increased rocks or sediment run off Monitor potential direction change of overland flow and rain water Ensure ability, or a trigger in place, to review this consideration periodically*
Dust	<ul style="list-style-type: none"> Increased traffic Cleared areas Track and pipeline construction 	Conduct and compensation	<ul style="list-style-type: none"> Speed limits Gravelling roads Dust suppressant Compensation for dust affected areas (stock unable to graze) <p>(See appendix for more considerations)</p>	<ul style="list-style-type: none"> Baseline assessment of road conditions Baseline of pasture conditions bordering activity areas (prevailing winds) 	<ul style="list-style-type: none"> Monitor road conditions and effectiveness of suppressant measures Monitor pasture conditions for adjoining areas and potential changes in grazing movements Ensure ability, or a trigger in place, to review this consideration periodically*
Stock escaping	<ul style="list-style-type: none"> Vehicle travel Gates left open 	Conduct	<ul style="list-style-type: none"> Financial penalty for time spent re-mustering stock and checking gates Install grids instead of gates (if desired) 3 strike system where continuous breach by individuals may result in expulsion <p>(See appendix for more considerations)</p>	Property plan/map detailing stock movement (i.e. grazing pattern) and location of gates	<ul style="list-style-type: none"> Monitor effectiveness of this program Ensure methods of submitting "fines" to accounts is confirmed and fines are paid Ensure ability, or a trigger in place, to review this consideration periodically*
Time detracted from business	<ul style="list-style-type: none"> Negotiations Checking gates Inspecting wash downs 	Conduct and Compensation	Developing a framework to be compensated for time taken from your business as a direct result of CSG activities on your property (See appendix for more considerations)	Method of recording time spent as a direct result of CSG activities calculated at an hourly rate	Ensure ability, or a trigger in place, to review this consideration periodically*

Risk	Activity creating risk	Conduct and/or compensation	Considerations	Evidence	Ongoing
Loss of lifestyle	<ul style="list-style-type: none"> Increased traffic around homestead Loss of amenity Light, noise and vibration pollution 	Conduct	<ul style="list-style-type: none"> Whether you want roads around house used and restricting traffic movements at certain times of the day (i.e. 7-8am & 3-4pm). Limiting construction times with intense noise, other noise and visual amenity buffers, e.g. minimal pad clearing or planting trees <p>(See appendix for more considerations)</p>	Map highlighting roads, buffer zones and areas where you wish to restrict activities to certain times	<ul style="list-style-type: none"> Continue to monitor compliance Ensure ability, or a trigger in place, to review this consideration periodically*
Business interruption	<ul style="list-style-type: none"> Location of wells Timing of activities 	Conduct	<p>Developing property plan to clearly demonstrate property specific activities and outline how CSG infrastructure or activities may potentially impact these</p> <p>(See appendix 5 for more paddock considerations)</p>	Property plan detailing information about your operations	<ul style="list-style-type: none"> Continue to monitor compliance Ensure ability, or a trigger in place, to review this consideration periodically*
Damage to or death of livestock	<ul style="list-style-type: none"> Vehicle travel Gates left open Stock access to rubbish or chemicals 	Conduct and compensation	<ul style="list-style-type: none"> Drive <i>around</i> stock, speed restrictions, excluded from accessing certain roads or in certain paddocks at specific times Any death or damage company must immediately advise landholder and compensate accordingly <p>(See appendix for more considerations)</p>	Maintenance of stock records	<ul style="list-style-type: none"> Continue to monitor compliance Ensure ability, or a trigger in place, to review this consideration periodically*
Land segregation	<ul style="list-style-type: none"> New roads Pipelines Well pads Lay down areas Powerlines Dams Camps 	Conduct and compensation	<ul style="list-style-type: none"> Any defined unreasonable interference Are there weight restrictions over pipelines? Future developments and the possible impacts of land segregation Compensation for hindrance of farming operations <p>(See appendix 6 for more infrastructure considerations)</p>	Property plan with proposed CSG information to locate preferred position to minimise impacts	Ensure ability, or a trigger in place, to review this consideration periodically*

Risk	Activity creating risk	Conduct and/or compensation	Considerations	Evidence	Ongoing
Damage to irrigation equipment/crop	<ul style="list-style-type: none"> Vehicle travel Well location Erosion/increased run-off 	Conduct	<ul style="list-style-type: none"> Establishing right of way for harvesting, planting and heavy machinery Location of CSG infrastructure to ensure large equipment can still turn around (See appendix for more considerations) 	<ul style="list-style-type: none"> Current overland flow direction Natural contour banks Headlands and equipment size 	<ul style="list-style-type: none"> Continue to monitor compliance Ensure ability, or a trigger in place, to review this consideration periodically*
Surface water contamination	<ul style="list-style-type: none"> Spills Overflowing or flooded sump ponds/turkey's nest dams or frac ponds 	Conduct and compensation	<ul style="list-style-type: none"> Full disclosure of all chemicals on the property Negotiations for no sump ponds – pit-less drilling system Dust mitigation measures (See appendix for more considerations) 	Surface water baseline assessments prior to activities being carried out	<ul style="list-style-type: none"> Ongoing monitoring of surface water catchments, changes in stock drinking patterns. Check areas of activity for potential issues Ensure ability, or a trigger in place, to review this consideration periodically*
Impact on natural resources	<ul style="list-style-type: none"> Clearing vegetation Environment/habit change 	Conduct and compensation	<ul style="list-style-type: none"> Check that the company has relevant authority to clear and their rehabilitation process (See appendix 7 for more Vegetation/natural resources considerations) 	Any current environmental accreditations (Nature Refuge, ISO, organic certification, etc.)	Ensure ability, or a trigger in place, to review this consideration periodically*
Loss of production land	<ul style="list-style-type: none"> Well sites Dams Roads Pipeline routes Exclusion areas 	Compensation	<ul style="list-style-type: none"> Determine compensation for 'deprivation of possession of its surface' and others (See appendix and compensatable effects list in CSG workbook) 	<ul style="list-style-type: none"> Calculate total area of land lost and seek professional advice to determine value Consider future value based on property plan 	Ensure ability, or a trigger in place, to review this consideration periodically*

Appendix

1. General considerations

- Has the company representative explained their activities and identified these on a map? (*The company should supply you with a map showing your property and the activities the company wishes to carry out before you enter formal negotiations so that you have sufficient time to review and identify potential impacts to your property*).
- Can you list all of the activities the company wants to carry out, where and when? eg. road construction, well pads (how many, how big), lay down areas (equipment and machinery), pipelines, power lines and dams, how long it will take to construct and complete activities and have you inspected the proposed sites with the company?
- Do you have a single point of contact with the resource company for questions, concerns or complaints who is familiar with your situation? Do you have their contact details for after-hours issues that might need urgent attention?
- Do you know who you are negotiating with and what authority that person has to make decisions on behalf of the company? Have you asked how they will obtain formal approval for agreement conditions?
- Have you discussed the timeframe and specified the activities to be carried out under this agreement? Have you discussed and included in your agreement a provision that if activities change or increase in intensity the agreement should be revisited to ensure conduct and compensation reflects the increased impact?
- Has your accountant suggested including CPI (consumer price index), gas prices or land value in the compensation received?
- How and when do you wish to receive compensation payments – upfront, annually, monthly?
- Have you spoken to your accountant about how these compensation payments will be taxed based on the structure of your business (as income, as a capital gain)?
- Have you and your solicitor discussed with the company representative indemnity and liability of both parties and ensured you have not taken on any unnecessary liability?
- If you have different companies on your property, could you request that the companies have a distinctive flag on their vehicles so you can be sure which vehicle belongs to the company with approval over your property?
- Do you want staff and contractors to sign in and out of your property everyday so that you know exactly who is on your property at all times for Workplace Health and Safety regulations?
- Have you considered including a provision for compensation for any time taken away from your business as a direct result of the resource company's activities, for example time spent having to re-muster stock from a gate left open.

- The land access code (LAC) requires that company representatives leave gates as found, unless otherwise instructed. However, have you considered including further incentives in your CCA for company representatives to comply with such requirements, for example imposing fines for breaching conditions or ensuring that your time spent checking gates or re-mustering stock is compensated for?
- Do you wish to include a provision in that if a company employee willingly or more than once breaches conduct or land access conditions that they be expelled from your property until the company can prove they have successfully re-completed property induction and understand property conduct provisions?

2. Weeds: During negotiations have you highlighted with the resource company what you identify as pests and weeds of concern to your property (not just those of State or Local Government significance as mandated by the land access code (LAC))?

Other important considerations regarding weeds:

- Should you consider going beyond the LAC by developing an agreed protocol regarding wash down requirements and obtaining certificates from the company for machinery, equipment and vehicles entering your property?
- If your property is situated in high risk weed areas could you request that while intensive activities (drilling, clearing etc.) are being carried out all required vehicles and equipment remain on property?
- Make sure you discuss and understand company procedures for the treatment of weeds and for assigning responsibility for any outbreaks of pests or weeds. Should your compensation agreement specify that any weed spread of concern to you (whether declared or not) be compensated for by the resource company and/or eradication program undertaken by the resource company be at a level approved by you?
- Have you considered undertaking photo monitoring with a GPS and marking on your property map identified areas/infestations?
- For risk areas should you consider inspecting the site to confirm removal of potential weed propagative material? If you sign off on the inspection as satisfied the area is weed free does this impact on your potential future liability?
- Can you include in your CCA any time spent to conduct monitoring by you is compensated for at an agreed rate? e.g. inspecting vehicles and equipment?

3. Water: Prior to any advanced activities being carried out, have you considered discussing with the company representative that a full baseline assessment of all bores be carried out and a copy of the report provided to you?

Other important considerations regarding water:

- As part of your baseline assessment you should request that the standing water level is taken and is done so appropriately i.e. recorded whilst unaffected by pumping, not only based on data from when it was initially drilled.
- Should you have written into your agreement a condition to have ongoing bore monitoring undertaken and with what frequency this should occur?
- Have you considered the potential effects of CSG activities on surface water? i.e. dust settling on water bodies and/or erosion/storm runoff affecting water quality including Total Dissolved Solids (TDS), turbidity and Electrical Conductivity, and spills of drilling muds, fuels and chemicals etc.

See AgForce Bore Baseline assessment checklist handout for more information, noting all assessments and testing should be carried out by appropriately qualified professionals

- During discussions with your solicitor have you considered including in your CCA a provision that clearly states the company's responsibility and possible action to be taken in relation to any impact on water quality or quantity, separate to legislated 'make good' requirements?

4. Roads: Have you considered mapping roads that are all weather access, those that are inaccessible after rain events (to avoid damage and erosion), 4wd vs. 2wd and those that are not to be used unless in an emergency?

Other important considerations regarding roads:

- Should you consider a conduct provision to require that company representatives make contact with you after any rain events to seek confirmation of road conditions and accessibility?
- Have you considered setting speed limits to reduce the risk of collision and also dust (consider that any company vehicles must move off to the side of the road and come to a complete stop when you are also using the road)
- Establish a right of way for private vehicles, particularly heavy equipment and harvesting machines
- Excluding traffic at certain times, i.e. 7-9am when child drives to meet the school bus
- Request a copy of the company's dust management strategy- looking at paddocks that are closest to main access roads and prevailing winds, what impact would more dust have on pastures? Consider conduct provisions to minimise this threat.
- Take a baseline assessment of your road conditions to ensure that if any effects occur the resource companies agree to compensate and/or return to prior condition. If possible take photographs and GPS co-ordinates and attach to your computer mapping program to establish effective baseline. Make sure you continue to take regular baselines to monitor any changes.

- LAC requires existing roads be used, however if existing access roads go past your homestead consider the impact of excess vehicle traffic on this road and in this case consider whether it would be preferable for the resource company to build another separate road.
- If roads are built does this form part of your compensation in lieu of direct monetary payments? You will need to work with your solicitor and company representative to determine if it is of any benefit to you to have these roads.
- Should you establish maximum daily traffic numbers and speed limits set to the standard of road construction to minimise dust and/or livestock stress?

5. Paddocks: Have you considered the impact of stock disturbance during construction times and other times of increased activity and how this could be compensated for (Impacting on calving, breeding patterns, general stock movements – establish exclusion zones from certain paddocks etc.)?

Other important considerations regarding paddocks:

- If you carry out cropping/farming do you use aerial or machine spraying, and if so at what time of year are these activities carried out? Have you marked these areas on your property map and informed the company? Do any of these products have a withholding/exclusion period? Have you discussed and highlighted on your map what time of year you harvest/foliar spray and the need to exclude CSG activities at those times and the need to provide a right of way for heavy machinery and equipment?
- Have you or are you undertaking any pasture improvement? You should consider how your compensation should reflect this improvement and any effect of the introduction of weeds or undesirable pastures species?
- Do you have any quarantine paddocks and are they marked on your map? Have you considered what activities should be excluded and when (i.e. purchase of new breeders, bulls or segregation of accredited stock)?
- Have you marked where your breeding paddocks or sensitive paddocks are (if applicable) and should CSG activities be excluded at certain times of the year, i.e. lambing/calving and to a certain distance (i.e. exclusion zone)?
- Does your property have a high flood level or experience overland flow and have you marked these areas on your property map?
- Do you have any property accreditation programs, i.e. organic, EU cattle, Grains BMP, that company representatives should be aware of and have you built these requirements into your CCA?
- Have you had soil tests done which establish salinity and sodicity (can determine erosion prone areas)? As part of your negotiations with the resource company, is this something they have considered before constructing well pads and clearing vegetation?
- Are any CSG activities or infrastructure going to be conducted in close proximity to watering points, and if so, have you considered effects on other watering points if stock are moved on (e.g. increased pressure on paddocks and water)?

It is a requirement of the LAC for company representatives to remove all waste products and litter that may be hazardous to livestock. However if the company uses plastic tape for survey lines or line markings is there a risk that stock may eat this?

CHINCHILLA GROUNDWATER FIELD DAY

Industry contacts/resources

AgForce Projects CSG team	(07) 3238 6048 csg@agforceprojects.org.au
CSG Compliance Unit	(07) 4529 1500
Advance Western Downs	www.advancewesterndowns.com.au/major-projects.html#IBK
AgForce member contacts	3236 3100
Beyond Blue Lifeline	1300 22 4636 13 11 14
CSG Globe	www.dnrm.qld.gov.au/mapping-data/queensland-globe/using-coal-seam-gas-globe
DEHP Environmental Impact Statement (EIS) process	www.ehp.qld.gov.au/management/impact-assessment/eis-processes/index.html
DEHP Environmental Authority lists	www.ehp.qld.gov.au/management/env-authorities/index.php
DEHP fact sheets	www.ehp.qld.gov.au/management/coal-seam-gas/index.html
DEHP Make Good Guideline	www.ehp.qld.gov.au/management/pdf/good-obligations-guide.pdf
DEHP Permit and Licensing Management Unit – Mining Environmental Authorities (EA)	www.ehp.qld.gov.au/land/mining/chapter-5-notifications.html
GasFields Commission Qld	(07) 4542 7800 www.gasfieldscommissionqld.org.au/gasfields
MinesOnlineMaps	https://minesonlinemaps.business.qld.gov.au/
Mining Registrar contacts	http://mines.industry.qld.gov.au/mining/contacts.htm
OGIA UWIR online bore database	www.dnrm.qld.gov.au/ogia/surat-underground-water-impact-report/bore-search
Petroleum and Gas Inspectorate	http://mines.industry.qld.gov.au/safety-and-health/petroleum-gas-safety.htm
Pollution reporting hotline	1300 130 372
Industry	
Australian Petroleum Production & Exploration Association (APPEA)	www.appea.com.au
Arrow Energy	www.arrowenergy.com.au
Origin	www.originenergy.com.au/1143/Coal-seam-gas
QGC	www.qgc.com.au
Santos	www.santos.com/coal-seam-gas.aspx

For more information or to register or request a CSG workshop in your town visit:

www.agforceprojects.org.au

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List of terms

ADR	Alternative Dispute Resolution
ATP	Authority To Prospect
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CCA	Conduct and Compensation Agreement
CPF	Central Processing Facility (Gas processing site)
CSG	Coal Seam Gas
CWMP	Coal Seam Gas Water Management Plan
DAFF	Department of Agriculture Fisheries and Forestry
DNRM	Department of Natural Resources and Mines
DEHP	Department of Environment and Heritage Protection
DEWS	Department of Energy and Water Supply
EA	Environmental Authority
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP act	Environmental Protection Act
EPC	Exploration Permit for Coal
EPP	Exploration Permit for Petroleum
GAB	Great Artesian Basin
IRTM	Interactive Resource Tenure Mapping Portal
LAC	Land Access Code
LAWG	Land Access Working Group
LNG	Liquefied Natural Gas
ML	Mega-litre (1,000,000 litres)
MR act	Mineral Resources Act
OGIA	Office of Groundwater Impact Assessment
OP	Operational Plan
P & G Act	Petroleum & Gas (Production & Safety) Act
PL	Petroleum Lease
PPL	Petroleum Pipeline Licence
SCL	Strategic Cropping Land
Surat CMA	Surat Basin Cumulative Management Area
UWIR	Underground Water Impact Report

CHINCHILLA GROUNDWATER FIELD DAY

Bore baseline self-assessment

Protecting your property and groundwater – have you conducted a bore baseline assessment?

Is this an artesian or sub artesian bore? _____

Information checklist	Details	Date	Date	Date
Bore number (if registered) - check the Queensland Government's groundwater database for registration details				
Review drilling log				
Year drilled				
Total bore depth (original and current)		Date: Depth:	Date: Depth:	Date: Depth:
Standing Water Level (depth from top of casing to water level in bore when not affected by pumping [when drilled and current])				
Depth of pump inlet	Date: Details:			
Normal pumping rate (professional advice for further testing may be needed for verification)	Date Flowrate:			
Casing details: depth, diameter, where slotted (if available)	Details:			
Geological formation/aquifer tapped (if unknown, refer to borelogs if bore is registered)	Details:			
Water quality (electrical conductivity [EC], pH, Dissolved Oxygen, turbidity, temperature) Include details of water quality tester/lab	Date: Details:			
Artesian bore: Pressure reading when in operation and closed down?	Details:			
Sub artesian bore: pressure when drilled compared to now	Details:			

To provide the best level of protection for your property and groundwater resources, ongoing monitoring is required at regular intervals. This fact sheet is a guide only; we recommend you seek further professional advice. When considering advice ask about how to equip your bore with pressure gauges.

CHINCHILLA GROUNDWATER FIELD DAY

AgForce Projects staff contact list

Staff	Position	Phone	Email
Brisbane			
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Caitlin Boucher	Communications officer	(07) 3238 6060 0433 423 188	boucherc@agforceprojects.org.au
Mick Taylor	Grazing BMP officer	0438 363 001	taylorm@agforceqld.org.au
Noel Brinsmead	GIS technical officer	(07) 3238 6041 0400 665 436	brinsmeadn@agforceprojects.org.au
Sian Robertson	Project coordinator	(07) 3238 6048	robertsons@agforceprojects.org.au
Mareeba			
Brett Carlsson	Wild dog coordinator	0428 730 553	CarlssonB@agforceprojects.org.au