

Jemena Northern Gas Pipeline Pty Ltd

Northern Gas Pipeline

Draft Environmental Impact Statement

APPENDIX F2 – ECONOMIC AND SOCIAL RISK REGISTER

Public

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ID #	Project activity	Risk	Assumptions of inherent risk assessment	Likelihood	Consequence	Risk with no mitigation in place	Proposed mitigation measures	Effectiveness of mitigation	Likelihood	Consequence	Residual risk after mitigation measures
PLANNING PHASE											
Culture & Heritage											
2	Early survey works.	Field access for non-ground disturbing works results in unauthorised entry onto Aboriginal land, causes breach of the Aboriginal Land Act (ALA) and offence to Traditional Owners.	Without controls the risk is assessed as likely if field staff are not briefed on the requirements of the Aboriginal Land Act and the associated permit system managed by the CLC. The risk has occurred on other projects in the NT. While the impact on cultural life would likely be short term the consequence is nonetheless assumed to be serious if the risk occurs and so the overall impact could be significant.	4	B	Significant	Compliance with the ALA and issue of individual permits through the CLC permit system.	Complete control of access to Aboriginal land by CLC.	1	B	Low
5	Early survey works.	Field access for low impact ground disturbing works results in uninvited entry into Aboriginal living areas, e.g. family outstations and so causes anxiety and concern among residents.	It is possible that the risk could occur if field staff are unaware of the location of Aboriginal living areas and the accepted protocols for visiting such areas. The risk has occurred on other projects in the NT and elsewhere. The consequence of such an event is assumed as minor as that there would be low or no negative disruption to cultural life as a result. The overall risk is therefore ranked as low.	3	A	Low	Identification of family outstations and inclusion of access restrictions in Project land access line list.	All early works personnel comply with land access rules.	1	A	Low
Community Social Health & Well-being											
6	Mobilisation of Planning Phase workforce.	Communications and level of available information about the Project causes community and/or individual concern and anxiety arising from uncertainties about the Project.	The risk is likely as it has arisen many times on other resource and infrastructure projects. Notwithstanding the likelihood, the consequence has been assessed as serious but it is at a level which can be managed through good communication. Consequently, without control the overall impact could be significant.	4	B	Significant	Implementation of communications strategy and plan, including regular updates through a community reference group, established in 2016 and implemented throughout the Project Construction Phase.	Community understands how the Project will be implemented and feels assured of a channel of communication with Jemena.	2	B	Low
7	Land negotiations.	Concern among Aboriginal and other land interests about benefits being paid or perceived to have been paid results in inter/intra family conflict and reduced community cohesion, consequent increases in interaction with the criminal justice system and health and other community services.	Without controls, the risk is likely to occur as it commonly occurs on resource projects in the NT and elsewhere. The consequence of the risk occurring could be severe as it could result in individuals being harmed, require police and other agency intervention and a loss of community cohesion. Consequently, without control the overall impact could be significant.	3	C	Significant	Land negotiations held through well established and proponent funded Land Council and Aboriginal representative body processes. Land negotiations with other landowners held through established and transparent, proponent funded processes.	Aboriginal and other landowners understand and accept the land negotiation processes as being fair and reasonable.	2	B	Low

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8	Land negotiations.	Proponent does not negotiate land agreements in good faith, or avoids responsibilities under ALRA and NTA, and Traditional owners and native title holders are not able to exercise Free, Prior and Informed Consent and so are not appropriately protected or afforded appropriate compensation for land use.	<p>There is no likelihood of this occurring as the Traditional Owners has a statutory form of FPIC built into the ALRA. In addition, the requirements of the NTA and the policy approaches of all concerned governments requires agreements with Aboriginal land interests to be negotiated in good faith.</p> <p>The consequence in this case is directly linked to the likelihood, i.e. as there is no chance of the risk occurring the consequence will not occur, notwithstanding, if the risk occurred it would be serious. The overall ranking is low.</p>	1	B	Low	Land negotiations held through well established and proponent funded Land Council and Aboriginal representative body processes and in accordance with the ALRA and NTA.	Land agreements with Aboriginal interests successfully negotiated and registered through the relevant legislation with the support of Aboriginal Parties.	1	A	Low
x	Land negotiations and community engagement and consultation.	Broader community and special interest group concerns regarding hydraulic fracturing (fracking) in the onshore gas industry cause concern, anxiety and division in the community (loss of social cohesion) about the enabling impact of the NGP for the onshore gas industry and consequent increase in fracking in NT sedimentary basins.	<p>It is assumed that the risk is likely to occur given the broader debate in the NT regarding the onshore gas industry, recent activities in Tennant Creek by special interest groups and the political debate about the industry associated generally.</p> <p>It is assumed that without mitigation that the consequence could be that there is serious stakeholder concern that is not easily manageable through good communication. Consequently, without control the overall impact could be significant.</p>	3	C	Significant	In managing the risk Jemena will continue to engage with the broader Tennant Creek community and directly with Traditional Owner groups and other Aboriginal people through direct briefings and meetings about the project to explain the nature of the project, i.e. sources of foundation and future gas, that the NGP is a transporter of gas and not a producer. Also that approval decisions regarding any onshore gas projects would be made separately to any approval decisions about the NGP. These communications would also occur through the proposed CRG. Jemena will also engage directly with the special interest groups concerned to understand and respond to their concerns as much as is reasonably practicable.	The expected effectiveness of the above communications program would result in a far greater understanding of the nature and purpose of the NGP and how it relates to the onshore (conventional and unconventional) gas industry. While community concern about the issue may not be completely addressed it would certainly be alleviated.	3	B	Moderate
Economy & Development											
9	Early survey works.	Field survey employment opportunities are not realised by local people.	<p>Without controls it is possible that the risk will arise as while field survey work opportunities would be available, the mechanisms for short-term employment in remote areas are few and contractors are not used to employing people in these areas.</p> <p>In the event that the risk occurs, while assessed as serious given expectations about local participation in the Project, the actual impact on the local economy is minor and could easily be absorbed. As a result the overall ranking is moderate.</p>	3	B	Moderate	Proponent actively pursues local employment.	Local people are employed on field survey work.	1	A	Low

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10	Project does not proceed.	Approvals are not obtained or market changes causes proponent to withdraw from commitments leading to no economic development from the Project and/or local businesses and individuals incur financial loss or loss in goodwill.	<p>The risk is unlikely to occur given the work undertaken to date by the proponent and the commitments made to the NT Government, the underpinning gas sales agreements and the significant financial backing of the proponent.</p> <p>If the risk occurred, while the consequences are assessed as serious, the impacts would be able to be absorbed by the local economy, but may result in some financial loss and/or loss of good will. The overall risk is therefore ranked as low.</p>	2	B	Low	<p>Proponent uses best endeavours to obtain all approvals within the current market conditions.</p> <p>Keep local business and community regularly briefed on Project progress.</p>	Local stakeholders remain fully informed and make business and personal choices in accordance with the best information available to them.	1	A	Low
11	Project is delayed.	Approvals are delayed with local businesses and individuals incurring financial loss or loss in goodwill.	<p>It is possible that the risk could arise given the Project complexity of approvals and the multiple stakeholders involved and the numerous approvals required. This has occurred on other major projects in the NT and elsewhere.</p> <p>If the project is delayed there are potentially severe consequences for local businesses that have made investment decisions based on understood Project timelines. Consequently, without control the overall impact could be significant.</p>	3	C	Significant	<p>Proponent uses best endeavours to obtain all approvals within the current market conditions.</p> <p>Keep local business and community regularly briefed on Project progress.</p>	Local stakeholders remain fully informed and make business and personal choices in accordance with the best information available to them.	1	A	Low

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CONSTRUCTION PHASE											
Culture & Heritage											
13	Mobilisation of construction workforce.	Increased traffic on remote roads results in uninvited entry into Aboriginal living areas, e.g. family outstations.	It is possible that the risk could occur if construction staff are unaware of the location of Aboriginal living areas and the accepted protocols for visiting them. The risk has occurred on other projects in the NT and elsewhere. The consequence of such an event is assumed as minor as that there would be low or no negative disruption to cultural life as a result.	3	A	Low	Identification of family outstations and inclusion of access restrictions in Project land access line list.	Complete control of access and establishment of Restricted Work Areas and Exclusion Zones	1	A	Low
15	Clearance and disturbance activities along the alignment, access roads, camps and other areas.	Ground disturbance within approved areas results in unauthorised entry onto Aboriginal Land.	Without controls the risk is assessed as likely if construction staff are not briefed on the requirements of the Aboriginal Land Act and the associated permit system managed by the CLC. The risk has occurred on other projects in the NT. While the impact on cultural life would likely be short term the consequence is nonetheless assumed to be serious if the risk occurs. The overall risk is therefore ranked as low.	2	B	Low	Agreement with the Central Land Council regarding the issue of Project permits to access the Warumungu and Wakaya Aboriginal Land Trust lands.	Project workforce access controlled.	1	B	Low
20	Transportation of personnel, machinery and materials during construction and installation of the pipeline.	Ground disturbance within approved areas results in uninvited entry into Aboriginal living areas, e.g. family outstations.	It is possible that the risk could occur if construction staff are unaware of the location of Aboriginal living areas and the accepted protocols for visiting such areas. The risk has occurred on other projects in the NT and elsewhere. The consequence of such an event is assumed as minor as there would be low or no negative disruption to cultural life as a result.	3	A	Low	Identification of family outstations and inclusion of access restrictions in Project land access line list.	All construction personnel to comply with land access rules.	1	A	Low

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Community Social Health & Well-being											
23	Land Agreement Implementation.	Distribution of Land Agreement benefits gives rise to inter/intra family conflict and reduced community cohesion, consequent increases in interaction with the criminal justice system and health and other community services.	Without controls this risk is likely to occur unless carefully managed as it has commonly occurred associated with resource projects in the NT and elsewhere. The consequence of the risk occurring could be serious as it could result in individuals being harmed, require police and other agency intervention and a loss of community cohesion. Consequently, without control the overall impact could be significant.	4	B	Significant	Land agreement benefits are managed through well established Land Council and Aboriginal representative body processes.	Land agreement beneficiaries understand and accept the land negotiation benefit distributions and processes as being fair and reasonable.	2	B	Low
24	Mobilisation of construction workforce.	Increased wages and benefits circulating in the community results in members of the workforce who are unskilled in money management engaging in creased alcohol and drug consumption, resulting in increased anti-social behavious including inter/intra family violence causing consequent increases in negative interaction with the criminal justice system and health and other community services.	This risk is likely to occur unless carefully managed as it has commonly occurred associated with resource projects in the NT and elsewhere. The consequence of the risk occurring could be serious as it could result in individuals being harmed, require police and other agency intervention and a loss of community cohesion. Consequently, without control the overall impact could be significant.	4	B	Significant	Money management and associated education of local workforce through Jemena's Project Ready Training Program and liaison with community support agencies.	Local workforce manages increased incomes in ways that avoid negative impact in the community.	3	B	Moderate
25	Mobilisation of construction workforce.	Increased wages and benefits circulating in the community causes remote community members working on the project to gravitate to centres such as Tennant Creek and Mount Isa during rostered break and engage in increased alcohol and drug consumption, resulting in increased anti-social behaviours including inter / intra family violence causing consequent increases in negative interaction with the criminal justice system and health and other community services. Also, results in high incidence of employment abandonment.	This risk is likely to occur unless carefully managed as it has commonly occurred associated with resource projects in the NT and elsewhere. The consequence of the risk occurring could be serious as it could result in individuals being harmed, require police and other agency intervention and a loss of community cohesion. Consequently, without control the overall impact could be significant.	4	B	Significant	Develop strategies in consultation with remote community workers and community organisations that support and coordinate workers during rostered breaks including town based support for workers returning to the project.	Remote community workers don't engage in significant alcohol and drug consumption on roster breaks and return to work on time.	3	B	Moderate
26	Mobilisation of construction workforce.	Due to recruitment in the local labour market community conflict arises over perception of unfair employment processes results in reduced community cohesion, possible inter / intra family violence and conflict and consequent negative increases in interaction with the criminal justice system and health and other community services.	This risk is likely to occur unless carefully managed as it has commonly occurred associated with resource projects in the NT and elsewhere. The consequence of the risk occurring could be serious as it could result in individuals being harmed, require police and other agency intervention and a loss of community cohesion. Consequently, without control the overall impact could be significant.	4	B	Significant	Transparent implementation of Jemena's Regional Employment Plan, including selection processes for the Project Ready Training Program and transparency communication of employment recruitment processes by contractors through the NGP Jobs online portal.	Local workforce fully undertsands the training and employment recruitment practices and accepts these as fair and reasonable.	2	B	Low

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27	Mobilisation of construction workforce.	Due to employment of a local workforce the local people employed on the Project are unable to maintain active participation in local community (volunteering) and sporting organisations, results in reduced community amenity and cohesion.	The risk is likely to occur as it has done previously on other resource and infrastructure projects in the NT and elsewhere. While the uncontrolled consequence is assessed as potentially serious for community amenity, given the short construction period, the overall ranking is assessed as moderate.	3	B	Moderate	Jemena to discuss potential impacts with community organisations to assess level of impact and possible mitigation strategies, e.g. potential participation of workforce existing community events.	Strategies put in place to minimise any impacts that are accepted by the local community.	3	A	Low
29	Laydown yard in Tenant Creek	Establishment and operations of pipe laydown yard at Tennant Creek results in trespass into the yard with subsequent possible illegal activities, theft, vandalism or injury increasing interaction with the criminal justice system, health and other community services.	It is possible that this will occur given the proximity of the pipe laydown yard to Tennant Creek and as it has occurred on other resource and infrastructure projects in the NT and elsewhere. As the consequences are potentially severe for any individuals involved given the potential health impacts and for police and other agency intervention the inherent risk ranking is significant.	3	C	Significant	Security plan established for the pipe laydown yard in consultation with local police.	No or low level of incidences of security events and subsequent negative impacts.	2	B	Low
30	Mobilisation of construction workforce.	Due to storage and use of petrol in project locations, people who engage in petrol sniffing seek to access Project areas to gain access to petrol.	It is possible that this will occur given the proximity of the pipe laydown yard to Tennant Creek and as it has occurred on other resource and infrastructure projects in the NT and elsewhere. As the consequences are potentially severe for any individuals involved given the potential health impacts and for police and other agency intervention the inherent risk ranking is significant.	3	C	Significant	Any petrol used is to be stored in securely locked storage areas and specifically monitored through security plan.	Access to petrol not obtained.	1	B	Low
33	Clearance and disturbance activities along the alignment, access roads, camps and other areas.	Local residents and/or tourists inadvertently enter the Project footprint in hazardous areas causing injuries to local people and property damage.	Due to the remoteness of the Project the risk without control is assessed as unlikely. If the risk did occur the consequences could be severe if personal injury or property damage occurred. The overall uncontrolled risk ranking is therefore moderate.	2	C	Moderate	Security plan established for the Project activities including and Project communications about risks.	Local residents and tourists aware of Project and avoid Project areas.	1	B	Low
34	Establishment and operation of construction workers camps.	Phillip Creek Compressor Station (PCCS) workforce (>200 people) based in Tennant Creek Town - in either established and operated workers' camp or existing commercial accommodation sees an increased demand on existing community services and infrastructure, e.g. GP, hospital and emergency services, leading to loss of service for Tennant Creek community.	Without control it is possible that the risk will occur given the number of people that could potentially require support from these services. If the risk did occur the consequences could be serious, but are likely to be manageable with some support from the Project proponent, so the overall inherent ranking is moderate.	3	B	Moderate	Levels of demand for use of local medical and emergency facilities controlled through: - pre-employment fitness-for-duty drug/alcohol/medical assessments. - appropriate medical facilities and support at PCCS camp - Safety Management Systems minimise workplace injury; - established medical and evacuation protocols in consultation with Tennant Creek Hospital and other emergency services. Refer Project Human Health & Safety Plan.	Community service levels maintained emergency medical responses agreed with local services. Ability to plan ahead for eventualities.	2	B	Low

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35	Accommodation of construction workforce	Phillip Creek Compressor Station (PCCS) workforce (>200 people) based in Tennant Creek Town - in either established and operated workers' camp or existing commercial accommodation results in an increased demand on emergency / medical services and insufficient resources to adequately cover local response to remote locations: bushfire, vehicle incidents, emergency evacuation, police incident.	Without control it is possible that the risk will occur given the number of people that could potentially require support from these services. If the risk did occur the consequences could be serious, but are likely to be manageable with some support from the Project proponent, so the overall inherent ranking is moderate.	3	B	Moderate	Develop Emergency Response Plan in consultation with NT PFES including integrating emergency communications procedures. Ensure ER capacity at temporary camps and with crews. Established medical and evacuation protocols. Pre-employment fitness-for-duty drug/alcohol/medical assessments.	Agreed ERP in place with NT PFES and so plans in place for potential eventualities.	2	B	Low
36	Accommodation of construction workforce	Phillip Creek Compressor Station (PCCS) workforce (>200 people) based in Tennant Creek Town - in either established and operated workers' camp or existing commercial accommodation results in a changed demographic profile and impacts on Tennant Creek sense of place, community amenity, safety etc.	Without mitigation this risk is likely to occur as such impacts have occurred in other communities in Australia and internationally associated with resource and infrastructure projects, particularly in smaller populations with a significant Indigenous component such as Tennant Creek. The consequences of the risk occurring could be serious given that the negative impacts on community social health and safety but last only a short timeframe given the impacts will be during the construction period. As such the inherent risk ranking is assessed as significant.	4	B	Significant	Undertake further consultation with the Tennant Creek community stakeholders about the safe number of workers able to be accommodated in Tennant Creek either in a workers camp situation or in existing commercial accommodation. Establish a Workers Accommodation Plan for the Project that protects community amenity.	Workers Accommodation Plan established and little or no negative impact occurs to community amenity, safety etc.	3	A	Low

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37	Accommodation of construction workforce	Phillip Creek Compressor Station (PCCS) workforce (>200 people) based in Tennant Creek Town - in either established and operated workers' camp or existing commercial accommodation engages in anti-social behaviour causing disruption and increased pressure on local health and emergency services.	Without mitigation this risk is likely to occur as such impacts have occurred in other communities in Australia and internationally associated with resource and infrastructure projects, particularly in smaller populations with a significant Indigenous component such as Tennant Creek. The consequences of the risk occurring could be severe given that the negative impacts on community social health and safety could last for some time and not be easily manageable. Consequently, the initial ranking is high.	4	C	High	Controls include Project Drug and Alcohol Policy, Codes of Conduct, FIFO workers directly transported to and from landing point to construction accommodation. Establishment of a Workers Accommodation Plan for the project that protects community amenity.	Workers Accommodation Plan established and little or no negative impact occurs to community amenity.	3	B	Moderate
38	Accommodation of construction workforce	Phillip Creek Compressor Station (PCCS) workforce (>200 people) based in Tennant Creek Town - in either established and operated workers' camp or existing commercial accommodation results in increased formal / informal sexual interaction with the community causing negative health and community consequences in Tennant Creek (e.g. increased prevalence of STIs).	Prior to mitigation the likelihood is assumed to be possible as impacts have been seen to occur in other communities in Australia and internationally. The consequences are potentially serious if the risk occurred but the overall impact would be moderate given the short-term nature of the project and the likely low numbers involved in such activities.	3	B	Moderate	Establish a Workers' Accommodation Plan for Tennant Creek that manages the interaction between the community and the workforce in a way that minimises the potential for these risks to occur.	Workers Accommodation Plan established and results in no negative impact of this nature.	2	A	Low
39	Accommodation of construction workforce	Phillip Creek Compressor Station (PCCS) workforce (>200 people) based in Tennant Creek Town - in either established and operated workers' camp or existing commercial accommodation sees an increase in pressure on Tennant Creek municipal services (e.g. sewerage systems, waste management capacity to cater for additional waste generated by a construction workers camp). Results in breakdown of local services.	The risk is unlikely to occur despite the number of personnel as Tennant Creek municipal services would likely be able to manage as the town has catered for such influxes in the past. If the risk did occur the consequences could be severe despite the town having the capacity to adapt, in the event that there was a breakdown in local service provision of these essential services. The overall uncontrolled impact would therefore be moderate.	2	C	Moderate	Determine impact quantities and municipal system capacity in consultation with the Barkly Regional Council. Develop a Workers' Accommodation Plan that minimises impact on municipal services.	Workers Accommodation Plan established and results in no negative impact of this nature.	1	B	Low
40	Accommodation of construction workforce	Mount Isa Compressor Station (MICS) workforce (>100 people over 12 month period) based in City of Mount Isa - in either established and operated workers' camp or existing commercial accommodation causes an increased demand on existing community services and infrastructure, e.g. GP, hospital and emergency services, leading to loss of service for Mount Isa community.	The risk is unlikely to occur given the comparatively small increase in population (~100), against the overall population of Mount Isa (~23,000). The consequences are assumed to be minor as Mount Isa could easily adapt or cope with the change. Consequently the overall impact is expected to be low.	2	A	Low	Jemena provides for medical services to an appropriate level for MICS construction workforce and makes arrangements for emergency medical scenarios with Mount Isa Hospital and other local emergency services.	Community service levels maintained emergency medical responses agreed with local services. Ability to plan ahead for eventualities.	2	B	Low

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41	Accommodation of construction workforce	Mount Isa Compressor Station (MICS) workforce (>100 people over 12 month period) based in City of Mount Isa - in either established and operated workers' camp or existing commercial accommodation causes increased demand on emergency / medical services and insufficient resources to adequately cover local response to remote locations: bushfire, vehicle incidents, emergency evacuation, police incident.	The risk is unlikely to occur given the size of Mount Isa and the existing and substantial services / infrastructure capacity. The consequences are assumed to be minor as Mount Isa could easily adapt or cope with the change. Consequently the overall impact is expected to be low.	2	A	Low	Develop Emergency Response Plan in consultation with Mount Isa emergency services including integrating emergency communications procedures. Ensure Emergency Response capacity at temporary camps and with crews.	Agreed ERP in place with Mount Isa emergency services and so plans in place for potential eventualities.	1	B	Low
42	Accommodation of construction workforce	Mount Isa Compressor Station (MICS) workforce (>100 people over 12 month period) based in City of Mount Isa - in either established and operated workers' camp or existing commercial accommodation results in a changed demographic profile and impacts on Mount Isa sense of place, community amenity, safety etc.	The risk is unlikely to occur given the industrial nature of Mount Isa and the relatively small increase in workforce (~100) compared with the population (~23,000). If the risk did occur, while the consequences could be serious, the overall impact would be low given the short-term nature of the Project, ~12 months.	2	B	Low	Establish a Workers' Accommodation Plan for Mount Isa that manages the interaction between the community and the workforce in a way that minimises the potential for these risks to occur.	Workers Accommodation Plan established and results in no negative impact of this nature.	1	B	Low
43	Accommodation of construction workforce	Mount Isa Compressor Station (MICS) workforce (>100 people over 12 month period) based in City of Mount Isa - in either established and operated workers' camp or existing commercial accommodation causes anti-social behaviour including increased drug and alcohol abuse and potential associated increased violence and crime.	Without control it is assumed possible for this risk to occur as the impacts have been seen to occur associated with other resource projects in other communities in Australia. If the risk did occur the consequences could be serious for the individuals concerned but the impact on overall community health and safety would be short-term and easily manageable. Consequently, the overall impact would be moderate .	3	B	Moderate	Establish a Workers' Accommodation Plan for Mount Isa that manages the interaction between the community and the workforce in a way that minimises the potential for these risks to occur.	Workers Accommodation Plan established and results in no negative impact of this nature.	2	C	Moderate
44	Accommodation of construction workforce	Mount Isa Compressor Station (MICS) workforce (>100 people over 12 month period) based in City of Mount Isa - in either established and operated workers' camp or existing commercial accommodation results in increased formal / informal sexual interaction with the community causing negative health and community consequences in Mount Isa (e.g. increased prevalence of STIs).	Without control it is assumed possible for this risk to occur as the impacts have been seen to occur associated with other resource projects in other communities in Australia. If the risk did occur the consequences could be serious for the individuals concerned but the impact on overall community health and safety would be short-term and easily manageable. Consequently, the overall impact would be moderate .	3	B	Moderate	Establish a Workers' Accommodation Plan for Mount Isa that manages the interaction between the community and the workforce in a way that minimises the potential for these risks to occur.	Workers Accommodation Plan established and results in no negative impact of this nature.	2	C	Moderate

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45	Accommodation of construction workforce	Mount Isa Compressor Station (MICS) workforce (>100 people over 12 month period) based in City of Mount Isa - in either established and operated workers' camp or existing commercial accommodation sees an increased in pressure on Mount Isa municipal services (e.g. sewerage systems, waste management capacity to cater for additional waste generated by a construction workers camp). Results in breakdown of local services.	The risk is unlikely to occur given the size of Mount Isa and the existing and substantial services / infrastructure capacity. The consequences are assumed to be minor as Mount Isa could easily adapt or cope with the change. Consequently the overall impact is expected to be low.	2	A	Low	Determine impact quantities and municipal system capacity in consultation with the Mount Isa City Council. Develop a Workers' Accommodation Plan that minimises impact on municipal services.	Workers Accommodation Plan established and results in no negative impact of this nature.	2	B	Low
46	Trenching activities and installation of the pipeline.	Local residents and/or tourists inadvertently enter the Project footprint in hazardous areas causing injuries to local people and property damage.	Without controls the likelihood of the risk occurring is considered rare given the remoteness of the Project. If the risk did occur the consequences could be serious due to the potential for personal injury and / or property damage. The overall ranking however, is considered to be low.	1	B	Low	A combination of Project signage and gates will be used to control unauthorised access to the construction site. Security plan established for the pipeline and compressor station construction activities.	No or low level of incidences of security events and subsequent negative impacts.	2	B	Low
47	Construction activities	Community concern due to a lack of knowledge of environmental management procedures results in community anxiety / negative perceptions regarding environmental management of the NGP Project.	It is considered likely that this risk will arise as it has done so previously on many resource and infrastructure projects. The consequences of the risk arising though, while considered serious, can be managed through good communication. The overall risk ranking, therefore is low.	3	B	Moderate	Implementation of Communications Strategy & Plan, including regular updates through specified Community Stakeholder Communications Network, established in 2016 and implemented throughout the Project Construction Phase.	Community understands how the Project will be implemented and feels assured of a channel of communication with Jemena.	2	B	Low
Economy & Development											
48	Project procurement and contracting	Awarding of contracts on the Project does not go to local businesses through a lack of capacity to competitively tender and supply.	Without controls it is considered likely that this risk will occur as it has arisen many times before in other projects particularly where a project occurs in regions where local businesses have limited capacity. The consequence could be considered serious as the Project represents a substantial opportunity for local businesses. Overall though, the impact (or lack thereof) would be relatively easily absorbed in the local economy given the short-term nature of the Project. Nonetheless, the risk ranking, on balance, is significant.	4	B	Significant	Implementation of Jemena's Industry Participation Plan (IPP) including the SME Business Growth Program.	Local suppliers best positioned to successfully complete for business contracts with the Project.	3	B	Moderate

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49	Project procurement and contracting	Through the award of contracts/contracting process Jemena's 1st tier (major) and Tier 2 contractors fail to maximise use of local goods and services from the regions and local businesses miss out on opportunities as a result.	Without mitigation the likelihood of this occurring is possible as the risk has occurred before in other projects where proponents and major contractors have not sought to maximise local outcomes. The consequence could be considered serious as the Project represents a substantial opportunity for local businesses. Overall though, the impact (or lack thereof) would be relatively easily absorbed in the local economy given the short-term nature of the Project. Nonetheless, the risk ranking, on balance, is significant.	4	B	Significant	Implementation of Jemena's Industry Participation Plan (IPP) including the SME Business Growth Program, including inclusion of local content requirements in all Tier 1 and Tier 2 contracts, continued assessment and scrutiny of contractor local content plans.	Local suppliers best positioned to successfully complete for business contracts with the Project.	3	B	Moderate
50	Project procurement and contracting	Local businesses over invest in expectation of winning contracts but are unsuccessful.	Without mitigation it is possible that this risk will occur as it has occurred before in other projects in the NT in recent times. While the consequences could be serious for individual businesses the overall impact on the local economy could be easily absorbed. The overall risk is therefore ranked as moderate.	3	B	Moderate	Continued communication with the local business community about opportunities with the Project, including timing and scope.	Local suppliers clearly understand the breadth of opportunities and make clear business decisions that do not result in over investment.	2	B	Low
51	Project procurement and contracting	Through the award of contracts/contracting process new small businesses may accelerate in initial development based on the Project and then fail once the Project opportunities pass.	Without controls it is possible that this risk will occur as it has occurred before associated with other resource and infrastructure projects and the survival rate of new small businesses is low generally. If the risk did occur, it would be serious for individual businesses, however the overall impact on the local economy could easily be absorbed. Accordingly the risk is assessed as moderate.	3	B	Moderate	Communicate support opportunities to all businesses, particularly new small businesses, including the risk of early failure and the importance of adopting strategies to manage this in their business plans.	Less new small businesses fail.	2	B	Low
52	Project procurement and contracting	Increased local demand for goods and services to support Project construction activities causes inflationary pressures resulting in increased prices and economic hardship for locals not involved in the Project.	It is possible that this risk will occur as it is a common impact that resource and infrastructure projects have on regional towns. The consequences could be serious however, goiven the short construction period any impacts would be short-term in nature. Given this, the overall ranking is assessed as moderate.	3	B	Moderate	Implementation of Communications Strategy & Plan, including regular updates through a Community Reference Group, established in 2016 and implemented throughout the Project Construction Phase. Understanding of Project demand impact lessens possibility of false demand signals and unnecessary price increases.	Community well informed about Project demand and false demand expectations minimised.	2	B	Low

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53	Project procurement and contracting	Increased local demand for goods and services to support Project construction activities results in reduced level of goods and services to support existing community requirements.	<p>It is unlikely that this risk will occur because suppliers in the Project area (Tennant Creek, Barkly Homestead, Camooweal and Mount Isa) are close to or on major transport routes and as such there is the ability for the supply chain to respond.</p> <p>In the event; however, that the risk does occur the potential consequences, while assumed to be serious, the impact on the local economy is likely to be minor, short term and that could easily be absorbed. Consequently, the overall</p>	2	B	Low	<p>Implementation of Communications Strategy & Plan, including regular updates through a Community Reference Group, established in 2016 and implemented throughout the Project Construction Phase.</p> <p>Understanding of Project demand impact lessens possibility of false demand signals and unnecessary price increases.</p>	Community well informed about Project demand and false demand expectations minimised.	1	B	Low
54	Mobilisation of construction workforce.	During construction phase recruitment people miss out on jobs and expectations on the provision of local jobs are not met.	<p>Without significant effort on Jemena's part, there is a strong likelihood of the risk occurring as it has frequently occurred on other projects in regional and remote areas.</p> <p>The consequences for the local community are assumed to be serious; however, the given the short term nature of the project it is expected that the local economy could absorb the impact. Notwithstanding, the risk is assessed as significant given the commitments made.</p>	4	B	Significant	Transparent implementation of Jemena's Regional Employment Plan, including selection processes for the Project Ready Training Program and transparent communication of employment recruitment processes by contractors through the NGP Jobs online portal.	Local workforce optimises participation in the Project to the extent reasonably possible.	2	C	Moderate
55	Mobilisation of construction workforce.	Regional flight congestion caused by the fly in, fly out component of the workforce takes up available spaces on regional flights resulting in displacement of other travellers, e.g. tourists, government service workers and other industry workers, i.e. particularly in Tennant Creek.	<p>It is likely that this risk will occur in Tennant Creek unless controls (alternatives) are put in place given the restricted availability of flights. The risk is unlikely to occur at Mount Isa which is serviced by two major airlines.</p> <p>In the event; however, that the risk does occur the potential consequences could be serious, despite the short term nature of the project. Consequently, the ranking is assessed as significant.</p>	4	B	Significant	Construction contractor to organise charter flights to and from Tennant Creek.	No, or low impact on flight seat availability.	2	B	Low
56	Mobilisation of construction workforce.	Workforce mobility to the Project sees local government, pastoral industry, tourism and hospitality industry, businesses and community organisations lose workers to the Project.	<p>It is likely that this risk will occur as it has frequently occurred in other projects as local staff seek work on the project in search of higher wages.</p> <p>The consequence for other businesses and organisations could be serious however due to the short term nature of the project it is expected that the impact could be absorbed. Nonetheless, the risk ranking is assessed as significant.</p>	4	B	Significant	<p>Transparent implementation of Jemena's Regional Employment Plan, including selection processes for the Project Ready Training Program and transparent communication of employment recruitment processes by contractors through the NGP Jobs online portal.</p> <p>Briefing of local government, businesses, pastoral industry and community organisations regarding the timing and extent of Project labour demand.</p>	Local government, businesses, the pastoral industry and community organisations are able to plan well ahead to manage any staff changes as a result of the Project.	4	A	Low

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57	Mobilisation of construction workforce.	Wage pressures causes increased costs to local government, pastoral industry and community organisations through increased wages and conditions required to retain staff.	<p>It is likely that this risk will occur as it has frequently occurred in other projects as local staff seek higher wages and conditions in order to remain with their existing employers.</p> <p>The consequence for other businesses and organisations could be serious however due to the short term nature of the project it is expected that the impact could be absorbed. Nonetheless, the risk ranking is assessed as significant.</p>	4	B	Significant	<p>Transparent implementation of Jemena's Regional Employment Plan, including selection processes for the Project Ready Training Program and transparent communication of employment recruitment processes by contractors through the NGP Jobs online portal.</p> <p>Briefing of local government, businesses, pastoral industry and community organisations regarding the timing and extent of Project labour demand.</p>	Local government, businesses, the pastoral industry and community organisations are able to plan well ahead to manage any staff changes as a result of the Project.	4	A	Low
58	Project procurement and contracting	Mount Isa labour market stronger than Barkly results in the Mount Isa labour market overshadowing the Barkly labour market, resulting in limited employment outcomes for people from the Barkly, particularly Tennant Creek and Alpururulam.	<p>Based on the ESIA research and stakeholder consultation to date, it is likely that this risk will arise .</p> <p>The consequences for the local community are assumed to be serious; however, the given the short term nature of the project it is expected that the local economy could absorb the impact. Notwithstanding, the risk is assessed as significant given the commitments made.</p>	4	B	Significant	<p>Implementation of Jemena's Regional Employment Plan, including:</p> <ul style="list-style-type: none"> - the Project Ready Training Program - the NGP Jobs Portal - the Tennant Creek Social Enterprise opportunity - contractual provisions for subcontractors to maximise the use of labour from the Barkly and Mount Isa. 	Employment of people from the Barkly maximised to the extent possible.	3	B	Moderate
59	Establishment and operation of construction workers camps.	Phillip Creek Compressor Station workforce based in Tennant Creek Town in a Jemena established and operated workers' camp results in existing accommodation providers missing out on commercial benefits from the Project.	<p>Without an alternative plan, the likelihood of this risk occurring is assumed to be almost certain.</p> <p>The consequence for local accommodation providers would be serious as these businesses have a significant role in the Tennant Creek economy. At the same time, the impact would be short-term in nature as it relates to the Project's construction period; however the overall risk is assessed as high.</p>	5	B	High	<p>Establish a Workers' Accommodation Plan for Tennant Creek that provides the broadest possible benefits for local accommodation providers.</p>	Tennant Creek accommodation providers benefit to the broadest extent.	2	A	Low
60	Accommodation of construction workforce	Phillip Creek Compressor Station workforce based in Tennant Creek Town in a Jemena established and operated workers' camp causes a significant spike in demand for local utilities occurring outside of existing capacity, resulting in requirements for short-term utilities infrastructure and investment.	<p>Before mitigation the likelihood is assumed to be possible given the potential demands a large, new accommodation facility would place on utilities in Tennant Creek.</p> <p>The consequence of the risk occurring could be serious as the responsible government/utility provider would need to make investments to meet the short-term increase in demand. As such the overall risk is assessed as moderate.</p>	3	B	Moderate	<p>Establish a Workers' Accommodation Plan for Tennant Creek that does not result in utilities demand outside of existing capacity.</p>	No additional short term investment required and utilities demand kept within existing capacity.	2	A	Low

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61	Accommodation of construction workforce	Phillip Creek Compressor Station workforce based in Tennant Creek Town in existing commercial accommodation displaces other accommodation demand and results in a negative impact on other industries and services in the town, e.g. tourism, government services, other industry particularly at time of significant annual events that bring revenue to the town, e.g. the Tennant Creek Annual Show.	Without an alternative plan the likelihood of this occurring is almost certain. The consequences of this risk occurring would be serious across the whole economy, despite the short-term nature of the project as the project demand would saturate the accommodation supply, particularly during periods of high demand in the tourist season. Consequently, the risk is ranked as high.	5	B	High	Establish a Workers' Accommodation Plan for Tennant Creek that provides the broadest possible benefits for local accommodation providers but does not have a negative impact on other industries and services.	The right balance is struck between providing economic benefits to Tennant Creek without negatively impacting on other industries and services.	2	A	Low
62	Accommodation of construction workforce	Phillip Creek Compressor Station workforce based at Warrego in a Jemena established and operating workers' camp and existing accommodation providers miss out on commercial benefits from the Project.	Without an alternative plan, the likelihood of this risk occurring is assumed to be almost certain. The consequence for local accommodation providers would be serious as these businesses have a significant role in the Tennant Creek economy. At the same time, the impact would be short-term in nature as it relates to the Project's construction period; however the overall risk is assessed as high.	5	B	High	Establish a Workers' Accommodation Plan for Tennant Creek that provides the broadest possible benefits for local accommodation providers but does not have a negative impact on other industries and services.	The right balance is struck between providing economic benefits to Tennant Creek without negatively impacting on other industries and services.	2	A	Low
63	Accommodation of construction workforce	Workers seek private accommodation in Tennant Creek causing increase in the price and decrease in availability of private accommodation and increases the cost of living in Tennant Creek.	Without mitigation, if workers sought their own accommodation the likelihood is considered to be possible given the increased demand in a tight rental market. As the impact would be felt during the construction period of the Project, the consequence is assessed as serious, giving a final pre-mitigation risk ranking of moderate.	3	B	Moderate	Establish a Workers' Accommodation Plan for Tennant Creek that does not have an overly negative impact on the price and availability of private accommodation.	The right balance is struck between providing economic benefits to Tennant Creek without negatively impacting on the price and availability of private accommodation.	2	A	Low
64	Accommodation of construction workforce	Mount Isa Compressor Station workforce based in Mount Isa in a Jemena established and operated workers' camp results in existing accommodation providers missing out on commercial benefits from the Project.	The likelihood of this risk occurring is assumed to be almost certain, should Jemena choose this option. The consequences however would be minor as the overall demand for accommodation in Mount Isa comes from many sources and the Project demand is relatively small (100 workers). In this event the overall risk has been ranked as moderate.	5	A	Moderate	Establish a Workers' Accommodation Plan for Mount Isa that provides the broadest possible benefits for local accommodation providers.	Mount Isa accommodation providers benefit to the broadest extent.	2	A	Low

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65	Accommodation of construction workforce	Mount Isa Compressor Station workforce based in Mount Isa in a Jemena established and operated workers' camp causes a significant spike in demand for local utilities occurring outside of the existing capacity resulting in the requirement for short term utilities infrastructure investment capacity.	Before controls are in place, the likelihood of this risk occurring is assumed to be unlikely given the small increase in demand the workers camp would have. Should the risk occur, the consequence would be minor as the utilities infrastructure would be able to meet the incremental demand. Consequently the overall risk assessed as low.	2	A	Low	Establish a Workers' Accommodation Plan for Mount Isa that does not result in utilities demand outside of existing capacity.	No additional short term investment required and utilities demand kept within existing capacity.	2	A	Low
66	Accommodation of construction workforce	Mount Isa Compressor Station workforce based in Mount Isa in existing commercial accommodation displaces other accommodation demand and results in a negative impact on other industries and services in the town, e.g. tourism, government services, other industry.	It is possible that this could occur as the additional demand created by the Project could restrict access to other users. There is substantial accommodation supply in Mount Isa and so the project demand could easily be absorbed. Consequently, the overall risk is assessed as low.	3	A	Low	Establish a Workers' Accommodation Plan for Mount Isa that provides the broadest possible benefits for local accommodation providers but does not have a negative impact on other industries and services.	The right balance is struck between providing economic benefits to Mount Isa without negatively impacting on other industries and services.	2	A	Low
67	Accommodation of construction workforce	Workers seek private accommodation in Mount Isa causes the price and availability of private accommodation in Mount Isa to increase.	It is highly unlikely that this risk would occur as the Project's workforce demand in Mount Isa is very small relative to the large rental accommodation supply. The consequences would be minor given the ability of the Mount Isa rental market to readily absorb the additional demand. The risk is therefore ranked as low.	1	A	Low	Establish a Workers' Accommodation Plan for Mount Isa that does not have an overly negative impact on the price and availability of private accommodation.	The right balance is struck between providing economic benefits to Mount Isa Creek without negatively impacting on the price and availability of private accommodation.	1	A	Low
68	Clearance and disturbance activities along the alignment, access roads, camps and other areas.	Weed and weed seed spread results in loss of agricultural productivity and costs incurred to redress pest weed spread.	This risk could occur given that it has occurred on other pipeline projects that have traversed agricultural lands and is a common risk that occurs in rural areas through vehicle and stock movements. The consequences could result in minor short-term negative impacts if the land users incurred costs in remediating the land. Accordingly the risk is assessed moderate prior to controls being in place.	3	B	Moderate	Implementatton of Biosecurity (Weed) Management Plan in accordance with arrangements agreed with individual pastoral stations.	Reduced incidence of spread of weeds and weed seeds.	2	B	Low
69	Trenching activities and installation of the pipeline.	Pipeline installation across station and community access tracks causes delays to access on pastoral leases and to Aboriginal communities.	As there are a large number of serviceable access tracks it is unlikely this would occur. The consequence is assessed as minor due the disruption being an inconvenience to pastoralists and Aboriginal communities, accordingly the overall pre-mitigation risk is assessed as low.	2	A	Low	Access track crossing discussed with landowners and coordinated plan put in place to minimise disruption.	No or few delays in access.	1	A	Low

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70	Construction activities	Increased traffic on remote station roads results in interruptions / disruptions to mustering and other station activities.	<p>Given the expected increase in traffic relative to normal activities and the expansive use of land required for mustering and other station activities it is possible this risk could occur.</p> <p>While the risk could cause a disruption to pastoral activities, this would be very short-term as the pipeline construction activities move quickly along the route. Consequently the final risk ranking is moderate.</p>	3	B	Moderate	Project liaison with pastoralists to coordinate project construction activities with mustering.	No unplanned disruption to mustering and other activities.	1	B	Low
71	Trenching activities and installation of the pipeline.	Damage or disturbance to existing infrastructure such as electricity, water etc results in a loss of access to these critical services.	<p>Without controls, it is assessed as unlikely that this risk will occur as the locations of services are assumed to be evident.</p> <p>While it is unlikely that the risk will occur, should it happen the consequence could be serious (loss of services) but short-term. Consequently, the risk is assessed as low.</p>	2	B	Low	<p>Conduct pre-construction survey of known infrastructure locations and clearing delineate on ground prior to commencement of works.</p> <p>Close liaison with land occupants and service infrastructure noted in construction Land Line List.</p>	No or short term interruptions to critical services. Station and community occupants fully appraised of works.	1	A	Low
73	Installation of the pipeline	Remote communities and other stakeholders perceive that the installation of a gas pipeline in proximity to remote communities, e.g. Alpururulam, could result in an opportunity for gas supply.	<p>It is likely that the risk will occur as it has arisen in connection with other pipeline projects in the NT previously.</p> <p>The consequence is assessed as minor as, if the risk occurs, the outcome is expected to be brief disappointment at the loss of a potential benefit from the Project. Accordingly the risk is ranked as low.</p>	4	A	Low	Feasibility question to be addressed during ESIA consultations and in general community consultations and communications. Discussion with NT Power Water Corporation required.	Remote communities understand the infeasibility of the concept.	2	A	Low
83	Construction activities	Project activities will be visible to other users in the area where they are occurring, e.g. vegetation clearing and earthworks, pipeline stockpiles equipment, visibility of people, vehicles and other equipment, causing a negative impact on visual amenity for people driving through the area(s).	<p>The risk is likely to occur within visual distance to main roads.</p> <p>The consequence will be minor as the impact will be brief in duration given the short distances over which the activities will be visible to road users. The risk ranking is low.</p>	4	A	Low	Communications with the local community through the Tennant Creek CRG, newsletters and project updates and to other stakeholders, through other communication points, e.g. roadhouses, about the Project.	Local stakeholders and travellers understand the Project and the short term nature of the disturbance to visual amenity.	2	A	Low

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OPERATIONS PHASE											
Culture & Heritage											
75	Operation and maintenance of pipeline and facilities	Due to work activities requiring access to above ground facilities in remote areas, there is unauthorised entry onto Aboriginal land.	Without controls the risk is assessed as rare given the assumption that operations phase staff will be trained and operations phase processes fully established. While the impact on cultural life would likely be short term the consequence is nonetheless assumed to be serious if the risk occurs, giving an overall risk ranking of low.	1	B	Low	Individual permit access in accordance with Aboriginal Land Act and Land Agreement conditions and local relationship development.	Complete control of access and regular communication.	1	B	Low
77	Operation and maintenance of pipeline and facilities	Due to work activities requiring access to above ground facilities in remote areas, there is uninvited entry into Aboriginal living areas, e.g. family outstations.	It is assumed rare that this risk could occur given that the locations of Aboriginal living areas and the accepted protocols for visiting such areas will be known by operational staff. While the impact on cultural life would likely be short term the consequence is nonetheless assumed to be serious if the risk occurs, giving an overall risk ranking of low.	1	B	Low	Individual permit access in accordance with Aboriginal Land Act and Land Agreement conditions and local relationship development.	Complete control of access and regular communication.	1	B	Low
Community Social Health & Well-being											
78	Operation and maintenance of pipeline and facilities	Community concern about a lack of information about Project operations causes community anxiety / negative perceptions and concern about safety and environmental management of NGP Operations facilities.	Across the variety of communities residing along the pipeline it is possible that there will be some level of negative perceptions of the Project. The consequence has been assessed as serious without mitigation but it is assumed to be at a level which can be managed through good communication. Consequently, without control the overall impact is assessed as moderate.	3	B	Moderate	Consult community and explain operations safety and environmental management practices.	Community understands how Jemena will safely operate the Project and manage any environmental risk.	2	B	Low
79	Operation and maintenance of pipeline and facilities	Use of easement and temporary and permanent access tracks for improper access for people in remote areas, e.g. for personal reasons, hunting, discreet travel, illegal activities etc - causes negative impacts on existing land users.	Without controls in place the likelihood is assumed to be possible as there are a variety of scattered communities along the pipeline route that may use the easement or access tracks in such a way. Should this risk occur, the potential impact on existing land users could effect their legitimate use of the land, however it is expected this would be short-term in nature, giving a risk ranking of moderate.	3	B	Moderate	Controls include: - no access track to be left along easement; - no signage on permanent access tracks; - temporary access tracks to be progressively rehabilitated, unless agreed with landowner; - ongoing communication with landowners.	Access ability limited and landowner engagement in rural watch.	2	B	Low

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Economy & Development											
80	Project procurement and contracting.	Awarding of contracts on the Project does not go to local businesses through a lack of capacity to competitively tender and supply.	It is possible that this could occur as local businesses may lack capacity to competitively tender for work in the operations phase of the Project. The consequence could be considered serious for those businesses that miss out on contracts as the Project represents a substantial opportunity. Overall though, the impact (or lack thereof) would be relatively easily absorbed in the local economy as businesses seek out and secure other opportunities, giving a final risk ranking of moderate.	3	B	Moderate	Implementation of Jemena's Industry Participation Plan (IPP) including the SME Business Growth Program.	Local suppliers best positioned to successfully complete for business contracts with the Project.	3	B	Moderate
81	Mobilisation of operations workforce	During operations phase recruitment people miss out on jobs and expectations of the provision of local jobs are not met.	It is possible that this risk will occur as without significant efforts by Jemena it is likely local people will lack the capacity to gain employment on the operations phase of the Project. While the impact on the local economy would be negative, the number of employment roles for the operations phase is very small. Consequently the risk is assessed as moderate.	3	B	Moderate	Implementation of Jemena's Regional Employment Plan, including: - the Project Ready Training Program; - the NGP Jobs Portal; - the Tennant Creek Social Enterprise opportunity; - Jemena Gas Operator Training Program; - contractual provisions for subcontractors to maximise the use of labour from the Barkly and Mount Isa.	Local workforce optimises participation in the Project to the extent reasonably possible.	2	C	Moderate
84	Plant Operations	The PCCS flare stack (pilot flare) will be visible to surrounding communities, particularly at night.	If the PCCS flare stack is 40 m in height, using a distance to horizon calculation, it may be visible up to approximately 23km away. The nearest receptors are in excess of this distance and so the likelihood assessment is the lowest. Consequently, the impact is minor and the overall risk assessment is low.	1	A	Low	As the flare stack will not be seen at any populated place or Stuart Highway no mitigation is proposed apart from explaining to local stakeholders what the flare does and how safety at the PCCS is managed.	As the distance/height relationship determines the stack is not visible at any populated place or the Stuart Highway effectiveness is assumed.	1	A	Low