# Environmental Impact Classification Pursuant to Section 98 of the Petroleum and Geothermal Energy Act 2000

### Officer Basin Exploration Drilling Operations

## 15 April 2010

#### INTRODUCTION

Pursuant to section 98 of the *Petroleum and Geothermal Energy Act 2000* (the Act) the Minister must classify the regulated activities covered by a prepared Environmental Impact Report (EIR) as either of low, medium or high environmental impact.

The classification must be made on the basis of:

- The prepared EIR:
- Criteria established for classifying the level of environmental impact of regulated activities, a copy of which is found on the PIRSA Petroleum and Geothermal Group (PIRSA) web page:

(http://www.pir.sa.gov.au/ data/assets/pdf file/0008/27728/sigactv6.pdf; and

• Comment received from relevant Government departments in accordance with established administrative arrangements between these departments and PIRSA.

This document summarises the classification made by PIRSA on Ahava Energy's proposed exploration drilling activities in the Officer Basin. This classification is based on information provided in the original EIR prepared by Coffey Environment (February 2010).

#### SUMMARY OF CLASSIFICATION

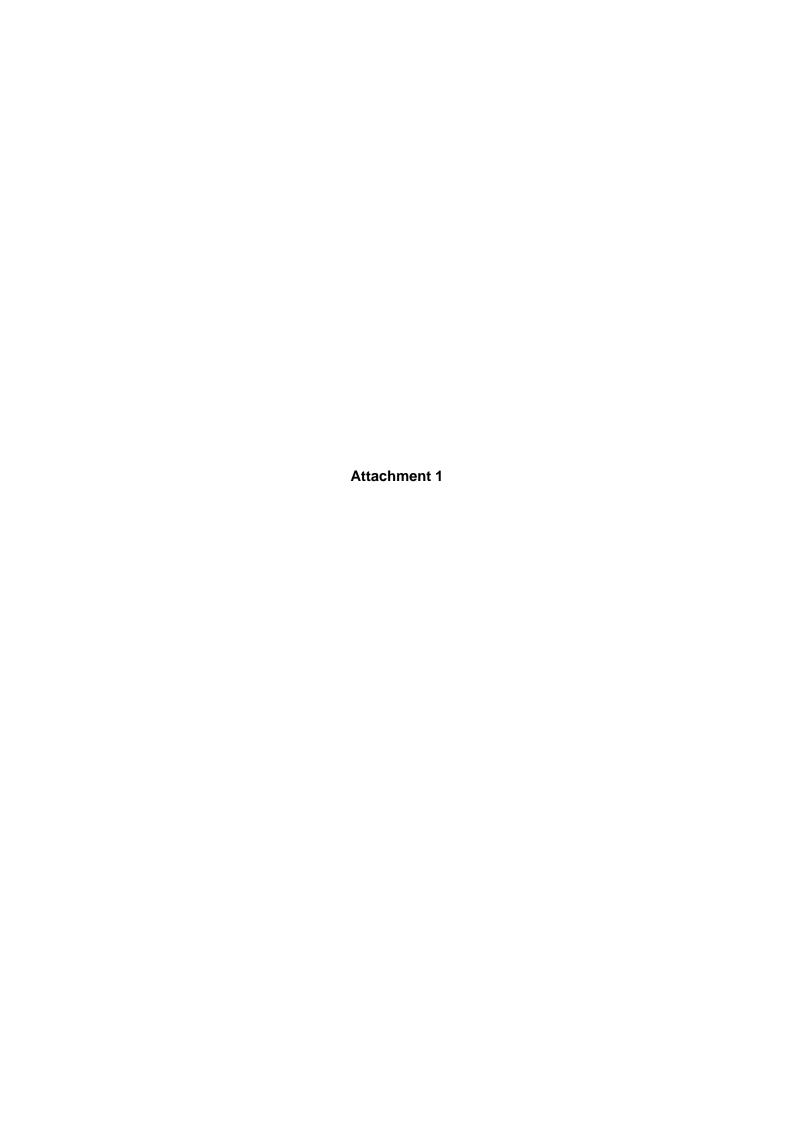
- From an analysis of the environmental significance of the events and potential impacts associated with the proposed activities against the classification criteria referred to above (assessment provided as Attachment 1), these regulated activities have been classified as low environmental impact.
- 2) The majority of events associated with the proposed exploration drilling operations were assessed to be of low environmental significance. This is due to the fact that appropriate management measures will be implemented by Ahava Energy to avoid or mitigate any potential environmental consequences.
- 3) For a low environmental impact classification, PIRSA is required to consult with Department for Environment and Heritage (DEH) and the Environment Protection Authority (EPA) in accordance with the administrative arrangement dated 11 November 2005 and 21 November 2005 respectively.
- 4) Comments received from DEH and EPA on 6 April 2010 and 7 April 2010 respectively, agreed with the low environmental impact classification.

Pursuant to delegated powers, I hereby classify this regulated activity as **low environmental impact**.

**Barry Goldstein** 

Director Petroleum & Geothermal

Delegate of the Minister for Mineral Resources Development



	Environmental Significance Assessment																	
PROJECT:	APY Lands - Exploration Drilling Operations																	
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REF	TYPE OF IMPACT EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	COMMENTS	Environmental significance	
	Natural Environment																	
	Impacts	<u> </u>																
4.2, Table 4.1& 4.2, 6.4.1	wellsite, access track and camp site preparation.	Soil erosion; Soil inversion; So compaction;		M	Н	H	Н	2	No	Med	Confined					Drilling activities will be accessed using existing tracks, seismic lines and roads where possible. Safety requirements will also be considered, as roads will have to be able to withstand heavy vehicle weights. Drilling pad are approximately 1 hectare in size to accompdate rig and associated infrastruture. Construction methods will vary depending on the land systems identified in Table 4.1 and 4.2. Camp sites are located near existing tracks or roads, and on previosuly distrubed areas where possible	LOW	
4.2.1, Table 4.1& 4.2, 6.4.2	Vehicle movement during construction, drilling and monitoring activities	Soil erosion; Soil compaction; Wheel tracks	М	н	М	М	Н	2	No	Med	Confined				3	Consultation will occur with APYLMU to determine truck routes, setting and observence of speed limits and usage of signs where appropriate. Existing tracks, seismic lines and roads will be used where possible. Road will be constructed to withstand heavy vehicle weights.	LOW	
6.4.4	Blowout or kick during drilling; Equipment or tubular failure; Down hole problems; Casing or cement failure	Soil contamination	М	Н	М	Н	Н	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW	
4.3, 6.4.4	Disposal of drilling and completion fluids to flare pits during well testing and clean-up; Disposal of drill cuttings and muds	Soil contamination	М	н	Н	Н	Н	2	No	Low					1	A mud sump is constructed at the wellsite for the disposal of drill cuttings and the recirculation of water into the mud system. Drilling muds are generally composed of non-toxic materials or are likely to have a low effective chronic toxicity due to low concentrations present within the drilling mud. The volumes of drilling fluid used compared to aquifer volumis very small.	LOW	
6.4.6	Explosion or fire during drilling	Soil contamination	М	Н	М	Н	Н	2	No	Low					1	Significant environmental damage can result from the unscheduled emission or buring of hydrocarbons. Oils reovered from drilling activities have the potential to contaminate the local environment if not handled and disposed of appropriately. The loss of some substances could result in an explosion or fire if an ignition source is activitated.	LOW	
4.2.3, 6.4.6	Spills and leaks associated with drilling operations, storag or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Soil contamination	M	Н	Н	H	Н	2	No	Low					1	The primary hazard with the handling of hydrocarbons, fuel and chemicals is associated with fire, spills or leaks. EPA Guidelines for Bunding and Sp Management will be followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are postioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.	LOW	
4.2.3	Disposal of domestic and chemical waste; Sewage treatment	Soil contamination; soil inversion	М	Н	Н	Н	Н	2	No	Low					1	Conatminated material collected and disposed of at an EPA licensed facility, licensed to accept the material. Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1	LOW	
4.5, 6.4.4	Groundwater Impacts  Blowout or kick during drilling; Equipment or tubular failure; Down hole problems; Casing or cement failure	contamination; Reduction in	M	M	M	Н	Н	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW	
4.4.1	Disposal of drilling and completion fluids to flare pits during well testing and clean-up; Disposal of drill cuttings and muds	Shallow groundwater contamination	М	Н	М	Н	н	2	No	Low					1	Initial production testing (IPT) is short term (< 10days) and usually involve small volumes of water and hydrocarbons. Water produced during IPT is disposed in the drilling sump where it evaporates. Water based fluid used in all hole sections and the use of polymers to minimise filtration invasion the production hole section. No synthetic or hydrocarbon based mud systems will be used.		

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REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	STANMMOD STA
6.4.4		Loss of radioactive source down hole	Groundwater contamination	Н	М	Н	Н	Н	2	No	Low					g	The likelihood of losing a tool downhole is considered unlikely and can generally be retrived. However, if it cant be retreived the tool is cemented LOW
6.4.4		Drilling fluids in down hole environment	Groundwater contamination of freshwater aquifers	M	Н	М	Н	Н	2	No	Low					1 [ 	n the hole to prevent it moving into adjacent formations.  During drilling activities, if lost or partial circulation occurs, drilling fluids  Dould potentially invade freshwater aquifers and cause contamination.  However, drilling muds are generally composed of non-toxic materials or are likely to have a low effective chronic toxicity due to the low  concentrations present within the drilling mud. The volumes of drilling fluid used compared to the aquifer volume is also very small.
4.2.3		Spills and leaks associated with drilling operations, storago rtransport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Groundwater contamination	М	Н	Н	Н	Н	2	No	Low					a s t	EPA Guidelines for Bunding and Spill Management followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are postioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.
6.4.4		Explosion or fire during drilling	Crossflow; Aquifer contamination; Reduction in aquifer pressure	М	н	М	Н	Н	2	No	Low					Ş	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.
6.4.3, 6.4.5		Disposal of domestic and chemical waste; Sewage treatment	Groundwater contamination	М	Н	Н	Н	Н	2	No	Low					r	Use of approved portable sewerage treatment plants. Segregate bins for ubbish removal and use of EPA approved vehicles for removing liquid hydrocarbons or other waste oil.
6.4.7		Aquifer use for water supply during drilling	Depletion of artesian and sub- artesian aquifers	М	Н	Н	М	Н	2	No	Low					r	Water will be supplied from existing bores. If insufficient supply is availably new wells may be drilled near wellsites. Only small amounts of water will be required for exploration drilling activities.
	Surface Water Impacts																
4.2, Table 4.1& 4.2, 5.5.1, 6.4.1		Earthmoving activities during wellsite, access track and camp site preparation.	Disturbance to natural drainage patterns	M	Н	Н	М	Н	2	No	Low					C r r a ii s	All of the rivers in the licence areas are ephemeral and are short in length. Diffugactivities will be accessed using existing tracks, seismic lines and roads where possible. Safety requirements will also be considered, as roads will have to be able to withstand heavy vehicle weights. Drilling pads are approximately 1 hectare in size to accomodate in gand associated infrastruture. Construction methods will vary depending on the land systems identified in Table 4.1 and 4.2. Camp sites are located near existing tracks or roads, and on previosuly distrubed areas where possible.
6.4.6		Explosion or fire during drilling	Surface water contamination	М	Н	М	Н	Н	2	No	Low					e h	Significant environmental damage can result from the unscheduled emission or buring of hydrocarbons. Oils roovered from drilling activities have the potential to contaminate the local environment if not handled and disposed of appropriately. The loss of some substances could result in an explosion or fire if an ignition source is activitated.
4.4.1		Disposal of drilling and completion fluids to flare pits during well testing and clean-up; Disposal of drill cuttings and muds	Surface water contamination; disturbed drainage patterns	М	Н	М	Н	Н	2	No	Low					s c ii t	nitial production testing (IPT) is short term (< 10days) and usually involves small volumes of water and hydrocarbons. Water produced during IPT is disposed in the drilling sump where it evaporates. Water based fluid used in all hole sections and the use of polymers to minimise filtration invasion the production hole section. No synthetic or hydrocarbon based mud systems will be used.
4.2.3		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.		М	Н	Н	Н	Н	2	No	Low					a s t	EPA Guidelines for Bunding and Spill Management followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are postioned at the refuelling powser and mechanical workshop to eliminate fuel and oil ground contamination.

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REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SCOPE	ECTS	STAKEHOLDERS	SIGNIFICANCE SIGNIFICANCE SUCH SIGNIFICANCE
4.2.3, 6.4.5		Disposal of domestic and chemical waste; Sewage treatment	Surface water contamination	M	Н	Н	Н	Н	2	No	Low		32			1 Putresible wastes are stored on site along with other wastes prior to disposal in a way that is aligned with EPA and Anangu requirements.  Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1995 or operated to the satisfaction of the Department of Health.
6.4.4		Blowout or kick during drilling; Equipment or tubular failure; Down hole problems; Casing or cement failure	Surface water contamination	М	Н	М	Н	Н	2	No	Low					Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.  LOW
6.4.3	Vegetation Impacts	Vegetation clearance for well sites, camps and access tracks	Loss of vegetation	Н	М	н	Н	Н	2	No	Med	Med	Confined			3 Native vegetation clearance will generally be avoided or minimised by placing wellsites and camps on previously cleared/disturbed areas. Care will be taken to avoid or minimise the clearance of heavily wooded areas (eg. woodlands that are found in or near drainage lines). Campsites will be located at the nearest available naturally clear area in which construction does not require a significant disturbance to vegetation.
4.1.3, 4.6.6		Vegetation clearance for wellsites, camps and access tracks	Dispersion of weeds and pathogens	Н	М	М	М	Н	2	No	Low					Conduct an environmental clearance survey prior to conducting drilling activities to determine the presence of noxious weeds. Wash down of vehicles and equipment prior to entry onto the APY Lands and when moving from areas of known weed infestations.
4.2.3		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Loss of vegetation and habitat	М	н	н	Н	н	2	No	Low					EPA Guidelines for Bunding and Spill Management followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are postioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.  LOW
6.4.2		Vehicle movement during construction, drilling and monitoring activities	Loss of vegetation and habitat; Dispersion of weeds and pathogens	М	Н	М	М	Н	2	No	Low					The traversing of vehicles (eg. trucks, bulldozers, 4wds and supply trucks to and from a well site or camp can have an impact on vegetation and contribute to weed invasion. Drilling activities will be accessed using existing tracks, seismic lines and roads where possible.  LOW
4.2.3, 6.4.5		Disposal of domestic and chemical waste; Sewage treatment	Loss of vegetation and habitat	М	Н	Н	Н	Н	2	No	Low					Putresible wastes are stored on site along with other wastes prior to disposal in a way that is aligned with EPA and Anangu requirements. Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1995 or operated to the satisfaction of the Department of Health.
6.4.4		Explosion or fire during drilling	Loss or damage to vegetation and habitat	М	Н	М	Н	Н	2	No	Low					Blow outs are uncommon in exploratory drilling, Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.  LOW
4.1.3	Fauna Impacts	Earthmoving activities during preparation of drill pad, mud sump, flare pit, water sump, access tracks, camp sites and borrow pits; Heavy vehicle and rig movement		М	Н	М	Н	Н	2	No	Med	Med	Confined			3 Environmental clearance surveys will be conducted where drilling activities are considered to have a significant impact (direct or indirect). In particula surveys are required to determine the prescence of mallee fowl and great desert skinks, as these are considered priority species in the APY Lands.  Appropriately trained trackers (Anangu where possible) to identify the locations and habitats of priority species so they can be flagged and avoided.
4.1.3		preparation of drill pad, mud		М	Н	М	М	Н	2	No	Low					The construction of new tracks through native vegetation has the potential to increase access to non-native predators. Where possible determine baseline numbers of feral predators prior to exploration drilling. Follow-up surveys should occur periodically following well closure and restoration to determine whether numbers of predators have increased.
6.4.4		Explosion or fire during drilling	Loss of habitat; disturbance to native fauna	М	Н	М	Н	Н	2	No	Low					Blow outs are uncommon in exploratory drilling, Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.

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REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	COMMENTS		Environmental significance
4.2.3, 7.6.6		Disposal of domestic and chemical waste; Sewage treatment	Attraction of scavenging wildlife (native and pest species)	Н	Н	Н	Н	Н	1	Yes						Disposal of domestic wastes to avoid the uninte pest animals. Application of pest control measur appropriately managed (ie. litter is not exposed	es as required and	LOW
4.2.3		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Disturbance to native fauna	М	Н	Н	Н	Н	2	No	Low					EPA Guidelines for Bunding and Spill Managem appropriately trained in the use of spill response spills are managed appropriately. Drip trays are bowser and mechanical workshop to eliminate f contamination.	equipment, to ensure postioned at the refuelling	Low
	Sensitive Area Impacts																	
4.12, 8	·	Damage to APY Lands	Disruption of Anangu way of life	М	М	М	М	Н	2	No	Med	Med	Confined			3 Consultation in relation to petroleum exploration development has been ongoing on the APY Lan APY Executive Board took active steps to comm social development of the Lands that may be pri exploration and potential future resources devel use of clearance teams to access proposed roal postions.	ds for several months. The ence planning for the empted by petroleum opment on the Lands. The	Low
4.2.1, Table 4.1 & 4.2, 5.5.3		Damage to saltlakes	Loss of biological significance	Н	Н	Н	М	Н	2	Yes						Saltlakes are limited in this region. However, a f scattered throughout, with the majoirty occurring Creek in PELA 148, south of Oolarinna, at the b Ranges, during times of high rainfall. No activiti saltlakes.	at the end of the Officer ase of the Everard	LOW
4.4.1	Air Impacts	Flaring of gas during	Atmospheric pollution	Н	н	Н	М	н	2	No	Low					During an initial production test produced gas is	diverted to a flare pit for	
7.6.5		production testing	Atmospheric pollution	М	Н	Н	M	Н	2	No	Low					combustion. The IPT is short term (< 10 days).  Vehicles and other equipment used during the eshould be regularly inspected and maintained all with equipment specific operational requirement	xploration drilling activities opropriately in accordance	LOW
3.4.4		Spills and leaks; Fire or explosion during drilling operations	Atmospheric pollution	М	Н	M	Н	Н	2	No	Low					Blow outs are uncommon in exploratory drilling, guidelines, practices and procedures designed twhich include the certification of trained individu procedures and the use of specialised well control.	Relevant industry o avoid a drilling blow out	Low
	Social Environment Community Resource																	
	<i>Impacts</i>	Vehicle movement to and from well sites	Damage to community infrastructure	М	Н	M	Н	Н	2	No	Low					Consult with APYLMU to determine truck routes of speed limits and usage of signs where appropriate rig and associated equipment are likely to or month), and will be staged over several days.	riate. The movements of	Low
6.4.2, 8		Change in visual appearance of area during well site and access track construction	Visual impact	М	Н	М	Н	Н	2	No	Low					In 2008, prior to the application of Ahava Energy activities on the Lands, the APY Executive Boar commence planning for the social development prompted by petroleum exploration and potentia development on the Lands. Consult with APYLN routes, setting and observence of speed limits a appropriate. The movements of the rig and asso likely to occur infrequently (once per month), an several days.	d took active steps to of the Lands that may be I future resources II to determine truck and usage of signs where ciated equipment are	LOW
4.2.3, 6.4.5		Disposal of domestic and chemical waste	Litter on well site	Н	Н	Н	Н	Н	1	Yes						Once the campsite has been vacated rehabilitat no rubbish or any man-made items are left in-sit industry standard practices for disposal of waste	u. Adoption of accepted	LOW
	Cultural & Heritage Impacts																	

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						PREDIC	TABILITY	,				MAN	AGEABILI	TY		
REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE STANDOD STANDON STANDON SIGNIFICANCE
4.1.2		sump, flare pit, water sump, access tracks, camp sites and borrow pits	Anangu cultural heritage sites; Disruption of Anangu way of life	М	I	н	Н	н	2	No	Low					Conjunctive Land Access Agreement 2009 established between APY and Ahava Energy. Clearance surveys are conducted to ensure that sites of heritage significance are identified and their avoidance is built into the determination of access tracks, wellsite and campsite locations. Any cultural heritage sites encountered during the clearance survey are flagge off and a detour is located around the site.
4.1.2		during construction, drilling and	Disturbance or damage to to Anangu cultural heritage sites; Disruption of Anangu way of life	М	н	н	н	Н	2	No	Low					Conjunctive Land Access Agreement 2009 established between APY and Ahava Energy. Clearance surveys are conducted to ensure that sites of heritage significance are identified and their avoidance is built into the determination of access tracks, wellsite and campsite locations. Any cultural heritage sites encountered during the clearance survey are flagge off and a detour is located around the site.
	Community Health & Safety															
6.4.2	Salety	Vehicle and rig movement during construction, drilling and monitoring activities	Road hazard/disturbance to local road users	М	Н	М	Н	н	2	No	Low					Heavy vehicles could potentially be a hazard to other road users. The movement of the rig will involved several semi-trailer loads and additional loads and vehicles may be required for the transport of camp buildings, supplies and equipment. However, these moves are likely to occur infrequently, once per month, and will be staged over several days.
6.4.2		Dust generation created from vehicle movement to and from well site (trucks, bulldozers, drill rigs)	Disturbance to local road users	М	н	М	н	Н	2	No	Low					The traversing of vehicles (eg. trucks, bulldozers, 4wds and supply trucks to and from a well site or camp can have an impact on vegetation and contribute to weed invasion. To minimise the risk and potential disturbance to other road users and residents, use of minor roads and tracks within APY Lands will require caffelul management and consultation with the APYLMU to determine truck routes, setting and observance of speed limit and usage of signs where appropriate.
6.4.2		Noise generation associated with vehicle and rig movement during construction, drilling and monitoring activities	Disruption of Anangu way of life	М	н	М	Н	н	2	No	Low					The Stuart Highway, between Coober Pedy and Marla, carries a relatively high level of heavy traffic. The additional traffic on major roads to the exploration drilling activities is not likely to be significant. To minimise the risk and potential disturbance to other road users and residents, use of minor roads and tracks within APV Lands will require cafreful management and consultation with the APYLMU to determine truck routes, setting and observance of speed limits and usage of signs where appropriate.
4.2.3		Disposal of domestic and chemical waste	Risks to human health	Н	I	Н	Н	Н	1	Yes						Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1995 or operated to the satisfaction of the Department of Health.
	Economic Environment															