

STATEMENT OF ENVIRONMENTAL OBJECTIVES
PETROLEUM PRODUCTION AT
ACRASIA FIELD, COOPER BASIN, SA

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1. INTRODUCTION

The following Statement of Environmental Objectives (SEO) has been prepared under the requirements of Part 12 of the SA *Petroleum Act 2000* and Part 3 of the Regulations to that Act.

This SEO covers the full commercial production of oil, the construction and operation of process, storage and loading facilities, and the transport of oil from Acrasia Field, located in PEL 90, formerly block CO98-E within the Cooper Basin of South Australia. Production will be from the Acrasia #1, #2 and #3 wells. The Operator of the wells and existing and proposed facilities is Stuart Petroleum Ltd. The SEO draws on information developed by and for Stuart Petroleum Ltd and presented or referenced within the Environmental Impact Report (EIR) *Petroleum production by Stuart Petroleum Ltd at Acrasia field, Cooper Basin, SA*, prepared by Fatchen Environmental (August 2003).

The purpose of the SEO is to provide the environmental objectives with which production from the extended test, and related activities including transportation, must conform, and the criteria upon which achievement of those objectives can be assessed, for consideration under Section 101(1) of the Act. A condition of approval of the activity is that Stuart Petroleum Ltd is liable for meeting the environmental objectives and assessment criteria.

The SEO covers objectives which apply regardless of the extent or nature of oil production and transportation, and accordingly has elements in common with smaller, initial production testing and extended production testing which has already taken place at Acrasia Field. Further, full production will utilise some facilities already in place, such as road access, developed for earlier activities. Accordingly, some Environmental Objectives in this SEO are also covered by existing SEOs for those other activities.

2. ENVIRONMENTAL OBJECTIVES

Based on risks to the environment identified within the EIR for production, the following are environmental objectives relevant to this activity.

- 1) Avoid disturbance to sites of Aboriginal and non-indigenous heritage significance
- 2) Minimise disturbance to vegetation and habitat
- 3) Minimise soil impacts
- 4) Minimise disturbance to gibber surfaces
- 5) Avoid disturbance to rare, endangered and vulnerable species
- 6) Avoid impacts on high biological value or wilderness value areas
- 7) Avoid flowline, process, storage and loading facility spills
- 8) In the event of a process fluid spill, minimise impacts on biota, soils, surface water and groundwater
- 9) Minimise fire risk at facility; prevent the spread of any fires to wellhead
- 10) Avoid transportation spills

- 11) In the event of a transportation spill, minimise the likelihood of its spread, minimise impacts of fire resulting, cleanup and remediation of oil-affected land to accepted Soil Health Index¹ (SHI) levels.
- 12) Formation water cleaned to no visible oil (equivalent to approximately <30ppm hydrocarbons) before disposal
- 13) Minimise adverse impact on livestock;
- 14) Avoid contamination of stockwaters with hydrocarbons and biocides
- 15) Avoid contamination of natural surface waters with hydrocarbons and biocides
- 16) Avoid contamination of groundwater with hydrocarbons and biocides.
- 17) Minimise visual impacts
- 18) Minimise public and third party risks
- 19) Minimise workforce hazards
- 20) Develop and test necessary alterations to Production Operation Manual, procedures and facilities prior to any shift to unmanned operation
- 21) Develop long term closure and remediation plan in advance of any closure.

3. ASSESSMENT CRITERIA

The criteria for measuring the achievement of these environmental objectives are detailed in Appendix 1. Criteria generally can be split into the following forms:

- 1) *Defined conditions*. Defined conditions apply where the achievement of an objective can be judged through ensuring that those particular conditions are met or carried out. Examples are:
 - Prohibitions of specific actions where the prohibition directly eliminates potential impacts. An example is the objective "Avoid disturbance to sites of Aboriginal and European heritage significance", for which one assessment criterion is compliance with the *Aboriginal Heritage Act 1988* and with the CO-98E Native Title agreement.
 - Requirements to undertake actions in accordance with approved procedures or industry accepted standards. For example, aspects of the construction and operation of the loading facility and the safe transportation of oil are required to meet stated Australian Standards.
 - Requirements to undertake actions or develop procedures to actively limit particular risks or minimise impacts where they do occur.
- 2) *Goal Attainment Scaling (GAS) criteria*. GAS criteria are applied where assessment has to deal with a range of outcomes rather than the relatively straightforward "yes/no" assessment possible in dealing with defined conditions, and where uncertainties of subjective judgement are involved. Examples are visual assessments of minimisation of disturbance to vegetation and soil, where the level of disturbance may range from major to nil, and assessments of the level of success of well site and track rehabilitation.

In this SEO, the objectives of most importance can be assessed using Defined Conditions.

¹ Santos is currently undertaking a study into developing a Soil Health Index for impacted soils and sediments. The outcome of the study is expected to provide an industry-wide basis for assessment.

4. AUSTRALIAN STANDARDS

The following Australian Standards are applicable to the proposed operation. Their application also has some bearing on environmental risks and hazards.

AS 1271	Safety Valves for Boilers and Unfired Pressure Vessels
AS 1692	Tanks for Flammable and Combustible Liquids
AS 1940	The Storage and Handling of Flammable and Combustible Liquids
AS 2381	Electrical equipment for Explosive Gas Atmospheres
AS 2430	Classification of Hazardous Areas
AS 2885	Pipelines Gas and Liquid Petroleum – Design and Construction
AS 3000	SAA Wiring Rules
AS 4041	Pressure Pipes
AS 4360	Risk Management
ANSI B31.3	Chemical and Petroleum Refinery Piping

5. INCIDENTS

5.1 Serious incidents

Section 85(1) of the Act defines "serious incident" to mean:

"an incident arising from activities conducted under a licence in which-

- (a) a person is seriously injured or killed; or
- (b) an imminent risk to public health or safety arises; or
- (c) serious environmental damage occurs or an imminent risk of serious environmental damage arises; or
- (d) security of natural gas supply is prejudiced or an imminent risk of prejudice to security of natural gas supply arises."

Pursuant to Regulation 12(2) of the Act, the incidents listed below are considered to be those which could arise and, if not properly managed or avoided, cause a serious incident:

- Explosion or fire at the well or loading facility;
- Failure of containment systems at any stage of process, including but not limited to containment systems at storage and loading facilities;
- Transportation accident involving oil spillage;
- Transportation accident resulting in fire;
- Failure of the formation water handling and cleaning system resulting in the release of uncleaned formation water into defined natural surface drainage;
- Disturbance to sites of Aboriginal and non-indigenous heritage significance;
- Removal of rare, vulnerable or endangered flora and fauna species.

5.2 Reportable incidents

Pursuant to Regulation 12(2) of the Act, the incidents listed below are considered to be reportable incidents under Section 85(1) of the Act.

- Non-compliance with procedures defined or developed to implement environmental objectives
- Spills of oil outside bunded and other defined areas intended to contain spillages;
- Evidence of oil in disposed formation water
- Other failure of the formation water handling and cleaning system, but where the failure does *not* extend to the release of uncleaned formation water into defined natural surface drainage;
- Jet pump fluid releases or line breaks resulting in biocide, emulsion breakers and/or other chemicals being released beyond drill pads or processing facility boundaries;
- Minor transportation accidents other than those listed under "Serious incidents".

APPENDIX 1: ENVIRONMENTAL OBJECTIVES AND ASSESSMENT CRITERIA

Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>1) Avoid disturbance to sites of known Aboriginal and non-indigenous heritage significance</p>	<p>Development of production facility at Acrasia #3 extends local impact of the existing former drill pad and borrow area. Flowline and jet pump line easement and routine inspection expands area of possible impact. Contingency for evaporation areas, construction of interception ponds and infiltration sump significantly expands potential area for impact on heritage. Continuing use of existing road access limits scope for impact from increased transportation requirements</p> <p>Borrow for road maintenance taken either from existing borrow sources, or from new sources, cleared in each case by indigenous stakeholders. There are no known non-indigenous heritage sites near facility or access on PEL 90</p>	<ul style="list-style-type: none"> • Facility location and access inspected; • borrow material sources inspected; • formation water disposal interception, infiltration and possible evaporation areas inspected; • flowline and related easements inspected. • All inspections involve signatories to the CO-98E Native Title agreement. 	<ul style="list-style-type: none"> • All production and associated areas have been surveyed and any sites of Aboriginal or non-aboriginal heritage identified. • Any identified cultural and heritage sites have been avoided.

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Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>2) Minimise direct disturbance to vegetation and habitat</p>	<p>The main risks arise from disposal of produced water. Quantities will be large, and need to be kept out of surface drainage. Proposed interception ponds shift interception away from existing (extended production test) interceptor, a turkey's nest which adjoins a waterway, and proposed infiltration is at a distance from the waterway, separated by the whole Acrasia 3 site development, rather than the existing disposal in borrow area which may connect at times with surface water. If infiltration for disposal of cleaned process water is not sufficient for total disposal, then the development of an evaporative disposal area represents an unavoidable impact but again the possible evaporation area will be isolated from defined watercourses.</p> <p>Other risks are secondary, from spills and fires.</p> <p>The access road has serviced four wells (two suspended) in close proximity, at Reg Sprigg 1 and 2 (Santos) and Acrasia 1 and 2 (Stuart Petroleum). Road improvement is primarily to increase safety of truck movement, but is also necessary to reduce erosion risks from breakup of rolled or other surfaces under additional traffic.</p>	<ul style="list-style-type: none"> • Water disposal interception, infiltration and evaporation areas adjoin Acrasia #3 pad • Process facilities kept clear of defined surface drainage • No uncleaned produced water released • Cleaned produced water kept out of local defined surface drainage • Disposal of cleaned produced water by infiltration to the maximum local surface sediments permit • Most construction is incremental on existing Acrasia #3 pad, storage and loading facility. • New construction areas (interception ponds, infiltration sump) and potential evaporation areas do not have unusual vegetation or habitat • Already existing access used for transportation • Acrasia Field haul road improved and maintained to prevent off-easement movement. • Borrow for maintenance taken either from existing pits, or from sources checked for low erosion hazard, vegetation and habitat • Procedures developed to limit spill and fire damage (see "Avoid spills" below) 	<ul style="list-style-type: none"> • New construction is only in areas specified in EIR and notifications • No process facilities are in or cross defined drainage lines other than flowline and road access crossings • There is zero release of uncleaned production water beyond holding ponds • There is zero off-easement movement of oil transportation traffic • There is zero tree or tall shrub removal at borrow pits.

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Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>3) Minimise soil impacts; and</p> <p>4) Minimise disturbance to gibber surfaces</p>	<p>Road formations need upgrading for safety of vehicle movement, to minimise risk of transportation spills, but also to limit dust generation and widening of the right of way by vehicles avoiding dust. Maintenance of the formation will be necessary to avoid recurrence of major dust formation.</p> <p>Use of formation laid on gibber (over existing rolled road) rather than continuing to use the rolled surface will avoid compaction resulting in water interception along a sunken road, but will also raise possibilities of redirected surface flows with formation acting as a dam, hence the proposed treatment of defined drainage lines and overland flow areas.</p>	<ul style="list-style-type: none"> • Interceptor ponds, infiltration pits in areas of minimal erosion risk • Interceptor pond site gibber surface scraped and stockpiled • Existing main access to be used. • Rationalisation and closure of tracks at facility • Further formation construction where necessary and maintenance of formation on Acrasia Field haul road. • Routine maintenance applied to whole of haul road. • Borrow for maintenance taken either from existing pits, or from sources checked for low erosion hazard. • Crossing of obvious drainage lines at grade; shallow spoon drainage provided to minimise redirection of overland flow by formation • Procedures developed and in place to limit and rehabilitate spill damage (see "Avoid spills" below) 	<ul style="list-style-type: none"> • No spills or leaks outside areas designed to contain them • No downslope or upslope erosion associated with borrow pits. • Natural drainage line flows are not impeded by road crossings or other construction. • Levels of hydrocarbon continually decreasing in the case of <i>in situ</i> remediation of spills. • Remediation to accepted SHI (Soil Health Index) levels
<p>5) Avoid disturbance to rare, endangered, vulnerable species</p>	<p>No such species known to be present along access within lease area; if present, then associated with common habitat and can be expected to be widespread in district. No such species known to be in possible evaporation areas.</p>	<ul style="list-style-type: none"> • Existing access only is used and risk of new damage reduced accordingly • Access and construction areas have been inspected and potential occurrences considered. • No such species have been found in new construction areas: water interceptor pond, infiltration and evaporation disposal areas 	<ul style="list-style-type: none"> • Any sites of rare, vulnerable and/or endangered species identified, flagged and subsequently avoided. • Other criteria as for Objective 2

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Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>6) Avoid impacts on high biological value or high wilderness value areas</p>	<p>No high biological value areas within lease near access. There is only a tenuous downstream connection at best between the lease area and the Ramsar "triangle". Over most of the lease roads, the carriageway is normally sufficiently distant from drainage lines for even extreme events such as complete single road train spill not to reach watercourses, other than at immediate crossings.</p> <p>Wilderness values may be perceived, but in reality are limited: five oil wells/wellsites in the immediate vicinity, with more pending drilling; pastoral dam construction nearby; proximity to Cordillo Downs-Innamincka road; major cattle trucking yards and pastoral bore at Mulga Bore; area within normal reach of cattle herds based on Mulga Bore.</p>	<ul style="list-style-type: none"> • Procedures developed to minimise spill risks under wet conditions; see under "Avoid spills" (below) • Procedures developed to limit the spread of fires associated with spills. • New construction kept adjacent to existing construction at Acrasia #3 pad. • Process water disposed away from defined surface drainage. 	<ul style="list-style-type: none"> • No spills or leaks outside areas designed to contain them • Zero produced water discharged to defined surface drainage • Fires contained to the extent reasonably possible

Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>7) Avoid flowline, process, storage and loading facility spills</p> <p>8) In the event of a process fluid spill, minimise impacts on biota, soils, surface water and groundwater (including rapid cleanup)</p>	<p>Oil pollution through local oil spills, tank or filling point overflows, flowline leaks or rupture is the main issue. Biocides and emulsion breakers may be present in process water from time to time and represent a minor additional risk. Main risk limitation is provided by design and construction integrity, augmented by procedures and failsafes such as automatic cutouts.</p>	<ul style="list-style-type: none"> • Facility design and operation, including tanker procedures, conforming with standards: AS 1271; AS 1692; AS 1940; AS 2381; AS 2430; AS 2885; AS 3000; AS 4041; AS 4360; ANSI B31.3. • Process, flowline, storage and loading facility constructed with high containment integrity systems using steel piping. • Piping pressure tested to the highest forecast production operating pressures and production conditions. • All flowlines laid above ground, supported, out of contact with soil to minimise corrosion issues. • To avoid damage and possible breaches during periods of surface water runoff, flowlines and jet pump fluid lines anchored where defined drainage is crossed on the edge of Acrasia #3 pad; continuous piping without threaded joints used at crossing. • Regular visual inspection procedures developed for leak detection in flow lines and jet pump fluid lines; flow sensors and automatic shutoffs fitted as precaution against rupture. • Normal access roads, including tanker haul and loading roads, do not cross laid pipes, storage and process areas. • Procedures developed and in place for control of vehicle access along flowlines and within process area; pipes crossed by culvert where occasional vehicle access is needed. • Tanks and manifolds banded with bunds sufficiently large to provide for catastrophic tank failure. • Pumps and secondary fuel supplies independently banded to cope with local failure • Delivery hard-piped to pump and loading point. • Loading bay banded, lined by compacted clay pad. (Cont..) 	<ul style="list-style-type: none"> • No spills or leaks outside areas designed to contain them • Formation, process or cleanup water only released to infiltration pit when no visible oil present (<30 mg/L) • No formation water released in surface watercourses. • Pondages and infiltration pits above maximum probable flood level • Levels of hydrocarbon continually decreasing in the case of <i>in situ</i> remediation of spills. • Remediation to accepted SHI (Soil Health Index) levels

Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>(Cont..)</p> <p>7) Avoid flowline, process, storage and loading facility spills (cont.)</p> <p>8) In the event of a process fluid spill, minimise impacts on biota, soils, surface water and groundwater(cont.)</p>		<p>(Cont..)</p> <ul style="list-style-type: none"> • Flexible hose with automatic cutoffs for train loading • Procedures in place for minimising overflow and loading spill risks, and integrity management. • Attendance at equipment at all times during road tanker filling. • Minor spillages at loading point to be left to evaporate and bio-remediate. Excessive contamination of surface clay either bioremediated in place or landfarmed on other portions of facility pad or removed for disposal at Moomba. • Major spills retained by clay lining and bund, and salvaged by pumping into process stream • Rapid response to clean up spills. 	
<p>9) Minimise fire risk at facility and prevent the spread of any fires to wellhead</p>		<ul style="list-style-type: none"> • Adequate earthing of process facility components in accordance with AS3000 to limit ignition potential. • Uninterrupted attendance at tanker filling operations • Maintenance of separation distances of well, tanks, pump and tanker filling point. • Manual shutoff/isolation of fuel possible even with a fire in progress; automatic shutoff/isolation possible in remote operation.. • Containment and isolation of fires by bunding as described for Objective 8. • First attack extinguishers present in operable condition for fires at loading pump, at tanker, at other potential ignition hazards such as secondary motors or power generation areas. • Approval held under AS1940 to permit fires to burn out where first attack has failed. 	<ul style="list-style-type: none"> • No wellhead fires. • Any fires contained and isolated within containment areas

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10) Avoid transportation spills	<p>Spills in transportation most likely to result from road accidents. Procedures are intended to reduce risk from poor road conditions, and to reduce extent of spills where they occur.</p> <p>No oil should move where trucks cannot be "dry-footed", as a spill in flowing water conditions will have a much larger impact than a spill in dry conditions. The proposed exception only applies (at present) at the Innamincka causeway, where it is possible to safely cross with some water flowing over the sealed road surface.</p>	<ul style="list-style-type: none"> • Procedures in place for safe movement on lease of oil transport • No movement on wet roads or in wet conditions • No full train night movements when wet conditions impending • No "wet-wheel" fording of flowing watercourses other than sealed floodways with depth markers. Fording depth limit as set by regulatory authorities • Upgrading/maintenance of Acrasia haul road • Appropriate speed limiting (40-60 km/hr) on Acrasia haul road • Transportation operations meet or exceed relevant minimum Australian Standards 	<ul style="list-style-type: none"> • No spills or leaks outside areas designed to contain them
11) In the event of a transportation spill, minimise the likelihood of its spread, minimise impacts of fire resulting, cleanup of oil-affected land		<ul style="list-style-type: none"> • Owner of oil/transportation company to have spill contingency and emergency response plans in place, and conform to Dangerous Substances Act 1979 and Environment Protection Act 1993 • For spills in transit within the lease area, contaminated soil on sandplain or dune either landfarmed in place for bio-remediation, or in extreme cases removed for pit disposal. • Contaminated soil from spillage at a watercourse crossing removed. • No evidence of oil contamination remaining at spill site after 3 months. • Fire handling provided for in emergency response plans. • Transportation fires permitted to burn out. Spread of secondary fires limited by firefighting procedures in emergency response plans. 	<ul style="list-style-type: none"> • No spills or leaks outside areas designed to contain them • Transportation operations meet or exceed relevant minimum Australian Standards • Levels of hydrocarbon continually decreasing in the case of <i>in situ</i> remediation of spills. • No contaminated soils left in watercourses • Remediation to accepted SHI (Soil Health Index) levels
12) Formation water cleaned to no visible oil (equivalent to approximately <30ppm hydrocarbons) before disposal	<p>Cleaning by initial dewatering, then two interceptor ponds in series with sufficient residence times for separation. Disposal water offtake subsurface from the second interceptor pond.</p>	<ul style="list-style-type: none"> • Dewatering tanks in operation • Interceptor ponds present and in operation, with active oil skimming • No visible oil film on disposed water. • Interceptor pond liners meet EPA guidelines 	<ul style="list-style-type: none"> • Formation water only released to infiltration pit when no visible oil present (<30 mg/L) • No visible oil on infiltration pit

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Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
<p>13) Minimise adverse impact on livestock; and</p> <p>14) Avoid contamination of stockwaters with hydrocarbons and biocides</p>	<p>There exists a possibility that disposed process water may extend subsurface and re-appear downslope in defined drainage, which below Acrasia #3 is incised. Although any remnant hydrocarbon and process biocides in the (cleaned) disposed water would have bound to soil particles and not reach the waterway, there is a possibility of some entrained salts being present. The piezometer is a simple means of flagging whether the temporary groundwater mound created by the process water is extending toward downslope surface drainage. Changes to the relative infiltration/evaporation rates are possible in such a situation.</p>	<ul style="list-style-type: none"> Existing access only used. Pastoral leaseholder routinely informed of oil movement timetables. Facility stock-fenced; all open water bodies associated with facility fenced. Formation water only released where no visible oil present (<30ppm). Final produced water disposal into infiltration sump fenced to exclude stock and larger wildlife. If used, evaporation areas fenced to exclude stock and larger wildlife. Piezometers installed between infiltration pit and watercourses to monitor spread of disposed process water mound. 	<ul style="list-style-type: none"> Formation water only released to infiltration pit when no visible oil present (<30 mg/L) No stock access to facility or water disposal Piezometer data show no groundwater movement from infiltration pit to surface watercourse
<p>15) Avoid contamination of natural surface waters with hydrocarbons and biocides; and</p> <p>16) Avoid contamination of groundwater with hydrocarbons and biocides.</p>	<p>There is no local near-surface groundwater. Infiltration of produced water will not have any effect other than creating a groundwater mound which will disappear after the field is exhausted. The piezometers are to check for the slight possibility of injected groundwater mound extending to nearby diffuse drainage lines. Two piezometers are proposed</p>	<ul style="list-style-type: none"> Procedures, design and construction in place to limit spills (Objectives 7 & 8 above) Interceptor pondages constructed out of defined drainage and above likely flood levels Interceptor pond bunds with geotextile to prevent wall erosion. No produced water released into surface watercourse areas. Cleaned produced water either disposed into infiltration sump or evaporation areas away from defined drainage. Installation and monitoring of downslope piezometers for detecting possible spread of groundwater plume due to injection. 	<ul style="list-style-type: none"> No spills or leaks outside areas designed to contain them Formation water only released to infiltration pit when no visible oil present (<30 mg/L) No formation water released in surface watercourses. Pondages and infiltration pits above maximum probable flood level
<p>17) Minimise visual impacts</p>	<p>Facility is out of sight and most access is masked from the Innamincka-Cordillo Downs road.</p>	<ul style="list-style-type: none"> Existing access only to be used 	<ul style="list-style-type: none"> Facility not obtrusive from Innamincka-Cordillo Downs road.
<p>18) Minimise public and third party risks</p>		<ul style="list-style-type: none"> Signage on rig road/public road intersection prohibiting entry, warning against trespassing, and warning of danger associated with petroleum activity and truck movements. Limitations on road train movements as above. 	<ul style="list-style-type: none"> Reasonable measures implemented to ensure public and third party safety

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Environmental objective	Comment	Means for achieving objectives	Assessment Criteria
19) Minimise workforce hazards		<ul style="list-style-type: none"> • Cutoff valves installed and operable at wellhead. • Firefighting provisions (extinguishers) for loading area and pump banded area. • Sufficient separation of wellhead, pumps, tanks, loading and subsidiary facility components sufficient for isolating major fires. • Storage and loading facilities fully earthed (single earth). • Emergency action and evacuation procedures in place. • Production Operations Manual with procedures developed and maintained. 	<ul style="list-style-type: none"> • Reasonable measures implemented to ensure workforce and public safety
20) Develop and test alterations to Production Operation Manual, procedures and facilities prior to any shift to unmanned operation	Stuart Petroleum proposes to switch the facility eventually to unmanned operation, once the integrity of the facility, its systems and the procedures for operating it are demonstrated. Unmanned operation <i>per se</i> does not alter environmental objectives, but will require that there be in place equipment automation or other modifications, and demonstration before the event that unmanned operation can be undertaken without increasing risks.	<ul style="list-style-type: none"> • Integrity of containment, production equipment and manual operation demonstrated by incident-free running • Required automation installed and tested • Production Operations Manual procedures revised, in place and tested. 	<ul style="list-style-type: none"> • No incident arising as a consequence of automation
21) Develop long term closure and remediation plan in advance of any closure	Remediation planning should be a formal part of operations, however production facilities and situations may change with time. Detail of closure and remediation should be developed before closure commences, but attempting detailed planning at the start of production is not an effective course. (For example, more wells may be drilled in the field, or the facility may be used in relation to other fields nearby, changing the lifespan and complexion of the operation.)	<ul style="list-style-type: none"> • Closure and remediation planning incorporated into production management 	<ul style="list-style-type: none"> • Planning completed and rehabilitation SEO developed prior to first well abandonment