

Table 3.2.1.1 Summary of Baseline (Pre Operational) Ecological– Sub Program

Sub Program	Objective	Period	Frequency	Location(s)	Methodology	Parameters	Interpretation & reporting	Other details
Marine Ecological Monitoring	Assess pre existing characteristics of marine ecological communities of Bass Strait in the region of the proposed outfall.	Commencing no later than April 2007 (Subject to assessment by statistical analysis on the suitability of control sites as representative of April "Impact" locations used in the April 2007 survey. If not suitable, commencement will be October 2007)	6 monthly surveys, in October and April.	Sample sites: 4 "Impact" Locations & 10 "Control" Locations subject to final approval by the expert panel Locations to reflect 2 series, one for benthic infauna & one for epi-benthic fauna and flora & fish.	Ecological Surveys, to establish baseline data set of a MBACI program design. 50m dia. sample Locations and 5 sites within each Location sampled for 2 replicates. 4 "Impact" Locations in area of 25-75m outside defined Mixing Zone. 10 "Control" Locations, 5 to the east and 5 to the west within 6 km of the outfall	<ol style="list-style-type: none"> Benthic infauna - Van veen grabs over a 1mm mesh to family level except for Molluscs and introduced marine pests that must be identified to species level (where possible). Epi-benthic fauna & flora – photo quadrats of reef assessed at 50 points to obtain % cover of algae and other biota. Supporting environmental variables to include concomitant water and sediment quality measures. 	<p>Sampling, statistical analysis and interpretation by a <i>suitably qualified expert</i>.</p> <p>6 monthly return with comparison between Locations and to historic data when collated.</p>	<p>Formal approval of a <i>suitably qualified expert</i> is required by The Director of Environmental Management before commencement.</p> <p>All fauna collected must be preserved in 70% alcohol and stored for at least 5 years. Storage jars must be labelled inside and out with details of date of collection, site location, collection method, collectors name, and identifiers name.</p> <p>All photographic records to be archived for 10 years minimum.</p>

Sub Program	Objective	Period	Frequency	Location(s)	Methodology	Parameters	Interpretation & reporting	Other details
	As Above	As Above	1 baseline survey then further sampling at the discretion of the Director.	As above	Baited Video	4. Fish community diversity & abundance	As above Footage to be archived and analysed as required by the Director	Subject to review as required by the Director

Table 3.2.1.2 Summary of Baseline Operational Ecological – Sub Program

Sub Program	Objective	Period	Frequency	Location(s)	Methodology	Parameters	Interpretation & reporting	Other details
Marine Ecological Monitoring	To detect and assess impact outside the defined Mixing Zone caused by outfall	Ongoing, with first review after 2.5 Years. Commencing less than one month after process effluent release commences.	6 monthly surveys, in October and April.	<p>Sample sites</p> <p>4 "Impact" Locations & 10 "Control" Locations subject to final approval by the expert panel</p> <p>Locations to reflect 2 series, one for benthic infauna & one for epi-benthic fauna and flora & fish.</p>	<p>Ecological Surveys, to establish if there has been a post disturbance ecological effect utilising a MBACI program design.</p> <p>50m dia. sample Locations and 5 sites within each Location sampled for 2 replicates.</p> <p>4 "Impact" Locations in area of 25-75m outside defined Mixing Zone.</p> <p>10 "Control" Locations, 5 to the east and 5 to the west within 6 km of the outfall</p>	<p>1. Benthic infauna - Van veen grabs over a 1mm mesh to family level.</p> <p>2. Epi-benthic fauna & flora – photo quadrats of reef assessed at 50 points to obtain % cover of algae and other biota.</p> <p>3. Supporting environmental variables to include concomitant water and sediment quality measures.</p>	<p>Sampling, statistical analysis and interpretation by a <i>suitably qualified expert</i>. 6 Monthly return with comparison between Locations and to historic data when collated.</p> <p>Results to be assessed using Power Analysis against Effect Levels: Final effect sizes and Type 1 and Type 2 error values to be determined and approved by the expert panel and the Director</p>	<p>Formal approval of a <i>suitably qualified expert</i>. is required by The Director of Environmental Management before commencement.</p> <p>All fauna collected must be preserved in 70% alcohol and stored for at least 5 years. Storage jars must be labelled inside and out with details of date of collection, site location, collection method, collectors name, and identifiers name. All photographic records to be archived for 10 years minimum.</p>