



Marine Operations

Shellsand is the natural resource for Cockburn Cement's lime manufacturing operation at Munster. It is comprised of calcium carbonate, which is transformed into quicklime by heating at high temperature.

Lime is a key ingredient in enabling the daily operation of some of Western Australia's most important industries, in particular alumina processing and gold extraction.

Why do we need shellsand?

The production of lime is recognised as being critically important to the WA economy and the development of industry and infrastructure. For this reason, Cockburn Cement has been granted long-term permission to access shellsand resources in Owen Anchorage, off the metropolitan coast.

Cockburn Cement's marine operations and processes to extract shellsand are approved by the WA Environmental Protection Authority. The company's approval to extract shellsand is provided in a WA Ministerial Statement and State Agreement.

All elements of the marine operations are monitored and regulated by relevant WA Government agencies, currently the Department of Water and Environmental Regulation

and the Department of Jobs, Tourism, Science and Innovation, and subject to auditing and annual reporting.

Where does the shellsand come from?

Shellsand is currently extracted from an area in Owen Anchorage approximately six kilometres off the coast - due west of Port Coogee. Cockburn Cement has operated in Owen Anchorage on Success and Parmelia sand banks since 1972.

The company does not operate in Cockburn Sound or any other offshore area.

Marine operations are currently taking place in an approved area covering 3.6 km² of seafloor in Owen Anchorage.

Approved Extraction Area





COCKBURN CEMENT

Is there seagrass in the approved extraction area?

The area of Owen Anchorage in which Cockburn Cement currently operates is defined by marine specialists and WA Government authorities based on the absence of seagrass meadows. The area was also selected to ensure there is a significant buffer between the extraction points, reefs and rocky outcrops.

Has any seagrass been impacted by the marine operations?

Prior to 2012, CCL had approval to operate within areas that had previously contained seagrass. For this reason, the company provided long-term funding for world-leading research and trials as part of a Seagrass Research and Rehabilitation Plan (SRRP). This 10-year research program successfully pioneered the replanting and regrowth of seagrass with the goal of establishing procedures for rehabilitating seagrass that are economically feasible and environmentally sustainable.

The SRRP involved independently managed research which demonstrated that seagrass could be rehabilitated. Successful rehabilitation trials occurred in differing environmental conditions within Cockburn Sound and also Oyster Harbour in Albany. The SRRP comprised five separate programs carried out by several leading universities and researchers from 2003 to 2012. This internationally important research was sponsored by Cockburn Cement and the WA Department of Commerce.

Further trials by Cockburn Cement on Success Bank have also shown that seagrass can be successfully transplanted at depths of up to 14 metres. Monitoring of the seagrass in decommissioned extraction areas has further revealed that there is natural recolonisation occurring of the seagrass on Success and Parmelia Banks.

In 2014, seagrass cover within Owen Anchorage was greater than it was in 1999, and it is now apparent from research and monitoring that the level of cover fluctuates over time due to a range of natural environmental factors. This means there is no fixed level of seagrass cover off the metropolitan coast.

How do the marine operations work?

A slow moving trailing suction hopper dredge is used to collect shellsand into the dredge. The shellsand is then transported to Woodman Point where the dredge is opened and the load is placed on the seafloor alongside the Cockburn Cement jetty. The shellsand is then collected from the seafloor and piped to a washplant on the shore at Woodman Point where it is cleaned of small organic material, such as seaweed fragments, and salt, before being pumped via a pipeline to the Munster plant.

Has the shoreline been changed by the marine operations?

It has been scientifically recognised that the marine environment off the metropolitan coast consists of a number of 'primary sediment cells' and there is a low likelihood of sand moving between the cells. These natural cells include one in Cockburn Sound, one in Owen Anchorage and out to Rottneest Island, and one north of Fremantle Harbour along the coastline to Perth's far northern suburbs.

The current marine operations are six kilometres offshore, which is a considerable distance from the mainland. Most impact on the shoreline since colonial settlement has resulted from the construction of important infrastructure, including groynes, breakwaters, marinas and harbours. Shorelines and beaches are also in a state of constant change and their size and shape are directly influenced by annual natural events such as storms and currents.

Analysis of aerial images from 1942 to 2018 indicates that the beaches nearest to Owen Anchorage have grown (accreted). Cockburn Cement has been monitoring shoreline changes at Owen Anchorage since 1988 and during that time the coastline north of Point Coogee has shown some erosion, while the coastline to the south has shown expansion (accretion). It is likely the erosion is due to a combination of factors including structures preventing sediment transport.

For more information visit:
www.cockburncementcommunity.com.au