

A History of Sea Dumping off Australia and its Territories

SUMMARY

The dumping of material in the world's oceans has a long history. Objects are dumped into the ocean in a variety of ways. Sea dumping, as currently defined in Australian legislation, is any deliberate disposal into the sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures and any deliberate disposal into the sea of vessels, aircraft, platforms or other man-made structures¹. It does not include material released directly into the sea from a land source or operational discharges from ships. Sea dumping of wastes has been common practice in the waters surrounding Australia, from first European settlement until a couple of decades ago. For the past seventy years sea dumping has been regulated by domestic legislation with increasing restriction on the type of material dumped. As Australian Government policy has moved to increase protection of both land and marine environments, waste reduction and environmentally sustainable disposal methods have become increasingly important. To control the dumping of waste Australia first introduced the *Beaches, Fishing Grounds and Sea Routes Protection Act 1932*, an Act to control the dumping of vessels that could potentially obstruct shipping channels or interfere with trawling grounds. Since 1975 an international agreement, the *Convention On The Prevention Of Marine Pollution By Dumping Of Wastes And Other Matter, 1972* (or London Convention) has controlled sea dumping internationally. In order to ratify the London Convention, Australia enacted the *Environment Protection (Sea Dumping) Act 1981* which provides for the regulated dumping of wastes and other substances in waters off Australia and its External Territories. More recently Australia has implemented the *1996 Protocol to the Convention On The Prevention Of Marine Pollution By Dumping Of Wastes And Other Matter, 1972*. The 1996 Protocol to the London Convention severely restricts the list of substances which may be dumped at sea. Currently most sea dumping permits in Australia are issued by the Department of the Environment and Heritage (DEH)² and are for the disposal of uncontaminated dredge spoil. In accord with its status as the predominant dumping permit, DEH has produced the *National Ocean Disposal Guidelines for Dredged Material*³. It assists permit applicants by providing a comprehensive framework for the assessment of the environmental impacts from the disposal at sea of dredged material, in accordance with domestic environmental protection legislation and Australia's international obligations. Occasionally, under strictly limited circumstances, permits are issued for the creation of artificial reefs. Historically, obsolete ammunition, organic refuse, chemicals and other waste have also been dumped off Australia.

¹ As defined by the 1996 Protocol (see further). The definition also includes any storage of wastes or other matter in the seabed and the subsoil thereof from vessels, aircraft, platforms or other man-made structures at sea and any abandonment or toppling at site of platforms or other man-made structures at sea for the sole purpose of deliberate disposal (from Article 1).

² Historically permits were issued by the Environment Protection Group (formerly Environment Protection Agency and Commonwealth Protection Agency).

³ Published by Environment Australia, May 2002 (ISBN 0 642 54831 5). Full copy viewable on the internet on the Department of the Environment and Heritage's web site; <http://www.deh.gov.au>.

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International Control of Sea Dumping

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention)

The need for an international convention to control the dumping of wastes at sea was recognised in 1972 at the United Nations Conference on the Human Environment which met in Stockholm, Sweden (5 - 16 June 1972). Principle 7, arising from the meeting stated that “*States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea*”. Meeting in London in November 1972, an Inter-Governmental Conference on the Convention of the Dumping of Wastes at Sea adopted the *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*. Originally known as the London Dumping Convention, now the London Convention, it has been in force internationally since 1975. The Contracting Parties to the Convention recognized that “*The marine environment and the living organisms which it supports are of vital importance to humanity...and that the capacity of the sea to assimilate wastes and render them harmless, and its ability to regenerate natural resources, is not unlimited*”. The London Convention, with its amendments of 1978, 1980 and 1993, controls marine pollution from dumping and incineration at sea.

Many objects are discarded in the world's oceans each year. The material comes from a variety of sources and is introduced into the ocean in a variety of ways. Sea dumping is a common term that covers the release of material into the ocean in a very specific way. Sea dumping as defined in Article III of the London Convention is (i) any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea and (ii) any deliberate disposal at sea of vessels, aircraft, platforms or other man-made structures at sea. The definition does not include (i) the disposal at sea of wastes or other matter incidental to, or derived from the normal operations of vessels (operational discharge), aircraft, platforms or other man-made structures at sea and their equipment⁴ (ii) placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this convention. The disposal of wastes or other matter directly arising from, or related to the exploration, exploitation and associated off-shore processing of seabed mineral resources and material discarded straight to the ocean from a land source such as sewage pumped directly into the ocean from a city's sewerage system are also not covered by the provisions of the Convention. This definition has been amended by the 1996 Protocol (see section below).

The London Convention prohibited the dumping of some substances which are listed in Annex I. These included organohalogen compounds, mercury, persistent plastics, crude oil⁵, radioactive wastes or other radioactive matter and materials in whatever form⁶ produced for biological and chemical warfare. It also allowed the regulated dumping of other substances. The dumping of

⁴ Other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or structures.

⁵ Crude oil and its wastes, refined petroleum products, petroleum, distillate residues, and any mixtures containing any of these, taken on board for the purpose of dumping.

⁶ e.g. solids, liquids, semi-liquids, gases or in a living state.

wastes or other matter listed in Annex II required a prior special permit and the dumping of all other wastes or matter required a prior general permit. Annex II substances included arsenic, beryllium, chromium, copper, lead, nickel, vanadium zinc (and their compounds), organosilicon compounds, cyanides, fluorides pesticides and their by-products not covered in Annex I⁷. Annex III established general provisions to be considered in establishing criteria in governing the issue of permits and included the characteristics and composition of the matter, characteristics of the dumping site and the method of deposit. In 1996, a special meeting of the contracting parties adopted the 1996 Protocol to the London Convention. It replaces the existing list of banned substances with a severely restricted list of substances which may be dumped at sea (see below).

1996 Protocol To The Convention On The Prevention Of Marine Pollution By Dumping Of Wastes And Other Matter, 1972⁸

In 1996⁹ a Special Meeting of Contracting Parties to the London Convention adopted the 1996 Protocol to the London Convention. It embodies a totally new approach to the dumping of wastes into the sea and will eventually replace the London Convention. The Protocol specifies seven types of materials that may be sea dumped, whereas, the London Convention specifies a list of materials that cannot. Therefore, the list of items that can be dumped under the London Convention is a long list of possibles while the 1996 Protocol is far more restrictive. A major aim of the Protocol is to have less and cleaner waste dumped at sea. On 25 March 1998, Australia signed the 1996 Protocol to the London Convention. Australia's treaty practice is to ratify a treaty after domestic law, which is in agreement with the treaty, is enacted. Thus the *Environment and Heritage Legislation Amendment Bill 2000* which amends the *Environment Protection (Sea Dumping) Act 1981* (see further) was introduced into the Federal Parliament. The Bill came into effect on 16 August 2000 and Australia ratified the 1996 Protocol on 4 December 2000.

The Protocol amended the definition of dumping as originally seen in Article III of the London Convention. Dumping now means (i) any deliberate disposal into the sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea (ii) any deliberate disposal into the sea of vessels, aircraft, platforms or other man-made structures at sea (iii) any storage of wastes or other matter in the seabed and the subsoil thereof from vessels, aircraft, platforms or other man-made structures at sea; and (iv) any abandonment or toppling at site of platforms or other man-made structures at sea, for the sole purpose of deliberate disposal. The Protocol requires the application of the precautionary principle, that is, the Contracting Parties to the Protocol must take appropriate preventative measures where there is reason to *believe* that wastes may cause harm even when there is no conclusive evidence to prove so. Further, the

⁷ Also considered in Annex II were containers, scrap metal and other bulky wastes liable to sink to the sea bottom which may present a serious obstacle to fishing or navigation.

⁸ The information in this section is largely based on Parliamentary Readings and an Explanatory Memorandum to the Environment and Heritage Legislation Amendment Bill 2000. Some of the passages below are taken directly from these sources. The following from the National Ocean Disposal Guidelines for Dredged Material (2002) should also be noted (page 7 & 8). "A major aim of the Protocol is to have less and cleaner waste dumped at sea. Annex 2 of the 1996 Protocol to the London Convention emphasises progressively reducing the need to dump waste at sea, by requiring applicants for sea dumping permits to carry out waste prevention audits and consider a range of waste minimisation strategies. Those who wish to dispose of material at sea should first consider what possible contaminants exist in the material to be dumped, particularly any prohibited substances. Secondly, they should consider the material's suitability for alternate disposal methods, including the comparative merits of dumping at sea and on land. Thirdly, applicants must conduct a waste characterisation process, to assess the material's physical, chemical and biological attributes. If the material is found to be acceptable for sea disposal, or it is feasible for it to be made acceptable by some form of processing, a dump site may then be selected".

⁹ 28 October - 8 November 1996.

Protocol obliges Contracting Parties to make attempts to reduce the necessity for sea dumping and to reduce contamination levels in material to be dumped. Parties are obliged to carry out a waste prevention audit¹⁰, consider waste management options¹¹, formulate an impact hypothesis in which the potential effects are assessed, and (if required) carry out a monitoring program to determine whether changes in the receiving environment are within those predicted by the Impact Hypothesis. In practice, in anticipation of its ratification, Australia had voluntarily adopted many of the provisions when issuing permits. Sea dumping permits issued in the last few years have been primarily for the disposal of uncontaminated dredge spoil. Occasionally, the scuttling of vessels and other appropriate materials for artificial reefs has occurred. These fall within the range of the seven permissible categories as listed in Annex 1 of the Protocol. The categories are;

- (i) dredged material;
- (ii) sewage sludge;
- (iii) fish waste, or material resulting from industrial fish processing operations;
- (iv) vessels and platforms or other man-made structures at sea;
- (v) inert, inorganic geological material;
- (vi) organic material of natural origin; and
- (vii) bulky items, primarily comprising iron, steel, concrete and similarly unharful materials, for which the concern is physical impact, limited to those circumstances where such wastes are generated at locations having no practicable access to disposal options other than dumping (for example small islands with isolated communities).

Except for in an emergency situation, no other substances may be considered for dumping. The Protocol also prohibits incineration at sea, except in an emergency situation, and prohibits the export of wastes or other matter for dumping into the sea or incineration at sea.

Controlled Sea Dumping in Australia

Legislative History

Although sea dumping has been a common method of waste disposal around the world, some countries have greatly restricted its practice. Australia, in particular, aims to limit sea dumping to the disposal of uncontaminated dredge spoil and occasionally for the creation of artificial reefs. This accords with the Australian Federal Government's¹² policy to minimise the production of waste and to encourage environmentally sustainable waste disposal.

¹⁰ A waste prevention audit is carried out in order to evaluate (1) types, amounts and relative hazard of wastes generated (2) waste sources and (3) the feasibility of waste reduction and prevention techniques. The audit can be used to reduce the amount of waste generated and to reduce waste contamination levels [from the National Ocean Disposal Guidelines for Dredged Material (2002), page 8].

¹¹ The 1996 Protocol to the London Convention requires applicants to consider alternate ways of dealing with waste, apart from disposal into land, air or sea. For example, disposal options, in order of increasing environmental impact, are: re-use; off-site recycling; destruction of hazardous constituents; treatment to reduce or remove the hazardous constituents; disposal on land, into air or into water. The determining authority must refuse an application if there are appropriate alternatives for re-use, recycling or treatment of the waste without undue risks to human health or the environment, or disproportionate costs. [from the National Ocean Disposal Guidelines for Dredged Material (2002), page 8].

¹² Australia is a Federation of six States, three internal territories and seven external territories. The State Governments have their own legislature. The Federal Government is also referred to as the Commonwealth Government.

Beaches, Fishing Grounds and Sea Routes Protection Act 1932

During the 1920s there was considerable public concern about pollution washing up on beaches, primarily on beaches around Sydney, but also around Melbourne and Adelaide¹³. Ships routinely discharged loads of garbage just off the coast. In Sydney this waste included offal, organic refuse¹⁴, waste collected by municipal councils and ashes¹⁵. As well as causing significant pollution problems when garbage washed up onto beaches, disposal of obsolete boats by dumping them off the coast also caused net-snagging problems with the recently established deep sea trawling industry¹⁶. A further problem of unsupervised ship disposal was possible obstruction of the increasingly busy navigation routes.

To reduce this pollution, the Federal Government (using its power to make laws with respect to interstate and international commerce, quarantine and fisheries) introduced the *Beaches, Fishing Grounds, and Sea Routes Protection Act 1932*¹⁷ to control the dumping of boats that could potentially obstruct shipping channels or interfere with trawling in Australia's fishing grounds. The Federal Government also regulated general waste and garbage dumping by prohibiting the dumping of "any garbage, rubbish, ashes or organic refuse" in designated exclusion zones¹⁸. This legislation was enacted some forty years before there were any international moves to control sea dumping.

The *Beaches, Fishing Grounds and Sea Routes Protection Act 1932* designated fourteen vessel dumping sites off the Australian coast, these being specially chosen to avoid shipping routes and areas regularly trawled by fishing boats (they were to become general disposal areas where chemicals and ammunition etc. were also dumped). A permit was required for each vessel dumped. To dump garbage, ashes or organic refuse, permission was required from the Director of Quarantine. The designated dumping zones are shown in Appendix A.

The ships as well as non ship objects that are known to have been dumped within each of these dumping grounds are listed in Appendix B and Appendix C respectively.

Environment Protection (Sea Dumping) Act 1981

Prior to the introduction of domestic legislation commensurate with the London Convention, Australia used voluntary agreements to control dumpings. This arrangement closely followed the Convention. Under the arrangement individuals or organisations wishing to dump materials at

¹³ Parliamentary speeches: second reading 2 December 1932. EPA 94/6791 & EPA 94/6789. These numbers refer to two of the files in the (former) Environment Protection Agency (EPA) file series: EPA- Waste Management Bch- Sea Dumping Records - Database, files which are now in the care of the Department of the Environment and Heritage, Canberra, Australia. The data for this paper has been sourced principally from Federal Government records on sea dumping collected and compiled in this file series.

¹⁴ This included human waste (also known as night soil) which was dumped daily beyond Sydney Heads (David Bishop pers. comm.).

¹⁵ Exact dumping figures are difficult to ascertain but these substances were dumped in large quantities eg. ash was dumped for many years and in one month alone, November 1932, 3,426 tons of ash were dumped three miles east off Sydney Heads. Much of the ash came from power stations. The introduction of incinerators reduced the loads dumped by city councils. Australian Archives ACT Regional Office Series A1928/1, item 848/12 part 1. EPA 94/6789.

¹⁶ An Australian company paid the price for the same problem forty years later when contractors constructing an oil rig dumped scrap metal in the sea at Lakes Entrance, Victoria, in 1971-1972. Because of net-snagging the company had to get the metal removed at a cost of \$100,000. Newspaper article, The Age (Melbourne), 11 August 1972. EPA 94/6789.

¹⁷ The legislative history which follows appears in EPA 94/6791.

¹⁸ It appears only one such zone was ever enacted. This was a prohibited zone off Sydney (found in the Statutory Rules to the Act).

sea approached the Federal Government for permission. If the waste material was banned under the Convention dumping was prohibited. In other cases dumping was allowed only in prescribed circumstances after consultation with relevant bodies such as fisheries and those responsible for navigation routes.

In preparing to ratify the London Convention, the Australian Federal Government introduced the *Environment Protection (Sea Dumping) Act 1981*¹⁹. It came into effect on 6 March 1984. It regulates the dumping of wastes and other matter in Australian waters, including the seas around its External Territories - including Cocos (Keeling) Islands, Christmas Island and Norfolk Island. It repeals the *Beaches, Fishing Grounds and Sea Routes Protection Act 1932*. The Act applies to Australian vessels, aircraft and platforms in any part of the world's seas and to foreign vessels, aircraft and platforms in Australian waters. It is immaterial where the material comes from, whether from a land or a sea-based source, but rather how and where it is dumped. In general, if the material is loaded for dumping or is dumped from a platform, vessel or aircraft to an area below the low tide mark in Australian waters, then a permit is required. Currently DEH administers the *Environment Protection (Sea Dumping) Act 1981* and issues permits to dump material at sea. DEH has delegated authority under the Sea Dumping Act for sea dumping in all Australian waters. Within the boundaries of the Great Barrier Reef Marine Park (GBRMP), the Great Barrier Reef Marine Park Authority (GBRMPA) has both delegated authority under the Sea Dumping Act and legislative authority under the *Great Barrier Reef Marine Park Act 1975* for dredging and the disposal of the associated spoil²⁰.

Under section 9 of the *Environment Protection (Sea Dumping) Act 1981* (known as the Rollback Provision) States can legislate to control sea dumping in their adjacent three nautical miles of sea if the legislation conforms with Federal law and, hence, the London Convention²¹. This is a consequence of the 1979 Offshore Constitutional Settlement, an agreement between the Federal Government and State Governments whereby the States have full sovereignty in the first three nautical miles from their coast. The Commonwealth Act does not apply to dumping in waters within the limits of the Northern Territory or a State, that is within bays, gulfs and rivers. The following from the National Ocean Disposal Guidelines for Dredged Material (2002) is also relevant²². "The Sea Dumping Act does not apply to dumping, or loading for the purposes of dumping, where the associated dumping activities (and any impacts) are to occur entirely in waters within the limits of a State or the Northern Territory. The extent that waters are wholly within the limits of a State or the Northern Territory is determined according to law, including by reference to the 'Letters Patent' issued to State Governors at Federation in 1901. Such waters include rivers, the gulfs in South Australia, and bays such as Sydney Harbour and Port Phillip Bay. State and Territory Governments are responsible for regulating dredging and dumping activities that occur within such waters, and, in most instances, have additional requirements for

¹⁹ Sometimes referred to locally as the Sea Dumping Act which is not to be confused with the International London Convention.

²⁰ All proponents who wish to dredge or dispose spoil in the GBRMP should consult GBRMPA about potential direct or indirect impacts of their activities on the Marine Park. All proponents should also contact GBRMPA to obtain the most recent dredging and spoil disposal policy. GBRMPA's requirements for environmental impact assessment may be more rigorous than in other areas because of the Authority's responsibility to protect the values of the reef and its plants and animals. In particular, dredging and spoil disposal are unlikely to be approved if these activities may damage sensitive environments. If a permit is approved there may be additional restrictions associated with volume or environmental risk. For example, GBRMPA has a precautionary approach, that dredge spoil which is contaminated above the Maximum Levels defined in the Australia New Zealand Environment and Conservation Council (ANZECC) Ocean Disposal Guidelines for Dredged and Excavated Materials (2001), must not be disposed of within the GBRMP [from the National Ocean Disposal Guidelines for Dredged Material (2002), page 3].

²¹ Until 1990 Australia's territorial sea limit was three nautical miles (nm).

²² Page 6.

dredging and dumping that occurs within their adjacent coastal waters. Sea dumping proponents should therefore also refer to the relevant State or Territory authority, to determine the nature and scope of any approvals required under the laws of that State or Territory. As outlined in The *Environment Protection and Biodiversity Conservation Act 1999* section (see further), there may also be a requirement for approval under this Act, for dredging and dumping activities that occur within waters within the limits of a State or Territory”.

The primary consideration in granting a permit is the effect of the material on the marine environment. Environmental impact assessment is undertaken by DEH for each application. If the material proposed for dumping contains sufficiently low levels of contaminants, and if the proposed dumping site will minimise any environmental effects, then the dumping will comply with the *Environment Protection (Sea Dumping) Act 1981* and a permit may be granted by the Federal Government Minister²³ responsible for the environment or his/her Delegate. A permit is not necessary for emergency dumpings to secure the safety of life at sea (referred to as force majeure (see section 15(3) of the *Environment Protection (Sea Dumping) Act 1981*). Permits can allow for multiple dumpings and always specify the amount of material to be dumped, the dumping period and other environmental guidelines. Fines can be levied for dumping without a permit, or if the conditions of a permit are not adhered to.

Australia formally ratified the London Dumping Convention on 21 August 1985. As, previously mentioned, Australia's treaty practice is to ratify a treaty after domestic law, which is in agreement with the treaty, is enacted.

Amendments to the Environment Protection (Sea Dumping) Act 1981

There have been several amendments to the *Environment Protection (Sea Dumping) Act 1981*. The two most important changes were made in 1986 and 1993. After Australia had signed the South Pacific Nuclear Free Zone (SPNFZ) Treaty in 1985 the Australian Federal Government introduced legislation to ban all radioactive waste dumping. Although high level radioactive waste dumping had always been banned by the London Convention, low level waste dumpings were still permitted. The 1986 Australian amendment prohibited all radioactive waste dumpings and defined radioactive material as that having activity above 35 becquerels per gram. Eight years later, on 21 February 1994, the Contracting Parties to the London Convention decided to stop all radioactive waste dumpings internationally.

The 1993 amendments enable Australia to ratify the *Protocol for the Prevention of Pollution of the South Pacific Region by Dumping* to which Australia is a party (commonly referred to as the SPREP Dumping Protocol). This protocol is one of two protocols to the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, otherwise known as the SPREP Convention. This Convention seeks to protect and manage the marine and coastal environment of the South Pacific Region. To conform with the SPREP Dumping Protocol the geographical area covered by the *Environment Protection (Sea Dumping) Act 1981* was extended to cover the Continental Shelf where it goes beyond the Australian Fishing Zone. In addition organophosphorus compounds were added to the list of banned substances.

Other changes made to the *Environment Protection (Sea Dumping) Act 1981* made by the passage of the *Environment and Heritage Legislation Amendment Bill 2000* include (i) the Sea Dumping Act now applies to Australia's Exclusive Economic Zone (EEZ), rather than, as was previously the case, the Australian Fishing Zone. The current definition of Australian waters is

²³ Referred to as the Responsible Minister.

“Australian waters includes the territorial sea of Australia, any waters on the landward side of the territorial sea (other than waters within the limits of a State or the Northern Territory), and any waters on the seaward side of the territorial sea, out to the limits of the Exclusive Economic Zone (EEZ), or the continental shelf of Australia where it extends beyond the EEZ”²⁴ (ii) the Bill limited the defence force exemption, so that the Australian Defence Force are now required to comply with the Act, except in an emergency situation²⁵ and (iii) puts beyond doubt that the Commonwealth has the responsibility for regulating the construction of artificial reefs.

The Environment Protection and Biodiversity Conservation Act 1999²⁶

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) has put in place a streamlined environmental assessment and approvals process, and establishes an integrated regime for biodiversity conservation and the management of important protected areas. In assessing a permit application under the Sea Dumping Act, the determining authority (currently DEH) must consider the requirements of Part 11 of the EPBC Act. Part 11 of the EPBC Act requires that an action which is the subject of a permit application under the Sea Dumping Act be assessed under Part 8 of the EPBC Act, if that action has, will have or is likely to have a significant impact on the environment. In circumstances where it is determined, in accordance with Part 11, that such an action requires an assessment under the EPBC Act, then the granting of a permit under the Sea Dumping Act will be subject to that assessment, and subsequent recommendations made in accordance with the Part 11²⁷.

Sea Dumping Activity off Australia

Under the auspices of the *Environment Protection (Sea Dumping) Act 1981*, 309 permits and 76 variations to a permit (a variation to a permit alters a condition imposed in a previously issued permit eg. it could alter the amount of material dumped or alter the dumping period; all other conditions in the original permit remain the same) have been issued²⁸ for dumpings in waters under Federal Government control. Most of the permits have been issued for dredge spoil. Other major categories (historically) include materials for the creation of artificial reefs and for the dumping of obsolete equipment and boats (see Table 1 and Appendix D²⁹).

²⁴ National Ocean Disposal Guidelines for Dredged Material (2002), page 3.

²⁵ See the Defence Forces section where it is noted, that in any case, a memorandum of understanding since 1986 between the Defence Forces and the body administering the *Environment Protection (Sea Dumping) Act 1981* has meant that all dumping has occurred in a manner consistent with the Sea Dumping Act.

²⁶ The following account is taken directly from the National Ocean Disposal Guidelines for Dredged Material (2002), pages 3 to 5.

²⁷ Where an action only includes activities for which an approval is required under the Sea Dumping Act (that is, dredging and sea dumping), a proponent is not required to separately refer that action under Part 7 of the EPBC Act. Rather, it will be the responsibility of the determining authority to decide, after consideration of the sea dumping permit application, whether an assessment is required under Part 8 of the EPBC Act, for the purposes of Part 11 of that Act. There may be circumstances, however, where an action will require assessment and approval under both the EPBC Act and Sea Dumping Act. Such circumstances will include a situation where (1) an action includes activities which will require approval under the Sea Dumping Act, and other activities that will not (eg a port expansion involving dredging, sea dumping, land reclamation and the construction of new berths) and (2) that action has, will have or is likely to have a significant impact on a matter of national environmental significance listed in Part 3. As the operation of the EPBC Act may vary depending on the circumstances of particular actions, it is advisable that proponents discuss proposed actions with the Department of the Environment and Heritage.

²⁸ March 1984 to May 2003. EPA 94/4945.

²⁹ To 23 November 1994 data collated by the authour, thereafter from the Annual Report of the Department of the Environment, Sport and Territories/ Department of the Environment and Heritage. Note that the list only includes permits that were issued. It is possible for a permit to have been issued but the item(s) not dumped due to whatever reason.

Australian State Governments have permitted an unknown number of dumpings in waters within the limits of their state, although they have been principally for dredge spoil and artificial reefs (South Australia, especially, has established a large number of tyre reefs in its two gulfs).

Database of pre Environment Protection (Sea Dumping) Act 1981 dumpings

A database³⁰ listing all known sea dumping episodes prior to the introduction of the *Environment Protection (Sea Dumping) Act 1981* has been compiled. The database only details specific dump events where a geographic coordinate is described. It describes the type of material dumped, the amount, date and coordinates. The data has been categorised under four broad and arbitrary headings, being chemicals (Appendix E), boats (Appendix F), ammunition (Appendix G) and a fourth being all dumpings not related to the first three categories (Appendix H). In some cases there is necessary overlap in the categorisation (eg: chemical/ammunition) and the dump event could have been placed in either group. The four categories are presented in four spreadsheets and the data is presented in chronological order. It is important to know where any hazardous material may lie, both to prevent human contact and to assess the possible ecological consequences.

As there is now only limited sea dumping activity most of the data is based on old records. It is based on a variety of Federal Government records, many being secondary records having an unknown source of origin. During the compilation of these secondary records transcription errors may have occurred. Without Global Positioning Systems being available, the dump coordinates are necessarily less accurate than today. Under the influence of currents the dumped material could have drifted from its surface position. Moreover the items may well now be buried or may not even exist having totally dissolved, rotted or corroded. Some of the items have 2 conflicting coordinates possibly due to transcription errors. Gross errors were quickly discounted. Otherwise previous dumping patterns were used to discriminate the most likely coordinate. In the case of scuttled vessels, non-Government data such as that sourced by Maritime Historians can exist. Data submitted under the *Beaches, Fishing Grounds and Sea Routes Protection Act 1932* was used when in conflict (see also Parsons & Plunkett 1995).

In conclusion, many of these records are simply unverifiable. Short of diving on these items and using Global Positioning Systems the detail and coordinates can only be thought of as indicative and not absolute.

The spreadsheets contain all or some of the following field headings:

1. Material
2. Registered boat name (for maritime history of the boats refer *Scuttled and Abandoned Ships in Australian Waters* which is reproduced in this report)
3. State off which the material was dumped
4. Quantity
5. Description of the material
6. Whether item is a submarine
7. Whether item is part of an artificial reef
8. Date(s) of dumping
9. Dump coordinates (D=degrees, M=minutes, S=seconds; two or three lots of latitude/longitude)

³⁰ The database was first published on the Royal Australian Navy Hydrographic Office web site (<http://www.hydro.gov.au>) in Notices to Mariners, January 2000 where an electronic copy is still available.

coordinates indicates the material was dumped in a line marked by these coordinates, four denotes the material was dumped within a boundary marked by the coordinates). The following datums apply; to 1966 - Clarke; 1966 to the early 1990s, ADG66 and thereafter GPS (Global Positioning System) WGS84³¹.

10. Buffer which defines a circle around the given coordinate (nm=nautical miles and km=kilometres), anywhere, within which the item may have been dumped

11. Depth where f=fathoms and m=metres (please note that what is now considered as "shallow water" was viewed differently when these dumpings took place eg: for fishing trawlers operating in the early 1970s, a depth over 120 metres was considered as "very deep water". Nowadays, however, trawlers work in depths to 1000 metres and material dumped decades before can be accidentally recovered).

All the databases combined have been plotted³² and are presented in Appendix L, Appendix M and Appendix N. As can be seen, most of the dumping sites were concentrated at sites near the major ports where the material was loaded for dumping.

Dredge Spoil (and the National Ocean Disposal Guidelines for Dredged Material)

It has already been noted that virtually all current permits for sea dumping are for uncontaminated dredge spoil (see Table 1). Dredging is required in all Australian States. In the northern ports a proportion of this dredging remedies the effects of cyclones which occur at these latitudes.

According its status as the predominant dumping permit, DEH has produced the *National Ocean Disposal Guidelines for Dredged Material*³³. It assists permit applicants under the Sea Dumping Act, by providing a comprehensive framework for the assessment of the environmental impacts from the disposal at sea of dredged material, in accordance with that Act, other environmental protection legislation (including the *Environment Protection and Biodiversity Conservation Act 1999*) and Australia's international obligations. Public consultation on the National Ocean Disposal Guidelines was conducted between December 2000 and April 2002. Comments received through that consultative process were taken into account in the production of the Guidelines. The Guidelines build upon and replace the *Australian and New Zealand Environment and Conservation Council Interim Ocean Disposal Guidelines*, December 1998.

Under the Guidelines, Australia has developed a decision tree approach for assessing sediment contamination comprising four phases: evaluation of existing information (Phase I); sampling and analysis of dredge spoil (Phase II); bioavailability and acute toxicity testing (Phase III); and comprehensive sub-acute/chronic toxicity testing (Phase IV). The Guidelines also set out a framework for offshore disposal site selection, assessment, management and monitoring. In all cases, impacts on water quality, marine species, environmentally sensitive sites, marine resources, (including fisheries and geological resources), marine infrastructure (including outfalls, cables and pipelines, and monitoring stations), native title interests, the general amenity of the marine environment and other legitimate uses of the sea must be assessed. Dredging and spoil disposal may be prohibited or restricted in protected areas such as Marine Parks or Aquatic Reserves. The Guidelines are not intended to provide mandatory or inflexible standards, but rather a comprehensive best practice framework that the determining authority expects to be

³¹ Mark Bolger pers. comm.

³² The maps were first published on the Royal Australian Navy Hydrographic Office web site (<http://www.hydro.gov.au>) in Notices to Mariners, January 2000. Plotted in Mapinfo 6 some points represent multiple dumps.

³³ The following account comes from these guidelines, pages 3, 13 & 14.

adhered to, unless it is demonstrated by a proponent that an alternative approach is appropriate, or necessary. These Guidelines reflect Australia's commitment to longer term permitting arrangements under the Sea Dumping Act. This will provide proponents with greater certainty and facilitate opportunities for more strategic financial, operational and technical planning.

Consultation with relevant stakeholders should be undertaken by the proponent prior to submission of the application. This may involve the use of a Technical Advisory and Consultative Committee (TACC). A TACC is intended to assist the determining authority and the proponent in protecting the local environment and reconciling various stakeholder interests. Membership is drawn from relevant Commonwealth, State and Local Government and non-Government organisations with expertise, responsibilities or an interest in the subject matter.

Until recently, most permits authorising the dumping, and the loading for the purposes of dumping, of dredged material derived from maintenance dredging, were issued on an annual basis. DEH has now established procedures for applicants to obtain longer term permits, with an increasing number of those permits issued for a term of five years. Longer term permitting arrangements provide greater certainty to proponents and assist with more effective and efficient administration of the Sea Dumping Act.

Chemical and Industrial Waste

Under the *Environment Protection (Sea Dumping) Act 1981* permits issued include those for 'black liquor', a waste product in the paper making industry (three permits were issued for a total of 65,000 tonnes, the last being on 13 January 1986 for 30,000 tonnes) and spent caustic soda (for which two permits were issued for a total of 4,800 tonnes, the last being on 23 December 1986 for 2,800 tonnes). The last permit for industrial waste was for jarosite, a waste product from a zinc smelter in Hobart. It was issued 1 November 1995. There will be no further permits issued for industrial waste as such materials are now not permitted to be dumped under the London Convention (see also Appendix D).

Records of chemical dumpings before March 1984 are limited. The earliest recorded dumping where the amount dumped, the date and the location of dumping is known, was made in 1939 for p-nitrochlorobenzene³⁴. Most of the known chemical dumpings occurred from the mid 1960s to early 1980s (see Appendix E). The figures in Appendix I show the chemical dump sites. Some of the drums of chemicals have posed, and could still pose, a problem for trawling vessels or for sea mining etc. On 18 April 1973 a fishing vessel trawling in 115 fathoms, 15 to 18 miles east of Sydney, snared twelve 44 gallon drums³⁵. The contents of the drums, vinyl chloride tar (contaminated hydrocarbons), covered the deck of the boat and the fish catch. In 1983 a vessel trawling east of Brisbane trawled a 1 ton cylinder of mustard gas³⁶, this being part of the 21,030 tons of chemical warfare agents dumped in Australian waters at the end of World War II (examined in Plunkett 2003 – *Chemical Warfare Agent Sea Dumping off Australia* which is reproduced at the back of this report).

³⁴ Letter marked M49/195/1/589 and dated 31 May 1949 from Master of the vessel responsible for the dumping. EPA 94/6789.

³⁵ Transcription of ABC "Four Corners" program, 23 August 1972. EPA 94/6789.

³⁶ Courier Mail Newspaper, Queensland - 31 August 1983.

In the past, choices for disposal of industrial waste and spent chemicals were limited to landfill, sea dumping or incineration. Sea dumping was preferred as landfill posed obvious environmental hazards (and precluded some future uses of the land). Sea dumping was also inexpensive.

Incineration at Sea

Incineration of wastes at sea has occurred off Australia in compliance with the London Convention. In December 1982 and January 1983, vinyl chloride manufacturing wastes (4,660 tonnes) and PCB wastes (215 tonnes) were incinerated by the American owned vessel, the MT "Vulcanus" which travelled to Australia for this purpose³⁷. The "Vulcanus" undertook the burning 200 nautical miles off the south east coast of Australia. PCB importation to Australia is now banned and a management plan to establish conditions under which environmentally sound ways (excluding sea dumping) of destroying the stocks may proceed has been developed. Incineration at sea of industrial waste is now banned by the London Convention.

Artificial Reefs

From the mid 1960s artificial reefs were constructed with increasing success (see Pollard 1989 for a good introduction to artificial reefs in Australia). At least 74 boats have been dumped for this purpose³⁸. Artificial reefs have been placed for two primary reasons, for fish attracting devices (used by anglers) and for recreational divers, but consideration should also be given to other environmental outcomes, aside from recreational and or fishing ones. A variety of materials have been used including vessels, tyres bound together, pipes, car bodies and other waste material. One of Australia's largest artificial reefs (although not under Federal Government control) is the Hervey Bay Artificial Reef off Woody Island, Queensland. At the Hervey Bay Reef there have been 66 sea dumping episodes between 1968 and 1990³⁹. Material dumped includes seven boats, 500 tons of cement pipes and slabs, some 10,000 tyres as singles and bound, 250 gas stoves, 400 pre-drying racks and 2,600 car bodies. The Curtin Artificial Reef at Moreton Bay, Queensland, has nineteen vessels, nine navigation buoys, 5,000 tyres⁴⁰, 60 car bodies (now rusted away), 36 steel pontoons, seven tonnes of concrete pipes and 57 tonnes of concrete dolphin⁴¹.

The placement and construction of Artificial Reefs are regulated under the Commonwealth *Environment Protection (Sea Dumping) Act 1981* (the Sea Dumping Act). An application for a permit to create an artificial reef must be obtained from, DEH or the Great Barrier Reef Marine Park Authority. Additional permits may also be required under relevant State or Territory legislation⁴².

³⁷ EPA 94/6789.

³⁸ 1967 to July 2002. EPA 94/4945, EPA 94/6943, EPA 94/6790, EPA 94/7319, EPA 94/6944 and EPA 94/6792.

See also Parsons and Plunkett (1995).

³⁹ F Grant (pers. comm.). EPA 94/4945.

⁴⁰ A total of 195,700 (to November 1994) bound tyres have been placed at several locations in the Gulf waters of South Australia. Tyres are not now regarded as a suitable material for an artificial reef in Australian waters.

⁴¹ D Lennon (pers. comm.). EPA 94/4945.

⁴² The Artificial Reef Fact Sheet on the DEH website, <http://www.deh.gov.au>, details the resource considerations, site choice, materials needed, layout and long term monitoring requirements that applicants must consider (see also Appendix D).

Vessels

Many hundreds of obsolete vessels have been sea dumped or abandoned off Australia. In *Scuttled and Abandoned Ships in Australian Waters* (which is reproduced at the back of this report) Parsons and Plunkett (1995) have detailed the maritime history of the identified vessels deliberately dumped at sea. Included are obsolete vessels scuttled in the designated "Graveyard" sites of the *Beaches, Fishing Grounds and Sea Routes Protection Act 1932*. Although some of the "Graveyard" sites have been little used, the sites off Sydney Heads (New South Wales), near Rottnest Island (Western Australia) and near Barwon Heads (Victoria) have been heavily utilised. The ships dumped at each of these "Graveyard" sites are listed in Appendix B. Due to the availability of shipping registers and the work of maritime archaeologists in each State, knowledge of ship dumping for this century is relatively comprehensive. Refer to Appendix F for a listing of all boats that are known to have been sea dumped.

Although not technically sea dumping, some boats have been sunk by enemy action. They can be considered as deliberate sinkings. We can note here forty eight boats and three submarines that have been sunk by mines, torpedoes or bombed during the two World Wars. The heaviest casualties occurred on 19 December 1942, when a Japanese air raid sank ten vessels in, or very close to, Darwin Harbour⁴³. Of the ten submarines sunk, six obsolete subs were scuttled in Victorian waters between 1926 and 1930, one was scuttled near Perth in 1952, two Japanese midget subs were sunk in action near Sydney (World War II) and one sub was sunk in the Northern Territory (also World War II)⁴⁴.

The first boat scuttled to form an artificial reef was in October 1967⁴⁵ (see Pollard 1989). Since then an increasing number have been placed in shallow water eg: seven at the Hervey Bay Artificial Reef and nineteen at the Curtin Artificial Reef. Since the coming into force of the *Environment Protection (Sea Dumping) Act 1981*, most of the vessels that have been sunk were for artificial reefs, either for recreational divers or to enhance fishing (refer Appendix D). A condition of each permit is that the vessel be cleaned and stripped of floatable material. Sea dumping of old vessels in deep water is now discouraged and only permitted if this is the only practical means of disposal eg: it was deemed impractical to return the "Nella Dan" (which ran aground and was damaged beyond repair at Macquarie Island) to Australia.

The use of old boats for breakwaters has been a common practice all this century. In 1984, a boat was added to the Tangalooma breakwater in Queensland, a breakwater started in 1963 to provide shelter for small craft on the Moreton Island foreshore. Controlled by the Queensland Government, it contains at least fifteen boats⁴⁶.

Defence Forces

The *Environment Protection (Sea Dumping) Act 1981* does not apply in relation to a vessel or aircraft belonging to the Australian Defence Force, when it is being used in a situation of armed conflict or in an emergency situation other than a situation of armed conflict. The Act also does not apply in relation to a vessel or aircraft belonging to the naval, military or air forces of a foreign country. A memorandum of understanding since 1986 between the Defence Forces and the body administering the *Environment Protection (Sea Dumping) Act 1981* has meant that all dumping must occur in a manner consistent with the Sea Dumping Act.

⁴³ EPA 94/6943. See also Parsons and Plunkett (1995).

⁴⁴ EPA 94/4945.

⁴⁵ Some records indicate September 1967. EPA 94/4945.

⁴⁶ EPA 94/4945. See also Parsons and Plunkett (1995).

Until the early 1970s, obsolete ammunition and equipment was regularly dumped by or on behalf of all three Australian forces, Navy, Airforce and Army⁴⁷. As was the case for hazardous chemicals wastes, the options for ammunition disposal were limited. Disposal on land had inherent dangers and destruction was difficult and costly. Dumpings occurred frequently at the end of World War II to eliminate old war stocks (this included obsolete war planes dumped off Sydney). Again, exact dumping figures are difficult to locate, although it is known that by the early 1970s, some 23,000 tons of ammunition had been dumped by the Department of Supply (former suppliers for the forces) off the North Queensland coast⁴⁸.

The ammunition⁴⁹ (historically including shells, cartridges, fuses, projectiles, guns, missile parts, pistols, mortar bombs, markers, rifles, flares, igniters, depth charges, bombs, plastic explosive, grenades, detonators, bayonets and smoke floats) was dumped, packaged or unpackaged (sometimes counterweighted), at a variety of depths (refer to Appendix G for details and Appendix K for a visual presentation of dumping patterns). Other material included old medical stores, scrap metal, tyres, boats and other surplus or obsolete material. Originally, the Navy appears to have dumped at depths greater than 549 metres (300 fathoms), but then switched to depths greater than 915 metres (500 fathoms) after trawlers working at the 300 fathoms limit had snared ammunition in their nets. Other dumpings are known to have occurred at lesser depths eg: 183 metres (100 fathoms), including the 1945 dumpings off Sydney as mentioned above. Historical exercise areas for gunfire and torpedo practice include Hervey Bay, Jervis Bay, Fremantle, Port Hobart, Port Phillip and Port Jackson.

Most of the ammunition dumping seems to have stopped in 1973. A few episodes are known since then, including two small dumpings in 1981 and two dumpings off Flinders Island, in 1989 and 1992 respectively⁵⁰.

Human Bodies

A total of 29 permits for sea burial of human bodies have been issued from 1984 to May 2003 (see Appendix D). Burials at sea are chosen for a variety of reason eg: by sailors, anglers or those with an affinity for the sea. The practice employed for this purpose is modelled on that already specified for use by ships at sea and includes appropriate ballast provisions as well as the selection of areas away from fishing.

Sea Dumping Activity off Australia's External Territories

Antarctica⁵¹

From the start of Australia's expeditions in the mid 1950s, solid waste generated at the Antarctic stations was usually deposited at tip sites on land. Occasionally in winter, when sea ice conditions allowed, waste materials were taken from the stations and left on the sea ice where they would eventually disperse into the sea. This practice declined with the introduction of high

⁴⁷ EPA 94/7012. A number of LST (Landing Ship Tank) vessels (eg; 3014, 3017 and others) involved with the dumping of ammunition maintained a record of their dumping activities (if not always detailing the exact dump coordinates). The files are held by the Australian War Memorial (Canberra) and National Archives and can be found by using the keywords "dumping ammunition" and "dumping sea" on the records search site at <http://www.naa.gov.au>.

⁴⁸ Newspaper article, West Australian, 8 August 1972. EPA 94/6789.

⁴⁹ EPA 94/7012.

⁵⁰ EPA 94/4945.

⁵¹ Communication from Antarctic Division, Department of the Environment, Sport and Territories, dated 2 November 1994. EPA 94/6789.

temperature incinerators but some non-combustible wastes were disposed of in this way until 1985. The disposal on the sea ice of organic waste (food scraps) and ash ceased at Casey in 1986 and at Mawson and Davis in 1987⁵². There are no records of the volume, composition or location of materials disposed this way. It was generated by a couple of dozen staff over winter. All solid waste is now incinerated on site or brought back to Australia in accordance with legislation implementing the Protocol on Environmental Protection to the Antarctica Treaty (the Madrid Protocol).

Small quantities of waste are also generated aboard Antarctic vessels. Some Antarctic vessels dumped waste north of 60 degrees South before 1988. Since 1988 only macerated food scraps (excluding poultry products) have been dumped. With the current supply boat, all waste is either burnt or returned to Australia. In February 1988 remnants of a few 200 litre drums and some debris from a derelict research station at Atlas Cove was jettisoned off a boat near Heard Island.

Macquarie Island⁵³

Boats were known to have dumped rubbish from field huts four to five times, about 0.5 miles off the east and west coast (1970s to early 1980s). Rubbish was placed in 44 gallon drums, burnt and then dumped. Re-supply vessels also dumped food scraps just off the island. This practice stopped in the mid 1980s⁵⁴.

Norfolk Island

There is no sea dumping as defined by the *Environment Protection (Sea Dumping) Act 1981* undertaken off Norfolk Island. Waste is either incinerated or some is pushed off the land into the sea.

Cocos (Keeling) Islands

The Federal Government has issued several permits to dump in the sea off Cocos (Keeling) Islands. One was in December 1987 for 65 pieces of obsolete equipment and another was in December 1991 for more obsolete equipment including old vehicles (stripped and cleaned) and aeroplane parts. A permit issued in 1992 allowed for the dumping of 30 tonnes of machinery and vehicles (this permit was varied in 1993 to allow the disposal of car bodies, pipes and other material)⁵⁵. More recently, a permit was issued to allow the disposal of several boats that posed a quarantine problem.

Christmas Island

Several permits have been issued to dispose of boats that posed a quarantine problem (refer Appendix D).

⁵² At Mawson Station the original tip site was near the shore and, occasionally, accumulated materials were pushed into the sea affecting some 20 to 30 metres of the shoreline. This practice has been discontinued and some of the material has been recovered. Consistent with the Madrid Protocol, secondary treated grey water and other residues of the sewage treatment systems are disposed of in the sea.

⁵³ Macquarie Island is technically not an external territory but, rather, a part of Tasmania. It has been included here for convenience.

⁵⁴ EPA 94/6789.

⁵⁵ To November 1994. EPA 94/4945.

For Norfolk Island, Cocos (Keeling) Islands and Christmas Island waste minimisation schemes have been developed. Sea dumping remains, for the near and immediate future, a continuing practice at Cocos (Keeling) Islands for the disposal of non-combustible waste (mainly metallic) which is not able to be diverted from disposal by waste minimisation strategies.

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In updating the original report and bringing it to publication, I would like to thank the following Department of the Environment and Heritage staff, Edward Kleverlaan and Dionne Cassanell.

TABLE 1

TYPE AND NUMBER OF PERMITS AND VARIATIONS OF A PERMIT ISSUED BY THE FEDERAL GOVERNMENT⁵⁶

Type of material dumped	Number of permits issued	Variations of a permit
Ammunition	2	-
Chemicals/Industrial waste/Obsolete equipment ⁵⁷	21	4
Dredge spoil	158	60
Fish waste	2	-
Food scraps	1	-
Human bodies	29	-
Jarosite	10	-
Materials for artificial reefs	36	2
Treated water	2	-
Vessels ⁵⁸	27	10

⁵⁶ March 1984 to May 2003.

⁵⁷ Including demolition materials.

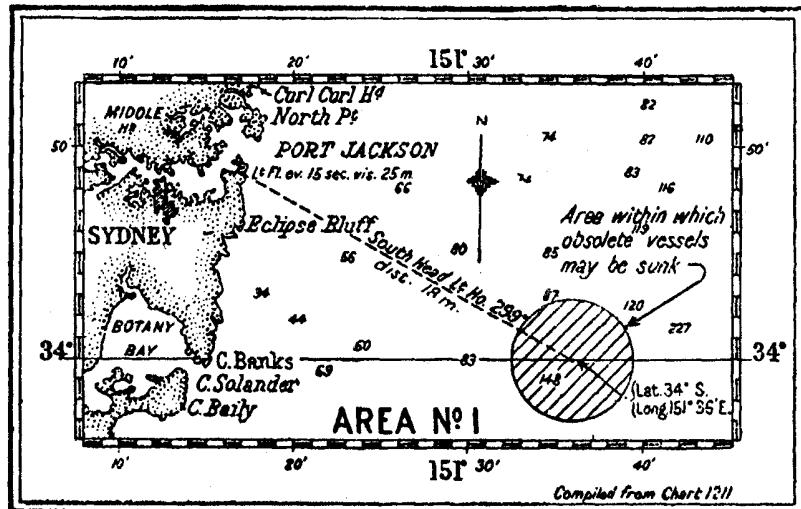
⁵⁸ Not included in artificial reefs.

Appendix A - Dump sites as designated by the Beaches, Fishing Grounds and Sea Routes Protection Act 1932

SCHEDULE II.

AREAS IN WHICH, WITH THE PERMISSION OF THE DEPUTY DIRECTOR,
VESSELS MAY BE SUNK AT SEA.

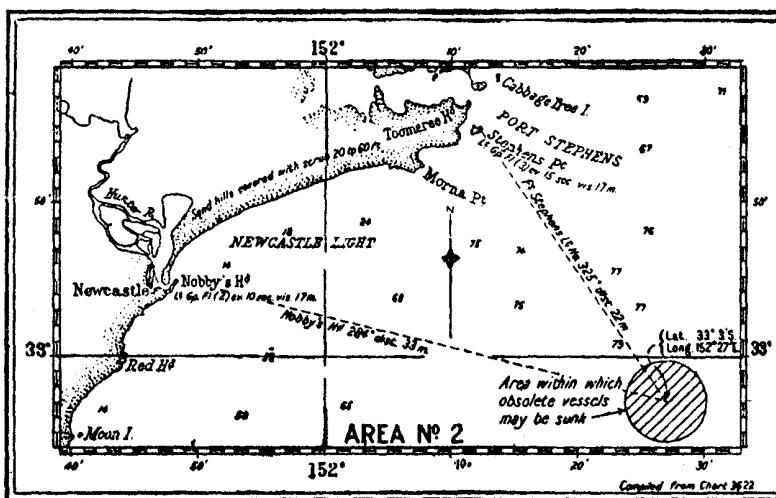
AREA No. 1.—FOR SYDNEY.



Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 34° 0' S., longitude 151° 36' E., with South Head Lighthouse bearing 299° distant 18 miles.

Area 1 -Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 34 deg 0 min S., Longitude 151 deg 36 min E. with South Head Lighthouse bearing 299 deg distant 18 miles.

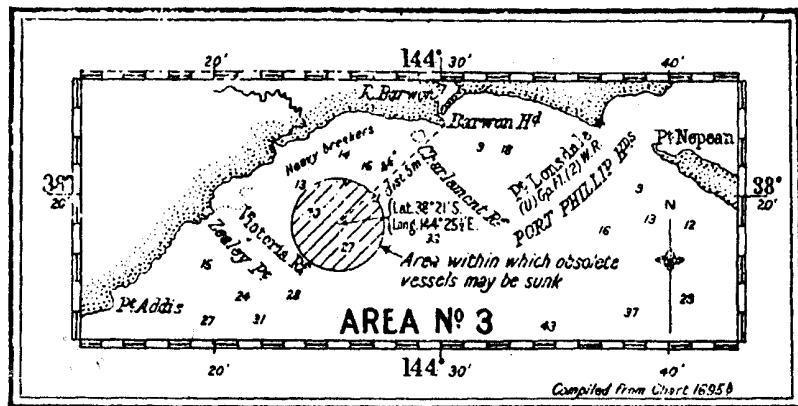
AREA No. 2.—FOR NEWCASTLE.



Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 33° 3' S., longitude 152° 27' E., 104° distant 33 miles from Nobby's Head. Port Stevens Lighthouse distant 22 miles, with high land of Toomeree Head bearing 326°.

Area 2 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 33 deg 3 min S., longitude 152 deg 27 min E., 104 deg distant 33 miles from Nobby's Head. Port Stevens Lighthouse distant 22 miles, with high land of Toomeree Head bearing 326 deg.

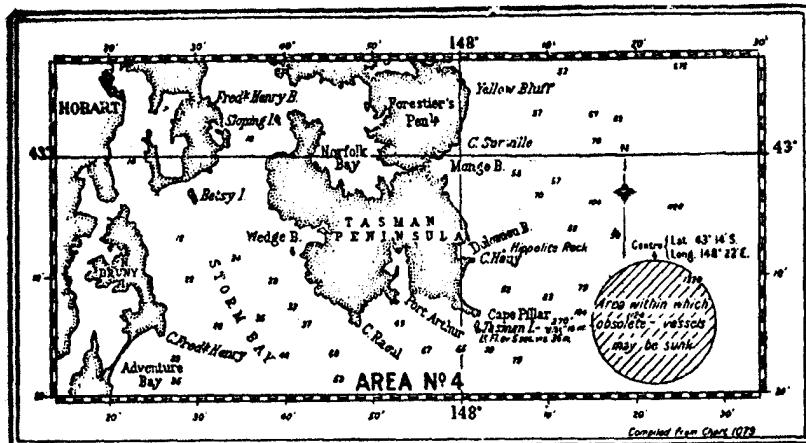
AREA NO. 3.—FOR MELBOURNE AND GEELONG.



In about 25 fathoms within a circular area 3 miles in diameter, with centre in latitude 38° 21' S., longitude 144° 25' E., with Barwon Head bearing 46° distant 5 miles.

Area 3 - In about 25 fathoms within a circular area 3 miles in diameter, with centre in latitude 38 deg 21 min S., longitude 144 deg 25.5 min E.. with Barwon Head bearing 46 deg distant 5 miles.

Area No. 4 - For Newcastle

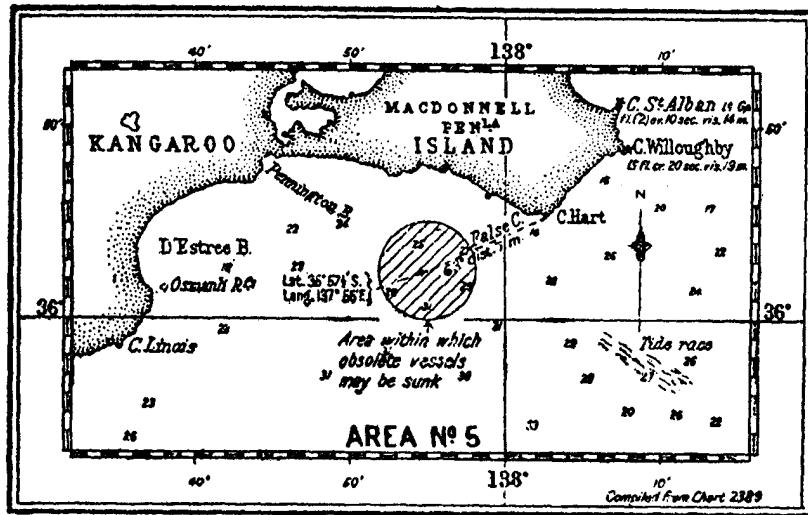


Outside the 100 fathom line with a circular area 5 miles in diameter with centre in latitude 43° 14' S., longitude 148° 22' E., Tasman Island Lighthouse bearing 270° distant 15 miles.

NOTE.—The sinking area within the Hobart port limits is on the edge of the reef at the south end of Betsy Island situated to the eastward of the entrance to the Derwent River.

Area 4 - Outside the 100 fathom line with a circular area. 5 miles in diameter with centre in latitude 43 deg 14 min S, longitude 148 deg 22 min E, Tasman Lighthouse bearing 270 deg distant 15 miles.
NOTE.-The sinking area within the Hobart port limits is on the edge of the reef at the south end of Betsy Island situated to the eastward of the entrance to the Derwent River.

AREA NO. 5. FOR ADELAIDE AND GULF PORTS.

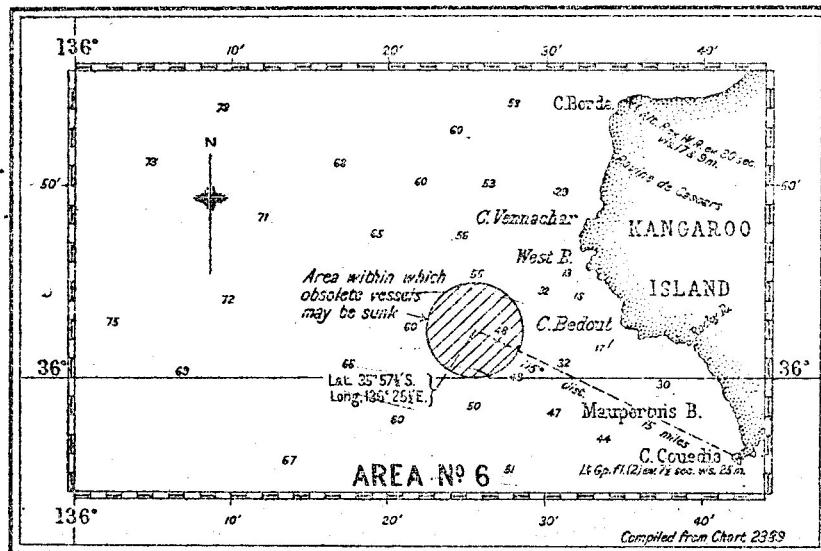


Within either of the following areas:—

No. 5 (Eastern Area).—South of Macdonnel Peninsula in 26 fathoms within a circular area 5 miles in diameter with centre in latitude 35° 57½' S., longitude 137° 55' E., Cape Hart bearing 63° distant 7 miles.

Area 5 - (Eastern Area).—South of Macdonnel Peninsula in 26 fathoms within a circular area 5 miles in diameter with centre in latitude 35 deg 57.5 min S., longitude 137 deg 55 min E., Cape Hart bearing 63 deg distant 7 miles.

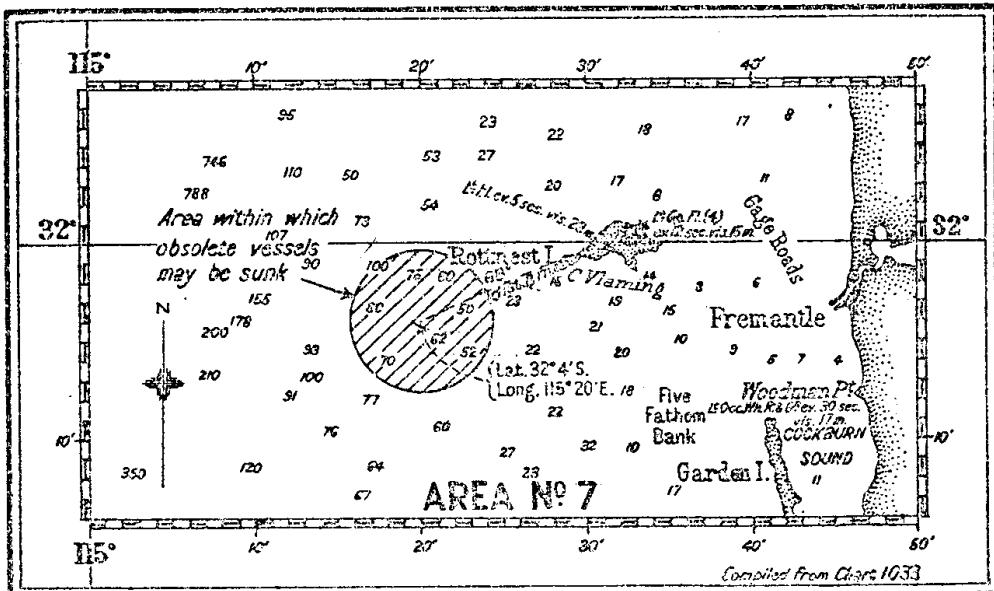
Area No. 6 - For Adelaide and Gulf Ports



No. 6 (Western Area).—West of Kangaroo Island in 50 fathoms within a circular area 5 miles in diameter with centre in latitude 35° 57½' S., longitude 136° 25½' E., Cape Couedie bearing 115° distant 15 miles.

Area 6 - (Western Area).—West of Kangaroo Island in 50 fathoms within a circular area 5 miles in diameter with centre in latitude 35 deg 57.5 min S, longitude 136 deg 25.5 min E., Cape Couedie bearing 115 deg distant 15 miles.

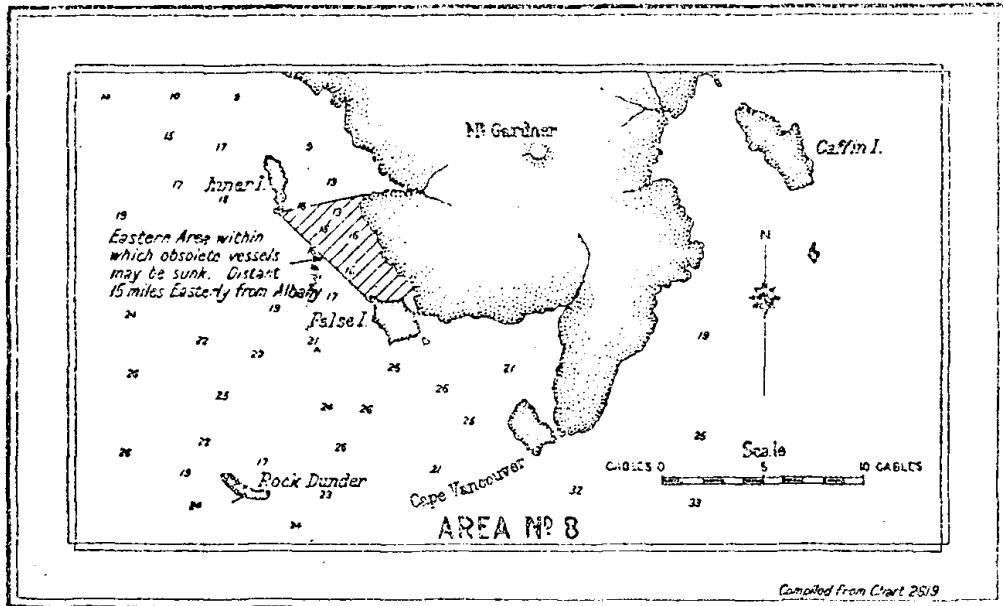
AREA No. 7.—FOR FREMANTLE.



Within a circular area 7 miles in diameter with centre in latitude 32° 4' S., longitude 115° 20' E., with Rottnest Island Lighthouse bearing 68° distant 11 miles.

Area 7 - Within a circular area 7 miles in diameter with centre in latitude 32 deg 4 min S, longitude 115 deg 20 min E., with Rottnest Island Lighthouse bearing 68 deg distant 11 miles.

AREA NO. 8
FOR ALBANY.



Within either of the following areas:—

No. 8.—*Eastern Area near Cape Vancouver*—

Within an area bounded—

To the westward—by a line between the south end of Inner Island and the north end of False Island.

To the northward—by a line between the south end of Inner Island and the nearest part of mainland.

To the eastward—by the mainland.

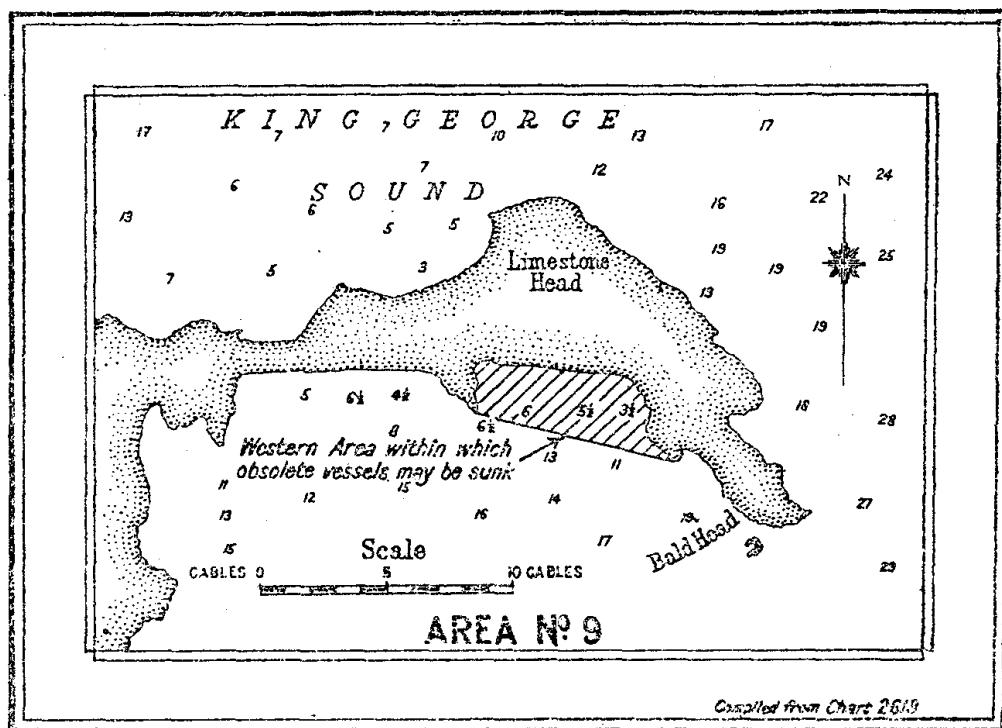
To the southward—by the northern shore of False Island.

Area 8 - Eastern Area near Cape Vancouver-Within an area bounded by; To the westward-by a line between the south end of Inner Island and the north end of False Island.

To the northward-by a line between the south end of Inner Island and the nearest part of a mainland.

To the eastward-by the mainland.

To the southward-by the northern shore of False Island.



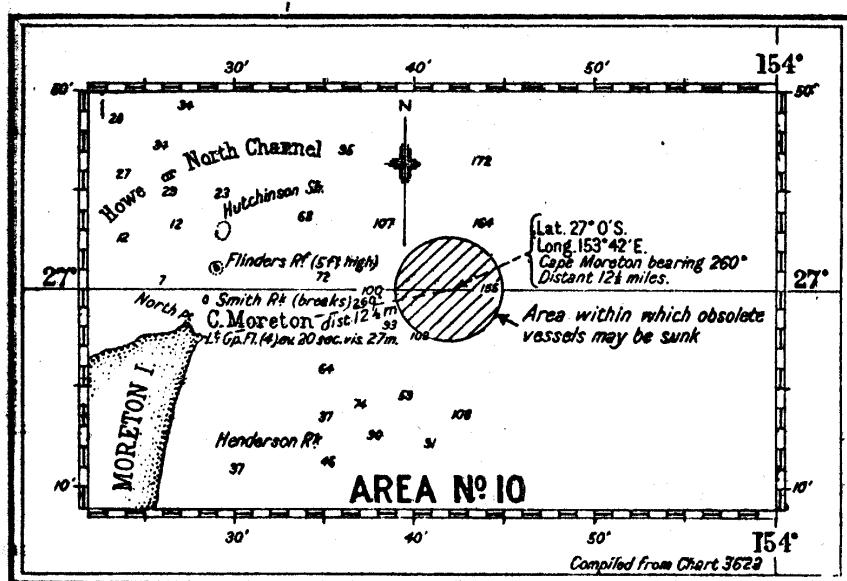
Compiled from Chart 2619

No. 9.—Western Area near Bald Head—

North of a line between the headlands of the Middle Bay (unnamed on chart 2619). South of the summit of the Limestone Head Peninsula.

Area 9 - Western Area near Bald Head- North of a line between the headlands of the Middle Bay (unnamed on chart 2619). South of the summit of the Limestone Head Peninsula.

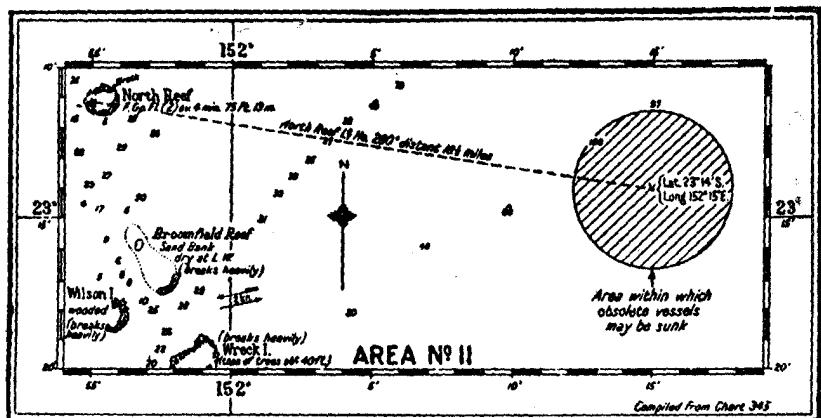
AREA NO. 10.—FOR BRISBANE.



Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 27° S., longitude 153° 42' E., with Cape Moreton Lighthouse bearing 260° distant 12.5 miles.

Area 10 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 27 deg S., longitude 153 deg 42 min E., with Cape Moreton Lighthouse bearing 260 deg distant 12.5 miles.

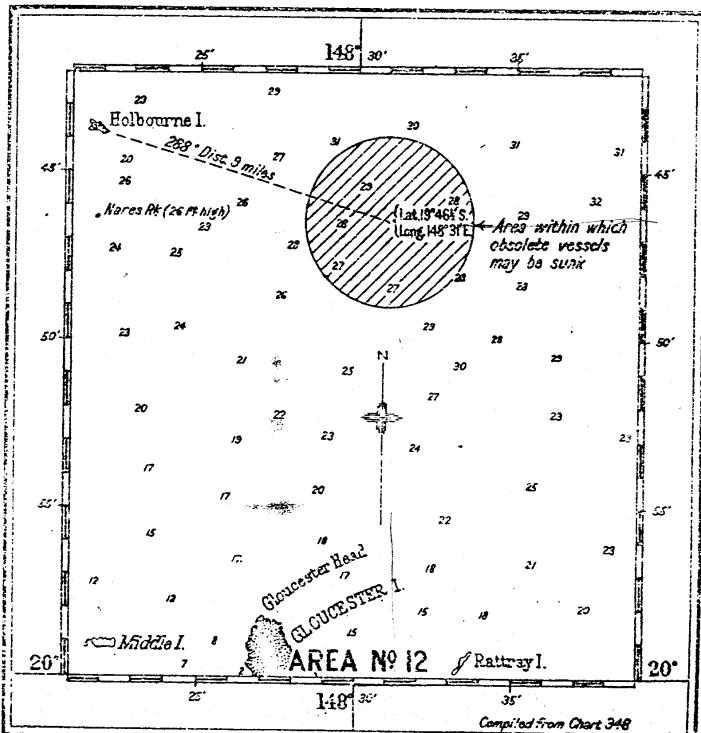
AREA NO. 11.—FOR ROCKHAMPTON.



Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 23° 14' S., longitude 152° 15' E., with North Reef Lighthouse bearing 280° distant 18.5 miles.

Area 11 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 23 deg 14 min S., longitude 152 deg 15 min E., with North Reef Lighthouse bearing 280 deg distant 18.5 miles.

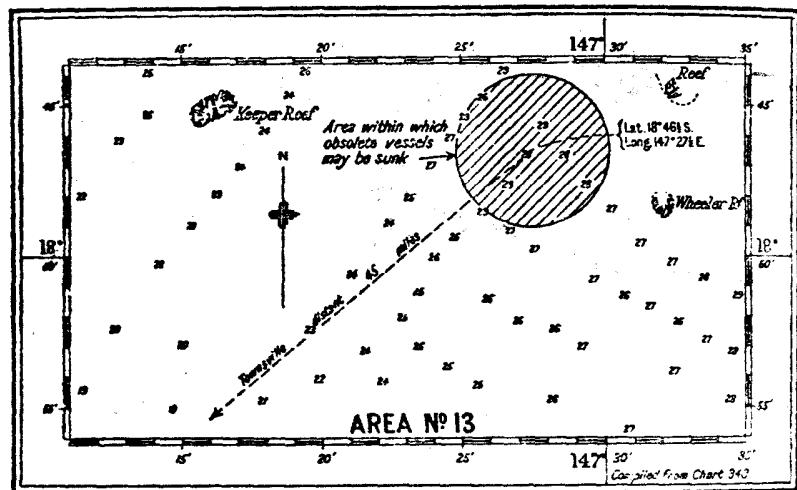
AREA NO. 12.—FOR BOWEN.



In 28 fathoms within a circular area 5 miles in diameter with centre in latitude 19° 46.5' S., longitude 148° 31' E., with Holborne Island bearing 288° distant 9 miles and Gloucester Head bearing 198° distant 12.5 miles.

Area 12 - In 28 fathoms within a circular area 5 miles in diameter with centre in latitude 19 deg 46.5 min S, longitude 148 deg 31 min E., with Holborne Island bearing 288 deg distant 9 miles and Gloucester Head bearing 198 deg distant 12.5 miles.

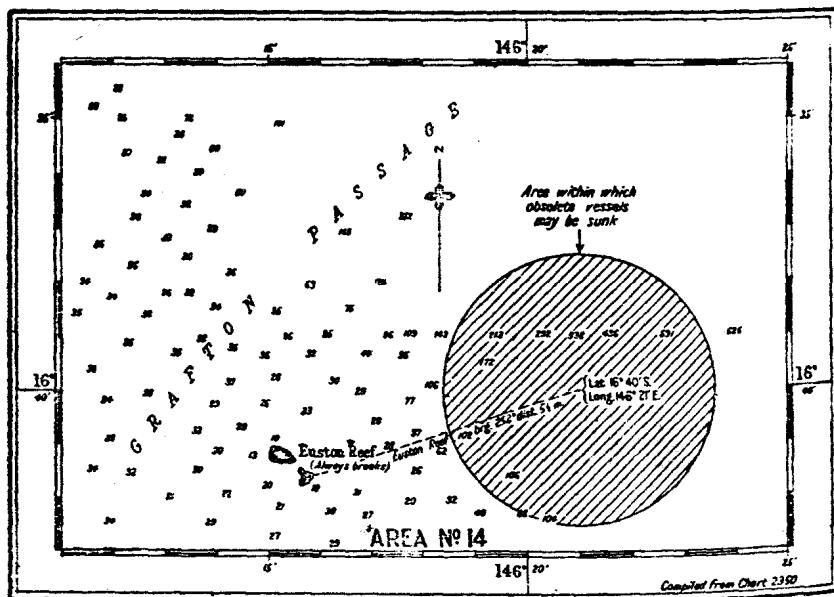
AREA No. 13.—FOR TOWNSVILLE.



In 27 fathoms within a circular area 5 miles in diameter with centre in latitude 18° 46.5 min S, longitude 147° 24.5 E, midway between Keeper and Wheeler Reefs, 45 miles north-east from Townsville.

Area 13 - In 27 fathoms within a circular area 5 miles in diameter with centre in latitude 18 deg 46.5 min S, longitude 147 deg 24.5 E, midway between Keeper and Wheeler Reefs, 45 miles north-east from Townsville.

AREA No. 14.—FOR CAIRNS.



Outside the 100 fathom line, near entrance to Grafton Passage, within a circular area 5 miles in diameter with centre in latitude 16° 40' S, longitude 146° 21' E., Euston Reef bearing 253° distance 5½ miles, 40 miles from Cairns.

Area 14 - Outside the 100 fathom line, near entrance to Grafton Passage, within a circular area 5 miles in diameter with centre in latitude 16 deg 40 min S, longitude 146 deg 21 min E, Euston Reef bearing 253 deg distance 5.5 miles, 40 miles from Cairns.

Amendments to dump areas

In 1972 the dump areas were reviewed. Two new areas were added and one was removed, leaving a new total of 15. The amended schedule is shown below with the former status of the area shown in brackets.

Area No. 1 (unchanged)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 34 degrees south latitude with the meridian 151 degrees 36 minutes east longitude.

Area No. 2 (new)-The area bounded by the circumference of a circle of a radius of one-quarter of a mile with its centre at the intersection of the parallel 33 degrees 47 minutes south latitude with the meridian 151 degrees 21 minutes east longitude.

Area No. 3 (former Area No. 2)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 33 degrees 03 minutes south latitude with the meridian 152 degrees 27 minutes east longitude.

Area No. 4 (former Area No. 3)- The area bounded by the circumference of a circle of a radius of one and one-half miles with its centre at the intersection of the parallel 38 degrees 21 minutes south latitude with the meridian 144 degrees 25.5 minutes east longitude.

Area No. 5 (former Area No. 4)-The area bounded by the circumference of a circle of a radius of two one-half miles with its centre at the intersection of the parallel 43 degrees 14 minutes south latitude with the meridian 148 degrees 22 minutes east longitude.

Area No. 6 (former Area No. 5)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 35 degrees 57.5 minutes south latitude with the meridian 137 degrees 55 minutes east longitude.

Area No. 7 (unchanged)-The area bounded by the circumference of a circle of a radius of three and one-half miles with its centre at the intersection of the parallel 32 degrees 04 minutes south latitude with the meridian 115 degrees 20 minutes east longitude.

Area No. 8 (former Area No. 8?)-The area bounded by a straight line between the intersection of the parallel 35 degrees 00 minutes 26 seconds south latitude with the meridian 118 degrees 09 minutes 25 seconds east longitude and the intersection of the parallel 35 degrees 00 minutes 26 seconds south latitude with the meridian 118 degrees 09 minutes 52 seconds east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 35 degrees 00 minutes 48 seconds south latitude with the meridian 118 degrees 10 minutes 10 seconds east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 35 degrees 00 minutes 48 seconds south latitude with the meridian 118 degrees 09 minutes 52 seconds east longitude, and the straight line between the last-mentioned intersection and the first-mentioned intersection.

Area No. 9 (former Area No. 9?)-The area bounded by a straight line between the intersection of the parallel 35 degrees 05 minutes 55 seconds south latitude with the meridian 117 degrees 59 minutes 27 seconds east longitude and the intersection of the parallel 35 degrees 06 minutes south latitude with the meridian 118 degrees 00 minutes 11 seconds east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 35 degrees 06 minutes 14 seconds south latitude with the meridian 118 degrees 00 minutes 15 seconds east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 35 degrees 06 minutes 05 seconds south latitude with the meridian 117 degrees 59 minutes 27 seconds east longitude and the straight line between the last-mentioned intersection and the first-mentioned intersection.

Area No. 10 (unchanged)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 27 degrees south latitude with the meridian 153 degrees 42 minutes east longitude.

Area No 11 (unchanged)-Tho area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 23 degrees 14 minutes south latitude with the meridian 152 degrees 15 minutes east longitude.

Area No. 12 (former Area No. 12 modified)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 19 degrees 20 minutes south latitude with the meridian 148 degrees 33 minutes east longitude.

Area No. 13 (former Area No. 13 modified)-The area bounded by a straight line between the intersection of the parallel 18 degrees 44 minutes south latitude with the meridian 147 degrees 22 minutes east longitude and the intersection of the parallel 18 degrees 44 minutes south latitude with the meridian 147 degrees 30 minutes east longitude, the straight line between the last-mentioned inter-section and the intersection of the parallel 18 degrees 49 minutes south latitude with the meridian 147 degrees 30 minutes east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 18 degrees 49 minutes south latitude with the meridian 147 degrees 22 minutes east longitude, and the straight line between the last-mentioned intersection and the first-mentioned intersection.

Area No. 14 (unchanged)-The area bounded by the circumference of a circle of two and one-half miles with its centre at the intersection of the parallel 16 degrees 40 minutes south latitude with the meridian 146 degrees 21 minutes east longitude.

Area No. 15 (new)-The area bounded by the circumference of a circle of two and one-half miles with its centre at the intersection of the parallel 9 degrees 57 minutes south latitude with the meridian 130 degrees east longitude.

**Appendix B - Ships dumped within disposal areas proclaimed under the
Beaches, Fishing Grounds and Sea Routes Protection Act
1932**

Area 1 -Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 34 deg 0 min S., Longitude 151 deg 36 min E. with South Head Lighthouse bearing 299 deg distant 18 miles.

	Boat name		Boat name
1	716	35	MARJORIE
2	ANGLIAN	36	MARRAWAH
3	ANZAC	37	MATAGALPA
4	ARAWATTA	38	MEDUSA
5	AROONEE	39	MORIB
6	BARRABOOL	40	NAMOI
7	BELLAMBI	41	NANCY
8	BOSUN	42	No.15
9	BURRA-BRU	43	No.16
10	BUSTLER	44	No.5
11	CAPTAIN PHILLIP	45	No.696
12	CAVAN	46	No.8
13	CECIL RHODES	47	OUR ELSIE
14	CIRCE	48	PHYLLIS
15	CRANE BARGE No.4	49	PIONEER
16	CURL CURL	50	POSEIDON
17	CYCLOPS	51	PREMIER
18	DORIC	52	SEAMEG
19	G.F.HOLDEN	53	STALWART
20	GANNET	54	STRAHAN
21	GEEBUNG	55	SUCCESS
22	GERANIUM	56	SWALLOW
23	GOVERNOR BLACKALL	57	TAVIUNI
24	HERCULES	58	TUNCURRY
25	HUON	59	VALIANT
26	IRON DUKE	60	VENDETTA
27	KESTREL	61	WALLSEND
28	KIANGA	62	WICKLOW
29	KURNELL	63	YARRA
30	L292	64	YULOO
31	LEWES	65	UNIDENTIFIED
32	MALLOW	66	G F HOLDEN
33	MARGARET	67	No.716
34	MARGUERITE	68	No.969

Area 2 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 33 deg 3 min S., longitude 152 deg 27 min E., 104 deg distant 33 miles from Nobby's Head. Port Stevens Lighthouse distant 22 miles, with high land of Toomeree Head bearing 326 deg.

	Boat name
1	ABILITY
2	JUNO

Area 3 - In about 25 fathoms within a circular area 3 miles in diameter, with centre in latitude 38 deg 21 min S., longitude 144 deg 25.5 min E.. with Barwon Head bearing 46 deg distant 5 miles.

	Boat name
1	BATMAN
2	BEVERWYK 19
3	BUNINYONG
4	BUNYIP
5	CASABLANCA
6	D. McLENNAN
7	DUNLOE
8	EURO
9	FAWKNER
10	MILORA
11	PIGOTT
12	PIONEER
13	VHB 53
14	VICTORIAN
15	WAREATEA
16	WHITEPINE
17	WILLS

Area 4 - Outside the 100 fathom line with a circular area. 5 miles in diameter with centre in latitude 43 deg 14 min S, longitude 148 deg 22 min E, Tasman Lighthouse bearing 270 deg distant 15 miles. NOTE.-The sinking area within the Hobart port limits is on the edge of the reef at the south end of Betsy Island situated to the eastward of the entrance to the Derwent River.

NO SHIPS RECORDED

Area 5 - (Eastern Area).-South of Macdonnel Peninsula in 26 fathoms within a circular area 5 miles in diameter with centre in latitude 35 deg 57.5 min S., longitude 137 deg 55 min E, Cape Hart bearing 63 deg distant 7 miles.

NO SHIPS RECORDED

Area 6 - (Western Area).-West of Kangaroo Island in 50 fathoms within a circular area 5 miles in diameter with centre in latitude 35 deg 57.5 min S, longitude 136 deg 25.5 min E., Cape Couedie bearing 115 deg distant 15 miles.

NO SHIPS RECORDED

Area 7 - Within a circular area 7 miles in diameter with centre in latitude 32 deg 4 min S, longitude 115 deg 20 min E., with Rottnest Island Lighthouse bearing 68 deg distant 11 miles.

	Boat name		Boat name
1	AGNES	19	KOORDA
2	BANKFIELDS	20	KOS VII
3	CAPE OTWAY	21	LOCH NESS
4	CARAVAN	22	MARANDA
5	CLEVEDON	23	NIRIMBA
6	COMMILES	24	NORWHALE
7	CONCORDIA	25	PREMIER
8	COUNTY OF CAITHNESS	26	ROBERT MOORE
9	DRAGON	27	ROCKINGHAM
10	DUCHESS	28	SESA
11	ENTERPRISE	29	SUBMARINE K.II
12	EUCLA	30	SWAN
13	FREMANTLE	31	TAMERLANE
14	GOVERNOR	32	THORNLIEBANK
15	GUNGA	33	TOCOPILLA
16	JUNEE	34	UNIDENTIFIED
17	KIRKCUDBRIGHTSHIRE	35	ADVENTURE
18	KNOWSLEY		

Area 8 - Eastern Area near Cape Vancouver-Within an area bounded by;

To the westward-by a line between the south end of Inner Island and the north end of False Island.

To the northward-by a line between the south end of Inner Island and the nearest part of a mainland.
To the eastward-by the mainland.

To the southward-by the northern shore of False Island.

NO SHIPS RECORDED

Area 9 - Western Area near Bald Head- North of a line between the headlands of the Middle Bay (unnamed on chart 2619). South of the summit of the Limestone Head Peninsula.

NO SHIPS RECORDED

Area 10 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 27 deg S., longitude 153 deg 42 min E., with Cape Moreton Lighthouse bearing 260 deg distant 12.5 miles.

	Boat name
1	DREDGE D

Area 11 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 23 deg 14 min S., longitude 152 deg 15 min E., with North Reef Lighthouse bearing 280 deg distant 18.5 miles.

NO SHIPS RECORDED

Area 12 - In 28 fathoms within a circular area 5 miles in diameter with centre in latitude 19 deg 46.5 min S, longitude 148 deg 31 min E., with Holborne Island bearing 288 deg distant 9 miles and Gloucester Head bearing 198 deg distant 12.5 miles.

NO SHIPS RECORDED

Area 13 - In 27 fathoms within a circular area 5 miles in diameter with centre in latitude 18 deg 46.5 min S, longitude 147 deg 24.5 E, midway between Keeper and Wheeler Reefs, 45 miles north-east from Townsville.

	Boat name
1	B.D.5
2	CLEVELAND BAY
3	UNIDENTIFIED

Area 14 - Outside the 100 fathom line, near entrance to Grafton Passage, within a circular area 5 miles in diameter with centre in latitude 16 deg 40 min S, longitude 146 deg 21 min E, Euston Reef bearing 253 deg distance 5.5 miles, 40 miles from Cairns.

	Boat name
1	JINN CHANG
2	SOUTHERN ENDEAVOUR
3	SUMATRA

Dumpings in Amended dump areas

In 1972 the dump areas were reviewed. Two new areas were added and one was removed, leaving a new total of 15. The amended schedule is shown below with the former status of the area shown in brackets.

Area No. 2 (new)-The area bounded by the circumference of a circle of a radius of one-quarter of a mile with its centre at the intersection of the parallel 33 degrees 47 minutes south latitude with the meridian 151 degrees 21 minutes east longitude.

NO SHIPS RECORDED

Area No. 12 (former Area No. 12 modified)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 19 degrees 20 minutes south latitude with the meridian 148 degrees 33 minutes east longitude.

NO SHIPS RECORDED

Area No. 13 (former Area No. 13 modified)-The area bounded by a straight line between the intersection of the parallel 18 degrees 44 minutes south latitude with the meridian 147 degrees 22 minutes east longitude and the intersection of the parallel 18 degrees 44 minutes south latitude with the meridian 147 degrees 30 minutes east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 18 degrees 49 minutes south latitude with the meridian 147 degrees 30 minutes east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 18 degrees 49 minutes south latitude with the meridian 147 degrees 22 minutes east longitude, and the straight line between the last-mentioned intersection and the first-mentioned intersection.

	Boat name
1	B.D.5
2	CLEVELAND BAY
3	LALOR
4	UNIDENTIFIED

Area No. 15 (new)-The area bounded by the circumference of a circle of two and one-half miles with its centre at the intersection of the parallel 9 degrees 57 minutes south latitude with the meridian 130 degrees east longitude.

NO SHIPS RECORDED

Appendix C - Non Ship Objects dumped within disposal proclaimed under the Beaches, Fishing Ground and Sea Routes Protection Act 1932

All are separate dumpings

Area 1 -Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 34 deg 0 min S., Longitude 151 deg 36 min E. with South Head Lighthouse bearing 299 deg distant 18 miles.

	DESCRIPTION	AMOUNT	UNITS
1	AMMUNITION	200	Tons
2	VARIOUS	18 pr. shell fuzes removed & boxed, Ctges SAA 50 boxed	Unknown
3	VARIOUS	Bombs incendiary rolls	Unknown
4	AMMUNITION	Unknown	Unknown
5	AMMUNITION	Unknown	Unknown
6	EXHAUST VALVES	18000	Valves
7	EXHAUST VALVES	1932	Valves
8	EXHAUST VALVES	322	Valves
9	EXHAUST VALVES	169	Valves
10	SODIUM EXHAUST VALVES	138	Valves
11	SODIUM EXHAUST VALVES	822	Valves
12	CHEMICAL WARFARE AGENT	5000	Tons
13	WAR PLANES	Unknown	Plane
14	EXHAUST VALVES	6	Boxes
15	EXHAUST VALVES	6	Containers
16	BURIAL AT SEA	1	body
17	BURIAL AT SEA	1	body
18	BURIAL AT SEA	1	body

Area 2 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 33 deg 3 min S., longitude 152 deg 27 min E., 104 deg distant 33 miles from Nobby's Head. Port Stevens Lighthouse distant 22 miles, with high land of Toomeree Head bearing 326 deg.

NO OBJECTS RECORDED

Area 3 - In about 25 fathoms within a circular area 3 miles in diameter, with centre in latitude 38 deg 21 min S., longitude 144 deg 25.5 min E.. with Barwon Head bearing 46 deg distant 5 miles.

NO OBJECTS RECORDED

Area 4 - Outside the 100 fathom line with a circular area. 5 miles in diameter with centre in latitude 43 deg 14 min S, longitude 148 deg 22 min E, Tasman Lighthouse bearing 270 deg distant 15 miles. NOTE.-The sinking area within the Hobart port limits is on the edge of the reef at the south end of Betsy Island situated to the eastward of the entrance to the Derwent River.

	DESCRIPTION	AMOUNT	UNITS
1	BURIAL AT SEA	1	Body

Area 5 - (Eastern Area).-South of Macdonnel Peninsula in 26 fathoms within a circular area 5 miles in diameter with centre in latitude 35 deg 57.5 min S., longitude 137 deg 55 min E, Cape Hart bearing 63 deg distant 7 miles.

NO OBJECTS RECORDED

Area 6 - (Western Area).-West of Kangaroo Island in 50 fathoms within a circular area 5 miles in diameter with centre in latitude 35 deg 57.5 min S, longitude 136 deg 25.5 min E., Cape Couedie bearing 115 deg distant 15 miles.

NO OBJECTS RECORDED

Area 7 - Within a circular area 7 miles in diameter with centre in latitude 32 deg 4 min S, longitude 115 deg 20 min E., with Rottnest Island Lighthouse bearing 68 deg distant 11 miles.

	DESCRIPTION	AMOUNT	UNITS
1	EXPLOSIVES	200	Cartons
2	BURIAL AT SEA	1	body
3	BURIAL AT SEA	1	body

Area 8 - Eastern Area near Cape Vancouver-Within an area bounded by; To the westward-by a line between the south end of Inner Island and the north end of False Island. To the northward-by a line between the south end of Inner Island and the nearest part of a mainland. To the eastward-by the mainland. To the southward-by the northern shore of False Island.

NO OBJECTS RECORDED

Area 9 - Western Area near Bald Head- North of a line between the headlands of the Middle Bay (unnamed on chart 2619). South of the summit of the Limestone Head Peninsula.

NO OBJECTS RECORDED

Area 10 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 27 deg S., longitude 153 deg 42 min E., with Cape Moreton Lighthouse bearing 260 deg distant 12.5 miles.

	DESCRIPTION	AMOUNT	UNITS	MORE DESCRIPTION
1	SHELL	205.5	Tons	155mm loose shell
2	SHELL	252	Tons	155mm loose shell
3	SHELL	204	Tons	155mm loose shell
4	WEAPONS	30	Tons	Boxes of weapons
5	WEAPONS	70	Tons	Boxes of weapons
6	SHELL	94	Tons	Shell HE boxed-1470 packages
7	VARIOUS	458	Tons	Mortar Ammo HE Light-13763 packages
8	SHELL	57	Tons	Shell HE loose-1271 packages
9	FUZES	2	Tons	Fuzes HE boxed-58 packages
10	VARIOUS	20	Tons	Small arms/ stores
11	PROJECTILES	30	Tons	37mm HE projectiles
12	VARIOUS	4000	Lbs	Boxed general stores including bayonets

Area 11 - Outside the 100 fathom line within a circular area 5 miles in diameter with centre in latitude 23 deg 14 min S., longitude 152 deg 15 min E., with North Reef Lighthouse bearing 280 deg distant 18.5 miles.

NO OBJECTS RECORDED

Area 12 - In 28 fathoms within a circular area 5 miles in diameter with centre in latitude 19 deg 46.5 min S., longitude 148 deg 31 min E., with Holborne Island bearing 288 deg distant 9 miles and Gloucester Head bearing 198 deg distant 12.5 miles.

NO OBJECTS RECORDED

Area 13 - In 27 fathoms within a circular area 5 miles in diameter with centre in latitude 18 deg 46.5 min S, longitude 147 deg 24.5 E, midway between Keeper and Wheeler Reefs, 45 miles north-east from Townsville.

NO OBJECTS RECORDED

Area 14 - Outside the 100 fathom line, near entrance to Grafton Passage, within a circular area 5 miles in diameter with centre in latitude 16 deg 40 min S, longitude 146 deg 21 min E, Euston Reef bearing 253 deg distance 5.5 miles, 40 miles from Cairns.

	DESCRIPTION	AMOUNT	UNITS
1	BURIAL AT SEA	1	body

Dumpings in Amended dump areas

In 1972 the dump areas were reviewed. Two new areas were added and one was removed, leaving a new total of 15. The amended schedule is shown below with the former status of the area shown in brackets.

Area No. 2 (new)-The area bounded by the circumference of a circle of a radius of one-quarter of a mile with its centre at the intersection of the parallel 33 degrees 47 minutes south latitude with the meridian 151 degrees 21 minutes east longitude.

	DESCRIPTION	AMOUNT	UNITS
1	DREDGE SPOIL	40 000	tonnes
2	CONCRETE PONTOON	30	tons

Area No. 12 (former Area No. 12 modified)-The area bounded by the circumference of a circle of a radius of two and one-half miles with its centre at the intersection of the parallel 19 degrees 20 minutes south latitude with the meridian 148 degrees 33 minutes east longitude.

NO OBJECTS RECORDED

Area No. 13 (former Area No. 13 modified)-The area bounded by a straight line between the intersection of the parallel 18 degrees 44 minutes south latitude with the meridian 147 degrees 22 minutes east longitude and the intersection of the parallel 18 degrees 44 minutes south latitude with the meridian 147 degrees 30 minutes east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 18 degrees 49 minutes south latitude with the meridian 147 degrees 30 minutes east longitude, the straight line between the last-mentioned intersection and the intersection of the parallel 18 degrees 49 minutes south latitude with the meridian 147 degrees 22 minutes east longitude, and the straight line between the last-mentioned intersection and the first-mentioned intersection.

NO OBJECTS RECORDED

Area No. 15 (new)-The area bounded by the circumference of a circle of two and one-half miles with its centre at the intersection of the parallel 9 degrees 57 minutes south latitude with the meridian 130 degrees east longitude.

NO OBJECTS RECORDED

Appendix D - Permits Issued under the Environment Protection (Sea Dumping) Act 1981

	State	Material	Quantity	Qty (units)	Description	Commence	Exire	Latitude	Longitude	Depth
1	TAS	Jarosite	77,000	tonnes	Zinc refinery. radius 2nm	6/3/1984	30/6/1984	43 36 30	148 14 30	2000m
2	SA	Artificial reef	652	tonnes	2 barges 326 tonnes each (in State waters) 34 31 20, 138 04 for 2nd barge	10/4/1984	11/4/1984	34 59	138 25	18m
3	TAS	Jarosite	240,000	tonnes	Zinc refinery. radius 2nm	17/7/1984	30/6/1985	43 36 30	148 14 30	2000m
4	WA	Dredge spoil	30 million	tonnes	Approach channel. 5.4 and 8.6 miles north of port Hedland. 2 rectangular sites.	1/8/1984	5/5/1985			
5	VIC	Black Liquor	5,000	tonnes	Process liquor (paper making). Between 150 and 250nm off E coast N of 38s to S of 29 30-between 150 and 250nm off South Coast W of 140 35 to E of 135 40	10/10/1984	30/11/1984			
6	QLD	Burial at sea	1		Off Morton Island-QLD	21/12/1984				
7	NSW	Dredge spoil	40,000	tonnes	NE of Port Jackson. radius 0.25nm	28/2/1985	30/8/1985	33 47	151 21	
8	NSW	Demolition materials	22,000	tonnes	triangle 7nm ESE of Port Jackson	28/2/1985	28/2/1986			
9		Spent caustic soda	2,000	tonnes	From production of liquified petroleum gas. Between 100 and 200nm off east coast North of 33 50 south of 28 10	1/3/1985	31/5/1986			
10	VIC	Black Liquor	30,000	tonnes	Process liquor (paper making). Between 150 and 250nm off South Coast W of 140 35 to E of 135 40	1/4/1985	31/12/1985			
11	WA	Dredge spoil	34 million	tonnes	Supersedes permit (1/8/84-5/5/85). 2 rectangular sites 5.4 and 8.6 nm North of Port Hedland/ adjacent to approach channel between 7.4 and 21.6 nm off shore 2nm E of Port Kembla. Hexagonal area.	6/5/1985	30/8/1986			
12	NSW	Dredge spoil	2.2 million	tonnes	Of Flinders Reef	8/5/1985	30/6/1986			
13	QLD	Vessel	1,000	tonnes	Zinc refinery. 60nm South of Hobart. 2nm radius	31/5/1985	30/8/1986	26 58.5	153 29.5	
14	TAS	Jarosite	240,000	tonnes	Dredge spoil from harbour maintenance. 0.5nm W of Alyangule	17/7/1985	30/6/1988	43 36 30	148 14 30	2000m
15	NT	Dredge spoil	300,000	tonnes	Variation of 1/8/85 - outer dump site enlarged. 0.5nm W of Alyangule	1/8/1985	31/10/1985			
16	NT	Dredge spoil	490,000	tonnes	Southern Darling Harbour- 21/9/85? 7nm ESE of Port Jackson. (33 52 48, 151 25 36) (33 51 06, 151 27 54)	27/9/1985				
17	NSW	Dredge spoil	150,000	tonnes	2.8 miles E of Curi Curi Head	21/11/1985	21/5/1986			
18	NSW	Dredge spoil	750	tonnes	2nm E of port Kembla	16/12/1985	16/12/1986			
19	NSW	Dredge spoil	40,000	tonnes	Harbour maintenance. 2.5nm SE of Nobbys Head	30/12/1985	30/3/1986			
20	NSW	Dredge spoil	315,000	tonnes	6.5 nm N of Port Dampier. 2 areas	1/1/1986	31/12/1987			
21	WA	Dredge spoil	17 million	tonnes	Between 150 and 250nm off E coast N of 38s to S of 29 30-between 150 and 250nm off South Coast W of 140 35 to E of 135 40	13/1/1986	31/12/1986			
22	VIC	Black liquor	30,000	tonnes	1nm E of Warden Head	20/2/1986	20/2/1987			
23	NSW	Dredge spoil	6000	tonnes	Variation of 1/1/86	1/3/1986				
24	WA	Dredge spoil	22 million	tonnes	2.8nm E of Curi Curi Head	13/3/1986	13/9/1986			
25	NSW	Dredge spoil	1,200	tonnes	Balance not dumped under previous permit. 1nm W of Alyangule	23/3/1986	23/9/1986			
26	NT	Dredge spoil	10,000	tonnes	0.5 nm NE of Tarrant Island	9/4/1986	9/10/1986			
27	WA?	Dredge spoil	20,000	tonnes	Variation of permit issued 6/5/85 - outer dump site enlargec	5/5/1986				
28	WA	Dredge spoil			60nm S of Hobart	17/7/1986	30/6/1987	43 36 30	148 14 30	2000m
29	TAS	Jarosite	240,000	tonnes	Sand, clay and silt. 7nm ESE of Port Jackson	17/10/1986				700m
30	NSW	Dredge spoil	31,000	tonnes	1nm SE Norah Head. 2 areas	14/11/1986	14/11/1987			
31	NSW	Dredge spoil	2,200	tonnes						

Appendix D - Permits Issued under the Environment Protection (Sea Dumping) Act 1981

	State	Material	Quantity	Qty (units)	Description	Commence	Exire	Latitude	Longitude	Depth
32	NSW	Vessel "Gabriella"			Sank 10/12/86. 29.5nm of Port Kembla	9/12/1986	9/1/1987	34 35	151 30	2000m
33	QLD	Vessel "Merino"			Obsolete vessel-sunk 28/1/87. Gulf of Carpentaria	17/12/1986	17/9/1987	140 14		66m
34	NSW	Spent Caustic soda	2,800	tonnes	Between 100 and 200nm of E coast, N of 33 50 S of 28 10	23/12/1986	23/4/1987			
35	NSW	Dredge spoil	31,500	tonnes	Variation of 17/10/86. 7nm ESE of Port Jackson	9/2/1987				
36	WA	Artificial reef	400	tonnes	tyres/wharf/fender panels	16/2/1987	16/11/1987	20 14 30	108 31 30	
37	NSW	Demolition materials	22,000	tonnes	Area six nautical miles from E of Cape Banks	19/2/1987	19/8/1987			
38	3 barges				Steel barges- reef	28/2/1987	28/8/1987	33 43	151 21	
39	WA	Artificial reef	34,000	tyres	6 400 sq m centred at coords given. Geographe Bay	10/3/1987	10/3/1988	33 35.04	115 10.02	
40		Burial at sea	1			26/3/1987	26/4/1987	19 20	118 33	
41		Vessel "Leven"	1			29/5/1987	29/11/1987	41 08	146 29	
42	TAS	Jarosite	240,000	tonnes	60nm S of Hobart. Circle 2nm	1/7/1987	30/6/1988	43 36 30	148 14 30	
43	NSW	Dredge spoil	320,000	tonnes	Rectangular area 2.5nm SE of Nobbys Head	10/7/1987	9/1/1988			
		Two 1000 tonne steel flotation tanks	2,000	tonnes	Obsolete oiling gear. 16.2nm WNW of Port Dampier, Bare Rock	19/8/1987	18/2/1988			15m
44	WA	Dredge spoil			Variation of permit issued 1/1/86. 6.5nm N of Port Dampier. 2 areas	27/7/10/1987				
45	WA	Dredge spoil	16,500	tonnes	Approach channel. Triangular area 7nm ESE of Port Jacksor	14/7/12/1987	13/6/1988			
46	NSW	Dredge spoil								
47		Vessel "Nella Dan"	1,920	tonnes	Vessel ran aground on Macquarie Island. 10nm E of Macquarie Island	18/12/1987	17/8/1988			
48		Obsolete equipment	65	pieces	Supply vehicles and plant. 2nm E of Home Island	18/12/1987	17/8/1988			
49	WA	Dredge spoil	22 million	tonnes	Variation of permit issued 1/1/86. 2 areas 6.5nm N of Port Dampier	28/12/1987				
50	QLD	Treated water	60,000	tonnes	Treated sewage from floating hotel. 3nm W of Western edge of John Brewer Reef. rectangular area	13/1/1988	12/1/1988			
51	NSW	Dredge spoil	500,000	tonnes	excavation for tunnels and dredged trench on seabed. Liquid:cut sandstone, clay, sand and silt pumped in seawater	1/3/1988	31/12/1990			
52	WA	Burial at sea	1		Rottnest Is	11/3/1988	10/4/1988	32 04	115 22	
53	WA	Artificial Reef	16,000	vehicle tyres	Disused motor vehicle tyres (13"-15"), solid form, 28 tyres strapped together by 11mm; nylon tape to form a tetrahedron	20/4/1988	19/4/1989	33 35 04	115 1002	15-20m
54	WA	Dredge spoil	1.65	million tonnes	Bunbury- Coral fines or silts. (33 15 30, 115 39 30) (33 16 38, 115 39 30) (33 16 38, 115 39 50)	24/5/1988	24/5/1989	33 15 30	115 39 50	11-13m
55	QLD	Dredge spoil - part 1	350,000	tonnes	silt flowing into dredged channels, sediment from stormwater. (19 08 09, 146 56 51) (19 08 43, 146 57 28) (19 11 13, 146 55 51)	31/5/1988	31/5/1989	19 10 39	146 5453	11m
56	QLD	Dredge spoil - Part 2	53,000	tonnes/yr	small scale maintenance dredging in Townsville Harbour. (19 14 51, 146 54 00) (19 15 54, 146 53 18) (19 14 45, 146 51 22)	31/5/1988	31/5/1991	19 13 48	146 52 00	24m
57	NSW	Dredge spoil	23,000	tonnes	Darling Harbour - clayey silt, some sand. Radius 400m	1/6/1988	1/12/1988	33 51.65	151 25.72	
58	WA	Dredge spoil	2.2	million tonnes	sea floor of the Esperance Harbour. (033 52 37, 121 57 44) (033 53 09, 121 57 44) (033 53 09, 121 57 44)	6/6/1988	5/6/1989	033 52 37	121 57 04	35-40m
59	QLD	Dredge spoil	310,000	tonnes/yr	natural siltation of Trinity Inlet. radius 0.5 mile	14/6/1988	13/4/1989	016 47 24	145 48 48	10-12m

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Serial	State	Material	Quantity	Qty (units)	Description	Commence	Expiry	Latitude	Longitude	Depth
60	NSW	Dredge spoil			Variation of permit of 14/12/87 - extension	14/12/1988	14/12/1988			
61	QLD	Dredge spoil	94,000	tonnes	Mackay Harbour -Clay, sand and mud. (21 5 26, 149 16 22) (21 5 37, 149 16 12) (21 5 44, 149 15 29)	16/6/1988	15/6/1989	21 5 13	149 15 39	
62	NSW	20 concrete pontoons-Artificial reef	30 tonnes each		Re-inforced concrete marina pontoons, hollow in section and tubular steel outrigger pontoons. Approx 9.5m x 2m x 1.4m	24/6/1988	23/12/1988	033 43.1	151 20.6	45m
63	NSW	Dredge spoil	400 tonnes		Harbour frontage at Mosman, Sand and silt. radius 400 m	24/6/1988	23/12/1988	33 51 65	151 25 72	
64	TAS	Jarosite waste	240,000	tonnes/yr	Ammonium jarositite, primary zinc, zinc ferrite, lead sulphate, gypsum, silica, in the form of high moisture filter cake. radius 2 miles	17/7/1988	30/6/1989	043 3630	148 1430	2000m
65	QLD	Dredge spoil	300,000	tonnes	Harbour siltation, sand, gravel silt. radius 0.5nm	21/7/1988	20/8/1989	024 4342	152 2612	
66	NSW	Obsolete tug "Henry Bolte" - Artificial reef	300	tonnes	Twofold Bay, tug	21/7/1988	20/11/1989	037 0800	149 5930	20m
67		65 pieces Obsolete equipment			Variation of permit issued 18/12/87	25/7/1988	17/4/1989			
68	NSW	Dredge spoil	56,000	tonnes	Darling Harbour, variation of 7/6/88, increase tonnage	27/7/1988				
69	NT	Obsolete vessel the "Marchart 3"- Artificial reef	N/A		Darwin harbour-dumped 8/8/88 - hulk, ex rig tender	4/8/1988	3/2/1989	012 10.75	130 40.75	20m
70	QLD	Dredge			Variation of permit issued 31/5/88, change coords. (19 13 24, 146 53 36) (19 15 00, 146 52 36) (19 14 30, 146 51 30)	4/8/1988	19 12 48	146 52 36		
71	QLD	Body	1		Bowen	31/8/1988	30/9/1988	20 00	149 03	
72	NSW	The tug "Tasman Hauler"-Artificial reef	420	tonnes	Tug boat built in Australia in 1959-scuttled 1/10/88	28/9/1988	28/3/1989	037 0800	149 5930	20m
73	NSW	Dredge spoil	3,500	tonnes	Ryde, Sydney, NSW. radius 400m	19/10/1988	18/10/1989	033 51 39	151 2544	200m
74	NT	Steel Dumb Barge	0		Steel dumb barge, length 27.44m, breadth 11.60m depth 2.13m-repeated in pre 81 data	12/12/1988	12/5/1989	12 24.84	130 48.17	18m
75	NSW	Dredge spoil	1,500,000	tonnes	Treated water output from seaage treatment plant onboard the floating hotel.	1/1/1989	31/3/1991			
76	NSW	Dredge spoil			Variation of permit issued 19/10/88, change coords	10/1/1989	33 52.6	151 25.3	400m	
77	NSW	Dredge spoil	450,000	tonnes	From Newcastle Harbour. (32 57 00, 151 51 00) (32 57 48, 151 50 12) (32 57 05, 151 49 12)	19/1/1989	18/1/1990	32 56 20	151 50 00	
78	NSW	Weapons and ammunition			Department of Defence magazine production Obsolete small arms and associated explosive stores-dumped off Flinders Island, radius 1 mile	13/4/1989	13/9/1989	149 25	039 37	4000m
79	QLD	John Brewer Pty Ltd	60,000	tonnes	Treated water output from seaage treatment plant onboard the floating hotel. (018 38 30, 146 55 30) (018 38 30, 146 58 30) (018 35 30, 146 58 30)	20/4/1989	19/4/1990	018 35 30	146 5530	40m
80	QLD	Dredge spoil			Variation of permit issued 31/5/88 350 000 tonnes to 450 000 tonnes	27/4/1989				
81	NSW	Dredge spoil	105,000	tonnes	Spoil and blast furnace slag from Port Kembla Opening of casting basin at Port Kembla. (34 30 7, 151 3 0) (34 32 6, 151 2 4) (34 32 1, 151 0 0)	3/5/1989	2/11/1990	34 20.2	151 00.8	
82	QLD	Dredge spoil	4,500,000	tonnes	From Weipa channel	9/5/1989	8/11/1991	12 39.2	141 40.8	
83	QLD	Dredge spoil	85,000		Trinity Inlet	10/5/1989	9/8/1989			

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	State	Material	Quantity	Qty (units)	Description	Commencement	Expiry	Latitude	Longitude	Depth
84	WA	Dredge spoil			Variation of permit issued 24/5/88 Extension to 31/12/89	17/5/1989	31/12/1989			
85	WA	Dredge spoil	1,275,000 tonnes		seabed of Mermaid Sound in the port of Dampier in W.A. Fine-medium grained silty-sands. (020 32 34, 116 45 30) (020 33 03, 116 44 17) (020 32 04, 116 44 17) (020 30 59, 116 46 03) (020 3 059, 116 44 50)	18/5/1989	17/5/1992	020 32 04	116 45 30	8-12m
86	NSW	Dredge spoil	230 tonnes		From Point Piper. radius 400m	14/6/1989	13/12/1989	33 52.6	151 25.3	
87	WA	Dredge spoil	55,000 tonnes		Sea bed of Success Harbour Quartz beach sand which may contain shell fragments and other matter. (33 04 09, 115 43 41) (33 04 58, 115 43 36) (33 04 53, 115 43 49)	19/6/1989	19/6/1990	33 04 04	115 43 54	2
88	TAS	Jarosite	240,000 tonnes		The wastes are mixtures of ammonium jarosite, zinc ferrite, lead sulphate, gypsum and silica	17/7/1989	30/6/1990	043 36 30	148 14 30	2000m
89	QLD	Dredge spoil	385,000 tonnes		Trinity Inlet Marine mud and silt	10/7/1989	30/6/1990	016 48 12	145 48 00	12m
90	WA	Dredge spoil			Variation of permit issued 16/5/89	2/8/1989				
91	NSW	Dredge spoil	250,000 tonnes		Kooragang Island oil berth, Newcastle NSW. Brown silty clay and sand. (032 57 00, 151 51 00) (032 57 48, 151 50 12) (032 57 05, 151 49 12)	4/8/1989	3/8/1990	032 56 20	151 50 00	24-28m
92	WA	Dredge spoil	750,000 tonnes		Hamersley Shipping channel Mermaid Sound, WA Fine sand and silt; fawn to olive grey in colour. (20 36 52, 116 40 48) (20 36 51, 116 40 42) (20 36 17, 116 40 49)	24/8/1989	23/8/1990	020 36 18	116 40 54	6-10m
93	QLD	Dredge spoil	94,000 tonnes		Mackay Harbour -Clay, sand and mud. (21 05 26, 149 16 22) (21 05 57, 149 16 12) (21 05 44, 149 15 29)	25/8/1989	24/8/1990	21 05 13	149 15 39	11-13m
94	NSW	Dredge Spoil	102,000 tonnes		Glebe Is Clay, sand and silt. Centrepoint of 0.5nm	29/8/1989	28/8/1990	33 51 48	151 24 42	110m
95	NSW	Dredge spoil			Variation of permit issued 1/1/89 change co-ordinates. diameter 1000m. up to 50 000m on given coords. (33 51 48, 151 24 42)	29/8/1989		33 51 42	151 25 42	
96	WA	Obsolete equipment	800 tonnes		Cyclone damaged derrick barge 750t crane jib, 30t boiler, 15t pipe, steel scrap. Center point of 400m	31/8/1989	28/2/1990	20 08 00	115 57	50m
97	WA	Obsolete equipment			Derrick barge Steel containers (up to 8). radius 400m	1/9/1989	28/3/1990	20 08	115 57	
98	NSW	Dredge spoil		4	Variation of permit issued 29/8/89 46 000cu m from pier 3/ 1600cu m from pier	1/9/1989				
99	QLD	Dredge spoil	300,000 tonnes		Bundaberg Harbour Sand and silt. Centerpoint of 0.5nm	22/9/1989	21/9/1990	24 43 42	152 26 12	10m
100	NSW	Dredge spoil			Variation of permit issued 29/8/89	22/9/1989				
101	NSW	Dredge spoil	1000 tonnes		From Cremorne	5/10/1989	5/4/1990	33 52.6	151 25.3	
102	QLD	Artificial reef			Ferro boat hull	27/11/1989	26/5/1990	25 05 18	152 34 12	
103	QLD	Food scraps	600 kg/day		2 circular areas. (26 26 3, 151 52.7) (23 28 7, 151 55.9) 2.2nm off Heron Island (23 28.7, 151 55.9 2.2) nm off Heron Island	28/12/1989	27/12/1990			
104	NSW	Dredge spoil	700,000 tonnes		Dredging Newcastle Harbour	5/3/1990	5/3/1991			
105	SA	"karina G"				9/3/1990	9/9/1990	34 10	129	3000m
106	WA	Dredge spoil	1.2 million tonnes		Shipping channel, berthing basin, Bunbury. Sand, silt, weed and rock. (33 12 27 115 39 39) (33 16 48, 115 36 00) (33 16 48, 115 39 39)	2/4/1990	2/4/1991	33 12 27	115 36 00	12-15m
107	QLD	Dredge spoil	260,000 cu m		natural silt flow into dredged channels and harbour. (019 08 43, 146 57 28) (019 11 13 146 55 51) (019 10 39, 146 54 53)	30/4/1990	29/4/1991	019 08 09	146 56 29	11m
108	NSW	Dredge spoil	8,200 tonnes		Morrisons Bay, Putney Marine sediments mainly silty sands, inorganic silts and clays	16/5/1990	15/5/1991	033 51.83	151 24.72	110-120m

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	State	Material	Quantity	Qty (units)	Description	Commence	Exire	Latitude	Longitude	Depth
109	QLD	Dredge spoil			Variation of permit issued 3/5/90 ?	24/5/1990				
110	WA	Dredge spoil	350,000 cu m		Dredging from Port Headland. (20 12 35, 118 35 04) (20 13 20, 118 35 24) (20 13 51, 118 34 00)	30/5/1990	29/5/1991	20 12 35	118 33 40	
111	TAS	Jarosite	240,000 dry tonnes	yr	EZ zinc smelter	17/7/1990	31/10/1991	043 3630	148 1430	2000m
112	QLD	Dredge spoil	285,000 tonnes		Cairns Harbour Marine clay, deposited silt. Centerpoint of 0.5nm	17/7/1990	16/7/1991	016 4812	145 4800	10m
113	Qld	Dredge spoil	1,675,000 tonnes		Cairns Harbour Marine clay, deposited silt. Centerpoint of 0.5nm	15/8/1990	14/8/1991	16 48 12	145 48	
114	QLD	Burial at sea	1		Off Cairns. Centrepoint of 5nm	10/10/1990	9/11/1990	16 40	146 21	
115	NSW	Dredge spoil	2,000 cu m		Waterfront moorings, Sydney harbour Marine sand, silt, clay, sandstone. Centerpoint of 400m	16/10/1990	15/10/1991	033 5236	151 2518	
116	VIC	Discarded steel sections	30 tonnes		Scrapped trawler	26/10/1990	25/4/1991	38 19	141 39	11m
117	QLD	Artificial reef	50 car bodies		2km off Woodgate Beach Striped car bodies (up to 50 bodies	1/11/1990	31/10/1991	25 05 30	152 34 25	9m
		Obsolete vessel "Aroonee"								
118	NSW		14 tonnes		Off Sydney harbour Yacht, ferro-cement hull, 17m long, 3m wide, 4m high	1/2/1991	31/7/1991	034 0000	151 3600	200ft
119	QLD	Dredge spoil	27,500 tonnes		Navigation channels of Rosslyn Bay, Queensland Marine silt, mud, fine sand. radius 100m	8/2/1991	7/2/1992	023 09 13	150 4744	6m
120	NSW	Dredge spoil			Extention of operation to 5/5/91-variation of 5/3/90 permi	1/3/1991	5/5/1991			
121	NSW	Dredge spoil			Extention of operation to 3/13/92-variation of 1/1/88	13/3/1991	31/3/1992	33 51 48	151 24 42	
122	QLD	Burial at sea			Due east of Mooloobea	23/3/1991	22/4/1991	due east	154	2000ft
123	QLD	Dredge spoil			Extention of operation to 15/6/91 variation of 30/4/9C	17/4/1991	15/6/1991			
124	NSW	Dredge spoil	60,000 cu m		Extention of operation to 16/6/91-variation of 5/3/9C	1/5/1991	16/6/1991			
125	NSW	Dredge spoil	2,650 cu m		bed of Hunters Hill near foreshore Sandy mud in solid form. radius 400rr	20/5/1991	19/5/1992	33 52 48	151 2518	100m
126	NSW	Concrete pontoon	30 tons		Off Syney harbour Reinforced concrete with 4 hardwood beams, 43x 11'6"x 5'6", displacement 30 tons	14/6/1991	13/12/1991	033 4705	151 2100	45m
127	NSW	Dredge spoil	500,000 cu m		Berthing basins and shipping channels in Port of Newcastle. (032 57 00, 151 51 00) (032 57 48, 151 50 12) (032 57 05, 151 49 12)	14/6/1991	13/6/1992	032 5620	151 5000	24m
128	QLD	Dredge spoil	15,000 tonnes		Townsville Harbour Silt, fine sand clay. (19 13 24, 146 53 36) (19 15 00, 146 52 36) (19 14 30, 146 51 30)	15/6/1991	31/8/1991	19 1248	146 52 36	
129	QLD	Dredge spoil			Extention of operation to 18/7/91-variation of 18/12/90 ? 25/8/89 ?	18/6/1991	18/7/1991			
130	QLD	Dredge spoil	94,000 tonnes		(21 5 26, 149 16 22) (21 5 44, 149 15 29)	17/7/1991	16/7/1991	21 5 13	149 15 39	
131	QLD	Dredge spoil	400,000 tonnes		Trinity Inlet Marine clay, deposited silt. radius 05 miles	23/7/1991	30/11/1991	016 4724	145 4848	11-13m
132	VIC	Vessel "Emily S"	210 tonnes		Former tug and fishing vessel "Emily S" 30m steel construction with timber trim	21/8/1991	20/2/1992	38 24 30	141 40 00	20-24m
133	QLD	Dredge spoil	525,000 tonnes		Natural silt flow into dredged channels and harbour Silt, fine sand,clay (450 000 tonnes offshore and 75 000 tonnes onshore). (019 08 43, 146 57 28) (019 11 13, 146 55 51) (019 10 39, 146 54 53)	30/8/1991	29/8/1992	019 0809	146 5629	11m
134	QLD	Artificial reef	40 tonnes		Redcliffe Bay Concrete pipes of variable diameter and length secured with galvanised chain	14/10/1991	13/10/1992	027 1200	153 0735	5m
135		Obsolete equipment/machinery			.5 km off Cocos Island. Old vehicles (up to 40), aeroplane parts. Composed of metal	16/10/1991	15/4/1992	012 0240	096 5550	2000m
136	NSW	Dredge spoil	1,340 cu m		Hunters Hill and Darling Point	30/10/1991	29/10/1992	33 52 48	151 25 18	

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	State	Material	Quantity	Qty (units)	Description	Commence	Expiry	Latitude	Longitude	Depth	
137	TAS	Jarosite	240,000	tonnes	Darnley Is access channel Dredge spoil from the shipping channe	1/11/1991	31/10/1995	43 36.5	148 14.5		
138	QLD	Dredge spoil	2,000	cu m		4/11/1991	3/5/1992	09 38 12	143 45 42	12m	
139	ACT	Obsolete and rejected munitions			Off Flinders Is	3/2/1992	2/2/1993	39 37	149 25	4000m	
140		Obsolete equipment			Variation of permit issued 16/10/91 Increases amount dumped	2/3/1992	12 07 30	96 48 20			
141	QLD	Dredge spoil	1,500,000	m3	Wipa Harbour Sand, silt and clay	27/5/1992	30/6/1993	12 39 18	141 40 48	13-15m	
142	NSW	Dredge spoil	500,000	cu m	Port of Newcastle Recently deposited silt. (32 57 00, 151 51 00) (32 57 48, 151 50 12) (32 57 05, 151 49 12)	11/6/1992	10/6/1993	32 56 20	151 50 00	11-13m	
143	NSW	Dredge spoil	1,250	m3	Hunters Hill Sandy mud. Centerpoint of 400m	18/6/1992	17/9/1992	33 52 48	151 25 18		
144		Obsolete equipment	30	tonnes	Cocos Keeling Mostly steel equipment - machinery, vehicles	18/6/1992	17/6/1994	12 07 30	96 48 20		
					Gravel dredge, 200 steel structures, 4 steel hoppers, 44 blast furnace sections, 2 steel water tank sections, 80 steel pipes, 53 steel pontoons, 6 truck chassis, 2000 tonnes steel/concrete pipes, 300 cars, 400 tram carriages. Burdaberg. (24 54 07, 152 32 27) (24 54 33, 152 32 07) (24 54 33, 152 31 52)	23/6/1992	22/6/1994	24 54 07	152 31 52		
145	QLD	Artificial reef			Dover	23/7/1992	22/8/1992	43 14	148 22		
146	TAS	Burial at sea	1		Variation of permit issued 30/8/91-extentition to 31/10/93	17/8/1992	31/10/1992				
147		Dredge spoil	268,000	tonnes	Inner harbour basin and channel around Outer Breakwater. (33 16.48, 115 39.36)	25/9/1992	24/9/1995	33 15.42	115 39.25		
148	WA	Dredge spoil	0.9	million m3	Shipping channel & harbour Silt and calcareous sand occasional rock boulders Silt, fine sand and clay. (19 07 42, 146 58 47) (19 09 51, 146 57 25) (19 09 00, 146 55 57)	21/10/1992	20/10/1993	19 07 42	146 56 47		
149	QLD	Dredge Spoil	940,000	m3	Off Sydney Harbour	1/12/1992	31/12/1992	34 00	151 36	3000m	
150	NSW	Burial at sea	1		Extention of berthing basins Sand, clay and rock. (21 13 02, 149 16 46) (21 13 30, 149 17 38) (21 13 48, 149 17 12)	22/12/1992	25/12/1992				
151	QLD	Burial at sea			Capital works on port development & maintenance Silt, sand and gravel. (23 52.56, 151 27.03) (23 51.36, 151 27.48) (23 52.36, 151 28.48)	5/3/1993	4/3/1994	21 13 44	149 17 12		
152	QLD	Dredge spoil	450,000	tonnes	2 obsolete barges	10/3/1993	9/3/1994	23 53.56	151 28.56		
153	QLD	Dredge spoil	1,000,000	m3	Variation of permit issued 18/6/92 Drums, car bodies, fridges, pipes, chains,boa trailers.	12/3/1993	11/3/1994				
154	WA	Artificial reef			Variation of permit issued 18/6/92 Permit now includes 200m asbestos fibro sheeting	12/3/1993	12/07 30	96 48 20			
155		Obsolete equipment			Maintenance of harbour	29/3/1993	28/3/1996				
156		Obsolete equipment			Demolition of castle on harbour foreshore Concrete blocks, bricks. Centrepoint of 200m circle	27/4/1993	27/3/1994	33 52.18	151 27.24		
157	TAS	Dredge spoil	unspecified		Variation - to extend period of operation to 30 June 93 Variation of permit issued 11/6/92	12/5/1993	30/6/1993	16 14 24	145 48 48		
158	NSW	Demolition material	4,000	tonnes	Mooring bay in front of house-Hunters Hill Sand and silt Centrepoint of 200m circle	10/6/1993	30/6/1993				
159	QLD	Dredge spoil	8,958	cu m		10/6/1993	9/6/1994	33 52.18	151 27.24		
160	NSW	Dredge spoil									
161	NSW	Dredge spoil	800	m3							

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	State	Material	Quantity	Qty (units)	Description	Commence	Expiry	Latitude	Longitude	Depth
162	QLD	Dredge spoil	500,000	m ³	Capital and maintenance dredging of harbour Silt, fine sand and clay. (19 13 24, 146 53 36) (19 15 00, 146 52 36) (19 14 30, 146 51 30)	16/6/1993	15/6/1994	19 12 48	146 52 36	
163	NSW	Dredge spoil	300,000	tonnes	Maintenance dredging of harbour. (32 57 00, 151 51 00) (32 57 48, 151 50 12)	28/6/1993	10/6/1994	32 56 20	151 50 00	
164	QLD	Dredge spoil	1,500,000	m ³	Maintenance dredging of approach channel to harbour Centrepoint of 1.1nm circle	28/6/1993	27/6/1994	12 39.18	141 40.48	
165	QLD	Dredge spoil	500,000	tonnes	Maintenance dredging of channel Clay, silt and sand Centrepoint of 1nm circle	14/7/1993	13/7/1994	16 47 24	145 48 48	
166	QLD	Dredge spoil	70,000	m ³	Maintenance dredging Silt , some sand and clay. (21 13 2, 149 16 46) (21 13 30, 149 17 38) (21 12 48, 149 17 12)	15/7/1993	14/7/1994	21 13 44	149 17 12	
167	QLD	Dredge spoil			Variation. Reduce to 50 000 tonnes	21/7/1993				
168	NSW	Burial at sea	1		Off Sydney harbour. Centerpoint of 2.5nm circle	28/7/1993	27/8/1993	34 00	151 36	
169	QLD	Dredge spoil	15,000	tonnes	Maintenance dredging Clay, sand and mud. (21 5 26, 149 16 22) (21 5 57, 149 16 12) (21 5 44, 149 15 29)	28/7/1993	27/9/1993	21 5 13	149 15 39	
170	QLD	Dredge spoil	500,000	m ³	Maintenance dredging of harbour and channels Silt, fine sand and clay. (19 07 42, 146 58 47) (19 09 51, 146 57 25) (19 09 00, 146 55 57)	17/8/1993	16/8/1994	19 07 42	146 56 47	
171	QLD	Artificial reef	50	tonnes	Addition to existing artificial reef - 9m depth Car and tractor tyres tied in a module form, balasted with 150 kg concrete	18/8/1993	17/8/1995	25 05 30	152 34 25	9m
172	QLD	Dredge spoil	160,000	tonnes	Maintenance dredging Clay, sand and mud. (21 5 26, 149 16 22) (21 5 57, 149 16 12) (21 5 44, 149 15 29)	27/9/1993	26/9/1995	21 5 13	149 15 39	
173	NSW	Burial at sea	1		Off sydney harbour Centerpoint of 2.5 nm	30/9/1993	29/10/1993	34 00	151 36	
174	WA	Dredge spoil	900,000	m ³	Construction and maintenance dredging of berthing areas Calcarene and silty sand. (20 32 34, 116 45 29) (20 33 03, 116 44 17) (20 30 59, 116 46 02) (20 30 59, 116 44 49)	11/11/1993	9/5/1995	20 32 04	116 45 29	
175	NSW	Obsolete pontoon			Obsolete concrete ferry landing pontoon	19/11/1993	18/11/1994	33 53	151 27.5	
176	NT	Dredge spoil	5,600	m ³	Dredging of the berthing areas at Milner Bay Silt and sand with some small amounts of manganese ore. (13 51 55, 136 24.88) (13 51.85, 136 25.04) (13 51.93, 136 24.89) (13 51.93, 136 24.45)	21/12/1993	20/12/1998	13 51.55	136 24.45	
177	WA	Dredge spoil			Allow one off dumping to 15/9/94	13/1/1994	15/9/1994			
178	WA	Burial at sea	1		Centrepoint of 1nm	3/2/1994	2/3/1994	32 04	115 22	
179	QLD	Dredge spoil			Variation - to extend period of operation till 10/3/95 Silt, sand and grave	23/2/1994	10/3/1995			
180	WA	Dredge spoil	100,000	tonnes	Harbour and approach channel silt and sand	12/4/1994	11/4/1995		11f	
181	QLD	Dredge spoil			Variation of permit issued 17/8/93 Extend operation to 31/12/94 and increase amnt from 500 000 cu m to 700 000 cu m at "Inshore dump site". (19 09 51, 146 57 25) (19 09 00, 146 55 57)	8/6/1994	31/12/1994	19 07 42	146 56 47	
182	QLD	Dredge spoil			Revokes permit issued 21/7/93-Varies permit of 16/6/93 Extend operation to 31/12/94 and decrease amnt from 500 000 cu m to 50 000 cu m at "Inshore dump site". (19 13 24, 146 53 36) (19 15 00, 146 52 36) (19 14 30, 146 51 30)	8/6/1994	31/12/1994	19 12 48	146 52 36	
183	WA	Artificial Reef	250	modules	Modules constructed of tyres and weighted with concrete-28 tyres per module	17/6/1994	16/6/1994	25 02.79	113 32.25	12m

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	State	Material	Quantity	Qty (units)	Description	Commence	Expiry	Latitude	Longitude	Depth
184	QLD	Dredge spoil Obsolete vessel- "HMAS Adroit"	1,500,000	cu m	Maintainence dredging of approach channel to Weipa. 1.1 nm radius buffer. 35nm from Rottnest Island Attack class control boat-deliberately sunk in Navy exercise	1/7/1994	30/6/1995	12 39.3	141 40.8	7-12m
185	WA	Aircraft pallets	1	vessel	Steel pallets used to deliver 2 boats to sea for army exercise Steel pallets- 1.5mx2.4mx0.1m for a frequent army exercise	4/7/1994	3/1/1995	32 04'	114 45'	2500m
186	WA	Aircraft pallets	2	pallets	Maintainance dredging Port of Hay (21 13 01.87, 149 16 46.4) (21 13 30.31, 149 17 37.8) (21 12 48.18, 149 17 11.5)	5/8/1994	4/2/1995	16 20	123	
187	QLD	Dredge spoil	70,000	cu m	Tug took on water & sank in 42m water in Twofold Bay-Eden Salvage oper. w/e given permit to re-dump in deep water, 150 degrees-30 mins East (line due E from vessel)	25/8/1994	24/8/1995	21 13 44.03	149 17 12.4	
188	NSW	Obsolete vessel "Provincial Trader"	1	vessel		28/10/1994	27/4/1995			2000m
189	QLD	Various								
190	WA	"HMAS Derwent"	1	vessel						
191		Two vessels	2	vessels						
192	QLD	Dredge spoil	500,000	cu m	Artificial reef variation (Carnarvon artificial reef) Extend period of operation for 2 months	22/12/1994	28/2/1995			
193	NSW	Dredge spoil	2,200	tonnes		31/12/1994				
194	QLD	Dredge spoil	500,000	cu m		21/1/1995	19/7/1995	33 51.7	151 25.7	
195	WA	Two vessels	2	vessels		22/2/1995	23/2/1996	19 07 42	146 56 47	
196		tyre modules	150	tyre modules	Sunken fishing vessels	3/5/1995	2/11/1995	21 29.7	115 13.8	
197	QLD	Dredge spoil	3,000	tonnes	Increase the amount of material of operator	16/5/1995	17/8/1997			
198	NSW	Dredge spoil	500,000	cu m		17/5/1995	16/6/1995	23 53.56	151 28.56	
199	QLD	Dredge spoil	1,200,000	cu m		8/6/1995	7/6/1996	32 56 20	151 50 00	
200	QLD	Dredge spoil	150,000	tonnes		19/7/1995	19/7/1996	21 13 44	149 17 12	
		Obsolete vessel- "Iron Baron"	1	vessel		25/7/1995	30/6/1996	23 52 78	151 28 42	
201	TAS	Burial at sea	1		Beyond 1000m contour line Tin Can Bay	26/7/1995	25/8/1995	39 33 26	149 23 49	
202	QLD	Obsolete vessel- "Madeleina II"	1	vessel		22/8/1995				
203	WA					23/8/1995	23/8/1996	31 37 2	115 37 2	
204	QLD	Dredge spoil	85,000	tonnes		30/9/1995	30/9/1996	21 5 13	149 15 39	
205	QLD	Dredge spoil	1,500,000	tonnes		4/10/1995	30/9/1996	12 39 3	141 40 8	
206	TAS	Jarosite	240,000	tonnes		1/11/1995	31/1/1997	43 33 5	148 14 5	
207	NSW	Burial at sea	1			29/11/1995		34 00	151 36	
208	QLD	Dredge spoil	550,000	tonnes		30/11/1995	30/11/1996	24 42 33	152 28 28	
209	QLD	Mohawk Planes	2	planes	Bundaberg artificial reef	9/2/1996	9/2/1998	25 54 7	152 31 53	
210	WA	Dredge spoil	900,000	cu m		19/2/1996	19/2/1999	33 15 30	115 39 30	
211		Obsolete refugee boat	1	vessel	Christmas Island	15/3/1996	15/4/1996	10 25	105 38	

Appendix D - Permits Issued under the Environment Protection (Sea Dumping) Act 1981

	State	Material	Quantity	Qty units	Description	Commence	Expiry	Latitude	Longitude	Depth
212		Obsolete machinery & equipment		various	Cocos (Keeling) Island	20/3/1996	20/3/1998	12 02 40	96 55 50	
213		Obsolete refugee boat		1 vessel	Christmas Island	6/5/1996	6/6/1996	10 25	105 38	
214		Obsolete refugee boat		1 vessel	Christmas Island	7/5/1996	7/6/1996	10 25	105 38	
215		Obsolete refugee boat		1 vessel	Christmas Island	9/5/1996	9/6/1996	10 25	105 38	
216		Obsolete refugee boat		1 vessel	Christmas Island	14/5/1996	14/6/1996	10 25	105 38	
217	QLD	Dredge spoil	500,000	cu m	19 07 42 146 56 47	31/5/1996	31/5/1997	19 14 30	146 51 30	
218	NSW	Dredge spoil	500,000	cu m		4/6/1996	4/9/1996	32 56 20	151 50 00	
219	QLD	Dredge spoil	250,000	cu m		11/6/1996	11/6/1997	15 27	145 15	
220	QLD	Dredge spoil	1,200,000	cu m		25/6/1996	25/9/1998	17 25 05	140 44 06	
221	QLD	Steel tower	1	tower	Off Saumarez reef	27/6/1996	27/8/1996			
222	QLD	Dredge spoil	46,000	tonnes		22/8/1996	21/8/1997	23 9.3	150 47 79	
223	TAS	Dredge spoil	600,000	tonnes		30/8/1996	30/8/1997	41 8.24	146 23 06	
224	QLD	Dredge spoil	100,000	tonnes	Also (23 52.92 15 27.03) (23 51.62 151 27.85) (23 52.63 151 29.78)	21/10/1996	20/4/1997	23 53.93	151 28.96	
225	TAS	Artificial reef	1	vessel	Scuba club	21/10/1996	20/4/1997	41 7.45	146 19.6	
226	QLD	Dredge spoil	95,000	cu m	Also (21 5.26 149 16.22, 21 5.57 149 16.12, 21 5.44 149 15.29)	30/10/1996	30/10/1997	21 5.13	149 15.39	
227	WA	Artificial reef	1	vessel	Karratha	27/11/1996	26/2/1997	20 24	117 13	
228	NSW	Burial at sea	1	body	Ulladulla	1/12/1996	10/1/1997	35 20	151	
229	QLD	Dredge spoil	550,000	tonnes	Bundaberg	6/2/1997	6/2/1998	24 42.33	152 28.28	
230		Obsolete refugee boat		1 vessel	Christmas Island	24/3/1997	24/9/1997	10 25	105 38	
231	NSW	Burial at sea	1	body	Port Stephens	3/4/1997	2/5/1997	32 45	152 55	
232	WA	Dredge spoil	340,000	cu m	Port Hedland (20 13.25, 118 35.24) (20 13.56, 118 34.12) (20 12.51, 118 33.42)	16/4/1997	15/4/1998	20 11.54	118 34.42	
233	QLD	Dredge spoil	500,000	cu m	Townsville (19 7.42, 146 58.47) (19 09.51, 146 57.25) (19 9, 146 55.57)	1/6/1997	1/6/2000	19 7.42	146 56.47	
234	TAS	Burial at sea	1	body	Hobart	2/6/1997	1/7/1997	43 14	148 22	
235	NSW	Dredge spoil	500,000	cu m	Newcastle (32 55.77, 151 49.4) (32 56.16, 151 49.79) (32 56.49, 151 49.32)	11/6/1997	10/6/2000	32 56.1	151 48.94	
236	WA	Dredge spoil	340,000	cu m	Port Hedland Variation of permit - change of position	25/7/1997	15/4/1998	20 30 14	118 43 44	
237	WA	Dredge spoil	340,000	cu m	Port Hedland Variation of permit - change of position	31/7/1997	15/4/1998	20 30 02	118 43 26	
238		Obsolete refugee boat		5 vessels	Christmas Island	8/10/1997	7/10/1998	10 25	105 38	
239	QLD	Dredge spoil	25,000	cu m	Maintenance work Hay Point (21 13 30.31, 149 17 37.84) (21 12 48.18, 149 17 11.53)	10/10/1997	9/10/1998	21 13 44.03	149 17 12.4	
240	NSW	Burial at sea	1	body	Moruya	10/10/1997	9/11/1997	36 15	150 30	
241	WA	Dredge spoil	3,500,000	cu m	Onslow (21 33.9, 115 5.7) (21 35.9, 115 6.2) (21 35.8, 115 5.3)	20/11/1997	21/12/1999	21 33.8	115 4.5	
242	QLD	Dredge spoil	148,000	cu m	Mackay (21 5.26, 149 16.22) (21 5.57, 149 16.12) (21 5.44, 149 15.29)	1/12/1997	30/11/1998	21 5.13	149 15.39	
243	QLD	Artificial reef	various	items	152 31 52.82)	3/12/1997	2/12/1998	24 54 7	152 31 52.92	

Appendix D - Permits Issued under the Environment Protection (Sea Dumping) Act 1981

	State	Material	Quantity	Qty (units)	Description	Commence	Exire	Latitude	Longitude	Depth	
244	WA	Obsolete refugee boat		1	vessels	Ashmore Reef	11/12/1997	10/11/1998	12.07	122.53	
245	WA	Artificial reef		1	vessel	HMAS Swan Geographe Bay	11/12/1997	10/12/1998	33.33	02	
246	TAS	Dredge spoil	148,000	cu m		Devonport	16/1/1998	15/1/1999	41.08	21	
247	WA	Dredge spoil	1,000,000	cu m	Dampier (20 36 54, 116 40 33) (20 35 46, 116 40 40) (20 35 46, 116 40 58)	23/1/1998	30/9/1998	20 36	54	116 40 51	
248	QLD	Burial at sea	1	body	Cairns	12/3/1998	12/4/1998	16.40	146.21		
249	TAS	Well head	1		Bass Strait	7/4/1998	7/5/1998	38.45	140		
250	WA	Dredge spoil	550,000	cu m	Dampier (20 36 54, 116 40 33) (20 35 46, 116 40 40) (20 35 46, 116 40 58)	21/4/1998	30/6/1999	20 36	54	116 40 51	
251	QLD	Dredge spoil	160,100	cu m	Gladstone (23 52.92, 151 27.03) (23 51.62, 151 27.85) (23 52.63, 151 29.78)	22/4/1998	22/4/1999	23 53	.95	151.28.96	
252	TAS	Well head	1		Bass Strait Variation	22/4/1998	7/5/1998	38.45		149	
253	WA	Fish Waste	1600	tonnes	Geraldton	23/4/1998	22/4/1999	28.45		114.21.25	
254	QLD	Dredge spoil	3,000,000	cu m	Weipa	1/5/1998	30/4/2000	12.66	.12	141.65.56	
255	TAS	Dredge spoil	240,000	cu m	Variation to increase amount to 240,000 cu m - Devonport	24/5/1998	15/1/1999	41.08	.21	146.23.37	
256	QLD	Dredge spoil	1,020,000	cu m	Variation to extend period of permit - Karumba:	25/5/1998	30/9/2000	17.25	.05	140.40.06	
257	WA	Obsolete refugee boat		1	vessel	Ashmore Reef	29/5/1998	29/6/1998	12.07	122.53	
258	QLD	Dredge spoil	88,000	cu m	Port Penefather	1/6/1998	31/7/2000	12.17	.2	141.40.4	
259	WA	Dredge spoil	800,000	cu m	Variation to increase spoil size - Dampier (20 36 54, 116 40 33) (20 35 46, 116 40 40) (20 35 46, 116 40 58)	9/6/1998	30/6/1999	20 36	54	116 40 51	
260	NSW	Dredge spoil	24,000	cu m	Newcastle (32 55.77, 151 49.4) (32 56.16, 151 49.79) (32 56.49, 151 49.32)	17/7/1998	31/12/1998	32.56	.1	151.48.94	
261	WA	Dredge spoil	3,000,000	tonnes	UTM Grid Zone 50 (AMG); SE corner 7.720,400 mN 466,800mE; SW corner 7.720,400 mN 466,200mE; NW corner 7,722,500 mN 466,400mE; NE corner 7,722,500 mN 467,000mE; Perth Variation of permit from 2,000,000 cu m	17/7/1998	30/9/1998				
262	WA	Dredge spoil	550,000	tonnes	A circle of centrepoint 0.5 nm centred on the coords. Bundaberg	24/7/1998	23/7/1999	24.42	.20	152.28.17	
263	WA	Artificial Reef - boat "Samson II"	1	vessel		17/8/1998	16/1/1999	20.24		117.13	
264	QLD	Dredge spoil	1,500,000	cu m	Variation from 1,020,000 cu m	19/8/1998	30/9/2000	17.25	.05	140.40.06	
265	NSW	Dredge spoil	10,000	cu m		8/9/1998	1/9/1999	28.10	.22	153.33.81	
266	NSW	Dredge spoil	25,000	cu m		28/10/1998	28/10/1999	33.52	.3	151.27.4	
267	WA	Burial at sea	1	body	Fremantle	18/11/1998	17/12/1998	32.02		115.02	
268	QLD	Dredge spoil	148,000	cu m	Mackay (21 5 26, 149 16 22) (21 5 57, 149 16 12) (21 5 44, 149 15 29)	30/11/1998	28/2/1999	21.51	.13	149.15.39	
269	WA	Vessels	6	vessels	Christmas Island	18/12/1998	17/12/1999	10.25		105.38	
270	WA	Granite	9,100	tonnes	Artificial Reef	22/12/1998	21/12/1999	32.01		115.44	
271	NT	Obsolete vessel- "Min Ping You No. 8"	1	vessel	Port Essington	8/1/1999	7/7/1999	10.40		132.04	

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	State	Material	Quantity	Qty (units)	Description	Commence	Expiry	Latitude	Longitude	Depth
272	NSW	Artificial Reef - vessel "Demetrius"	1 vessel		Coffs Harbour	15/1/1999	14/1/2000	29 55.075	153 22.83	
273	TAS	Dredge spoil	210,000	cu m	Devonport	2/2/1999	1/2/2000	41 8.45	146 23.1	
274	NSW	Artificial Reef - vessel "Urunga"	1 vessel							
275	QLD	Dredge spoil	12,000/25,000	cu m	(21 5 26, 149 16 22) (21 5 57, 149 16 12) (21 5 44, 149 15 29) Mackay	5/3/1999	4/3/2000	33 58.374	151 15.766	
276	WA	Obsolete vessel- "Min Ping Liu No. 25"	1 vessel		Port Hedland	12/3/1999	11/3/2000	20 02.5	118 22.2	
277	NSW	Obsolete vessel- "Torrens"	1 vessel			8/4/1999	7/10/1999	31 47	114 47	
278	QLD	Dredge spoil	118,000	cu m	(19 16 1.666, 146 50 33.353) (19 15 37.915, 146 50 33.376) (19 15 37.586, 146 50 28.237) Townsville	12/4/1999	11/4/2000	19 15 40.839	146 50 27.892	
279	WA	Vessels	up to 4	vessels	Ashmore Reef	23/4/1999	22/10/1999	12 11	122 45	
280	QLD	Artificial Reef	1 barge		(24 54 7.3, 152 32 7.17) (24 54 33.03, 152 32 7.07) (24 54 32.98, 152 31 52.82) Bundaberg	13/5/1999	12/5/2000	24 54 7	152 31 52.92	
281	QLD	Dredge spoil	30,000	cu m	(21 13 1.87, 149 16 46.43) (21 13 30.31, 149 17 37.84) (21 12 48.28, 149 17 11.53) Mackay	14/5/1999	13/5/2000	21 13 44.03	149 17 12.4	
282	QLD	Dredge spoil	100,000	cu m	(23 52.92, 151 27.03) (23 51.62, 151 27.85) (23 52.63, 151 29.78) Gladstone	9/6/1999	8/6/2000	23 53.93	151 28.96	
283	NSW	Obsolete vessel- "Torrens"	1 vessel		Variation (31 47, 114 30)	10/6/1999	7/10/1999	31 47	114 47	
284	NSW	Dredge spoil	165,000	tonnes	Variation of 14/12/87. Triangular area 7nm ESE of Port Jackson	?/?/88				
285	QLD	Dredge spoil	11,200,000	cu m	Karumba			17 25.05	140 40.06	

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
PARANITROCHLORBENZENE	SA	487	drums	320 100 pound bombs - refer Chemical Warfare Agent Sea Dumping off Australia	29/5/1939				50 miles east of north end of Flinders Island	1138f
MUSTARD GAS	QLD	320	100 pound	refer Chemical Warfare Agent Sea Dumping off Australia	12/10/1945					600f
MUSTARD GAS	QLD	700	65 pound	Various - refer Chemical Warfare Agent Sea Dumping off Australia	14/10/1945	18	148			600f
CHEMICAL WARFARE AGENT	NSW			Agent Sea Dumping off Australia	24/9/1946		34,18.8	151,43.6		1829m
CHEMICAL WARFARE AGENT	NSW			Various - refer Chemical Warfare Agent Sea Dumping off Australia	11/12/1946	34,10.2	151,53.1		50 miles east of southern portion of Flinders Island	2195m
PARANITROCHLORBENZENE	SA	657	drums	Dumped by Argonaut II	30/4/1949					300f+
RAPIDECH CRYSTALLISED CHEMICAL	NSW	?	?	Sunk under supervision of HMAS Kangaroo	13/12/1949	34,02,00	151,44,00			556f
SPRAYING OIL	NSW	6	drums		5/9/1950				0915 hours long 135 deg	3040f
SODIUM CYANIDE RESIDUE	SA	19	drums	1cwt	16/6/1953	37,20,00	131,40,00			3000f
MUSTARD GAS	NSW	-4	pounds	refer Chemical Warfare Agent Sea Dumping off Australia	12/10/1965	34,23	151,26			310f
MEDICAL STORES/SULPHUR DRUGS	QLD	0.50	ton		2/2/1966	26,59,00	153,57,00			450f
CYANIDE	NSW	7	drums		14/2/1966				24m ESE of North Head	
CYANIDE	NSW	10	drums		14/2/1966				24m ESE of North Head	
CYANIDE RESIDUE	NSW	10	drums		27/9/1966	33,58,55,6	151,42,19,3			
METHYL PARATHION	NSW	2	drums		27/9/1966	33,58,55,6	151,42,19,3			
POLYMERISED ETHYLENE OXIDE	NSW	1	drum		27/9/1966	33,58,55,6	151,42,19,3			
SULPHONAMIDES & ANTHISTAMINES	NSW	2	drums		27/9/1966	33,58,55,6	151,42,19,3			
MEDICAL STORES FROM WATER POUCE	QLD	0.25	ton		20/12/1966	26,59,00	153,57,00			450f
CHLORINATED HYDROCARBONS	NSW	1760	gallons	44 gal drums	21/12/1967	33,59,18,6	151,43,26			
CHLORINATED HYDROCARBONS	NSW	1584	gallons	44 gal drums	22/2/1967	33,59,18,6	151,43,26			
CHLORINATED HYDROCARBONS	NSW	44	drums		22/3/1967	33,59,18,6	151,43,26			
CHLORINATED HYDROCARBONS	NSW	44	drums		23/3/1967	33,59,18,6	151,43,26			
CHLORINATED HYDROCARBONS	NSW	44	drums		8/5/1967	33,59,41,6	151,44,32,6			
CHLORINATED HYDROCARBONS	NSW	42	drums		29/5/1967	33,59,41,6	151,44,32,6			
CHLORINATED HYDROCARBONS	NSW	1834	gallons	44 & 12.5 gal drums	20/6/1967	33,59,41,6	151,44,32,6			
CHLORINATED HYDROCARBONS	NSW	1741	gallons	44 & 12.5 gal drums	12/7/1967	33,59,18,6	151,43,26			
CHLORINATED HYDROCARBONS	NSW	621	gallons	44 & 12.5 gal drums	25/7/1967	33,59,18,6	151,43,26			
CYANIDE RESIDUE	NSW	396	gallons	44 gal drums	25/7/1967	33,59,18,6	151,43,26			
CHLORINATED HYDROCARBONS	NSW	6952	gallons	44 gal drums	25/8/1967	33,58,32,6	151,41,12,7			
PESTICIDES	SA	180	gallons	15 drums	9/9/1967	38,13,00	138,12,00			

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
CHORINATED HYDROCARBONS	NSW	8008	gallons		28/1/1967		33,51,19.9	151,45,51.6		
TOXIC SLUDGE	NSW	160	gallons	36 drums	28/1/1967		33,51,19.9	151,45,51.6		
CYANIDE	NSW	1584	gallons	44 drums	29/1/1967		37,22,00	150,22,00		
CYANIDE	NSW	352	gallons	8 gallon drums	30/1/1967		34,39,00	151,16,00		
CHORINATED HYDROCARBONS	NSW	3784	gallons		13/2/1968		33,51,19.9	151,47,3.6		
CYANIDE RESIDUE	NSW	836	gallons		13/2/1968		33,51,19.9	151,47,3.6		
CHORINATED HYDROCARBONS	NSW	8096	gallons		16/2/1968		33,51,19.9	151,47,3.6		
CYANIDE RESIDUE	NSW	264	gallons		16/2/1968		33,51,19.9	151,47,3.6		
CHORINATED HYDROCARBONS	NSW	6600	gallons		6/5/1968		33,51,19.9	151,45,51.6		
CYANIDE	QLD	15	vats	Cyanide impregnated vats	Jun-68		31,06,00	153,25,00		540f
CYANIDE	VIC	5	pots	Obsolete cyanide-pots weighed in 45 gallon drums	8/7/1968		36,25,00	150,30,00		500f
CYANIDE	NSW	264	gallons	444 gallon drums used x 6	Cyanide residue	2/8/1968	33,51,19.9	151,43,27.5		200f
HYDROCARBONS	NSW	1760	gallons	444 gallon drums used x 40	Hydrocarbons	2/8/1968	33,51,19.9	151,43,27.5		200f
HYDROCARBONS	NSW	5236	gallons	444 gallon drums used x 119	Contaminated residue	2/8/1968	33,51,19.9	151,43,27.5		200f
CYANIDE	VIC	115	gallons	5 gallon drums x 23	Cyanide	30/8/1968	38,48,00	151,20,00		2000f
CYANOGEN BROMIDE	NSW	88	gallons	444 gallon drums used x 2	Cyanogen Bromide	6/9/1968	33,51,19.9	151,42,15.5		90f
PHOSPHOROUS TRICHLORIDE	NSW			cartrons and drums 444 gallon drums used	Phosphorous Trichloride-935 cartons and 9 x 44 gal. drums	20/9/1968	33,51,19.9	151,43,27.5		
CYANIDE	QLD	4	vats	Cyanide impregnated partially neutralised	Cyanide impregnated vats	Jan-69	46,52,00	153,49,00		275f
ELECTRIC PLATING VATS	QLD	2649	lbs	Cyanide impregnated-partially neutralised	Also 20 x OMC-180 lbs	8/1/1969	26,52,00	153,48,00		500f
WHITE SPIRIT/PERCHLOROETHYLENE PESTICIDES	NSW	88	gallons	444 gallon drums used x 2	White Spirit/Perchloroethylene (50:50) 2 x 44 gallon drums	4/3/1969	33,51,19.9	151,43,27.5		300f
CHEMICALS	VIC	144	gallons	12 gallon drums used	Obsolete chemicals	2/4/1969	35,16,00	103,41,00		
CYANIDE	VIC	20	gallons	5 gallon drums used x 4	Scrap cyanide	14/4/1969	38,57,00	151,17,00		2500f
CYANIDE	VIC	90	gallons	45 gallon drums used x 2	Scrap cyanide	14/4/1969	38,57,00	151,17,00		2500f
CYANIDE	VIC	13	gallons	13 gallon drums used x 1	Waste Arsenical Solution in 44 gal. Drums	18/4/1969	31,37,00	114,14,00		2950f
ARSENICAL SOLUTION CYANA-GAS	WA	19360	gallons	444 gallon drums used x 440 drums	Cyana-gas	7/5/1969	29,50,00	84,00,00		1500f
CYANA-GAS	VIC	20	gallons	20 gallon drums used	Cyana-gas	7/5/1969	29,50,00	84,00,00		1500f
SODIUM CYANIDE	VIC	40	gallons	100 gallon drums used x 4	Sodium cyanide	7/5/1969	29,50,00	84,00,00		1500f
HYDROCARBONS	NSW	352	gallons	444 gallon drums used x 8 drums	Contaminated hydrocarbons	8/9/1969	33,59,45.9	151,41,28.1		200f
CYANIDE	NSW	3273	kg	20% cyanide salt & 80% sodium carbonate in lump form		15/9/1969		37.5km S, 13km E of South Head		
HYDROCARBONS	NSW	6660	gallons	45 gallon drums used x 148	Contaminated hydrocarbons	29/9/1969	33,59,45.9	151,41,28.1		200f
CYANIDE		352	gallons	8 drums		12/10/1969	37,09,00	150,39,00		
CYANIDE	VIC	3124	gallons	Cyanide-71 x 44 gal. drums and 2 pots		20/10/1969	38,30,00	148,47,00		1000f

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
ARSENICAL SOLUTION	NSW	20 drums		Waste Arsenical Solution	Nov-69		32, 04.00	115,04.00		200+ft
HYDROCARBONS	NSW	8840 gallons	45 gallon drums x 192	Contaminated hydrocarbons	4/11/1969		33,51,19.9	151,44,39.6		200f
SHEEP DIP	NSW	462 Gallons		Sheep dip	4/11/1969		33,51,19.9	151,44,39.6		200f
IRON CALCINE	TAS	11 621 tonnes	Continuous twice daily dumping refer Chemical Warfare Agent Sea	Iron Calcine derived from the roasting of iron pyrite Iron-58% Zinc 2% lead 1% silica 6% trace quantities of other heavy metals	Jan-70	Jun-70	40,58,12	146,36.00		50m
MUSTARD GAS	QLD	0.5 ton	Dumping off Australia		23/1/1970		26,59,30	153,57		450f
MUSTARD GAS CYLINDERS	QLD	0.50 ton			23/1/1970		26,59,30	153,57.00		450f
CYANIDE	VIC	190 gallons	5 gallon drums x 38	Waste cyanide	3/2/1970		38,08.00	155,26.00		2500f
CYANIDE	VIC	50 gallons	25 gallon drums x 2	Waste cyanide	3/2/1970		38,08.00	155,26.00		2500f
PYROTECHNICS	VIC	90 gallons	45 gallon drums x 2	Obsolete pyrotechnics	3/2/1970		38,08.00	155,26.00		2500f
SODIUM AZIDE	NSW	375 gallons	15 drums	25 gallon drums	3/2/1970		38,08.00	155,26.00		
CYANIDE RESIDUE	NSW	1056 gallons	44 gallon drums x 24	Cyanide residue	12/2/1970		33,4,47.4	151,33,11.7		
CYANIDE SALT	NSW	1027 gallons	13 gallon drums x 79	Cyanide salt	12/2/1970		33,4,47.4	151,33,11.7		
HYDROCARBONS	NSW	6864 gallons	44 gallon drums	Contaminated hydrocarbons-156 x 44 gal. drums	12/2/1970		33,4,47.4	151,33,11.7		150f
ARSENICAL SOLUTION	WA	20 drums	Reject material from reserve stock	Waste arsenical solution-20 drums	Mar-70		32,20,00	114,55.00		350f
SODIUM AZIDE	WA	3 tons		Sodium azide	Apr-70		34,13,00	97,12,00		
IRON CALCINE	TAS	82 411 tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-70	Jun-71	40,58,12	146,36.00		50m
CYANIDE	VIC	90 gallons	5 gallon drums x 18	Cyanide	23/7/1970		39,02,00	142,20,00		400f
CYANIDE	VIC	96 gallons	24 gallon drums x 4	Cyanide	23/7/1970		39,02,00	142,20,00		400f
CYANIDE	VIC	1408 gallons	44 gallon drums x 32	Obsolete cyanide-32 x 44 gal. drums	Aug-70		38,22,00	152,16,00		
CYANIDE	TAS	8 drums		Waste cyanide-8 drums	4/8/1970		42,02,00	144,34,00		500f
PYROTECHNICS	VIC	1 ton		Obsolete pyrotechnics	30/8/1970		38,22,00	152,16,00		
CERAMICS	WA	100 tons	Also in April 1970	Ceramics contaminated with arsenic	Dec-70		32,00,00	114,30.00		
PESTICIDES	VIC	384 gallons	12 gal. drums	Pesticides-32 drums	23/12/1970		35,02,00	88,09,00		
HYDROCARBONS	NSW	7392 drums	44 gallon drums x 168	Contaminated hydrocarbons-44 gal. drums	12/1/1971		33,53,4.7	151,40,58.2		
CYANIDE	VIC	10 lbs		Waste cyanide	1/2/1971		43,23,00	145,32,00		500f
CARBONATE/CYANIDE	NSW	151 lbs		Zinc carbonate and cyanide	19/5/1971		33,40,54.5	151,43,23.1		
HYDROCARBONS	NSW	7392 gallons		Contaminated hydrocarbons-168 x 44 gal. drums	19/5/1971		33,40,54.5	151,43,23.1		
SOLVENTS	NSW	10 gallons	5 gallon drums x 2	Mixed solvents/narcotic residues	19/5/1971		33,40,54.5	151,43,23.1		
HYDROCARBONS	NSW	7392 gallons	44 gallon drums used x 168	Contaminated hydrocarbons	1/6/1971		33,40,54.5	151,43,23.1		

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
CONTAMINATED HYDROCARBON HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	10/6/71 dumping?	8/6/1971	33,46,6.5	151,43,58.3		
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	10/6/1971	33,46,6.5	151,43,58.3		
IRON CALCINE	TAS	159 439	tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-71	40,58,12	146,36.00		50m
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	16/7/1971	34,1,15	151,42,29.4		
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	28/8/1971	33,57,9.3	151,36,41.7		
CYANIDE	VIC	85	gallons	5 gal. Drums x 17	Waste cyanide	6/9/1971	38,14,00	156,37,00		3000f
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	9/9/1971	33,48,16.5	151,41,54		
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	4/10/1971	33,46,16.9	151,42,47.4		
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	8/12/1971	33,50,6.5	151,43,12.1		
HYDROCARBONS	NSW	14784	gallons	44 gallon drums x 336 drums	Contaminated hydrocarbons	1/3/1972	24,02,00	151,36,00		
HYDROCARBONS	NSW	7392	gallons	46 gallon drums x 168	Contaminated hydrocarbons	28/3/1972	33,50,6.5	151,42,00		
HYDROCARBONS	NSW	7392	gallons	47 gallon drums x 168	Contaminated hydrocarbons	20/4/1972	33,50,6.5	151,42,00		
CYANIDE	NSW	1300	gallons	44 gallon drums	Cyanide in alkaline solution-40 drums	27/4/1972	34,03,54.7	151,43,17.8		
HYDROCARBONS	NSW	5280	gallons	44 gallon drums x 120	Contaminated hydrocarbons	16/5/1972	33,50,6.5	151,42,00		
CYANIDE	VIC	63	gallons	12.5 gallon drums	Obsolete cyanide	19/5/1972	41,24,00	143,57,00		1200f
Poisonous Material	VIC	70	gallons	5 gallon drums x 14	Poisonous material 14 x 5 gal. drums	19/5/1972	41,24,00	143,57,00		1200f
HYDROCARBONS	NSW	7040	gallons	44 gallon drums x 160	Contaminated hydrocarbons	20/6/1972	33,50,6.5	151,42,00		
HYDROCARBONS	NSW	7392	gallons	47 gallon drums x 168	Contaminated hydrocarbons	27/6/1972	33,50,6.5	151,42,00		
IRON CALCINE	TAS	176 538	tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-72	40,58,12	146,36,00		50m
CONTAMINATED HYDROCARBON	NSW	7392	gallons	47 gallon drums x 168		25/7/1972	33,50,6.5	151,42,00		
CYANIDE	VIC	15	tons		Waste cyanide-15 tons	26/7/1972	43,40,00	145,34,00		700f
FLARES	VIC	95	gallons	5 gallon drums x 19	Obsolete flares	26/7/1972	43,40,00	145,34,00		700f
HYDROCARBONS	NSW	7392	gallons	44 gallon drums x 168	Contaminated hydrocarbons	8/8/1972	33,50,6.5	151,42,00		
HYDROCARBONS	NSW	7392	gallons	45 gallon drums x 168	Contaminated hydrocarbons	25/8/1972	33,50,6.5	151,42,00		
PYROTECHNICS	NSW	unknown			Outdated pyrotechnics	Sep-72	32,00,00	115,03,00		500f
RESIDUE FROM GRAIN CLEANING	WA	1320	gallons	44 gallon drums x 30	Residue from grain cleaning-30 drums	Oct-72	32,04,00	114,52,00		
JAROSITE	TAS	330	tonnes	Trial dumping	Zinc and iron precipitates-ammonium jarosite,zinc ferrite,gypsum,lead sulphate,silica and trace quant. of heavy metals	19/12/1972	40,14,00	148,18,30		1500m
SPENT CAUSTIC SODA	NSW	3150	tonnes		Spent caustic soda-hydroxide 10% sodium sulphide 6% and trace quant. of sodium mercaptides	25/4/1973			(33,49,00/155,00,00) (36,12,00/158,00,00)	4000m

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
IRON CALCINE	TAS	150 240 tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-73	Jun-74	40,58,12	146,36,00	(33,49,00/155,00,00) (36,12,00/158,00,00)	50m
SPENT CAUSTIC SODA	NSW	2751 tonnes		See Apr 73 dumping for details of material dumped	4/8/1973				(33,49,00/155,00,00) (36,12,00/158,00,00)	4000m
SPENT CAUSTIC SODA	NSW	1533 tonnes		See Apr 73 dumping for details of material dumped	7/11/1973				(33,49,00/155,00,00) (36,12,00/158,00,00)	4000m
JAROSITE	TAS	34 068 tonnes	One ref says 64 038 tonnes	see 19/12/72 dumping for details of material dumped	Dec-73	Jun-74	43,38,00	148,18,00	Buffer - radius of 8km (33,49,00/155,00,00) (36,12,00/158,00,00)	2000m
SPENT CAUSTIC SODA	NSW	2900 tonnes		See Apr 73 dumping for details of material dumped	19/4/1974				(33,49,00/155,00,00) (36,12,00/158,00,00)	4000m
IRON CALCINE	TAS	148 431 tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-74	Jun-75	40,58,12	146,36,00		50m
JAROSITE	TAS	96 500 tonnes	One ref says 99 599 tonnes	see 19/12/72 dumping for details of material dumped	Jul-74	Jun-75	43,38,00	148,18,00	Buffer - radius of 8km (33,49,00/155,00,00) (36,12,00/158,00,00)	2000m
SPENT CAUSTIC SODA	NSW	2900 tonnes	Approx tonnage, 150 miles off SE Aust coastline	See Apr 73 dumping for details of material dumped	26/9/1974				(33,49,00/155,00,00) (36,12,00/158,00,00)	4000m
SPENT CAUSTIC SODA	NSW	2000 tonnes		See Apr 73 dumping for details of material dumped	Nov-74		35,20,00,	154,40,00		
PHOSPHOROUS TRICHLORIDE	NSW	15 000 kg	Liquid form-released from a barge	Phosphorous Trichloride-50 x 44 gal. steel drums	22/11/1974		34,10,00	151,55,00		1800m
IRON CALCINE	TAS	116 315 tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-75	Jun-76	40,58,12	146,36,00		50m
JAROSITE	TAS	106 433 tonnes	Some of the data suggests more was dumped? This is dry wgt?	see 19/12/72 dumping for details of material dumped	Jul-75	Jun-76	43,38,00	148,18,00	Buffer - radius of 8km (26,30,00/166,00,00) (25,50,00/167,05,00)	2000m
SPENT CAUSTIC SODA	NSW	2850 tonnes	3000 valves in each box-from aircraft engines x 6 boxes	Unserviceable sodium filled engine exhaust valves	12/7/1975					
EXHAUST VALVES	NSW	18000 valves		17/1/1976			34,00,00	151,36,00		300m
SPENT CAUSTIC SODA	NSW	1000 tonnes	Approx tonnage	See Apr 73 dumping for details of material dumped	31/5/1976		35,43,00	156,40,00	Course 160, 7 knots) 150 miles off SE Australian Coast, Began at 8am-finished at 3.25pm	
IRON CALCINE	TAS	142 676 tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-76	Jun-77	40,58,12	146,36,00		50m
JAROSITE	TAS	133 000 tonnes	One ref has 133 509 tonnes	see 19/12/72 dumping for details of material dumped	Jul-76	Jun-77	43,38,00	148,18,00	Buffer - radius of 8km (36,05,00/153,10,00) (36,40,00/153,56,00) (36,40,00/153,43,00)	2000m
SPENT CAUSTIC SODA	NSW	2695 tonnes		See Apr 73 dumping for details of material dumped	7/2/1977					
IRON CALCINE	TAS	157 666 tonnes	Continuous twice daily dumping	See Jan 70 dumping for details of material dumped	Jul-77	Jun-78	40,58,12	146,36,00		50m
JAROSITE	TAS	143 158 tonnes	Some of the data suggests more was dumped? This is dry wgt?	see 19/12/72 dumping for details of material dumped	Jul-77	Jun-78	43,38,00	148,18,00	Buffer - radius of 8km	2000m

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
SPENT CAUSTIC SODA	NSW	2500	tonnes	Approx tonnage	See Apr 73 dumping for details of material dumped	23/7/1977			(35,45,00/153,40,00) (36,37,00/153,29,00)	4000m
SPENT SULPHURIC ALKYLATION ACID	NSW	2300	tonnes	Contains small quantities of hydrocarbon and organic material	Spent sulphuric alkylation acid- loaded at Port Kembla	11/8/1977			(34,51,00/154,25,00) (35,23,00/154,58,00) (35,18,00/155,09,00)	4000m
SPENT SULPHURIC ALKYLATION ACID	NSW	3500	tonnes	Contains small quantities of hydrocarbon and organic material	Spent sulphuric alkylation acid Unserviceable sodium filled engine exhaust valves	15/2/1978			(34,29,00/154,20,00) (32,52,00/153,50,00) (39,34,00/152,52,00)	
EXHAUST VALVES	NSW	1932	valves	322 valves per container x 6	See Jan 70 dumping for details of material dumped	Jun-78			200m	
IRON CALCINE	TAS	54 232	tonnes	Continuous twice daily dumping	see 19/12/72 dumping for details of material dumped	Jul-78	Jun-79	151,35,00 40,58,12	146,36,00	50m
JAROSITE	TAS	142 236	tonnes	Some of the data suggests more was dumped? This is dry wgt?	See Apr 73 dumping for details of material dumped	Jul-78	Jun-79	43,38,00	148,18,00	Buffer - radius of 8km 2000m
SPENT CAUSTIC SODA	NSW	1980	tonnes	Approx tonnage	Spent sulphuric alkylation acid- loaded at Botany Bay	Jul-78			(34,53,00/154,00,00) (36,20,00/153,30,00)	
SPENT SULPHURIC ALKYLATION ACID	NSW	2440	tonnes	Contains small quantities of hydrocarbon and organic material	In glass carboys with fragile aluminium disk	1/8/1978			(35,45,00/153,49,00) (38,35,00/152,55,00)	
PHOSPHORUS OXYCHLORIDE	NSW	4	tonnes	loaded at Botany Bay	Unserviceable sodium filled engine exhaust valves	Dec-78			34,15,00 151,50,00	2000m
EXHAUST VALVES	NSW	322	valves	421 valves per container					34,00,00 151,35,00	200m
SPENT SULPHURIC ALKYLATION ACID	NSW	3500	tonnes	Contains small quantities of hydrocarbon and organic material	Spent sulphuric alkylation acid- see Apr 73 dumping for details of material dumped	Feb-79			More than 150 miles off coast, south of 25 degrees and not less than 100 miles from all islands and reefs	
SPENT CAUSTIC SODA	NSW	1474	tonnes	Approx tonnage	Unused iron pyrite (containing iron 40% zinc 3% lead 1.4%)	Apr-79			(37,18,00/153,40,00) (38,35,00/153,12,00)	4000m
IRON PYRITE	TAS	15 000	tonnes	300 tonnes per day	Heat treated salts in 26 x 44 gal. drums	May-79	Jun-79	40,58,12	146,36,00	Bass Strait 50m
HEAT TREATED SALTS	NSW	9	tonnes			26/5/1979		34,10,00	151,55,00	2000m
SPENT SULPHURIC ALKYLATION ACID	NSW	2500	tonnes	Contains small quantities of hydrocarbon and organic material	Spent sulphuric alkylation acid- see 19/12/72 dumping for details of material dumped	Jun-79			More than 150 miles off coast, south of 25 degrees and not less than 100 miles from all islands and reefs	4000m
JAROSITE	TAS	199 926	tonnes	Continuous daily dumping		Jul-79	Jun-80	43,38,00	148,18,00	Buffer - radius of 8km 2000m
SODIUM	NSW	350	kg			24/9/1979		34,10,00	151,55,00	2400m
EXHAUST VALVES	NSW	169	valves			Oct-79		34,00,00	151,35,00	200m
JAROSITE	TAS	207 631	tonnes	Continuous daily dumping	see 19/12/72 dumping for details of material dumped	Jul-80	Jun-81	43,38,00	148,18,00	Buffer - radius of 8km 2000m

Appendix E - Database of Chemical Dumping Episodes

Material	State	Quantity (units)	Description (1)	Description (2)	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
SODIUM EXHAUST VALVES	NSW	138			Aug-80		34.00,00	151,36,00	(36,33,00/154,11,00) (38,43,00/153,21,00)	200m
CAUSTIC SODA	NSW	1900	tonnes		Nov-80					4000m
JAROSITE	TAS	211 231	tonnes	Continuous daily dumping see 19/12/72 dumping for details of material dumped	Jul-81	Jun-82	43,38,00	148,18,00	Buffer - radius of 8km	2000m
BLACK LIQUOR	NSW	2650	tonnes	Trial dumping a paper residue	Nov-81				(38,00,00/153,07,00) (34,25,00/154,31,00)	4000m
BLACK LIQUOR	VIC	27 815	tonnes	A paper residue	Jan-82	Dec-82			(40,55,00/140,35,00) (37,55,00/135,40,00)	3400m
JAROSITE	TAS	2222 527	tonnes		Jul-82	Jun-83	43,36,30	148,14,30	Buffer 2nm	2000m
SODIUM EXHAUST VALVES	NSW	822		25/8/1982			34,00,00	151,36,00		200m
IRON ORE	WA	1005	tonnes	"Shinyo Maru"	1/12/1982		20,20,00	116,30,00	Buffer - radius of 3km	
JAROSITE	TAS	240 000	tonnes		Jul-83	Jun-84	43,36,30	148,14,30		2000m
CHEMICAL WARFARE AGENT	QLD	8000	ton	Various - refer Chemical Warfare Agent Sea Dumping off Australia Dumped post WW2					Between 100 and 600 fathom line off Cape Moreton - refer Chemical Warfare Agent Sea Dumping off Australia	
CHEMICAL WARFARE AGENT	NSW	5000	ton	Various - refer Chemical Warfare Agent Sea Dumping off Australia Dumped post WW2			34	151,36	Buffer of 5	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer diameter in nm (Diameter in nm)	Submarine reef	Artificial reef	Maritime history of boat	Notes
ABILITY	NSW	33,03,00	152,27,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
ADONIS	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
ADROIT	WA	32,04,00	114,45,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ADVENTURE	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
AGNES	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
ALBA	SA	34,48,47	128,31,45				Refer Scuttled & Abandoned Ships in Australian Waters	
ANGLIAN	NSW	34,00,00	151,39,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ANZAC	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ARAWATTA	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
ARCHER	NSW	33,52,00	151,39,00				Refer Scuttled & Abandoned Ships in Australian Waters	
AROONEE	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
AURIGA	VIC	38,20,57	144,34,18				Refer Scuttled & Abandoned Ships in Australian Waters	
AUSTRALIA	NSW	33,53,24	151,20,42				Refer Scuttled & Abandoned Ships in Australian Waters	
B.D.5	QLD	18,46,30	147,24,30	5			Refer Scuttled & Abandoned Ships in Australian Waters	
BADGER	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
BALLINA	NSW	33,03,42	152,24,00				Refer Scuttled & Abandoned Ships in Australian Waters	
BANKFIELDS	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
BANTAM	NSW	34,18,48	151,43,36				Refer Scuttled & Abandoned Ships in Australian Waters	
BAR-EA-MUL	NSW	33,54,54	151,26,00				Refer Scuttled & Abandoned Ships in Australian Waters	
BARGE No.2	SA	34,14,00	136,50,00				Refer Scuttled & Abandoned Ships in Australian Waters	
BARGE No.5	SA	33,11,00	138,00,00				Refer Scuttled & Abandoned Ships in Australian Waters	
BARRABOOL	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
BARRAMBIN	QLD	27,06,07	153,21,00	R	Refer Scuttled & Abandoned Ships in Australian Waters			
BATMAN	VIC	38,21,306	144,24,659					Revised 3/10/2000. Updated coords supplied by Rowan Stevens. GPS determined within 3m error. Datum WGS 84.

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer diameter in nm (Diameter in m)	Submarine	Artificial reef	Maritime history of boat	Notes
BAYONET		38,43.05	144,35.25				HMAS, 21/9/99 in 80 metres water	
BELLAMBI	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
BELLUBERA	NSW	33,43,00	151,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BERMAGUI	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BEVERWYK 19	VIC	38,21,12	144,25,171			R	Refer Scuttled & Abandoned Ships in Australian Waters	Notes as for Batman
BINGERA	QLD	27,22,00	153,10,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BINGGARRA	NSW	34,10,12	151,53,06			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BOSUN	NSW	34,00,00	151,36,00	5		R	Refer Scuttled & Abandoned Ships in Australian Waters	
BREAM	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BREMER	QLD	27,06,07	153,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BRONZEWING	SA	34,41,00	135,52,42			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BUNINYONG	VIC	38,21,00	144,25,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BUNYIP	VIC	38,22,13	144,25,02			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BURRA-BRU	NSW	34,00,00	151,36,00	5		R	Refer Scuttled & Abandoned Ships in Australian Waters	
BURRINBAR	NSW	33,47,30	151,41,24			R	Refer Scuttled & Abandoned Ships in Australian Waters	
BUSTLER	NSW	34,00,00	151,36,00	5		R	Refer Scuttled & Abandoned Ships in Australian Waters	
CAMPANA	VIC	38,20,854	144,34,15			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CAMRO	NSW	34,04,00	151,33,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CAPE OTWAY	WA	32,04,00	115,20,00	7		R	Refer Scuttled & Abandoned Ships in Australian Waters	
CAPTAIN COOK	QLD	27,22,00	153,10,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CAPTAIN PHILLIP	NSW	34,00,00	151,36,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CARAVAN	WA	32,04,00	115,20,00	7		R	Refer Scuttled & Abandoned Ships in Australian Waters	
CASABLANCA	VIC	38,21,36	144,26,40			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CAVAN	NSW	34,00,00	151,36,00	5		R	Refer Scuttled & Abandoned Ships in Australian Waters	
CECIL RHODES	NSW	34,00,00	151,36,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CENTIPEDE	QLD	27,06,07	153,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CERATODUS II	QLD	24,54,28	152,31,92			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CERBERUS	VIC	37,58,09	145,00,23			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CERES	NSW	33,11,54	151,37,48			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CIRCE	NSW	34,00,00	151,36,00	5		R	Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine (nm)	Artificial reef	Maritime history of boat	Notes
CIVILITY	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
CLEVEDON	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
CLEVELAND BAY	QLD	18,46,30	147,24,30	5			Refer Scuttled & Abandoned Ships in Australian Waters	
COMMILES	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
CONCORDIA	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
COOGEE	VIC	38,18,429	144,34,3				Refer Scuttled & Abandoned Ships in Australian Waters	
COOLOOLI	NSW	33,43,00	151,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
COUNTY OF CAITHNESS	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
COURIER	VIC	38,19,488	144,34,914				Refer Scuttled & Abandoned Ships in Australian Waters	
CRANE BARGE No.4	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
CRUSADER II	QLD	26,58,30	153,29,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
CRYSTAL VOYAGER	QLD	24,17,00	153,18,00				Refer Scuttled & Abandoned Ships in Australian Waters	
CURL CURL	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
CURRAJONG	NSW	33,50,54	151,41,06				Refer Scuttled & Abandoned Ships in Australian Waters	
CYCLOPS	NSW	34,11,9,00	151,37,00				Refer Scuttled & Abandoned Ships in Australian Waters	
D. MCLENNAN	VIC	38,22,13	144,25,18				Refer Scuttled & Abandoned Ships in Australian Waters	
DAGANG BARU		22,11	122,45				Dumped 22/9/99. Boat seized in Ashmore Reef National Nature Reserve. Code name "Eliza". Arrived 11/8/99.	
DEE WHY	NSW	33,43,06	151,20,36			R	Refer Scuttled & Abandoned Ships in Australian Waters	
DERWENT	WA	32,00,00	115,12,00				Refer Scuttled & Abandoned Ships in Australian Waters	
DOLPHIN	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
DOMINION	VIC	38,08,24	144,42,42				Refer Scuttled & Abandoned Ships in Australian Waters	
DOOMBA	NSW	33,43,12	151,20,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
DORIC	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
DOROTHY H. STERLING	SA	34,48,49	138,32,19				Refer Scuttled & Abandoned Ships in Australian Waters	
DOROTHY S	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
DRAGON	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
DREDGE D	QLD	27,00,00	153,42,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine (nm)	Artificial reef	Maritime history of boat	Notes
DSAC BARGE	NT	12,24,50	130,48,10			R	Refer Scuttled & Abandoned Ships in Australian Waters	
DUCHESS	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
DUNLOE	VIC	38,21,36	144,24,405				Refer Scuttled & Abandoned Ships in Australian Waters	Notes as for Batman
EAGLE	NSW	33,58,06	151,33,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ECHENEIS	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
EDEN	NSW	33,56,54	151,36,54				Refer Scuttled & Abandoned Ships in Australian Waters	
EGERIA	NSW	33,30,30	151,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ELENI K	SA	32,18,00	133,31,24				Refer Scuttled & Abandoned Ships in Australian Waters	
EMILY S	VIC	38,24,30	141,40,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
EMU	NSW	33,59,00	151,39,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ENCOUNTER	NSW	33,54,36	151,20,54				Refer Scuttled & Abandoned Ships in Australian Waters	
ENTERPRISE	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
ERRINGHI	NSW	33,54,54	151,26,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ESTRELLA DEL MAR	QLD	27,06,07	153,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
EUCLA	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
EURO	VIC	38,20,651	144,26,368				Refer Scuttled & Abandoned Ships in Australian Waters	Notes as for Batman
EXCELSIOR	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
EXCELSIOR	SA	34,45,00	138,19,00				Refer Scuttled & Abandoned Ships in Australian Waters	
EXCELSIOR	SA	34,47,00	138,31,00				Refer Scuttled & Abandoned Ships in Australian Waters	
FAWKNER	VIC	38,21,378	144,25,31				Refer Scuttled & Abandoned Ships in Australian Waters	Notes as for Batman
FLINDERS	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
FREMANTLE	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
G F HOLDEN	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
G.F.HOLDEN	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
GABO	NSW	33,57,18	151,38,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GABRIELLA	NSW	34,35,00	151,38,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GAIL JEANETTE II	TAS	42,00,00	148,38,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GANNET	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
GARTHNEILL	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GEEBUNG	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine (nm)	Artificial reef	Maritime history of boat	Notes
GEO.KERMODE	VIC	38,31,12	145,14,48			R	Refer Scuttled & Abandoned Ships in Australian Waters	
GEORGE DINSDALE	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GERANIUM	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
GLAUCUS	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GOORI	QLD	25,17,12	152,58,36			R	Refer Scuttled & Abandoned Ships in Australian Waters	
GOVERNOR	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
GOVERNOR BLACKALL	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
GRACE DARLING	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
GROPER	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
GROPER	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
GUNGA	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
HAM LUONG	NT	11,28,36	130,47,54				Refer Scuttled & Abandoned Ships in Australian Waters	
HARMONY	WA	21,29,46	115,14,16				Refer Scuttled & Abandoned Ships in Australian Waters	
HENRY BOLTE	NSW	37,08,00	149,59,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
HERCULES	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
HIMMA	NSW	33,43,12	151,20,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
HOPPER BARGE	SA	34,58,48.5	138,26,22.5				Refer Scuttled & Abandoned Ships in Australian Waters	
HOPPER BARGE	SA	34,31,50.5	138,03,41			R	Refer Scuttled & Abandoned Ships in Australian Waters	
HOPPER BARGE	WA	28,44,00	114,44,00				Refer Scuttled & Abandoned Ships in Australian Waters	
HOUgomont	SA	35,16,58	136,56,36				Refer Scuttled & Abandoned Ships in Australian Waters	
HUON	NSW	33,58,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
HYGEIA	VIC	38,21,02	144,33,34				Refer Scuttled & Abandoned Ships in Australian Waters	
ICEBERG	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
INCA	NSW	33,47,00	151,31,24				Refer Scuttled & Abandoned Ships in Australian Waters	
IRON DUKE	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
J1	VIC	38,19,01	144,33,06		S		Refer Scuttled & Abandoned Ships in Australian Waters	
J2	VIC	38,18,52	144,34,39		S		Refer Scuttled & Abandoned Ships in Australian Waters	
J3	VIC	38,14,44	144,42,06		S		Refer Scuttled & Abandoned Ships in Australian Waters	
J4	VIC	38,18,01	144,33,39		S		Refer Scuttled & Abandoned Ships in Australian Waters	
J5	VIC	38,18,42	144,32,57		S		Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine (Artificial reef in m)	Maritime history of boat	Notes
J7	VIC	37,56,41	144,59,36	S	Refer Scuttled & Abandoned Ships in Australian Waters		
JINN CHANG	QLD	16,40,18	146,21,00		Refer Scuttled & Abandoned Ships in Australian Waters		
JOHN HOLLAND	NT	11,28,27	130,47,57	R	Refer Scuttled & Abandoned Ships in Australian Waters		
JOHN NIMMO	VIC	38,21,24	144,33,15		Refer Scuttled & Abandoned Ships in Australian Waters		
JOSEFA	QLD	19,18,00	147,55,00		Refer Scuttled & Abandoned Ships in Australian Waters		
JUNEE	WA	32,04,00	115,20,00	7	Refer Scuttled & Abandoned Ships in Australian Waters		
JUNO	NSW	33,03,00	152,27,00	5	Refer Scuttled & Abandoned Ships in Australian Waters		
JUNO	SA	34,48,47	138,32,00		Refer Scuttled & Abandoned Ships in Australian Waters		
KARINA G	SA	34,10,00	129,00,00		Refer Scuttled & Abandoned Ships in Australian Waters		
KAROO LA	NSW	34,50,00	151,30,00		Refer Scuttled & Abandoned Ships in Australian Waters		
KEMBLA	NSW	33,45,12	151,42,00		Refer Scuttled & Abandoned Ships in Australian Waters		
KESTREL	NSW	34,00,00	151,36,00	5	Refer Scuttled & Abandoned Ships in Australian Waters		
KGARI	QLD	25,16,20	152,58,12	R	Refer Scuttled & Abandoned Ships in Australian Waters		
KIANGA	NSW	34,00,00	151,36,00	5	Refer Scuttled & Abandoned Ships in Australian Waters		
KIRKCUDBRIGHTSHIRE	WA	32,04,00	115,20,00	7	Refer Scuttled & Abandoned Ships in Australian Waters		
KNOWSLEY	WA	32,04,00	115,20,00	7	Refer Scuttled & Abandoned Ships in Australian Waters		
KOOKABURRA	NSW	33,51,30	151,20,42		Refer Scuttled & Abandoned Ships in Australian Waters		
KOOKABURRA	QLD	27,10,00,	153,22,00	R	Refer Scuttled & Abandoned Ships in Australian Waters		
KOORDA	WA	32,04,00	115,20,00	7	Refer Scuttled & Abandoned Ships in Australian Waters		
KOSI	QLD	27,10,00	153,22,00	R	Refer Scuttled & Abandoned Ships in Australian Waters		
KOS II	QLD	27,10,00	153,22,00	R	Refer Scuttled & Abandoned Ships in Australian Waters		
KOS VII	WA	32,04,00	115,20,00	7	Refer Scuttled & Abandoned Ships in Australian Waters		
KUNMUNYA	WA	20,25,00	117,12,00	R	Refer Scuttled & Abandoned Ships in Australian Waters		
KURAMIA	NSW	33,59,5,00	151,35,00		Refer Scuttled & Abandoned Ships in Australian Waters		
KURNELL	NSW	34,00,00	151,36,00	5	Refer Scuttled & Abandoned Ships in Australian Waters		
L292	NSW	34,00,00	151,36,00	5	Refer Scuttled & Abandoned Ships in Australian Waters		
LADY DALY	SA	34,48,00	138,31,00		Refer Scuttled & Abandoned Ships in Australian Waters		
LADY JOYUS	WA	25,02,47	113,32,15	R	Refer Scuttled & Abandoned Ships in Australian Waters		
LADY NORMAN	QLD	27,06,07	153,21,00	R	Refer Scuttled & Abandoned Ships in Australian Waters		
LADY PAMELA	WA	21,29,45	115,14,19		Refer Scuttled & Abandoned Ships in Australian Waters		

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine reef (Artificial reef)	Maritime history of boat	Notes
LALOR	QLD	18,46,00	147,25,50			Refer Scuttled & Abandoned Ships in Australian Waters	
LASS O'GOWRIE	QLD	25,16,40	152,58,24		R	Refer Scuttled & Abandoned Ships in Australian Waters	
LEEUWIN	VIC	38,21,16	144,33,47			Refer Scuttled & Abandoned Ships in Australian Waters	
LEWES	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
LIMA TUJUH		22,11	122,45			Dumped 22/9/99. Boat seized in Ashmore Reef National Nature Reserve. Code name "Ida". Arrived 30/8/99.	
LOCH NESS	WA	32,04,00	115,20,00	7		Refer Scuttled & Abandoned Ships in Australian Waters	
LOCH TAY	SA	34,48,47	138,32,00			Refer Scuttled & Abandoned Ships in Australian Waters	
LOCHEIL	QLD	27,22,00	153,10,30			Refer Scuttled & Abandoned Ships in Australian Waters	
LOEVESTEIN	QLD	27,06,07	153,21,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
LOTTIE	SA	34,48,47	138,32,00			Refer Scuttled & Abandoned Ships in Australian Waters	
LUCINDA	QLD	27,22,00	153,10,30			Refer Scuttled & Abandoned Ships in Australian Waters	
LULU	SA	34,49,00	138,31,00			Refer Scuttled & Abandoned Ships in Australian Waters	
MAIDA	QLD	27,22,00	153,10,30			Refer Scuttled & Abandoned Ships in Australian Waters	
MALACHITE	NSW	33,52,00	151,39,00			Refer Scuttled & Abandoned Ships in Australian Waters	
MALAITA	VIC	38,21,16	144,33,04			Refer Scuttled & Abandoned Ships in Australian Waters	
MALLOW	NSW	34,01,18	151,35,42			Refer Scuttled & Abandoned Ships in Australian Waters	
MANGANA	SA	34,48,47	138,32,00			Refer Scuttled & Abandoned Ships in Australian Waters	
MARANDA	WA	32,04,00	115,20,00	7		Refer Scuttled & Abandoned Ships in Australian Waters	
MARCHART 3	NT	12,10,45	130,40,45		R	Refer Scuttled & Abandoned Ships in Australian Waters	
MARGARET	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
MARGUERITE	NSW	34,00,00	151,36,06			Refer Scuttled & Abandoned Ships in Australian Waters	
MARJORIE	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
MARRAWAH	NSW	33,57,48	151,34,48			Refer Scuttled & Abandoned Ships in Australian Waters	
MARYBOROUGH	QLD	27,10,00	153,22,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
MASTER JACK	SA	35,42,55	136,46,08			Refer Scuttled & Abandoned Ships in Australian Waters	
MATAGALPA	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
BARGE No.20	WA	20,08,00	115,57,00			Refer Scuttled & Abandoned Ships in Australian Waters	
MEDUSA	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
MELBOURNE	QLD	27,06,07	153,21,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine (Artificial reef)	Maritime history of boat	Notes
MERINO	QLD	14,00,00	140,00,00			Refer Scuttled & Abandoned Ships in Australian Waters	
MILORA	VIC	38,21,103	144,23,379			Refer Scuttled & Abandoned Ships in Australian Waters	Notes as for Batman
MINER	QLD	27,22,00	153,10,30			Refer Scuttled & Abandoned Ships in Australian Waters	
MING PING LUI NO. 25		20,02,29	118,22,05			Scuttled 26/3/99 in 17m. Scuttled with explosives.	
MING PING YOU NO. 8						Scuttled 9/1/99. Seized Cobourg Peninsula, Northern Territory.	
MOE	SA	34,48,47	138,32,00			Refer Scuttled & Abandoned Ships in Australian Waters	
MORETON	QLD	27,22,00	153,10,30			Refer Scuttled & Abandoned Ships in Australian Waters	
MORIB	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
MORWONG	QLD	27,10,00	153,22,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
MOURILYAN	QLD	20,22,00	148,57,25		R	Refer Scuttled & Abandoned Ships in Australian Waters	
MYEE	NSW	33,52,48	151,25,36			Refer Scuttled & Abandoned Ships in Australian Waters	
MYEE	SA	33,11,00	138,00,00			Refer Scuttled & Abandoned Ships in Australian Waters	
NAMOI	NSW	34,01,00	151,38,00			Refer Scuttled & Abandoned Ships in Australian Waters	
NANCY	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
NEVILLE BONNAR	QLD	27,06,07	153,21,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
NEWCASTLE	NSW	33,48,06	151,42,00			Refer Scuttled & Abandoned Ships in Australian Waters	
NIRIMBA	WA	32,04,00	115,20,00	7		Refer Scuttled & Abandoned Ships in Australian Waters	
No.15	NSW	34,00,00	151,34,00			Refer Scuttled & Abandoned Ships in Australian Waters	
No.16	NSW	34,00,00	151,34,00			Refer Scuttled & Abandoned Ships in Australian Waters	
No.25	QLD	27,06,07	153,21,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
No.5	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
No.651	NSW	33,41,18	151,21,18		R	Refer Scuttled & Abandoned Ships in Australian Waters	
No.653	NSW	33,42,00	151,21,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
No.654	NSW	33,41,18	151,21,18		R	Refer Scuttled & Abandoned Ships in Australian Waters	
No.656	NSW	33,43,00	151,23,00		R	Refer Scuttled & Abandoned Ships in Australian Waters	
No.696	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
No.716	NSW	34,00,00	151,36,00	5		Hopper barge, 18/10/56	
No.8	NSW	34,00,00	151,36,00	5		Refer Scuttled & Abandoned Ships in Australian Waters	
No.969	NSW	34,00,00	151,36,00	5		Hopper barge, 6/8/47	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer diameter in m (Diametermeter in m)	Submarine reef	Artificial reef	Maritime history of boat	Notes
NOR'WESTER	VIC	38,19,50	144,41,26				Refer Scuttled & Abandoned Ships in Australian Waters	
NORWHALE	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
OIL FUEL LIGHTER	QLD	27,06,07	153,21,00		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
OIL FUEL LIGHTER 1204	NSW	35,30,30	151,04,06				Refer Scuttled & Abandoned Ships in Australian Waters	
OTTER	QLD	25,16,40	152,58,24		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
OUR ELSIE	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
OZONE	VIC	38,08,24	144,42,42				Refer Scuttled & Abandoned Ships in Australian Waters	
PAM	SA	36,00,00	138,00,00				Refer Scuttled & Abandoned Ships in Australian Waters	
PELICAN	QLD	25,16,40	152,58,24		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
PHYLLIS	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
PIGOTT	VIC	38,20,751	144,26,095				Refer Scuttled & Abandoned Ships in Australian Waters	
PIONEER	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
PIONEER	VIC	38,20,366	144,26,378				Refer Scuttled & Abandoned Ships in Australian Waters	
PL BARU TERBIT		22,11	122,45				Dumped 1/11/99. Illegal boat seized in Ashmore Reef National Nature Reserve. Code name "Xaraq".	
PLATYPUS II	QLD	27,10,00	153,22,00		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
POINT LOOKOUT	QLD	27,06,07	153,21,00		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
POSEIDON	NSW	34,0,5,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
PREMIER	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
PREMIER	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
PYRMONT II	NSW	33,43,12	151,20,30		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
QUEENSLAND	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
QUORNA	SA	35,59,00	138,11,00				Refer Scuttled & Abandoned Ships in Australian Waters	
REMORA	QLD	27,10,00	153,22,00		R	R	Refer Scuttled & Abandoned Ships in Australian Waters	
RHEA	NSW	33,54,48	151,45,00				Refer Scuttled & Abandoned Ships in Australian Waters	
ROBERT MOORE	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
ROCKINGHAM	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
RODERICK DHU	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
ROTOMAHAMA	VIC	38,19,197	144,32,175				Refer Scuttled & Abandoned Ships in Australian Waters	
S.F.HERSEY	VIC	38,14,43	144,42,07				Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer radius (Diameter in nm)	Submarine (nm)	Artificial reef	Maritime history of boat	Notes
SAMSON	NSW	34,54,00	151,21,00				Refer Scuttled & Abandoned Ships in Australian Waters	
SANTIAGO	SA	34,48,43	138,32,25				Refer Scuttled & Abandoned Ships in Australian Waters	
SARNIA	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
SURIAN	SA	35,06,57	138,24,38			R	Refer Scuttled & Abandoned Ships in Australian Waters	
SCHNAPPER	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
SEAHORSE	WA	25,02,47	113,32,15			R	Refer Scuttled & Abandoned Ships in Australian Waters	
SEAL	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
SEAL	TAS	41,07,27	146,19,36			R	Refer Scuttled & Abandoned Ships in Australian Waters	
SEAMEG	NSW	34,02,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
SESA	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
SETIA KAWAN		22,11	122,45				Dumped 22/9/99. Boat seized in Ashmore Reef National Nature Reserve. Code name "Grenfell". Arrived 23/8/99.	
SIMPATI		22,11	122,45				Nature Reserve. Code name "Hawthorn". Arrived 26/8/99.	
SINAR		12,08	122,50				Dumped 22/9/99. Boat seized in Ashmore Reef National Nature Reserve. Code name "Jagged". Arrived 31/8/99.	
SIR WILLIAM MCPHERSON	VIC	38,20,49	144,28,55				Refer Scuttled & Abandoned Ships in Australian Waters	
SOLACE	QLD	27,06,07	153,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
SONG SAIGON	NT	11,28,29	130,48,04.6			R	For artificial reef, 4/11/82	
SOUTH AUSTRALIAN	SA	34,58,45	138,26,20			R	Refer Scuttled & Abandoned Ships in Australian Waters	
SOUTHERN ENDEAVOUR	QLD	16,39,48	146,19,12				Refer Scuttled & Abandoned Ships in Australian Waters	
ST.KILDA	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
STALWART	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
STANLEY	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
STINGAREE	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
STRAHAN	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
SUBMARINE K.II	WA	32,04,00	115,20,00	7	S		Refer Scuttled & Abandoned Ships in Australian Waters	
SUCCESS	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
SUMATRA	QLD	16,41,54	146,21,12				Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Buffer diameter in m (Diameter of DMS in nm)	Submarine	Artificial reef	Maritime history of boat	Notes
SUNBEAM	SA	34,48,47	138,31,36				Refer Scuttled & Abandoned Ships in Australian Waters	
SWALLOW	NSW	34,0,5,00	151,36,24				Refer Scuttled & Abandoned Ships in Australian Waters	
SWAN	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
SWORDSMAN	NSW	34,10,00	151,30,00				Refer Scuttled & Abandoned Ships in Australian Waters	
SY'DNEY	NSW	33,51,36	151,24,00				Refer Scuttled & Abandoned Ships in Australian Waters	
TAMERLANE	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
TASMAN HAULER	NSW	37,08,00	149,59,30			R	Refer Scuttled & Abandoned Ships in Australian Waters	
TASMANIA	NSW	34,07,48	151,26,54				Refer Scuttled & Abandoned Ships in Australian Waters	
TATTOO	NSW	33,59,54	151,30,54				Refer Scuttled & Abandoned Ships in Australian Waters	
TAVIUNI	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
TELFOR BARGES	SA	35,06,00	138,24,00				Refer Scuttled & Abandoned Ships in Australian Waters	
THOMAS & ANNIE	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
THORNLIEBANK	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
TOCOPILLA	WA	32,04,00	115,20,00	7			Refer Scuttled & Abandoned Ships in Australian Waters	
TORRENS		31,39,5	114,30				Scuttled 14/6/99. Destroyer sunk by Submarine.	
TORRENS	NSW	33,53,54	151,39,54				Refer Scuttled & Abandoned Ships in Australian Waters	
TRAFAVGAR	SA	34,48,00	138,31,00				Refer Scuttled & Abandoned Ships in Australian Waters	
TRINITY BAY	QLD	16,43,00	146,15,00				Refer Scuttled & Abandoned Ships in Australian Waters	
TUNCURRY	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
UKI	QLD	27,10,00	153,22,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
ULLOCK	SA	34,48,47	138,32,00				Refer Scuttled & Abandoned Ships in Australian Waters	
UNIDENTIFIED	QLD	18,46,30	147,24,30				Sunk under Beaches, Fishing grounds etc. Act 1933 on 18/9/49	
UNIDENTIFIED	NT	12,11,10	130,41,14			R	Steel boat cut in 2 sections, 19/6/91	
UNIDENTIFIED	QLD	25,05,18	152,34,12			R	For artificial reef	
UNIDENTIFIED	QLD	25,16,20	152,58,12			R	2 barges for artificial reef, 15/3/81 & 16/9/81	
UNIDENTIFIED	NT	12,24,36	130,48,11.2			R	Barge for artificial reef	
UNIDENTIFIED	NSW	34,00,00	151,36,00	5			Navy target barge, 12/7/72	
UNIDENTIFIED	WA	28,44,00	114,36,00				Old hopper barge dumped 5/9/73?	
UNIDENTIFIED	NT	12,24,50	130,48,10			R	Steel dumb barge for artificial reef, 27.44m length	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Bufer diameter (m)	Submarine	Artificial reef	Maritime history of boat	Notes
UNIDENTIFIED	WA	32,04,00	115,20,00	7			Barge, 13/12/69	
UNIDENTIFIED	NSW	33,43,00	151,21,00		R		Steel barge for artificial reef, 4/12/79	
UNIDENTIFIED	QLD	27,6,10,00	153,21,5,00			Hull of craft, metal, 7/1/65, Army		
UNIDENTIFIED		12,11	122,46			Vessel was codenamed "Nelson"		
UNIDENTIFIED		10,25	105,39			Scuttled 12/6/98		
UNIDENTIFIED		10,24	105,39			Named Budi Murni?		
UNIDENTIFIED		10,24	105,33					
UNIDENTIFIED		11	122,45			Named Maskur Ilahi?		
UNIDENTIFIED		11	122,45			Named Sinar Bonerate?		
UNIDENTIFIED	QLD	24,54,12,1	152,32,4,3		R	10.8m	TB Landing Barge at Cochrane Artificial Reef, 27/5/99,	
UNIDENTIFIED		12,13	122,53				17/5/2000 Burnt and sank. Towline snapped. Named "Rockingham?".	
UNIDENTIFIED		22,11	122,45				Dumped 28/7/99. Illegal boat seized in Ashmore Reef National Nature Reserve. Code name "York".	
UNIDENTIFIED		22,11	122,45				Dumped 28/7/99. Illegal boat seized in Ashmore Reef National Nature Reserve. Code name "Zeil".	
UNIDENTIFIED		22,11	122,45				Dumped 22/9/99. Illegal boat seized in Ashmore Reef National Nature Reserve. Code name "Buller". Arrived 21/7/99.	
UNIDENTIFIED		22,11	122,45				Dumped 27/9/99. Illegal boat seized in Ashmore Reef National Nature Reserve. Code name "Nebo".	
UNIDENTIFIED		22,11	122,45				Dumped 27/9/99. Illegal boat seized in Ashmore Reef National Nature Reserve. Code name "Owen".	
UNIDENTIFIED		10,24	105,34				Scuttled 21/8/99. Arrived Christmas Island 13/8/99.	
UNIDENTIFIED		10,33,12	105,42,05				Scuttled 18/2/2000. Illegal foreign vessel.	
UNIDENTIFIED		10,22,09	105,32,01				Scuttled 24/12/1999. Illegal foreign vessel.	
UNIDENTIFIED		10,23,54	105,32,54				Scuttled 3/12/1999. Illegal foreign vessel.	
UNIDENTIFIED		10,24,45	105,33,55				Scuttled 20/11/1999. Illegal foreign vessel.	
UNIDENTIFIED		10,23,15	105,34,47				Scuttled 14/11/1999. Illegal foreign vessel.	

Appendix F - Database of Ship dumping episodes

Boat name	State	Latitude DMS	Longitude DMS	Bufer diameter in m)	Submarine (Diameter in m)	Artificial reef	Maritime history of boat	Notes
UNIDENTIFIED	QLD	24,54,14.1	152,31,59.3			R	Breaksea Spit Light Vessel scuttled on Cochrane Artificial Reef - Bundaberg on 23 September 2000	
UNIDENTIFIED	QLD	24,54,16.1	152,32,1.2			R	Breaksea Spit Light Vessel scuttled on Cochrane Artificial Reef - Bundaberg on 23 September 2000	
UTAH 2	QLD	27,06,07	153,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
VALIANT	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
VENDETTA	NSW	34,00,00	151,36,00				Refer Scuttled & Abandoned Ships in Australian Waters	
VERDIER	NSW	33,43,00	151,21,00			R	Refer Scuttled & Abandoned Ships in Australian Waters	
VHB 53	VIC	38,21,645	144,26,217				Refer Scuttled & Abandoned Ships in Australian Waters	
VHB 54	VIC	38,20,587	144,25,058				Refer Scuttled & Abandoned Ships in Australian Waters	
VICTORIAN	VIC	38,21,00	144,25,30				Refer Scuttled & Abandoned Ships in Australian Waters	
WALLSEND	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
WAREATEA	VIC	38,21,42	144,26,08				Refer Scuttled & Abandoned Ships in Australian Waters	
WERFA	VIC	38,21,29	144,33,50				Refer Scuttled & Abandoned Ships in Australian Waters	
WHITEPINE	VIC	38,21,757	144,26,354				Refer Scuttled & Abandoned Ships in Australian Waters	
WICKLOW	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
WILLS	VIC	38,21,18	144,26,48				Refer Scuttled & Abandoned Ships in Australian Waters	
YAMBA	NSW	33,53,24	151,22,36				Refer Scuttled & Abandoned Ships in Australian Waters	
YARRA	NSW	34,00,00	151,36,00	5			Refer Scuttled & Abandoned Ships in Australian Waters	
YOSEMITE	QLD	27,22,00	153,10,30				Refer Scuttled & Abandoned Ships in Australian Waters	
YU HAN 22	NT	12,30,03	130,48,18			R	Refer Scuttled & Abandoned Ships in Australian Waters	
YULOO	NSW	34,00,00	151,39,00				Refer Scuttled & Abandoned Ships in Australian Waters	

Appendix G - Database of Ammunition dumping episodes

Type	State	Quantity	Quantity (units)	Description	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
AMMUNITION	NSW	200	tons	Unserviceable ammunition	25/8/1945		34,00,00	151,37,00		366m
AMMUNITION	NSW	180	tons	HMAS Paterson towed a barge to the area & dumped	3/9/1945		33,53,56	151,44,29		366m
AMMUNITION	NSW	150	tons	HMAS Paterson towed a barge to the area & dumped	11/9/1945		34,00,00	151,40,00		188.5m
AMMUNITION	NSW	110	tons	18 pt: shell fuzes removed & boxed, Ciges SAA 50 boxed Bombs incendiary rolls	12/9/1945		33,53,56	151,44,29		366m
VARIOUS	NSW			Unserviceable ammunition	17/9/1945		33,53,56	151,44,29		366m
AMMUNITION	NSW			Unserviceable ammunition	11/12/1945		34,00,00	151,36,00		183m
AMMUNITION	NSW			Unserviceable ammunition	15/3/1946		34,00,00	151,36,00		183m
AMMUNITION	NSW			Unserviceable ammunition	8/6/1946		33,55,00	151,41,00		183m
AMMUNITION	NSW	500	tons	Unserviceable ammunition	11/6/1946		33,59,00	151,35,00		219.6m
AMMUNITION	SA	6	tons	Ammunition	6/2/1961		34,02,41	152,03,25		
SHELL	QLD	205,50	tons	155mm loose shell	7/3/1962		35,00,00	130,00,00		2745m
SHELL	QLD	252	tons	155mm loose shell	9/3/1962		27,00,00	153,42,00		283.65m
SHELL	QLD	204	tons	155mm loose shell	15/3/1962		16/3/1962	27,00,00		283.65m
WEAPONS	QLD	30	tons	Boxes of weapons	15/3/1962		16/3/1962	27,00,00		283.65m
WEAPONS	QLD	70	tons	Boxes of weapons	19/3/1962		20/3/1962	27,00,00		283.65m
VARIOUS	NSW			Fuzes and cartridges	1963		33,54,00	151,52,00		622.2m
PROJECTILES	NSW			Projectiles	1963		34,05,00	151,40,00		640.5m
PROJECTILES	NSW			Projectiles	1963		31,34,00	153,15,30		576.45m
PROJECTILES	NSW			Projectiles	1963		34,31,30	151,26,48		549m
PROJECTILES	NSW			Projectiles	1963		33,45,00	151,52,00		585.6m
PROJECTILES	NSW			Projectiles	1963		33,44,30	151,55,00		878.4m
PROJECTILES	NSW			Projectiles	1963		33,49,48	151,50,00		595.6m
PROJECTILES	NSW			Projectiles	1963		33,46,00	151,51,00		567.3m
PROJECTILES	NSW			Projectiles	1963		34,04,00	151,39,00		576m
PROJECTILES	NSW			Projectiles	1963		34,20,00	151,32,00		549m
PROJECTILES	NSW			Rifles, pistols and shell	1963		36,55,00	150,22,00		585.6m
PROJECTILES	NSW			Guns and rifles	1963		37,10,00	150,25,00		915m
PROJECTILES	NSW			Projectiles	1964		33,59,00	151,44,30		549m
PROJECTILES	NSW			Projectiles	1964		34,18,00	151,27,00		549m
PROJECTILES	NSW			Projectiles	1964		34,06,00	151,38,00		576.45m
PROJECTILES	NSW			Projectiles	1964		34,10,00	151,50,00		549m
VARIOUS	NSW			Target	1964		34,13,00	151,31,30		640.5m
SWEET ACOSTIC	NSW			Sweep acoustic	1964		34,25,00	152,20,00		3660m
VARIOUS	NSW			Sweep acoustic and shell	1964		34,19,30	151,32,00		768.6m
SHELL	NSW			Shell	1964		34,16,00	151,32,00		585.6m
SHELL	NSW			Shell	1964		34,11,00	151,31,42		732m

Appendix G - Database of Ammunition dumping episodes

Type	State	Quantity	Quantity (units)	Description	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
SHELL	NSW			Shell	1964	33,34,00	151,50,00			631,35m
DISTRESS SIGNAL	NSW			Distress signal	1964	32,20,00	153,08,00			2,196m
SHELL	VIC			Shell	1964	38,44,00	149,05,00			1,830m
SHELL	QLD	941	tons	Shell HE boxed-1470 packages	12/6/1964	30/6/1964	153,42,00			283,65m
VARIOUS	QLD	458	tons	Mortar Ammo HE Light-13763 packages	12/6/1964	30/6/1964	153,42,00			283,65m
SHELL	QLD	57	tons	Shell HE loose-1271 packages	12/6/1964	30/6/1964	153,42,00			283,65m
FUZES	QLD	2	tons	Fuzes HE boxed-58 packages	12/6/1964	30/6/1964	153,42,00			283,65m
VARIOUS	QLD	20	tons	Small arms/ stores	12/6/1964	30/6/1964	153,42,00			283,65m
PROJECTILES	QLD	30	tons	37mm HE projectiles	12/6/1964	30/6/1964	153,42,00			283,65m
VARIOUS	NSW			Generators, FuzeS, Igniters, Shell, Flares and Projectiles	1965	34,00,00	151,44,00			594,75m
VARIOUS	NSW			Projectiles and flares	1965	34,00,00	151,42,00			640,5m
PROJECTILES	NSW			Projectiles	1965	33,57,00	151,41,00			640,5m
PROJECTILES	NSW			Projectiles	1965	33,50,00	151,54,00			677,1m
PROJECTILES	NSW			Projectiles	1965	33,47,48	151,49,30			585,6m
PROJECTILES	NSW			Projectiles,cartridges,shell,fuzes	1965	34,35,30	151,17,18			640,5m
PROJECTILES	NSW			Projectiles	1965	34,29,24	151,18,18			594,75m
DEPTH CHARGES	NSW			Projectiles	1965	33,21,12	152,13,00			686,25m
DEPTH CHARGES	NSW			Depth charges	1965	34,05,00	151,40,36			549m
DEPTH CHARGES	NSW			Depth charges	1965	35,03,00	151,42,24			549m
DEPTH CHARGES	NSW			Depth charges	1965	35,05,00	151,40,24			549m
DEPTH CHARGES	NSW			Depth charges	1965	34,04,00	151,40,42			549m
VARIOUS	NSW			Depth charges and fuzes	1965	34,05,54	151,39,42			549m
PROJECTILES	NSW			Projectiles	1965	34,23,12	151,24,30			549m
VARIOUS	NSW			Projectiles,cartridges,fuzes,shell and flares	1965	28,56,00	153,53,00			1116,3m
FUZES	NSW			Fuzes	1965	35,10,00	151,08,00			1244,4m
STORES	QLD	1	ton	Ordnance stores	6/11/1965	26,59,18	153,57,00			823,5m
MISSILE PARTS	SA	7	tons	Inert metal missile parts	7/11/1965					
VARIOUS	NSW			Plastic explosives,shell,motor flares,fuzes	1966	33,49,30	152,00,00			824
VARIOUS	NSW			Floats,cartridges,generators	1966	34,19,00	151,31,00			814,4m
CARTRIDGES	WA			Cartridges	1966	22,33,00	113,26,00			796m
CARTRIDGES	NSW			T-cutters,shell,detonators	1967	34,05,30	151,46,24			1189,5m
VARIOUS	NSW			Cartridges,fuzes,primers,exploder,deonato	1967	34,12,00	151,34,00			915m
VARIOUS	WA			rs,granades	1967	31,57,00	115,06,00			951,6m
DEPTH CHARGES	WA			Depth charge	1967	32,02,00	115,08,00			549m
(37,45,5/139,35,5) (37,48,2/139,48,2) Dumped in straight line between these points										

Appendix G - Database of Ammunition dumping episodes

Type	State	Quantity	Quantity (units)	Description	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
VARIOUS	NSW			Rifles,fuzes	1967	36,07,00	150,32,00			915m
VARIOUS	WA			Detonator,fuzes	1968	32,03,00	115,05,00			549m
VARIOUS	VIC			Cartridges,projectiles and fuzes	1968	39,42,00	142,53,00			1098m
WEAPONS	QLD	2080	lbs	Boxed weapons	21/2/1968	28/2/1968	26,59,00	153,13,00		237.9m
VARIOUS	QLD	4000	lbs	Boxed general stores including bayonets	21/2/1968	28/2/1968	27,02,00	153,41,00		256.2m
EXPLOSIVES	WA	200	cartons	Explosives	9/8/1968	32,4,00	115,20,00	Buffer - 7mm Diameter reading		
VARIOUS	QLD	600	lbs	Boxed rifle barrels & sulphur bottles	21/10/1968	27,05,00	153,55,00			915m
STORES	WA	1	ton	Ordnance stores	6/12/1968	31,59,00	115,23,00			65.88m
VARIOUS	NSW			Shell,grenades,cartridges	1969	33,35,00	152,00,00			622.2m
VARIOUS	NSW			Flares,T-Cutter	1969	33,41,00	151,53,00			567.3m
GUNS	WA			Guns	1969	31,58,30	115,09,00			592.92m
VARIOUS	WA			Shell,bombs,detonator,cartridges	1969	31,59,00	115,08,00			
CARTRIDGES	WA			Cartridges	1969	21,23,00	114,37,00			183m
VARIOUS	WA			Fuzes,cartridges,shell	1969	30,32,00	114,35,00			567.3m
VARIOUS	WA			Grenades,smoke float,flares,shell,cartridges,bombs,exploder s	1969	32,10,00	115,00,00			549m
VARIOUS	NSW			Flares,cartridges,grenades	1969	36,36,00	150,23,00			594.75m
SMALL ARMS	VIC	4	tons	Small arms	25/1/1969	38,22,00	148,22,00			250.71m
SHELL	WA	47	tons	Naval 5.5 star shells	22/3/1969	31,59,00	115,23,00			65.88m
VARIOUS	QLD	6800	lbs	Boxed OMC parts & assorted weapons parts	24/3/1969	25,58,00	153,44,00			265.35m
SMALL ARMS	VIC	4	tons	Small arms	9/7/1969	40,05,00	146,00,00			86.01m
WEAPONS	SA	59	cases	Weapons	19/9/1969	38,23,00	140,17,00			915m
VARIOUS	WA	8	tons	Army weapons/Medical stores	2/10/1969	32,04,00	114,52,00			915m
SMOKE FLOAT	NSW			Smoke float	1970	34,23,00	151,28,00			732m
SMOKE FLOAT	NSW			Smoke float	1970	33,21,30	153,32,00			4941m
SMOKE FLOAT	NSW			Smoke float	1970	34,10,00	151,34,00			549m
SMOKE FLOAT	QLD			Smoke float	1970	24,01,00	153,09,00			567.3m
SMOKE FLOAT	NSW			Smoke float	1970	34,35,06	151,24,42			1098m
VARIOUS	SA			Pistols,springs,guns,cartridges	1970	36,57,00	129,33,00			5490m
VARIOUS	NT			Defused bloodhound missiles, inert components, specified non hazardous	3/1/1970	8,53,00	129,50,00			1830m
PYROTECHNICS	NSW	2	drums	Obsolete pyrotechnics	3/2/1970	38,08,00	155,26,00			4575m
VARIOUS	WA	7	tons							915m
EXPLOSIVES	VIC	32	boxes	Army weapons/Medical stores/Equipment	19/3/1970	32,04,00	114,52,00			4575m
DETONATORS	VIC	2331	cases	Explosives	22/6/1970	38,35,00	151,43,00			732m
EXPLOSIVES	VIC	144	boxes	Detonators	23/7/1970	39,02,00	142,20,00			732m
				Explosives	23/7/1970	39,02,00	142,20,00			

Appendix G - Database of Ammunition dumping episodes

Type	State	Quantity	Quantity (units)	Description	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
CORDTEX	VIC	168	cases	55lb in each case	23/7/1970		39,02,00	142,20,00		732m
EXPLOSIVES	TAS	130	cases	Explosives	4/8/1970		42,02,00	144,34,00		915m
CORDTEX	TAS	130	cases	Obsolete pyrotechnics	4/8/1970		42,02,00	144,34,00		915m
PYROTECHNICS	VIC	1	ton	Ordnance/Medical stores	30/8/1970		38,22,00	152,16,00		
VARIOUS	WA	1	ton	Fuzes, Shell Grenades,cartridges,signal heads	23/10/1970		32,04,00	114,52,00		915m
VARIOUS	WA			Depth charges	1971		31,55,00	114,43,00		1098m
DEPTH CHARGES	WA			Ammunition,depth charges,grenades	1971		31,53,00	113,30,00		2470.5m
VARIOUS	WA			Ammunition	1971		32,03,00	114,52,00		1098m
AMMUNITION	WA			Signals,fuzes,ammunition	1971		22,20,00	108,56,00		4026m
VARIOUS	NSW			Cartridges	1971		35,05,00	151,27,48		4758m
CARTRIDGES	NSW			Cartridges	1971		34,22,48	151,31,36		915m
CARTRIDGES	NSW			Cartridges	1971		33,59,00	151,51,30		1189.5m
CARTRIDGES	NSW			Cartridges	1971		34,08,00	151,45,06		1189.5m
CARTRIDGES	NSW			Cartridges	1971		34,21,00	151,33,00		1006.5m
VARIOUS	NSW			Ammunition,smoke bombs,signal cartridges,signal floats,explosive cutters,flares,bolt ammunition,fuzes,shell star,shell heads,plastic explosive,cordex	1971				(33,39,00/152,03,00)(33,10,00/152,33,00) Dumped in straight line between these points	1006.5m
VARIOUS	NSW			Shell,explosives,cartridges,fuzes	1971				(33,36,00/152,06,00)(33,15,00/152,22,00) Dumped in straight line between these points	1006.5m
CARTRIDGES	NSW			Shell cartridges	1971				(33,35,00/152,07,00) Dumped in straight line between these points	1006.5m
WEAPONS	SA	74	cases	Weapons	Oct-71	Nov-71	36,26,00	135,50,00		915m
NITRAMON	WA	594	lbs		9/11/1971		32,1,00	115,17,00		
NITRAMON	WA	32	tonnes		9/12/1971		32,7,00	114,48,00		
VARIOUS	WA			Smoke floats,cartridges	1972		32,02,00	115,00,00		1123,62m
CARTRIDGES	WA			Cartridges	1972		31,59,00	115,03,00		1281m
VARIOUS	NSW			Flares,primers,bombs,smoke floats,signals	1972		35,06,00	151,06,00		1098m
VARIOUS	NSW			Rocket flares,depth charges,mortar bombs	1972		34,13,00	151,40,00		1098m
VARIOUS	NSW			Flares,smokes,smoke candles,markers, grenades,rockets,cartridges,fuzes,25lb practice bombs	1972		33,25,00	152,21,00		915m
VARIOUS	NSW			Cartridges,flares,primers,shell,practice bombs,fuzes,grenades,bolt ammunition	1972		33,36,00	152,09,00		915m
VARIOUS	NSW			Rifles,machine guns	1972		33,16,00	152,31,00		915m

Appendix G - Database of Ammunition dumping episodes

Type	State	Quantity	Quantity (units)	Description	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
FUZE COMPONENTS	VIC	720	lbs	Surplus fuze components	7/3/1972				3.6m S of Cape Schanck Light	58.36m
AMMUNITION	NSW	306	tons	Also rocket heads	2/5/1972		33,25,00	152,21,00		
EXPLOSIVES	TAS	23	tons	Explosives	19/5/1972		41,24,00	143,57,00		2196m
FLARES	TAS	19	drums	5 gallon drums; Obsolete flares	26/7/1972		43,40,00	145,34,00		1281m
PYROTECHNICS	WA	unknown		Ouidated pyrotechnics	Sep-72		32,00,00	115,03,00		915m
FUZE COMPONENTS	VIC	2024	lbs	Surplus fuze components	26/9/1972		38,31,48	148,43,24		
BOMBS	NSW	500	kg	GP bombs	Nov-72		34,10,00	151,55,00		2196m
MARKERS	WA			Markers	1973		34,00,00	113,31,00		3015.84m
MORTAR	NSW			Mortar bombs	1973		34,10,00	151,55,00		
AMMUNITION	QLD	4	boxes	40/60 ammunition: 16 rounds (40mm practice ammo comprising cartridge propellant and solid round in one unit)	23/8/1973		16,30,00	146,30,00		
RIFLES	TAS			.303 rifles	4/11/1973		41,40,00	148,40,00		1500m
MARKERS	WA			Markers	1974		18,00,00	110,30,00		915m
CARTRIDGES	QLD			40/60 cartridges	1975		24,23,24	153,24,36		4928.19m
AMMUNITION	QLD	2	drums	44 gallon drums	Apr-81		26,58,54	153,57,30		
AMMUNITION	QLD			19 rounds (40mm), 200 rounds 0.5 calibre, 150 pounds of plastic explosives	5/12/1981		17,58,30	147,21,00		
DEPTH CHARGES (UNEXPLODED)	WA	150	kg				16,06,57	123,36,51		1030m
DEPTH CHARGES (UNEXPLODED)	WA						16,05,35	123,35,20		
DEPTH CHARGES (UNEXPLODED)	WA						20,23,02	115,39,57		
DEPTH CHARGES (UNEXPLODED)	WA						21,29,00	114,39,42		
DEPTH CHARGES (UNEXPLODED)	WA						31,45,12	115,13,12		
DEPTH CHARGES (UNEXPLODED)	WA						31,47,30	115,14,18		
DEPTH CHARGES (UNEXPLODED)	WA						31,56,30	115,32,01		
DEPTH CHARGES (UNEXPLODED)	VIC						38,13,58	144,49,39		
DEPTH CHARGES (UNEXPLODED)	VIC						38,11,35	144,51,55		
DEPTH CHARGES (UNEXPLODED)	VIC						38,08,54	144,50,35		
DEPTH CHARGES (UNEXPLODED)	VIC						39,05,44	146,45,05		
DEPTH CHARGES (UNEXPLODED)	VIC						39,38,06	146,46,30		
DEPTH CHARGES (UNEXPLODED)	VIC						38,07,24	148,00,52		
DEPTH CHARGES (UNEXPLODED)	NSW						35,15,30	150,38,00		
DEPTH CHARGES (UNEXPLODED)	NSW						35,15,13	150,41,20		
DEPTH CHARGES (UNEXPLODED)	NSW						35,12,00	150,38,00		
DEPTH CHARGES (UNEXPLODED)	NSW						35,06,41	150,48,07		
DEPTH CHARGES (UNEXPLODED)	NSW						34,53,12	150,57,48		
DEPTH CHARGES (UNEXPLODED)	NSW						34,52,00	150,58,00		
DEPTH CHARGES (UNEXPLODED)	NSW						34,50,00	150,59,00		
DEPTH CHARGES (UNEXPLODED)	NSW						34,27,37	150,55,48		

Appendix G - Database of Ammunition dumping episodes

Type	State	Quantity (units)	Quantity (units)	Description	Start Date	Finish Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
DEPTH CHARGES (UNEXPLODED)	NSW						34,18,00	151,03,00		
DEPTH CHARGES (UNEXPLODED)	NSW						34,10,00	151,15,00		
DEPTH CHARGES (UNEXPLODED)	NSW						33,50,27	151,16,17		
DEPTH CHARGES (UNEXPLODED)	NSW						33,50,35	151,16,19		
DEPTH CHARGES (UNEXPLODED)	NSW						33,50,58	151,16,15		
DEPTH CHARGES (UNEXPLODED)	NSW						33,51,02	151,16,13		
DEPTH CHARGES (UNEXPLODED)	NSW						33,34,45	151,27,33		
DEPTH CHARGES (UNEXPLODED)	NSW						32,59,10	151,48,47		
DEPTH CHARGES (UNEXPLODED)	QLD						26,54,42	153,08,33		
DEPTH CHARGES (UNEXPLODED)	QLD						27,14,24	153,15,40		
DEPTH CHARGES (UNEXPLODED)	QLD						22,14,18	150,25,24		
DEPTH CHARGES (UNEXPLODED)	QLD						19,10,18	146,55,00		
DEPTH CHARGES (UNEXPLODED)	QLD						16,47,18	145,35,18		
DEPTH CHARGES (UNEXPLODED)	QLD						16,41,54	145,51,36		
DEPTH CHARGES (UNEXPLODED)	NT						12,21,48	130,46,29		

Appendix H - Database of Other dumping episodes

Material	State	Reef	Quantity	Quantity (units)	Description (1)	Description (2)	Start Date	End Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
VARIOUS AIRCRAFT	NSW		180	tons	Placed on Hopper lighter No. 292-towed by steam tug Woonona	Coke, breeze, bricks and some paper-probably March	15/3/37	Jan-46	33,53,00	151,38,30	5 to 6 m E of a straight line drawn from South Head signal station to Outer North Head	
WAR PLANES	NSW										096deg, 23 miles from Macquarie Light also in 5nm circular area 119 deg Macquarie Light 18 miles - presumably a diameter measurement	217.8m
WAR PLANES	NSW					Obsolete war planes	18/1/1946	23/1/1946				
AMPHIBIOUS VEHICLES						Obsolete war planes and engines	15/4/1946		34,00,00	151,36,00		
CAR BODIES	SA										1 is at 2m, two at 7.9m, 1 at 12.9m and 1 at 14m from the shore of the Nobbys Lighthouse while another 3 are at 064 deg 6.7miles, 067 deg 12 miles & 066 deg 14 miles from the LH SA-Port Broughton	
MEDICAL STORES/SULPHUR DRUGS	QLD		0.50	ton		One was recovered	8/3/1954					
MEDICAL STORES FROM WATER POUCE	QLD		0.25	ton		Motor vehicle bodies	1960s		33,33,00	137,51,24		
PIPES & SLABS	QLD	R	500	tons approx			2/2/1966		26,59,00	153,57,00		
TYRES	QLD	R	10000	tyres		Roy Rufus Artificial Reef	1968	1971	25,16,20	152,58,12		
CARS	QLD	R	2600	car bodies		Roy Rufus Artificial Reef	1968	1990	25,16,20	152,58,12		
PONTOONS	QLD		36			Steel pontoons	Aug-68		27,06,07	153,21,00		
PIPES	QLD		7	tonnes		Concrete pipes	Jan-69		27,06,07	153,21,00		
METAL	QLD		0.50	ton		RAAF stores metal	22/1/1969		26,59,30	153,57,00		
TYRES/CAR BODIES	QLD		10	tons			15/2/1969		27,6,6	153,21,30		
ARMY WEAPONS/MEDICAL STORES	WA		8	tons				2/10/1969	32,04,00	114,52,00		
FOOD SCRAPS						Macquarie Is	Dumped by resupply vessels just off coast	70s-early 80s				915m

Appendix H - Database of Other dumping episodes

Material	State	Artificial Reef	Quantity	Quantity (units)	Description (1)	Description (2)	Start Date	End Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
RUBBISH					Macquarie Is - LARC boats dumped waste from field huts on 4-5 occasions	Rubbish was put in 44 gallon drums, burnt & then dumped	70s-early 80s				0.5m approx off West & East sides of Macquarie Is	
TYRES	QLD		5000	tyres			1970	1977	27,06,07	153,21,00		40-70
TYRES/CAR BODIES	QLD		9	tons			28/11/1970		27,6,18	153,22,9		
ARMY WEAPONS/MEDICAL STORES/EQUIPMENT	WA		7	tons			19/3/1970		32,04,00	114,52,00		915m
SCRAP METAL	VIC			unknown	Late July		Jul-70		38,25,00	148,32,00		
TYRES/CAR BODIES	QLD		10	tons			28/11/1970		27,6,18	153,22,9		
ORDNANCE/MEDICAL STORES	WA		1	ton			23/10/1970		32,04,00	114,52,00		915m
TYRES/CAR BODIES	QLD		8	tons			29/11/1970		27,6,18	153,22,9		
CERAMICS	WA		100	tons	Also in April 1970?	Ceramics contaminated with arsenic	Dec-70		32,00,00	114,30,00		
TYRES	SA		5000	tyres		Added to 1983-see various 1983	1971		33,05,43	137,36,23		10m
SCRAP METAL	QLD		1	ton		Scrap metal in drums	17/8/1971		26,59,30	153,57,00		
TYRES	SA		2000	tyres		Bundles of 5-6	1972		34,45,20	135,55,50		823.5m
RESIDUE FROM GRAIN CLEANING	WA		30	drums	44 gallon drums	Residue from grain cleaning-30 drums	Oct-72		32,04,00	114,52,00		
CONCRETE PILES	QLD		60	piles		Steel encased concrete piles	Dec-75	Mar-76	10,43,00	142,19,00		
DREDGE SPOIL	SA		100 000	m3	Dredge HC Meyer	Maintenance dredging	1976		34,46,00	138,26,00		
DREDGE SPOIL	SA		9000	m3	Dredge Andrew Wilson	Maintenance dredging- Inner harbour	1976		34,46,00	138,26,00		
DREDGE SPOIL	SA		624 300	m3	Dredge HC Meyer	New Dredging works-No. 6 O/H & approaches	1976		34,46,00	138,26,00		
DREDGE SPOIL	SA		960 000	m3	AD Geopotes I	New Dredging works	1976		34,46,00	138,26,00		
DREDGE SPOIL	SA		10 000	m3	Dredge Andrew Wilson	New Dredging works-No. 6 O/H	1976		34,46,00	138,26,00		
EXHAUST VALVES	NSW		6	boxes	3000 valves in each box- from aircraft engines	Unserviceable sodium filled engine exhaust valves	17/1/1976		34,00,00	151,36,00		300m
DREDGE SPOIL	SA		90 000	m3	Dredge HC Meyer	Maintenance dredging	1977		34,46,00	138,26,00		
DREDGE SPOIL	SA		8600	m3	Dredge Andrew Wilson	Maintenance dredging- Pt Adelaide	1977		34,46,00	138,26,00		

Appendix H - Database of Other dumping episodes

Material	State	Reefer	Quantity	Quantity (units)	Description (1)	Description (2)	Start Date	End Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
DREDGE SPOIL	SA		573,000	m ³	Dredge HC Meyer	New Dredging works-No 6	1977		34,46,00	138,26,00		
DREDGE SPOIL	SA		104,000	m ³	AD Geopates I	New Dredging works	1977		34,46,00	138,26,00		
DREDGE SPOIL	SA		13,500	m ³	Dredge Andrew Wilson	New Dredging works	1977		34,46,00	138,26,00		
DREDGE SPOIL	SA		2000	m ³	Dredge Andrew Wilson	New Dredging works-No 6 O/H	1977		34,46,00	138,26,00		
DREDGE SPOIL	SA		100,000	m ³	Dredge HC Meyer	Maintenance dredging	1978		34,46,00	138,26,00		
DREDGE SPOIL	SA		487,000	m ³	Dredge HC Meyer	New Dredging works	1978		34,46,00	138,26,00		
DREDGE SPOIL	SA		22,000	m ³	Dredge Andrew Wilson	New Dredging works	1978		34,46,00	138,26,00		
VARIOUS	QLD					Bricks,concrete pipes & machinery	1978		25,05,50	152,34,42		9m
EXHAUST VALVES	NSW		6	containers		Unserviceable sodium filled engine exhaust valves	Jun-78		34,00,00	151,35,00		200m
EXHAUST VALVES	NSW		322	valves		421 valves per container			34,00,00	151,35,00		200m
DREDGE SPOIL	SA		90,000	m ³	Dredge HC Meyer	Maintenance dredging	1979		34,46,00	138,26,00		
DREDGE SPOIL	SA		6,500	m ³	Dredge Andrew Wilson	Maintenance dredging- Pt Adelaide	1979		34,46,00	138,26,00		
DREDGE SPOIL	SA		568,000	m ³	Dredge HC Meyer	New Dredging works	1979		34,46,00	138,26,00		
DREDGE SPOIL	SA		22,615	m ³	Dredge Andrew Wilson	New Dredging works	1979		34,46,00	138,26,00		
PONTOON	NSW		1	pontoon		From South East Pound-Garden Island	8/8/79		33,43,6	151,20,48		33m
EXHAUST VALVES	NSW		169	valves		Old landing pontoon/lighter	1/10/1979		34,00,00	151,35,00		200m
DREDGE SPOIL	SA		315,000	m ³	Dredge HC Meyer	Maintenance dredging	1980		34,46,00	138,26,00		
DREDGE SPOIL	SA		10,000	m ³	Dredge Andrew Wilson	Maintenance dredging	1980		34,46,00	138,26,00		
DREDGE SPOIL	SA		5,000	m ³	Dredge Andrew Wilson	North Haven	1980		34,46,00	138,26,00		
DREDGE SPOIL	SA		166,000	m ³	AD Victoria	New Dredging works	1980		34,46,00	138,26,00		
DREDGE SPOIL	SA		5,000	m ³	Dredge Andrew Wilson	New Dredging works-Osbone	1980		34,46,00	138,26,00		
SODIUM EXHAUST VALVES	NSW		138				Aug-80		34,00,00	151,36,00		200m
DREDGE SPOIL	SA		138,000	m ³	AD Victoria	Maintenance dredging	1981		34,46,00	138,26,00		
DREDGE SPOIL	SA		8,000	m ³	Dredge Andrew Wilson	Maintenance dredging	1981		34,46,00	138,26,00		
DREDGE SPOIL	SA		422,000	m ³	AD Victoria	New Dredging works	1981		34,46,00	138,26,00		
DREDGE SPOIL	SA		180,000	m ³	AD Victoria	New Dredging works	1981		34,46,00	138,26,00		
DREDGE SPOIL	SA		4,500	m ³	Dredge Andrew Wilson	New Dredging works	1981		34,46,00	138,26,00		
DREDGE SPOIL	SA		366,000	m ³	AD Victoria	Maintenance dredging	1982		34,46,00	138,26,00		

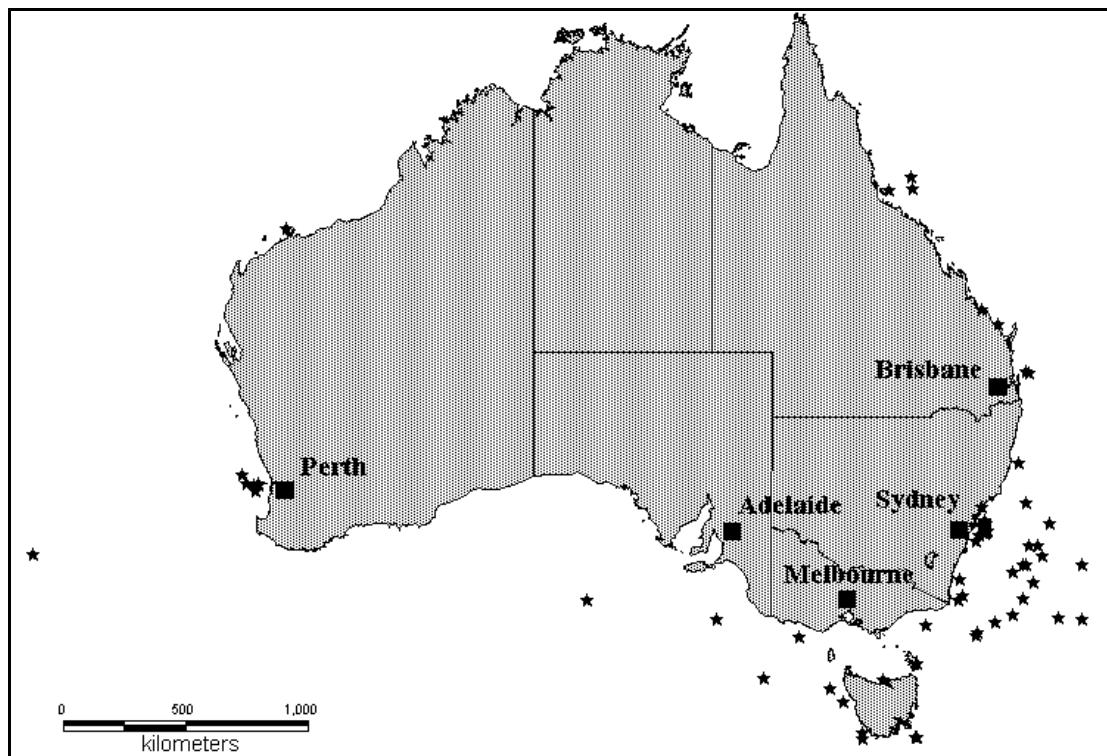
Appendix H - Database of Other dumping episodes

Material	State	Artificial reef	Quantity	Quantity (units)	Description (1)	Description (2)	Start Date	End Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
DREDGE SPOIL	SA	5 100	m ³		Dredge Andrew Wilson	Maintenance dredging	1982		34,46,00	138,26,00		
DREDGE SPOIL	SA	304 500	m ³		AD Victoria	New Dredging works	1982		34,46,00	138,26,00		
DREDGE SPOIL	SA	97 400	m ³		AD Victoria	New Dredging works	1982		34,46,00	138,26,00		
DREDGE SPOIL	SA	23 300	m ³		AD Victoria	New Dredging works	1982		34,46,00	138,26,00		
DREDGE SPOIL	SA	7 000	m ³		Dredge Andrew Wilson	New Dredging works	1982		34,46,00	138,26,00		
SODIUM EXHAUST VALVES	NSW	822					25/8/1982		34,00,00	151,36,00	200m	
IRON ORE	WA	1005	tonnes		Shinyo Maru		1/12/1982		20,20,00	116,30,00	Buffer of radius 3nm	
DREDGE SPOIL	SA	237 000	m ³		AD Victoria	Maintenance dredging	1983		34,46,00	138,26,00		
DREDGE SPOIL	SA	163 000	m ³		AD Victoria	Maintenance dredging	1983		34,46,00	138,26,00		
DREDGE SPOIL	SA	3 250	m ³		Dredge Andrew Wilson	Maintenance dredging	1983		34,46,00	138,26,00		
						50 tonnes tractor tyres (large) & 10 tonnes concrete steel structures	1983		33,05,43	137,36,23		15m
					AD Victoria	Maintenance dredging	1984		34,46,00	138,26,00		
					AD Victoria	New Dredging works	1984		34,46,00	138,26,00		
					AD Geopotes I	New Dredging works	1984		34,46,00	138,26,00		
TYRES	SA	R	33600	tyres	Artificial reef	28 tyre modules	Jul-84	Oct-84	34,55,6	138,24,00		18m
NAVIGATION BUOYS	QLD	9	buoys		Harbours and Marine, Brisbane	3x2m	29/7/1984		27,06,07	153,21,00		40-70
DREDGE SPOIL	SA	7 000	m ³		AD Victoria	Maintenance dredging	1985		34,46,00	138,26,00		
DREDGE SPOIL	SA	226 000	m ³		AD Victoria	New Dredging works	1985		34,46,00	138,26,00		
DREDGE SPOIL	SA	5 000	m ³		Dredge Andrew Wilson	New Dredging works	1985		34,46,00	138,26,00		
DREDGE SPOIL	SA	345 000	m ³		Resolution	New Dredging works	1985		34,46,00	138,26,00		
TYRES	SA	R	25200	tyres	Artificial reef	28 tyre modules	Jun-85		34,58,48	138,26,24		18m
TYRES	SA	R	18200	tyres	Artificial reef	28 tyre modules	Dec-85		35,08,12	138,26,30		20m
DREDGE SPOIL	SA	R	210 000	m ³	AD Victoria		1986		34,46,00	138,26,00		
DREDGE SPOIL	SA	R	3 000	m ³	Dredge Andrew Wilson	Maintenance dredging	1986		34,46,00	138,26,00		
TYRES	SA	R	12600	tyres	Artificial reef	28 tyre modules	Jul-86		35,41,12	137,40,12		18m
TYRES	SA	R	33600	tyres	Artificial reef	28 tyre modules	Jul-86		32,58,6	137,47,54		18m
TYRES	SA	R	11200	tyres	Artificial reef	28 tyre modules	Jul-86		32,59,42	137,47,6		18m
TYRES	SA	R	28000	tyres	Artificial reef	28 tyre modules	Jul-86		33,05,12	137,54,18		18m
TYRES	SA	R	28000	tyres	Artificial reef	28 tyre modules	Jul-86		32,40,00	137,45,48		18m
CONCRETE DOLPHIN	QLD	R	57	tonnes			Nov-90		27,06,07	153,21,00		40-70

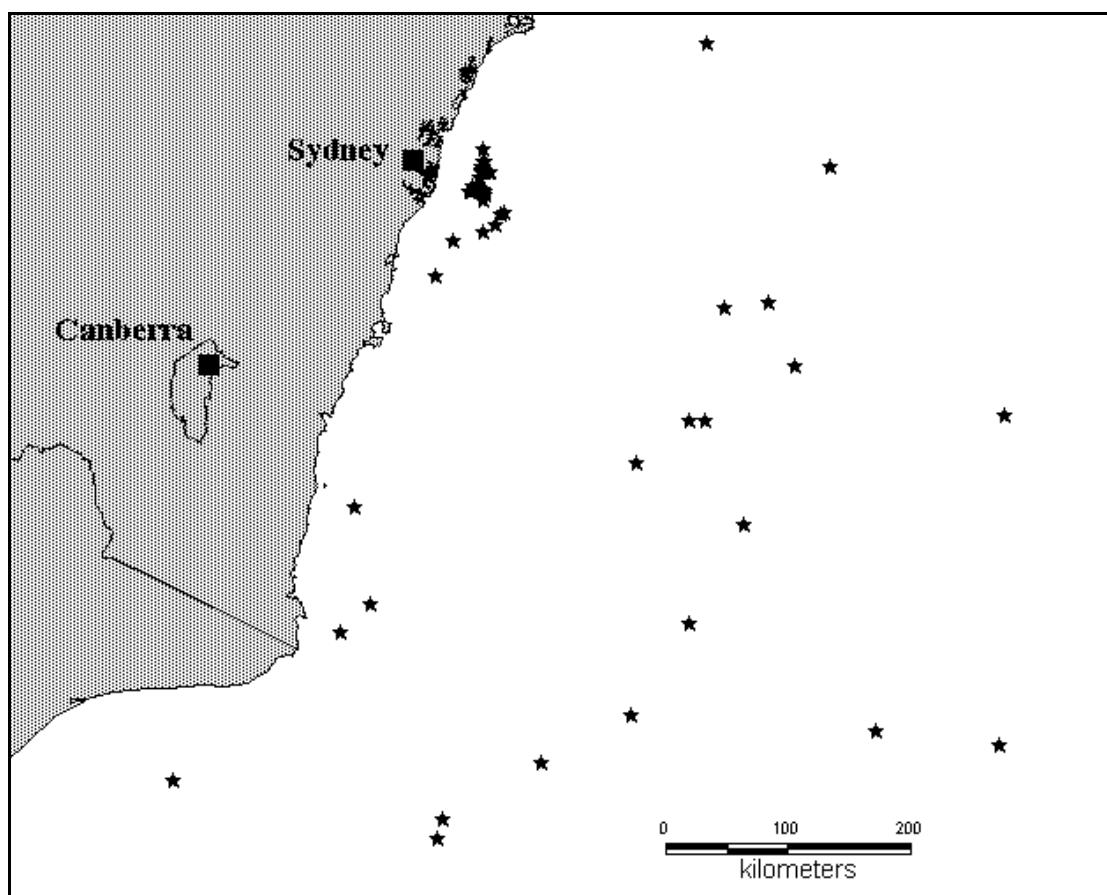
Appendix H - Database of Other dumping episodes

Material	State	Reefer	Quantity	Quantity (units)	Description (1)	Description (2)	Start Date	End Date	Latitude DMS	Longitude DMS	Other Detail of Dumping Position	Depth
LOADING FACILITY	TAS				Port Latta Loading facility	Port Latta Loading facility	Dec-90		40,51,00	143,23,00		9-17m
TYRES	SA	R	2800	tyres	Artificial reef	28 tyre modules	1991		35,02,48	137,47,24		15m
TYRES	SA	R	2800	tyres	Artificial reef	28 tyre modules	Oct-91		32,44,00	134,15,00		9m
PONTOONS	QLD			pontoons	Built from spoil-now covered and reclaimed land	Called Bishop Island-located in Moreton Bay			27,22,00	153,10,30		
CAMEL PONTOONS	QLD			pontoons	Built from spoil-now covered and reclaimed land	Called Bishop Island-located in Moreton Bay			27,22,00	153,10,30		
SIGNAL STATION AND HOUSES	QLD				Built from spoil-now covered and reclaimed land	Called Bishop Island-located in Moreton Bay			27,22,00	153,10,30		
CARBODIES	QLD		60			Now rotted away			27,06,07	153,21,00		40-70

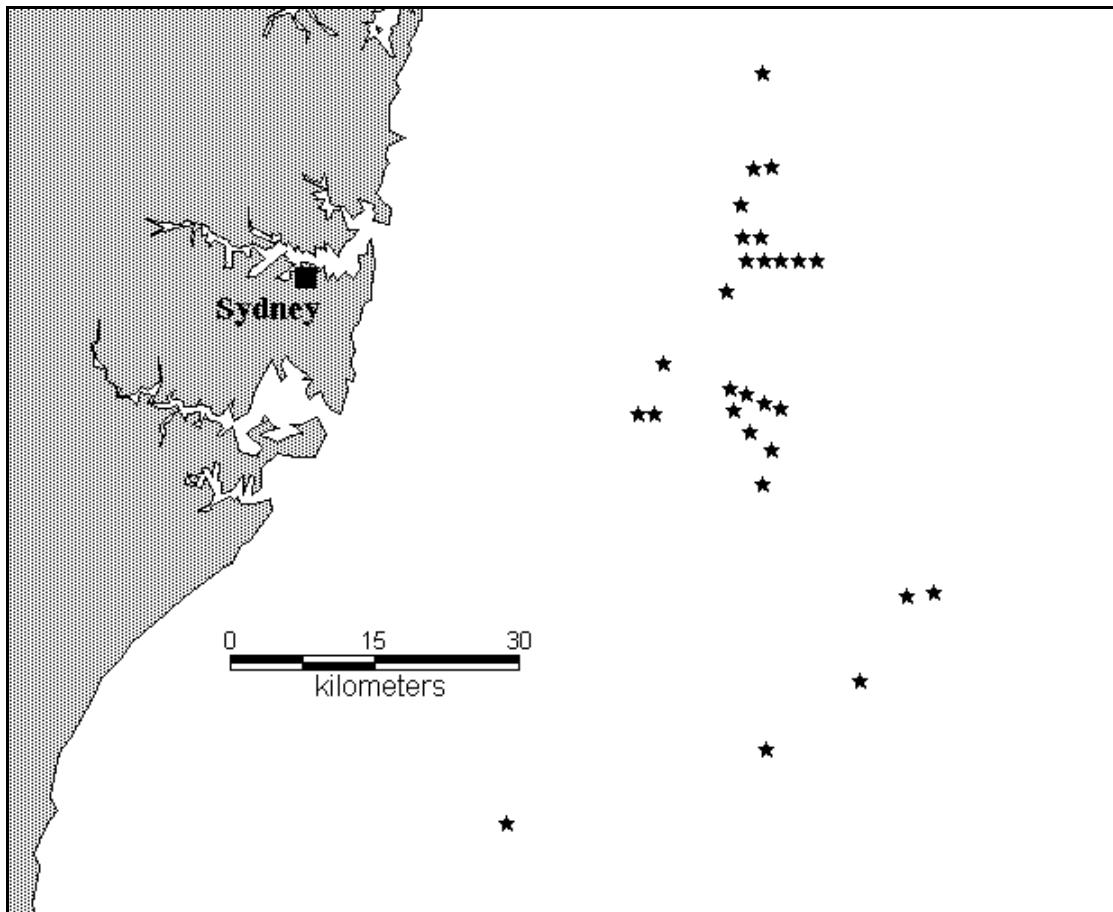
Appendix I - Visual presentation of Chemical dump sites



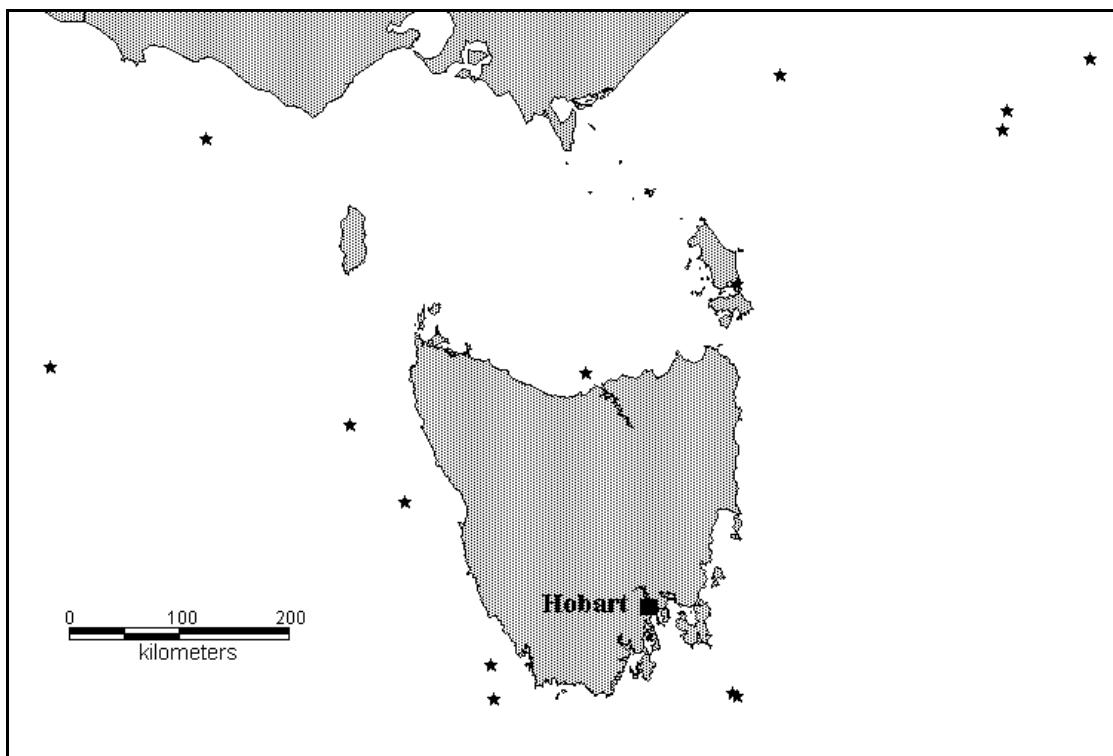
Australia



New South Wales

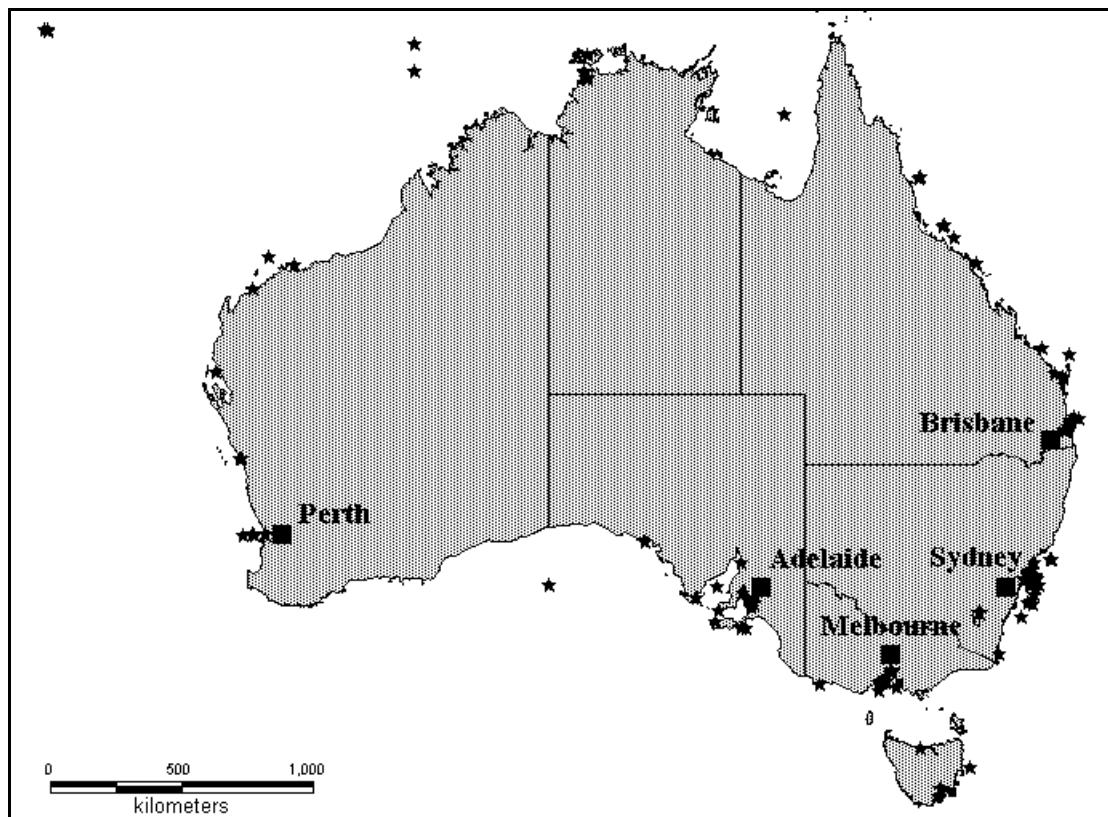


Sydney

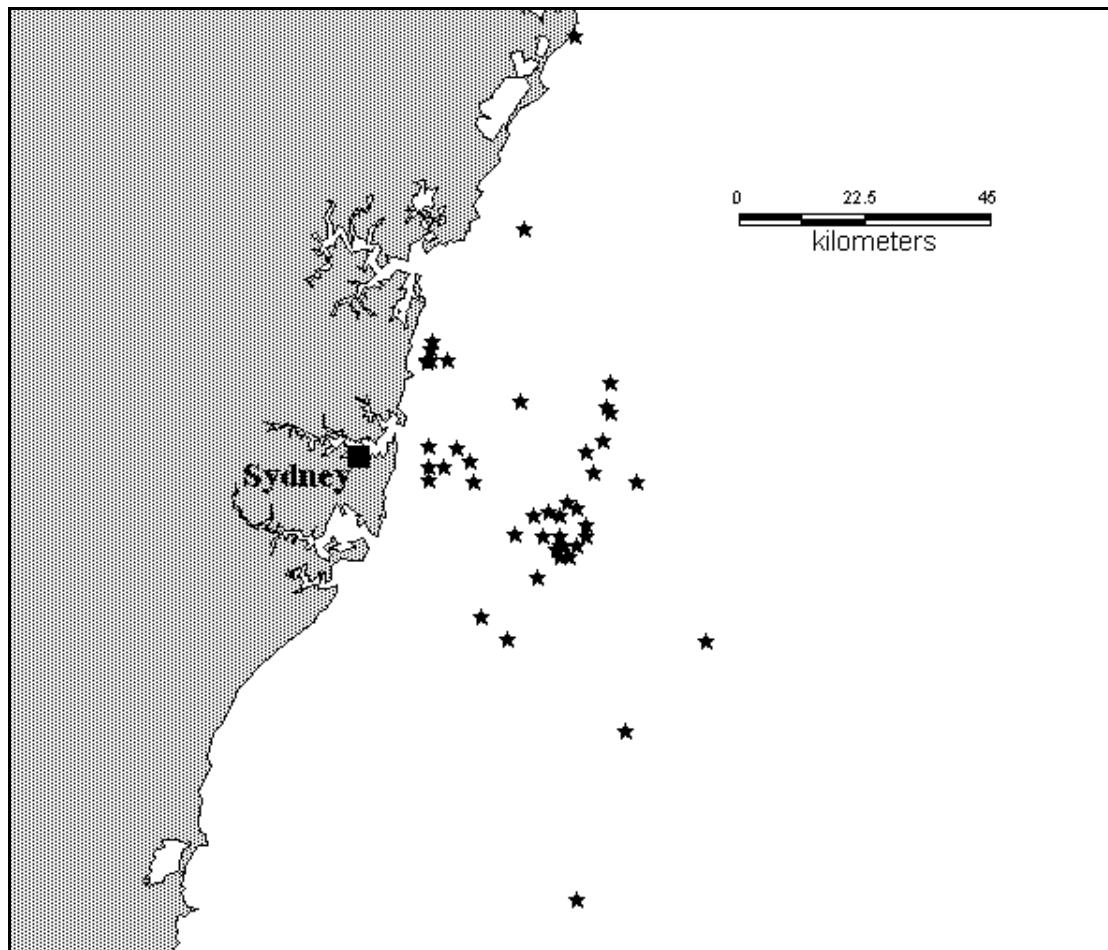


Tasmania

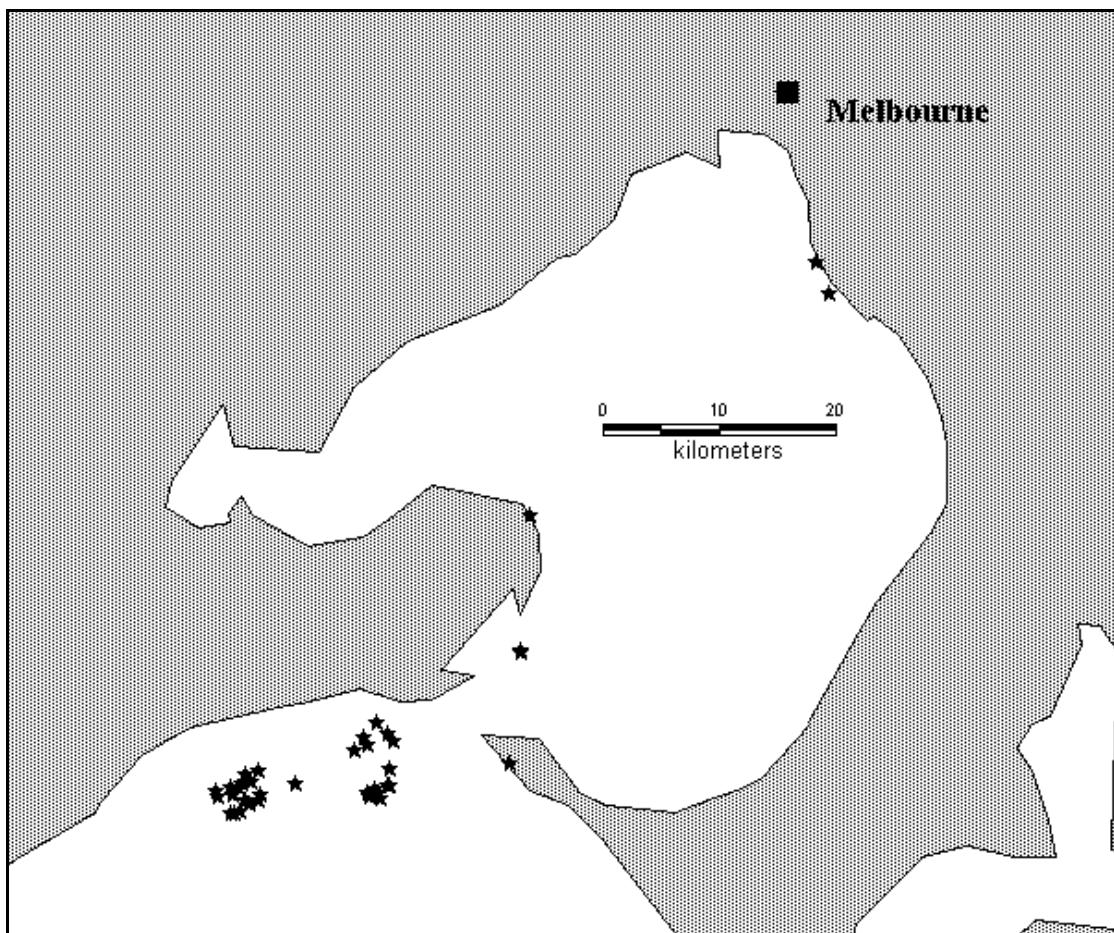
Appendix J - Visual presentation of Boat dump sites



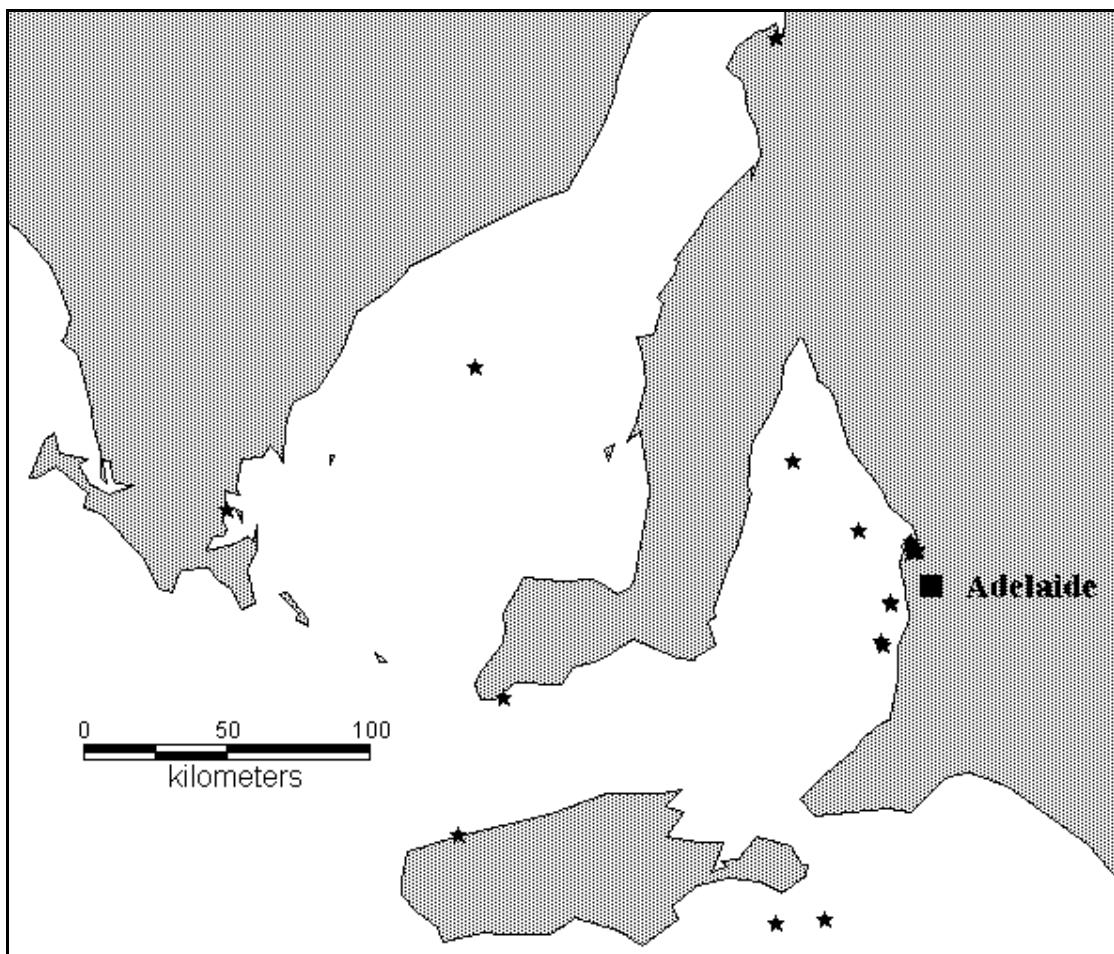
Australia



New South Wales

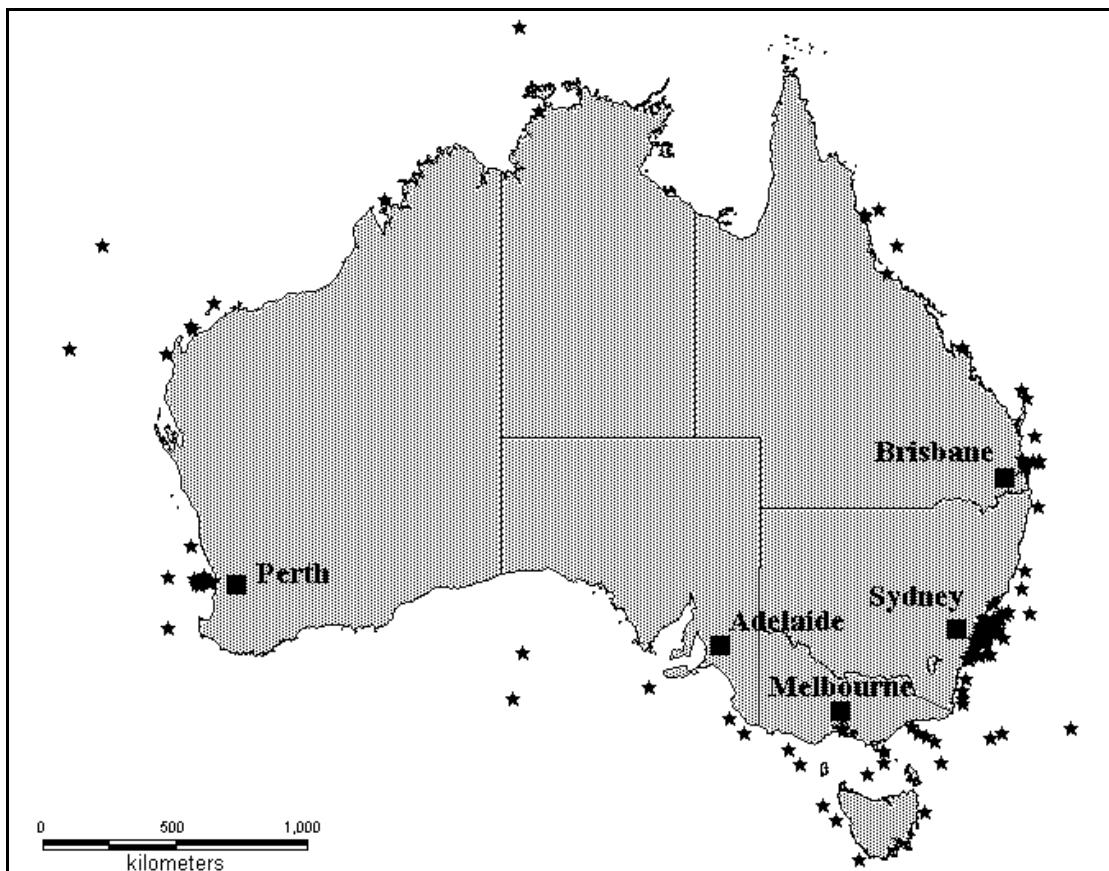


Melbourne

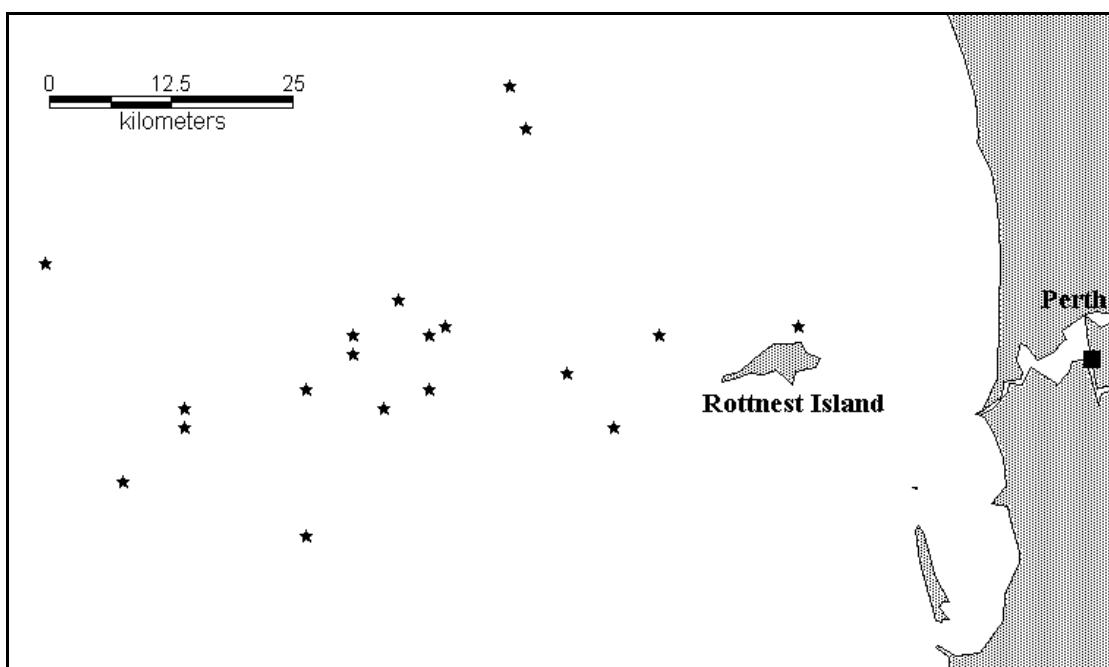


Adelaide

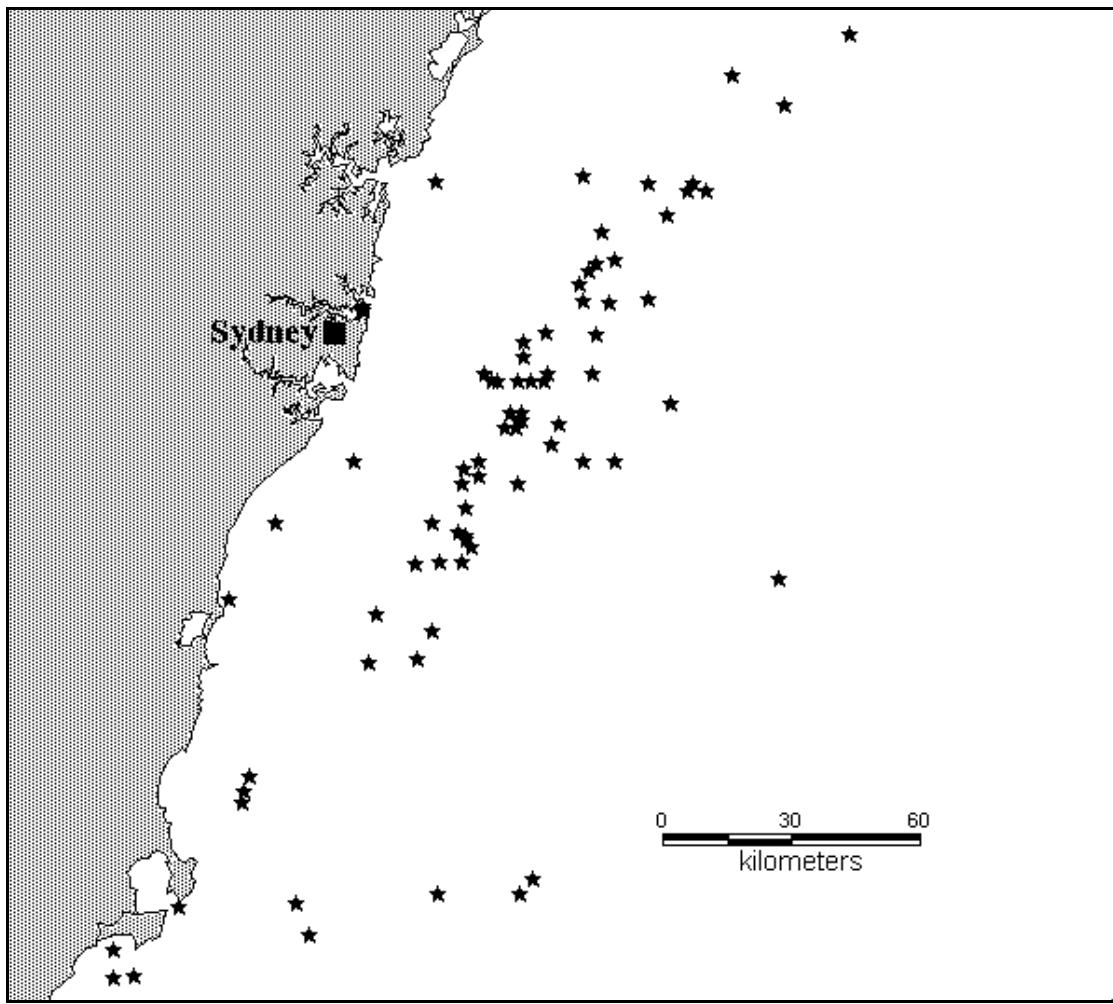
Appendix K - Visual presentation of Ammunition dump sites



Australia

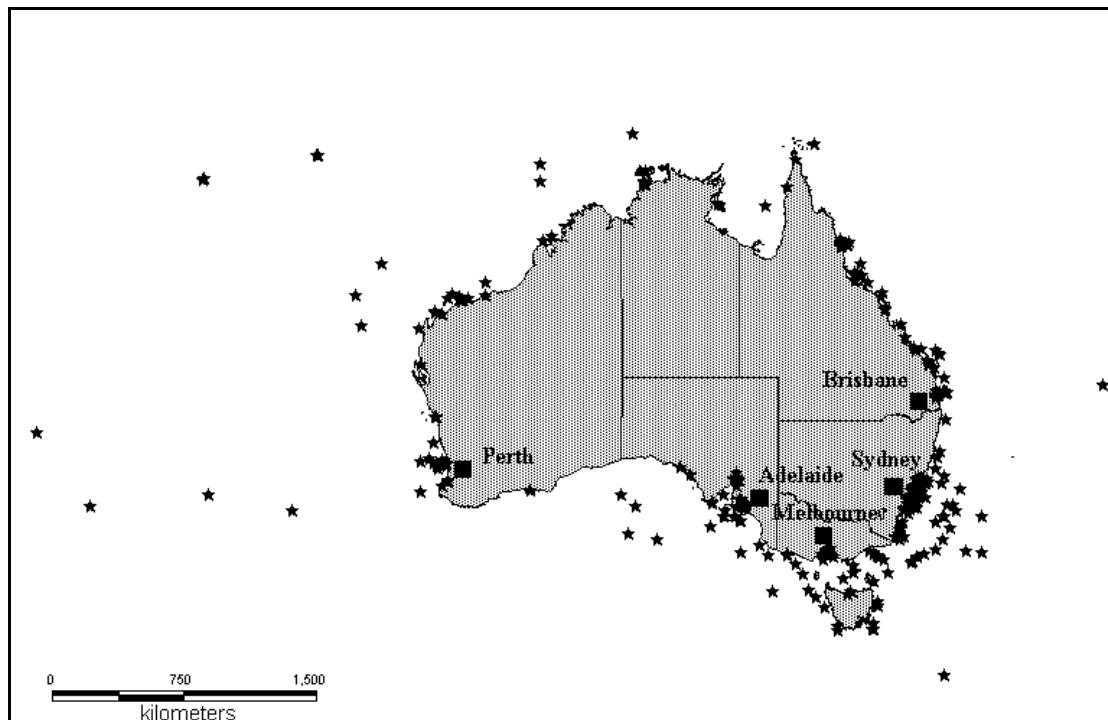


Perth

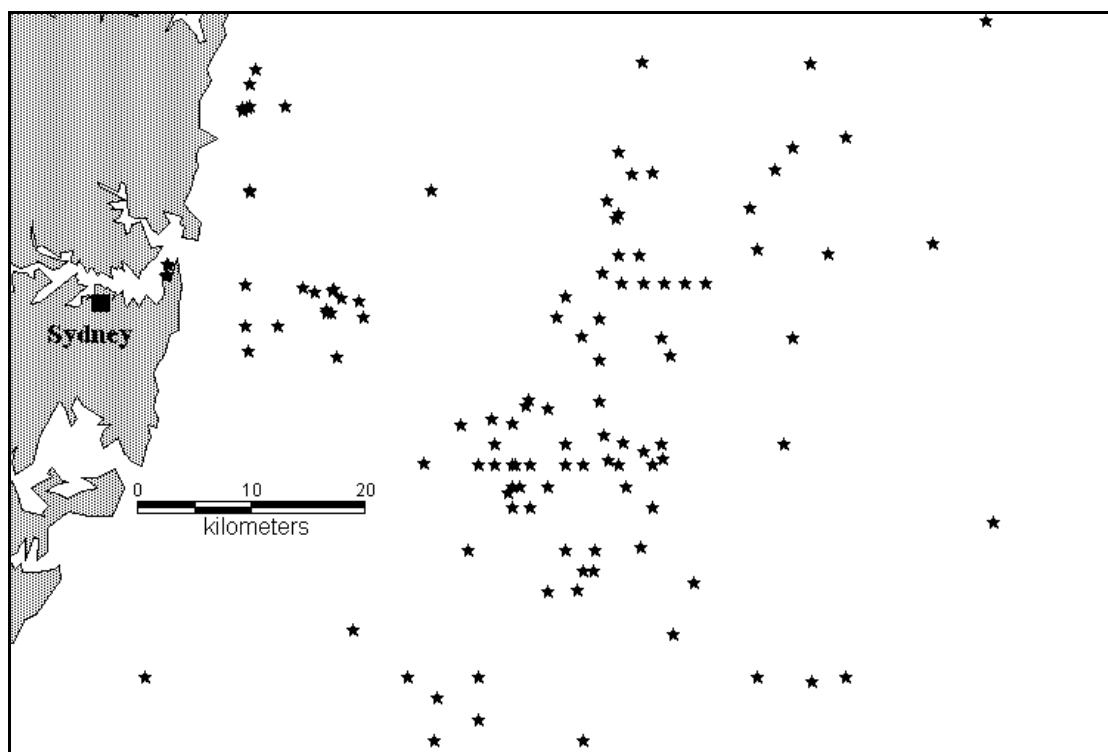


New South Wales

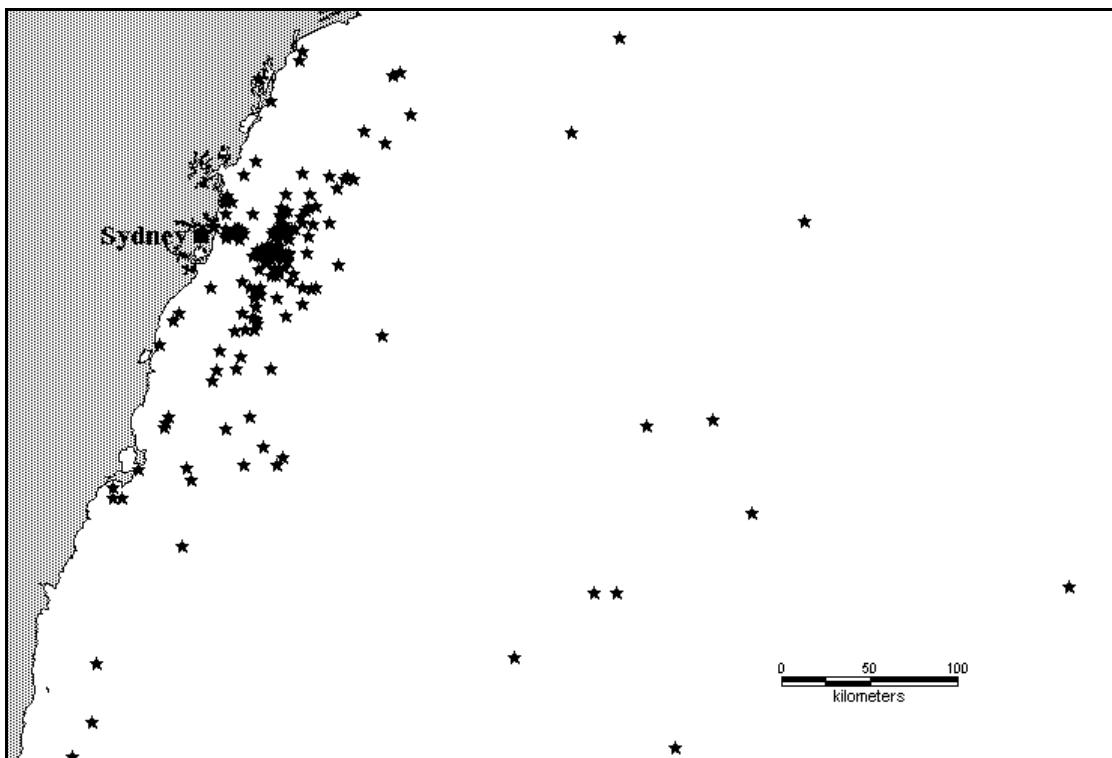
Appendix L - Visual presentation of all dump categories combined – Australia & New South Wales



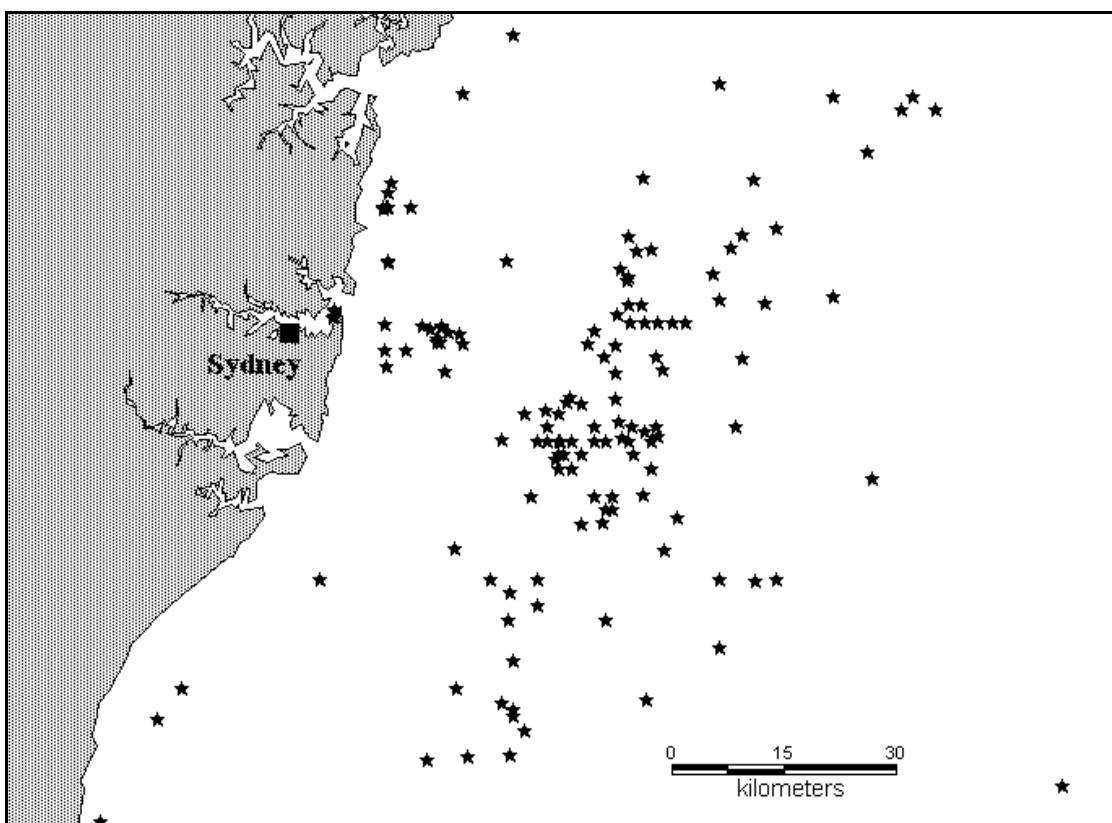
Australia



New South Wales

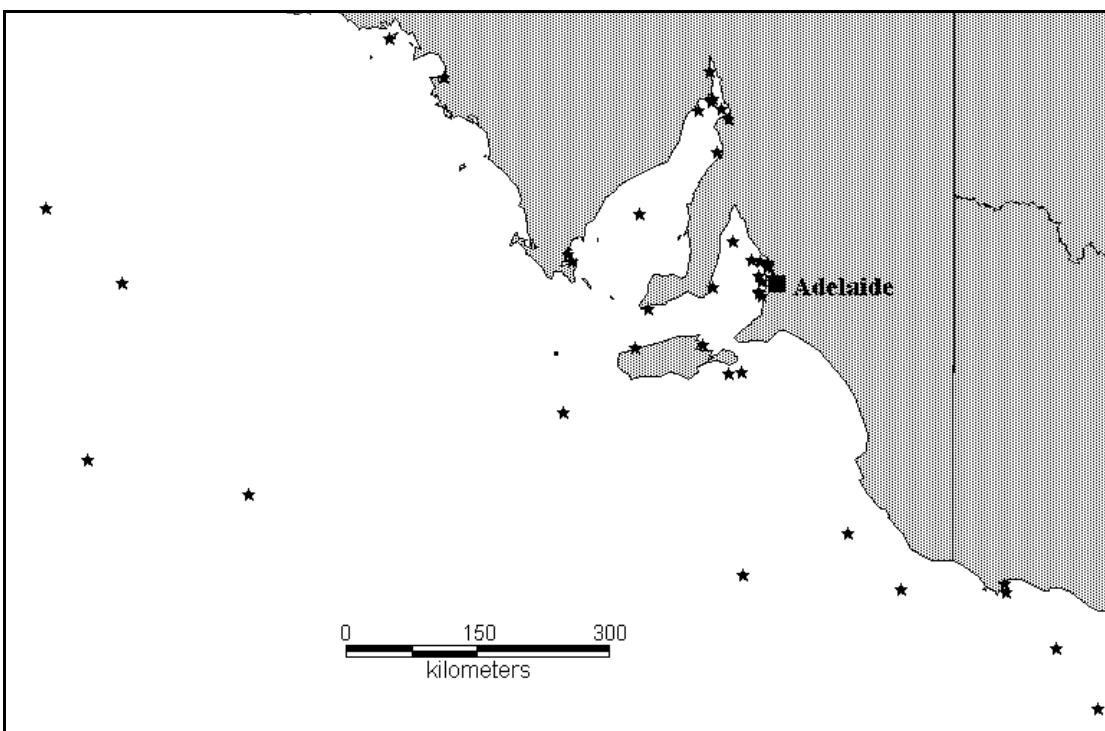


New South Wales

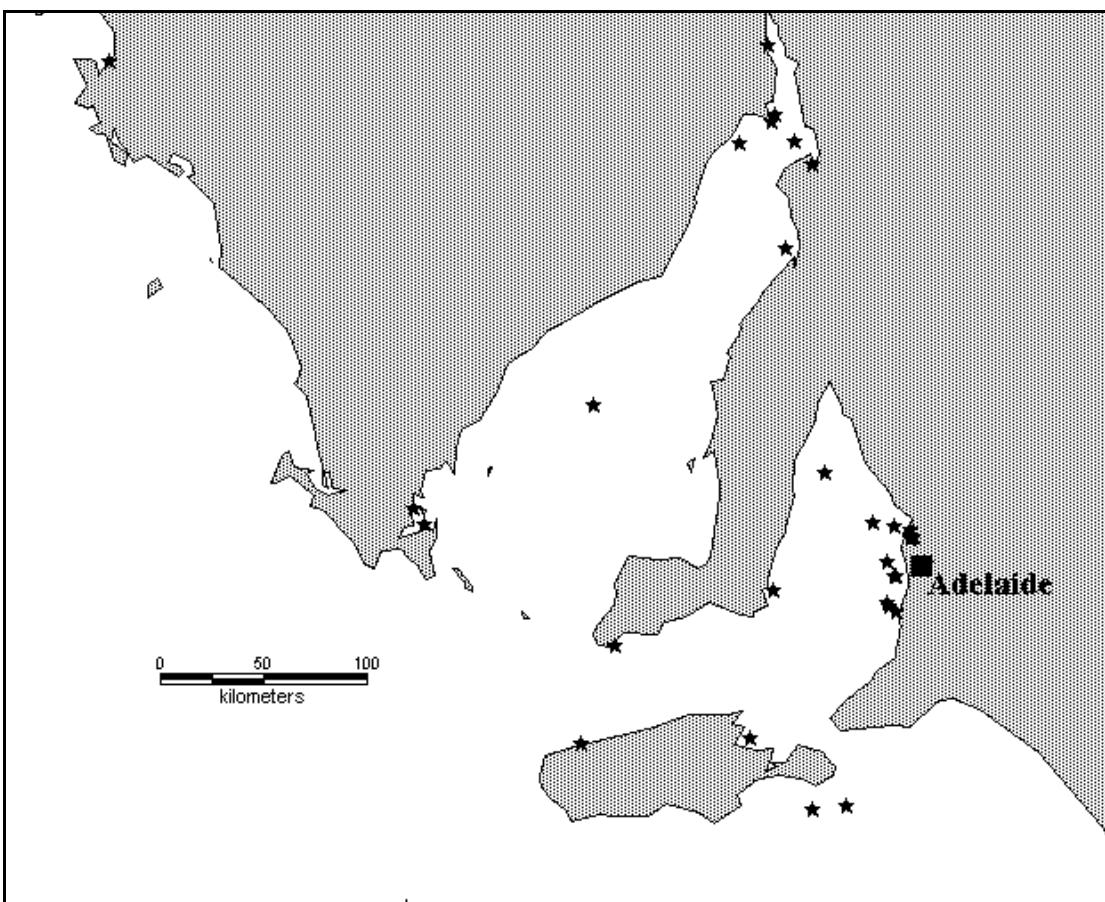


New South Wales

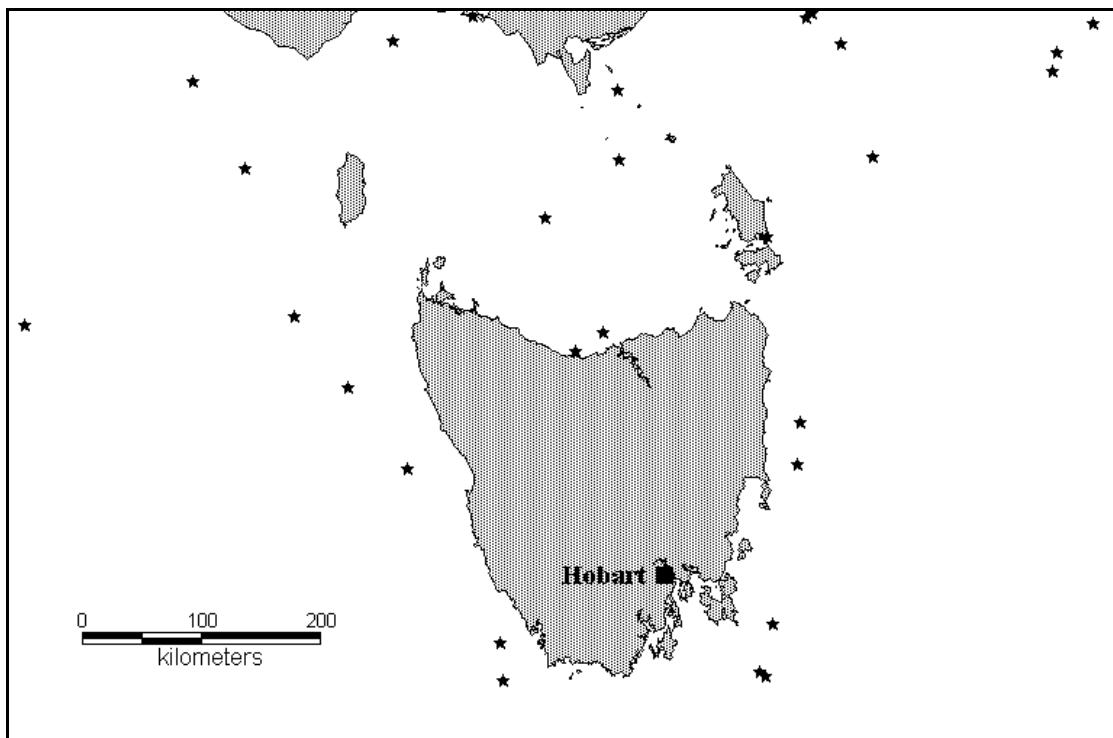
Appendix M - Visual presentation of all dump categories combined - Adelaide, Tasmania, Queensland



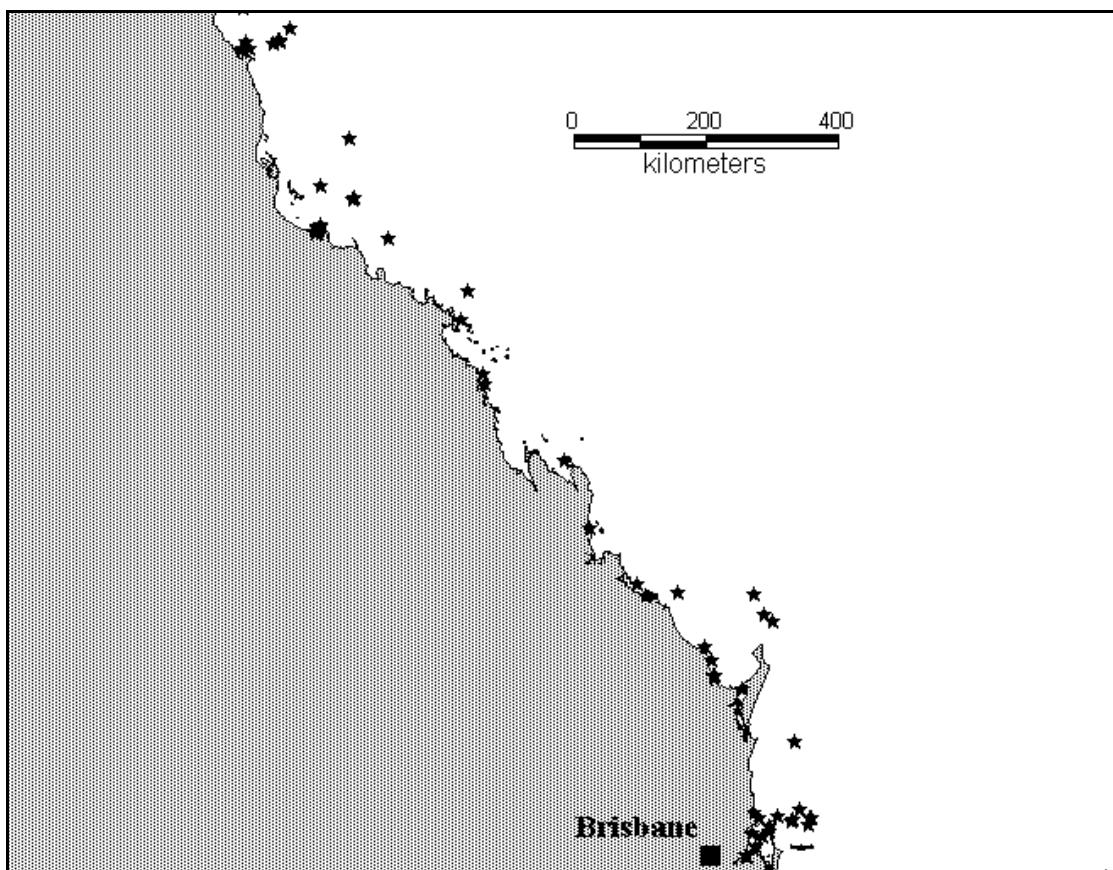
Adelaide



Adelaide

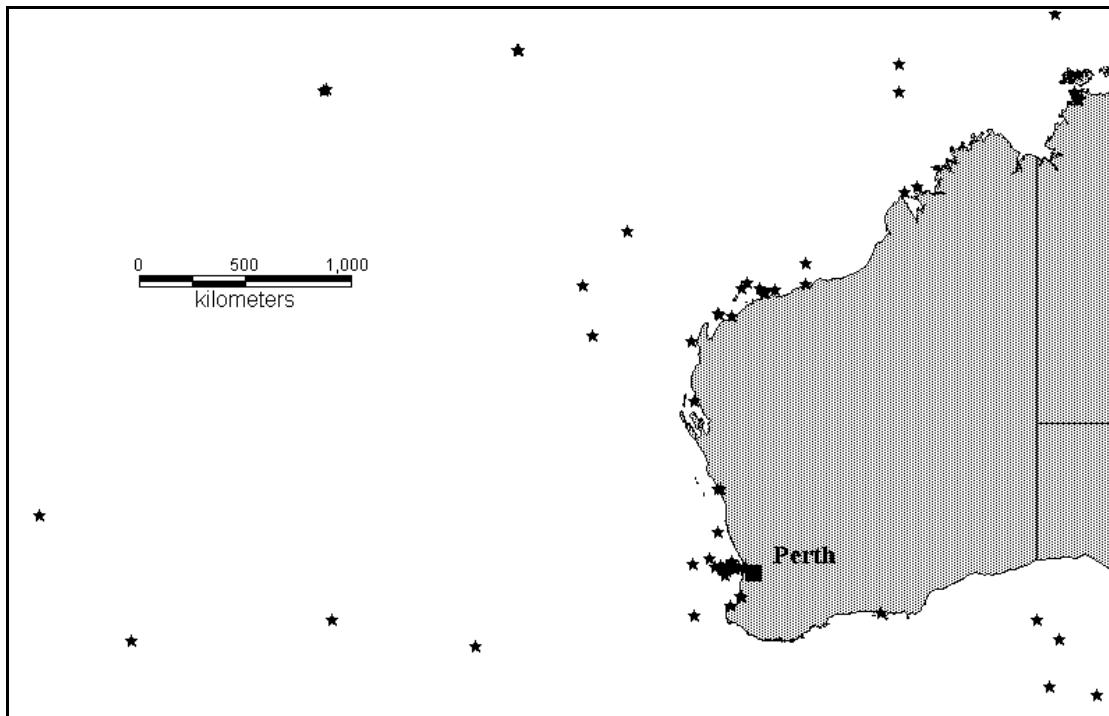


Tasmania

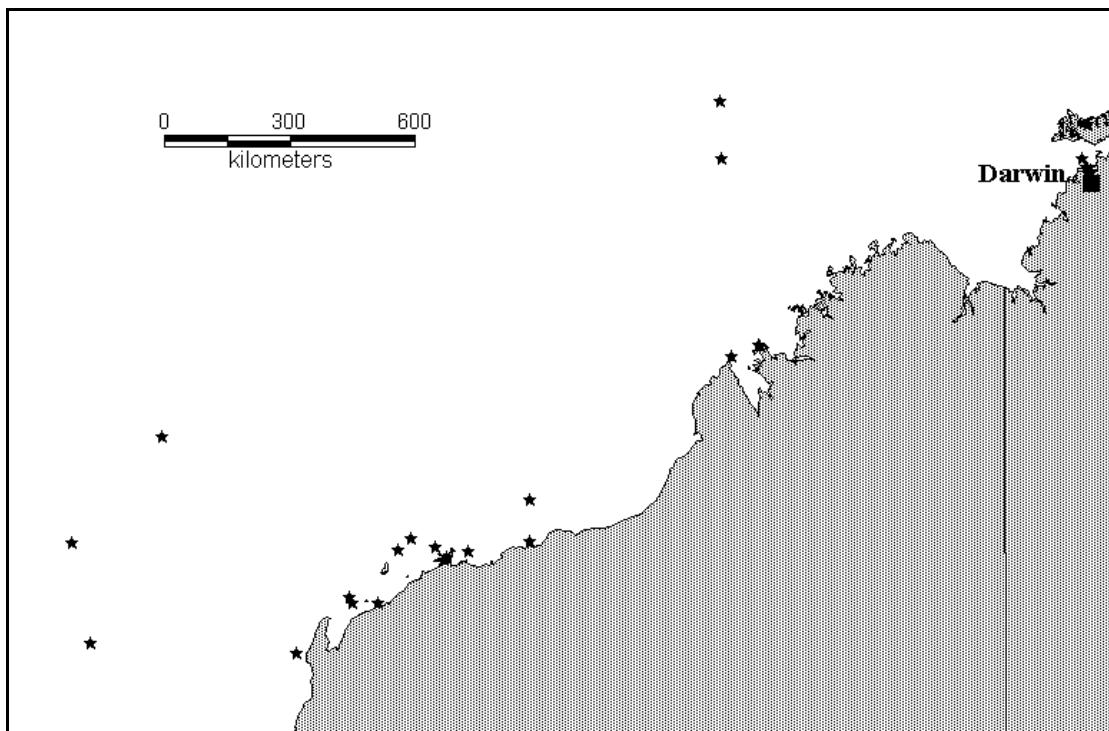


Queensland

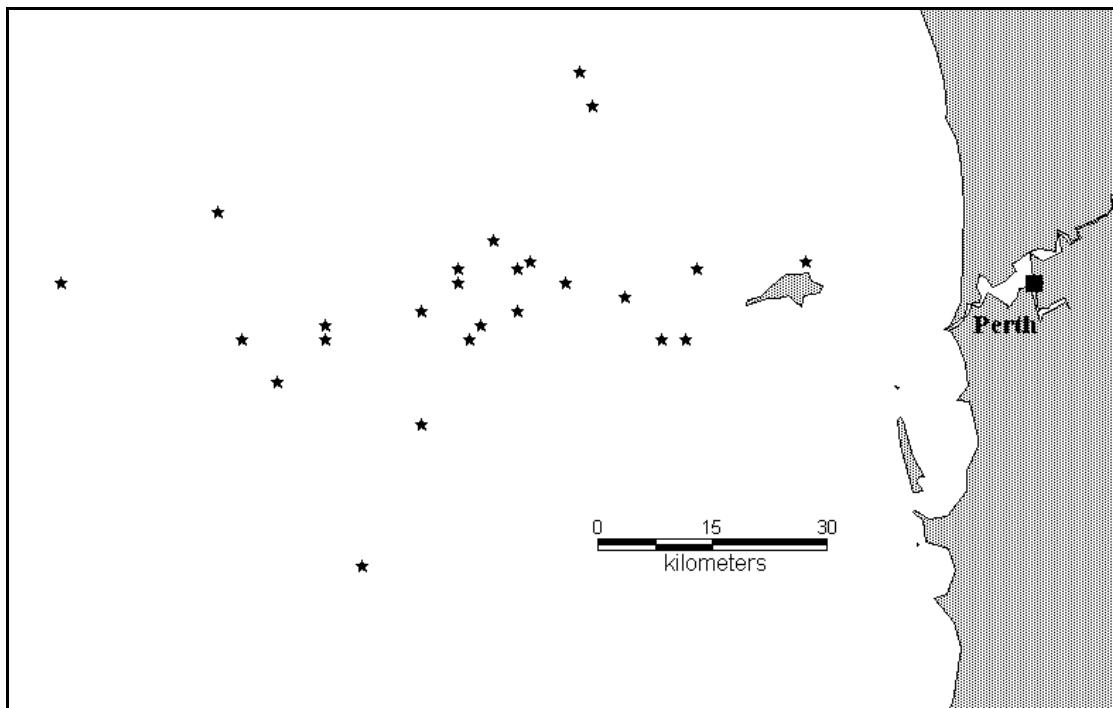
Appendix N - Visual presentation of all dump episodes combined - Western Australia, South East States



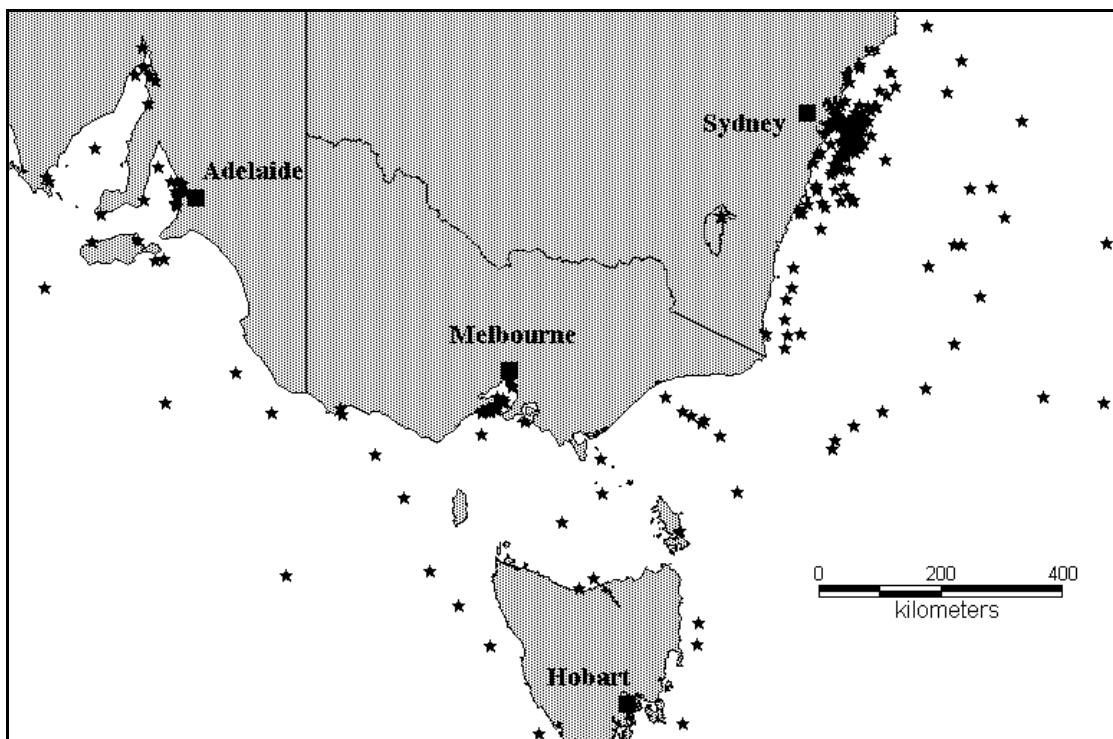
Western Australia



Western Australia



Western Australia



South East States