



WQPN 42, FEBRUARY 2006

Radiator repair and reconditioning

Purpose

Radiator repair and reconditioning are essential services for the maintenance of motor vehicles, stationary engines and cooling systems. Coolants (antifreeze) mixed with water contain chemicals that assist in the transfer of heat, limit corrosion, scavenge oxygen and help lubricate moving components. Coolants may contain ethylene or propylene glycol, amines, borate, carboxylate, detergents, hydrazine, molybdate, nitrite, phosphoric acid and/or silicates. Once coolants are removed from service they may also contain contaminants resulting from engine wear eg lubricants and metals (aluminium, copper, cadmium, chromium, iron, lead, magnesium, nickel and zinc), volatile organics and acidic or alkaline cleanser residues.

Coolants can threaten water resource quality through the inappropriate storage of new and used chemicals, or the discharge of wastewater containing contaminants. Radiator repairers often use large amounts of water to flush radiators during servicing. It is unacceptable practice to discharge contaminated water into stormwater drains or on-site soak pits, posing a contamination risk to downstream water users. Chemical residues may harm drinking water, irrigation waters or aquatic ecology (plants, fish and waterbirds).

The Department of Water is responsible for managing and protecting the State's water resources. It is also a lead agency for water conservation and reuse. This note offers:

- the Department's current views on radiator repair and reconditioning;
- guidance on acceptable practices used to protect the quality of Western Australian water resources; and
- a basis for the development of a multi-agency code or guideline designed to balance the views of industry, government and the community, while sustaining a healthy environment.

This note provides a general guide on issues of environmental concern, and offers potential solutions based on professional judgement and precedent. The recommendations made do not override any statutory obligation or Government policy statement. Alternative practical environmental solutions suited to local conditions may be considered. Regulatory agencies should not use the note's recommendations without a site-specific assessment of any project's environmental risks. Any conditions set should consider the values of the surrounding environment, the safeguards in place, and take a precautionary approach. This note shall not be used as the Department's policy position on a specific matter, unless confirmed in writing.

Scope

This note applies to new and established radiator repairers and reconditioners throughout the State. It has particular relevance to sites within close proximity to *sensitive water resources* (see description at Appendix C).

The note provides recommendations on best environmental management practices, and may be used by other decision-making agencies evaluating the establishment or operation of radiator repairers and reconditioners at sites where they may affect the quality of water resources. The aim is for recognised best environmental management practices to be adopted for all industrial activities. Employing these practices should result in reduced production costs through more efficient use of resources, an enhanced image with customers and benefits to the local environment.

This note is not intended to cover cooling systems that rely on gas compression and expansion for heat exchange, but may offer some useful guidance on potential risks to the environment and good practice.

Recommendations

Siting

Within Public Drinking Water Source Areas

Public Drinking Water Source Area (PDWSA) is the collective name given to any catchment declared for the management and protection of a water source used for public drinking water supplies. PDWSAs include Underground Water Pollution Control Areas, Water Reserves and Catchment Areas. For details on the relevant statutes and associated regulatory measures in PDWSAs, see Appendix B.

Within PDWSAs, the Department uses three protective classifications of land areas (Priority 1, 2 and 3) based on present land use, zoning and vulnerability of the water body to harm. These areas are each managed in a different way to protect the quality of the water resource. Priority classifications are assigned in drinking water source protection plans. These plans are prepared in consultation with State government agencies, landowners, local government, key industry and community stakeholders. Additional constraints may apply in defined zones closest to where drinking water is harvested or stored. These are described as Wellhead Protection Zones and Reservoir Protection Zones (RPZ). For additional explanatory information on PDWSAs, see this Department's Water Quality Protection Note *Land use compatibility in Public Drinking Water Source Areas*.

1. *In Priority 1 and 2 PDWSAs, Wellhead Protection Zones and Prohibited Zones (RPZ), the establishment or expansion of automotive and industrial service facilities is incompatible with management objectives for the water resource. This department will oppose development or expansion of these facilities in these areas and zones.*
2. *In Priority 3 PDWSAs, these facilities are compatible with conditions, requiring best practice environmental management to be used. Guidance on current best environmental management practice is given in this note, or in project-specific conditions set by regulatory agencies.*
3. *Operational areas (where compatible) should have a minimum vegetated separation buffer of 100 metres to the full supply level of reservoirs, their primary feeder streams, and production bores/ wells used as a source of drinking water. Wastewater should not be discharged to waterways, drains or soaks in buffer areas.*

Existing authorised radiator servicing premises may remain operating in an incompatible area. However, recommended environmental management measures described in this note should be implemented.

Near waterways

Waterways Management Areas are presently proclaimed to provide special protection to five estuaries and their associated waterways that are considered especially vulnerable to degradation. These are the Albany Waterways, Avon River, Leschenault Inlet, Peel–Harvey estuary, and Wilson Inlet Management Areas.

4. If a development is located within a Waterways Management Area, the *Waterways Conservation Act 1976* requires prior written approval from the Department of Environment. Information on waterway values and the location of these management areas can be obtained by contacting the Department's regional offices (go to www.water.wa.gov.au and see 'Contact us').
5. Adequate separation distances should be maintained between operational areas where chemicals or wastewaters (treated or otherwise) could enter the environment and natural waterways to minimise the risk of degradation of water quality. These separation distances are determined on the basis of the waterway values, vulnerability and biophysical criteria (see [Appendix A, reference 4a](#)).

Swan River Trust Management Area

6. The Swan-Canning estuary and abutting reserves are managed by the Swan River Trust under the *Swan River Trust Act 1988*. Written approval from the Trust is needed for any land or water based development that may have an effect on the estuary. For further information visit the Internet site www.swanrivertrust.wa.gov.au, or phone the Trust on 9278 0900.

Near wetlands

The department aims to ensure that chemicals or contaminated waters do not enter the environment close to sensitive waters such as wetlands. Many of these waterbodies have been given a conservation status under the Ramsar convention, the Australian Nature Conservation Agency or Western Australian Environmental Protection Policy (EPP).

7. Operational areas where chemicals or wastewaters (treated or untreated) could enter the environment and are proposed within 500 metres of any wetland (including lakes, swamps, marshes and dampland) should be referred to our regional office for assessment, with supporting information addressing the environmental risks. For information on protection of wetlands and their fringing vegetation, see [Appendix A, references 3 and 4b](#).
8. Separation distances will be negotiated based on wetland values, vulnerability, local biophysical factors and protective management techniques used at the facility to maintain or enhance the quality of water resources and adjoining wetland vegetation.

Private water supply sources

Surface waterbodies or groundwater wells used for water supplies need protection from physical, chemical and microbial contaminants. This protection is mainly provided by preventing discharge of contaminating material to soils and waterways, and maintaining adequate separation buffers. Information on buffer dimensions is given in this Department's Water Quality Protection Note *Vegetation buffers to sensitive water resources* (see [Appendix A, reference 5b](#)).

9. For human drinking water supplies, the buffer from the external boundary of operational areas where chemicals or wastewater (treated or untreated) could enter the environment to the full supply level of surface water sources, their primary feeder streams, and production bores or wells; and aquaculture ponds (excluding tanks) should be a minimum of 100 metres.
10. For all other water supply uses, the minimum separation distance should be 50 metres.

Other siting constraints

11. Radiator servicing facilities should not be located on flood-prone land. Filling of low-lying sites may be accepted provided it does not interfere with land drainage or increase the extent of upstream floodwaters.
12. A minimum vertical separation distance of two metres from infrastructure to the maximum (wet season) groundwater table is recommended for free-draining soils, to avoid waterlogging and allow for soil contaminant filtration/ aerobic microbial action.
13. The premises should be connected to deep sewerage, except where special exemptions apply under the *Government sewerage policy*. If sewerage connection is not available, alternative management strategies should be used to ensure adequate protection of the quality of local water resources.

Construction

14. Radiator servicing should be carried out in weather-proof workshops with an impervious (sealed) floor designed and graded to contain any spilt material or washdown water. The workshop area should be bunded, kerbed or graded to a collection sump to prevent the escape of spilt fluids. Chemical spills or radiator wastewater should drain to the collection sump. Facilities should be constructed and managed so that coolant cannot escape into the environment, ie during normal operations, due to equipment malfunctions or during emergencies eg storms, fires or vandalism.
15. Any bunded compounds needing vehicle access should be protected by ramps that permit safe passage of personnel and vehicles, while maintaining effective containment capacity.
16. Stormwater run-off from roofs and external paved areas should be diverted away from the workshop and chemical storage areas.
17. Any chemical bulk storage tanks with capacity exceeding 250 litres should follow the recommendations in this Department's Water Quality Protection Note *Tanks used for above ground chemical storage*. Transfer of any chemicals from bulk tankers to storage should occur within chemical-resistant sealed and bunded areas that permit recovery of any spills. Any underground tanks containing chemicals or wastes (where approved) should follow the recommendations in the Water Quality Protection Note *Tank systems for underground chemical storage*.
18. Although coolant water has in the past been released to drains or soakage, this practice poses a contamination threat to the quality of local water resources. Engine coolants and corrosion inhibitors are now prohibited under environmental protection regulations from discharge to the environment.
19. Wastewater containing coolant or corrosion inhibitor residues should ideally be either treated for recycling on-site. Wastewater holding, treatment, and coolant recovery units should be installed within the workshop. These units should be operated and maintained as recommended by the manufacturer.
20. Radiator wastewater may be discharged to sewer (where available) if approved by the sewerage service provider eg Water Corporation, when conforming with an industrial waste permit. Early negotiations with the sewerage service provider should occur so adequate wastewater pre-treatment occurs prior to discharge to sewer.
21. Alternately, radiator wastewater should be fully contained until transported off-site to a Schedule 1 Category 61 liquid waste facility, licensed by the Department of Environment under the *Environmental Protection Regulations 1987* (as amended).

22. Related recommendations on water source protection practices are provided in this Department's Water Quality Protection Note *Industrial sites near sensitive environments* (see Appendix A, reference 5b).

Operation

Hazardous chemicals

23. Bulk chemical and fuel storage should adhere to *Explosives and Dangerous Goods Regulations 1992* and the recommendations in this Department's Water Quality Protection Note *Toxic and hazardous substances – storage and use* (see Appendix A, reference 5b).
24. There should be no storage of coolant containers outside weatherproof and bunded areas, whether they contain chemicals or are nominally empty.
25. Coolant should be stored in robust chemical-resistant containers. Containers with a capacity less than 250 litres should be held in weather-proof buildings on reinforced concrete floors as previously described. Flooring, drains and collection sumps should be sealed with protective coatings (where necessary) to resist seepage, damage or deterioration resulting from contact with the stored materials. Bunded compounds should have a storage capacity of 110 per cent of the largest chemical container, plus 25 per cent of the capacity of all containers held within the compound.
26. Coolant formulation, mixing, processing, container transfer and decanting should occur within the weather-proof buildings or an approved equivalent containment facility/area.

Liquid waste management and disposal

27. Efficient use of water and chemicals should be pursued through source reduction or substitution, and environmentally sound recycling systems. Ways of achieving this are through implementing good operating practices, material substitution, process changes and recycling. The Centre of Excellence in Cleaner Production at the Curtin University conducts *Cleaner Production training programs* that can assist business and industry in reducing waste (see Appendix D, *Useful contacts*). Refer to section 3.3 of *Environmental management and cleaner production directory for small and medium business* for links to other best practice documents, available from www.swanrivertrust.gov.au.
28. This Department supports wastewater recycling and the use of non-toxic chemicals, where practical. Chemicals should not be stored near to any floor drain that is connected to an on-site sewerage system eg septic tank, or near a stormwater drain discharging into surface waters.
29. Where practical, high pressure jetting and readily degradable cleansers should be used instead of hazardous chemicals to flush cooling systems. Where resilient or toxic solvents are used, they should be contained and stored securely to prevent any release to the environment prior to disposal.
30. Wastewater (treated or untreated) should not be allowed to enter stormwater drains leaving the premises (eg open drains, culverts or pipes).
31. Engine coolant or engine corrosion inhibitor discharge to the environment is prohibited by the *Environmental Protection (Unauthorised discharges) Regulations 2004*. These regulations are administered by the Department of Environment. Significant penalties apply to any commercial operator who contravenes the regulations.

32. Occasionally effectively treated wastewater may be approved for discharge to on-site soakage (where other recommended options are demonstrated to be impractical). Such wastewater should be regularly monitored and confirmed as meeting the water quality criteria for the maintenance of values in receiving waters. Guidance on water quality criteria is in *National Water Quality Management Strategy* documents (see Appendix A, reference 1).
33. On-site wastewater discharge (treated or untreated) is not acceptable within PDWSAs or within the buffers to water resources with recognised conservation values. Industrial wastewaters should not be discharged into on-site sewerage treatment systems.
34. This Department's Water Quality Protection Note *Mechanical servicing and workshop facilities* (see Appendix A, reference 5b), and the *Environmental code of practice on automotive repair industry* (see Appendix A, reference 4e) are useful references.

Solid waste management and disposal

35. Solid wastes should be stored in separate bins or skips suited to the appropriate disposal method eg sludges, metals, plastics, paper and cardboard. Fluid containers should be recycled, while sludges (after any necessary de-watering to assist handling) may only be landfilled at secure (Class IV) sites. Refer to *Landfill waste classifications* and *Waste definitions* (see Appendix A, reference 4d) for further information on appropriate waste disposal.
36. Containers used for solvents, lubricants and other liquid wastes storage should be recycled or properly disposed offsite.
37. Consider recycling or selling the used metals parts or metal scrap to licensed vendors.

Mechanical servicing

38. All support activities associated with mechanical repairs, such as recoring of radiators and maintenance, should take place within the workshop area.
39. Any mechanical servicing facilities should be guided by this Department's Water Quality Protection Note *Mechanical servicing and workshops* (see Appendix A, reference 5b). Any resultant liquid waste should be contained, prior to disposal at a licensed facility.

Operator training

40. Employees should be effectively trained and reminded by signage of risks posed to the environment from chemical and wastewater discharge to local drains and soakage.

Spill incidents and emergency response

41. Absorbent materials should be used to clean-up chemical spills and leaks. Shop rags are commonly used to soak up spilt fluids. Chemical spills should be immediately responded to and contained, then recovered or disposed of, both for occupational health and safety reasons and to prevent contamination of the local environment (such as soils, drains, surface water and groundwater). For additional advice, refer to this Department's Water Quality Protection Note *Contaminant spills - emergency response* (see Appendix A, reference 5b).
42. Spill kits should be located in workshops in easily accessible areas. They should include absorbent materials eg absorbent powders, sawdust, rags, or "kitty litter", as well as mops, brooms, dustpans and appropriate protective clothing.

Monitoring and reporting

43. Where monitoring and reporting are required by regulatory authorities, the section on Monitoring and reporting in this Department's Water Quality Protection Note *Industrial sites near sensitive environments* can provide guidance.

Development or expansion approvals

44. Plans for the development or expansion of an existing facility initially require approval from the relevant local government authority (council) (see Appendix B).

45. The proponent should determine whether the development site may affect sensitive waters by contacting our local regional office (see www.water.wa.gov.au and *Contact us*). Where facilities are planned for construction or upgrade near sensitive water resources, proponents should supply a notice of intent to this Department, including the following data:

- a. Name of site owner and activity operator, contact address and details.
- b. A site plan showing the location of the planned facility.
- c. Description of the type and scale of activities that will be carried out.
- d. The nature and approximate quantity of materials stored or handled on site.
- e. Details of the storage and containment of chemicals used commercially on-site.
- f. Data on the soils, land contours, local water features, vegetation cover, existing infrastructure, historical land usage that may be affected by the project facilities or their operation.
- g. Description of the types and quantities of any waste generated at the facility.
- h. Details of the treatment and disposal of all wastes (solid and liquid) generated on site.
- i. Details of any relevant approvals/licences already provided by Government.

More Information

We welcome your views on this note. Feedback provided on this topic is held on Department of Water file **15549**. This note will be updated periodically as new information is received or industry/activity standards change. Updates are placed on our webpage <http://drinkingwater.water.wa.gov.au>, select *Publications > Water Quality Protection Notes*.

To comment on this note or for more information, please contact the Water Source Protection Branch at our Atrium office in Perth, phone (08) 6364 7600 (business hours), fax 6364 6525, use *contact us* at www.water.wa.gov.au or email drinkingwater@water.wa.gov.au, citing the note topic and version.

The State Government in October 2005 announced the formation of the Department of Water. From January 2006, the Department of Water has assumed primary responsibility for managing the State's water resources. Once the Department of Water is legally established, it will replace many of the present functions of the present Water and Rivers Commission and operate in parallel (with separate powers) to the Department of Environment. The custodian and recommendations made in this note will then change to match the assigned responsibilities of the departments of Environment or Water.



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www.swanrivertrust.wa.gov.au
Telephone: (08) 9278 0900
Facsimile: (08) 9325 7149
Level 1, Hyatt complex
20 Terrace Rd East Perth
Western Australia 6004

Appendices

Appendix A - References and further reading

1. Australian Government - National Water Quality Management Strategy
 - a. *Australian and New Zealand Guidelines For Fresh and Marine Water Quality* (ANZECC, ARMCANZ, 2000);
 - b. *Australian Guidelines for Water Quality Monitoring and Reporting* (ANZECC, ARMCANZ, 2000);
see web page www.deh.gov.au/water/quality/nwqms/index.html.
 - c. *Australian Drinking Water Guidelines* (NRMMC, NHMRC, 2004);
see web page www.health.gov.au/nhmrc/publications/synopses/eh19syn.htm.
 - d. *Water Quality Management – An Outline of the Policies* (ANZECC, ARMCANZ, 1994)
 - e. *Implementation Guidelines* (ANZECC, ARMCANZ, 1998).
see web page www.awa.asn.au/AM/Template.cfm?Section=Publications.

Acronyms

ANZECC : Australian and New Zealand Environment and Conservation Council,
ARMCANZ: Agriculture and Resource Management Council of Australia and New Zealand
NRMMC : Natural Resource Management Ministerial Council
NHMRC : National Health and Medical Research Council

2. Government of Western Australia- *Government Sewerage Policy – Perth Metropolitan Region* 1981 (as amended)
3. Wetland information
 - a. For RAMSAR wetlands, see internet site: www.ramsar.org;
 - b. Australian Department of Environment and Heritage *Directory of important wetlands in Australia*, see web page www.deh.gov.au/water/wetlands/databases.html, or the
 - c. Department of Conservation and Land Management (WA), see web page www.naturebase.net/national_parks/wetlands/wa_wetlands.html.
 - d. *Geomorphic wetlands of the Swan Coastal Plain* dataset; see web pages or books:
 - www.walis.wa.gov.au in conjunction with a guide to viewing the WALIS dataset available at <http://wetlands.environment.wa.gov.au/>, select *data>wetland mapping*; or
 - *Perth Groundwater Atlas*, see www.water.wa.gov.au select *Water Information> Data*. For more information contact this Department's Groundwater Information section on 6364 7459; or
 - *Wetlands of the Swan Coastal Plain, Volume 2B Wetland mapping, classification and evaluation - wetlands atlas* (Hill, Semeniuk, Del Marco 1996). Reference copies are available from the Department of Environment library in Perth.
4. Department of Environment WA
 - a. Waterways policy and guidelines:
 - *Foreshore Policy 1: Identifying the Foreshore Area, WRC November 2002*;
 - *Water Note 11: Identifying the riparian zone*;
 - *Water Note 23: Determining foreshore reserves*;see web page <http://waterways.environment.wa.gov.au>, select *Publications*.

- b. Wetlands policy and guidelines:
 - *Position statement: Wetlands*, WRC 2001;
 - *Wetlands of the Swan Coastal Plain*, WRC & DEP 1996;
see web page <http://wetlands.environment.wa.gov.au>, select *Publications*.
 - c. Stormwater

Stormwater Management Manual for Western Australia;
see web page <http://stormwater.environment.wa.gov.au>, select *Publications>Manuals*.
 - d. Waste management
 - *Guidelines for acceptance of solid waste to landfill*, January 2001.
 - *Landfill Waste Classification and Waste Definitions*, 2001.
 - *Draft Strategy for the management of green and solid organic waste in WA*, Dec. 1997.
 - *Western Australian Waste Reduction and Recycling Policy 1997*.
see web page <http://wastemanagement.environment.wa.gov.au>, select *Publications*.
 - e. Environmental Code of Practice: *Automotive Repair Industry*, Department of Environmental Protection Western Australia, October 1997.
5. Department of Water WA
- a. Drinking water source protection policy

Pesticide Use in Public Drinking Water Source Areas, 2000.
 - b. Water Quality Protection Notes:
 - *Contaminant spills- emergency response*;
 - *Industrial sites near sensitive environments*;
 - *Irrigation of vegetated land with nutrient-rich wastewater*;
 - *Land use compatibility in Public Drinking Water Source Areas*;
 - *Mechanical servicing and workshop facilities*;
 - *Service stations*;
 - *Tanks- above ground chemical storage in sensitive environments*;
 - *Toxic and hazardous substances- storage and use*;
 - *Vegetation buffers to sensitive water resources*;
 - *Washdown of mechanical equipment*;

see web page <http://drinkingwater.water.wa.gov.au>, select *Publications >Water Quality Protection Notes*.
6. Swan River Trust *Environmental Management and Cleaner Production Directory for small and medium business*, available from www.swanrivertrust.wa.gov.au select *Swan-Canning Cleanup Program > S CPP Publications*.

Appendix B - Statutory requirements and approvals relevant to this note include:

What's regulated	Statute	Regulatory body/ agency
Subdivision of land	<i>Town Planning and Development Act 1928</i>	Western Australian Planning Commission
		Department for Planning and Infrastructure
Land zoning and development approval	<i>Town Planning and Development Act 1928</i>	Local government (council)
		Department for Planning and Infrastructure
Impact of significant development proposals on the values and ecology of land or natural waters	<i>Environmental Protection Act 1986, Part IV Environmental Impact Assessment</i>	Minister for the Environment advised by the EPA
Pollution control and regulation	<i>Environmental Protection Act 1986, Part V Environmental regulation</i>	Department of Environment - regional office
	<i>Environmental Protection(Unauthorised discharges) Regulations 2004</i>	
Licence to discharge waters into managed waterways.	<i>Waterways Conservation Act 1976</i>	
Licence to take surface water and groundwater	<i>Rights in Water and Irrigation Act 1914</i>	Department of Water - regional office
Industrial sites in existing public drinking water source areas	<i>Metropolitan Water Supply, Sewerage and Drainage Act 1909</i>	
	<i>Country Areas Water Supply Act 1947</i>	
Discharges into the Swan-Canning Estuary	<i>Swan River Trust Act 1988</i>	Swan River Trust
Storage of fuels, solvent, explosive and dangerous goods	<i>Explosive and Dangerous Goods (EDG) Act 1961 and Regulations, 1992</i>	Department of Consumer and Employment Protection
Management of human wastes, community health issues	<i>Health Act 1911</i>	Local Government;
		Department of Health
Emergency response planning	<i>Fire and Emergency Services Authority of WA Act 1998</i>	Fire and Emergency Services Authority
Discharge to sewer (industrial waste permit) or to main drain	<i>Metropolitan Water Supply, Sewerage and Drainage Act 1909</i>	Water Corporation; Other designated water services provider
	<i>Country Towns Sewerage Act 1948</i>	

APPENDIX C - Sensitive water resources

Clean water resources used for drinking water, sustaining aquatic and terrestrial ecology, industry and aesthetic values, along with breathable air, rank as the most fundamental and important needs for viable communities. These water resources should remain within specific quality limits, and therefore require stringent and conservative protection measures. Guidance on water quality parameters necessary to maintain water values are published in the Australian Government's *National Water Quality Management Strategy Guidelines* (see web page www.deh.gov.au/water/quality/nwqms/index.html).

This Department strives to improve community awareness of catchment protection measures for both surface water and groundwater aquifers as part of a multi-barrier protection approach to maintain the quality of water resources and their values.

To be considered sensitive, water resources must support one or more of the environmental values described below. Any activity or a land use may pose a risk to water quality if contaminants are able to be washed or leached into sensitive water resources in discernible quantities. These water resources include shallow groundwater accessed by water supply wells, surface waterways, estuaries, or wetlands. Community support for these values, setting of management objectives for water resources and implementation of a practical attainment strategy are seen as key elements in protecting and restoring the values of these water resources.

Sensitive water resources include:

- a. Those proclaimed or assigned as Public Drinking Water Source Areas (ie Water Reserves, Catchment Areas or Underground Water Pollution Control Areas) under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, the *Country Areas Water Supply Act 1947* or the *Health Act 1911*.
- b. Those used as private drinking water supply sources (ie for human or stock consumption).
- c. Waters with specific qualities necessary to support commercial or industrial activities eg aquaculture, food processing or crop irrigation.
- d. Waterways (other than engineered drains or ornamental features) including:
 - waterways managed under the *Waterways Conservation Act 1976*, ie the Avon, Peel-Harvey, Leschenault, Wilson Inlet and Albany Waterways Management Areas; and
 - the Swan-Canning Estuary and areas managed via the *Swan River Trust Act 1988* and the *Environmental Protection (Swan and Canning Rivers) Policy 1998*.
- e. Wetlands that are pristine or conservation-valued, including:
 - policy areas covering water resources defined via Part III of the *Environmental Protection Act 1986* eg *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* and *Draft Environmental Protection (Swan Coastal Plain Wetlands) Policy 2004*; and
 - wetlands of regional, national and international importance, including but not limited to: Conservation category wetlands and Resource enhancement category wetlands and wetlands listed within *A Directory of Important Wetlands in Australia*. See the Australian Department of Environment and Heritage web site (which includes information on Ramsar convention sites) www.deh.gov.au/water/wetlands/database/directory.
- g. Groundwater aquifers that sustain important ecological functions eg cave ecology.

- h. Surface waterbodies or wetlands meeting recognised cultural or social needs, eg water resources used for community swimming, fishing or valued for their visual appeal.

Appendix D - Useful contacts

1. Motor Trade Association of Western Australia
224 Balcatta Road Balcatta WA 6914, phone: 9345 3466, fax: 9345 3465;
See Internet site www.mtawa.com.au, select *Environment>Green stamp program>Environmental Product and Services Directory and Environmental Guidelines>Coolant management*.
2. Curtin University - Centre for excellence in Cleaner Production:
Contact details: phone: 9266 4519, fax: 9226 4811
web page <http://cleanerproduction.curtin.edu.au>.
3. Wynns Automotive Products (Coolant Recycling Systems)
Contact 27 Oxleigh Dr Malaga WA phone: 9249 5333, fax: 9249 5262
Internet www.wynns.com.au/ select *Workshop programs*
4. Licensed contractors taking coolants for disposal include:
 - Nationwide Oil Pty Ltd, 113 Ewing St. Welshpool, phone: 9351 1300;
 - Wren Oil, Lot 4/37 Harris Road Picton, phone: 1800 654 002 or fax: 9725 4847;
 - Total Waste Disposals Pty Ltd, 29 Kimmer Place Cannington, phone: 9356 2771.

Note: This Department does not endorse the use of specific products or services described above as meeting specific objectives. Potential users should obtain advice on their suitability for their particular needs and also seek competitive quotes from suppliers of similar products and services.