



Water quality protection note 28

September 2013

Looking after all our water needs

Mechanical servicing and workshops

Purpose

Mechanical servicing and workshop facilities perform a vital service for the community of Western Australia. The work is usually carried out in weatherproof buildings with reinforced concrete floors that allow for comparatively easy clean-up of any spilt servicing fluids. Provided that chemicals (new and waste) and process wastewater are well-managed and well-contained, these facilities are unlikely to pose a significant threat to water resources. On occasion, field servicing and repairs may need to be carried out where a mechanical breakdown has occurred. Care is needed to prevent fuel and chemicals from escaping into the soil and drains where they may seep into water resources causing harm to plants, animals or people.

Best environmental management practices are needed wherever escape of industrial fluids could affect water resources. Implementing these practices should result in reduced production costs through more efficient use of chemicals, an improved image with customers and benefits to the local environment. Areas where good environmental management practice can make a difference include:

- containment and appropriate disposal of all fluid wastes and discarded parts
- spill control for floor areas
- stormwater management
- wastewater from wash down of vehicles, parts and floors is captured and correctly managed.

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

- our views on facilities used for repair and servicing of vehicles and mechanical equipment
- guidance on acceptable practices used to protect the quality of water resources
- 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.

Appendices provide additional advice relevant to this note, including:

- A. Information on sensitive water resources, note limitations and updates
- B. Relevant statutes and administering agencies
- C. Data needed to support project assessments, followed by references, note disclaimer and how to provide feedback.

Scope

This note applies to the design, installation and operation of mechanical servicing and workshop facilities for:

- motor vehicles
- agricultural and earthmoving machinery
- industrial plant (such as pumps and generators)
- any similar equipment where harmful fluids could escape into the environment and potentially contaminate water resources.

The note is not intended to cover home workshops or small non-commercial activities, but may offer a useful guide on environmental risks and good practice.

Advice and recommendations

Location

- 1 Workshop facilities should be located on land meeting the following criteria:
 - a site is zoned for commercial or light industrial activities in the local government planning scheme
 - b access is available to key support services including waste treatment, materials recycling and disposal facilities
 - c sufficient on-site area provided for safe chemical storage and effective management of waste products
 - d adequate area provided for future expansion
 - e having adequate setbacks from sensitive environments such as residential areas and water resources (where practical)
 - f the groundwater table (at the end of the wet season) is located at least 2 m below the final land surface
 - g not prone to flooding or waterlogging.

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 Appendices A and B.

Within PDWSA, three priority areas - priority 1 (P1), priority 2 (P2) and priority 3 (P3) - are assigned based on the land use, zoning, tenure and strategic importance of the water source and its surrounding catchment. These areas are each managed in a different way to protect water quality. Priority areas are assigned in site-specific drinking water source protection reports. These documents are normally prepared by this department in consultation with state government agencies, landowners, local governments, industry and community stakeholders.

Additional constraints may apply in zones closest to the point where drinking water is abstracted or stored. These are described as wellhead protection zones (WHPZs) and reservoir protection zones (RPZs).

For more information on PDWSAs, see our Water quality protection note (WQPN) 25 *Land use compatibility in public drinking water source areas* (reference 4b).

- 2 Mechanical servicing and workshop facilities are incompatible within P1 and P2 areas, WHPZs and RPZs. This department will oppose development or expansion of these facilities within these areas and zones.
- 3 Within P3 areas, these facilities are considered 'compatible with conditions' and require best environmental management practice to be used. Guidance on current best environmental management practice is given in this note, or in project-specific conditions set by regulatory agencies.
- 4 A vegetated separation distance should be maintained between operational areas and the full supply level of reservoirs, their primary feeder streams and production bores or wells that supply drinking water. Guidance is provided in our WQPN 6 *Vegetated buffers to sensitive water resources* (reference 4b).

Legally established workshop facilities located in incompatible areas may continue to operate. These facilities should install and use best environmental measures to minimise the risk of water resource contamination.

Within a proclaimed waterway management area or near natural waterways

Five waterway management areas have been declared to provide special protection to estuaries and their associated waterways that are considered especially vulnerable to environmental degradation. These areas are the Albany Waterways, Avon River, Leschenault Inlet, Peel-Harvey Estuary and Wilson Inlet.

- 5 Adequate separation distances should be maintained between operational areas 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 (reference 3a).
- 6 If a development is located within a waterways management area, the *Waterways Conservation Act 1976* requires prior written approval from the Department of Water (Appendix B). Information on waterway values and the location of these management areas can be obtained by contacting this department's regional offices.

With the Swan-Canning Estuary catchment

- 7 The Swan River Trust is responsible for the protection and management of the Swan-Canning River system to safeguard its ecological and social values under the *Swan and Canning Rivers Management Act 2006*. Approval from the trust is needed for any land- or water-based development within the Swan, Canning, Helena or Southern rivers and their associated foreshore areas—the *Swan River Trust development control area* (DCA). Activities and development close to these areas are likely to have an effect on the waters of the river system. Development proposals within or abutting the DCA should be referred to the trust for comment.

Developments distant from the DCA, but near river tributaries or drainage systems, that could affect waters within the area (e.g. by leachate in groundwater flow) should also be referred to the trust for assessment and advice. For detailed information, see online advice at <www.swanrivertrust.wa.gov.au>, phone +61(8) 9278 0900 or email: planning@swanrivertrust.wa.gov.au.

Near conservation-valued wetlands

- 8 Operational areas proposed within 500 m of the edge of any wetland (such as lakes, sump lands, damp lands and palusplain wetlands) should be referred to the Department of Parks and Wildlife for assessment and advice. For information on the protection of wetlands and their fringing vegetation see references 3, 4b and 5.

Near private water supply sources

- 9 Private surface water bodies or groundwater wells need protection from physical, chemical and microbial contaminants. This protection is provided by preventing discharge of contaminating material to soils and waterways and providing adequate buffers. The buffer from operational areas to the margins of surface water supply reservoirs and their primary feeder streams, to water supply bores or wells and to aquaculture ponds (excluding above-ground tanks) should be determined using guidance in our WQPN 6 *Vegetated buffers to sensitive water resources* (reference 3b).

Construction

- 10 Mechanical servicing should be carried out on a durable, low-permeability floor or pad (such as reinforced concrete) finished and graded to contain any spilt material or wash-down water. The floor should be chemically sealed to minimise seepage below the surface and aid clean-up of spilt fluids. The workshop area should be surrounded with an impervious spill containment bund or have the floor graded to internal collection sumps. Ramps or 'speed humps' should be installed to allow traffic to cross bund walls.
- 11 Workshop areas should be undercover and adequately weatherproofed to prevent intrusion of stormwater. Wash bays connected to sewer with a footprint of greater than 20 m² must be covered. Any stormwater should be diverted away from the workshop floor and any chemical or parts storage areas.

Operation and management

- 12 All servicing and parts-cleaning operations should occur within the workshop. Where this is impractical, these operations should occur within a roofed, paved area which prevents stormwater mixing with wastewater and process fluids and prevents their escape to the environment. Cleaning of parts over stormwater gullies is unacceptable, as harmful residues will escape via drains or may leach into groundwater, wetlands or waterways.
- 13 Stormwater drains and inlets should be labelled to deter people from using them to dispose of waste. Discharge of waste to the environment that may cause pollution is an offence under section 50 of the *Environmental Protection Act 1986* and the Environmental Protection (Unauthorised Discharges) Regulations 2004.
- 14 Used fluids such as lubricating or hydraulic oils, brake fluid and coolants should be drained into product-specific, secure containers for recycling or disposal at an approved local government facility.

- 15 An industrial waste permit is required to connect and discharge wastewater to sewer. Further information is available online at <www.watercorporation.com.au> or by phoning the Water Corporation's customer service centre on 13 13 95 (Appendix B).
- 16 Steam or quick-break detergents should be used for cleaning oily mechanical equipment where treated waters containing residues may ultimately discharge to the environment. Organic solvents that create stable emulsions should not be used for degreasing, unless an effective means is employed to break emulsions, then treat the contaminated residue.
- 17 Clean wastewater may only be released to drains after it has been effectively treated (such as oil separation, chemical coagulation or dissolved air flotation with sludge and floating scum capture) and conforms to the water quality management objectives of the catchment. The treatment train should include structural and non-structural controls (see references 3d and 9).
- 18 Separated scum and settled solids should be either recycled or collected for disposal at an approved location.

Waste-water treatment

- 19 Any equipment cleaning system used prior to on-site wastewater disposal should remove heavy soil particles such as grit (e.g. using a lined settling basin). The settling capacity should provide an effective holding time of at least one hour (at peak) through-flow for effective removal of coarse solids.
- 20 Settled effluent containing any oils or grease emulsions should pass into a physical separator (e.g. corrugated plate interceptor) or chemical separator (e.g. chemical coagulation tank, followed by water–oil separation) allowing sufficient time to break emulsions and permit effective removal of any floating oil by skimming.
- 21 Treatment systems should be designed to avoid accidental discharge to the ground or off-site stormwater drainage systems. Adequately sized (with freeboard) low-permeability basins (seepage controlled to less than 3 cm per year) should be used to prevent the escape of fluids during treatment. Detailed information is provided in our WQPN 27 *Liners for containing pollutants, using engineered soils* and WQPN 26 *Liners for containing pollutants, using synthetic membranes* (reference 3b).
- 22 Any oil separated from the wastewater system should be collected in secure containers, then be recycled or disposed of in an approved manner (reference 3d).
- 23 Small quantities (up to 250 L) of each liquid waste may be stored in drums within the workshop area. Larger quantities of liquid waste should be stored within secure tanks within a secondary containment compound. The compound should comply with the recommendations in our WQPN 56 *Tanks for above ground chemical storage* (reference 3b).
- 24 Effluent from equipment wash-down areas should be managed as described in our WQPN 68 *Wash-down of mechanical equipment* (reference 3b).
- 25 Regular inspection and maintenance of water treatment equipment should be carried out to ensure it is working effectively.

Treated wastewater disposal

- 26 Waste oils, grease, solvents, lubricants, acids, brake fluid, radiator coolant or detergents should not be discharged to any soak well, stormwater drain, land surface or water body. These liquid wastes are unsuitable for discharge on-site and should be held in secure containers pending removal off-site. They should then be recycled, or disposed of at an approved facility (reference 3d).
- 27 Wastewater (treated or otherwise) should not be discharged to the environment unless it meets the quality criteria to maintain the values of local water resources. Local water resource values may include:
- protection of aquatic ecosystems (such as fish, birds, frogs, molluscs and their food sources)
 - water for drinking supplies
 - industrial and agricultural water supplies
 - private water supply sources, including municipal and garden bores
 - aesthetic, cultural or recreational needs.

This department uses the water quality criteria to protect various water values provided in the *National water quality management strategy* papers 4 and 6 (reference 1).

- 28 Treated wastewater – with contaminant levels suited to the chosen receiving environment – may be discharged:
- to sewer, where available and approved by the service provider (such as the Water Corporation, see recommendation 14)
 - on-site into a soakage or evaporation basin provided it is routinely tested and consistently free of contaminant concentrations likely to harm the local environment, and has the written approval of relevant regulatory agencies.
- 28 Analytical results describing the quality of any effluent discharged to the environment should be retained on-site for at least two years to allow for audits by environmental regulators.

Wastewater disposal provisions within PDWSAs

- 29 Process liquid discharge is considered 'incompatible' within P1 and P2 areas, WHPZs and RPZs, and will be opposed by this department. Any liquids discharged to soakage in P3 areas should conform to the water quality criteria given in the *Australian Drinking Water Guidelines* (reference 1).
- 30 Employees should be effectively trained and reminded via signs or symbols of the risks to drinking water sources posed by chemicals accidentally or deliberately released to the local environment (including stormwater systems). Once in the environment, many of these chemicals are not able to be effectively removed by normal water treatment processes.

Parts, chemical residues and solid waste storage and disposal

- 31 Used batteries, chemical containers, machinery parts, tyres and contaminated waste products should be stored inside the workshop or in a contained, weatherproof area (e.g. a lockable skip or sea container), until they can be moved off-site for recycling or

to an approved disposal facility. For information on cleaner production, see Curtin University's website <<http://cleanerproduction.curtin.edu.au>>.

- 32 Batteries, used solvent containers, water treatment process sludge, lubricants and other chemicals should be recycled or removed to an approved facility (reference 2b).

Spill containment

- 33 Any spilt fluids should drain to sealed collection sumps. These wastes should then be transferred to a sullage tank, pending either export off-site or treatment prior to disposal.
- 34 A contingency plan should be available on-site to address emergency situations, (such as accidents, fires, chemical spills and any vandalism) that could put local water resources at risk of contamination. For further information on chemical spills refer to the Motor Trade Association WA's guideline *Cleaning up spills* (reference 5).
- 35 Staff should be trained and assigned roles in emergency response procedures for the site. Absorbent materials such as sawdust or inert absorbent litter should be kept on-site to soak up any fluids spilt on the floor. Spills should initially be cleaned up using absorbent materials, prior to any wash down. Contaminated litter should be placed in a skip for off-site disposal as previously described.

Environmental monitoring and reporting

- 36 Any significant chemical spill (exceeding 100 L) that escapes to the environment should immediately be reported to the Department of Environment Regulation's pollution watch hotline on 1300 784 782 (24 hours). If the spill occurs within a PDWSA, notify the Water Corporation (phone 1800 652 897) immediately.

Site closure

- 37 In the event of permanent closure of the workshop, the site should undergo an environmental audit and, if necessary, remedial actions should be taken to ensure soil conditions suit the needs of the follow-on land use. For information on contaminated sites, see reference 2.

Appendix A: Information on sensitive water resources, note limitations and updates

Sensitive water resources

Our water resources sustain ecosystems, aquatic recreation and aesthetic values as well as providing drinking, industry and irrigation supplies. Along with breathable air, uncontaminated water is essential for viable communities. Natural water resources should remain within defined quality limits to retain their ecological, social and economic values. Hence they require appropriate protection measures to minimise contamination risks.

Information on water quality parameters and processes to maintain water values are published in the Australian Government's national water quality management strategy papers. These papers are available online at <www.environment.gov.au> select *water* > *water policy and programs* > *water quality*.

The Department of Water strives to improve community awareness of catchment protection measures (for both surface water and groundwater) as part of a multi-barrier

protection approach to sustain acceptable water resource quality. Human activity and many land uses pose a risk to water quality if contaminants in significant quantities are washed or leached into water resources.

Sensitive waters include estuaries, natural waterways, wetlands and groundwater. These waters support one or more of the environmental values described below.

Public drinking water sources

Overview

Public drinking water source area (PDWSA) is the collective name given to any area proclaimed to manage and protect a community drinking water source. PDWSA include underground water pollution control areas, water reserves and catchment areas administered by the Department of Water under the provisions of the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* or the *Country Areas Water Supply Act 1947*.

For online information on the location of PDWSAs, see <www.water.wa.gov.au> select *tools and data > maps and atlases > geographic data atlas*, then open *environment > public drinking water source areas*.

Within PDWSAs, priority areas are defined (P1, P2 or P3) via publicly consulted drinking water source protection reports or land use and water management strategies. Priority areas are used to guide land planning, rezoning and development approval processes. Priority areas are assigned considering the current local planning scheme zoning, land tenure, the water source's strategic value and its vulnerability to harm. Each priority area is managed using a specific risk-based strategy to provide for effective water resource protection. The Department of Water develops these documents in consultation with other government agencies, landowners, industry and the community.

P1 areas are defined to ensure human activity does not degrade a water source. These areas are declared over land where the provision of high-quality drinking water for public use is the primary beneficial land value. P1 areas typically cover land controlled by the state government or one of its agencies. These areas are managed under the principle of *risk avoidance*, so most land development and human activity is normally opposed.

P2 areas are defined to ensure there is *no increased risk of pollution* to the water source once a source protection plan has been published. These areas are declared over land where low-intensity development exists (involving rural usage such as dry land grazing or cropping). Protection of public water supply sources is a high priority in P2 areas. These areas are managed in accordance with the principle of *risk minimisation*, and so the intensity of development should be restricted (via management conditions) and activities with a low water contamination risk are normally considered acceptable.

P3 areas are defined to *manage the risk of pollution* to the water source. These areas are declared over land where public water supply sources must co-exist with other land uses such as residential, commercial and/or light industrial development. Protection of P3 areas is mainly achieved through land use management measures e.g. contamination barriers. Environmental guidance (such as these notes) or site-specific development approval conditions are used to limit the water resources contamination risk from the land use or activity. If, however, the water source becomes contaminated, then water supplied from P3 sources may need to be more intensively treated or an alternative water supply source commissioned.

Additional protection zones are defined close to the point where drinking water is extracted or stored. These zones are called *wellhead protection zones (WHPZs)* and *reservoir protection zones (RPZs)*. Statutory land use constraints apply to activities within these zones surrounding sources to safeguard these waters most vulnerable to contamination.

WHPZs are assigned around water production wells based on hydrological factors. Statutory land use restrictions apply within these zones as groundwater moves rapidly towards wells due to aquifer depressurisation by pumping. Any contaminants leaching from the ground surface in a WHPZ could rapidly migrate into scheme water supplies (before effective remedial action can occur). In sedimentary basins, WHPZs are usually circular, with a radius of 500 m in P1 areas and 300 m in P2 and P3 areas. These zones do not extend outside PDWSA boundaries.

RPZs are defined over and around public water supply storage or pipe-head reservoirs. Statutory access and land use restrictions apply in RPZs. The aim is to restrict the likelihood of contaminants being deposited or washing into water sources in any runoff. RPZs are normally within state-controlled areas encompassing land up to 2 km measured outward from the reservoir top water-level and include the inundated area when the reservoir is full.

For additional explanatory information on PDWSAs, see our Water quality protection note (WQPN) 25 *Land use compatibility in public drinking water source areas*, WQPN 36 *Protecting public drinking water source areas*, WQPN 75 *Proclaimed public drinking water source areas*, note 76 *Land use planning in PDWSAs* and WQPN 77 *Risk assessment in PDWSAs*. These notes are available online at <www.water.wa.gov.au> select *publications* > *find a publication* > *series browse*.

Established activities within PDWSAs

Many land use activities were approved and established before publication of a drinking water source protection report or land use and water management strategy.

Activity operators should ensure that modern environmental facilities and practices are progressively implemented and maintained so that the water resource contamination risk is minimised (within practicable and economic constraints).

New or expanded activities in PDWSAs

Any development proposals that could affect a drinking water source should be referred to this department's local regional office with detailed supporting information for an assessment and written response.

The development proposal may be:

- approved (with or without conditions)
- delayed pending receipt of additional information before a decision is made; or
- opposed due to a statutory or policy conflict or inadequate protective measures provided to safeguard the water source.

To assist the assessment, operators should demonstrate that under all operating conditions the facilities and processes used on-site do not pose a significant water contamination risk.

Buffers to water supply sources

Native vegetation buffers should be used to separate compatible land use areas from the sources of drinking water including the full supply margins of reservoirs, their primary feeder streams and/or production bores. Advice on suitable buffer forms and dimensions is provided in our WQPN 6 *Vegetated buffers to sensitive water resources*.

Within clearing control catchments

Controls on vegetation clearing for salinity management in country areas are provided under part IIA of the *Country Areas Water Supply Act 1947*.

These controls apply in the Wellington Dam, Harris River Dam, Mundaring Weir and Denmark River catchment areas and the Kent River and Warren River water reserves.

Details of clearing controls may be obtained from our regional offices, see online information at <www.water.wa.gov.au> select *Contact us*.

Private water supply sources

Private water sources vulnerable to contamination include:

- drinking water sources for people or domesticated animals
- commercial or industrial water supply sources (requiring specific qualities that support activities such as aquaculture, cooling, food and mineral processing or crop irrigation)
- urban or municipal irrigation sources (where water quality may affect vegetation performance or people's health and wellbeing).

Underground ecosystems

Important underground ecological functions that may be at risk of contamination include groundwater- and cave-dwelling animals and microorganisms (generally located within soils that have open pore spaces such as sand, gravel and limestone).

Waterway ecological and social values

Waterways that have high social and conservation significance are described in the Western Australian Environmental Protection Authority (EPA) Guidance statement 33 *Environmental guidance for planning and development*, section B5.2.2. This statement is available online at <www.epa.wa.gov.au> select *policies and guidelines > environmental assessment guidelines > guidance statements*.

The Department of Water manages natural waterways under Section 9 of the *Water Agencies (Powers) Act 1984* and the *Rights in Water and Irrigation Act 1914*. For online information, see <www.water.wa.gov.au> and select *managing water*.

Apart from aquatic ecosystems and water sources, waterways provide social values including aesthetic appeal, drainage pathways and recreational opportunities for watercraft use, fishing, tourism, swimming and related aquatic activities. Engineered drains and constructed water features are normally not assigned ecological values because their primary function and operational factors outweigh their ecological value.

This department also administers the *Waterways Conservation Act 1976* which defines Western Australian waterways subject to specific regulatory controls. Currently proclaimed

waterways include the Avon River, Peel-Harvey Inlet, Leschenault Inlet, Wilson Inlet and Albany waterways management areas.

Within the Swan-Canning Estuary catchment

The Swan River Trust is responsible for the protection and management of the Swan-Canning River system. The trust safeguards ecological and social values under the *Swan and Canning Rivers Management Act 2006*. Written approval is needed for any land- or water-based development within the Swan, Canning, Helena or Southern rivers and their associated foreshore areas within the *Swan River Trust development control area (DCA)*. Human activity and development close to these areas are likely to have an effect on the waters of the river system. Development proposals within or abutting the DCA should be referred to the trust for assessment.

Developments outside the DCA, but near river tributaries or drainage systems should also be referred to the trust for assessment and advice. This is because water quality within the area may be affected by chemicals leached into groundwater flow. For detailed information, see online advice at <www.swanrivertrust.wa.gov.au>, phone 9278 0900 or email: planning@swanrivertrust.wa.gov.au .

Wetland ecology

Many important wetlands have been given conservation status under the Ramsar convention (described online at <www.ramsar.org>), Japan and Australia migratory bird agreement (JAMBA), China and Australia migratory bird agreement (CAMBA), and Republic of Korea and Australia migratory bird agreement (ROKAMBA).

Wetlands are also protected under various national and Western Australian government policies. Conservation wetland data to guide land planning and development activities is provided via the following publications:

- *Directory of important wetlands in Australia* defines wetlands scheduled by the Australian Government. It is available online at <www.environment.gov.au> select *water* > *water topics* > *wetlands*.
- Wetlands with defined high conservation significance are described in the EPA (WA) guidance statement 33 *Environmental guidance for planning and development* (section B4.2.2). This statement is available online at <www.epa.wa.gov.au> select *policies and guidelines* > *environmental assessment guidelines* > *guidance statements*.

The Department of Parks and Wildlife is the custodian of the state wetland datasets, and is responsible for maintaining and updating relevant information. These datasets are available online at <www.dpaw.wa.gov.au>.

Wetlands datasets identified for conservation value or for resource enhancement include:

- *Geomorphic wetlands of the Swan Coastal Plain*
- *South coast significant wetlands*
- *Geomorphic wetlands Augusta to Walpole* (this dataset awaits detailed evaluation).

Wetlands that are highly disturbed by land use, or have been landscaped to provide a social amenity or drainage control function in urban settings, may not be assigned conservation values unless they are actively managed to maintain these values.

Note limitations

Many Western Australian aquifers, waterways and wetlands await detailed scientific evaluation, present data on their quality is sparse and their values remain unclassified. Unless demonstrated otherwise, any natural waters that are slightly disturbed by human activity are considered to have sensitive environmental values. Community support for these water values, the setting of practical management objectives, provision of sustainable protection services and effective implementation are vital to protecting or restoring water resources for both current needs and those of future generations.

This note provides a general guide on environmental issues, and offers solutions based on data searches, professional judgement and precedents. Recommendations made in this note do not override any statutory obligation or government policy statement. Alternative practical environmental solutions suited to local conditions may be considered. This note's recommendations shall not be used as this department's policy position on a specific matter, unless confirmed in writing. In addition, regulatory agencies should not use this note's recommendations in place of site-specific development conditions based on a project's assessed environmental risks. Any regulatory conditions should consider local environmental values, the safeguards in place and take a precautionary approach.

Where a conflict arises between this note's recommendations and any activity that may affect a sensitive water resource, this note may be used to assist stakeholder negotiations. The negotiated outcome should not result in a greater water quality contamination risk than would apply if the recommended protection measures were used.

Water quality protection note updates

This note will be updated as new information is received, industry/activity standards change and resources permit. The currently approved version is available online at <www.water.wa.gov.au> select *publications* > *find a publication* > *series browse* > *water quality protection notes*.

Appendix B: Statutory approvals relevant to this note include-

What's regulated?	Western Australian statutes	Regulatory body/ agency
Licensing of prescribed premises that pollute; Licensed transport and disposal of scheduled harmful substances.	<i>Environmental Protection Act 1986, Part V Environmental Regulation</i> Environmental Protection (Controlled Waste) Regulations 2004; Environmental Protection (Unauthorised Discharge) Regulations 2004	Department of Environment Regulation www.der.wa.gov.au
Transport, storage and handling of fuels, solvents, explosive and other dangerous goods	<i>Dangerous Goods Safety Act 2004</i> Dangerous goods safety regulations 2007	Department of Mines and Petroleum – Resources Safety Division www.dmp.wa.gov.au
Licence to take surface water and groundwater	<i>Rights in Water and Irrigation Act 1914</i>	Department of Water – regional office www.water.wa.gov.au
Industrial sites in existing public drinking water source areas	<i>Metropolitan Water Supply, Sewerage and Drainage Act 1909; Country Areas Water Supply Act 1947</i>	
Licence to discharge waters into managed waterways.	<i>Waterways Conservation Act 1976</i>	
Emergency response planning	<i>Fire and Emergency Services Authority of WA Act 1998</i>	Fire and Emergency Services Authority www.fesa.wa.gov.au
Management of human wastes, Community health issues	<i>Health Act 1911</i>	Local Government; Department of Health www.health.wa.gov.au
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 Environmental Protection Authority www.epa.wa.gov.au
Discharges into the Swan-Canning Estuary	<i>Swan and Canning Rivers Management Act 2006</i>	Swan River Trust www.swanrivertrust.wa.gov.au
Discharge to sewer (industrial waste permit) or to main drain	<i>Metropolitan Water Supply Sewerage and Drainage Act 1909; Country Towns Sewerage Act 1948</i>	Water Corporation; www.watercorporation.com.au Designated water service providers
Land zoning and development approval	<i>Planning and Development Act 2005</i>	Western Australian Planning Commission, Department of Planning www.planning.wa.gov.au Local Government (Council)

Relevant statutes are available from the *State Law Publisher* at <www.slp.wa.gov.au>.

Appendix C: Data needed for development assessments

Where facilities near sensitive waters are to be constructed or upgraded, the following data should be supplied with the development proposal:

- 1 Site owner/operating tenant's name and contact details.
- 2 A site plan showing the location of the project facilities relative to tenements, leases, lots and roads. The plan should show the topography, any remnant vegetation cover, existing and proposed development areas and on-site water features and sources.
- 3 Details of site investigation of soil strata, depth to water table (if applicable) and data on the location, extent, hydrology, quality and dependencies on local water resources (including any seasonal variations) that could be affected by site facilities or operations.
- 4 The present local government planning scheme land use zoning (where applicable). Current land use description, any site contamination history and its remediation.
- 5 Full description and scale of the activities planned for the project site, (including any site amenities, infrastructure, crops, animals, earthworks and chemical applications), construction and operating workforce and planned project operational life.
- 6 Describe the expected commissioning date, operating hours and expansion options.
- 7 Details of any proposed vegetation clearing, environmental buffers, site earthworks and services, including water supply, sewerage and drainage provisions.
- 8 Description of all materials/chemicals to be stored or handled on-site in commercial quantities, including a water use budget.
- 9 Description of the types, quantities and quality of solid and liquid waste (if applicable) that will be generated at or disposed from the facility.
- 10 Description of planned material containment, waste management (treatment and disposal) and water recycling; with an environmental management plan and nutrient and irrigation management plan (where applicable).
- 11 Details of any environmental modelling conducted or planned monitoring system to demonstrate the effects of the project on local water resources.
- 12 Planned operational and equipment maintenance procedures.
- 13 Details of any contingency measures proposed to minimise the impacts of chemical spills and safely dispose of contaminated waters that may result from storms, fire, flood, equipment malfunction or vandalism. Information should include workforce training, site monitoring and emergency response facilities.
- 14 Any project contractual agreements or regulatory approvals received.

For significant projects, development proponents should engage the services of a qualified and experienced consultant to professionally prepare their development proposal. This should ensure that government agencies can efficiently assess and respond to the proposal without delays caused by inadequate or poorly defined information.

References and further reading

- 1 Australian Government - National water quality management strategy papers, available online at <www.environment.gov.au> select *water*> *water policy and programs*> *water quality* > *national water quality management strategy*
 - a *Paper 2 - Policies and principles*, 1994
 - b *Paper 3 - Implementation guidelines*, 1998
 - c *Paper 4 - Australian and New Zealand guidelines for fresh and marine water quality*, 2000
 - d *Paper 6 - Australian drinking water guidelines*, 2011
 - e *Paper 7 - Australian guidelines for water quality monitoring and reporting*, 2000
 - f *Paper 9 - Rural land uses and water quality - a community resource*, 2000
For paper 9, see <www.awa.asn.au>, request by a copy via email at <bookshop@awa.asn.au> or obtain the paper from a library service.
- 2 The previous Department of Environment and Conservation publications:
 - a Department of Environment Regulation, Contaminated sites, available <www.der.wa.gov.au>
Contaminated sites management series
 - b Department of Environment Regulation, Waste management, available <www.der.wa.gov.au>
 - *Guidelines for acceptance of solid waste to landfill*, January 2001
 - *Landfill waste classification and waste definitions*, 2001
 - *Waste 2020, towards zero waste*, 2001
 - *Western Australian waste reduction and recycling policy*, 1997.
 - c Department of Parks and Wildlife, Wetlands policy and guidelines, available <www.dpaw.wa.gov.au>
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- 3 Department of Water publications available online at <www.water.wa.gov.au>
 - a Drinking water source policy, select *publications*> *find a publication*> *series browse* > *state-wide policy*
Pesticide use in public drinking water source areas, 2000.
 - b Water quality protection notes (WQPN), select *publications*> *find a publication*> *series browse*> *water quality protection notes*
 - *WQPN 6 Vegetated buffers to sensitive water resources*
 - *WQPN 25 Land use compatibility in public drinking water source areas*
 - *WQPN 27 Liners for containing pollutants, using engineered soils*
 - *WQPN 26 Liners for containing pollutants, using synthetic membranes*
 - *WQPN 29 Mobile mechanical servicing and cleaning*
 - *WQPN 33 Nutrient and irrigation management plans*
 - *WQPN 42 Radiator repair and reconditioning*

- *WQPN 56 Tanks for above ground chemical storage*
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 - *WQPN 65 Toxic and hazardous substances - storage and use*
 - *WQPN 68 Wash-down of mechanical equipment*
 - *WQPN 93 Light Industry – establishment and management.*
- c Waterways policy and guidelines, select *publications*> *find a publication*> *series browse*
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Feedback

We welcome your thoughts on this note. Feedback will help us prepare future versions.

To comment on this note or seek any clarification, please contact our water source protection planning branch (details below), citing the note topic and version.

Manager, Water Source Protection Planning

Department of Water

168 St Georges Terrace

Perth Western Australia 6000

Telephone +61 8 6364 7600

Email waterquality@water.wa.gov.au

PO Box K822

Perth Western Australia 6842

Facsimile +61 8 6364 7601

National relay service 133 677

To locate our regional offices online, see www.water.wa.gov.au, then select *Contact us*.

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