



**TWEED**  
SHIRE COUNCIL

## Policy

# Contaminated Land

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# Contaminated Land

## Policy Objective

The objectives of this Policy are:

- To establish an administrative and management regime to enable the effective on-going identification and recording of contaminated land issues;
- To establish a Data Base of contaminated or potentially contaminated land to assist Council in the discharge of its statutory obligations under the EP&A Act 1979 and Local Government Act 1993;
- To ensure Council fulfils its statutory obligations in respect to Part 7A of the EP&A Act 1979 and in particular to comply with the “Contaminated Land - planning guidelines for Contaminated Land” issued by the DUAP from time to time pursuant to S145C of the EP&A Act;
- To ensure that Council attracts the full statutory indemnity from liability contained in S145B of the EP&A Act 1979;
- To establish protocols for public access to information held by Council in respect to contaminated land; and
- To minimise potential for adverse social (including environmental and public health issues) and economic impacts as a result of contaminated land issues.

## Definitions

**Accredited site auditor** - a person accredited by the NSW EPA under the Contamination Land Management Act to conduct site audits

**ANZECC** - The Australian and New Zealand Conservation Council

**Contaminated Land** - land in, or under which any substance is present at a concentration above that naturally present, on or under the land and that poses, or is likely to pose, an immediate or long-term risk to human health or the environment

**Contaminated Land Guidelines** - the ‘Managing Land Contamination - Planning Guidelines’ (1998) or subsequent guidelines issued from time to time under S145B of the Environmental Planning and Assessment Act, 1979

**Contamination** - concentration of substances above that naturally present that poses, or is likely to pose, an immediate long-term risk to human health or the environment

**Detailed site investigation** - an investigation to define the extent and degree of contamination, to assess potential risk posed by contaminants to health and the environment, and to obtain sufficient information for the development of a remedial action plan if required (see section 3.4.2)

**DUAP** - The NSW Department of Urban Affairs and Planning

**EP&A Act** - The Environmental Planning and Assessment Act, 1979

**EPA** - The NSW Environment Protection Authority

**Independent review** - an evaluation by an independent expert required by a planning authority of any information submitted by a proponent, conducted at the proponent's expense

**LG Act** - The Local Government Act, 1993

**NH & MRC** - The National Health and Medical Research Council

**Potentially Contaminated Land** - Any land which by reason of its location adjoining, adjacent or near land which is known to be contaminated or that was used for a purpose identified in Schedule 1, or any land which was used for a purpose listed in Schedule 1 or any other use which had the potential to result in contamination of the land

**Preliminary site investigation** - an investigation to identify any past or present potentially contaminating activities and to provide a preliminary assessment of any site contamination (see section 3.4.2)

**Principal Policy** - The Contaminated Land Guidelines

**Remediation work** means a work or works in, on or under contaminated land, being a work or works that:

- (a) removes the cause of the contamination of the land, or
- (b) disperses, destroys, reduces, mitigates or contains the contamination of the land, or
- (c) eliminates or reduces any hazard arising from the contamination of the land (including by prevent the entry of persons or animals on that land) (3)

**Site audit** an independent review of any or all stages of the site investigation process conducted in accordance with the Contaminated Land Management Act (2) (see section 4.1.3)

**Site remedial action plan** a plan which sets remediation goals and documents the process to remediate a site (see section 3.4.2)

**Validation** the process of determining whether the objectives for remediation and any conditions of development consent have been achieved

## Policy Background

In 1994, the Federal Court made a landmark ruling in Alex Finlayson Pty Ltd v Armidale City Council and Anor 1994 (123 ALR 155), (The Finlayson Case) which has caused considerable review of the liability and responsibility of Local Government in the discharge of its land use and regulatory powers and the advice it provides by way of

certificates issued under Section 149 of the Environmental Planning and Assessment Act, 1979 (EP&A Act) 1979.

This case related to the issue of contaminated land and the Councils failure to adequately consider contamination issues during the planning process.

As a direct response to the Federal Courts' decision in the Finlayson Case, the NSW Government brought about amendments to the EP&A 1979 to specifically clarify the responsibilities of Local Council's in the identification and consideration of contaminated land issues and the provision of appropriate advice in Section 149 Certificates.

Consequently, Section 149 of the Act was amended and Part 7A of the EP&A 1979 was introduced to clarify Local Government's responsibilities.

Sections 145B and 145C of the Act provide as follows:-

*"Exemption from liability - contaminated land*

*145B(1) A planning authority does not incur any liability in respect of anything done or omitted to be done in good faith by the authority in duly exercising any planning function of the authority to which this section applies in so far as it relates to contaminated land (including the likelihood of land being contaminated land) or to the nature or extent of contamination of land.*

*(2) This section applies to the following planning functions:*

- (a) the preparation or making of an environmental planning instrument,*
- (b) the preparation or making of a development control plan,*
- (c) the processing and determination of a development application,*
- (d) the modification of a development consent,*
- (e) the furnishing of advice in a certificate under section 149,*
- (f) anything incidental or ancillary to the carrying out of any function listed in paragraphs (a)-(e).*

*(3) Without limiting any other circumstance in which a planning authority may have acted in good faith, a planning authority is (unless the contrary is proved) taken to have acted in good faith if the thing was done or omitted to be done substantially in accordance with the contaminated land planning guidelines in force at the time the thing was done or omitted to be done.*

*(4) This section applies to and in respect of:*

- (a) a councillor, and*
- (b) an employee of a planning authority, and*
- (c) a public servant, and*
- (e) a person acting under the direction of a planning authority, in the same way as it applies to a planning authority.*

*Contaminated land planning guidelines*

*145C(1) For the purposes of section 145B, the Minister may, from time to time, give notice in the Gazette of the publication of planning guidelines relating to*

*contaminated land and that a copy of the guidelines may be inspected, free of charge, at the principal office of each council during ordinary office hours.*

- (2) *However, the Minister cannot give notice under subsection (1) of the publication of contaminated land planning guidelines unless:
  - (a) those guidelines are based (either wholly or partly) on contaminated land planning guidelines that have been publicly exhibited, for a period of at least 28 days, in such a manner as may be directed by the Minister, and
  - (b) the Minister has considered any written submissions made within the specified public exhibition period in relation to those guidelines.*
- (3) *A copy of the guidelines must be made available for public inspection, free of charge, at the principal office of each council during ordinary office hours.*
- (4) *For the purposes of this Part, contaminated land planning guidelines:
  - (a) enter into force on the day on which their publication is notified in the Gazette, and
  - (b) cease to be in force on the day on which the publication of new contaminated land planning guidelines is notified in the Gazette in accordance with this section.”*

In September 1998, the Department of Urban Affairs and Planning (DUAP) issued the document titled “Managing Land Contamination - Planning Guidelines” (Contaminated Land Guidelines) in accordance with Section 145(C) of the Environmental Planning and Assessment Act, 1979.

This policy is prepared substantially in accordance with the 1998 Contaminated Land Guidelines.

### **Key Principles of Contaminated Land Guidelines**

The planning and development control process as provided for in EP&A Act plays an important role in the management of land contamination. The integration of land contamination management into the planning and development control system will:

- ensure that changes of land use will not increase the risk to health or the environment
- avoid inappropriate restrictions on land use
- provide information to support decision making and to inform the community

A key message for planning authorities is that there is a need to:

- consider the likelihood of land contamination as early as possible in the planning and development control process
- link decisions about development of land with the information available about contamination possibilities
- adopt a policy approach which provides for strategic and statutory planning options depending on the information about contamination
- exercise statutory planning functions with a reasonable standard of care.

**The general principle of the Guidelines is that Council's should adopt a precautionary approach when exercising a planning function.** The object of this approach is to enable any land contamination issues to be identified and dealt with at an early stage in the planning process in order to prevent harm and reduce delays and costs.

## **Policy**

Except as otherwise expressly stated, the 'principal policy' in relation to the identification of, assessment of and remediation of contaminated land is the "Contaminated Land Guidelines" issued by the Department of Urban Affairs and Planning from time to time pursuant to S145C of the EP&A Act 1979.

### **Restriction on Landuse Generally**

In respect to an application for:

- the rezoning of land;
- development consent (Part IV, EP&A Act 1979); or
- approval (Part V, EP&A Act 1979).

Council shall not approve the application unless it is satisfied on the basis of information available to it under this Policy that:

- contamination is unlikely; or
- contamination has been determined to be below investigation thresholds; or
- contamination has been determined not to pose an unacceptable risk for the intended use; or
- conditions can be placed in planning instruments or on development consents and approvals under Part V that will ensure any contaminated land can be remediated to a level appropriate to its intended use, prior to, or during the development stage.

## **Implementation**

### Identification of Contaminated Land

Council will identify contaminated land generally in accordance with the procedures outlined in the Contaminated Land Guidelines.

However, given the vast array of material intended to be retrieved and reviewed by Council and the considerable resources required to undertake the review, it is intended that Council will adopt a staged approach in relation to the identification of potentially contaminated or contaminated land.

The staged approach proposed is designed to enable Council to compile the greatest amount of information in the shortest possible time for the benefit of landholders, developers, prospective land purchasers and the general public alike.

This approach would also allow interested persons to identify which information has or has not yet been reviewed by Council and consequently where those persons should reasonably concentrate their additional investigations.

### Staging of Information Review

It is proposed that Council will carry out the following investigations in relation to land contamination in accordance with the staging program outlined as follows:-

#### **Stage 1: Search of the following is undertaken**

- all development and subdivision application records back to 1988.
- all building application records back to 1988.
- all property files back to 1988 (or alternatively, property files relating to development applications, subdivision applications only).
- all rezoning applications back to 1988.
- all complaint/work request forms back to commencement date of current system.
- records relating to activities in Table 1 to Schedule 1
- Requests of other authorities for information.
- Council staff survey.

#### **Stage 2: Search of the following is undertaken**

- Topographical mapping information
- Aerial photography available
- Valuation records - 1960-1965
- Strategic Plan Information - 1974
- Ecograph information - 1997

### Contaminated Land Data Base

Upon completion of the Stage 1 review process (see 3.2 above), Council will develop a Data Base of land considered to be contaminated land or potentially contaminated land, based on the information reviewed by Council at that time. The Data Base will provide relevant information in relation to land identified as contaminated or potentially contaminated including the reason for its inclusion, details of any testing carried out on the land, details of any remedial work carried out on the land and any site audits conducted.

The Data Base will then be updated progressively as information in relation to land contamination comes to hand and in particular, following the Stage 2 information review.

Prior to the completion of the Stage 2 information review users will be able to ascertain from the Data Base what stage Council has reached in its information review and therefore, what further investigations, where relevant, the user should make in addition to Council's Data Base.

The Data Base will be held and maintained by Council's Environment and Community Services Division.

## **When is land placed on the Data Base?**

Land will be placed on the Data Base when that land is Contaminated Land or Potentially Contaminated Land as defined for the purposes of this policy, notwithstanding that the land may have been remediated for a specific use.

Notification of intention to place property on the Data Base of Contaminated Land Council will notify affected landholders of its intention to list their property in the Data Base of Contaminated Land and allow 28 days for any representations to be made before the property is listed in the Data Base.

Where the landowner objects to the inclusion of the land on the Data Base, the Director of Environment and Community Services will cause a review of records held by Council in respect to contamination or potential contamination of the land to be undertaken, together with any supporting information provided by the landowner. Within 28 days of the date of the landowners submission, the Director of Environment and Community Services shall determine whether the land is contaminated or potentially contaminated within the meaning of this policy and shall cause the land to be added to the Data Base where considered appropriate.

When is land removed from the Data Base?

Land will be removed from the Data Base when the land is no longer Contaminated Land or Potentially Contaminated Land within the meaning of this Policy as may be determined by Council following consideration of any investigations and/or validation carried out in accordance with Sections 4.1.2, 4.1.3 and 4.2 of this Policy.

## **Information required to be submitted with Applications for Rezoning, Development Approval and Part V Approval (EP&A Act 1979)**

### Applications

Council's Application Forms for rezoning and development of land and approvals under Part V of the EP&A Act 1979, will require the applicant to respond to the following questions:-

1. Please specify all land uses to which the site has been put, including the current use.
2. Is the proponent aware of uses to which properties adjoining the site have been put? If so, please specify.
3. Do any of the uses correlate with the potentially contaminating activities set out in table 1 in Schedule 1 of this policy.
4. If the answer to 3 is yes - has there been any testing or assessment of the site and, if so, what were the results?
5. Is the proponent aware of any contamination on the site?

6. What remediation work, if any (carried out voluntarily or ordered by a government agency), has been taken in respect to contamination which is or may have been present on the site?

Upon receipt of an application Council will evaluate this information substantially in accordance with the procedures outlined in Chapter 3 of the Principal Policy.

#### Additional Information

Where Council has evaluated the information provided in accordance with S3.4.1 above and is uncertain about the likelihood of contamination or there are indications that contamination is or may be present, Council will require the submission of one or more of the following with the respective application:

1. Preliminary site investigation - including details of any previous remediation.
2. Detailed site investigation - including site sampling and assessment report.
3. A statement from the applicant's consultant certifying that the site is presently suitable for the intended use.
4. A statement from the applicant's consultant as to what remediation options are available to allow the intended use.
5. Site Remedial Action Plan (if necessary).
6. Site Validation and On-going Monitoring Plan.

### **Making Decisions**

#### Determination of Applications/Rezoning

Following consideration of the information provided under Clause 3.4 the council will not determine the application or rezoning proposal as the case may be, unless:

- it is satisfied that the site is suitable for the proposed use without the need for further testing or treatment; or
- it has obtained an independent review and is subsequently satisfied that the site is suitable for the proposed use without the need for further testing or treatment; or
- the applicants consultant has certified that the site is capable of remediation in accordance with the applicable EPA Guidelines and standards so as to render the site suitable for the proposed use; or
- the Council is satisfied that removal of contaminated material and subsequent placement upon another site will not result in unacceptable environmental and human health risks.

If the council is not satisfied that the subject land can be remediated, or that contaminated material can be placed on the site without unacceptable environmental or human health risks, it will refuse the relevant application or resolve not to rezone the land as the case may be.

#### Modification of an Activity/Conditions of Approval

In its determination to grant approval to an application for approval (Part V) or development consent, the Council will consider whether or not there is a need to modify the activity or development to reduce the potential environmental impact of the development. Council will also consider the need for the consent to include conditions relating to the matters identified in Appendix C to the Principal Policy and the following specific conditions:-

- in all cases:
  - The following reports being submitted for Council's consideration and approval prior to the commencement of proposed remediation works:
    - sampling procedures and testing results.
    - remediation action plan.
- where remediation will be carried out prior to other works associated with the development:
  - No works associated with the development (other than remediation works) being commenced until:
    - remediation works have been completed; and
    - a validation and monitoring report has been provided to Council; and
    - Council is satisfied with the contents of the required report.

**Note: A Subdivision Certificate will not be issued until this condition is satisfied.**

- where remediation will be carried out in conjunction with other works associated with the development:
  - Occupation of the site shall not occur until:
    - remediation works have been completed; and
    - a validation and monitoring report has been provided to the Council; and
    - the Council is satisfied with the contents of that report.

**Note: A Subdivision Certificate will not be issued until this condition is satisfied.**

- No works associated with the development (other than remediation works) being commenced until the applicant has demonstrated to the Council that:
  - remediation on that part of the site on which work is to take place has been satisfactorily carried out; and
  - segregation between remediation and non-remediated parts of the site is sufficient to prevent cross-contamination and adverse impact to site workers.
- where the nature of contamination warrants ongoing obligations after remediation (eg. long term monitoring or leachate collection):
  - The applicant entering into a positive covenant on the title of the land under section 88E of the Conveyancing Act 1919 requiring the owner to carry out (insert appropriate activity) in accordance with this consent. The covenant shall be in favour of the Council.
- where the proposal involves the transport and disposal of contaminated material:
  - The applicant shall comply with all requirements of the Environment Protection Authority, including any requirements of the Scheduled Chemical Waste Chemical Control Order 1994.

**Council will also consider the desirability of determining development applications by way of deferred commencement consent or staged consent pursuant to Ss80(3) and 80(4) of the Environmental Planning and Assessment Act, 1979 respectively.**

## **Requirements for Providing Information on Contamination**

### Who can provide information on contamination?

#### Preliminary Information

The preliminary information required in S3.4.1 may be provided by the applicant and/or owner (or their consultant or representative authorised to act on their behalf) of the land, the subject of the application.

Where the applicant or owner do not have sufficient knowledge in relation to the site history, information from previous landowners may be used where those persons make a statutory declaration.

#### Investigations

A person satisfying the requirements listed in Schedule 2 may provide the information required in Ss3.4.1 and 3.4.2 and may provide a site remedial action plan, site validation and on-going monitoring report where required by Council.

## Independent Review

Where considered necessary by Council, an independent review (or site audit) may be required in relation to any or all of the site investigation process.

An independent review or site audit can only be conducted by an Accredited Site Auditor, accredited by the DEC for this purpose.

An Independent Review or Site Audit will generally only be required where Council:-

- believes on reasonable grounds that the information provided by the applicant is incorrect or incomplete
- wishes to verify whether the information provided by the proponent has adhered to appropriate standards, procedures and guidelines
- does not have the internal resources to conduct its own technical review

Where an Independent Review or Site Audit is required, the Accredited Certifier will be appointed by Council and shall be engaged at the applicant or proponents cost.

## Guidelines and Technical Policies

Consultants or persons investigating and reporting on contaminated or potentially contaminated sites shall carry out that investigation and subsequent reporting substantially in accordance with the following documents:

1. ANZECC/NH & MRC GUIDELINES (1992)
2. DEC's "Sampling Design Guidelines for Contaminated Sites (Sept 1995).
3. DEC's "Environmental Guidelines for Consultants Reporting on Contaminated Sites" (Nov 1997).
4. DEC's "Guidelines for Assessing Banana Plantation Sites" (Oct 1997)
5. DEC's Service Station Assessment Guidelines (Dec 1994)
6. Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report
7. Guidelines for the NSW Site Auditor Scheme
8. National Environment Protection (Assessment of Site Contamination) Measure 1999

and any other DEC guideline developed from time to time relevant to contamination issues.

## **Access to Information**

Council's Policy on access to information from the Data Base on Contaminated Land is set out below. It should be noted that responses to **all** enquiries must be confirmed in writing. Verbal advice will not be provided. Council's adopted fees and charges set out the fees for the provision of general advice.

## Information available to property owners or their authorised agents

Property owners, or persons authorised by them in writing, may be provided with information from the Data Base, if any, in relation to their own property. Those persons may also be provided with access to Council's relevant property file and other relevant

records upon application under the Freedom of Information Act being made to Council's Public Officer.

#### Other inquiries

All other inquiries in relation to contaminated or potentially contaminated land should be dealt with through the property inquiry system under S149 of the EP&A Act, 1979.

#### **Information provided by way of s149 of the Environmental Planning and Assessment Act 1979**

Where Council's records are inconclusive as to whether or not the land is contaminated or potentially contaminated, a notation will be provided on a basic certificate under S149(2) in the following terms:-

*“Due to the historical nature of land uses in the Tweed Shire, there is a possibility that land previously used for such purposes as agriculture, industrial, residential, commercial or similar uses would contain contamination. Enquiries should be made at the Council for any information held in their files and enquiries should also be made with all other relevant authorities. Tweed Council has not as yet prepared any detailed information as to whether this land is contaminated land.*

*Under the Contaminated Land Management Act, 1997 the Environment Protection Authority (EPA) are required to maintain a data base of all contaminated land and enquiries should be made of that Authority”.*

Where Council's records indicate that the land the subject of an application for a certificate under S149 is contaminated or potentially contaminated, a notation will be provided on a basic certificate under S149(2) in the following terms:-

*“Council has adopted by Resolution, a policy which may restrict the development of the land. This policy is triggered when zoning, land use changes or any other development are/is proposed on lands considered to be potentially contaminated, contaminated or contaminated lands which have been remediated for a specific use. Consideration of Council's adopted policy and the application of provisions made under relevant State legislation is warranted*

*Under the Contaminated Land Management. Act 1997 the Environment Protection Authority (EPA) are required to maintain a data base of all contaminated land and enquiries should be made of that Authority”.*

Where the above notation is provided under S149(2), an advisory note will be attached to the Certificate indicating that further information is available in relation to the contamination or potential contamination of the land where an application is made for information under S149(5) of the Act.

Where an application is received for information under S149(5) of the Act, the following information may be included where available:-

1. Any site history relevant to potential contamination held in Council's records;

2. Information on the nature of the contamination;
3. Any information on investigations undertaken, testing results and remediation.

## Schedule 1

**TABLE 1: SOME POTENTIALLY CONTAMINATING ACTIVITIES AND MAIN CONTAMINANTS**

Industry	Type of Chemical	Associated Chemicals
<b>Agricultural/horticultural activities</b>		See Fertiliser, Insecticides, Fungicides and Herbicides under 'Chemicals manufacture and use'.
<b>Airports</b>	Hydrocarbons Metals	Aviation fuels Particularly aluminium, magnesium, chromium
<b>Asbestos production and disposal</b>		Asbestos
<b>Battery manufacture and recycling</b>	Metals  Acids	Lead, manganese, zinc, cadmium, nickel, cobalt, mercury, silver, antimony Sulfuric acid
<b>Breweries/distilleries</b>	Alcohol	Ethanol, methanol, esters
<b>Chemicals</b>	Acid/alkali manufacture and use	Mercury (chlor/alkali), sulfuric, hydrochloric and nitric acids, sodium and calcium hydroxides
	Adhesive/resins	Polyvinyl acetate, phenols, formaldehyde, acrylates, phthalates
	Dyes	Chromium, titanium cobalt, sulfur and nitrogen organic compounds, sulfates, solvents
	Explosives	Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulfuric acid, nitroglycerine, calcium cyanamide, lead, ethylene glycol, methanol, copper, aluminium, bis(2-ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver
	Fertiliser	Calcium phosphate, calcium sulfate, nitrates, ammonium sulfate, carbonates, potassium, copper, magnesium, molybdenum, boron, cadmium
	Flocculants	Aluminium
	Foam production	Urethane, formaldehyde, styrene
	Fungicides	Carbamates, copper sulfate, copper chloride, sulfur, chromium, zinc
	Herbicides	Ammonium thiocyanate, carbamates, organochlorines, organophosphates, arsenic, mercury, triazines
	Paints • heavy metals  • solvents	Arsenic, barium, cadmium, chromium, cobalt, lead, manganese, mercury, selenium, zinc Titanium Toluene oils either natural (eg. pine oil) or synthetic
	Pesticides • active ingredients  • solvents	Arsenic, lead, organochlorines, organophosphates, sodium, tetraborate, carbamates, sulfur, synthetic pyrethroids Xylene, kerosene, methyl isobutyl ketone, amyl acetate, chlorinated solvents

Industry	Type of Chemical	Associated Chemicals
	Pharmaceutical <ul style="list-style-type: none"> <li>solvents</li> </ul>	Acetone, cyclohexane, methylene chloride, ethyl acetate, butyl acetate, methanol, ethanol, isopropanol, butanol, pyridine methyl ethyl ketone, methyl isobutyl ketone, tetrahydrofuran
	Photography	Hydroquinone, sodium carbonate, sodium sulfite, potassium bromide, monomethyl para-aminophenol sulfate, ferricyanide, compounds, sulfur compounds, phosphate, phenylene diamine, ethyl alcohol, thiosulfates, formaldehyde
	Plastics	Sulfates, carbonates, cadmium, solvents, acrylates, phthalates, styrene
	Rubber	Carbon black
	Soap/detergent <ul style="list-style-type: none"> <li>general</li> <li>acids</li> <li>oils</li> </ul>	Potassium compounds, phosphates, ammonia, alcohols, esters, sodium hydroxide, surfactants (sodium lauryl sulfate), silicate compounds Sulfuric acid and stearic acid Palm, coconut, pine, teatree
	Solvents <ul style="list-style-type: none"> <li>general</li> <li>hydrocarbons</li> <li>chlorinated organics</li> </ul>	Ammonia eg. BTEX (benzene, toluene, ethylbenzene, xylene) eg. trichloroethane, carbon tetrachloride, methylene chloride
<b>Defence Works</b>		See Explosives under 'Chemicals manufacture and use'; also 'Foundries', 'Engine works' and 'Service stations'
<b>Drum reconditioning</b>		See 'Chemicals manufacture and use'
<b>Dry cleaning</b>		Trichlorethylene and 1,1,1 - trichloroethane Carbon tetrachloride Perchlorethylene
<b>Electrical</b>		PCBs (transformers and capacitors), solvents, tin, lead, copper, mercury
<b>Engine Works</b>	Hydrocarbons Metals Solvents Acids/Alkalis Refrigerants	Chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons
	Antifreeze	Ethylene glycol, nitrates, phosphates, silicates
<b>Foundries</b>	Metals	Particularly aluminium, manganese, iron, copper, nickel, chromium zinc, cadmium and lead and oxides, chlorides, fluorides and sulfates of these metals
	Acids	Sulfuric and phosphoric Phenolics and amines coke/graphite dust

<b>Industry</b>	<b>Type of Chemical</b>	<b>Associated Chemicals</b>
<b>Gas works</b>	Inorganics	Ammonia, cyanide, nitrate, sulfide, thiocyanate Aluminium, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, zinc
	Organics	BTEX, phenolics, PAHs and coke
<b>Iron and steel works</b>		BTEX, phenolics, PAHs, metals and oxides of iron, nickel, copper, chromium, magnesium, manganese and graphite
<b>Landfill sites</b>		Alkanes and ammonia, sulfides, heavy metals, organic acids
<b>Marinas</b>	Antifouling paints	See 'Engine works' and Electroplating metals under 'Metal treatments' Copper, tributyltin (TBT)
<b>Metal treatments</b>	Electroplating <ul style="list-style-type: none"> <li>• metals</li> <li>• acids</li> <li>• general</li> </ul>	Nickel, chromium, zinc, aluminium, copper, lead, cadmium, tin Sulfuric, hydrochloric, nitric, phosphoric sodium hydroxide, 1, 1, 1 - trichloroethane, tetrachloroethylene, toluene, ethylene glycol, cyanide compounds
	Liquid carburizing baths	Sodium, cyanide, barium, chloride, potassium chloride, sodium chloride, sodium carbonate, sodium cyanate
<b>Mining and extractive industries</b>		Arsenic, mercury and cyanides and also explosives under 'Chemicals manufacture and use' Aluminium, arsenic, copper, chromium, cobalt, lead, manganese, nickel, selenium, zinc and radio-radionuclides The list of heavy metals should be decided according to the composition of the deposit and known impurities
<b>Power stations</b>		Asbestos, PCBs, fly ash metals, water treatment chemicals
<b>Printing shops</b>		Acids, alkalis, solvents, chromium See also Photography under 'Chemicals manufacture and use'
<b>Railway yards</b>		Hydrocarbons, arsenic, phenolics (cresote), heavy metals, nitrates, ammonia
<b>Scrap yards</b>		Hydrocarbons, metals, solvents
<b>Service stations and fuel storage facilities</b>		Aliphatic hydrocarbons BTEX (ie. benzene, toluene, ethylbenzene, xylene) PAHs Phenols Lead
<b>Sheep and cattle dips</b>		Arsenic, organochlorines, organophosphates, carbamates, synthetic pyrethroids
<b>Smelting and refining</b>		Metals, the fluorides, chlorides and oxides of copper, tin, silver, gold, selenium, lead and aluminium
<b>Tanning and associated trades</b>	Metals	Chromium, manganese, aluminium

Industry	Type of Chemical	Associated Chemicals
	General	Ammonium sulfate, ammonia, ammonium nitrate, arsenic phenolics, formaldehyde, sulfide, tannic acid
<b>Water and sewage treatment plants</b>	Metals	Aluminium, arsenic, cadmium, chromium, cobalt, lead, nickel, fluoride, lime, zinc
<b>Wood preservation</b>	Metals	Chromium, copper, arsenic Naphthalene, ammonia, pentachlorophenol, dibenzofuran, anthracene, biphenyl, ammonium sulfate, quinoline, boron, creosote, organochlorine pesticides

## SCHEDULE 2

Consultants undertaking any investigations associated reporting on potentially-contaminated land in the Shire shall certify or provide the following, as a standard annexure to their reports:

1. That they have demonstrated experience and expertise and relevant qualifications in the following:
  - \* contaminated land assessment
  - \* soil sampling, design and methodology
  - \* groundwater sampling, design and methodology
  - \* interpretation of analytical data
  - \* quality control/assurance procedures and
  - \* assessment of containment exposure pathway and risks.
2. That they have a good understanding of the impact of contaminated land on the environment, public and worker health and safety.
3. That they have a good understanding of the NSW legislation relating to contaminated sites and environment protection.
4. That they have a good understanding of ANZECC and DUAP Guidelines regarding contaminated sites.
5. That they have access to expertise in the following areas:
  - geotechnical/hydrogeology
  - environmental chemistry
  - soil science
  - ecotoxicology
  - containment transport and exposure assessment
  - sampling and analysis
  - risk evaluation, and
  - remedial technologies and associated requirements
6. That they are able to conduct an investigation in a logical fashion and able to critically review information and compile reports of a high scientific/engineering standard for contaminated land assessments.
7. Evidence of current insurance for professional indemnity and public liability.

Information shall be provided by consultants in accordance with the “*Guidelines for Consultants Reporting on Contaminated Sites*”, EPA (1995), which are based on the ANZECC Guidelines.

### Related Legislation

The Local Government Act, 1993  
Contamination Land Management Act  
Environmental Planning and Assessment Act, 1979

### Compliance

Not applicable

## **Forms**

Not applicable

## **Review Period**

This policy will be reviewed within 12 months of the election of each new Council or more frequently in the event of any legislative changes or change in circumstances.

## **Useful Links**

[Tweed Shire Council website](#)

