

NT Environmental Impact Assessment Guide: Greenhouse Gas Emissions

12.1 PURPOSE

The Northern Territory Government's objective for managing greenhouse gas emissions from new and expanding operations is to minimise emissions to a level that is as low as practicable.

This Guide aims to assist proponents in providing the information needed by the Environment Protection Agency (EPA) Program to assess the impact of greenhouse gas emissions from proposed projects during assessment under the *Northern Territory Environmental Assessment Act 1994*¹.

12.2 THE GUIDANCE

12.2.1 Emissions estimates

Proponents should detail the following in their environmental impact assessment documentation:

a) an estimate of the **greenhouse gas** emissions for the construction and operation phases: in **absolute** and **carbon dioxide equivalent** figures (refer to the Glossary in this Guide) for each year of the project; and identified on a gas by gas basis and by **source** (including on site and upstream sources such as emissions arising from land clearing and the production and supply of energy to the site).

*Emissions estimates are to be calculated using the methodology developed and periodically updated by the **National Greenhouse Gas Inventory Committee**² or another national or internationally agreed methodology.*

b) Details of the **project lifecycle greenhouse gas emissions** and the greenhouse gas efficiency of the proposed project (per unit and/or other agreed performance indicators).

Lifecycle emissions and greenhouse gas efficiency should be compared with similar technologies producing similar products.

¹As required under Action 6.4 of the NT Strategy for Greenhouse Action 2006, available at http://www.nt.gov.au/nreta/environment/greenhouse/publications/pdf/greenhouse_action.pdf

²Up to date methodology can be obtained from the Australian Greenhouse Office. See www.greenhouse.gov.au.

To provide an understanding of the broader impact of the proposal, proponents are encouraged to place the estimated greenhouse gas emissions from the proposal into a national and global context.³

12.2.2 Measures to minimise greenhouse gas emissions

Proponents must demonstrate consideration of a wide range of options and indicate the intended measures and efficient technologies to be adopted to minimise total greenhouse gas emissions from the proposed project, including:

- (a) identifying energy conservation measures, opportunities for improving energy efficiency and ways to reduce fugitive emissions where applicable;
- (b) indicating where potential savings in greenhouse gas emissions can be made through the use of renewable energy sources, taking into account fossil fuels used for supplementary power generation; and
- (c) their commitment to offsetting greenhouse gas emissions.

*The design measures to maximise efficiency and minimise emissions should represent **best practice** at the time of seeking project approval.*

Proponents are to advise whether they will join the **Commonwealth Government's Greenhouse Challenge** program.

- Emission offsets include activities that remove carbon from the atmosphere or reduce the greenhouse gas intensity (output per unit product) from current or future activities. Examples may include but are not limited to:
 - establishment and maintenance of perennial vegetation;
 - **sequestration** of carbon by geological, chemical, biological or other means;
 - reducing the carbon intensity of existing activities;
 - replacing fossil fuels with renewable fuels;
 - trading emissions permits in a nationally approved system;
 - synergistic linking of enterprises to reduce net greenhouse gas outputs; and
 - development of new greenhouse gas efficient technologies.

Proposed emissions offsets projects should include an estimate of greenhouse gas emissions savings that are likely to be achieved through implementation.

Measures that offset emissions within the NT are encouraged, and EPA staff can discuss possible options with proponents.

12.2.3 Emissions monitoring and reporting

Consistent with the principles of continuous improvement, a program is to be outlined in the proponent's Environmental Management Plan which includes ongoing monitoring, investigation, review and reporting of greenhouse gas emissions and **abatement** measures. It should be noted that in 2006, large energy users (those using greater than 0.5 petajoules per year) will be required by the Commonwealth Government to report publicly on their greenhouse gas emissions.

³ Information on Australia's national emissions profile can be obtained from the Australian Greenhouse Office at www.greenhouse.gov.au; international emissions from the United Nations Framework Convention on Climate Change (UNFCCC) website at <http://unfccc.int/2860.php/>.

12.2.4 Preparedness for climate change

Proponents should demonstrate due consideration of the risk of climate change impacts to the proposal. Relevant variables may include, but are not limited to:

- increasing average temperature and evaporation rates;
- variation in rainfall and the incidence of floods;
- sea level rise;
- increased frequency and intensity of cyclones and storm surge levels; and
- altered distribution of pests and disease.

In assessing climate change risk, proponents should be guided by recent projections published by organisations such as the CSIRO and Intergovernmental Panel on Climate Change (For CSIRO projections, see: <http://www.ipe.nt.gov.au/whatwedo/greenhouse/documents/pdf/ntclimatechange.pdf>).

12.2.5 GLOSSARY of Greenhouse Terms

- **Abatement:** Limiting, abating, avoiding or sequestering greenhouse gas emissions through source reduction, fuel displacement or switching, carbon stabilising techniques or **sink** enhancement.
- **Absolute emissions:** Refers to the total emissions of greenhouse gases expressed in terms of the actual mass of each individual gas emitted over a specified time period.
- **Best Practice:** A best practice is a process, technique, or use of technology, equipment or resource that has a proven record of success in minimising energy use and greenhouse gas emissions. A commitment to use best practice is a commitment to use all available knowledge and technology to ensure that greenhouse gas emissions are minimised.
- **Carbon Dioxide Equivalent:** A unit of greenhouse gas emissions calculated by multiplying the actual mass of emissions by the appropriate **Global Warming Potential**. This enables emissions of different gases to be added together and compared with carbon dioxide (see Table 1 below).
- **Commonwealth Government's Greenhouse Challenge program:** A cooperative effort by industry and the Commonwealth Government to reduce greenhouse gas emissions through voluntary industry action. See: www.greenhouse.gov.au/challenge.
- **Greenhouse Gases:** Table 1 lists the greenhouse gases proponents are required to report on.
- **Global Warming Potential (GWP):** The warming potential of a gas, compared to that for carbon dioxide. GWPs are revised from time to time as knowledge increases about the influences of different gases and processes on climate change. Refer Table 1.
- **Project Lifecycle Greenhouse Gas Emissions:** Those greenhouse gas emissions measured cumulatively over a defined period. Typically this period is from the point of extraction of the raw materials to either the beginning of the consumer phase of a product or the final disposal or recycling stage of a product, depending on its nature. Proponents should justify their choice of the defined period.

- **National Greenhouse Gas Inventory Committee:** A committee comprising representatives of the Commonwealth, State and Territory Governments that oversees the development of greenhouse gas inventory methods and compilation of inventories for Australia.
- **Sequestration:** Removal of greenhouse gases from the atmosphere by vegetation or technological measures. Sequestration is not yet precisely defined for the purposes of recognised trading or offset schemes. Accordingly, OEH will take a common sense approach on a case by case basis in the interim. To assist proponents, OEH regards sequestration as a process that results in the isolation of carbon dioxide from the atmosphere for a period which is significant in terms of influencing the global warming effect.
- **Source:** Any process or activity that releases a greenhouse gas into the atmosphere.

Table 1: Greenhouse gases and respective Global Warming Potentials (GWPs)*

Greenhouse Gas	Global Warming Potential
Carbon dioxide (CO ₂)	1
Methane (CH ₄)	21
Nitrous oxide (N ₂ O)	310
Perfluorocarbons (CF _x)	6500 - 8700
Hydrofluorocarbons (HFCs)	560 – 11 700
Sulphur hexafluoride (SF ₆)	23 900

- Greenhouse gas emissions expressed in carbon dioxide equivalent (CO₂-e) are calculated by multiplying the actual mass of emissions for each greenhouse gas by its respective GWP factor

* GWP factors listed are those published by the International Panel on Climate Change at the time of publication of this Guide

Guidelines for preventing mosquito breeding sites associated with mining sites

13.1 BITING INSECT ASSESSMENT (Baseline Survey)

Biting insects need to be considered due to the potential of mine sites to create extensive breeding sites for mosquitoes of pest and disease significance, and the potential for the introduction into the NT of dengue carrying mosquito species from North Queensland and overseas. The location of the mine site to natural creeklines and large water bodies created by past mining activities could also potentially expose mine workers to mosquitoes and mosquito borne disease. It is therefore recommended that a Biting Insect Assessment be conducted at the proposed mine site, with an outline of the proposed Biting Insect Assessment provided below.

A Biting Insect Assessment generally includes a 12 month adult biting insect trapping program, with traps set once a month around the time of the full moon to locate monthly abundance of mosquito and biting midge species. Ground assessments are also conducted to locate actual and potential mosquito breeding sites within the development area, and an assessment of aerial photography is undertaken to locate potential mosquito breeding sites outside of the development area that may impact on the development area. Mining plans are also examined to evaluate the potential for mining operations to create new mosquito breeding sites. A detailed report is then prepared based on the findings of the biting insect assessment, with recommendations provided on how to prevent new mosquito breeding sites and reducing the impact of biting insects on mine personnel. The proponent or relevant environmental consultant should contact the Medical Entomology Branch to discuss the proposed Biting Insect Assessment.

13.2 GUIDELINES FOR PREVENTING MOSQUITO BREEDING SITES ASSOCIATED WITH MINING SITES

For more information contact:

Medical Entomology Branch
Department of Health and Community Services
PO Box 40596
CASUARINA NT 0811

Telephone: 89228901
Fax: 89228820

GUIDELINES FOR PREVENTING MOSQUITO BREEDING SITES ASSOCIATED WITH MINING SITES

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Department of Health and Community Services
November 2005**

General Comments

All mining operations need to include a section in an Environmental Management Plan for the monitoring and control of mosquitoes. This is necessary because of the potential of mine sites to provide extensive breeding sites for mosquitoes of pest and disease significance. Mine sites also provide the potential for the introduction of mosquito species and mosquito borne diseases into the NT that are either exotic to the NT or have previously been eliminated.

The monitoring of adult mosquitoes in any new mine should include trapping of adult mosquitoes once a month at a number of sites for the initial 12 months baseline mosquito monitoring program. The baseline mosquito monitoring program provides an indication of the seasonal distribution of the mosquito species present and the relative potential impact of mosquito borne disease to mine personnel.

The monitoring and control of mosquito larvae should be an ongoing operation for the life of the mine. Mosquito larvae must be controlled with an approved mosquito larvicide (*Bacillus thuringiensis* var. *israelensis* or methoprene) as part of an organised monitoring and control program. Any mosquito control program should be discussed with the Medical Entomology Branch of the Department of Health and Community Services with regard to methods and insecticides.

Accommodation for personnel should be sited as far as possible from the most important biting insect breeding sites and be adequately insect screened or otherwise protected to reduce the impact of mosquitoes.

The potential for artificially created mosquito breeding sites can be minimised with the appropriate design of water holding facilities and water management procedures.

1. WATER DAMS

All water storage dams should be constructed with relatively steep sides (45° slope minimum) to discourage the establishment of semi-aquatic vegetation (eg. *Typha* and *Eleocharis* reeds) that will provide suitable habitats for mosquito breeding.

Dam margins should be as straight as possible to minimise the linear area available for the establishment of semi-aquatic vegetation.

Where possible, any closely grouped dams should be joined together to minimise the linear margin of vegetation.

The bottom of any dam should be graded as level as possible, with a slight slope to one end to form a deeper section for periods of low water. This will remove the potential for the formation of isolated pools as the water level recedes in the dry season.

Areas surrounding any dam that will be flooded during the wet season should be graded to enable water to drain freely into the dam as the water level recedes, without the formation of isolated pools that are capable of retaining water for a period greater than 5 days.

There must be no islands formed within any dam. All areas of impounded water should have a relatively deep (2 m) wet season stabilised water level to prevent the emergence of semi-aquatic vegetation.

Any drainage line directed into a dam must be fitted with a sediment trap or erosion prevention structures just upstream from the dam. This is necessary to prevent the formation of “alluvial fans” that will promote the establishment of semi-aquatic vegetation in the area of the fan where silt will be progressively deposited. Any overflow areas from dams should have erosion protection measures to prevent the creation of plunge pools.

Local native fish should be introduced or have access into any dams where the water quality is suitable for their survival, to provide natural predators for the control of mosquito larvae.

The margins of any water dam should be inspected annually for vegetation growth such as semi-aquatic vegetation and grass. Any dense marginal vegetation should be herbicided or physically removed, to prevent the vegetation from creating suitable mosquito breeding sites.

2. WET LAND FILTERS

Wetland filters have the potential to provide prolific breeding sites for mosquito species of pest and disease significance. If no other alternative is available for the treatment and disposal of waste water, a wetland filter should incorporate the ability to annually reduce the build up of any dead vegetation. Plans for wetland filter design and siting should be forwarded to the Department of Health and Community Services (Medical Entomology Branch) at the planning stage to ensure that their potential impact on the health of mine site personnel is minimised.

Annual maintenance could be achieved by dividing a wetland filter into separate sections. A dual system will enable water to be directed into one section of the filter while vegetation is burnt or otherwise reduced in the other section. An ability to manipulate the water level in the filter to strand or drown vegetation would be beneficial for the management of vegetation and mosquito numbers. Stocking the wetland filter with local native fish will provide a significant measure for controlling mosquito larvae. The provision of fish however will not remove the need for annual maintenance of the wetland filter.

Where appropriate, consideration should be given to the provision of a fish ladder on any overflow facility to enable the dispersal of fish into and upstream of the filter. Wetland filters may need to be removed after mining operations are completed to enable the future development of adjacent land.

3. WEIRS

Any spillways must be fitted with erosion prevention structures to prevent scouring and siltation of creek lines during periods of overflow.

Fish ladders should be constructed where appropriate to enable the upstream dispersal of fish following periods of dam overflow.

4. MINE WASTE DUMPS

The final surface of mine waste dumps should be contoured so that the surface area is free draining and has no surface depressions.

Any runoff from a waste dump should be directed to a silt trap to prevent any siltation of natural creek lines. Siltation in creek lines can promote the formation of isolated pools or disrupt fish ecology and may lead to the subsequent establishment of mosquito breeding sites.

Mine waste dumps should be located away from natural drainage lines, to prevent the upstream impoundment of natural surface water flows. If impractical to locate mine waste dumps away from natural drainage lines, diversion drains will be required to direct surface water flows around the waste dump.

5. SEDIMENT TRAPS

Sediment traps need to be designed so that they are free draining within a period of 5 days after flooding.

Sediment traps should be maintained by silt and vegetation removal on an annual basis.

6. BORROW PITS

Borrow pits, costeans or scrapes must be rehabilitated such that they do not hold water for a period greater than 5 days. These sites can be rectified either by filling or rendering them to be free draining.

7. DRAINAGE PATHS

Natural drainage patterns should be maintained where possible. Access roads across drainage lines may need to be fitted with culverts of sufficient size to prevent upstream flooding for periods that will enable mosquito breeding. Culverts should be installed flush with the upstream surface level. Erosion prevention structures will need to be constructed on the downstream side of any culvert, and erosion prevention structures may also be required at the headwalls of any culvert.

Any disruption to surface drainage should be removed at the end of the mining operations.

8. WASTE WATER DISPOSAL

Septic tanks must be installed to DHCS guidelines and should be inspected on an annual basis by the Environmental Officer to ensure that tanks and their effluents do not breed mosquitoes.

Discharge, overflow or excess effluent from sewage treatment systems must be disposed of in a manner approved by DHCS. A sprinkler disposal system is suitable under most situations. Infiltration systems are acceptable if soil conditions are favourable. The discharge of excess effluent into ephemeral creek lines is not acceptable.

Sewage ponds should be constructed with steep sides with an impervious lining and be regularly maintained to prevent vegetative growth at the margins (see *“The prevention of mosquito breeding in sewage treatment facilities”*, available from the Medical Entomology Branch). Surface debris and algal scum should be removed on a regular basis. Monitoring of mosquito larvae should be conducted in sewage ponds on a regular basis and control treatments conducted when necessary.

Disposal of water into “Application areas” must ensure that water does not pool for a period greater than 5 days.

9. ARTIFICIAL CONTAINERS

Rainwater tanks must be adequately screened to prevent the entry of mosquitoes. Any container capable of holding water, eg. machinery tyres, drums, disused tyres, tanks, pots, etc. should be stored under cover, be provided with drainage holes, emptied on a weekly basis, treated with an appropriate insecticide on an appropriate schedule, or disposed of in an appropriate dump site to prevent the formation of mosquito breeding sites.

No used tyres, machinery or other containers that have previously held rain water should be brought to the NT from Queensland unless the containers or machinery has been thoroughly treated with chlorine or an appropriate insecticide to remove the possibility of the introduction of drought resistant eggs of exotic *Aedes* mosquito species.

10. RUBBISH AND GARBAGE DUMPS

Rubbish and garbage dumps must be operated in such a manner that there is no ground surface or water filled receptacle pooling of water for a period greater than 5 days, to prevent the formation of mosquito breeding sites.

Rubbish and garbage dumps must be rehabilitated by filling and surface contouring to ensure they are free draining and have no surface depressions.

11. DECOMMISSIONING AND REHABILITATION

A decommissioning and rehabilitation plan should be in place for all mining operations to ensure no actual or potential mosquito breeding sites remain after cessation of mining operations. All disturbed areas should be rehabilitated to be free draining where practical. The proponent should consult the Medical Entomology Branch for input when preparing this document.

Aspects to consider when decommissioning and rehabilitating a mine site include removing and appropriately grading all sediment ponds, removing all bund walls created for the development, removing infrastructure and artificial receptacles that could pond water, removing water dams and reinstating existing flowpaths where practical, rehabilitating borrow pits, removing wetland filters, sediment traps, and other facilities that could pond water and breed mosquitoes.

Facilities such as open pit voids and water dams can be left as water holding pits if they are constructed with steep sides (at least 1:2 slope), and stocked with fish during the rehabilitation process.

ENVIRONMENTAL HEALTH INFORMATION BULLETIN No. 6

Requirements for Mining, Construction & Bush Camps

This information bulletin has been developed to provide information to proponents of Mining, Construction & Bush Camps with regard to the Department of Health and Community Services' (DHCS) environmental health requirements. Issues covered include food business registration, boarding house registration, on-site wastewater disposal, wastewater stabilisation ponds, potable water supply, solid waste disposal, fuel storage, public health nuisances, and environmental management plans.

14.1 Registration as a Food Business

Larger camps that are not self-catering generally incorporate a commercial food preparation area (kitchen). The *Food Act 2004* defines a food business as 'any business or activity that handles food intended for sale or selling regardless whether the business is of a commercial, charitable or community nature or whether it involves handling or selling on one occasion only'. Consequently the camp's commercial food preparation area is considered to be a food business and therefore requires registration with DHCS in accordance with the *Food Act 2004*.

Registration can be carried out on-line and does not attract a fee. The Registration period is for 12 months with renewals due on 1 July.

To register, go to the DHCS website link or contact the relevant Environmental Health Office:

- <http://www.transact.nt.gov.au/ths/healthmanager/HealthNotifications.nsf>

The *Food Act 2004* also requires all food businesses to meet the minimum standards prescribed by the *Food Safety Standards*:

- 3.1.1 Interpretation and Application
- 3.2.2 Food Safety Practices and General Requirements
- 3.2.3 Food Premises and Equipment

These nationally endorsed standards have been designed to be descriptive, rather than prescriptive and provide the food industry with an increased flexibility in meeting the desired outcome of providing safe food to consumers. Accordingly, Environmental Health Officers (EHO) are also now required to adopt a more flexible approach when assessing how businesses are able to meet the criteria contained within these Standards.

Australian Standard AS 4674 “*Design, Construction and Fit-out of Food Premises*” has been developed to assist the food industry in meeting the outcomes of the Standards. It is not prescribed by law that a premises must meet the requirements contained within, however a premises that meets AS4674 is deemed to comply with the *Food Act* and *Food Safety Standards*.

A food premises that does not meet the requirements of AS 4674 may still be able to meet the requirements of the relevant legislation. However, further evidence may be required to be provided to the EHO to ensure that they can be assured that the business will comply through other means. In some instances, a design issue may be able to be addressed through the development and implementation of appropriate workplace policies or procedures. This may, in turn, sometimes result in a delay of the approval process, and require the submission of more information than the typical application.

Approval Process

The approval process of a food business is dependent on its location, however it generally involves at least one inspection. Camps are by nature located in remote areas where Building Control in terms of the *Building Act* is not applicable. Building Control essentially means that a Building Certifier must certify all building structures to ensure compliance with the Building Code of Australia. Proponents are referred to Appendix 1 to determine if their project is located within a Building Control Area.

Inside a Building Control Area

Under the provisions of the *Building Act*, DHCS is a Reporting Authority and as such, Building Certifiers are required to seek the Department’s comments on all building applications involving, amongst other things, new or existing food businesses. The Building Certifier must submit detailed plans to the relevant Environmental Health Office prior to the construction of works. Following assessment and approval, the premises must be registered as a Food Business with the relevant Environmental Health Office prior to operating.

Outside a Building Control Area

Since Building Certification does not apply then DHCS becomes the first point of contact for approval of a food business. The proponent must submit detailed plans and specification to the relevant Environmental Health Office prior to the construction of works. Following assessment and approval, the premises must be registered as a Food Business with the relevant Environmental Health Office prior to operating.

14.2 Registration as a Boarding House

- The accommodation section of the Camp will require registration as a boarding house in accordance with the *Public Health Act and Public Health (Shops, Eating-Houses, Boarding Houses, Hostels and Hotels) Regulations*. The Registration period is for 12 months with renewals due on the 31 December. Annual Fees are applicable and are based on the number of bedrooms:

- 3-10 Bedrooms \$100 p.a.
- 11-20 Bedrooms \$125 p.a.
- 21-40 Bedrooms \$150 p.a.
- > 40 Bedrooms \$250 p.a.
- A Boarding House application form can be downloaded online or by contacting the relevant Environmental Health Office:
- http://www.nt.gov.au/health/healthdev/environ_health/environ_health.shtml
>application forms

Following a review of Northern Territory public health legislation, DHCS has developed *Public Health Guidelines for Commercial Accommodation 2005*. These Guidelines will eventually replace the current provisions relating to boarding houses in the *Public Health (Shops, Eating-Houses, Boarding Houses, Hostels and Hotels) Regulations* offering a less prescriptive approach and a clear set of minimum standards.

Room sizes in the Camp must comply with the provisions of *Public Health (Shops, Eating-Houses, Boarding Houses, Hostels and Hotels) Regulations* or the yet to be endorsed Guidelines. However, if the latter is chosen, it will be necessary for the proponent to make application in writing to the Chief Health Officer seeking approval to utilise the Guidelines.

Approval Process

The approval process of a boarding house is dependent on its location in a similar manner to food businesses, and also generally involves at least one inspection. Camps are by nature located in remote areas where Building Control in terms of the *Building Act* is not applicable. Building Control essentially means that a Building Certifier must certify all building structures to ensure compliance with the Building Code of Australia. Proponents are referred to Appendix 1 to determine if their project is located within a Building Control Area.

Inside a Building Control Area

Under the provisions of the *Building Act*, DHCS is a Reporting Authority and as such, Building Certifiers are required to seek the Department's comments on all building applications involving, amongst other things, new or existing boarding houses. The Building Certifier must submit detailed plans to the relevant Environmental Health Office prior to the construction of works. Following assessment and approval, the premises must be registered as a Boarding House with the relevant Environmental Health Office prior to operating.

Outside a Building Control Area

Since Building Certification does not apply then DHCS becomes the first point of contact for approval of a boarding house. The proponent must submit detailed plans and specification to the relevant Environmental Health Office prior to the construction of works. Following assessment and approval, the premises must be registered as a Boarding House with the relevant Environmental Health Office prior to operating.

14.3 Sanitary Accommodation & Ablution Facilities

Adequate numbers of ablution facilities and sanitary accommodation to be accessible for all operations in accordance with Building Code of Australia and relevant Northern Territory legislation.

14.4 Environmental Management Plans

The proponent shall provide the relevant Environmental Health Office with copies of Environmental Management Plans that relate to the Camp or Project Operations for initial comment.

14.5 On-site Wastewater Disposal

On-site wastewater disposal using septic tanks is likely to be the most suitable option for camps that have no major site constraints and comprise less than 20 staff. Larger camps may need to consider other options such as a treatment plant or waste stabilisation ponds. In all cases, the proponent should seek advice from a qualified hydraulic consultant about the most suitable wastewater disposal system. Reliability and low maintenance costs of remote on-site wastewater disposal systems should not be underestimated.

The design of septic tank systems is detailed in the Northern Territory *Code of Practice for the small on-site sewage and sullage treatment systems and the disposal or reuse of sewage effluent* (The Code). The Code was gazetted on the 11 November 1998 and is called up in Regulations 28-28B of the *Public Health (General Sanitation, Mosquito Prevention, Rat Exclusion and Prevention) Regulations*.

The Role of Regulatory Authorities

Local Government Authorities in the Northern Territory have no jurisdiction over on-site wastewater management, i.e. approval or monitoring of septic tank installations.

The Department of Planning and Infrastructure (DPI) administer the provisions of the *Building Act & Regulations* with respect to all septic tank installations within a Building Control Area.

DHCS administers the provisions of the *Public Health Act & Regulations* with respect to the:

- type approval of septic tanks and associated products.
- conventional septic tanks located outside Building Control Areas.
- notification to install an Alternative Septic Tank System (ASTS) for a single residential dwelling.
- site-specific design approval of an ASTS.

Conventional Septic Tanks & Alternative Septic Tank Systems

Conventional Septic Tanks (e.g. septic tank reticulating to absorption trenches or evapotranspiration bed) must be installed by self-certifying plumbers and drainers within Building Control Areas or by licensed plumbers and drainers outside Building Control Areas. The administrative process is dependent on whether the installation is located within a Building Control Area (urban areas and along main highways) or outside a Building Control Area (remote areas).

Alternative Septic Tank Systems (ASTS) are septic tank systems that treat effluent to a higher quality than that offered by conventional septic tank system. For example, these include Aerated Wastewater Treatment Systems (AWTS), Composting Toilets, Hybrid Systems and Ecomax Systems. In addition to the self-certification of the installation, ASTS require either a notification to install or site specific design approval.

- Septic Tank application forms can be downloaded online or by contacting the relevant Environmental Health Office:
http://www.nt.gov.au/health/healthdev/environ_health/environ_health.shtml
>application forms

Connection to existing Septic Tank Systems

If the proposal can utilise existing infrastructure such as septic tank systems, then the proponent will need to demonstrate that such infrastructure has adequate hydraulic capacity. This will require the proponent to engage a qualified hydraulic consultant to provide the relevant Environmental Health Office with as-constructed drawings of the existing infrastructure.

14.6 Trade Waste Pre-treatment Devices

Trade waste is defined as a *“liquid or liquid borne waste generated from any industry, business, trade, manufacturing process or similar that is approved for discharge to sewer but does not include wastewater from a toilet, shower, hand basin or similar fixture”*.

It is not recommended that trade waste be discharged to septic tank system, however a Camp’s commercial food premises may prepare cooked food generating liquid trade waste that comprises of food scraps, detergents, fats, oils and grease. This liquid trade waste has a substantial impact on a septic tank system, and if not contained by pre-treatment equipment will cause system failure. For this reason, it is mandatory that all greasy liquid trade waste must be discharged to sewer via a pre-treatment device that has been approved by Power and Water Corporation’s Trade Waste Section.

The requirements for trade waste pre-treatment devices are detailed in the following documents:

- Power and Water Corporation - *Guidelines for On-site Pre-treatment* which can be downloaded from the website at:
http://www.powerwater.com.au/powerwater/business/trade_waste.html
- DHCS Information Bulletin – *Trade Waste Pre-treatment Devices* which can be obtained from the relevant Environmental Health Office.

14.7 Waste Stabilisation Ponds

Waste stabilisation ponds (also known as sewage ponds) are used extensively in the Northern Territory for the treatment of wastewater prior to final disposal.

There is legislation to control the reuse or disposal of treated sewage effluent. The responsibility for enforcement of such legislation is vested with DHCS and the Environment Protection Agency (EPA). The discharge of treated sewage effluent to land or water may therefore occur, but only in accordance with pertinent legislation, or in its absence, to any reasonable conditions imposed by the relevant government agency.

Where treated sewage effluent is proposed to be discharged to a waterway and where the discharge does not have a potential to impact on public health, DHCS will liaise with the EPA as part of the approval process. Consideration will be given to the reuse/irrigation of treated sewage effluent in controlled public access areas, constructed and operated for this express purpose.

Approval Process

- Any proposal to construct waste stabilisation ponds at a camp shall require the submittal of plans, design specifications and disposal methodology to the relevant Environmental Health Office & the EPA for approval, prior to construction.
- Environmental Health Office will seek specific comment with regard to mosquito breeding from the Department's Medical Entomology Branch.

14.8 Potable Water Supply

- The camp must have a potable that complies with the NH&MRC *Australian Drinking Water Guidelines*. The relevant Environment Health Office may set conditions on the provision of water testing results. Proponents should note that water analysis can be carried out by the Water Laboratories at:
- Alice Springs – Department of Natural Resources, Environment and the Arts - located at the Tom Hare Building, phone (08) 8951 8233
- Darwin – Department of Primary Industries and Fisheries - located at Berrimah Farm, phone (08) 8999 2346
- Bore setbacks to onsite wastewater disposal shall be in accordance with the Code of Practice for Small On-Site Sewage and Sullage Treatment Systems and the Disposal or Reuse of Sewage Effluent.

Solid Waste Disposal

The *Waste Management and Pollution Control Act 1998* requires that certain waste management activities be licensed or approved by the EPA. An EPA approval for a landfill (rubbish dump) is not required if the landfill is for domestic waste generated on the premises or domestic waste from temporary construction camps.

An EPA licence for a landfill is required if the Camp serves a permanent population of more than 1000 persons or if the Project Operations generates hazardous waste. Further information can be obtained by contacting the EPA on (08) 8924 4139 or by going to their website > <http://www.nt.gov.au/nreta/environment/index.html>

Providing the landfill does not have to be licensed or approved by the EPA, then the proponent will still need to demonstrate to the relevant Environmental Health Office that the Camp's landfill meets best practice and will not cause an environmental or public health nuisance. Reference should be made to the *Guidelines for Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory 2003* which can be downloaded from the EPA website:

<http://www.nt.gov.au/nreta/environment/waste/codes/index.html>

14.9 Fuel Storage

Camps and their respective operations generally have a fuel storage facility. Environmental Health does not regulate fuel storage and therefore proponents should discuss this issue with the EPA. Reference should be made to AS 1940-2004 (and amendments) *Storage and handling of flammable and combustible liquids*.

14.10 Public Health Nuisance

The proponent shall ensure that the construction and operation of the Camp does not create a public health nuisance, in particular from dust or other particulate matter. Environmental Health has provisions to deal with public health nuisances under the *Public Health (Nuisance Prevention) Regulations*.

14.11 LOCATION OF ENVIRONMENTAL HEALTH OFFICES

Enquiries and applications should be directed to the Environmental Health Office for the locality in which the works are to be carried out.

Darwin Urban

Ground Floor
Casuarina Plaza
PO Box 40596
CASUARINA NT 0811
Telephone: (08) 8922 7377
Facsimile: (08) 8922 7036

Darwin Rural

2nd Floor
Casuarina Plaza
PO Box 40596
CASUARINA NT 0811
Telephone: (08) 8922 7152
Facsimile: (08) 8922 7334

Katherine West Health Board

Unit 10, Riverbank Office Village
Cnr First Street & O'Shea Terrace
PO Box 147
KATHERINE NT 0852
Telephone: (08) 8971 9315
Facsimile: (08) 8972 1233

Katherine

NT Government Centre
First Street, Katherine
PMB 73
KATHERINE NT 0851
Telephone: (08) 8973 8767
(08) 8973 8411
Facsimile: (08) 8973 8592

Barkly

Health Development Building
Cnr Schmidt & Windley Streets
PO Box 346
TENNANT CREEK NT 0862
Telephone: (08) 8962 4302
Facsimile: (08) 8962 4420

Tiwi Health Services

Health House
Mitchell Street, Darwin
PO Box 40596
CASUARINA NT 0811
Telephone: 0401 116 030
Facsimile: (08) 8927 9170

Alice Springs Central Australia

Menzies Building
Cnr Gap Road & Stuart Terrace
Alice Springs Hospital Complex
PO Box 721
ALICE SPRINGS NT 0871
Telephone: (08) 8951 7518
Facsimile: (08) 8951 7859

East Arnhem

Endeavour Square
PO Box 421
NHULUNBUY NT 0881
Telephone: (08) 8987 0440
(08) 8987 0441
Facsimile: (08) 8987 0444

Environmental Health Program Directorate

2nd Floor
Casuarina Plaza
PO Box 40596
CASUARINA NT 0811
Telephone: (08) 8922 7152
Facsimile: (08) 8922 7334
Email: envirohealth@nt.gov.au
Web: <http://www.health.nt.gov.au/>>Environmental Health

14.12 Explanation of Building CONTROL Areas

Building Control Areas in the Northern Territory are those areas declared under the Building Act by the Minister for Infrastructure, Planning and Environment.

Whilst some aspects of the Building Act apply to all of the Northern Territory, building control is only affect in gazetted Building Control Areas.

The extent of the gazetted Building Control Areas is detailed in the map of the building areas in the Northern Territory (overleaf).

The current Building Control Areas include:

(a)	Adelaide River	Kings Canyon
	Alice Springs	Lake Bennett
	Batchelor	Larrimah
	Borroloola	Mataranka
	Brewer Estate	Namarada
	Darwin	Pine Creek
	Elliott	Tennant Creek
	Jabiru	Ti - Tree
	Katherine	Timber Creek
	Katherine Gorge National Park	Yulara

NOTE:

- Detailed maps of these areas can be obtained from the Building Advisory Services Branch at Department of Planning, Infrastructure. BASB can be contacted in Darwin (Cavenagh House) on 8999 8965 or Alice Springs (Alice Springs Plaza) on 8951 9200.
- The township of Nhulunbuy is not a Building Control Area.

- (b) Land within 500 m of each side of the road reserve of the highways and roads detailed on the map of the building areas in the Northern Territory.

NOTE:

- Where there are no road reserves then the distance is measured from the centre line.

BUILDING AREAS IN THE NORTHERN TERRITORY

