INDIGENOUS ESSENTIAL SERVICES BOARD

**Mervyn Davies**
Director

**Judith King**
Chairman

**Andrew Macrides**
Managing Director

**Michael Hannon**
Director

**LEADERSHIP TEAM**

Remote Operations core areas

- **Darryl Day**
  General Manager
  Oversees electricity, water and sewerage services.

- **Duncan Griffin**
  Manager
  Supply of water and wastewater services.

- **Stephen Benaim**
  Manager
  Transmission and distribution of electricity to customers.

- **Dennis Ryan**
  Manager
  Generation of electricity to meet the needs of customers.

- **Elise Vervetjes**
  Group Manager
  Oversees service and infrastructure planning.

- **Tammy Falconer**
  Manager
  Manage retail services and contract management.

- **Lee Morgan**
  Manager
  Southern region services operations.

Remote Operations support areas

- **Fuel Supply and Asset Performance**
  - **Scott Wheeler**
    Fuel supply and asset performance and regulatory reporting.

- **Energy Strategy and SCADA**
  - **Megan Jolley**
    Energy planning, SCADA and communications.

- **Water Quality and Treatment**
  - **Amy Dysart**
    Water and wastewater treatment planning and regulatory reporting.

- **Sustainable Water and Energy**
  - **Nerida Beard**
    Water resource management and water and energy efficiency programs.

- **Program Administration**
  - **Linda Broomhall**
    Financial and contract management.

- **Program Delivery**
  - **Steve Walker**
    Program planning and delivery.

- **Land Development**
  - **Lindsay Smith**
    Infrastructure development, connections and GIS.

- **Workforce/Health and Safety**
  - **John Harris**
    Workforce planning, health, safety and the environment.
  - **Mick Carwright**
    Workforce planning, health, safety and the environment.
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Indigenous Essential Services is unique. As a not-for-profit business, we provide utility standard electricity, safe and reliable water supplies and environmentally appropriate sewerage services to remote communities spread over the length and breadth of the vast expanse of Northern Territory, from the arid centre to the dry tropical north.

Services are of similar standard to equivalent sized towns across Australia, and are essential to support the national challenge to Closing the Gap on Indigenous disadvantage, community wellbeing, social and economic outcomes.

Our achievements in 2011-2012 are a reflection of the dedication, commitment and professionalism of the Power and Water staff and contractors over the 12 months.

They are also the result of five years of strategic focus and implementation of plans to achieve sustainable service delivery, prudent investment in existing and new assets and building capacity in local communities.

The investment in water treatment technologies, systems, processes, capacity, knowledge and research has changed substantially the nature of water supplies where all water supplies now have continuous disinfection to ensure the water is safe to drink, with a commitment to continuous improvement in all aspects.

The sustainability of resources has been a key focus. The past five years has seen significant investment in evaluation, monitoring and developing groundwater sources that supply 90 per cent of the remote community water supplies.

In addition, significant focus has been given to water efficiency and energy efficient programs, at both a community and program level, to ensure resources are sustainable, and services are provided as efficiently as possible.

Innovation and investment in best practice technologies and affordable solutions is reflected in the Energy Sources Strategy - Towards 2020, resulting in new high penetration solar power stations, the introduction of wind power and the refurbishment of the solar dish power stations.

Best practice remote monitoring and control systems have been introduced to reduce costs, protect assets and improve services.

The operations are funded from $28m collected in revenue from the sale of electricity, water supply and sewerage services and a grant of $56 million from the Northern Territory Government through a purchaser-provider agreement with the Department of Housing, local Government and Regional Services.

IES also received capital grant funding of $45m from the Northern Territory Government and Australian Government.

I would like to take this opportunity to recognise the staff involved in this journey of very significant change over the past five years and thank every one for their commitment, dedication and generous contribution of discretionary effort to improve the well being and economic prospects of remote communities.
Highlights of 2011-12

- A 1.8ML water tank was built at Wurrumiyanga (Nguiu) and extra bores sunk to ensure the community has enough water to meet current and future needs.
- High levels of customer satisfaction maintained with scores across all satisfaction and performance rating over eight out of ten.
- Release of a Northern Territory wide water efficiency marketing campaign to encourage more efficient use of water in remote areas.
- Completed major construction of Power and Water’s renewable energy showcase that integrates wind-solar-diesel to generate electricity.
- Continued improvement in our ability to remotely monitor and control essential infrastructure in remote communities.
- Introduction of water fluoridation in two communities to help improve oral health outcomes by helping to prevent tooth decay.
- 90,500 water quality tests to verify water is safe for residents to drink.
- Employment of Indigenous Galiwin’ku residents to educate their fellow community members about using water more efficiently.
- Construction of three solar systems at Ti Tree, Kalkarindgi and Alpurrurulam (Lake Nash), which will produce a total of almost one megawatt (MW) of solar power later in 2012.
- Improved sewerage treatment in Angurugu.
Outlook for 2012-13

Power and Water’s Framework for Success sets a **vision**, defines **purpose** and identifies the **values** that guide the behaviour of employees through their actions and decisions. The framework outlines the **six strategies** to achieve our vision.

- **Water for Healthy Communities** - This initiative is about safe drinking water supply, sustainable water management and wastewater management and includes expanding and replacing ageing water and wastewater infrastructure.

- **Energy and water efficiency** - Strengthened water conservation and energy efficiency programs for Territory Growth Towns and other priority communities will be established with input from local stakeholders.

- **Energy Source Strategy Towards 2020** - Provides an economic and technical assessment of options available for remote power generation with the objective of replacing diesel fuel as the primary source of power generation in remote towns and communities, minimising long-term service delivery costs and meeting community demand growth in an economic and environmentally sustainable manner.

- **Workforce capability** - Essential Services Operators (ESOs) retention, recruitment and training will be a priority as a retiring ESO workforce and an increase in complexity of power, water and sewerage infrastructure is addressed.

- **Financial sustainability** - Developing cost-recovery models that better reflect the cost of service delivery due to remoteness, extreme weather conditions and size of the communities. This would include improvements in the user-pays model.

- **Maximising operational efficiency** - Improving technology and remote communication allow for more cost-effective asset and maintenance management. Smart meters and Supervisory Control and Data Acquisition (SCADA), with improved control systems, will be introduced and IES will continue to support skills development to work with this technology.
OUR PURPOSE
We will focus on meeting the power, water and sewerage needs of our customers, whilst acknowledging the expectations of our shareholders.

OUR VISION
We aspire to be a leading utility business valued and respected in the community.

OUR VALUES
Safety
Protecting the health and well-being of ourselves, contractors and the general public to achieve zero harm.

Integrity
Engendering trust through open, honest and ethical behaviours.

Communication
Engaging in an open, positive and constructive way to obtain better individual and business outcomes.

Teamwork
Working together for a common purpose, achieving our goals in a supportive, respectful and enthusiastic manner.

Commitment
Leading by example, continually improving, accountable for our actions and carrying them out with passion and purpose.

OUR STRATEGIES
- Trusted
- Environmentally sustainable
- Organisationally capable
- In good operation and asset health
- Financially sustainable

FRAMEWORK FOR SUCCESS
Our Business

Power and Water aims to deliver reliable and equitable services to the Territory Growth Towns and remote communities in a competitive, efficient, safe and sustainable manner, while meeting environmental obligations, supporting regional development and Indigenous employment and training.

The unique combination of the integrated utility structure and years of experience in the Territory enables Power and Water to provide cost-effective essential services. This is achieved through:

- Integration of power, water and sewerage services to maximise cost efficiencies
- Coordination of routine maintenance, asset replacement and capital investment
- Management of a communications network for remote monitoring and control of infrastructure
- Appropriate and effective management of the interdependencies between energy, water and sewerage services
- Integration of operational delivery and planning
- Essential Services Operators in the towns and communities, who are on the ground to respond quickly and effectively.

This ability to maintain 'value for money' is particularly challenging as the majority of the communities we service are relatively small, sparsely located and experience a vast array of climatic conditions from the cyclone and storm-prone tropics of the north to the deserts of Central Australia.

"The issues we confront in Remote Operations, delivering services in remote localities, can be very different to those normally encountered. Our remote team can make a tangible difference in a community, delivering quality service with power, water and sewerage systems to NT remote communities. This is what makes our work very rewarding."

RALPH HUTCHINS
Water and Sewer Operations, Alice Springs
The following provides an overview of the essential services and Power and Water’s key initiatives for each of the 20 Territory Growth Towns and 52 remote communities serviced by IES Pty Ltd.
**BARKLY REGION**

**Ali Curung (411)**
- Plentiful groundwater source available and extraction is licenced.
- Marginal quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 671 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.

**Alpurrurul (410)**
- Limited groundwater source available.
- Marginal quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 108 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.

**Amplitwatja (463)**
- Connected to Arlapi electricity grid.
- Plentiful groundwater source available.
- Marginal quality water, disinfected with ultraviolet and monitored monthly for microbes.
- Township water demand of 360 L/EP/d

**Apatula (243)**
- Plentiful groundwater source available and extraction is licenced.
- Good quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 710 L/EP/d
- Secondary sewage treatment, which seasonally discharges to the environment.

**Engawala (220)**
- Limited groundwater source available.
- Adequate quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 320 L/EP/d

**Hermansburg (694)**
- Limited groundwater source available and extraction is continuously monitored.
- Adequate quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 888 L/EP/d

**Ikuntji (154)**
- Plentiful groundwater source available.
- Marginal quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 268 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.

**Wutunugurra (234)**
- Limited groundwater source available and extraction is continuously monitored.
- Very good quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 984 L/EP/d

**Kaltukatjara (427)**
- Plentiful groundwater source available.
- Marginal quality water, aeration treatment, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 353 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.

**Kintore (418)**
- Limited groundwater source available and extraction is continuously monitored.
- Marginal quality water, disinfected with gas chlorine and monitored monthly for microbes.
- Township water demand of 110 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.

**Laramba (297)**
- Limited groundwater source available.
- Marginal quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 580 L/EP/d

**Mt Liebig (328)**
- Limited groundwater source available.
- Marginal quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 420 L/EP/d

**Papunya (371)**
- Plentiful groundwater source available.
- Marginal quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 621 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.

**Santa Teresa (656)**
- Connected to electricity grid.
- Plentiful groundwater source available.
- Adequate quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 584 L/EP/d

**Wallace Rockhole (106)**
- Limited groundwater source available.
- Adequate quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 849 L/EP/d

**Yuelamu (258)**
- Limited groundwater source available and extraction is continuously monitored.
- Limited surface water source and extraction is licenced.
- Marginal quality water, filtered through sand, disinfected with calcium hypochlorite and monitored monthly for microbes.
- Township water demand of 235 L/EP/d and conservation education program in place.
- Secondary sewage treatment, which discharges through evaporation.

**Yuendumu (852)**
- Limited groundwater source available and extraction is continuously monitored.
- Good quality water, disinfected with sodium hypochlorite and monitored monthly for microbes.
- Township water demand of 640 L/EP/d
- Secondary sewage treatment, which discharges through evaporation.
IES sources renewable energy at five communities. These systems use a range of solar technologies, including concentrating photovoltaic (CPV) dishes and flat plate photovoltaic (PV) solar systems and have an installed capacity of over 780 kilowatts (kW). Major solar systems have been installed in another three communities during 2012.

Power and Water will gradually displace distillate in many remote communities where it is economically efficient to do so. Our goal is long-term provision of reliable, cost-effective power supply and we will pursue a diversified energy source mix in the near term to allow a range of renewable and low emission energy source options to be assessed.

This Energy Source Strategy is underpinned by an economic assessment of available energy options for each community. The objectives of the strategy are to:

- minimise long-term service delivery costs
- meet demand growth
- make efficient use of emerging technologies and the availability of gaseous fuels
- prepare for the financial impacts of climate change.

IES Pty Ltd owns and operates 52 diesel-fired power stations and over 1,000 km of power distribution lines to deliver electricity to remote communities and Territory Growth Towns. Where customers are close to existing electricity services, power is purchased through agreements, such as with Rio Tinto Alcan at Gove and GEMCO on Groote Eylandt.
Water Supply

Power and Water manages more than 250 production bores, 160 water storage tanks and 600 kilometres of water distribution systems to deliver water to households.

We obtain water from 70 isolated groundwater and surface water sources to supply drinking water to the Territory Growth Towns and remote communities.

In 63 towns and communities the water comes exclusively from groundwater contained in aquifers, which is extracted through production bores. Three communities exclusively use surface water sources, such as rivers, creeks and dams. The remaining five communities use a combination of groundwater and surface water sources. All water is disinfected before it is provided for drinking. The amount of water available and the natural quality of the water found in these diverse water sources presents significant challenges to ensure that each community has a safe and reliable water supply.

Power and Water has developed the Water for Healthy Communities program, which includes water quality, water sustainability and wastewater management, to ensure the provision of appropriate water and sewerage services in Territory Growth Towns and remote communities. This is based on the principles of risk management and focuses on making adequate safe water available for community use, with appropriately treated wastewater being returned to the catchments.

The objectives of Water for Healthy Communities are to:

- Protect public health
- Provide appropriate service infrastructure
- Minimise any adverse effects our operations have on the environment
- Manage water resources sustainability
- Enhance involvement with community residents and stakeholders in water management

To deliver drinking water to homes, a number of production bores pump water from the underground aquifers to a central storage area where it is disinfected and delivered via the distribution system using gravity.

For more information see Appendix: Providing Safe Water Water Quality Test Results
Sewerage services

Power and Water manages more than 300 km of reticulated sewerage pipe and 56 waste stabilisation pond treatment systems across 56 of the Territory Growth Towns and remote communities.

We have developed a Wastewater Management Strategy to improve wastewater treatment systems in 56 of the Territory Growth Towns and remote communities by 2015. The strategy gives direction on wastewater management including design, management, commissioning and ownership of the technology, public health issues, energy requirements, maintenance and security of assets, monitoring, approvals and stakeholder engagement.

Sewerage services are provided by taking wastewater off-site through pipes and pump stations to centralised waste stabilisation ponds for treatment and appropriate disposal.

FOR MORE INFORMATION SEE APPENDIX
EFFECTIVE SEWERAGE SERVICES
It is expected that use of electricity, water and sewerage services will continue to grow across the Territory Growth Towns and remote communities. Although population growth is a driver, many of the Northern Territory and Australian Government initiatives aimed at improving lifestyle and health outcomes will lead to greater use of energy and water services. Improved prosperity through programs to provide sustainable employment opportunities will also increase demand for services with embodied energy and water.

All customers pay for electricity, water and sewerage at the uniform Power and Water tariff, which is less than the actual cost to provide these services to the majority of the Territory Growth Towns and remote communities. Domestic Indigenous households are not charged for water and sewerage services, and electricity is purchased using prepaid power tokens.

The 2011-12 financial year saw electricity sales of $23.1 million, water sales valued at $3.1 million, and sewerage services valued at $2.0 million.
Over the years, Power and Water has shifted focus from infrastructure maintenance to a holistic utility approach in line with changing government and public expectations. This has resulted in growth in the areas of monitoring and management of water quality and water sources, monitoring and limiting the impact our operations have on the environment as well as planning for sustainability of assets and service delivery.

We have responded to changes in customer and government environs that have resulted in exponential growth in housing as well as health, education and other developments. To meet this growth in demand, we have had to increase capacity to deliver water and energy in some locations by augmenting the infrastructure.

To continue to meet requirements, planning, asset management, reporting and project management capabilities have been strengthened. Our planning and development team of technical and professional staff provides:

- Strategic planning for power, water and sewerage services including the expansion of our renewable and low emissions energy portfolio and capability
- Development of investment programs and funding submissions
- Project delivery capability for capital and minor works program including financial management and analysis
- Infrastructure management including reporting on system performance
- Customer service and support for various developers
- Contract management capability including the supply and delivery of distillate
- Program planning and management expertise including hydro-geological assessment, groundwater investigations and monitoring
- Development and delivery of water and energy efficiency programs through community engagement and consultation
- Coordination of legislative and regulatory reporting to relevant authorities for services
- Water quality, water and wastewater treatment expertise including operational management and capital improvement requirements
- Development and implementation of Supervisory Control and Data Acquisition (SCADA) systems to provide infrastructure control and performance monitoring.

We are analysing the capacity of infrastructure in the Territory Growth Towns to determine the impact of the scheduled development on service delivery. A significant portion, constructed shortly after the Northern Territory achieved self-government, has reached the end of its life. To date, funding to replace ageing assets as well as augmentation to meet the increased capacity required has not been available, resulting in deferral of major projects. Extension and upgrade of critical primary infrastructure is essential to meet the infrastructure development.
Monitoring and control infrastructure

Supervisory Control and Data Acquisition (SCADA) systems are deployed in 58 power systems and 21 water systems across the Northern Territory. This approach has proven to significantly improve the effectiveness of service delivery, decrease the time taken to respond to issues and reduce the cost of managing remote essential infrastructure.

Key aspects are:

- improved infrastructure performance and operating efficiency
- supply of reliable power services
- ensuring safe water supplies
- monitoring of sewerage system overflows
- enabling improved reporting on infrastructure performance
- supporting increasing regulatory requirements
- better support of community-based Essential Services Operators.

Water and energy efficiency

Power and Water’s energy and water efficiency strategies encourage more effective use of water and electricity in remote areas to reduce long-term costs and support sustainable management of our water resources. A number of complementary initiatives are targeted at our diverse stakeholders, all of whom have a part to play in reducing water and energy usage and requirements for the future.
During 2012 Remote Operations established a project delivery team for major capital investment, supported by Power and Water’s procurement, finance and property (leasing) teams.

As a result the following major projects have been achieved.
FOOTBALL HELPING PROMOTE WATER

NT Thunder players have continued to use their magical mix of footy clinics and educational sessions to help spread the word about water conservation in remote communities.

As water conservation ambassadors, the squad helped promote water conservation with visits to remote communities as part of a sponsorship arrangement with the Corporation.

Children of all ages joined group sessions learning about where water comes from, how it is tested and how it gets from under the ground all the way through to household taps and importantly, how to conserve it.

This win-win partnership is raising awareness of the importance of doing simple things to reduce water use.

Expanding populations and economic growth in remote communities has seen demand for water and energy rise sharply. We provide services to more than 30,000 people in 20 Territory Growth Towns and 52 communities and outstations.

We are committed to reducing water and energy consumption and our work with NT Thunder is an important part of this conservation program.

SAVE WATER

Power and Water recognises the need to encourage more efficient use of water and energy in remote areas. Water efficiency is vital where the existing water resource is at risk of over-extraction, which could have a detrimental impact on the quantity and quality of the natural water resource including it drying up completely.

We are using a Territory-wide water efficiency campaign to increase the basic knowledge of all residents on the need for efficient use of water and energy. This is being achieved through a general marketing program on local media channels including broadcast of radio advertisements in six Indigenous languages, DVDs, ‘Use Less Water’ posters, promotional items including t-shirts, water bottles and fans. This information is available from Power and Water’s website:

www.powerwater.com.au
/sustainability_and_environment
/remote_sustainability_initiatives
/water_resource_management
/use_less_water_campaign

GALIWIN’KU WATER CONSERVATION OFFICERS

Four Indigenous residents of Galiwin’ku have been employed to help spread the word on water conservation. The locals are being trained and mentored to educate their fellow community members about their water resource, the importance of positive water use behaviours and how to save in their homes and workplaces to achieve water conservation targets. The officers have uniforms and a range of communication materials to help spread key messages including ‘talking books’ in local language, a DVD series, posters, stickers and radio adverts. Working four days a week, the officers have also helped Power and Water identify and fix leaks through raising community awareness of leak reporting, to further increase efficiencies and reduce water losses.

This initiative demonstrates the benefits of partnering with local Community Development Employment Program provider, Community Enterprise Australia. The community benefits from the employment opportunities, an improved understanding of power and water services and how individuals can reduce their use. The project was also supported with direct funding from the Northern Territory Government.
SMART METERS IN GUNBALANYA

Following the success of a trial at Santa Teresa, smart meters were extended to Gunbalanya, a community that relies on a water source known to have a limited volume of water. The smart meters have been installed on all houses and buildings in the community as well as on key parts of the water distribution system.

'Smart' meters are electronic meters that automatically measure the flow of water and upload the information to a web interface for Power and Water to examine water use quickly and effectively.

The information gained will help detect leaks and support a future water and energy efficiency program, which will include community education and a household water audit and retrofit program. Selected commercial customers will be eligible for water and energy audits. This information is expected to be available in early 2012-13, allowing us to understand water use patterns and the implications of those patterns on sustainable extraction of water. The program is expected to be extended to other communities such as Milingimbi and Ali Curung in the future.

Over the next 12 months, Power and Water will work with West Arnhem Shire and the Department of Housing Local Government and Regional Services and use smart meters and community engagement processes to reduce water consumption to within sustainable limits. This household water efficiency program is funded by the Department of Regional Australia, Regional Development and Local Government and will provide important data on the effectiveness of water efficiency programs that may be extended to other locations in the future.

WURRUMIYANGA WATER PROJECT

Wurrumiyanga, on Bathurst Island, has a more secure water supply with the completion of a $4.3 million upgrade.

The community, formerly known as Nguiu, is home to nearly 1500 people and has been identified as a Territory Growth Town.

A new, 1.8 million litre water tank and additional bores have been installed to meet current and forecast future needs.

The larger tank increases water supply and pressure to the new homes and amenities like the AFL field, training ground for the Tiwi Bombers.

The state-of-the-art chlorination system ensures the water is safe to drink, while fluoridation has been introduced to meet levels recommended by the Northern Territory Department of Health.

The facilities are about six kilometres from the community centre, giving room for the community to grow.

Wurrumiyanga was the first of five remote Indigenous communities to take part in the Strong Teeth and Healthy Bodies program with the Corporation and the Department of Health.

Fluoridated water will also be provided in Maningrida, Wadeye, Angurugu and Umbakumba.

HELPING TO IMPROVE HEALTH OUTCOMES

As part of an ongoing program in partnership with Department of Health, Power and Water installed new gas chlorination and fluoridation systems at Wurrumiyanga (Nguiu) and Wadeye (Port Keats). The new chlorination systems replaced old liquid chlorine systems, which were becoming problematic to manage as the communities grow. The new disinfection systems are more reliable and efficient and improve the safety of the water by reducing potential exposure of residents to disease causing micro-organisms. The fluoridation systems were introduced to add fluoride to the drinking water and improve oral health outcomes in the community by helping to prevent tooth decay.

Power and Water will roll out these new chlorination and fluoridation systems in other Territory Growth Towns over the next few years. In 2012-13 Maningrida, Angurugu, Umbakumba and Gunbalanya (Oenpelli) will receive a combination of these new treatment systems.
CONSTRUCTION OF THREE NEW WATER TREATMENT SYSTEMS

Construction has begun on the first of the three advanced water treatment systems to be installed in Ali Curung, Kintore and Yuelamu. This is the first installation of this type of advanced treatment technology, which is necessary to reduce levels of naturally occurring nitrate and fluoride as well as salinity and hardness, in remote communities.

The treatment systems will improve the water quality and security of water supplies. Once installed, the quality of the drinking water will be within the recommended levels of the Australian Drinking Water Guidelines.

Power and Water has been working very closely with the three communities to provide information, share understandings and ensure support for changes to water supplies. As well as community meetings, support material including posters have been displayed and distributed.

NEW NATURAL GAS-FIRED POWER STATION AT WADEYE

Power and Water is developing designs for a seven megawatt (MW) natural gas-fired power station at Wadeye. The new power station will be located out of the Wadeye township, close to the Bonaparte Gas Pipeline. It will replace the old diesel-fired power station, currently located in the middle of town, and provide greater generation capacity to meet the growing electricity needs.

Construction will commence in 2012-13 and is expected to be completed by 2013-14.

IMPROVING REMOTE MONITORING

Power and Water will continue to improve its remote monitoring and control systems in remote communities by establishing a faster more reliable communications network and fitting infrastructure with Supervisory Control and Data Acquisition (SCADA) systems. During 2011-12 five satellite and five fibre optic communications links ensured a new central database could be readily accessed for monitoring and analysis.

Ongoing investment in SCADA and communication systems will be made in conjunction with major capital investment. These systems enable us to remotely monitor and control supply systems and ensure that they run as effectively as possible and will automatically turn on and off equipment as required. This helps ensure precious water isn’t wasted through water storage tank overflows and leaks.

SOLAR POWER IN THREE MORE COMMUNITIES

Almost one megawatt of solar energy potential was installed across three systems in Ti Tree, Kalkarindji and Alpurrurulam (Lake Nash) this year.

Funding of $14m was provided by the Australian and Northern Territory governments and Power and Water signed a 20-year power purchase agreement for electricity produced with Epuron Pty Ltd and its subsidiary TKLN Solar Pty Ltd. The flat plate photovoltaic (PV) solar systems are expected to provide up to 80 per cent of daily power requirements and in the long-term will save millions of litres of diesel fuel and significantly reduce carbon emissions.

PREPARED FOR EMERGENCIES

During emergencies such as cyclones, floods and other natural disasters, communication systems are often unavailable. To enable communication to be maintained with remote communities during these emergency events we have instigated the re-establishment of High Frequency (HF) radio systems.

In 2011-12, HF systems were re-commissioned or installed in key high risk sites across the northern region and the program will be extended to communities in the Katherine region as the next priority. This ensures we can maintain or reinstate essential services as quickly as possible following an emergency.

In 2011-12, the solar panels and associated infrastructure were constructed and integrated with the diesel-fired power stations at each of the communities. The systems are in the process of being commissioned and are expected to provide power in 2013.

Two million litres of diesel will be saved every year by replacing the existing diesel power station with a natural gas-fired power station.
INTEGRATED RENEWABLE ENERGY SHOWCASE

As part of Power and Water’s commitment to integrating alternate energy sources to generate electricity we have established a renewable energy showcase at Alpurrurulam (Lake Nash). The wind-solar-diesel hybrid power station includes both wind turbines and a flat plate photovoltaic (PV) solar system to generate electricity. The showcase demonstrates the complementary nature of solar and wind energy resources to generate electricity.

Power and Water has a 20-year power purchase agreement for the renewable energy produced by these systems with the owner Epuron.

The showcase wind-solar-diesel hybrid system is expected to be generating electricity by end 2012.

IMPROVING THE AMOUNT OF POWER FROM SOLAR

Power and Water operates concentrating solar photovoltaic (CPV) dishes in Hermannsburg, Lajamanu and Yuendumu. The solar power generated from these systems supplements the electricity supply provided by the diesel power stations to give a reliable supply of power to the communities. We are in the process of replacing the concentrating mirrors with new mirrors, which have added technology features that improve generation output and the life of the systems.

PLANNING FOR HERMANNSBURG ELECTRICITY GRID CONNECTION

Hermannsburg is a Territory Growth Town and demand for electricity is rapidly increasing. To cater for this, Power and Water is planning a powerline to connect Hermannsburg, and the outstations currently connected to the Hermannsburg network, to the Alice Springs power supply. The new powerline will stretch more than 90 kilometres and approximately 30 kilometres of existing powerline, that connects the outstations to the new powerline, will also be upgraded.

Once the powerline is in place, we will be able to decommission the old, less efficient diesel-fired power station at the community. In the long-term, this will save million of litres of diesel fuel and provide a secure power supply from the more efficient gas-fired station at Alice Springs and allow the communities to continue to grow.
NEW SEWERAGE PUMPING STATION AT WADEYE

Wadeye is a Territory Growth Town and significant investment continues in facilities including schools, health centres and stores. To ensure that the sewerage system continues to effectively remove sewage from the community, Power and Water has upgraded one of the sewerage pump stations and a portion of the sewerage reticulation system. The upgrades have significantly increased the capacity of the system and will meet the needs of the rapidly growing township into the future.

ADDITIONAL POWER IN SEVEN REMOTE COMMUNITIES

Three new diesel generators were installed as part of the upgrade to the Rammingining power station, which increased the total generation capacity from 1.6 megawatts (MW) to 2.4 MW. This ensures we can meet power demand if a unit needs to be offline for maintenance, as well as allowing generators to operate within their optimal range and use the least amount of fuel.

New and refurbished generators were also installed in Atitjere (Harts Range), Numbulwar, Papunya, Tara (Neutral Junction), Willowra and Wilora (Stirling). This has increased generation capacity at the communities to ensure that the stations are operated as efficiently as possible and meet the growing demand for power services.

NEW WASTEWATER TREATMENT SYSTEM AT ANGURUGU

New wastewater stabilisation ponds, sewage reticulation and a new sewer pump station have been installed at Angurugu as part of long-term plans to upgrade the sewerage system to meet the growing community’s needs. The ponds are located further away from the community, allowing the old system to be decommissioned and the site to be rehabilitated so the land may be returned to the community for use. Over the coming years, Power and Water will progressively replace the remaining ageing sewerage reticulation system.

MORE FUEL STORAGE AT GAPUWIYAK

In 2011-12, Power and Water completed a $1.1 million project to improve diesel fuel storage at Gapuwiyak. The project involved increasing fuel storage capacity and upgrading the fuel bunding to meet national standards and reduce impact to the environment at both the barge landing and the power station. The existing storage tanks at the barge landing were relocated to the power station 25km away to increase the storage capacity by 50 000 litres. Two new storage tanks were installed at the barge landing to provide another 110 000 litres of fuel storage capacity. As part of the project, fuel transfer facilities and personnel access were significantly improved to further protect the safety of operators.

WATER FOR THE FUTURE

Angurugu, Maningrida, Hermannsburg and Umbakumba are Territory Growths Towns and more water is required to meet the growing needs of these communities. Over the last 12 months, Power and Water drilled a number of ground water bores to access underground aquifers, which can be used to provide future water supplies and to monitor the overall health of the aquifer.

<table>
<thead>
<tr>
<th>Community</th>
<th>Provide water to the community in the future</th>
<th>To monitor the health of the water resource to ensure water is available for the future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angurugu</td>
<td>2 new production bores</td>
<td>1 new monitoring bore</td>
</tr>
<tr>
<td>Maningrida</td>
<td>3 new production bores</td>
<td>5 monitoring bores rehabilitated</td>
</tr>
<tr>
<td>Hermannsburg</td>
<td>5 new production bores</td>
<td>2 new monitoring bores</td>
</tr>
<tr>
<td>Umbakumba</td>
<td>3 new production bores</td>
<td>3 new monitoring bores</td>
</tr>
<tr>
<td>Total</td>
<td>8 new production bores</td>
<td>9 monitoring bores</td>
</tr>
</tbody>
</table>
To provide electricity, water and sewerage services IES operates essential infrastructure including:

- electricity generation infrastructure comprising mostly of diesel power stations
- electrical distribution systems, up to and including customers’ meters
- water infrastructure including surface water harvesting, groundwater production bores, bore-pumps, tanks, transfer pumping stations, water treatment and water supply reticulation systems, up to the customers’ property boundaries
- sewerage infrastructure, starting at the customers’ boundaries, including collection mains, pumping stations and wastewater treatment, reuse and disposal systems.
### Statistical Summary

**ELECTRICITY**

<table>
<thead>
<tr>
<th>Units</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GENERATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed Capacity (including solar)</td>
<td>MW</td>
<td>51.02</td>
<td>55.95</td>
<td>59.61</td>
<td>69.41</td>
<td>71.25</td>
</tr>
<tr>
<td>Installed Capacity (solar only)</td>
<td>MW</td>
<td>0.74</td>
<td>0.69</td>
<td>0.79</td>
<td>0.79</td>
<td>0.79</td>
</tr>
<tr>
<td>Electricity Generated (including solar)</td>
<td>GWh</td>
<td>94.67</td>
<td>96.67</td>
<td>106.24</td>
<td>111.81</td>
<td>103.22</td>
</tr>
<tr>
<td>Electricity Generated (solar only)</td>
<td>GWh</td>
<td>1.56</td>
<td>0.97</td>
<td>0.81</td>
<td>0.66</td>
<td>0.27</td>
</tr>
<tr>
<td>Electricity Sent Out (including solar, purchases from PWC and purchases from private suppliers)</td>
<td>GWh</td>
<td>93.12</td>
<td>97.31</td>
<td>123.12</td>
<td>129.10</td>
<td>118.80</td>
</tr>
<tr>
<td>Purchases from PWC (electricity purchased from PWC electricity grids and sent out to IES communities)</td>
<td>GWh</td>
<td>n/a</td>
<td>n/a</td>
<td>11.03</td>
<td>11.95</td>
<td>9.42</td>
</tr>
<tr>
<td>Purchases from Private Suppliers</td>
<td>GWh</td>
<td>7.51</td>
<td>8.09</td>
<td>7.98</td>
<td>7.57</td>
<td>8.23</td>
</tr>
</tbody>
</table>

**NETWORKS**

<table>
<thead>
<tr>
<th>Units</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distribution (22/11 kV &amp; below)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HV Overhead</td>
<td>km</td>
<td>373</td>
<td>349</td>
<td>472.23</td>
<td>513.23</td>
<td>578.6</td>
</tr>
<tr>
<td>HV Underground</td>
<td>km</td>
<td>0.5</td>
<td>5.36</td>
<td>5.42</td>
<td>5.42</td>
<td>7.1</td>
</tr>
<tr>
<td>LV Overhead</td>
<td>km</td>
<td>278</td>
<td>278.07</td>
<td>277.66</td>
<td>277.66</td>
<td>325.2</td>
</tr>
<tr>
<td>LV Underground</td>
<td>km</td>
<td>1</td>
<td>3.51</td>
<td>2.67</td>
<td>2.67</td>
<td>2.8</td>
</tr>
<tr>
<td>SWER All Voltages</td>
<td>km</td>
<td>87</td>
<td>87</td>
<td>86.7</td>
<td>87</td>
<td>87</td>
</tr>
<tr>
<td>Sales</td>
<td>MWh</td>
<td>60573</td>
<td>63665</td>
<td>104501</td>
<td>112029</td>
<td>112725</td>
</tr>
<tr>
<td>Customers (ie. Services)</td>
<td>No. of Installations</td>
<td>7373</td>
<td>7540</td>
<td>8116</td>
<td>8478</td>
<td>8507</td>
</tr>
</tbody>
</table>

**WATER**

<table>
<thead>
<tr>
<th>Units</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sourced Water</td>
<td>ML/day</td>
<td>9250.03</td>
<td>9845.74</td>
<td>9848</td>
<td>9791.59</td>
<td>9002.07</td>
</tr>
<tr>
<td>Length of Mains</td>
<td>km</td>
<td>649</td>
<td>649</td>
<td>651.83</td>
<td>654</td>
<td>654</td>
</tr>
<tr>
<td>Customers (ie. Services)</td>
<td>No. of Meters</td>
<td>567</td>
<td>783</td>
<td>1341</td>
<td>2175</td>
<td>2213</td>
</tr>
</tbody>
</table>

**WASTEWATER**

<table>
<thead>
<tr>
<th>Units</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of Sewage Treated</td>
<td>ML</td>
<td>3551.96</td>
<td>3834.86</td>
<td>3940</td>
<td>3916.63</td>
<td>3600.83</td>
</tr>
<tr>
<td>Length of Sewer Mains</td>
<td>km</td>
<td>303</td>
<td>302.5</td>
<td>305</td>
<td>307</td>
<td>303</td>
</tr>
<tr>
<td>Volume of Effluent Reused</td>
<td>ML</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Customers (ie. Services)</td>
<td>No. of Installations</td>
<td>847</td>
<td>899</td>
<td>1122</td>
<td>1467</td>
<td>1793</td>
</tr>
</tbody>
</table>

---

1. Electricity Sent Out and Purchases from PWC are estimated as this data is not metered. Changes have been made to the estimation methodology for this statistic, and therefore historical data has been restated.

2. From 2008-09, Electricity Sent Out includes Purchases from PWC (ie. electricity sent out to IES communities purchased from PWC power grids). This has not been included in previous years.

3. Distribution line lengths, and water and sewer main lengths have been estimated for 2011-12 using historical data. A review of the distribution line and main lengths is currently underway, and data is being moved to the Geographic Information System.

4. From 2008-09, Electricity Sales includes all prepayment and credit meter sales. Previous years data does not include all prepayment meter sales.

5. Due to changes to the calculation methodology for this statistic, historical data for 2010-11 and prior years have been re-stated.
Power and Water undertakes annual customer satisfaction research among its stakeholders in Territory Growth Towns and remote communities.

More than 200 customers including school principals, health clinic managers, Shire Service Managers, Australian Government business managers, police officers and community store managers, were interviewed over the phone between 27 October and 14 November 2011.

Customers’ overall satisfaction with Power and Water’s services has been steadily increasing since we first started tracking it in 2007 and is now at a notable 8.2 out of 10 (see Figure 1).

The 2012 customer satisfaction survey results indicate that Power and Water is trusted and appreciated and we are satisfying the needs of customers and stakeholders.

Figure 1: Overall Satisfaction with PWC Services and People

Our Essential Service Operators (ESOs) are a critical part of successfully providing power, water and sewerage services. This is demonstrated by a very positive score of 9.2 out of 10 given for the level of satisfaction with the ESOs’ responsiveness or time taken to attend to unplanned service interruptions (see Figure 2).

Figure 2: Overall Satisfaction with Responsiveness of ESO to Unplanned Service Interruptions

Power and Water’s investment in remote monitoring and control of essential infrastructure will further support the continued improvement in ESOs responsiveness as these systems automatically send ‘alarm’ signals to ESOs advising them of problems with critical infrastructure and enabling immediate responses.
Power and Water monitors the amount of water extracted from more than 70 water sources to supply drinking water to Territory Growth Towns and remote communities. Water extraction licences are required from the Department of Natural Resources Environment the Arts and Sport (NRETAS) as part of the Northern Territory Water Act (2008) for 28 communities. Currently, Power and Water holds licences in 13 communities and has submitted 15 licence applications to NRETAS with approvals pending. These licenses require the amount of water extracted be reported to the regulator to ensure set limits are not exceeded and the long-term sustainability of water resources are maintained.

In 2011-12, the amount of water extracted for one of the communities exceeded the licence limit. Bulla relies on both groundwater and the East Baines River to supply the community with water. The licence limit breach occurred due to a larger volume of water being extracted from the river to dilute and reduce the natural levels of barium in the groundwater source to ensure that the water was safe for consumption. Power and Water is working with NRETAS to reduce water consumption and is investigating new water sources or increasing licence extraction limits based on the sustainability of the resource.

WATER RESOURCE EXTRACTION

Power and Water has a Memorandum of Understanding (MoU) with the Department of Health for managing drinking water quality in its area of control. The MoU outlines actions that need to be taken when water tests identify issues, including when E. coli is detected in the distribution system, as part of the Drinking Water Quality Monitoring Program. In some instances, the Department of Health will take an extra step and issue a Precautionary Advice for Drinking Water to advise the community that drinking water should be boiled before consumption.

In 2011-12, E. coli detections occurred at Galiwinku, Gunbalunya, Jilkminggan, Nganmayanga (Palumpa), Papunya, Wallace Rockhole, Wilora, Weemol and Yarralin.

Of these detections, only one, Gunbalanya, indicated a significant risk to public health and the Department of Health (DoH) issued a Precautionary Advice for Drinking Water.

Significant levels of E. coli were detected in one of three samples taken from the water supply on 16 May 2012 and a Precautionary Advice was issued by the DoH. Power and Water immediately reconfirmed chlorine disinfection levels, collected more water samples and comprehensively flushed the water supply system. Analysis of subsequent water samples confirmed the water was clear from E. coli and other indicator bacteria. The Department of Health lifted the Precautionary Notice on 17 May. An investigation found the E. coli detection was due to contamination of the sample collection bottle and not the water quality. Power and Water has implemented preventative measures to avoid such an incident happening again.
Indigenous Essential Services

The Remote Operations unit provides management, technical and professional services to IES, with administrative and technical support from Power and Water. This integrated structure allows operational delivery and planning teams to work closely together and ensures that capital investment programs are delivered as cost effectively as possible across the energy, water and sewerage business.

Our People

Every day the Remote Operations team overcomes the challenges of remoteness and climatic extremes to ensure that the integrity of services is maintained across more than 1.3 million square kilometres - nearly one sixth of Australia’s land mass.

The key to successful delivery of electricity, water and sewerage services in Territory Growth Towns and remote communities is the Remote Operations team that make it happen. Across the Territory a team of multidisciplinary professionals and technical staff are committed to improving the environments of remote residents through reliable electricity, water and wastewater services.

More than 150 full time and relief Essential Services Operators, who work locally for shires or private contractors, are crucial to maintaining these services on the ground. This group is trained by Power and Water to perform specific tasks such as testing water quality or maintaining adequate fuel supplies to ensure the integrity of our infrastructure.
Remote operations

Over recent years, the approach to servicing Territory Growth Towns and remote communities has undergone immense change. This has been driven by the implementation of various initiatives through Australian and Territory Governments’ partnerships which have included significant investment in Territory Growth Towns, establishing an increase in expectations of development and service standards, monitoring and reporting. Remote Operations has continued to maintain a team of multidisciplinary professional and technical people that not only ensure that the ‘lights stay on’ but also work to improve services, reduce costs, meet regulatory requirements and plan for the future.

Over the last 12 months, Remote Operations staff focussed on increasing participation in current Power and Water health and safety initiatives, such as the completion of Safe Act Observations and training. The team has also been working on implementing a new system to manage our workforce capability and planning. This has involved identifying ‘benchmark’ health and safety, licences and training required for each individual position and compared with existing skills to identify training requirements. For example, Certificate III in Water Operations is required for all Water and Sewerage Technical Coordinators, so a Registered Training Organisation has been engaged and will deliver the training program, which is expected to be completed in early 2013.

In 2011-12, Remote Operations implemented a number of new systems and processes to improve contractor health and safety performance. This included increasing documentation requirements during planning and delivery of projects and conducting training and audits to ensure compliance with Power and Water’s procedures and legislative requirements.

Safety is one of Power and Water’s core values and Remote Operations continually implements health and safety initiatives to protect ourselves, contractors and the general public.

Ralph Hutchins started working with Transport and Works, Water Division in the NT in 1980. In the years that followed, the provider of essential services in the Territory changed its name numerous times and went through some fundamental changes in infrastructure and technology - Ralph has seen it all.

In 1995 Ralph joined the Remote Operations section of the Power and Water Authority in the Engineering Services Group. Prior to that he had worked for Water Services in both Darwin and Alice Springs where he was instrumental in creating a Service Development Team for power, water and sewerage services, and communicating water conservation messages to schools and the broader community.

Ralph’s biggest highlight since joining Remote Operations has been his involvement - from conception to completion - in the National Aboriginal Health Strategy. He is passionate about improving living conditions for community residents and used this opportunity to deliver effective sewerage systems to 12 communities in the southern region. In his various roles, Ralph has always ensured the best possible outcomes for the communities are achieved.

Ralph has lived in Alice Springs for more than 25 years after transferring from Darwin. He said that his work and family are key in his life and the reason for living in Alice Springs. With his extensive knowledge of community infrastructure across the NT and the systems that are fundamental to our operations, we are glad he is still here.

32 YEARS AND STILL MORE TO COME
In 2009 Power and Water embarked on a journey to embed a new corporate vision, purpose and values and, in turn, improve culture amongst staff. The culture is based on shared values, norms and expectations that guide our team members in how they approach their work, interact with each other and our customers.

Building our focus on achievement and pursuing a standard of excellence in a supportive and cooperative manner has been a strong driver in Remote Operations. We do this through workshops, creating shared understanding and objectives and building knowledge and skills in areas of technical expertise, as well as “softer” skills and leadership capacity.

In 2011, the Planning and Development group in Remote Operations received specific recognition from Power and Water’s Board of Directors for excellent results in the Organisational Culture Survey.

We are very proud supporters of programs designed to develop leadership and management capacity including the management development workshops. In the past two years nine managers successfully participated in the Emerging Leaders Program, which has resulted in key improvements in the overall management capacity and effectiveness of the business unit.

We continue to focus on recruitment of highly skilled and motivated people and have supported the Power and Water graduate program by hosting at least three graduates for each six month rotation.

ESOs carry out a range of regular tasks as part of the operation and maintenance of essential services including water quality testing, diesel generator servicing and meter reading for retail services. They require a variety of skills, knowledge and experience in power, water and sewerage infrastructure, operations and customer services to safely, effectively and efficiently carry out all duties. Power and Water supports ESOs through a range of initiatives, including inductions, familiarisation courses, Occupation Health and Safety (OH&S) training, on-site training and mentoring.

Since 2011, Power and Water has introduced a strategic workforce capability plan for ESOs, which strives to build local capacity and provide targeted training and development opportunities to ensure they continue to provide a significant role in the delivery of power, water and sewerage services in remote areas.
Indigenous employment

Power and Water is working with Charles Darwin University (CDU), Group Training NT (GTNT) and the shires to target training and development opportunities for ESOs and support Indigenous employment. This is being achieved by facilitating a career pathway for ESOs, supported by Certificate II or III qualifications in essential service infrastructure delivery, with a particular focus on increasing the portion of ESOs that are Indigenous or identified as Aboriginal and Torres Strait Islander (ATSI).

<table>
<thead>
<tr>
<th>Career path</th>
<th>Non - ATSI</th>
<th>ATSI</th>
<th>Number</th>
<th>% ATSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESO Supervisor</td>
<td>20</td>
<td>5</td>
<td>25</td>
<td>3%</td>
</tr>
<tr>
<td>Qualified ESO</td>
<td>20</td>
<td>12</td>
<td>32</td>
<td>8%</td>
</tr>
<tr>
<td>Base Grade</td>
<td>39</td>
<td>54</td>
<td>93</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Total ESOs</strong></td>
<td></td>
<td></td>
<td>150</td>
<td>47%</td>
</tr>
</tbody>
</table>
Our Partnerships

Power and Water understands that continuous improvement of services is achieved through strategic partnerships with government and key organisations.

We continued to work with the Department of Local Government, Housing and Regional Services (DHLGRS) on the “Improving Water Management in Small Water Supplies in the NT” project, which is focussing on Homelands (often also referred to as Outstations). The project aims to build capacity in a sustainable manner amongst service providers, communities and stakeholders and put processes in place to ensure that those involved in water supply management can manage the water and protect public health. Over the last 18 months, the project has coordinated 10 training workshops on water management for small water supplies and has used the Community Water Planner Field Guide as a tool to develop Water Management Plans for a number of Homelands.
Regulatory relationships

Power and Water maintains regulatory partnerships with the following departments and agencies:

**THE DEPARTMENT OF HEALTH**

The Department regulates drinking water quality in the Northern Territory. Power and Water works very closely with the Chief Health Officer to establish and review monitoring programs to verify water quality, incident response protocols and proposed actions to improve infrastructure for extraction, treatment, storage and distribution of potable water.

The Memorandum of Understanding between Power and Water and the Department of Health documents the commitment by both parties to providing drinking water. The MoU confirms the Australian Drinking Water Quality Guideline as the key reference for water quality management in Territory Growth Towns and remote communities.

This *Indigenous Essential Services Annual Report 2011-12* is provided to the Chief Health Officer in compliance with regulatory obligations.

**THE DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENT, THE ARTS AND SPORT (NRETAS)**

The Department administers the *Water Act*, which provides for the investigation, allocation, use, control, protection, management and administration of water resources, and related purposes. Power and Water works with NRETAS to obtain licences and report on water extraction from production bores as well as pollution discharges to waterways from wastewater treatment ponds.
Service agreements

IES Pty Ltd has an agreement until 2013 with the Northern Territory Government, administered by the Department of Local Government, Housing and Regional Services (DHLGRS) as its agent, to help fund essential services in the communities. Power and Water and DHLGRS work in close partnership to deliver services. The purchase of additional services by DLGHR is on a fee-for-service basis. Ownership of water supply, sanitation and electricity assets is vested in IES Pty Ltd. The agreement with the Northern Territory Government establishes the services to be provided and specifies service level guidelines.

The objectives of the agreement are to provide:

- Reliable and equitable services to Territory funded Territory Growth Towns and remote communities
- Effective management of the assets including optimal repair and maintenance programs
- Efficient financial management, providing low cost services, works, repair and maintenance programming
- Support of regional development and Indigenous employment and training.
Research and development

As part of the continuous improvement of services, Power and Water partners and participates in a number of research and development initiatives. Key initiatives undertaken during 2011-12 included:

- Establishing the Daly River solar energy project, a partnership between Power and Water and Charles Darwin University’s Centre for Renewable Energy. The project will determine how the amount of solar energy supplied to the community can be maximised through the optimisation of the diesel power station operation and load management. The project has received $500,000 from the Australian Solar Institute and will begin at Daly River early 2012-13.

- Continued participation in “Application of capacitive deionisation in inland brackish water desalination” in conjunction with the National Centre for Excellence in Desalination and the University of South Australia. The two-year project involves optimising and trialling a new treatment technology that removes salts from drinking water to test its suitability and effectiveness for use in remote areas of the Northern Territory. Participation in the project is promoting the development of robust and cost effective treatment technologies to improve the taste of the water and reduce the formation of scale. This could be suitable for use in our remote communities in the future.

- Establishing the “Validation of maturation ponds in order to enhance safe and economical water recycling” project, in partnership with Charles Darwin University (CDU) as part of a larger national study led by Griffith University. Power and Water will support a post-doctorate research position at CDU to undertake field sampling and validation of one of the IES waste stabilisation ponds. The project will help us assess the risks and impacts associated with remote wastewater treatment systems and understand the risks associated with reusing or recycling treated wastewater. The expected outcomes include new techniques for determining the treatment efficacy of ponds; a user-friendly design, operation and maintenance model; and an evidence-based, decision-support tool for assessing potential human and ecological risks associated with reuse.
Our Governance

Indigenous Essential Services Pty Ltd is a wholly owned, not-for-profit subsidiary of Power and Water Corporation. Its Board of Directors are also members of Power and Water Corporation’s Board of Directors and are:

**MS JUDITH KING (CHAIRMAN)**

*BA, Foundation Fellow AICD*

Ms King is Board Chairman and has been a director of Power and Water Corporation since its establishment. With extensive board experience in the private and public sector, she was formerly a director of Melbourne Water Corporation and Citipower and closely involved in the restructure and reform of the Victorian utility sector. Ms King’s current appointments include National Ageing Research Institute and the Victorian Commission for Gambling Regulation. Ms King was awarded an Australian Centenary Medal in 2003.

**MR ANDREW MACRIDES**

*Dip Bus(Mgt), B Bus(Acc), MBA, FCBA, FAICD*

Mr Macrides was appointed Managing Director of the Power and Water Corporation in June 2007. Born and raised in Darwin, Mr Macrides has extensive government and management experience, beginning his career in the accounting field in 1978. Prior to joining Power and Water Corporation in 1998, he worked across a range of sectors in the NT Government, including health, housing, community services and tourism. Following corporatisation on 1 July 2002, Mr Macrides was appointed General Manager Business Services and Chief Financial Officer with the Power and Water Corporation, and in May 2003 was appointed Company Secretary in addition to his role as General Manager Business Services.

**MR MERVYN DAVIES**

*BEng(Elec - Power & Control) (Hons 1st class), MEngSc, BCom(Econ)*

Mr Davies joined the Power and Water Corporation Board in May 2009. He has worked in all areas of electricity distribution, gaining extensive experience managing the businesses’ financial and technical performance. He has held senior management positions at energy Australia, the country’s largest electricity distribution company and his resume includes periods as Managing Director. Since leaving Energy Australia in 2002, Mr Davies has established a small engineering consultancy, specialising in electricity distribution system management. He has spent time developing and negotiating long-term capital expenditure plans and performance outcomes affecting the security of electricity supply to Sydney. He has University of New South Wales qualifications in engineering and economics.

**MR MICHAEL HANNON AM**

Mr Hannon was appointed to the Power and Water Board in August 2009. Mr Hannon is Chairman of the Hannon Group of Companies, a family-owned group operating public transport, property investment, crocodile farming and exporting businesses. Mr Hannon was born and permanently resides in Darwin and developed his career in the Northern Territory. The Hannon Group also has business interests in Queensland, Victoria and New South Wales. They employ more than 300 Territorians and that number again interstate.
In 2011-12 revenue collected from the sale of electricity, water supply and sewerage services was $25.7 million (2010: $23.2 million).

Total revenue for 2010-11 was $114.5 million. This included $52.3 million of recurrent grant funding (2010: $45.0 million) and $32.4 million of capital grant funding (2010: $23.8 million) which was received from the Northern Territory Government. The capital grant is used to replace existing assets and maintain service standards.

Major cost drivers over the 2010-11 financial year resulted from:

- A continued focus on revenue protection resulting in electricity, water and sewerage revenue recovered from customers previously not billed. Sales revenue was down compared with budgeted targets for electricity and water. This was primarily due to less demand brought about by weather patterns, increased costs of electricity and water and education programs rolled out in communities. Sewerage services sales continued to grow and exceeded expectations due to audits carried out in remote communities.

- The price of distillate continued to rise impacting energy costs. At 30 June 2012 the weighted average cost of distillate was $0.9942 against the budgeted cost of $0.8950.

- Repairs and Maintenance saw a marked increase in 2011-12 to $16.1m (2011: $13.6m) due to unforeseen water and sewerage reticulation failures at Galiwinku and Angurugu and damaged generation plant at Wurrumiyanga.
Indigenous Essential Services Pty Limited
(ACN 105 269 636)

For the year ended 30 June 2012

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DIRECTORS' REPORT
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

The directors present their report together with the financial report of the Indigenous Essential Services Pty Limited (the Company) for the year ended 30 June 2012 and the auditor's report thereon.

Directors

The directors of the Company at any time during or since the end of the financial year were:

Ms Judith King Director since 26 June 2003;  
Appointed Chairman 1 July 2007.

Mr Andrew Macrides Director since 1 July 2007.

Mr Michael Hannon Director since 1 August 2009.

Mr Mervyn Davies Director since 4 May 2011.

Company Particulars
Indigenous Essential Services Pty Limited is an Australian proprietary company, incorporated and operating in Australia.

Principal Registered Office and  
Principal Place of Business:  
Level 2 Mitchell Centre  
55 Mitchell Street  
Darwin NT 0800

Company Secretary:  
Mr Kelvin Strange

Principal Activities
The Company was formed on 26 June 2003 and commenced operations on 1 July 2003.

During the course of the financial year the principal activities of the Company as a not-for-profit entity were to provide electricity, water and sewerage services to remote Indigenous communities in the Northern Territory.

Controlling Entity
The Company's controlling entity is the Power and Water Corporation, a government owned corporation pursuant to the Government Owned Corporation Act 2001. In this report, the controlling entity is referred to as Power and Water.

Operating and Financial Review
The Company's net profit for the period of $25,908,420 was higher than last year's (2011: $19,998,338) principally due to additional capital funding being spent during the course of the financial year. Capital funding spent included receipts from the current financial year and funds rolled over from the previous financial year.

Changes in state of affairs
In the opinion of the directors, other than the matters mentioned above there were no significant changes in the state of affairs of the Company that occurred during the financial year under review.

Dividends
As a not-for-profit entity the Company paid no dividends during the financial year (2011: nil).
DIRECTORS’ REPORT
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

Environmental Regulation
The Company's operations are subject to various environmental regulations under both Commonwealth and Territory legislations.

The Company regularly monitors compliance with environmental regulations. The directors are not aware of any significant breaches during the period covered by this report.

Events Subsequent to Reporting Date
There has not arisen in the interval between the end of the financial year and the date of this report any item, transaction or event of a material or unusual nature likely, in the opinion of the directors of the Company, to affect significantly the operations of the Company, the results of those operations, or the state of affairs of the Company in future financial years.

Future Developments
At the date of this report, there are no developments in the operations of the Company that, in the opinion of the directors, are likely to significantly impact the Company during the 2013 financial year.

The service contract between the Company and the Northern Territory Government to construct and maintain assets required to provide electricity, water and sewerage services to remote Indigenous communities in the Northern Territory expired on 30 June 2010. The contract was extended for a period of three years from 01 July 2010 to 30 June 2013. A review is currently being undertaken to determine the future impact on the Northern Territory Budget of delivering essential services to remote towns and Indigenous communities across the Territory, through a comprehensive analysis of the historical costs and forecast future costs of service delivery, including future demand growth.

Lead Auditor’s Independence Declaration Under Section 307C of the Corporations Act 2001
The lead auditor’s declaration of independence is set out on page 6 of the financial report.

Indemnification and Insurance of Directors and Officers

Indemnification
The Northern Territory Government has indemnified the directors of IES Pty Limited's controlling entity Power and Water as well as the directors of Power and Water’s wholly controlled entities for all liabilities that may arise from their position, except where the liability is incurred or arises out of actual dishonesty on the part of the director. The indemnity covers the full amount of any such liabilities, including costs and expenses.

Insurance Premiums
The following insurance policies were purchased by Power and Water to cover its directors and officers, and those of its subsidiaries. In accordance with normal commercial practices, under the terms of the insurance contracts, the nature of the liabilities insured against and the amount of premiums are confidential.

Group Personal Accident Insurance
Professional Indemnity Insurance
Directors' and Officers' Liability

This report is made in accordance with a resolution of Directors pursuant to s.298(2) of the Corporations Act 2001.

Ms Judith King
Director and Chairman

Mr Andrew Macrides
Managing Director

Dated at Darwin this 26th day of September 2012
DIRECTORS' DECLARATION
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

In the opinion of the directors of Indigenous Essential Services Pty Limited ("the Company"):
(a) the financial statements and notes, set out on pages 9 to 23, are in accordance with the Corporations Act 2001, including:

(i) giving a true and fair view of the financial position of the Company as at 30 June 2012 and its performance for the year ended on that date; and

(ii) complying with Accounting Standards in Australia; and

(b) there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

Signed in accordance with a resolution of directors made pursuant to s.295(5) of the Corporations Act 2001.

Ms Judith King
Director and Chairman

Mr Andrew Macrides
Managing Director

Dated at Darwin this 26th day of September 2012
The Board of Directors
Indigenous Essential Services Pty Limited
Level 2, Mitchell Centre
55 – 59 Mitchell Street
Darwin NT 0800

26 September 2012

Dear Members of the Board,

Indigenous Essential Services Pty Limited

In accordance with section 307C of the Corporations Act 2001, I am pleased to provide the following declaration of independence to the directors of Indigenous Essential Services Pty Limited.

As auditor for the audit of the financial statements of Indigenous Essential Services Pty Limited for the financial year ended 30 June 2012, I declare that to the best of my knowledge and belief, there have been no contraventions of:

(i) the auditor independence requirements of the Corporations Act 2001 in relation to the audit; and

(ii) any applicable code of professional conduct in relation to the audit.

Yours faithfully,

[Signed]
F. McGuiness
Auditor-General for the Northern Territory
I have audited the accompanying financial report of Indigenous Essential Services Pty Limited, which comprises the statement of financial position as at 30 June 2012, the statement of comprehensive income, the statement of cash flows and the statement of changes in equity for the year ended on that date, notes comprising a summary of significant accounting policies and other explanatory information, and the directors’ declaration as set out on pages 9 to 23.

**Directors’ Responsibility for the Financial Report**

The directors of the company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards and the Corporations Act 2001 and for such internal control as the directors determine is necessary to enable the preparation of the financial report that is free from material misstatement, whether due to fraud or error.

**Auditor’s Responsibility**

My responsibility is to express an opinion on the financial report based on my audit. I conducted my audit in accordance with Australian Auditing Standards. Those standards require that I comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor’s judgement, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control, relevant to the entity’s preparation of the financial report that gives a true and fair view, in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity’s internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the directors, as well as evaluating the overall presentation of the financial report.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

**Auditor’s Independence Declaration**

In conducting my audit, I have complied with the independence requirements of the Corporations Act 2001. I confirm that the independence declaration required by the Corporations Act 2001, which has been given to the directors of Indigenous Essential Services Pty Limited, would be in the same terms if given to the directors as at the time of this auditor’s report.
Opinion

In my opinion, the financial report of Indigenous Essential Services Pty Limited is in accordance with the Corporations Act 2001, including:

(a) giving a true and fair view of the company's financial position as at 30 June 2012 and of its performance for the year ended on that date, and

(b) complying with Australian Accounting Standards and the Corporations Regulations 2001

F. McGuiness
Auditor-General for the Northern Territory

Darwin, Northern Territory

26 September 2012
**Statement of Comprehensive Income**

Indigenous Essential Services Pty Limited for the year ended 30 June 2012

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continuing Operations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue from sale of goods</td>
<td>26,197,330</td>
<td>24,565,789</td>
</tr>
<tr>
<td>Revenue from rendering of services</td>
<td>96,310,618</td>
<td>85,838,795</td>
</tr>
<tr>
<td>Interest revenue</td>
<td>2,076,800</td>
<td>1,261,482</td>
</tr>
<tr>
<td>Other Income</td>
<td>605,074</td>
<td>2,881,442</td>
</tr>
<tr>
<td><strong>Total revenue and income</strong></td>
<td>125,189,822</td>
<td>114,547,508</td>
</tr>
<tr>
<td>Raw materials and consumables used</td>
<td>35,428,434</td>
<td>30,572,026</td>
</tr>
<tr>
<td>Depreciation and amortisation expenses</td>
<td>13,455,146</td>
<td>16,167,825</td>
</tr>
<tr>
<td>Other expenses</td>
<td>50,397,822</td>
<td>47,809,319</td>
</tr>
<tr>
<td><strong>Surplus for the year from continuing operations</strong></td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td><strong>Surplus for the year</strong></td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td><strong>Total comprehensive income for the year</strong></td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td>Surplus attributable to Owner of the Company</td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td>Comprehensive income attributable to Owner of the Company</td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
</tbody>
</table>

The statement of comprehensive income is to be read in conjunction with the notes to the financial statements.

**Statement of Changes in Equity**

Indigenous Essential Services Pty Limited for the year ended 30 June 2012

<table>
<thead>
<tr>
<th>Description</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contributed Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at the beginning of the year</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Balance at the end of the year</strong></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Retained Earnings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at the beginning of the year</td>
<td>210,666,432</td>
<td>190,668,094</td>
</tr>
<tr>
<td>Surplus for the year</td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td><strong>Balance at the end of the year</strong></td>
<td>236,574,852</td>
<td>210,666,432</td>
</tr>
<tr>
<td><strong>Total equity</strong></td>
<td>236,574,862</td>
<td>210,666,442</td>
</tr>
</tbody>
</table>

The statement of changes in equity is to be read in conjunction with the notes to the financial statements.
Statement of Financial Position  
Indigenous Essential Services Pty Ltd as at 30 June 2012

<table>
<thead>
<tr>
<th></th>
<th>Note</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT ASSETS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>4 (a)</td>
<td>55,266,383</td>
<td>62,520,946</td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>5</td>
<td>8,304,577</td>
<td>1,739,673</td>
</tr>
<tr>
<td>Inventories</td>
<td>6</td>
<td>6,799,437</td>
<td>5,891,031</td>
</tr>
<tr>
<td>Other assets</td>
<td></td>
<td>11,674</td>
<td></td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td></td>
<td>70,382,071</td>
<td>70,151,650</td>
</tr>
<tr>
<td>NON-CURRENT ASSETS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, plant and equipment</td>
<td>7</td>
<td>229,757,155</td>
<td>204,770,991</td>
</tr>
<tr>
<td><strong>Total non-current assets</strong></td>
<td></td>
<td>229,757,155</td>
<td>204,770,991</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td></td>
<td>300,139,226</td>
<td>274,922,641</td>
</tr>
<tr>
<td>CURRENT LIABILITIES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade and other payables</td>
<td>8</td>
<td>63,564,362</td>
<td>64,256,199</td>
</tr>
<tr>
<td><strong>Total current liabilities</strong></td>
<td></td>
<td>63,564,362</td>
<td>64,256,199</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td></td>
<td>63,564,362</td>
<td>64,256,199</td>
</tr>
<tr>
<td><strong>Net assets</strong></td>
<td></td>
<td>236,574,864</td>
<td>210,666,442</td>
</tr>
<tr>
<td>EQUITY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributed equity</td>
<td>9</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>10</td>
<td>236,574,852</td>
<td>210,666,432</td>
</tr>
<tr>
<td><strong>Total equity</strong></td>
<td></td>
<td>236,574,862</td>
<td>210,666,442</td>
</tr>
</tbody>
</table>

The statement of financial position is to be read in conjunction with the notes to the financial statements.
Statement of Cash Flows
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

<table>
<thead>
<tr>
<th>Note</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>CASH FLOWS FROM OPERATING ACTIVITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receipts from customers</td>
<td>28,601,210</td>
<td>26,166,159</td>
</tr>
<tr>
<td>Payments to suppliers</td>
<td>(93,785,511)</td>
<td>(71,498,399)</td>
</tr>
<tr>
<td>Receipt of Government Grants</td>
<td>94,409,964</td>
<td>104,253,556</td>
</tr>
<tr>
<td>Interest received</td>
<td>2,039,274</td>
<td>1,267,202</td>
</tr>
<tr>
<td><strong>Net cash provided by operating activities</strong></td>
<td><strong>31,264,937</strong></td>
<td><strong>60,188,518</strong></td>
</tr>
</tbody>
</table>

| CASH FLOWS USED IN INVESTING ACTIVITIES |
| Proceeds from sale of property, plant and equipment | (78,193) | (188,146) |
| Purchase of property, plant and equipment            | (38,441,307) | (34,352,379) |
| **Net cash used in investing activities** | **(38,519,500)** | **(34,540,525)** |

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Net increase/(decrease) in cash and cash equivalents</td>
<td>(7,254,563)</td>
<td>25,647,993</td>
</tr>
<tr>
<td>Cash and cash equivalents at beginning of year</td>
<td>62,520,946</td>
<td>36,872,953</td>
</tr>
<tr>
<td>Cash and cash equivalents at end of year</td>
<td>4 (a)</td>
<td>55,266,383</td>
</tr>
</tbody>
</table>

Cash and cash equivalents at end of year 4 (a) 55,266,383 62,520,946

The statement of cash flows is to be read in conjunction with the notes to the financial statements.
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

1) Company Information
Indigenous Essential Services Pty Limited (the Company) is a not-for-profit proprietary company operating and domiciled in Australia.
On 26 September 2012, Directors authorised the issue of the Company’s financial report for the year ended 30 June 2012.

2) Statement of significant accounting policies
The significant accounting policies which have been adopted in the preparation of this report are:

(a) Statement of compliance
This general purpose financial report has been prepared in accordance with Accounting Standards and Interpretations and the Corporations Act 2001. Accounting Standards include Australian equivalents to International Financial Reporting Standards (A-IFRS).

Adoption of new and revised Accounting Standards

In the current year, the Corporation has adopted all of the new and revised Standards and Interpretations issued by the Australian Accounting Standards Board (the AASB) that are relevant to its operations and effective for the current annual reporting period. Where applicable, details of the impact of the adoption of these new accounting standards are set out in the individual accounting policy notes below.

Standards and Interpretations effective for the first time in the current period

The following new and revised Standards and Interpretations have been adopted in the current period and have affected the amounts reported or the presentation/disclosure in these financial statements:

<table>
<thead>
<tr>
<th>Standard or Interpretation</th>
<th>Nature of Change to Accounting Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASB 2009-12 ‘Amendments to Australian Accounting Standards’ and AASB 124 ‘Related Party Disclosures (revised December 2009)’</td>
<td>The application of AASB 124 ‘Related Party Disclosures’ provides a partial exemption from related party disclosure requirements for government-related entities, clarifies the definition of a related party and includes an explicit requirement to disclose commitments involving related parties.</td>
</tr>
<tr>
<td>AASB 2010-4 ‘Amendments to Australian Accounting Standards arising from the Annual Improvements Process’</td>
<td>Makes amendments to seven different Standards. The amendments largely clarify the required accounting treatment where previous practice had varied.</td>
</tr>
<tr>
<td>AASB 2010-6 ‘Amendments to Australian Accounting Standards – Disclosures on Transfers of Financial Assets’</td>
<td>Amends AASB 101 ‘Presentation of Financial Statements’ to clarify the context of the statement of changes in equity in such that an entity may present the analysis of other comprehensive income by item either in the statement of changes in equity or in the notes to the financial statements.</td>
</tr>
<tr>
<td>AASB 2010-8 ‘Financial Instruments: Disclosures’</td>
<td>Amends AASB 7 ‘Financial Instruments: Disclosures’ to encourage qualitative disclosures in the context of the quantitative disclosure required to help users to form an overall picture of the nature and extent of risks arising from financial instruments. It also clarifies the required level of disclosure around credit risk, collateral held and provides relief from disclosure of renegotiated loans.</td>
</tr>
</tbody>
</table>

The following new and revised Standards and Interpretations have also been adopted in these financial statements. Their adoption has not had any significant impact on the amounts reported in these financial statements as they do not result in any changes to the Company’s existing accounting policies. However, they may affect the accounting for future transactions or arrangements:

<table>
<thead>
<tr>
<th>Standard or Interpretation</th>
<th>Nature of Change to Accounting Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASB 2010-5 ‘Amendments to Australian Accounting Standards’</td>
<td>The application of AASB 2010-5 makes amendments to AASB 3 (2008) ‘Business Combinations’ to clarify that the measurement choice regarding non-controlling interests at the date of acquisition is only available in respect of non-controlling interests that are present ownership interests and that entitle their holders to a proportionate share of the entity’s net assets in the event of liquidation. All other types of non-controlling interests are measured at their acquisition-date fair value, unless another measurement basis is required by other Standards. The Group did not have any business combinations.</td>
</tr>
<tr>
<td>AASB 1054 ‘Australian Additional Disclosures’, AASB 2011-1 ‘Amendments to Australian Accounting Standards arising from the Trans-Tasman Convergence Project’</td>
<td>This standard is the consequence of Phase 1 of the joint Trans-Tasman Convergence project of the AASB and the Financial Reporting Standards Board (FRSB) of New Zealand Institute of Chartered Accountants, harmonising Australian Accounting Standards and New Zealand equivalents to IFRSs, with a focus on eliminating differences between the Standards in each country relating to for-profit entities. It sets out the Australian-specific disclosures for entities that have adopted Australian Accounting Standards. This Standard contains disclosure requirements that are additional to IFRSs in areas such as compliance with Australian Accounting Standards, the nature of financial statements (general purpose or special purpose), audit fees, imputation (franking) credits and the reconciliation of net operating cash flow to profit (loss).</td>
</tr>
</tbody>
</table>
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

Standards and Interpretations issued but not yet effective

At the date of authorisation of the financial report, the following Standards and Interpretations were in issue but not yet effective. The Company does not intend to adopt any of these pronouncements before their effective dates. Initial application of these Standards and Interpretations will not affect the reported results or position of the Company as they do not result in any changes to the Company’s accounting policies. Adoption will, however, result in changes in information currently disclosed in the financial statements.

<table>
<thead>
<tr>
<th>Standard or Interpretation</th>
<th>Effective annual reporting periods beginning on or after</th>
<th>Expected to be initially applied to the financial year ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASB 2010-8 ‘Amendments to Australian Accounting Standards – Deferred Tax: Recovery of Underlying Assets’</td>
<td>1 January 2012</td>
<td>30 June 2013</td>
</tr>
<tr>
<td>AASB 2011-9 ‘Amendments to Australian Accounting Standards - Presentation of Items of Other Comprehensive Income’</td>
<td>1 July 2012</td>
<td>30 June 2013</td>
</tr>
<tr>
<td>AASB 10 ‘Consolidated Financial Statements’</td>
<td>1 January 2013</td>
<td>30 June 2014</td>
</tr>
<tr>
<td>AASB 12 ‘Disclosure of Interests in Other Entities’</td>
<td>1 January 2013</td>
<td>30 June 2014</td>
</tr>
<tr>
<td>AASB 13 ‘Fair Value Measurement’ and related AASB 2011-8 ‘Amendments to Australian Accounting Standards arising from AASB 13’</td>
<td>1 January 2013</td>
<td>30 June 2014</td>
</tr>
<tr>
<td>AASB 2011-7 ‘Amendments to Australian Accounting Standards arising from the Consolidation and Joint Arrangements standards’</td>
<td>1 January 2013</td>
<td>30 June 2014</td>
</tr>
<tr>
<td>AASB 1053 ‘Application of Tiers of Australian Accounting Standards’ and AASB 2010-2 ‘Amendments to Australian Accounting Standards arising from Reduced Disclosure Requirements’</td>
<td>1 July 2013</td>
<td>30 June 2014</td>
</tr>
<tr>
<td>AASB 2011-2 ‘Amendments to Australian Accounting Standards arising from the Trans-Tasman Convergence Project – Reduced Disclosure Requirements’</td>
<td>1 July 2013</td>
<td>30 June 2014</td>
</tr>
<tr>
<td>AASB 2011-4 ‘Amendments to Australian Accounting Standards to Remove Individual Key Management Personnel Disclosure Requirements’</td>
<td>1 July 2013</td>
<td>30 June 2014</td>
</tr>
</tbody>
</table>

(b) Basis of preparation

The financial report is prepared on an historical cost basis. Cost is based on the fair values of the consideration given in exchange for assets.

These accounting policies have been consistently applied by the Company unless otherwise stated and are consistent with those of the previous year.

The financial report is presented in Australian dollars.

(c) Use and revision of accounting estimates

In the application of the Company’s accounting policies, management is required to make judgements, estimates and assumptions about carrying values of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

(d) Revenue recognition

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Company and the revenue can be reliably measured. The following specific recognition criteria must also be met before revenue is recognised:

Sale of goods

Revenue from the sale of goods is recognised (net of discounts and allowances) when the significant risks and rewards of ownership of the goods have passed to the buyer and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Risks and rewards of ownership are considered passed to the buyer at the time of delivery of goods to the customer. Sale of goods includes estimates for un billed consumption of electricity and water as at reporting date.

Rendering of services

Revenue from the rendering of services is recognised when the service is provided, having regard for the costs incurred in providing those services.

Government grants

Revenue in the form of government grants is received from the Northern Territory Government. Government grants are assistance by the government in the form of transfers of resources to the Company in return for past or future compliance with certain conditions relating to the operating activities of the Company.

Government grants are not recognised until there is reasonable assurance that the Company will comply with the conditions attaching to them and the grants will be received.

Where the grant relates to an expense or capital item, it is recognised initially as deferred income in the statement of financial position and recognised as income over the periods necessary to match the grant on a systematic basis to the costs that it is intended to compensate.

Interest Revenue

Interest revenue is recognised as it accrues.
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

(e) Goods and services tax
Revenues, expenses and assets are recognised net of the amount of goods and services tax (GST), except where the amount of the GST incurred is not recoverable from the taxation authority. In these circumstances, the GST is recognised as part of the cost of acquisition of the asset or as part of the expense.

Receivables and credit losses are stated at the amount of GST included. The net amount of GST recoverable from, or payable to, the taxation authority (through Power and Water) is included as a current asset or liability in the statement of financial position.

Cash flows are included in the statement of cash flows on a gross basis. The GST components of cash flows arising from investing and financing activities which are recoverable from, or payable to, the taxation authority (through Power and Water) are classified as operating cash flows.

(f) Income tax consolidation
The Power and Water Corporation is the head entity in a tax consolidated group comprising all of its wholly-owned subsidiaries apart from Indigenous Essential Services Pty Limited. Indigenous Essential Services Pty Limited was removed from the National Tax Equivalent Regime effective 1 July 2003 as a not-for-profit entity.

(g) Cash and cash equivalents
Cash includes cash on hand and at bank.

(h) Trade and other receivables
Trade and other receivables are recognised and carried at the original invoice amount less an allowance for any uncollectible amounts.
Trade receivables are on 14 day terms and other receivables are on 30 day terms.

(i) Inventories
Inventories are carried at the lower of cost and net realisable value. Costs are assigned to inventory based on the weighted-average purchase cost of bringing each item to its present location and condition. Net realisable value represents the amounts expected to be realised from the use of the inventory.

(j) Property, plant and equipment
Acquisition of assets
The carrying value of assets is originally stated at cost less accumulated depreciation and any accumulated impairment losses. Such cost includes the cost of replacing parts that are eligible for capitalisation when the cost of replacing the parts is incurred. Subsequent expenditure is capitalised only when it is probable that the future economic benefits associated with the expenditure will flow to the Company. Ongoing repairs and maintenance is expensed as incurred.

Where an asset is acquired at no-cost, or for nominal cost, the cost is its fair value as at the date of acquisition.

Property, plant and equipment assets are measured at deemed cost being the fair value of assets at the transition date to AIFRS on 1 July 2004, less accumulated depreciation and less any impairment losses recognised at that date.

Depreciation and amortisation
Complex assets
The components of major assets that have materially different useful lives, are effectively accounted for as separate assets, and are separately depreciated.

Useful lives
All assets, excluding freehold land, have limited useful lives and are depreciated/amortised using the straight-line method over their estimated useful lives.

Assets are depreciated or amortised from the date of acquisition or, in respect of internally constructed assets, from the time an asset is completed and held ready for use.

Depreciation rates and methods are reviewed annually for appropriateness. When changes are made, adjustments are reflected prospectively in current and future periods only. Depreciation and amortisation is expensed.

The depreciation useful lives used for each class of asset are as follows:

<table>
<thead>
<tr>
<th>Building, plant and equipment</th>
<th>June 2012</th>
<th>June 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building and improvements</td>
<td>8 to 60 years</td>
<td>8 to 60 years</td>
</tr>
<tr>
<td>Plant and equipment</td>
<td>1 to 99 years</td>
<td>1 to 99 years</td>
</tr>
<tr>
<td>Intangibles</td>
<td>1 to 2 years</td>
<td>1 to 2 years</td>
</tr>
</tbody>
</table>

Impairment of assets
The carrying values of plant and equipment are assessed for impairment at each reporting date, with recoverable amounts being estimated when events or changes in circumstances indicate that the carrying value may be impaired.

The recoverable amount of plant and equipment is the depreciated replacement cost.

Depreciated replacement cost is defined as the current replacement cost of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

An impairment exists when the carrying value of an asset exceeds its estimated recoverable amount. The asset is then written down to its recoverable amount.

For property, plant and equipment, impairment losses are recognised in the statement of comprehensive income.

Derecognition and disposal
An item of property, plant and equipment is derecognised upon disposal or when no further future economic benefits are expected from its use or disposal.

Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in the statement of comprehensive income in the year in which the asset is derecognised.
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

(k) Intangible assets
All intangible assets are acquired separately and are carried at cost less accumulated amortisation and accumulated impairment losses. Assets are amortised from the date of acquisition or from the time the asset is held ready for use. Amortisation rates and methods are reviewed annually for appropriateness. When changes are made, adjustments are reflected prospectively in current and future periods only.

The Company doesn't have internally-generated intangible assets.

Purchased software
All purchased software items have limited useful lives and are amortised using the straight-line method over their estimated useful lives. Subsequent expenditure is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates.

(i) Payables
Trade payables and other payables are carried at amortised cost and represent liabilities for goods and services provided to the Company prior to the end of the financial year that are unpaid and arise when the Company becomes obligated to make future payments in respect of the purchase of these goods and services. Trade accounts payable are normally settled within 30 days.

(m) Financial Instruments
Financial instruments held by the Company consist of cash, trade and other receivables classified as 'loans and receivables' and payables classified as other financial liabilities measured and recognised in line with AASB 139 'Financial Instruments: Recognition and Measurement'. Interest revenue recognised is solely incurred by cash held.

(n) Leased Assets
The determination of whether an arrangement is or contains a lease is based on the substance of the arrangement and requires an assessment of whether the fulfilment of the arrangement is dependent on the use of a specific asset or assets and the arrangement conveys a right to use the asset.

Operating leases
Operating lease payments are recognised as an expense in profit or loss on a straight-line basis over the lease term. Lease incentives are recognised in profit or loss as an integral part of the total lease expense.
### Notes to the Financial Statements

Indigenous Essential Services Pty Limited for the year ended 30 June 2012

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3 Revenue and expenses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Revenue and expenses from continuing operations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Sale of goods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>23,064,554</td>
<td>22,576,335</td>
</tr>
<tr>
<td>Water</td>
<td>3,132,776</td>
<td>1,989,454</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>26,197,330</td>
<td>24,565,789</td>
</tr>
<tr>
<td>(b) Rendering of services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recurrent grant</td>
<td>55,965,150</td>
<td>52,281,785</td>
</tr>
<tr>
<td>Capital grant</td>
<td>38,274,335</td>
<td>32,392,813</td>
</tr>
<tr>
<td>Services Rendered</td>
<td>2,071,133</td>
<td>1,164,197</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>96,310,618</td>
<td>85,838,795</td>
</tr>
<tr>
<td>(c) Other income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Service Obligations</td>
<td></td>
<td>2,522</td>
</tr>
<tr>
<td>Capital contributions and recoverable works</td>
<td>285,374</td>
<td>2,814,530</td>
</tr>
<tr>
<td>Net profit/(loss) on disposal of property, plant and equipment</td>
<td>(78,193)</td>
<td>(188,145)</td>
</tr>
<tr>
<td>Other Income</td>
<td>397,893</td>
<td>252,535</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>605,074</td>
<td>2,881,442</td>
</tr>
<tr>
<td>(d) Other expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repairs and maintenance</td>
<td>16,063,062</td>
<td>13,610,561</td>
</tr>
<tr>
<td>Direct personnel costs</td>
<td>14,145,302</td>
<td>12,403,451</td>
</tr>
<tr>
<td>Agents - Community Contract Fees</td>
<td>7,699,904</td>
<td>7,900,311</td>
</tr>
<tr>
<td>Other</td>
<td>12,489,554</td>
<td>13,894,996</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50,397,822</td>
<td>47,809,319</td>
</tr>
</tbody>
</table>
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

4  Cash and cash equivalents

(a)  Reconciliation of cash
Cash at the end of the financial year as shown in the statements of cash flows is reconciled to the related items in the balance sheet as follows:

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash at bank</td>
<td>55,266,383</td>
<td>62,520,946</td>
</tr>
<tr>
<td>The weighted average interest rate on cash assets at 2012 is 4.08% (2011: 4.42%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b)  Reconciliation of net surplus to net cash flows from operations

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Surplus</td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td>Adjustments for:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>13,455,146</td>
<td>16,167,825</td>
</tr>
<tr>
<td>Net (profit)/loss on disposal of property, plant and equipment</td>
<td>78,193</td>
<td>188,145</td>
</tr>
<tr>
<td>Changes in assets and liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Increase)/decrease in inventories</td>
<td>(908,406)</td>
<td>(1,171,198)</td>
</tr>
<tr>
<td>(Increase)/decrease in trade and other receivables</td>
<td>(6,564,905)</td>
<td>(782,772)</td>
</tr>
<tr>
<td>(Increase)/decrease in prepayments</td>
<td>(11,674)</td>
<td>-</td>
</tr>
<tr>
<td>(Decrease)/increase in trade and other payables</td>
<td>(691,837)</td>
<td>25,788,180</td>
</tr>
<tr>
<td>Net cash flows from operating activities</td>
<td>31,264,937</td>
<td>60,188,518</td>
</tr>
</tbody>
</table>

5  Trade and other receivables

Current

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amounts due from controlling entity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest receivable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other debtors</td>
<td>8,147,425</td>
<td>1,620,047</td>
</tr>
<tr>
<td></td>
<td>8,304,577</td>
<td>1,739,673</td>
</tr>
</tbody>
</table>

Ageing of trade and other receivables:

- 0-30 days: 8,281,738, 1,738,273
- 30-60 days: 5,390
- 60-90 days: - 1,400
- 90+ days: 17,449

Receivables at 30 June 2012 are non-interest bearing.

6  Inventories

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials and stores</td>
<td></td>
<td>13,853</td>
</tr>
<tr>
<td>Distillate Stocks</td>
<td>6,799,437</td>
<td>5,877,178</td>
</tr>
<tr>
<td></td>
<td>6,799,437</td>
<td>5,891,031</td>
</tr>
</tbody>
</table>
## Notes to the Financial Statements
### Indigenous Essential Services Pty Limited for the year ended 30 June 2012

### 7 Property, plant and equipment

<table>
<thead>
<tr>
<th>June 2012</th>
<th>Land</th>
<th>Buildings</th>
<th>Plant and Equipment</th>
<th>Intangible Assets</th>
<th>Work in Progress</th>
<th>Total Property, Plant and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening Balance</td>
<td>21,332</td>
<td>40,900,251</td>
<td>336,704,568</td>
<td>24,768</td>
<td>31,280,120</td>
<td>408,931,039</td>
</tr>
<tr>
<td>Transfer / Restructure</td>
<td></td>
<td>20,629</td>
<td>(35,411)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer From WIP</td>
<td></td>
<td>3,177,023</td>
<td>33,993,002</td>
<td>84,660</td>
<td>(37,254,685)</td>
<td></td>
</tr>
<tr>
<td>Disposals</td>
<td></td>
<td>(172,637)</td>
<td>(3,134,634)</td>
<td></td>
<td>(3,307,271)</td>
<td></td>
</tr>
<tr>
<td><strong>Closing Balance</strong></td>
<td>21,332</td>
<td>43,925,266</td>
<td>367,527,525</td>
<td>109,428</td>
<td>32,599,928</td>
<td>444,183,479</td>
</tr>
</tbody>
</table>

| **Accumulated Depreciation** |        |           |                     |                   |                  |                                      |
| Opening Balance       |        |           |                     |                   |                  |                                      |
| Transfer / Restructure |        |           |                     |                   |                  |                                      |
| Depreciation          |        |           |                     |                   |                  |                                      |
| Disposals             |        |           |                     |                   |                  |                                      |
| **Closing Balance**   |        |           |                     |                   |                  |                                      |

| **Written Down Value** |        |           |                     |                   |                  |                                      |
| Opening Balance       | 21,332 | 16,830,333| 156,639,206         |                   | 31,280,120       | 204,770,991                          |
| Transfer / Restructure |        | 20,629     | (35,411)            |                   |                  |                                      |
| Additions             |        |           |                     |                   |                  |                                      |
| Transfer From WIP     |        | 3,177,023  | 33,993,002          | 84,660            | (37,254,685)     |                                      |
| Disposals             |        | (444)      | (117,957)           |                   | (118,401)        |                                      |
| **Closing Balance**   | 21,332 | 18,878,292| 178,187,532         | 70,071            | 32,599,928       | 229,757,155                          |

### 2011

<table>
<thead>
<tr>
<th>June 2011</th>
<th>Land</th>
<th>Buildings</th>
<th>Plant and Equipment</th>
<th>Intangible Assets</th>
<th>Work in Progress</th>
<th>Total Property, Plant and Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opening Balance</td>
<td>21,332</td>
<td>40,568,941</td>
<td>316,925,542</td>
<td></td>
<td>17,246,580</td>
<td>374,762,395</td>
</tr>
<tr>
<td>Transfer / Restructure</td>
<td></td>
<td>(7,270)</td>
<td>17,718</td>
<td></td>
<td>(9,237)</td>
<td>1,211</td>
</tr>
<tr>
<td>Additions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer From WIP</td>
<td></td>
<td>393,343</td>
<td>20,091,730</td>
<td>24,768</td>
<td>(20,509,841)</td>
<td></td>
</tr>
<tr>
<td>Disposals</td>
<td></td>
<td>(54,763)</td>
<td>(330,422)</td>
<td></td>
<td>(385,185)</td>
<td></td>
</tr>
<tr>
<td><strong>Closing Balance</strong></td>
<td>21,332</td>
<td>40,900,251</td>
<td>336,704,568</td>
<td>24,768</td>
<td>31,280,120</td>
<td>408,931,039</td>
</tr>
</tbody>
</table>

| **Accumulated Depreciation** |        |           |                     |                   |                  |                                      |
| Opening Balance       |        |           |                     |                   |                  |                                      |
| Transfer / Restructure |        |           |                     |                   |                  |                                      |
| Depreciation          |        |           |                     |                   | (188,175,959)    |                                      |
| Disposals             |        |           |                     |                   | (1,212)          |                                      |
| **Closing Balance**   |        |           |                     |                   | (204,160,048)    |                                      |

| **Written Down Value** |        |           |                     |                   |                  |                                      |
| Opening Balance       | 21,332 | 18,184,699| 151,133,825         |                   | 17,246,580       | 186,586,436                          |
| Transfer / Restructure |        | (6,866)   | 16,102              |                   | (9,237)         | (1)                                  |
| Additions             |        |           |                     |                   | 34,552,618       | 34,552,618                           |
| Depreciation          |        | (1,695,977)| (14,447,080)       | (24,768)           | (16,167,825)     |                                      |
| Transfer From WIP     |        | 393,343   | 20,091,730          | 24,768            | (20,509,841)     |                                      |
| Disposals             |        | (44,866)  | (155,371)           |                   | (200,237)        |                                      |
| **Closing Balance**   | 21,332 | 16,830,333| 156,639,206         |                   | 31,280,120       | 204,770,991                          |
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td><strong>Trade and other payables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payable to controlling entity</td>
<td>7,951,065</td>
<td>13,382,405</td>
</tr>
<tr>
<td>Other creditors and accruals</td>
<td>10,005,390</td>
<td>11,613,224</td>
</tr>
<tr>
<td>Unearned revenue</td>
<td>45,607,907</td>
<td>39,260,570</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>63,564,362</td>
<td>64,256,199</td>
</tr>
</tbody>
</table>

Trade and other payables are non-interest-bearing. The policy of the Company is to settle trade payables within 30 days. The Company has financial risk management policies in place to ensure that all payables are paid within the credit timeframe.

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Contributed equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issued and paid-up share capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 (2011:10) ordinary shares of $1 fully paid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fully paid ordinary shares carry one vote per share and carry the right to dividends. The shares have no par value.

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>210,666,432</td>
<td>190,668,094</td>
</tr>
<tr>
<td><strong>Retained earnings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retained earnings at beginning of year</td>
<td>25,908,420</td>
<td>19,998,338</td>
</tr>
<tr>
<td>Net surplus for the year</td>
<td>236,574,852</td>
<td>210,666,432</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13,993,648</td>
<td>5,797,130</td>
</tr>
<tr>
<td><strong>Commitments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital expenditure commitments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contracted but not provided for and payable: within one year</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>743,545</td>
<td>751,179</td>
</tr>
<tr>
<td><strong>Operating Lease Arrangements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payments recognised as an expense</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum lease payments</td>
<td>743,545</td>
<td>751,179</td>
</tr>
</tbody>
</table>
13 Financial instruments

(a) Financial risk management objectives and policies
The Company has various financial instruments such as trade receivables and trade payables. It is, and has been throughout the period under review, the Company’s policy that no trading in financial instruments shall be undertaken. The main risks arising from the Company's financial instruments are liquidity risk and credit risk. The Board of Directors reviews and agrees policies for managing each of these risks and they are summarised below.

The Company's overall strategy remains unchanged from 2011.

(b) Market Risk

The Company provides electricity, water and sewerage services to remote Indigenous communities in the Northern Territory.

The Company receives grant funding from the Northern Territory Government to construct and maintain assets required to provide electricity, water and sewerage services to remote Indigenous communities in the Northern Territory. The Company is the only provider of these services to remote Indigenous communities in the Northern Territory.

The service contract between the Company and the Northern Territory Government expired on 30 June 2010. The contract has been extended for a period of three years from 01 July 2011 to 30 June 2013.

The following table sets out the source of the Company’s income.

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>%</td>
</tr>
<tr>
<td>Grant funding</td>
<td>94,239,485</td>
<td>75%</td>
</tr>
<tr>
<td>Electricity</td>
<td>23,064,554</td>
<td>18%</td>
</tr>
<tr>
<td>Water</td>
<td>3,132,776</td>
<td>3%</td>
</tr>
<tr>
<td>Services Rendered</td>
<td>2,071,133</td>
<td>2%</td>
</tr>
<tr>
<td>Capital contributions and recoverable works</td>
<td>285,374</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>2,396,500</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>125,189,822</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

(c) Credit risk management

Credit risk represents the loss that would be recognised if counterparties failed to perform as contracted. The credit risk on receivables of the Company that has been recognised in the statement of financial position is the carrying amount net of any provision for doubtful debts.

The Company performs works on behalf of Northern Territory Government agencies and private companies on a recoverable works basis. Funding for general recoverable works is obtained upfront thereby reducing credit risk associated with these transactions.

(d) Liquidity risk management

The Company's objective is to provide continued and reliable services to remote Indigenous communities in the Northern Territory within the grant funding and sales revenue it receives. Each year the Company limits expenditure to the level of grant funding and sales revenue it receives for that year.

(e) Commodity price risk

The Company is exposed to changes in the price of distillate which is used to power electricity generators. Each year grant funding received from the Northern Territory Government is based on an operational budget that includes an estimated cost of distillate consumption. In the event the distillate price varies upwards and the Company does not have sufficient grant funds to continue operating, the Company can apply to the Northern Territory Government for additional grant funds.
13 Financial Instruments (continued)

(f) Interest rate risk
Interest revenue is incurred solely on the cash balance held by the Company throughout the year. No interest expenses are incurred by the Company. Therefore the Company's exposure to interest rate risk is immaterial.

(g) Fair values
Net fair values of financial assets and liabilities approximate carrying values.

(h) Capital risk management
The Company's objectives when managing capital are to safeguard the principal business activities as a not-for-profit entity to provide electricity, water and sewerage services to remote Indigenous communities in the Northern Territory.

The capital structure of the Company consists of mainly cash and cash equivalents and equity attributable to the equity holder of the Company, comprising issued capital and retained earnings as disclosed in notes 9 and 10 respectively.

Operating cash flows are used to maintain and expand the Company's assets.

The Company is not subject to any externally imposed capital requirements.

The Company overall strategy remains unchanged from prior years.
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

14 Related party information

The following table provides the total amount of transactions that were entered into with related parties for the relevant financial year (for information regarding outstanding balances at year end refer to note 8).

<table>
<thead>
<tr>
<th>Related party</th>
<th>Sales to related parties $</th>
<th>Purchases from Related parties $</th>
<th>Amounts owed by related parties $</th>
<th>Amounts owed to related parties $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power and Water</td>
<td>2012</td>
<td>216,153</td>
<td>17,662,401</td>
<td>-</td>
</tr>
<tr>
<td>Corporation</td>
<td>2011</td>
<td>-</td>
<td>20,567,888</td>
<td>-</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>2012</td>
<td>94,524,860</td>
<td>778,611</td>
<td>62,488,340</td>
</tr>
<tr>
<td>Government</td>
<td>2011</td>
<td>87,489,128</td>
<td>771,904</td>
<td>1,735,137</td>
</tr>
</tbody>
</table>

(i) The controlling entity of the Company is Power and Water Corporation, a government owned corporation pursuant to the Government Owned Corporations Act 2001. Power and Water Corporation is wholly owned by the Northern Territory Government.

(ii) The Company purchases electricity, water and sewerage services from Power and Water Corporation's infrastructure for remote Indigenous communities that are able to be connected to this infrastructure rather than requiring stand alone infrastructure. In addition, the Company purchases labour, accounting, computing, human resources, secretarial services and utility services for its operations from Power and Water Corporation.

(iii) The Company receives operational and capital grants from the Northern Territory Government enabling it to provide electricity, water and sewerage services to remote Indigenous communities. The Company also receives recoverable works funds for specific projects undertaken on behalf of the Northern Territory Government and unrelated third parties.

15 Economic dependency

The Company's revenue is derived from two main sources as follows:

<table>
<thead>
<tr>
<th>Revenue source</th>
<th>2012 %</th>
<th>2011 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue derived from the Northern Territory Government</td>
<td>75</td>
<td>76</td>
</tr>
<tr>
<td>Revenue from provision of utility services</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Notes to the Financial Statements
Indigenous Essential Services Pty Limited for the year ended 30 June 2012

16 Auditor’s remuneration

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Services:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditors of the Company - NT Auditor-General</td>
<td>29,316</td>
<td>22,766</td>
</tr>
</tbody>
</table>

17 Director and executive disclosures

Directors
The names of each person holding the position of director within Indigenous Essential Services Pty Limited during the financial year are listed in the Directors' report.

Directors do not receive any compensation for their directorship. No director has entered into a material contract with the Company since the end of the previous financial year and there were no material contracts involving directors' interest subsisting at year-end.

Compensation of key management personnel
Indigenous Essential Services Pty Ltd has no employees.

18 Events after the reporting period
There has not arisen in the interval between the end of the financial year and the date of this report any item, transactions or event of a material or unusual nature likely, in the opinion of the directors of the Company, to affect significantly the operations of the Company, the results of those operations, or the state of affairs of the Company in future financial years.
Appendices

Water quality test results ................................................................. 59
Water and energy efficiency ............................................................. 74
Providing safe water ...................................................................... 78
Effective sewerage services ............................................................... 80
Providing reliable power ................................................................. 82
ESO training and employment ......................................................... 84
Power and Water regularly tests drinking water to confirm it complies with the Australian Drinking Water Guidelines (ADWG). Frequency of testing is outlined in the Drinking Water Monitoring Program which is developed in consultation with the Department of Health (DoH) and approved by the Chief Health Officer.

Water samples are collected by Essential Services Operators (ESOs) from particular points in the water supply system in each location and sent to laboratories for analysis.

To ensure water samples reach the laboratory in time for testing, small planes are chartered to collect samples from communities and deliver them to testing laboratories in Darwin and Alice Springs.

More than 90,000 analyses are carried out each year to determine microbiological, physio-chemical, trace metal and radiological characteristics of water to confirm it is safe to drink.

Each year over 5,000 water samples are collected from Territory Growth Towns and remote communities for quality testing.

Following is an overview of drinking water quality in each of the Territory Growth Towns and remote communities. Additional information and explanation is provided on some key water quality characteristics relevant to these water supplies to assist interpretation of water quality results.


**HEALTH PARAMETERS**

Health parameters are water quality characteristics that may present a risk if the consumer was exposed to concentrations above ADWG levels over a lifetime.

**Arsenic** in drinking water is recommended not to exceed 0.007 mg/L.

Arsenic can be introduced into ground and surface water naturally through dissolution of minerals and ores. These sources can make a significant contribution to the arsenic concentration in drinking water. Industrial effluent, atmospheric deposition (through the burning of fossil fuels and waste incineration), drainage from old gold mines or some types of sheep dip are also sources of arsenic.

In Australia, arsenic concentrations typically range from less than 0.005 mg/L to 0.015 mg/L. Studies into the consumption of drinking water containing arsenic above 0.3 mg/L over five to 25 years have shown effects on the skin, vascular system and nervous system, with the possibility of being carcinogenic.
Power and Water is installing a water treatment system at Ali Curung to reduce fluoride levels to below the guideline of 1.5 mg/L.

In contrast most water supplies in the northern and Katherine regions have naturally low fluoride levels due to the nature of shallow groundwater supplies and use of surface water supplies in some communities.

In 2011-12 fluoridation plants were installed in Wadeye and Wurrumiyanga in conjunction with works to upgrade disinfection systems. Fluoridation systems will be installed in 2012-13 at Angurugu, Maningrida and Umbakumba.

Nitrate in drinking water supplies in the Territory has been partially attributed to nitrogen fixing by native vegetation and cyanobacteria crusts on soils. Termite mounds appear to be a significant nitrate source, possibly due to the presence of nitrogen-fixing bacteria in many termite species and nitrogen-rich secretions used to build mounds.

The ADWG recommend that nitrate levels between 50 -100 mg/L are a health consideration for infants less than three months, although levels up to 100 mg/L can be safely consumed by adults.

Elevated levels of nitrate have been identified in Pmara Jutunta, Kintore and Ali Curung (Figure 2).

Barium in drinking water is recommended to be less than 0.7 mg/L. A number of epidemiological studies have been carried out on the effects of barium in drinking water and cardiovascular disease. No adverse effects have been found with barium concentrations up to 7mg/L. In a study of a small number of volunteers, no adverse effects were observed after eight weeks exposure to drinking water with up to 10 mg/L of barium.

Escherichia coli (E. coli) is a bacterial coliform excreted from the intestines of warm-blooded animals including humans and is an indicator of recent faecal contamination.

If E. coli is detected in a drinking water supply, immediate action is taken in accordance with established protocols.

Fluoride is one of the most abundant elements in the Earth’s crust. It naturally occurs in groundwater supplies and is present in most food and beverage products and toothpaste.

The concentration of natural fluoride in Territory groundwater supplies depends on the type of soil and rock water comes into contact with. Generally, surface water sources have low natural fluoride concentrations (around <0.1 to 0.5mg/L) and groundwater sources may have relatively high levels (ranging from 1-10 mg/L).

In the correct amounts, fluoride in drinking water helps build strong, healthy teeth that resist decay. The minimum fluoride for protection against dental caries is about 0.5mg/L, although about 1mg/L is optimal in temperate climates. At concentrations of 1.5 to 2mg/L, teeth may become mottled due to dental fluorosis.

The majority of communities in the Barkly and southern regions have fluoride levels between 0.5mg/L and 1.5mg/L with two communities very close to the guideline value and Ali Curung above the ADWG value of 1.5mg/L (Figure 1).

Figure 1
Natural fluoride levels above ADWG value of 1.5mg/L

Figure 2
Nitrate levels between 50 - 100 mg/L

Power and Water is installing a water treatment system at Ali Curung and Kintore to reduce nitrate levels to below the guideline of 100 mg/L.

Regular monitoring is scheduled for Pmara Jutunta as nitrate levels are very close to the recommended guideline.
Uranium is widely distributed in geological formations. It can be found in groundwater aquifers surrounded by granite rocks and pegmatites as well as in sedimentary rocks like sandstones. Uranium occurs as three naturally occurring isotopes and under appropriate conditions can become soluble and therefore present in a region’s groundwater. The transport of uranium in groundwater varies widely according to aquifer conditions. Uranium may also be present in the environment as a result of mine tailings and use of phosphate pesticides.

AESTHETIC PARAMETERS

Aesthetic parameters are characteristics associated with the acceptability of water to the consumer in terms of appearance, taste and odour.

Hardness (as calcium carbonate): is primarily the amount of calcium and magnesium ions in water and is expressed as a calcium carbonate (CaCO₃) equivalent. High hardness usually requires more soap to achieve lather and may lead to excessive scaling in hot water pipes and fittings.

Soft water, or water low in total calcium and magnesium ions, may also cause corrosion in pipes although this will depend on other physical and chemical characteristics such as pH, alkalinity and dissolved oxygen. The ADWG recommend hardness levels below 200mg/L to minimise scaling in hot water systems.

The ADWG describes various degrees of hardness as:

- <60mg/L CaCO₃
- Soft but possibly corrosive
- 60-200mg/L CaCO₃
- Good quality
- 200-500mg/L CaCO₃
- Increasing scaling problems
- >500mg/L CaCO₃
- Severe scaling

Hard water or water with calcium carbonate levels above 500mg/L (Figure 3) may lead to excessive scaling of pipes and fittings, which can impact on infrastructure service life and indirectly impact health through impeding access to water.

Typically, Territory communities that rely on groundwater supplies near the coast in the Northern region are described as ‘soft’, as the water is drawn from relatively shallow aquifers and maintains naturally low pH and hardness levels. Water supplies in inland communities are often described as ‘hard’, as the water is stored for longer periods in deeper aquifers resulting in ‘rich’ water chemistry.

Iron has a taste threshold of about 0.3mg/L in water and becomes objectionable above 3mg/L. High iron concentrations give water a rust-brown appearance and can cause staining of laundry and plumbing fittings and blockages in irrigation systems. Growths of iron bacteria, which increase the concentration of iron, may cause taste and odour problems and lead to pipe restrictions, blockages and corrosion. The concentration of iron at the tap can also be influenced by factors such as rusting iron pipes.

There are a number of communities regularly monitored for iron levels above 0.3mg/L and a limited number above 1mg/L (Figure 4).
Power and Water has identified alternative groundwater sources for Nauiyu (Daly River) that have reduced levels of iron and these will be developed in the next couple of years to improve water quality. Options to reduce iron levels in remaining communities with high levels are being investigated, including altering the operation of production bores to maximise use of those with reduced iron levels.

**pH** is a measure of the hydrogen ion concentration of water. It is measured on a logarithmic scale from 0 to 14. A pH of 7 is neutral, greater than 7 is alkaline and less than 7 is acidic. The ADWG recommends pH levels in drinking water should be between 6.5-8.5. Levels below 6.5 are likely to cause corrosion of pipes and fittings while levels above 8.5 can cause scaling particularly on hot water systems.

Typically, Territory communities that rely on groundwater supplies near the coast in the northern region are described as ‘corrosive’, as water is drawn from relatively shallow aquifers and has naturally low pH levels.

**Sodium** is an essential element for humans although there is currently no agreement on the minimum amount required.

Sodium ion is widespread in water due to the high solubility of sodium salts and the abundance of mineral deposits. The ADWG recommend action on levels above 180mg/L, when the taste becomes noticeable.

**Turbidity** is a measure of ‘discolouration’ of water caused by fine suspended matter such as clay or silt. The degree of “discolouration” depends on the amount, size and composition of the suspended matter.

At low levels, turbidity can only be measured by instruments, however at higher levels water has a ‘muddy’ or ‘milky’ appearance.

As a guide, “crystal-clear” water usually has a turbidity of less than 1 Nephelometric Turbidity Units (NTU), water with a turbidity of 5NTU appears slightly muddy or milky in a glass, while at >60NTU, it is not possible to see through the water.

Power and Water considers turbidity when managing community disinfection systems and adjusts disinfection doses to ensure adequate disinfection is achieved. Routine monitoring is also undertaken to check that disinfection systems are effective and safe water is being supplied.

**Total dissolved solids (TDS)** are small organic and inorganic particles dissolved in water that can affect how water tastes.

TDS comprises of sodium, potassium, calcium, magnesium, chloride, sulphate, bicarbonate,
carbonate, silica, organic matter, fluoride, iron, manganese, nitrate and phosphate.

Water with low TDS can taste flat, while water with TDS above 500mg/L could cause scaling in taps, pipes and hot water systems. Levels greater than 800mg/L significantly affect taste and may also cause moderate to severe scaling.

Based on taste, the ADWG recommends TDS levels below 500mg/L. Guidance is provided about palatability of drinking water according to TDS concentration:

<80mg/L
Excellent quality

80-500mg/L
Good quality

500-800mg/L
Fair quality

800-1000mg/L
Poor quality

>1000mg/L
May increase scaling, corrosion, taste.


Specific results of water quality testing for each of the communities is provided in the tables on the following pages.
## Water quality results

### Northern Region

<table>
<thead>
<tr>
<th>Healthy Characteristics</th>
<th>Reported unit</th>
<th>ADWG 2004</th>
<th>Acacia Larrakeyah</th>
<th>Angurugu</th>
<th>Bilyarnu</th>
<th>Galwirki (Echo Harbour)</th>
<th>Gapuwiyak (Lake Evella)</th>
<th>Gunyangara (Marngarr)</th>
<th>Gunyangara (Oenpelli)</th>
<th>Gungarlin (Wangerin)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E. coli detections</strong></td>
<td>per year</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>E. coli performance</strong></td>
<td>%</td>
<td>98</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>99</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Antimony</td>
<td>mg/L</td>
<td>0.003</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
</tr>
<tr>
<td>Arsenic</td>
<td>mg/L</td>
<td>0.007</td>
<td>0.0008</td>
<td>0.0005</td>
<td>0.001</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
<td>0.0005</td>
</tr>
<tr>
<td>Barium</td>
<td>mg/L</td>
<td>0.7</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Boron</td>
<td>mg/L</td>
<td>4</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Cadmium</td>
<td>mg/L</td>
<td>0.002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
</tr>
<tr>
<td>Chromium</td>
<td>mg/L</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Fluoride</td>
<td>mg/L</td>
<td>1.5</td>
<td>0.1</td>
<td>0.1</td>
<td>0.16</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>Lead</td>
<td>mg/L</td>
<td>0.01</td>
<td>0.001</td>
<td>0.0016</td>
<td>0.0016</td>
<td>0.001</td>
<td>0.0016</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Mercury</td>
<td>mg/L</td>
<td>0.001</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>mg/L</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Nickel</td>
<td>mg/L</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Nitrate</td>
<td>mg/L</td>
<td>50</td>
<td>1.9</td>
<td>1.23</td>
<td>1.6</td>
<td>1.38</td>
<td>2.51</td>
<td>1.01</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Annual Exposure to Radioactivity</td>
<td>mSv/yr</td>
<td>1</td>
<td>0.1</td>
<td>0.09</td>
<td>0.18</td>
<td>0.12</td>
<td>0.11</td>
<td>0.11</td>
<td>0.12</td>
<td>0.12</td>
</tr>
<tr>
<td>Selenium</td>
<td>mg/L</td>
<td>0.1</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Silver</td>
<td>mg/L</td>
<td>0.1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Uranium</td>
<td>mg/L</td>
<td>0.02</td>
<td>0.0004</td>
<td>0.0003</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

### Aesthetic Characteristics

<table>
<thead>
<tr>
<th>Aesthetic Characteristics</th>
<th>mg/L</th>
<th>mg/L</th>
<th>mg/L</th>
<th>mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>0.2</td>
<td>0.02</td>
<td>0.3</td>
<td>0.03</td>
</tr>
<tr>
<td>Chloride</td>
<td>250</td>
<td>7</td>
<td>10.6</td>
<td>8.12</td>
</tr>
<tr>
<td>Copper</td>
<td>2</td>
<td>0.01</td>
<td>0.02</td>
<td>0.07</td>
</tr>
<tr>
<td>Hardness (CaCO3)</td>
<td>200</td>
<td>219</td>
<td>9</td>
<td>16.5</td>
</tr>
<tr>
<td>Iodine</td>
<td>0.15</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Iron</td>
<td>0.3</td>
<td>0.038</td>
<td>0.13</td>
<td>0.06</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.1</td>
<td>0.007</td>
<td>0.005</td>
<td>0.009</td>
</tr>
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### Other Characteristics

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1 N/A Not Available
2 95th percentile reported
3 value indicates data from 2007-2012
4 value includes data from 2011-2012
5 one or more values in calculation were below detection limits. Result may be higher than actual value
# Northern Region (cont.)

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<th>HEALTH CHARACTERISTICS</th>
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1 N/A Not Available
2 95th percentile reported
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5 one or more values in calculation were below detection limits. Result may be higher than actual value
## Water quality results

### Northern Region (cont.)

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<th>Umbakumba</th>
<th>Wadrye</th>
<th>Warruvi</th>
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<td>0.03</td>
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1 N/A Not Available
2 95th percentile reported
3 value indicates data from 2007-2012
4 value includes data from 2011-2012
5 one or more values in calculation were below detection limits. Result may be higher than actual value
<table>
<thead>
<tr>
<th>Reported unit</th>
<th>ADWG 2004</th>
<th>Amarrabidi (Kakadu)</th>
<th>Barunga</th>
<th>Beswick</th>
<th>Bingil</th>
<th>Burdiddie (Pigeon Hole)</th>
<th>Daragaru</th>
<th>Gudabijin (Bulla)</th>
<th>Culin-Gulin (Bulman)</th>
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### HEALTH CHARACTERISTICS

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<th>E. coli detections</th>
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<th>0</th>
<th>0</th>
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<td>E. coli performance</td>
<td>%</td>
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<td>100</td>
<td>100</td>
<td>100</td>
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Antimony (mg/L): 0.003, 0.0004, 0.001, 0.002, 0.002, 0.002, 0.0002, 0.0002, 0.0002

Arsenic (mg/L): 0.7, 0.18, 0.07, 0.15, 0.18, 0.05, 0.075, 0.07, 0.075

Barium (mg/L): 0.51, 0.02, 0.02, 0.02, 0.02, 0.02, 0.02, 0.02, 0.02

Boron (mg/L): 4, 0.51, 0.02, 0.02, 0.02, 0.08, 0.09, 0.1, 0.02

Cadmium (mg/L): 0.002, 0.0002, 0.0002, 0.0002, 0.0002, 0.0002, 0.0002, 0.0002, 0.0002

Chromium (mg/L): 0.05, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005

Fluoride (mg/L): 1.5, 0.29, 0.1, 0.11, 0.42, 0.3, 0.3, 0.59, 0.1

Lead (mg/L): 0.01, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001

Mercury (mg/L): 0.002, 0.0005, 0.0005, 0.0005, 0.0005, 0.0005, 0.0005, 0.0005, 0.0005

Molybdenum (mg/L): 0.05, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005, 0.005

Nickel (mg/L): 0.01, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001

Nitrate (mg/L): 50, 1.29, 1, 2.04, 1.19, 19, 2.8, 1.4, 1

Selenium (mg/L): 0.1, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001

Silver (mg/L): 0.1, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01

Uranium (mg/L): 0.02, 0.0009, 0.0009, 0.0002, 0.0002, 0.0002, 0.0002, 0.0002, 0.0002

### AESTHETIC CHARACTERISTICS

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<th>Aluminum (mg/L)</th>
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<tr>
<td>Chloride (mg/L)</td>
<td>250</td>
<td>783, 6.64, 12.6, 25.3, 23, 40</td>
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<tr>
<td>Copper (mg/L)</td>
<td>2</td>
<td>0.03, 0.14, 0.01, 0.05, 0.02, 0.01</td>
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<td>Hardness (CaCO3 mg/L)</td>
<td>200</td>
<td>718, 296, 290, 312, 251, 242</td>
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<tr>
<td>Iodine (mg/L)</td>
<td>0.05</td>
<td>0.01, 0.01, 0.01, 0.01, 0.01</td>
</tr>
<tr>
<td>Iron (mg/L)</td>
<td>0.3</td>
<td>0.36, 0.04, 0.05, 0.05, 0.04, 0.04</td>
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<tr>
<td>Manganese (mg/L)</td>
<td>0.1</td>
<td>0.01, 0.01, 0.01, 0.01, 0.01, 0.01</td>
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<td>pH Units</td>
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<td>7.45, 7.57, 7.37, 7.9, 8.33, 7.72</td>
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<tr>
<td>Sodium (mg/L)</td>
<td>180</td>
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<tr>
<td>Sulfate (mg/L)</td>
<td>250</td>
<td>158, 6, 7, 8, 2, 1</td>
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<tr>
<td>Total Dissolved Solids (mg/L)</td>
<td>500</td>
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<td>True Colour (CU)</td>
<td>15</td>
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<tr>
<td>Turbidity (NTU)</td>
<td>5</td>
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<tr>
<td>Zinc (mg/L)</td>
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</table>

### OTHER CHARACTERISTICS

| Alkalinity (mg/L) | 470 | 121, 318, 314, 352, 295, 262 |
| Beryllium (mg/L)  | 0.01, 0.01, 0.01, 0.01, 0.01, 0.01 |
| Bromine (mg/L)    | 0.18 | 0.02, 0.016, 0.057, 0.072, 0.096 |
| Calcium (mg/L)    | 58 | 57, 64.2, 69, 48.3, 34, 62 |
| Conductivity (μS/cm) | 1486 | 235, 590, 602, 713, 611 |
| Magnesium (mg/L)  | 55.5 | 14.3, 37.1, 32, 33.9, 31, 37.9, 40.2 |
| Potassium (mg/L)  | 4.08 | 1.97, 4.67, 2.05, 4.1, 4.37, 2.55 |
| Silica (mg/L)     | 33.7 | 21, 22.9, 27.7, 56, 25.3, 18.9 |
| Tin (mg/L)        | 0.01, 0.01, 0.01, 0.01, 0.01, 0.01 |

1. N/A Not Available
2. 95th percentile reported
3. Value indicates data from 2007-2012
4. Value includes data from 2011-2012
5. One or more values in calculation were below detection limits. Result may be higher than actual value
**Water quality results**

### Katherine Region (cont.)

<table>
<thead>
<tr>
<th>Reported unit</th>
<th>ADWG 2004</th>
<th>Jilkinggan (Duck Creek)</th>
<th>Jodetluk (Gorge Camp)</th>
<th>Kalkarindji (Wave Hill)</th>
<th>Kyndoor Farm</th>
<th>Lajamanu</th>
<th>Manyalalluk (Eva Valley)</th>
<th>Minyerri</th>
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<tbody>
<tr>
<td><strong>HEALTH CHARACTERISTICS</strong></td>
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<td>E. coli detections</td>
<td>per year</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E. coli performance</td>
<td>%</td>
<td>98</td>
<td>95</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
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<td>0.0002</td>
<td>0.0002</td>
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<td>0.0003</td>
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<td>Calcium</td>
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1. N/A Not Available  
2. 95th percentile reported  
3. value indicates data from 2007-2012  
4. value includes data from 2011-2012  
5. one or more values in calculation were below detection limits. Result may be higher than actual value
### Health Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ADWG 2004</th>
<th>Ngukurr</th>
<th>Rittarangu</th>
<th>Wemol</th>
<th>Yarralin</th>
<th>Mungoboba (Robinson River)</th>
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<td><strong>E. coli detection</strong></td>
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<td>100</td>
<td>100</td>
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<td>96</td>
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<td>Boron (mg/L)</td>
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### Aesthetic Characteristics

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<th>Wemol</th>
<th>Yarralin</th>
<th>Mungoboba (Robinson River)</th>
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<tr>
<td><strong>Aluminum (mg/L)</strong></td>
<td>0.2</td>
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<td><strong>Chloride (mg/L)</strong></td>
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<td><strong>Copper (mg/L)</strong></td>
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<td><strong>Hardness (CaCO3 mg/L)</strong></td>
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<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
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<td><strong>Iron (mg/L)</strong></td>
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<td><strong>Manganese (mg/L)</strong></td>
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<td><strong>pH</strong></td>
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<td><strong>Sulfate (mg/L)</strong></td>
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<td><strong>Total Dissolved Solids (mg/L)</strong></td>
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<td>552</td>
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<td><strong>Zinc (mg/L)</strong></td>
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### Other Characteristics

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<tr>
<th>Parameter</th>
<th>ACW 2004</th>
<th>Ngukurr</th>
<th>Rittarangu</th>
<th>Wemol</th>
<th>Yarralin</th>
<th>Mungoboba (Robinson River)</th>
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<tbody>
<tr>
<td><strong>Alkalinity (mg/L)</strong></td>
<td>#</td>
<td>536</td>
<td>324</td>
<td>281</td>
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<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
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<td><strong>Conductivity (µS/cm)</strong></td>
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<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

1. N/A Not Available
2. 95th percentile reported
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4. value includes data from 2011-2012
5. one or more values in calculation were below detection limits. Result may be higher than actual value
## Water quality results

### Barkly Region (cont.)

<table>
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<tr>
<th>Reported unit</th>
<th>ADWG 2004</th>
<th>Nturiya</th>
<th>Owaitilla (Canteen Creek)</th>
<th>Tara</th>
<th>Warabri (Ali Curung)</th>
<th>Willowra</th>
<th>Wilora (Stirling)</th>
<th>Wutungurra (Epenarra)</th>
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<tr>
<td>E. coli detections(^4)</td>
<td>per year</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>E. coli performance(^4)</td>
<td>%</td>
<td>98</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>98</td>
<td>100</td>
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<tr>
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<td>mg/L</td>
<td>0.003</td>
<td>0.0003(^3)</td>
<td>0.0002(^3)</td>
<td>0.0002(^3)</td>
<td>0.0003(^3)</td>
<td>0.0003(^3)</td>
<td>0.0003(^3)</td>
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<tr>
<td>Arsenic</td>
<td>mg/L</td>
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<td>0.0005(^3)</td>
<td>0.0006(^3)</td>
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<td>0.05</td>
<td>0.05(^3)</td>
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<td>0.45</td>
<td>0.72</td>
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<td>0.0002(^3)</td>
<td>0.0002(^3)</td>
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<td>0.005(^3)</td>
<td>0.005(^3)</td>
<td>0.005(^3)</td>
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<td>0.0001(^3)</td>
<td>0.0001(^3)</td>
<td>0.0001(^3)</td>
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<td>0.01(^3)</td>
<td>0.01(^3)</td>
<td>0.01(^3)</td>
<td>0.01(^3)</td>
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<td>0.001(^3)</td>
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<td>0.01(^3)</td>
<td>0.01(^3)</td>
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<td>0.01(^3)</td>
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</tbody>
</table>

1 N/A Not Available
2 95th percentile reported
3 value indicates data from 2007-2012
4 value includes data from 2011-2012
5 one or more values in calculation were below detection limits. Result may be higher than actual value
## Southern Region

### HEALTH CHARACTERISTICS

<table>
<thead>
<tr>
<th>E. coli detections4</th>
<th>per year</th>
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<th>0</th>
<th>0</th>
<th>0</th>
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<th>0</th>
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<th>0</th>
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<tbody>
<tr>
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<td>%</td>
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<td>100</td>
<td>100</td>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Antimony</td>
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### AESTHETIC CHARACTERISTICS

| Aluminum          | mg/L     | 0.2   | 0.14 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Chloride          | mg/L     | 250   | 166  | 118  | 146  | 108  | 113  | 136  | 371  |
| Copper            | mg/L     | 2     | 0.01  | 0.02  | 0.02  | 0.02  | 0.03  | 0.03  | 0.03  | 0.03  | 0.05  |
| Hardness          | mg/L     | 200   | 446  | 273  | 187  | 416  | 277  | 377  | 580  |
| Iodine            | mg/L     | 0.15  | 0.18  | 0.21 | 0.03  | 0.09  | 0.14  | 0.12  | 0.25  |
| Iron              | mg/L     | 0.3   | 0.02  | 0.06  | 0.09  | 0.09  | 0.05  | 0.09  | 0.08 | 2, 5 |
| Manganese         | mg/L     | 0.1   | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| pH                | pH Units | 6.5-8.5 | 7.83 | 7.72 | 7.6  | 8.01 | 8.02 | 7.91 | 7.65  |
| Sodium            | mg/L     | 180   | 116  | 99   | 85   | 57   | 113  | 85   | 165  |
| Sulfate           | mg/L     | 250   | 224  | 97   | 57   | 77   | 134  | 61   | 258  |
| Total Dissolved Solids | mg/L | 500 | 992  | 621  | 462  | 640  | 691  | 705  | 1266  |
| True Colour       | CU       | 15    | 2.81  | 1.93  | 2.2  | 1.83  | 3.25  | 2.89  | 3.86 | 2, 5 |
| Turbidity         | NTU      | 5     | 0.39  | 1.04  | 0.9  | 1.19  | 0.7  | 3.4  | 1.28  |
| Zinc              | mg/L     | 3     | 0.02  | 0.02  | 0.14  | 0.05  | 0.03  | 0.03  | 0.15  |

### OTHER CHARACTERISTICS

| Alkalinity        | mg/L     | 301   | 254  | 123  | 341  | 216  | 123  | 241  |
| Beryllium         | mg/L     | #     | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| Bromine           | mg/L     | #     | 0.9   | 0.5   | 0.2   | 0.4   | 0.5   | 0.63  | 1.5  |
| Calcium           | mg/L     | #     | 97    | 60    | 53    | 75    | 44    | 69    | 109  |
| Conductivity      | µS/cm    | #     | 1502  | 1058  | 869  | 1121  | 1114  | 1184  | 1982 |
| Magnesium         | mg/L     | #     | 53.6  | 30.1  | 13   | 55.4  | 40.6  | 49.8  | 74.4 |
| Potassium         | mg/L     | #     | 23.6  | 13.7  | 6.4  | 8.37  | 8.66  | 7.3   | 28.7 |
| Silica            | mg/L     | #     | 39    | 49.5  | 16.4 | 18.8  | 34.6  | 68.7  | 51.6 |
| Tin               | mg/L     | #     | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |

1 N/A Not Available
2 95th percentile reported
3 value indicates data from 2007-2012
4 value includes data from 2011-2012
5 one or more values in calculation were below detection limits. Result may be higher than actual value
## Water quality results

### Southern Region (cont.)

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<th>ADWG 2004</th>
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<th>Luramba (Napuny)</th>
<th>Nhala (Nhamabong)</th>
<th>Nyripi</th>
<th>Parna Jutarta (T Tree 6 Mile)</th>
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1 N/A Not Available  
2 95th percentile reported  
3 value indicates data from 2007-2012  
4 value includes data from 2011-2012  
5 one or more values in calculation were below detection limits. Result may be higher than actual value
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1 N/A Not Available
2 95th percentile reported
3 value indicates data from 2007-2012
4 value includes data from 2011-2012
5 one or more values in calculation were below detection limits. Result may be higher than actual value
Appendix

Water and energy efficiency

WHY IT MATTERS

Life in the Territory is influenced by our environment. We live amidst expansive deserts in the south and wet/dry tropics in the north, with every climatic condition they bring. Seasonal extremes vary from very hot to very cold and very wet to dry. This can lead to increased use of electricity for heating and cooling, high water use for plants and gardens, keeping clean and staying cool.

Delivery of services

Delivering power and water safely and efficiently to remote homes in this environment is challenging. We live with the potential for fire, annual flooding, storms and cyclones, termites and ants disrupting supplies.

Power and Water services small populations across vast distances, meaning there are numerous small local power generation and groundwater pumps systems. Durable and reliable infrastructure is required to withstand the elements with less need for maintenance.

These factors make it costly to deliver services in remote areas of the Territory.

Supply cost influences

The majority of electricity in remote communities is supplied through diesel fuelled power stations, complemented by five renewable energy power generation plants in remote communities, with a further three in construction.

Diesel power is highly reliable and robust, however disadvantages include dependency on fossil fuels with predicted price rises and the environmental impacts of carbon emissions. Increasing renewable energy generation and high efficiency power generation is essential to address the rising cost to produce energy.

Growing demand

Demand for water and power is growing as population grows and improved standards of living are achieved. The tariff consumers pay for energy is much lower than the actual cost of production. Currently the cost to supply essential services is subsidised by government.

The growth in demand results in a growing ‘gap’ between the costs of delivery and revenue received, and also requires further upgrades of the system and assets.

The cost to produce water and energy is much higher in remote locations.

Customer cost

Utilising these essential services in homes and businesses comes at a financial cost to the end user. All customers across the Territory pay a uniform tariff for power, water and sewerage services whether they live and work in the bush or towns.

Using power and water efficiently means less consumption and therefore reduced costs to consumers. Simple changes in water and energy use behaviour or upgrades to water and energy efficient appliances at work and at home will help to manage and reduce money spent on essential electricity and water.
Limited water resources

Of the 72 communities serviced, 95 per cent rely on groundwater, which is limited.

Despite monsoonal rainfall in the north and large underground aquifers in the south, much of the water is not available or suitable for human use because quality and/or quantity is variable or cost prohibitive to access.

One third of these communities are considered ‘water-stressed’ due to three main factors:

- Demand growth is greater than available water sources
- Limited availability of alternative water sources
- Current water use is too high - posing a threat to water sources in the future.

The cost to produce water and energy is much higher in remote locations.

WHAT IS WATER AND ENERGY EFFICIENCY AND HOW DO WE IMPLEMENT IT?

Working together

To manage the cost and achieve the benefits, we all need to work together. Successful demand management requires:

- Leadership from all levels of government and private sector in efficiency measures
- Strong financial and educational signals to customers and shared commitment
- Cooperation across agencies and local organisations in improving efficiencies
- Engagement with customers (community residents, commercial and governments)
- Ability to fund cost-effective appliances and measures

What should be done?

Realising the potential for efficiency will require a range of measures, which can be summarised in to:

- Technical measures including efficient fixtures, fittings and appliances and fixing leaks
- Education of consumers about the benefits of reducing excessive discretionary use of water and energy
- Clear and direct incentives defined and implemented to encourage government and households to adopt water and energy efficiency appliances and to use water and energy wisely

This requires Power and Water to work with governments and the communities to improve awareness and promote behaviour change. We will provide leadership by initiating and managing various programs aimed to improve resource efficiencies.
The journey

Water and energy efficiency in remote areas began with Power and Water improving efficiency in power generation with the introduction of smart technology and use of renewable energy.

Power and Water has been working with a number of ‘water-stressed’ communities expanding education and awareness about why and how to save water. This has involved direct marketing and promotion to government staff, community organisations and the general public. Energy awareness materials are being developed and will be promoted widely across remote areas from early 2013.

Strengthening our approach

Over recent years, Power and Water has been developing its approach to improve efficiency in remote communities, which includes:

- Place-based programs addressing the highest risks which target communities that have highest growth or are water-stressed locations or have the higher cost to supply services
- Continuous improvement programs including water leak detection and supply upgrade programs
- Integration of ‘low emission’ energy sources through solar, gas and wind expansion; where it is cost effective
- Expansion and refinement of water resource monitoring programs
- Improved efficiency of diesel generation
- Working with communities to design education programs that are suitable and encourage change in the most effective manner
- Continuing to extend collaborative and persuasive efficiency programs
- Raising awareness and education through general marketing and media or targeted programs for remote government employees

Community effectiveness programs include:

- Smart metering, retrofits and community-wide behaviour change programs in Gunbalanya and Milingimbi;
- Water education programs in Galiwin’ku, Ali Curung, Kintore, Beswick, Minyerri and Nauiyu Nambiyu
- A trial of efficient fixtures and fittings retrofitted to existing public housing stock in Gunbalanya
- Commercial efficiency audits for the five major commercial/government facilities in six community locations in 2012-13

USEFUL TERMS

**Water efficiency** is achieving maximum the benefit from water used. This means achieving the same benefit from water (e.g. watering, cooling, cleaning) with less.

**Water conservation** refers to preventing wasteful or excessive use of water resources.

**Water demand management** includes water efficiency measures such as regulations, price changes and infrastructure improvements intended to reduce demand on potable water supplies.

**Energy efficiency** is achieving the maximum benefit from energy used. Similar to water efficiency, this means getting the same benefit from energy use (e.g. air-conditioning, cooking, refrigeration) while using less electricity.

**Energy demand management** is the modification of consumer demand for energy through various methods. Usually the goal of demand side management is to encourage the consumer to use less energy during peak hours, which is the time when most energy is being used. Supplying this peak demand requires costly infrastructure investment.
Moving ahead

Power and Water aims to increase awareness and achieve efficiency gains across remote communities through:

- Expansion of staff awareness and outreach to remotely-based government staff
- Expansion of ‘social marketing’ approaches promoting water and energy efficient behaviour across media in remote areas
- Plan for rolling out of water meters to all lots across the 72 communities;
- Continued implementation of improvements to systems including water supply efficiency, leak detection and diesel displacement by more efficient and cost-effective energy sources
- Seeking opportunities to improve market access for efficient consumer goods in remote areas of NT
- Prepare energy and water efficiency information and educational material for all customers
- Seek collaboration opportunities with Commonwealth agencies under linked programs for climate change, water management and energy efficiency to expand the program across the largest and prioritised communities

Efficiency can only be achieved sustainably by working with key stakeholders from businesses, governments and communities. Everyone plays a key role in securing water and energy supplies in a changing climate. Help manage household costs and improve the sustainability of the Territory lifestyle.

Information to assist with promotion and education about environmental sustainability is available from our website:
Providing safe water

Power and Water obtains water from 70 isolated natural groundwater and surface water sources to supply water services to remote communities. These natural water sources vary significantly in quantity and quality presenting challenges to ensure residents receive adequate safe water through their taps.

Power and Water provides safe drinking water to residents across 1.3 million square kilometers while minimising financial costs and environmental impacts of our operations.

ENSURING ADEQUATE WATER IS AVAILABLE

Most of the water supplied to remote communities comes from underground aquifers (groundwater sources) pumped to the surface by production bores. The number of bores at each community varies depending on the amount of water available and the demand. Ideally, production bores are able to pump enough water to meet the needs of the community, including in the event of a failure or routine maintenance of the largest production bore.

However, as communities grow and need more water, new water sources have to be located. As well as working with the communities to reduce water demand, Power and Water routinely searches for and develops water sources. This may involve drilling more production bores within the existing aquifer or integrating new water sources into the water supply system.

New sources are required when the existing water source is at risk of over-extraction which could result in the resource drying up altogether. Approximately one third of the water sources used to supply the Territory Growth Towns and remote communities are at risk of over-extraction.

Some water from aquifers in Central Australia is believed to be more than 10,000 years old while groundwater in the Top End may be just a few years old.
Power and Water manages a robust water source monitoring program to reduce the risk of over-extraction. This is carried out by routinely collecting water level data on 232 bores to determine their security and the impact of current extraction on long-term viability of the water source. This data is used to inform the operation of production bores and for replacement planning and prioritisation of water efficiency programs.

**PROTECTING PUBLIC HEALTH**

Over the last five years, Power and Water has applied a ‘multi-barrier’ approach to drinking water delivery. Multiple barriers are in place so if one fails; other systems prevent or reduce potentially harmful contaminants from reaching consumers. This approach reflects more than a century of supplying water and supporting public health practices. Ensuring water supplies are continuously disinfected is key to reducing consumers’ exposure to disease causing micro-organisms.

Chlorine is the preferred purifier as it is simple to use, destroys pathogenic micro-organisms effectively and provides protection through the distribution system.

Chlorine levels are maintained in the optimum range – high enough to combat any microbiological contamination and low enough to avoid affecting the taste of the water.

Power and Water has installed nearly 40 new automatic disinfection systems (chlorination, ultraviolet) and Supervisory Control and Data Acquisition (SCADA) systems to allow online monitoring. Replacement of older disinfection systems with modern systems to improve the reliability and efficiency of disinfection is on-going.

In addition to potential microbiological contamination, interaction between water in the aquifer and surrounding geology can result in a wide range of naturally occurring minerals and deposits in water. When water is stored for longer periods in deeper aquifers it can result in ‘rich’ water chemistry. In some communities these characteristics exceed levels recommended in the Australian Drinking Water Guidelines. Power and Water is building advanced water treatment systems to improve the physical and chemical quality in the three highest priority communities. A number of fact sheets have been developed to provide information on specific aspects of water quality relevant to some communities.

Power and Water monitors the quality of drinking water supplied to consumers in all remote locations, verifying consistency with the Australian Drinking Water Guidelines. The program is reviewed annually in consultation with the Department of Health (DoH) and includes daily testing for chlorine residual to ensure effective disinfection and regular water sampling to test for microbiological contamination. The physical and chemical characteristics of the water are also analysed.

**MAXIMISING OPERATIONAL EFFICIENCIES AND MEETING SAFETY OBLIGATIONS**

Power and Water is introducing online monitoring at critical water supply points, allowing signals to be sent to operators immediately when problems occur. This significantly reduces response times enabling staff to identify and address problems without necessarily having to travel to the site.

Storage and handling of chemicals used to treat water supplies is subject to relevant standards. New chlorine disinfection systems being installed are more efficient and comply with national safety and chemical standards. In the short to medium-term, Power and Water will improve existing chlorine disinfection facilities until these systems are replaced.

Improvements include shade structures, safety showers for operators and bunding to contain stored chemicals preventing release to the surrounding environment in the event of a spill.

To ensure environmental and safety obligations are met, best practise operational procedures suitable to our operational environment have been adopted. These have been supported with business improvements that help ensure the safety of our water system operators through the development of emergency response procedures for the installation of the new chlorination and fluoridation systems.

For more information see the Water Quality Results appendices
Indigenous Essential Services

Effective sewerage services

Maintaining sewerage services is an important, often overlooked part of the delivery of essential services. Power and Water plans to provide effective sewerage services and meet growing demands while minimising the financial cost and environmental impact of our operations.

EFFECTIVELY REMOVING SEWAGE FROM HOUSEHOLDS

Safe drinking water is provided to each house through one set of pipes. Another set of pipes takes away the wastewater collected through the drains such as kitchen and bathroom sinks and the toilet.

In most communities the wastewater drains into a network of underground pipes and flows to the treatment ponds. Power and Water staff and Essential Services Officers (ESOs) make sure these pipes don’t become damaged or blocked.

Where communities don’t have sewerage ponds the wastewater from the house goes into privately owned and managed septic tanks.

MAXIMISING OPERATIONAL EFFICIENCIES

The selection of sewerage infrastructure is a key aspect of the approach to maximise operational efficiencies and ensure delivery of effective sewerage services.

In the majority of communities with sewerage services, wastewater is collected from households using the force of gravity, which minimises operational costs. Sewerage pump stations are only used in low areas of the network to raise the wastewater and effectively transport it to the wastewater treatment system.

While in many other parts of Australia wastewater is treated using complex mechanical, chemical and biological systems, our waste stabilisation ponds are simple, efficient and very effective in treating wastewater. These pond systems require very little maintenance as they use the sun and warm temperatures to create an ideal environment for algae and bacteria to naturally treat the wastewater.

Power and Water is continuing to place telemetry systems on critical parts of sewerage infrastructure to provide real-time information about performance until Supervisory Control and Data Acquisition (SCADA) systems are installed.

As with the water distribution system, the management of wastewater reticulation is challenging with the majority of pipes underground. In high priority systems, Closed Circuit Television (CCTV) is used to monitor and identify the need for replacement or repairs.

Power and Water continues to investigate and trial inspection and maintenance methods to further improve operational efficiencies.

Appendix

Sewerage services are provided by taking wastewater off site through pipes and pump stations to centralised waste stabilisation ponds for treatment and appropriate disposal.
Appendix
Effective sewerage services

MINIMISING IMPACT ON THE ENVIRONMENT

Wastewater is collected in treatment ponds. Sunlight, algae and bacteria break down the organic matter, nutrients and disease causing organisms in the wastewater. Treated wastewater evaporates, is released into a river or the ocean or used for irrigation in the pond area. Some low levels of pollutants remain and are taken into consideration with existing disposal methods, reuse or recycling. Historically, this has included at least two ponds at each site holding water for at least one month to achieve the appropriate quality required for release.

Power and Water will continue working with the Department of Land Resource Management towards licensing remote area wastewater discharges. Licensing will allow better collection of data on wastewater systems and the environments they discharge to as well as meeting regulatory requirements.

A new funding program is required in wastewater assets to replace infrastructure and increase system capacities, including wastewater reticulation networks, sewerage pump stations, wastewater ponds and discharge systems.

In 2012-13, Power and Water has started to implement a wastewater quality monitoring program in four communities to study pond performance and discharge quality.

Refurbishing a sewerage pump station.

STATUS OF WASTEWATER SYSTEMS

Over half the wastewater system infrastructure in the Northern Territory was constructed prior to self government and since then investment in these systems has been largely focused on operational performance.

As a result, at some locations there are growing concerns about infrastructure condition and services which includes collapsing of wastewater reticulation networks, undersized sewerage pump stations and wastewater treatment ponds that are operating significantly over their original design capacity.
Providing reliable power

Power and Water Corporation works to improve key power station infrastructure in all of the communities, including:

- 11 new power station buildings constructed, control systems upgraded and larger generators installed at seven sites;
- Control system upgrades and larger generators (either new or refurbished) installed at 18 communities;
- Larger generators at eight sites; and
- Increased diesel fuel storage capacity at 25 sites and upgraded bunding consistent with national standards at 24 sites.

Power stations are managed through control systems that remotely turn generators on and off to ensure each are operating within optimal range to maximise fuel efficiency. In the event of a generator failure or a fault on the power distribution network, these control systems will maintain electricity supply to as many customers as possible.

ENSURING ENOUGH POWER IS AVAILABLE

At each power station there are up to four diesel generators, the sizes of which match the daily and annual power needs of the community.

The generators are sized to meet demand when the largest of the generators is off line, which can occur for routine maintenance or as a result of a fault. As communities grow and need more power, the smallest generator is replaced with a larger generator to maintain capability. This allows each generator to operate at optimal efficiency and use the least amount of diesel fuel.

Generators are refurbished and relocated to another suitable community until they reach the end of their economic life after 50,000 operating hours. This power station upgrade and generator relocation program requires annual evaluations of over 170 generators to ensure that each power station operates efficiently, return on capital investment is maximised and demand is met.
Power and Water generates and distributes electricity to customers at the lowest cost possible. Through regular monitoring, efficiency measures are identified and the target of generating at least one kilowatt-hour of electricity for each 2.8 litres of diesel fuel used can be achieved. When new generators are required or when generators have reached the end of their economic life, they are replaced with modern, more efficient systems.

Power and Water has a program to decommission less efficient power stations by connecting power distribution networks between communities or to urban centers where communities are geographically close. To date, this has lead to the decommissioning of five power stations.

In recent years the cost of diesel fuel has increased significantly. Combined with the introduction of a carbon pricing scheme, it has become more cost effective to switch to alternative energy sources in some locations.

The cost of alternative energy sources is monitored to identify opportunities that can be incorporated into our systems.

**MEETING ENVIRONMENTAL AND SAFETY OBLIGATIONS**

New solar systems are being installed in Ti Tree, Kalkarindji and Lake Nash as well as a wind system in Lake Nash. A gas power station is being built in Wadeye.

To ensure environmental and safety obligations are met, Power and Water adopts best practice operational procedures suitable to our unique and challenging operating environment. These procedures have been supported with business improvements which helps ensure the safety of power station operators is maintained.

Measures include the removal of asbestos from eight communities and replacement of lead acid batteries with maintenance-free batteries. Suitable fuel storage infrastructure complies with relevant standards and licensing.

Power and Water is upgrading fuel storage bunding and other containment measures to prevent release of fuel to the environment in the event of a spill.

In addition, personnel access and the refueling procedure has been improved to further protect the safety of operators. The up-grade program has been prioritised for the highest risk sites, with over 75 per cent of sites now compliant with Australian fuel storage standards.
Appendix

ESO training and employment

Essential Services Operators (ESOs) are crucial in the delivery of power, water and sewerage services in remote areas. These ESOs are responsible for carrying out a range of regular operational and maintenance tasks. They are our “eyes” on the ground and the first to respond to unplanned supply interruptions and emergencies.

More than 150 ESOs are based across Territory Growth Towns and remote communities, working for shires or private contractors under contracts with Power and Water.

The role of ESOs in communities provides valuable jobs for local people.

Power and Water is committed to building local capacity and providing training and development opportunities to ensure that ESOs continue to deliver essential services.

Power and Water is working to build local capacity by providing training and development opportunities, with a particular focus on increasing the portion of ESOs who are Indigenous. We are doing this in partnership with Charles Darwin University (CDU), Group Training NT (GTNT) and the Shires by providing a structured career path for ESOs to gradually develop the necessary skills to carry out ESO duties.

Career Path Entry:
1. Existing competent and experienced ESO
2. New Trainees (including from high school)

At present, 47 per cent of our 150 ESOs are Aboriginal or Torres Strait Islander.

This career path is being incorporated in contract arrangements starting with the MacDonnell, Central Desert and Roper Gulf Shires. Under new contracts, ESO supervisors provide:

- On-the-job tuition;
- Assistance with formal training; and
- Mentoring to support ESO trainees along their career path

The career path is designed to support existing ESOs as well build capacity in new people in the role.

This is being achieved through the training and development program which provides the framework to progressively obtain appropriate qualifications and skills through partnerships with CDU, GTNT and the Shires.
Power and Water instigated the program in 2012 with the first group of new trainees. We plan to establish the program over the next three years.

In the longer term, Power and Water aims to have at least 50 per cent of ESOs with certificate II or III qualifications by 2014 and the portion of indigenous employees increased to 60 per cent by 2020.

<table>
<thead>
<tr>
<th>ESO Employment</th>
<th>% Total</th>
<th>% ATSI*</th>
<th>Total ESOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Grade ESO</td>
<td>62%</td>
<td>36%</td>
<td>93</td>
</tr>
<tr>
<td>Qualified ESO</td>
<td>21%</td>
<td>8%</td>
<td>32</td>
</tr>
<tr>
<td>ESO Supervisor</td>
<td>17%</td>
<td>3%</td>
<td>25</td>
</tr>
</tbody>
</table>

*Identified as Aboriginal and Torres Strait Islander (ATSI)

Total 47% 150

ACHIEVEMENTS TO DATE

To date these building blocks of the training and development program have been established:

- Over 30 new trainees commenced Certificate II training in Remote Area Essential Services which involved training sessions at CDU regional campuses in Katherine and Alice Springs. By 2013, these trainees are expected to complete training through on-the-job visits in communities by CDU.

- The former familiarisation course has been replaced with accredited training sessions at Certificate II and III level which incorporates Occupational, Health and Safety (OHS) training and refresher sessions.

- The OHS component included Induction, Back2Basics, Power and Water obligations; confined space awareness; portable ladder safety; chemical safety; lone and remote work safety; personal protective equipment; spill prevention; trench safety and the accredited ‘Working Safely at Heights’. Training sessions have been conducted in Darwin, Alice Springs and Katherine.

Specialised training included:

- Gas chlorine disinfection and fluoridation dosing within six communities to ensure the ESO can safely operate disinfection and dosing systems. This training is accredited within the Certificate II Water Operations qualification.

- ESO supervisors from the Central Desert Shire and MacDonnell Shire participated in Power and Water’s team leader development program.

OUTCOMES FOR COMMUNITIES

The approach to training and development of ESOs supports local Indigenous employment by increasing community employment capacity with long-term jobs in communities.

The structured career path provides a framework for trainees and ESOs to progress their competencies and capabilities while staying within the communities.

Once qualified, ESOs will have a range of career opportunities in the utility, local government and mining sectors.

FOCUS FOR 2013

We will continue to leverage this successful training and development program by providing opportunities for school leavers through targeted numeracy and literacy programs together with basic trade and communication skills at Certificate I level. This will ensure career opportunities and provide a foundation for the ESO trainee program.

Power and Water will continue to implement Certificate II training in Remote Area Essential Services for eligible base grade ESOs.

Contractual arrangements with shires and private contractors will be improved to support the training and development program requirements to help achieve positive outcomes.
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