ENVIRONMENT PROTECTION AUTHORITY
SOUTH AUSTRALIA

Environmental Authorisation under Part 6 of the Environment Protection Act 1993

LICENCE

EPA 26902

Acciona Agua Adelaide Pty Ltd, McConnell Dowell Constructors (Aust) Pty Ltd, Abigroup Contractors Pty Ltd

Adelaide Desalination Plant, 16 Chrysler Road
LONSDALE SA 5160

Location

Allotment 11 (DP 80713), Christie Road, LONSDALE 5160 SA

Licensed Activities

The Licensee(s)

- Acciona Agua Adelaide Pty Ltd, McConnell Dowell Constructors (Aust) Pty Ltd, Abigroup Contractors Pty Ltd

is (are) authorised to undertake the following activities of environmental significance under Schedule 1 Part A of the Environment Protection Act 1993 (the Act), subject to the conditions of licence set out in the attached pages:

1(1)	Chemical Storage and Warehousing Facilities
8(7)	Discharges to Marine or Inland Waters

Term of Licence

Commence Date: 01-DEC-2010

Expiry Date: 30-NOV-2030

Delegate
Environment Protection Authority

16 November 2010

This licence is not valid unless signed

Conditions of licence to follow

Definitions

"the Act" means the Environment Protection Act 1993.

"the Authority" means the Environment Protection Authority established under Division 1 of Part 3 of the Act.

"the Premises" means, at the time of issue of this authorisation, the whole of the land comprised in Titles Register - Certificate of Title, Crown Lease and Crown Record:

List of Titles
CT 6033/737

"Authorisation Fee Payment Date" means the anniversary of the grant or renewal of this authorisation.

"Acoustic Engineer" means an Engineer who is eligible for membership of both the Institution of Engineers Australia and the Australian Acoustical Society.

"Ambient MP1" means the monitoring point in the desalination plant intake pipeline that connects the intake pumping station to the process plant.

"Ambient MP2" means the monitoring point at the Port Stanvac Jetty.

"Ambient Salinity" means an average of the salinities measured at Ambient MP1 and Ambient MP2.

"Brine" means the hypersaline by-product of seawater desalination.

"Desalination effluent" means any liquid by-product discharged from the Premises into marine waters, but does not include raw seawater from the seawater bypass.

"environmental harm" means the same as is defined in section 5 of the Environment Protection Act 1993.

"MP1" means the monitoring point located 100 metres inshore of the eastern outfall riser at no more than 100 centimetres above the seabed.

"MP2" means the monitoring point located 100 metres south of the outfall diffuser at no more than 100 centimetres above the seabed.

"MP3" means the monitoring point located 100 metres offshore of the western outfall riser at no more than 100 centimetres above the seabed.

"MP4" means the monitoring point located 100 metres north of the outfall diffuser at no more than 100 centimetres above the seabed.

"MP5" means the temporary monitoring point located 200 metres inshore of the eastern outfall riser at no more than 100 centimetres above the seabed.

"MP6" means the temporary monitoring point located 200 metres south of the outfall diffuser at no more than 100 centimetres above the seabed.

"MP7" means the temporary monitoring point located 200 metres offshore of the western outfall riser at no more than 100 centimetres above the seabed.

"MP8" means the temporary monitoring point located 200 metres north of the outfall diffuser at no more than 100 centimetres above the seabed.

"OEMMP" means Operational Environmental Management and Monitoring Plan and includes other plans such as the Commissioning Environmental Management and Monitoring Plan and any plans referred to within these plans.

"project handover of the 100 GL desalination plant" means the date for project handover of Separable Portion 2 (after which the Operator takes responsibility for the entire 100 GL desalination plant).

"project handover of the 50 GL desalination plant" means the date for project handover of Separable Portion 1 (after which the Operator takes responsibility for the 50 GL desalination plant).

"Sludge" means solid waste matter with a high water content (with solids above 2% w/w) and includes thickened sludge and dewatered sludge.

Acronyms

"EPA" means Environment Protection Authority.

"EIP" means Environment Improvement Programme.

"CIP" means Clean In Place.

"DO" means Dissolved Oxygen.

"GL" means gigalitre.

"PPT" means parts per thousand.

Explanatory Notes

(NB. - Explanatory Notes do not constitute a part of this Authorisation)

1. The Authority will consider changes to the salinity trigger level of 1.3 PPT as specified in conditions 212-39 & 212-44 during the term of this licence. Factors that will be taken into consideration in such a change include, but are not necessarily limited to:

   1. operational considerations
   2. ongoing reviews of monitoring data
   3. reviews of ecotoxicology data
   4. evidence of sustained adverse environmental impact.

   If the trigger level increases this will be considered a relaxation of the requirements of the licence as per section 46 of the Act.

2. The following EPA guidelines should be followed in order to meet sampling, monitoring and reporting requirements:

   1. 'Regulatory monitoring and testing - Independent verification requirements' December 2006 Ref. EPA 649/06.
   2. 'Regulatory monitoring and testing - Monitoring plan requirements' December 2006 Ref. EPA 650/06.
   3. 'Regulatory monitoring and testing, Reporting requirements' August 2007 Ref. EPA 651/06.
   4. 'Regulatory monitoring and testing, Water and wastewater sampling' June 2007.

   These and other EPA guidelines are available on the EPA website.

3. The Licensee must report to the Authority (on EPA emergency phone number 1800 100 833) all incidents causing or threatening serious or material environmental harm, upon becoming aware of the incident, in accordance with section 83 of the Act.

4. The Licensee must be aware of, and comply with:
   1. the requirements of the Environment Protection Policies which operate pursuant to the Act; and
   2. the requirements of any National Environment Protection Measure which operates as an Environment Protection Policy under the Act.

   NB: These requirements govern permissible procedures and protocols, emission or concentration levels, as well as operation and/or maintenance standards of plant and equipment.

5. Should the conditions of this licence require that the Licensee submit a report or other information to the Authority, then that report or that information becomes the property of the Authority.

6. This licence applies only to the Premises.
   Application for a new licence will be necessary should the Licensee move to new Premises.

7. The EPA will publish a summary of monitoring results on the EPA website. Results will generally be available on the website within two weeks of receipt by the EPA.
   All monitoring results received by the EPA as a condition of this licence are available for the public under the requirements of the Public Register (S109 of the Act).

8. The Environment Protection Act 1993, provides Authorised Officers under the Act powers to enter, inspect, give directions and obtain documents as reasonably required in connection with the administration or enforcement of the Act.
   For a full list of these powers see Section 87 of the Act.

CONDITIONS OF LICENCE

The Licensee is authorised to conduct the prescribed activities as described in this licence on the Premises nominated, subject to the following conditions:

Compliance Date

Seawater Intake Condition(s)

1. (212-40) The Licensee must not extract more than 7.77 cubic metres of seawater per second from the marine environment.

Salinity Compliance Level Condition(s)

2. (212-39) If average salinity at any point 100 metres from the diffuser structure exceeds 1.3 PPT above ambient salinity for a six hour period, then the Licensee must:

1. notify the EPA within six hours; and
2. take appropriate corrective action to manage salinity in the receiving environment.

3. (212-44) If average salinity at any point 100 metres from the diffuser structure exceeds 1.3 PPT above ambient salinity for a 24 hour period, then the Licensee must:

1. notify the EPA within six hours; and
2. stop all marine discharge of brine and desalination effluent from the desalination plant within six hours.

Chemical Use & Handling Condition(s)

4. (212-41) The Licensee must not allow the following chemicals to be discharged to the marine environment:

1. sodium dodecyl sulphate;
2. tetrasodium EDTA; and
3. chlorine.

5. (212-42) The Licensee must not use any CIP chemicals, antiscalants or water treatment chemicals in the desalination process other than those approved in writing by the Authority.

6. (330-232) The Licensee must ensure that:

1. all chemicals stored at the Premises are stored within bunds;

2. bunds for containers with a capacity larger than 250 litres, contain at least 120% of the volume of the largest container in the bund; and

3. bunds for containers with a capacity of 250 litres or less, contain at least 25% of the total volume of all containers in the bund.

Solid Waste Condition(s)

7. (330-235) The Licensee must:

1. not allow sludge to be discharged to the marine environment;

2. ensure that sludge does not create odour detectable at the Premises boundary; and

3. ensure that sludge is not disposed of at the Premises.

Monitoring & Reporting Condition(s)

8. (212-45) The Licensee must undertake marine monitoring according to the schedule specified in Attachment A entitled 'Adelaide Desalination Plant Marine Monitoring Schedule'.

9. (305-627) The Licensee must submit to the Authority results of all salinity monitoring for each month by the end of the following month.

10. (305-628) The Licensee must submit results of all marine monitoring, other than salinity monitoring, to the Authority according to the following schedule:

1. all marine monitoring undertaken in January, February or March in any year by the end of May in that year;

2. all marine monitoring undertaken in April, May or June in any year by the end of August in that year;

3. all marine monitoring undertaken in July, August or September in any year by the end of November in that year; and

4. all marine monitoring undertaken in October, November or December in any year by the end of February in the following year.

11. (305-626) The Licensee must ensure that:

1. an independent review of all marine monitoring is conducted by

independent specialist(s) as approved in writing by the Authority prior to the review commencing;

2. all marine monitoring from the period commencing with the issue of the licence and ending 12 months after project handover of the 100 GL desalination plant is included in the review;

3. the full results of the review are provided to the Authority not more than 18 months after project handover of the 100 GL desalination plant.

12. (325-50) The Licensee must:

1. undertake an audit of noise generated at the Premises:

1.1 prior to project handover of the 50 GL desalination plant; and

1.2 within 6 months of project handover of the 100 GL desalination plant;

2. ensure that the audits required by paragraph 1 are conducted by an Acoustic Engineer;

3. measure noise at points representative of:

3.1 residences on the western side of Carlisle Court, Hallett Cove; and

3.2 businesses in the industrial zone immediately east of Chrysler Rd Lonsdale;

4. measure and adjust the results obtained in accordance with the Environment Protection (Noise) Policy 2007; and

5. submit the results of each audit to the Authority within 60 days of completion of each audit.

Management & Contingency Plan Condition(s)

13. (212-34) The Licensee must:

1. prepare, maintain and implement an OEMMP which describes to the satisfaction of the Authority how the licensee will comply with the Act and this licence;

2. provide a full copy of the OEMMP to the Authority on request; and

3. review the OEMMP annually.

14. (315-441) CONTINGENCY PLAN

The Licensee must prepare and maintain a plan of action to be taken in the event of emergencies that might forseeably arise out of the activities undertaken pursuant to this licence which may involve the risk of serious or material environmental harm.

Certificate of Compliance Condition(s)

15. (320-50) The Licensee must:

1. by 30 September in each year, provide a certificate of compliance to the Authority for the previous financial year;

2. ensure that the certificate of compliance contains the following information:

2.1 a statement declaring full-compliance, partial-compliance, or non-compliance with each condition of the licence;

2.2 details of each partial-compliance or non-compliance; and

2.3 actions taken, or planned to be taken, to prevent any recurrence of the failure to achieve full-compliance; and

3. ensure that the certificate of compliance is certified as correct by a director of each company who holds the licence.

Maintain Register of Complaints Condition(s)

16. (300-3) COMPLAINTS REGISTER

The Licensee must:

1. maintain a Register of complaints received regarding the Licensee's operations that sets out:

1.1 the date and time of the complaint;

1.2 the name and address of the complainant (where provided);

1.3 details of the complaint;

1.4 the date and time of the events giving rise to the complaint including other relevant information and the likely cause at the time of the events;

1.5 the job title of the person receiving the complaint;

1.6 any action taken in response to the complaint; and

2. retain the Register for the duration of this licence.

Training & Induction Condition(s)

17. (400-215) The Licensee must ensure that every employee, agent or contractor responsible for carrying out any task controlled by this licence is properly advised as to the requirements of this licence and the general environmental duty under section 25 of the Act that relate to that person's tasks and responsibilities as employee, agent or contractor.

Operational Change or Alteration Condition(s)

18. (400-347) CHANGE to PROCESS EMISSIONS or WASTE

The Licensee must:

1. not undertake changes to operating processes at the Premises without written approval from the Authority, where such changes:

1.1 have the potential to increase the emissions, or alter the nature, of pollutants or waste currently generated by or from the licensed activity; or

1.2 have the potential to increase the risk of environmental harm; or

1.3 would relocate the point of discharge of pollution or waste at the Premises;

2. ensure that written application is submitted to the Authority on the EPA form entitled 'Application for Change to Process Emissions or Waste', that details the proposed changes; and

3. pay the prescribed application fee indicated on the Application form.

Notes:

1. The Authority may during the term of this licence impose or vary the conditions of this authorisation upon approval of an application made in accordance with this condition.

2. The 'Application for Change to Process Emissions or Waste' form is available on the EPA website at - http://www.epa.sa.gov.au/xstd_files/Licensing/Form/06_process_change.pdf.

19. (400-348) ALTERATIONS to PLANT and EQUIPMENT

The Licensee must:

1. not construct or alter a building or structure, or, install or alter any plant or equipment at the Premises, without written approval from the Authority, where such changes:

1.1 have the potential to increase the emissions, or alter the nature of pollutants or waste currently generated by, or from the licensed activity, or

1.2 have the potential to increase the risk of environmental harm, or

1.3 would relocate the point of discharge of pollution or waste at the Premises;

2. ensure that written application is submitted to the Authority on the EPA form entitled 'Application for Alterations to Plant and Equipment' that details the proposed changes; and

3. pay the prescribed application fee indicated on the Application form.

Notes:

1. The Authority may during the term of this licence impose or vary the conditions of this authorisation upon approval of an application made in accordance with this condition.

2. The 'Application for Alterations to Plant and Equipment' form is available on the EPA website at - http://www.epa.sa.gov.au/xstd_files/Licensing/Form/06_equipment_change.pdf.

3. In some circumstances installation of plant and equipment may be subject to consent under the provisions of the Development Act, which may have priority over the obligations of this condition - check with the licence coordinator for advice prior to completing the Application form.

General Administrative Condition(s)

20. (400-338) If the Licensee's name or postal address (or both) changes, then the Licensee must inform the Authority within 28 days of the change occurring.

21. (400-78) The Licensee must:

1. submit an annual return at least 90 days before the authorisation fee payment date, if this licence is for a term of two years or more; and

2. pay the annual authorisation fee by the authorisation fee payment date.

22. (400-79) An application for renewal of this licence must be made at least 90 days before the expiry date of this licence.

23. (400-201) IMPOSE OR VARY CONDITIONS

The Authority may during the term of this licence impose or vary conditions:

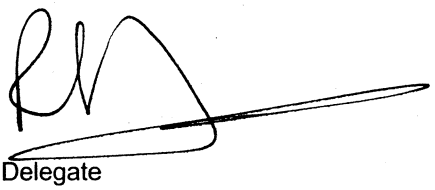
1. in relation to testing, monitoring and reporting referred to in section 52(1)(a) of the Act;

2. which require the Licensee, in accordance with section 53 of the Act, to prepare a plan of action to be taken in the event of an emergency;

3. which require the Licensee to develop an EIP as set out in section 54 of the Act and to comply with the requirements of the EIP;

4. which relate to provision of information relating to the Licensee or any agent or contractor undertaking any activity on behalf of the Licensee pursuant to this licence; and

5. which relate to provision of information relating to the activity subject to the licence including the levels of inputs and outputs and the amounts of pollutants or waste generated by the activity.



Delegate

Environment Protection Authority

Date 17/11/10

There are 2 attachments to this Licence

Ambient Marine Ecological Monitoring	
Intertidal Reef [1]	Two surveys per year at 20 sites, including 5 reference sites
Subtidal Reef [1]	Two surveys per year of benthic flora and fauna on the sub-tidal reef at 20 sites, including 5 reference sites
Baited Remote Underwater Video [1]	Two seasonal video fish traps per year to monitor local fish populations associated with sub-tidal reef and soft sediment communities.
Infauna Survey [1]	Two surveys per year of the meiofauna and microfauna in the soft sediments at 20 sites, including 5 reference sites, with multiple samples at each site to characterise variability.
Plankton	Collect seawater samples from the intake on 9 days evenly spaced across a 12 month period beginning with project handover of the 50GL desalination plant. Samples to be sieved and phytoplankton species composition to be determined. Sampling to continue for a longer period if there are high content of species of concern. Sub-sample the intake stream of seawater to assess the number of larvae, spores and other plankton being entrained, and compare these numbers and taxonomic compositions to the plankton sampling done to that time. Final details of monitoring plan to be provided prior to commencement.
Water Quality Profiling	Water column profiling at 100 m, 500 m & 5000 m north and south of the diffuser location plus 3 reference sites to measure: salinity (conductivity), dissolved oxygen (DO), pH, chlorophyll a, turbidity and water temperature at water depths 5, 10, 15, 20 & 25 metres. Monthly from the issue of the licence.
Seawater Characteristics	Measure conductivity & temperature of seawater at intake (Ambient MP1) & Pt Stanvac Jetty (Ambient MP2) every 10 minutes.

Intake Monitoring	
Seawater Characteristic	Measure conductivity, temperature, pH & DO of seawater intake every 10 minutes at Ambient MP1.
Seawater Characteristics [3]	Analyse for metals (Al, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Zn - soluble & total), Total nitrogen (as N), Total phosphorus (as P) & suspended solids weekly [24 hour flow weighted composite sample]
Intake volume	Daily volume of seawater intake in ML

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Discharge Monitoring (outfall)	
Discharge volume	Daily volume of all discharge in ML
Discharge Characteristics [2]	Measure conductivity, temperature, DO, pH and Cl_2 of whole of effluent discharge every 10 minutes.
Discharge Characteristics [3]	Analyse for metals (Al, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Zn - soluble & total), Total nitrogen (as N), Total phosphorus (as P) & suspended solids weekly [24 hour flow weighted composite sample]
Ecotoxicity [4]	Whole of effluent toxicity – 1 sample assessed within 1 month of first reaching each of 10% production, 20% production & 30% production& a further sample within 3 months of each of "project handover of the 50 GL desalination plant" & "project handover of the 100 GL desalination plant" tested on 2 species (to be agreed);

Receiving Environment Monitoring (Diffuser Performance Validation)	
DO & pH [5]	Twice per month for at least 24 hours each time in a variety of plant operational modes and receiving environment conditions.
Salinity (100 Metres) [6, 8]	Measure conductivity and temperature of seawater at MP1, MP2, MP3 & MP4 every 10 minutes.
Salinity (200 Metres) [7]	Measure conductivity and temperature of seawater at MP5, MP6, MP7 & MP8 every 10 minutes.
Currents	Measure current speed and direction every 10 minutes at either MP1, MP2, MP3 or MP4.
Marine Noise [9]	Noise surveys of the operating plant to confirm that noise from intake pumps or other equipment is not detectible.
Diffuser performance validation (a) [10]	Conduct a plume dispersion test during a dodge tide to validate dispersion at 10% production capacity.
Diffuser performance validation (b)	Hydrodynamic modelling based on salinity and current data collected during this monitoring program. To be completed within 12 months of "project handover of the 100 GL desalination plant".

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Footnotes:

1. To commence January 2011 and continue for 2 years, after this time the result are to be reviewed and consideration will be given to the need for future surveys.
2. Must be measured for each stream separately and reported as separate streams and proportionately flow weighted.
3. 24-hour flow weighted samples to be collected on the same day.
4. Effluent to be proportionately flow weighted according to an agreed protocol.
5. To continue until December 2011, after this time the result are to be reviewed and consideration will be given to the method of future measurement.
6. Salinity measurements commenced prior to the licence being issued, though not at these exact locations due to the marine construction works. Measurements can continue in these locations after the issue of the licence while marine construction is completed. Salinity monitoring to be in place at MP1, MP2, MP3 & MP4 prior to any Brine discharge. These monitoring requirements are to remain in place until the EPA has received and reviewed the results of the independent monitoring review specified in condition 305-626; subject to the outcomes of this review consideration will be given to the need for future measurement.
7. Salinity measurements at 200 metres was an extra commitment of the licensee and plant owner and can be discontinued or altered with the agreement of the EPA. The EPA and Licensee to review the requirement for this monitoring every 6 months.
8. The licensee must ensure that the monitoring points specified in this licence are linked by telemetry or some other suitable method to a computer system capable of analysing the data continuously to confirm ongoing compliance with the salinity trigger levels prior to any Brine discharge occurring. The requirement to submit salinity monitoring results to the EPA in condition 305-627 will commence with the first discharge of Brine.
9. To be conducted around the time of project handover of the 50 GL desalination plant and project handover of the 100 GL desalination plant and while the plant is operating at 50% and 100% production capacity respectively.
10. To be conducted prior to plant operating at 20% production capacity or greater. The licensee is permitted to discharge Rhodamine in the marine environment during this test.

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Environment Protection Authority
www.epa.sa.gov.au

EPA
South Australia

GPO Box 2607 Adelaide SA 5001
250 Victoria Square Adelaide SA
T (08) 8204 2000 **F** (08) 8204 2020
Country areas 1800 623 445

EPA 26902

Mr Mark Sabolch
Environment Manager
ACCIONA Agua Adelaide Pty Ltd
McConnell Dowell Constructors (Aust) Pty Ltd
Abigroup Contractors Pty Ltd
Adelaide Desalination Plant
16 Chrysler Road
LONSDALE SA 5160

Dear Mr Bohm

Re: Approved CIP Chemicals, Antiscalants and water treatment chemicals per condition 212-42 of licence 26902

The following list of CIP chemicals, antiscalants and other water treatment chemicals are approved by the EPA for use at the time of issue of the Adelaide Desalination Plant licence.

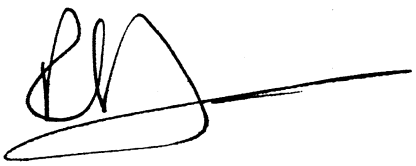
Activated Carbon	C
AN905 PWG	Anionic polyelectrolyte from *SNF* (potable grade)
AN910 PWG	Anionic polyelectrolyte from *SNF* (potable grade)
AN913 PWG	Anionic polyelectrolyte from *SNF* (potable grade)
Calcium Hydroxide	$Ca(OH)_2$
Carbon Dioxide	CO_2
Chlorine	Cl_2
Citric Acid	$C_6H_8O_7$
DBNPA	$C_3H_2N_2OBr_2$
Ferric Chloride	$FeCl_3$
Ferric Sulphate	$Fe_2(SO_4)_3$
Flocon 285	Antiscalant from *Biolab Water Additives*
Flocon 295	Antiscalant from *Biolab Water Additives*

Fluorosilicic acid	H_2SiF_6
Hydrochloric acid	HCl
LT25	Anionic polyelectrolyte from *CIBA* (potable grade)
LT27	Anionic polyelectrolyte from *CIBA* (potable grade)
LT30	Anionic polyelectrolyte from *CIBA* (potable grade)
PC1020T	Antiscalant from *Nalco*
Phosphoric acid	H_3PO_4
Sodium Carbonate	Na_2CO_3
Sodium Hexametaphosphate	$(NaPO_3)_6$
Sodium Hydroxide	NaOH
Sodium Hypochlorite	NaClO
Sodium Metabisulphite	$Na_2S_2O_5$
Sodium Silicate	Na_2SiO_3
Sodium Dodecyl Sulphate	$NaC_{12}H_{25}SO_4$
Spectraguard	Antiscalant from *Professional Water Technologies*
Sulphuric acid	H_2SO_4
Tetrasodium EDTA	$Na_4C_{10}H_{12}N_2O_8$

If you wish to use any other CIP chemicals, antiscalants or water treatment chemicals in any of your processes, you must seek approval prior to any use from the EPA. Approval from the EPA for any additions to this list will be provisional on the licensee proving to the satisfaction of the EPA that the risk of harm to the environment is not increased from any changes.

For further information on this matter, please contact Gerard Hocking on 8204 1281 or gerard.hocking@epa.sa.gov.au.

Yours sincerely



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