



*Teys Australia Wagga Wagga*  
Dampier Street  
Wagga Wagga  
NSW 2650

## **Teys Australia Southern Property Pty Ltd (Teys Australia Wagga Wagga)**

### *Environmental Monitoring Data Summary*

### *Environmental Protection Licence number 2262*

#### ***Executive Summary***

Teys Australia Wagga is the holder of Environmental Protection Licence (EPL) 2262. This Licence is administered by the *NSW Environmental Protection Authority (EPA)*, and includes conditions relevant to the site's operation, including environmental monitoring, as is outlined in this report. All environmental monitoring results required under EPL 2262 are submitted to the *EPA* each year in a formal annual return, and interpreted, and submitted to the *NSW Department of Planning and Infrastructure* in an Annual Environmental Management Review (AEMR).

All monitoring specified under EPL 2262 was completed in the 2011/2012 annual reporting period, which covered the period between 6 December 2011 and 5 December 2012.

Nil instances of non – compliance with any of the conditions in EPL 2262 occurred during the reporting period.

Further information is available by contacting the Teys Corporate Environmental team on (07) 3287 2188.

A full copy of EPL 2262 can be obtained on the EPA website from the following URL using the search function for licence number “2262”:

<http://www.environment.nsw.gov.au/prpoeoapp/>

**EPA Monitoring Point 4:** Summary of results for soil monitoring on CFA High irrigation paddock (EPA Monitoring Point 4)

<b><i>Pollutant</i></b>	<b><i>Units of measure</i></b>	<b><i>Monitoring frequency required by licence</i></b>	<b><i>No of times measured during year</i></b>	<b><i>Date of Sampling</i></b>	<b><i>Date data obtained</i></b>	<b><i>Date Published</i></b>	<b><i>Value</i></b>
Conductivity	(dS/m)	Annual	1	01/10/15	09/11/15	09/11/15	0.23
Exchangeable Calcium	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	792.1
Exchangeable Magnesium	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	256.6
Exchangeable Potassium	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	215
Exchangeable Sodium	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	234.1
Exchangeable Sodium Percentage	Percent	Annual	1	01/10/15	09/11/15	09/11/15	12.4
Extractable Phosphorus	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	104.8
Nitrate	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	12.2
Nitrogen (total)	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	392.8
pH	pH	Annual	1	01/10/15	09/11/15	09/11/15	7.3
Phosphorus (total)	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	229.3
Phosphorus Sorption Capacity	(L/kg)	Annual	1	01/10/15	09/11/15	09/11/15	227.8
Total Organic Carbon	(mg/kg)	Annual	1	01/10/15	09/11/15	09/11/15	10800

The monitoring data in the table above has been taken from monitoring point 4 in EPL 2262. The monitoring point has been established to monitor the soil on which treated wastewater is applied. The monitoring point is located within in the 'CFA High' irrigation area.

**EPA Monitoring Point 6:** Summary of results for soil monitoring on CFA Low irrigation paddock (EPA Monitoring point 6).

<i>Pollutant</i>	<i>Units of measure</i>	<i>Monitoring frequency required by licence</i>	<i>No of times measured during year</i>	<i>Date of Sampling</i>	<i>Date data obtained</i>	<i>Minimum Value</i>	<i>Mean Value</i>	<i>Maximum Value</i>
Conductivity	(dS/m)	Annual	1	01/10/15	09/11/15	0.19	1.26	0.53
Exchangeable Calcium	(mg/kg)	Annual	1	01/10/15	09/11/15	920	1560	1265
Exchangeable Magnesium	(mg/kg)	Annual	1	01/10/15	09/11/15	959.9	1628.1	1301
Exchangeable Potassium	(mg/kg)	Annual	1	01/10/15	09/11/15	172	324.5	222.1
Exchangeable Sodium	(mg/kg)	Annual	1	01/10/15	09/11/15	1239.7	4186	2446
Exchangeable Sodium Percentage	Percent	Annual	1	01/10/15	09/11/15	24	51	36.3
Extractable Phosphorus	(mg/kg)	Annual	1	01/10/15	09/11/15	19	30	25.1
Nitrate	(mg/kg)	Annual	1	01/10/15	09/11/15	1	10	3.2
Nitrogen (total)	(mg/kg)	Annual	1	01/10/15	09/11/15	255	719	436
pH	pH	Annual	1	01/10/15	09/11/15	8.2	9.5	8.8
Phosphorus (total)	(mg/kg)	Annual	1	01/10/15	09/11/15	129	215	169.7
Phosphorus Sorption Capacity	(L/kg)	Annual	1	01/10/15	09/11/15	219	330	278
Total Organic Carbon	(mg/kg)	Annual	1	01/10/15	09/11/15	6420	9810	7795

The monitoring data in the table above has been taken from monitoring point 6 in EPL 2262. The monitoring point has been established to monitor the soil on which treated wastewater is applied. The monitoring point is located within in the 'CFA Low' irrigation area.

***EPA Monitoring Point 1: Summary of results for waste water applied to irrigation areas (monitoring point 1) under Environmental Protection Licence 2262 (monthly sample – required only when irrigating)***

<b><i>Pollutant</i></b>	<b><i>Unit of measure</i></b>	<b><i>Monitoring frequency required by Licence</i></b>	<b><i>No. of times measured during month</i></b>	<b><i>100 percentile limit</i></b>	<b><i>Date of Sampling</i></b>	<b><i>Date data obtained</i></b>	<b><i>Date Published</i></b>	<b><i>Value</i></b>	<b><i>Exceedance (Yes/no)</i></b>
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	December	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	January	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	February	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	March	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	April	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	May	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	June	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	July	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	August	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	September	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	October	N/A	N/A	N/A	N/A
Biochemical Oxygen Demand	(mg/L)	Monthly	1	200	November	N/A	N/A	N/A	N/A

The monitoring data in the table above has been taken from monitoring point 1 from EPL 2262. The monitoring point has been established to monitor effluent quality at the discharge from the wastewater treatment system, to the effluent utilisation area on the Teys site. The monitoring point is located at the equalisation pond, downstream of the biological nutrient removal (BNR) system.

The 100 percentile limit refers to a maximum concentration, which BOD concentrations must be below, in order for the water to be irrigated on site.

\*NA – no irrigation occurred in given month. No monitoring required.

Locations of monitoring points 1, 4 and 6 are shown in the Figure 1 below.

***EPA Monitoring Point 9: Summary of results for groundwater monitoring on piezometer 1 - CFA High irrigation area***

<b><i>Pollutant</i></b>	<b><i>Unit of measure</i></b>	<b><i>Monitoring frequency required by Licence</i></b>	<b><i>No. of times measured during year</i></b>	<b><i>Date of Sampling</i></b>	<b><i>Date data obtained</i></b>	<b><i>Date Published</i></b>	<b><i>Value</i></b>
Conductivity	(uS/cm)	Annual	1	01/10/2015	01/12/2015	02/12/2015	2590
Nitrate	(mg/L)	Annual	1	01/10/2015	01/12/2015	02/12/2015	100
pH	(pH units)	Annual	1	01/10/2015	01/12/2015	02/12/2015	7.2
Standing Water Level	(m)	Annual	1	01/10/2015	01/12/2015	02/12/2015	10.8

***EPA Monitoring Point 10: Summary of results for groundwater monitoring on piezometer 5 - CFA High irrigation area***

<b><i>Pollutant</i></b>	<b><i>Unit of measure</i></b>	<b><i>Monitoring frequency required by Licence</i></b>	<b><i>No. of times measured during year</i></b>	<b><i>Date of Sampling</i></b>	<b><i>Date data obtained</i></b>	<b><i>Date Published</i></b>	<b><i>Value</i></b>
Conductivity	(uS/cm)	Annual	1	01/10/2015	01/12/2015	02/12/2015	511
Nitrate	(mg/L)	Annual	1	01/10/2015	01/12/2015	02/12/2015	13
pH	(pH units)	Annual	1	01/10/2015	01/12/2015	02/12/2015	5.8
Standing Water Level	(m)	Annual	1	01/10/2015	01/12/2015	02/12/2015	5.7

The monitoring data in the table above has been taken from monitoring point 9 and 10 as stated in the EPL 2262. The monitoring point has been established to monitor the groundwater in areas on which treated wastewater is applied.

The monitoring points are located within in the 'CFA High' irrigation area, and can be seen on Figure 2 below.

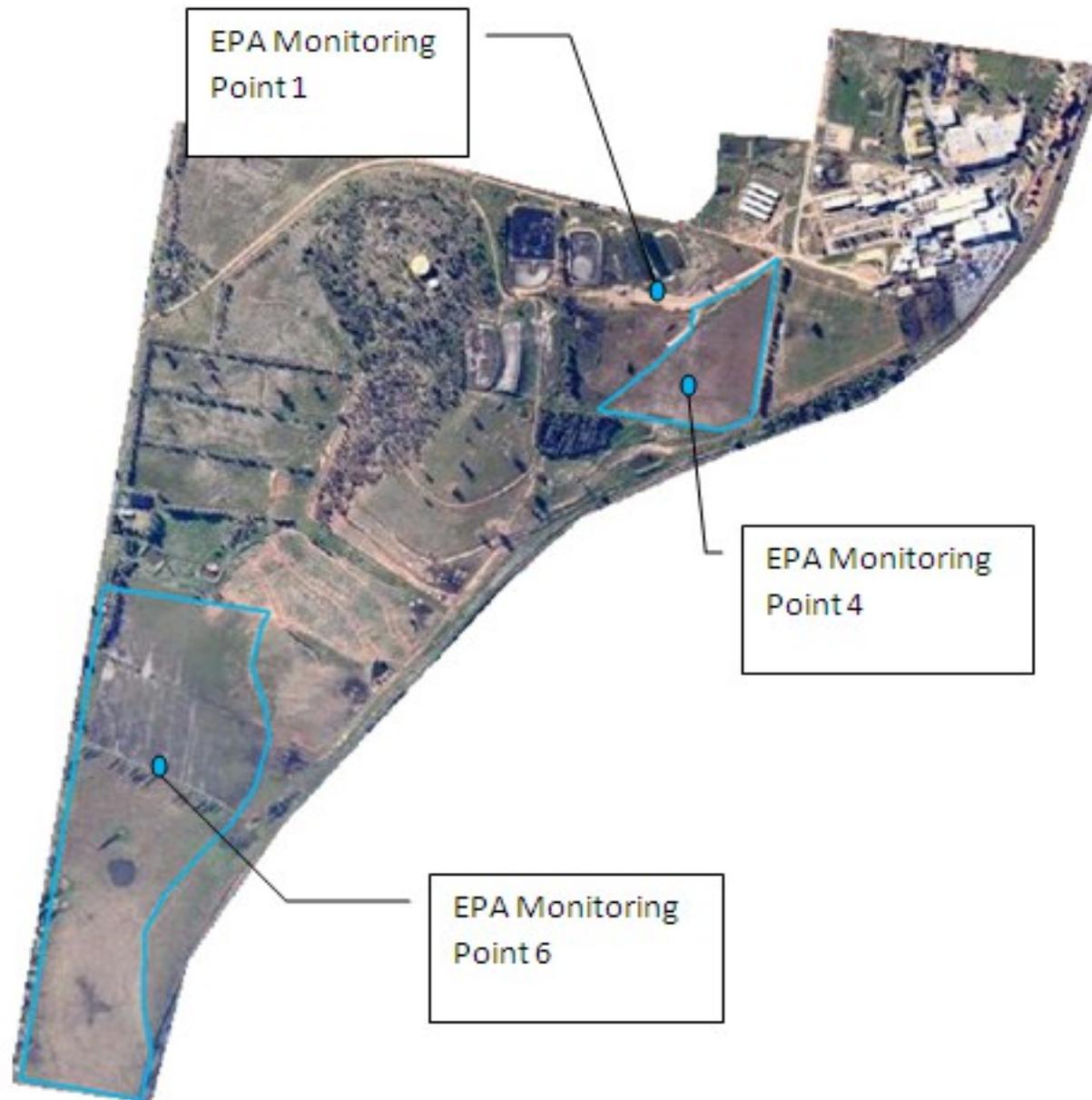
***EPA Monitoring Point 11: Summary of results for groundwater monitoring on piezometer 7 - CFA Low irrigation area***

<b><i>Pollutant</i></b>	<b><i>Unit of measure</i></b>	<b><i>Monitoring frequency required by Licence</i></b>	<b><i>No. of times measured during year</i></b>	<b><i>Date of Sampling</i></b>	<b><i>Date data obtained</i></b>	<b><i>Date Published</i></b>	<b><i>Value</i></b>
Conductivity	(uS/cm)	Annual	1	01/10/2015	01/12/2015	02/12/2015	2820
Nitrate	(mg/L)	Annual	1	01/10/2015	01/12/2015	02/12/2015	1
pH	(pH units)	Annual	1	01/10/2015	01/12/2015	02/12/2015	7.6
Standing Water Level	(m)	Annual	1	01/10/2015	01/12/2015	02/12/2015	4.8

The monitoring data in the table above has been taken from monitoring point 11 as stated in the EPL 2262. The monitoring point has been established to monitor the groundwater in areas on which treated wastewater is applied.

The monitoring points are located within in the 'CFA Low' irrigation area, and can be seen on Figure 3 below.

Locations of EPA monitoring points 1, 4 and 6 are shown in the Figure 1 below.



Locations of EPA monitoring points 9 and 10 as show in Figure 2



Location of EPA monitoring point 11 in Figure 3.



**Units of measure – Abbreviations outlined in full**

**mg/L** = Concentration in milligrams per litre, which is equivalent unit of measure to parts per million (ppm)

**dS/m** = Decisiemens per metre, a measure of electrical conductivity, which gives an indication of the concentration of dissolved ions

**uS/cm** = Microsiemens per centimetre, a measure of electrical conductivity, which gives an indication of the concentration of dissolved ions

**mg/kg** = Milligrams per kilogram, a measure of concentration of different parameters within a soil sample

**L/kg** = Litres per kilogram, a measure of the amount of mineral retained by the soil

**Correction Log**

This section is included to correct any incorrect data which may have been published in good faith.

*Teys Australia Southern Property Pty Ltd T/A Teys Australia Wagga Wagga*

*EPL number 2262*

*Pollutant:*

**Table 4: Correction log**

<i>Sample date and time</i>	<i>Original data</i>	<i>Corrected data</i>	<i>Date corrected</i>	<i>Date originally published</i>	<i>Reason</i>

*Note: No corrections required to date.*