

Adelaide Desalination Project (ADP) – DBOM

# Quarterly Salinity Monitoring Report

October to December 2021

Rev	Date	Approved AdelaideAqua
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## 1. Volumes of seawater received, and outfall discharged

Table 1 below shows the summary of seawater received and outfall discharged volumes for this reporting period.

**Table 1 - Intake and Discharge Volume Summary**

Month	Intake (ML)	Outfall (ML)
October	1,479	895
November	770	469
December	1,218	741
<b>Quarterly Total</b>	<b>3,467</b>	<b>2,105</b>

## 2. Water Quality

### 2.1 Seawater Characteristics Results

Tables 2A and 2B below show the summary of seawater characteristics for this reporting period.

**Table 2A - Seawater Characteristics Summary-Online Analyser**

Parameter	Conductivity	Temperature	pH	DO
	µS/cm	C		mg/L
<b>Average</b>	55,647	17.0	7.9	8.0
<b>Minimum</b>	48,632	14.2	6.0	5.2
<b>Maximum</b>	58,930	29.9	8.2	9.1

Source: Online analyser (10 minutes intervals data over 3 month)

**Table 2B - Seawater Characteristics Summary-External lab**

Parameter	Biochemical Oxygen Demand	Suspended solids	Nitrogen (Total)	Phosphorus (Total)	Zinc (Total)	Lead (Total)	Copper (Total)
	mg/L	mg/L	mg/L as N	mg/L as P	mg/L	mg/L	mg/L
<b>Average</b>	<2	1	0.13	0.01	<0.003	<0.001	<0.001
<b>Minimum</b>	<2	<1	0.07	<0.005	<0.003	<0.001	<0.001
<b>Maximum</b>	<2	2	0.24	0.02	<0.003	<0.001	<0.001

Source: AWQC

The ADP conducts intake chemical shock dosing to control the bio-growth in the intake tunnel. During the intake shock dosing, pH dropped to 6.0 (normal operation range 8.0-8.5) due to the acid dosing and came back to normal sea water pH range after shock dosing.

## 2.2 Discharge Characteristics Results

Tables 3A and 3B below show the summary of discharge characteristics for this reporting period.

**Table 3A - Discharge Characteristics Summary-Online Analyser**

Parameter	Conductivity	Temperature	pH	DO	Cl <sub>2</sub>
	µS/cm	C		mg/L	mg/L
<b>Average</b>	82,905	17.8	7.81	8.0	0.0
<b>Minimum</b>	12,606	11.1	6.41	6.1	0.0
<b>Maximum</b>	99,221	31.4	8.67	10.8	0.0

*Source: Online analyser (10 minutes intervals data over 3 months)*

**Table 3B - Discharge Characteristics Summary- External lab**

Parameter	Biochemical Oxygen Demand	Suspended solids	Nitrogen (Total)	Phosphorus (Total)	Zinc (Total)	Lead (Total)	Copper (Total)
	mg/L	mg/L	mg/L as N	mg/L as P	mg/L	mg/L	mg/L
<b>Average</b>	<2	1.5	1	0.080	<0.003	<0.001	<0.001
<b>Minimum</b>	<2	1	<1	0.026	<0.003	<0.001	<0.001
<b>Maximum</b>	3	2	7	0.156	<0.003	0.004	0.001

*Source: AWQC*

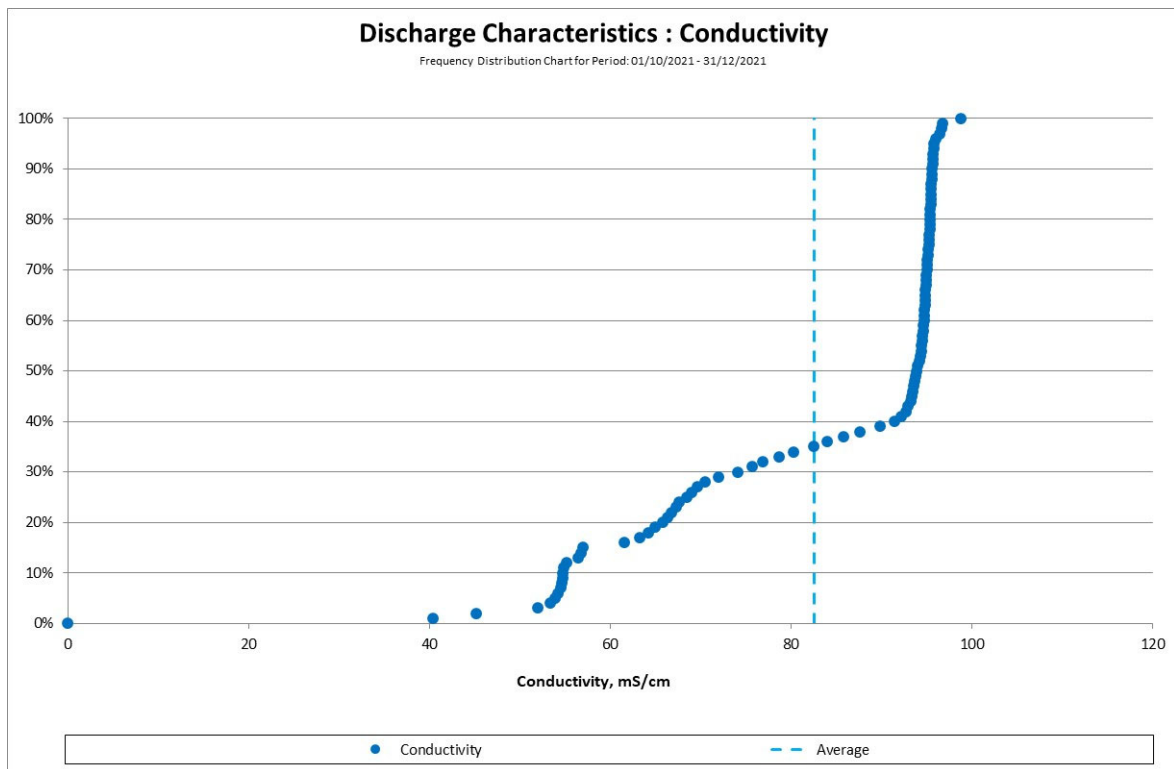


Figure 1 - Discharge Characteristic: Conductivity - Frequency Distribution

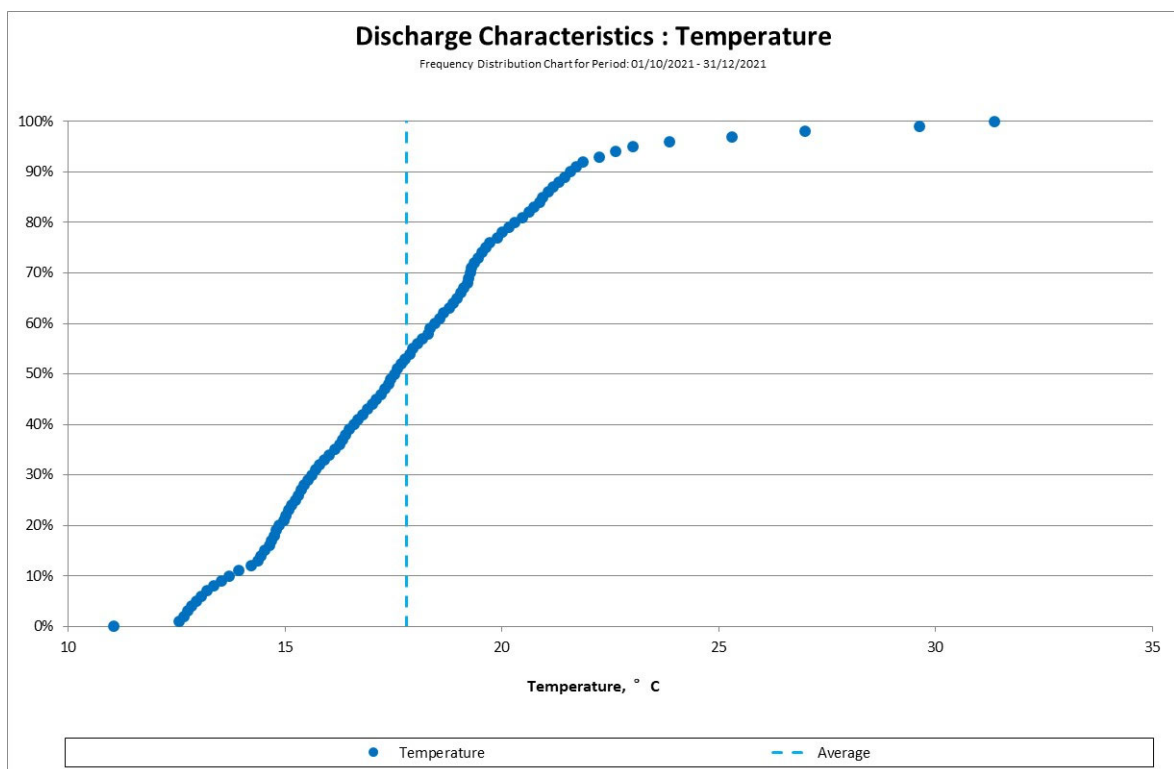
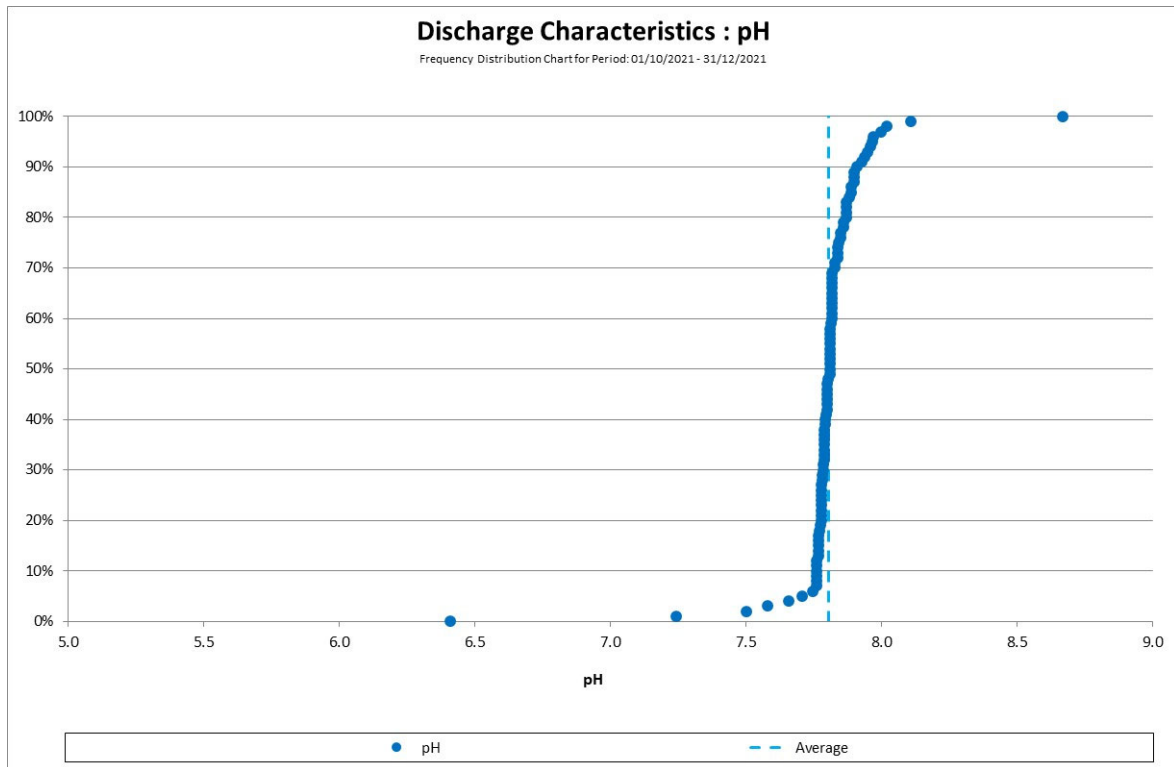
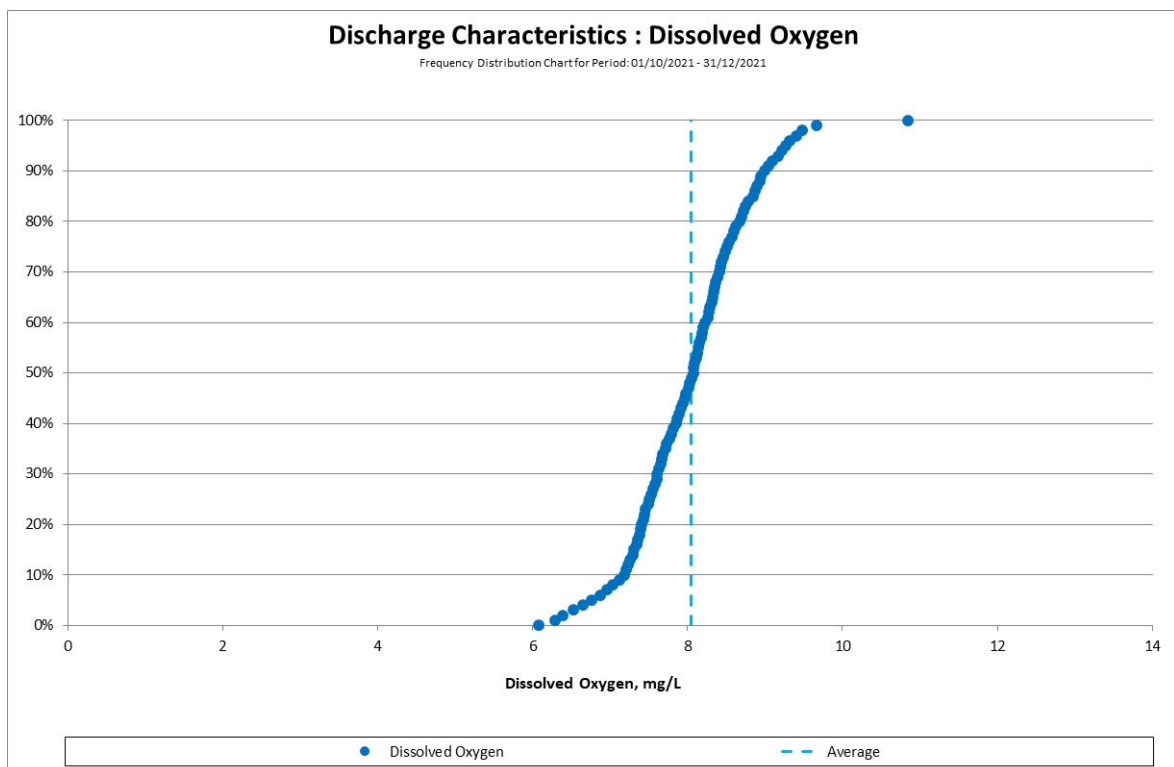


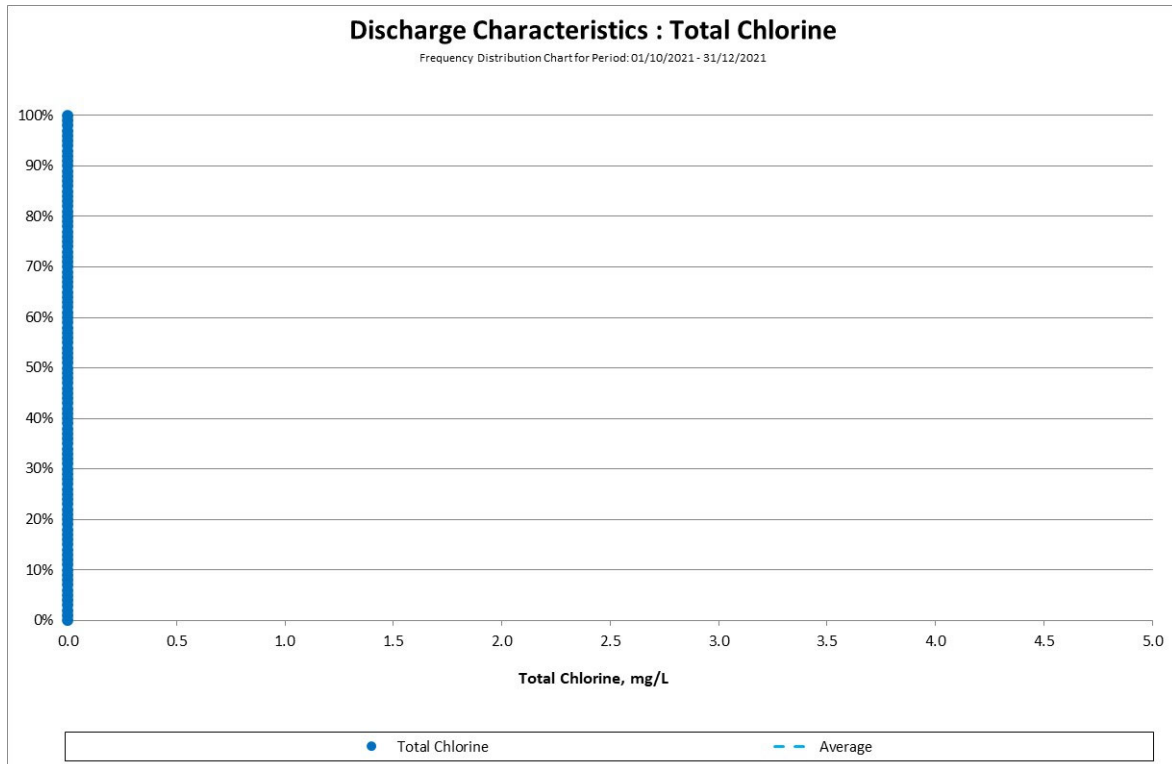
Figure 2 - Discharge Characteristics: Temperature - Frequency Distribution



**Figure 3 - Discharge Characteristics: pH - Frequency Distribution**



**Figure 4 - Discharge Characteristics: DO - Frequency Distribution**



**Figure 5 - Discharge Characteristics: Chlorine - Frequency Distribution**

### 3. Salinity Monitoring Results

#### 3.1 Average Salinity Discharge (U-149) Results

Table 4 below shows the summary of salinity readings at the edge of the mixing zone (100m from the discharge point) for this reporting period.

**Table 4 – Average Salinity Discharge Summary**

	Average Salinity Discharge (ppt)		
	October	November	December
<b>Average</b>	36.28	36.12	36.53
<b>Minimum</b>	33.27	35.92	34.87
<b>Maximum</b>	37.36	37.10	37.67

No exceedances or issues associated with Average Salinity Discharge (U-149) were identified during this reporting period.

### 3.2 Salinity Discharge (U-145, U-146) Results

Table 5 below shows the summary of salinity discharge ratio results for this reporting period.

**Table 5 Salinity discharge ratio summary**

	Salinity Discharge Ratio		
	October	November	December
<b>Average</b>	1.20	1.15	1.16
<b>Minimum</b>	1.00	1.00	1.00
<b>Maximum</b>	1.86	1.90	1.89

Over the quarter, the highest salinity discharge ratio recorded was 1.90 on 17/11/2021. This confirms that the discharge salinity did not exceed the intake salinity by a factor of 2.1. No exceedances, issues associated with Salinity Discharge (U-145, U-146) were identified during this reporting period.