

# Monthly Data Summary

## LIDDELL MONTHLY DATA SUMMARY JULY 2018

LICENCE NO	2122
LICENCE HOLDER	AGL MACQUARIE
REPORTING PERIOD	JULY 2018

### A1 Licence Holder

Licence Number 2122  
Licence Holder AGL MACQUARIE  
Trading Name (if applicable)  
ABN 18 167 859 494

### A2 Premises to which Licence Applies (if applicable)

Common Name (if any) LIDDELL POWER STATION  
Premises NEW ENGLAND HIGHWAY MUSWELLBROOK NSW 2333

### A3 Activities to which Licence Applies

Electricity Generating Works  
Coal Works

### A4 Other Activities (if applicable)

Helicopter-related facilities  
Chemical storage  
Operation of Emergency 1.5 MW diesel generator  
Operation of Gas turbine  
Sewage treatment  
Waste storage

### A5 Fee-Based Activity Classifications

**Note** that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Coal works	> 5,000,000.00	T handled
Generation of electrical power from coal	> 4,000.00	Gwh generated

# Monthly Data Summary

## Discharge & Monitoring Point 7

301204 East 6416350 North

Discharge to Air

In the flue gases of unit 1 boiler labelled as "Unit 1 Boiler 1-2 Chimney Stack" on plan no. LD 800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	571.3	702.0	906.0	1500 mg/m <sup>3</sup>
JULY 2018	10/07/2018		parts per million				278.3	342.0	441.4	700 ppm
JULY 2018	10/07/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	627.9	864.2	1068.0	
JULY 2018	10/07/2018		parts per million				219.7	302.4	373.7	600 ppm
JULY 2018	10/07/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	0.2	1.5	9.6	20%
Comments:										

## Annual monitoring of discharges to air

Air emission monitoring, Boiler 1 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m <sup>3</sup>
Jul-17	5/09/2017	Cadmium	milligrams per cubic metre	1	1	<0.0002	1.0
Jul-17	5/09/2017	Chlorine	milligrams per cubic metre	1	1	0.0	200
Jul-17	5/09/2017	Copper	milligrams per cubic metre	1	1	0.0029	
Jul-17	5/09/2017	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.014	5
Jul-17	5/09/2017	Hydrogen chloride	milligrams per cubic metre	1	1	5.7	100
Jul-17	5/09/2017	Mercury	milligrams per cubic metre	1	1	0.00140	1.0
Jul-17	5/09/2017	Nitrogen oxides	milligrams per cubic metre	1	1	660	1500
Jul-17	5/09/2017	Solid particles	milligrams per cubic metre	1	1	24.0	100
Jul-17	5/09/2017	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	1.100	100
Jul-17	5/09/2017	Sulphur dioxide	milligrams per cubic metre	1	1	1100	
Jul-17	5/09/2017	Total fluoride	milligrams per cubic metre	1	1	3.9	50
Jul-17	5/09/2017	Volatile organic compounds	milligrams per cubic metre	1	1	0.012	
Comments: Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.							

# Monthly Data Summary

## Discharge & Monitoring Point 8

301204 East 6416350 North

In the flue gases of unit 2 boiler labelled as "Unit 2 Boiler 1-2 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	379	661	901	1500 mg/m <sup>3</sup>
JULY 2018	10/07/2018		parts per million				185	322	439	700 ppm
JULY 2018	10/07/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	523	815	1004	
JULY 2018	10/07/2018		parts per million				183	285	351	600 ppm
JULY 2018	10/07/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	3.4	5.5	12.8	20%
Comments:										

## Annual monitoring of discharges to air

Air emission monitoring, Boiler 2 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m <sup>3</sup>
Mar-18	12/04/2018	Cadmium	milligrams per cubic metre	1	1	<0.0002	1.0
Mar-18	12/04/2018	Chlorine	milligrams per cubic metre	1	1	<0.007	200
Mar-18	12/04/2018	Copper	milligrams per cubic metre	1	1	0.0040	
Mar-18	12/04/2018	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.019	5
Mar-18	12/04/2018	Hydrogen chloride	milligrams per cubic metre	1	1	8.7	100
Mar-18	12/04/2018	Mercury	milligrams per cubic metre	1	1	<0.00080	1.0
Mar-18	12/04/2018	Nitrogen oxides	milligrams per cubic metre	1	1	550	1500
Mar-18	12/04/2018	Solid particles	milligrams per cubic metre	1	1	37.0	100
Mar-18	12/04/2018	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	0.880	100
Mar-18	12/04/2018	Sulphur dioxide	milligrams per cubic metre	1	1	900	
Mar-18	12/04/2018	Total fluoride	milligrams per cubic metre	1	1	8.2	50
Mar-18	12/04/2018	Volatile organic compounds	milligrams per cubic metre	1	1	0.940	
Comments: Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.							

# Monthly Data Summary

## Discharge & Monitoring Point 9

301204 East 6416350 North

In the flue gases of unit 3 boiler labelled as "Unit 3 Boiler 3-4 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour					1500 mg/m <sup>3</sup>
JULY 2018	10/07/2018		parts per million							700 ppm
JULY 2018	10/07/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour					600 ppm
JULY 2018	10/07/2018		parts per million							
JULY 2018	10/07/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour					20%
Comments:		Unit was out of service during July 2018								

## Annual monitoring of discharges to air

Air emission monitoring, Boiler 3 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m <sup>3</sup>			
Oct-17	1/12/2017	Cadmium	milligrams per cubic metre	1	1	<0.0001	1.0			
Oct-17	1/12/2017	Chlorine	milligrams per cubic metre	1	1	0.0	200			
Oct-17	1/12/2017	Copper	milligrams per cubic metre	1	1	0.0037				
Oct-17	1/12/2017	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.02	5			
Oct-17	1/12/2017	Hydrogen chloride	milligrams per cubic metre	1	1	20.0	100			
Oct-17	1/12/2017	Mercury	milligrams per cubic metre	1	1	0.00051	1.0			
Oct-17	1/12/2017	Nitrogen oxides	milligrams per cubic metre	1	1	770	1500			
Oct-17	1/12/2017	Solid particles	milligrams per cubic metre	1	1	42.0	100			
Oct-17	1/12/2017	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	1.700	100			
Oct-17	1/12/2017	Sulphur dioxide	milligrams per cubic metre	1	1	1300				
Oct-17	1/12/2017	Total fluoride	milligrams per cubic metre	1	1	9.8	50			
Oct-17	1/12/2017	Volatile organic compounds	milligrams per cubic metre	1	1	<0.02				
Comments:		Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.								

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## Discharge & Monitoring Point 10

301204 East 6416350 North

In the flue gases of unit 4 boiler labelled as "Unit 4 Boiler 3-4 Chimney Stack" on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Averaging period	Data capture %	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Nitrogen Oxides	milligrams per cubic metre	Continuous	One hour	>99%	380.7	600.0	694.0	1500 mg/m <sup>3</sup>
JULY 2018	10/07/2018		parts per million				185.5	292.3	338.1	700 ppm
JULY 2018	10/07/2018	Sulphur dioxide	milligrams per cubic metre	Continuous	One hour	>99%	616.9	854.4	1385.5	
JULY 2018	10/07/2018		parts per million				215.8	299.0	484.8	600 ppm
JULY 2018	10/07/2018	Opacity - Undifferentiated particles	Percent	Continuous	One hour	>99%	3.4	6.8	13.5	20%
Comments:										

## Annual monitoring of discharges to air

Air emission monitoring, Boiler 4 stack emissions, shown on plan no LD800474 amended 03 and dated 6/5/2003

Month	Date of Publication	Pollutant	Unit of measure	No. of samples required by licence	Samples collected and analysed	Sample value	EPL Limit mg/m <sup>3</sup>
Dec-17	15/01/2018	Cadmium	milligrams per cubic metre	1	1	<0.0001	1.0
Dec-17	15/01/2018	Chlorine	milligrams per cubic metre	1	1	0.0	200
Dec-17	15/01/2018	Copper	milligrams per cubic metre	1	1	0.0058	
Dec-17	15/01/2018	Hazardous substances (Metals)	milligrams per cubic metre	1	1	≤0.015	5
Dec-17	15/01/2018	Hydrogen chloride	milligrams per cubic metre	1	1	6.6	100
Dec-17	15/01/2018	Mercury	milligrams per cubic metre	1	1	0.00190	1.0
Dec-17	15/01/2018	Nitrogen oxides	milligrams per cubic metre	1	1	845	1500
Dec-17	15/01/2018	Solid particles	milligrams per cubic metre	1	1	24.0	100
Dec-17	15/01/2018	Sulfuric acid mist and sulfur trioxide	milligrams per cubic metre	1	1	5.500	100
Dec-17	15/01/2018	Sulphur dioxide	milligrams per cubic metre	1	1	1000	
Dec-17	15/01/2018	Total fluoride	milligrams per cubic metre	1	1	3.2	50
Dec-17	15/01/2018	Volatile organic compounds	milligrams per cubic metre	1	1	<0.07	
Comments: Monitoring of emission from each of the 4 boilers for the substances in this table is required annually.							

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## Discharge & Monitoring Point 12

Discharge to waters <301204 East 6416350 North> Update

Liddell Outfall Canal

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Ammonia	milligrams per litre	Fortnightly	3	<0.01	0.06	0.16	-
JULY 2018	10/07/2018	Antimony	milligrams per litre	Fortnightly	3	0.008	0.01	0.01	
JULY 2018	10/07/2018	Arsenic	milligrams per litre	Fortnightly	3	0.006	0.007	0.008	-
JULY 2018	10/07/2018	Barium	milligrams per litre	Fortnightly	3	0.1	0.104	0.108	
JULY 2018	10/07/2018	Beryllium	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Boron	milligrams per litre	Fortnightly	3	1.18	1.20	1.24	
JULY 2018	10/07/2018	Cadmium	milligrams per litre	Fortnightly	3	<0.0001	<0.0001	<0.0001	-
JULY 2018	10/07/2018	Chlorine	milligrams per litre	Fortnightly	3	0.02	0.04	0.07	
JULY 2018	10/07/2018	Chromium	milligrams per litre	Fortnightly	3	<0.01	<0.01	<0.01	-
JULY 2018	10/07/2018	Chromium (total)	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	
JULY 2018	10/07/2018	Cobalt	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Conductivity	uS/cm	Fortnightly	3	2630.0	2683.3	2720.0	
JULY 2018	10/07/2018	Copper	milligrams per litre	Fortnightly	3	0.003	0.004	0.005	-
JULY 2018	10/07/2018	Flouride	milligrams per litre	Fortnightly	3	1.7	1.75	1.8	
JULY 2018	10/07/2018	Lead	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Manganese	milligrams per litre	Fortnightly	3	0.006	0.007	0.009	
JULY 2018	10/07/2018	Mercury	milligrams per litre	Fortnightly	3	<0.0001	<0.0001	<0.0001	-
JULY 2018	10/07/2018	Methylene Blue Active Substance	milligrams per litre	Fortnightly	3	<0.1	0.2	0.6	
JULY 2018	10/07/2018	Molybdenum	milligrams per litre	Fortnightly	3	0.113	0.116	0.12	-

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JULY 2018	10/07/2018	Nickel	milligrams per litre	Fortnightly	3	0.004	0.005	0.006	
JULY 2018	10/07/2018	Nitrogen (total)	milligrams per litre	Fortnightly	3	0.4	0.5	0.6	-
JULY 2018	10/07/2018	Oil and Grease	milligrams per litre	Weekly	5	<5	<5	<5	
JULY 2018	10/07/2018	pH	pH Units	Daily	31	8.4	8.5	8.6	-
JULY 2018	10/07/2018	Phosphorus	milligrams per litre	Fortnightly	3	<0.01	0.015	0.02	
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Selenium	milligrams per litre	Fortnightly	3	<0.01	0.005	<0.01	-
JULY 2018	10/07/2018	Sulfur	milligrams per litre	Fortnightly	3	627	672	732	
JULY 2018	10/07/2018	Temperature	milligrams per litre	Fortnightly	3	21.9	22.6	23.3	
JULY 2018	10/07/2018	Tin	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Total Dissolved Solids	milligrams per litre	Fortnightly	3	1300	1520	1730	
JULY 2018	10/07/2018	Total Organic Carbon	milligrams per litre	Fortnightly	3	7	7.3	8	-
JULY 2018	10/07/2018	TSS	milligrams per litre	Fortnightly	3	2	3	4	
JULY 2018	10/07/2018	Vanadium	milligrams per litre	Fortnightly	3	0.01	0.01	0.01	-
JULY 2018	10/07/2018	Zinc	milligrams per litre	Fortnightly	3	<0.005	<0.005	<0.005	
Comments									

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Comments									
<b>Discharge &amp; Monitoring Point 13</b>									
Discharge to waters <301204 East 6416350 North> Update									
Liddell Oil and Grit Trap									
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Ammonia	milligrams per litre	Fortnightly	3	<0.01	0.28	0.48	-
JULY 2018	10/07/2018	Antimony	milligrams per litre	Fortnightly	3	0.008	0.009	0.01	
JULY 2018	10/07/2018	Arsenic	milligrams per litre	Fortnightly	3	0.006	0.008	0.01	-
JULY 2018	10/07/2018	Barium	milligrams per litre	Fortnightly	3	0.097	0.097	0.097	
JULY 2018	10/07/2018	Beryllium	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Boron	milligrams per litre	Fortnightly	3	1.11	1.14	1.16	
JULY 2018	10/07/2018	Cadmium	milligrams per litre	Fortnightly	3	<0.0001	<0.0001	<0.0001	-
JULY 2018	10/07/2018	Chlorine	milligrams per litre	Fortnightly	3	0.06	0.05	0.06	
JULY 2018	10/07/2018	Chromium	milligrams per litre	Fortnightly	3	<0.01	<0.01	<0.01	-
JULY 2018	10/07/2018	Chromium (total)	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	
JULY 2018	10/07/2018	Cobalt	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Conductivity	uS/cm	Fortnightly	3	2550.0	2583.3	2610.0	
JULY 2018	10/07/2018	Copper	milligrams per litre	Fortnightly	3	0.003	0.004	0.005	-
JULY 2018	10/07/2018	Flouride	milligrams per litre	Fortnightly	3	1.34	1.59	1.77	
JULY 2018	10/07/2018	Lead	milligrams per litre	Fortnightly	3	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Manganese	milligrams per litre	Fortnightly	3	0.007	0.008	0.009	
JULY 2018	10/07/2018	Mercury	milligrams per litre	Fortnightly	3	<0.0001	<0.0001	<0.0001	-
JULY 2018	10/07/2018	Methylene Blue Active Substance	milligrams per litre	Fortnightly	3	0.3	0.5	0.7	
JULY 2018	10/07/2018	Molybdenum	milligrams per litre	Fortnightly	3	0.112	0.114	0.117	-
JULY 2018	10/07/2018	Nickel	milligrams per litre	Fortnightly	3	0.004	0.005	0.005	



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JULY 2018	10/07/2018	Nitrogen (total)	milligrams per litre	Fortnightly	3	0.6	0.7	0.8	-
JULY 2018	10/07/2018	Oil and Grease	milligrams per litre	Weekly	5	<5	<5	<5	
JULY 2018	10/07/2018	pH	pH Units	Daily	31	7.4	8.4	8.7	-
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Phosphorus	milligrams per litre	Fortnightly	3	0.02	0.03	0.03	
JULY 2018	10/07/2018	Selenium	milligrams per litre	Fortnightly	3	<0.01	<0.01	<0.01	-
JULY 2018	10/07/2018	Sulfur	milligrams per litre	Fortnightly	3	608	640	620	
JULY 2018	10/07/2018	Temperature	milligrams per litre	Fortnightly	3	17.5	17.8	18.5	
JULY 2018	10/07/2018	Tin	milligrams per litre	Fortnightly	3	<0.001	0.00	0.001	-
JULY 2018	10/07/2018	Total Dissolved Solids	milligrams per litre	Fortnightly	3	1360	1467	1660	
JULY 2018	10/07/2018	Total Organic Carbon	milligrams per litre	Fortnightly	3	7	7.7	8	-
JULY 2018	10/07/2018	TSS	milligrams per litre	Fortnightly	3	2	6	10	
JULY 2018	10/07/2018	Vanadium	milligrams per litre	Fortnightly	3	0.01	0.01	0.02	-
JULY 2018	10/07/2018	Zinc	milligrams per litre	Fortnightly	3	<0.005	<0.005	<0.005	
Comments									

## Discharge & Monitoring Point 14

Discharge to waters <301204 East 6416350 North> Update

The skimmer dam overflow spillway, located at the left abutment of the skimmer dam.

Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurement frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	Arsenic	milligrams per litre	Weekly	5	0.036	0.0432	0.053	-
JULY 2018	10/07/2018	Boron	milligrams per litre	Weekly	5	1.62	1.782	2.06	
JULY 2018	10/07/2018	Cadmium	milligrams per litre	Weekly	5	<0.0001	0.00006	0.0001	-
JULY 2018	10/07/2018	Chromium	milligrams per litre	Weekly	5	<0.01	<0.01	<0.01	-
JULY 2018	10/07/2018	Chromium (total)	milligrams per litre	Weekly	5	0.001	0.0024	0.003	

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JULY 2018	10/07/2018	Conductivity	uS/cm	Weekly	5	2710.0	2818.0	2890.0	
JULY 2018	10/07/2018	Copper	milligrams per litre	Weekly	5	<0.001	0.0011	0.002	-
JULY 2018	10/07/2018	Flouride	milligrams per litre	Weekly	5	2.4	2.46	2.6	
JULY 2018	10/07/2018	Lead	milligrams per litre	Weekly	5	<0.001	<0.001	<0.001	-
JULY 2018	10/07/2018	Mercury	milligrams per litre	Weekly	5	<0.0001	<0.0001	<0.0001	-
JULY 2018	10/07/2018	Oil and Grease	milligrams per litre	Weekly	5	<5	<5	<5	
Month	Date of Publication	Pollutant	Unit of measure	Sampling / measurment frequency	Samples collected and analysed	Lowest sample value	Mean of samples	Highest sample value	EPL Limit
JULY 2018	10/07/2018	pH	pH Units	Weekly	5	8.1	8.3	8.4	-
JULY 2018	10/07/2018	Selenium	milligrams per litre	Weekly	5	0.04	0.042	0.05	-
JULY 2018	10/07/2018	TSS	milligrams per litre	Weekly	5	<1	1.9	3	
JULY 2018	10/07/2018	Zinc	milligrams per litre	Weekly	5	<0.005	<0.005	<0.005	
Comments									

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## Details of Non-Compliance with Licence

Licence condition number not complied with

N/A

Summary of particulars of the non-compliance **(NO MORE THAN 50 WORDS)**

If required, further details on particulars of non-compliance

-

Date(s) when the non-compliance occurred, if applicable

If applicable, registration numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance

Cause of non-compliance

Action taken or that will be taken to mitigate any adverse effects of the non-compliance

Action taken or that will be taken to prevent a recurrence of the non-compliance

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