Vista Gold Australia P/L
Mt Todd Mine Site
Waste Discharge Licence 178-2

Monthly Discharge Report
April 2013

Executive Summary

This report presents results and information pursuant to Condition 30 of WDL 178-2 that requires Vista Gold submit a periodic report to the NT EPA for each calendar month during which a discharge has occurred.

Two controlled discharges under the conditions of WDL 178-2 occurred on the 3rd of April 2013. The first discharge was of RP3 treated water commencing at approx. 0342 hrs and ceasing at 1012 hrs with an estimated total of 2.69 ML of RP3 treated water discharged at an average dilution ratio of 1:1123. The second discharge was of RP1 water commencing at 1230 hrs and ceasing at 0045 on the 4th of April with an estimated total of 2.3 ML of RP1 water discharged at an average dilution ratio of 1:1150. Ecotoxicological testing performed on RP1 and RP3 treated water determined that a dilution ratio of 1:1000 and 1:1123 (respectively) was required to meet the 80% species protection level at SW4.

Findings were as follows:

- No analytes exceeded the Australian Drinking Water Guidelines 6, 2011, Table 10.5.
- Surface water monitoring results indicate that the copper and zinc Monitoring Values of 3.0 and 33.8 µg/L were not exceeded at SW4 during the RP3 discharge.
- Sampling performed by the NT EPA indicate that the copper Monitoring Value of 4.2 µg/L was not exceeded at SW4 during the RP1 discharge.
- All metals with the exception of aluminium were below the ANZECC 80% species protection level as measured at SW4. However the higher aluminium levels observed correspond to naturally occurring high levels of these elements in upstream background waters.

1. Introduction

Condition 30 of WDL 178-2 states that:

“The Licensee must submit a periodic report to the NT EPA for each calendar month during which a discharge has occurred no later than 10 Business days after the last day of the relevant calendar month.

The periodic report must

30.1. include, for each day of the month where a discharge occurred, tabulated data including

- the factors used to assess the Dilution Factor at SW4;
- surface water monitoring results required under condition 21;
- a comparison of surface water monitoring results for monitoring point SW4 with Monitoring Values determined under condition 14;
- a comparison of surface water monitoring results for monitoring points SW2 and SW10 with applicable health guideline values from Australian Drinking Water Guidelines 6, 2011, Table 10.5; and

30.2. be made available on the Licensee's Australian website within 10 Business days of providing the report to the NT EPA.

This report presents the Edith River hydrological data, RP3 discharge data, RP1 discharge data as well analytical surface water monitoring results (where available) for discharges from Mt Todd conducted in accordance with Vista Gold’s Discharge Plan and pursuant to the conditions of WDL 178-2 during the month of April 2013.

2. Discharges

Two controlled discharges occurred on the 3rd of April 2013 as shown in Table 1 below. The first discharge was of RP3 treated water commencing at approx. 0342 hrs and ceasing at 1012 hrs with a measured total of 2.69 ML being discharged at an average dilution ratio of 1:1123. The second discharge was of RP1 water commencing at 1230 hrs and ceasing at 0045 on the 4th of April with an estimated total of 2.32 ML being discharged at an average dilution ratio of 1:1150.

Table 1 - April 2013 Discharges

Discharge	Date	Start Time (hrs)	Stop Time (hrs)	Duration (hrs & min)	Dilution		Volume Discharged (ML)	Additional Comments
					Report Reference[1]	Rate		
1	03:04:13	0342	1012	6 hrs 30 min	RP3 Feb-13	1:1123	2.69	Nil
2	03:04:2013 04:04:2013	1230	0045	12 hrs 15 min	VG Australia Discharge Plan	1:1150	2.32	* See below

* At 1230hrs the 250 and 160 mm valves partly opened to give a flow of 80 L/s
At 1330 hrs the 160mm valve was closed reducing flow to 60 L/s.
At1455 hrsflow from the 250mm valve was further reduced to give a flow of 50 L/s.
At 1950 hrs the 250 mm valve was closed and the 160 mmm valve reopened to reduce flow to 40 L/s.
All valves closed at 0045 hrs on the 4th of April 2013.

[1] These reports can be downloaded from the Mt Todd website at http://mttodd.com.au/content/waste-discharge-licence

Figure below graphically shows the Edith River volumetric flow as well as the corresponding discharge volumes of RP3 treated water together with cumulative water released over the period of discharge.

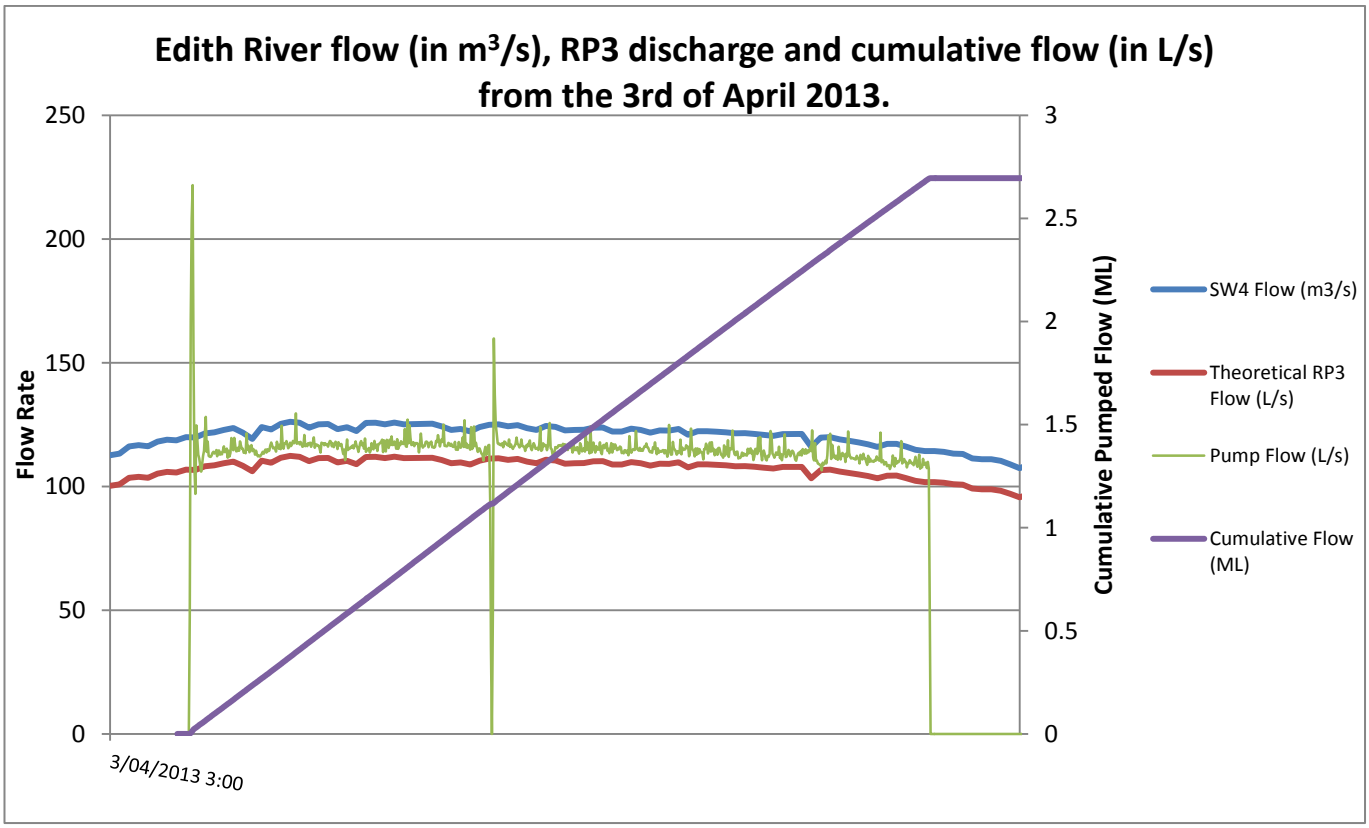

Figure 1 **Edith River flow (in m^3/s), RP3 discharge and cumulative flow (in L/s) from the 3rd of April 2013. (Note: spikes relate to pump priming intervals of 2 minute duration)**

As a product of the installed flowmeter being out of service (which gave unreliable flow readings) historical flow data under different siphoning scenarios (of which there are 4) was consulted and the discharge rate from siphons was manipulated manually to comply with the required dilution ratio for RP1 of 1:1000 (refer to footnote of Table 1).

Figure below graphically shows the Edith River volumetric flow (in m^3/s) as well as the corresponding discharge volumes (in L/s) of RP1 water during the controlled discharge. The figure also shows that the specified RP1 dilution ratio of 1:1000 was not exceeded at any time during this discharge.

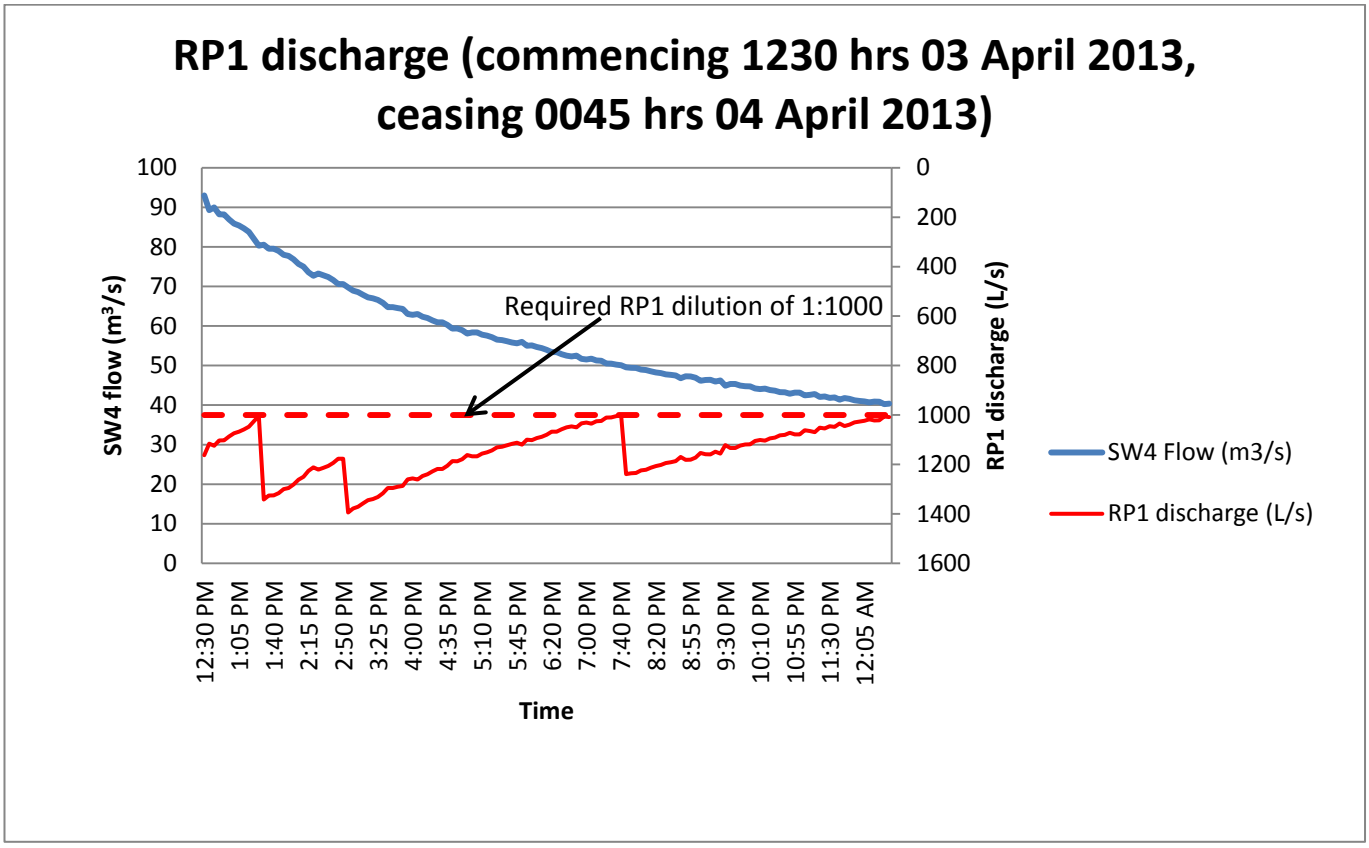

Figure 2 – RP1 water discharges during April 2013

Table 2 below shows the average hourly Edith River height in metres, volumetric flow in cubic metres per second, RP3 and RP1 discharge in litres per second whilst maintaining at least the 1:1123 and 1:1000 specified dilution ratios (respectively).

Table 2 - Edith River height (in m), volumetric flow (in m^3/s), RP3 and RP1 discharge rate in L/s

3/04/2013	RP1[2]	RP3[2]	RP7[2]	SW4	
Latitude	-14.162	-14.1388	-14.127	-14.1703	
Longitude	132.1085	132.1015	132.1216	132.098	
Easting[1]	187843	187055	18921	186745	
Northing[1]	8432432	8434993	8436326	8431490	
Time (HH:MM)	Mean Hourly Discharge Rate	Mean Hourly Discharge Rate	Mean Hourly Discharge Rate	Mean Hourly Height	Mean Hourly Flow
	L/s	L/s	L/s	m	m3/s
1:00	0	0	0	2.982	74.792
2:00	0	0	0	3.434	91.323
3:00	0	0	0	3.837	107.129
4:00	0	36.471	0	4.12	118.241
5:00	0	116.205	0	4.262	123.825
6:00	0	116.988	0	4.285	124.741
7:00	0	114.78	0	4.263	123.863
8:00	0	115.345	0	4.237	122.822
9:00	0	114.245	0	4.202	121.54
10:00	0	111.92	0	4.109	118.188
11:00	0	22.731	0	3.97	112.353
12:00	0	0	0	3.743	103.44
13:00	40	0	0	3.452	91.981
14:00	68.3	0	0	3.159	80.995
15:00	58.3	0	0	2.917	72.572
16:00	50	0	0	2.726	65.861
17:00	50	0	0	2.575	60.602
18:00	50	0	0	2.458	56.597
19:00	50	0	0	2.356	53.202
20:00	46.36	0	0	2.271	50.393
21:00	40	0	0	2.196	47.899
22:00	40	0	0	2.127	45.624
23:00	40	0	0	2.069	43.711
0:00	40	0	0	2.018	41.988

3. Surface Water Results

Full tabulated laboratory analytical results appear in Table 3 below.

The salient information shown by the results is as follows:

1. Sampling during the RP3 discharge was undertaken in accordance with the WDL on the morning of the 3rd of April. Later the same afternoon when RP3 discharge had ceased and RP1 discharge commenced, only sampling of RP1 source water was undertaken due to staff shortages.

2. No analytes exceeded the Australian Drinking Water Guidelines 6, 2011, Table 10.5.

3. Measured discharge of RP3 treated water and estimated RP1 water complied with the required dilution ratio of 1:1123 and 1:1000 (respectively) throughout the discharge.

4. Surface water monitoring results indicate that the copper and zinc Monitoring Values for RP3 of 3.0 and 33.8 µg/L (respectively) were not exceeded at SW4 during the RP3 discharge.

5. Sampling performed by the NT EPA indicated that the copper Monitoring Value for RP1 of 4.2 8 µg/L was not exceeded at SW4 during the RP1 discharge.

6. Results for total chromium at SW4 were below laboratory PQL hence no speciated chromium analysis was required.

7. Results for total cyanide at SW4 were below laboratory PQL hence no weak acid dissociable cyanide analysis (WAD CN) was required.

8. The ANZECC 80% species protection value for filtered (0.45 µg/L) aluminium of 150 µg/L was exceeded at SW4 during the discharge at SW4 returning 250 µg/L. However water discharged from RP3 and RP1 is not the sole source of aluminium at Mt Todd. It is known that the catchment to the south of the Mt Todd Mineral Leases drained by Phillips Creek, has a local geological unit at surface high in aluminium feldspars that are a significant source of aluminium to the Edith River as shown by the aluminium result for SW2 (110 µg/L). Similar aluminium rich geological units exist >3km downstream of SW4 contributing to the observed high aluminium concentration at SW10 (280 µg/L).

9. A comparison of discharge data against routine monthly sampling at SW4 and SW10 shows that during high flow events, a source of copper (but not zinc) downstream of the Mt Todd site but upstream of SW10 is entering the system. The copper result recorded at SW10 during the discharge was 72 µg/L. SW4 returned a copper level of 2 µg/L.

10. Results of sampling undertaken on the 6th of April (3 days following the controlled RP3 and RP1 discharges) indicate that water quality at SW4 had returned to typical ambient conditions.

Table 3 -Daily Discharge Monitoring Results for 03 and 06 April 2013

03-Apr-13			RP1[2]	RP3[2]	RP7[2]	SW4	80% Species Protection Level at SW4	*Monitoring Value at SW4	SW2	SW10	ADWG for Health
	Latitude		-14.162	-14.1388	-14.127	-14.1703			-14.1718	-14.183	
	Longitude		132.1085	132.1015	132.1216	132.098			132.12	132.03	
	Easting[1]		187843	187055	18921	186745			189088	179781	
	Northing[1]		8432432	8434993	8436326	or 8431490			8431347	8430015	
Metals and metalloids (0.45um filtered)											
Aluminium	Al	µg/L	15000	150	N/A	250	150	N/A	110	280	#
Cadmium	Cd	µg/L	53	5.3	N/A	<0.1	0.80	N/A	<0.1	<0.1	2
Cobalt	Co	µg/L	600	56	N/A	<1	90	N/A	<1	<1	#
Copper	Cu	µg/L	4000	6	N/A	2	2.5	3	<1	72	2000
Chromium Total	Cr	µg/L	<1	2	N/A	<1	40	N/A	<1	<1	50
Chromium III	Cr III	µg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#
Chromium VI	Cr VI	µg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#
Iron	Fe	µg/L	120	<10	N/A	220	300	N/A	140	170	#
Lead	Pb	µg/L	50	<1	N/A	<1	9.4	N/A	<1	<1	10
Magnesium	Mg	mg/L	110	100	N/A	0.7	2.5	N/A	<0.5	0.5	#
Manganese	Mn	µg/L	6500	1300	N/A	6	3600	N/A	<5	17	500
Mercury	Hg	µg/L	<0.05	<0.05	N/A	<0.05	5.40	N/A	<0.05	<0.05	1
Nickel	Ni	µg/L	610	61	N/A	<1	17	N/A	<1	<1	20
Zinc	Zn	µg/L	13000	210	N/A	8	31	33.8	<1	3	#
Field											
Dissolved Oxygen	DO	% saturation	94.5	91.2	N/A	88.8	85-120	N/A	100.7	85.7	#
Temperature	Temp.	ºC	29.7	28.4	N/A	30.6	N/A	N/A	27.8	28.8	#
Electrical Conductivity	EC	µS/cm	1472	2807	N/A	22.5	20-250	N/A	12.7	30.6	#
pH	pH	pH units	3.97	7.67	N/A	5.19	6-8	N/A	5.57	6.45	#
Environmental Indicators											
Sulphate	SO_4	mg/L	700	1500	N/A	2	129	N/A	<1	1	500
Bicarbonate	HCO3	mg/L	<5	28	N/A	6	N/A	N/A	6	11	#
Unfiltered Alkalinity	$CaCO_3$	mg/L	<5	28	N/A	6	N/A	N/A	6	11	#
Hardness	Hardness CaCO3	mg/L	570	1600	N/A	4	N/A	N/A	<3	4	#
Total Dissolved Solids	TDS	mg/L	1700	2700	N/A	51	N/A	N/A	37	71	#
Total Suspended Solids	TSS	mg/L	<5	<5	N/A	24	N/A	N/A	8	7	#
Total Solids	TS	mg/L	1700	2700	N/A	75	N/A	N/A	45	78	#
Sodium	Na	mg/L	11	44	N/A	1.2	N/A	N/A	0.8	2.3	#
Chloride	Cl	mg/L	6	7	N/A	<1	N/A	N/A	<1	<1	#
Calcium	Ca	mg/L	53	470	N/A	0.5	N/A	N/A	<0.5	0.7	#
Total Cyanide	Cn	mg/L	<0.004	<0.004	N/A	<0.004	N/A	N/A	<0.004	<0.004	80
WAD Cyanide	WAD Cn	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#

 # ANZECC has insufficient data to set a guideline value based on health guidelines
** Monitoring Value for RP3 only*

06-Apr-13			RP1[2]	RP3[2]	RP7[2]	SW4	80% Species Protection Level at SW4	*Monitoring Value at SW4	SW2	SW10	ADWG for Health
		Latitude	-14.162	-14.1388	-14.127	-14.1703			-14.1718	-14.183	
		Longitude	132.1085	132.1015	132.1216	132.098			132.12	132.03	
		Easting[1]	187843	187055	18921	186745			189088	179781	
		Northing[1]	8432432	8434993	8436326	or 8431490			8431347	8430015	
Metals and metalloids (0.45µm filtered)											
Aluminium	Al	µg/L	N/A	N/A	N/A	48	150	N/A	58	73	#
Cadmium	Cd	µg/L	N/A	N/A	N/A	<0.1	0.80	N/A	<0.1	<0.1	2
Cobalt	Co	µg/L	N/A	N/A	N/A	<1	90	N/A	<1	<1	#
Copper	Cu	µg/L	N/A	N/A	N/A	<1	2.5	3	<1	1	2000
Chromium Total	Cr	µg/L	N/A	N/A	N/A	<1	40	N/A	<1	<1	50
Chromium III	Cr III	µg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#
Chromium VI	Cr VI	µg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#
Iron	Fe	µg/L	N/A	N/A	N/A	150	300	N/A	160	150	#
Lead	Pb	µg/L	N/A	N/A	N/A	<1	9.4	N/A	<1	<1	10
Magnesium	Mg	mg/L	N/A	N/A	N/A	1	2.5	N/A	<0.5	1.1	#
Manganese	Mn	µg/L	N/A	N/A	N/A	40	3600	N/A	5	36	500
Mercury	Hg	µg/L	N/A	N/A	N/A	<0.05	5.40	N/A	<0.05	<0.05	1
Nickel	Ni	µg/L	N/A	N/A	N/A	<1	17	N/A	<1	<1	20
Zinc	Zn	µg/L	N/A	N/A	N/A	5	31	33.8	<1	3	#
Field											
Dissolved Oxygen	DO	% saturation	94.5	91.2	N/A	95.6	85-120	N/A	95.6	91.2	#
Temperature	Temp.	ºC	29.7	28.4	N/A	30.1	N/A	N/A	30.4	29.5	#
Electrical Conductivity	EC	µS/cm	1472	2807	N/A	31.2	20-250	N/A	15.9	36.5	#
pH	pH	pH units	3.97	7.67	N/A	6.06	6-8	N/A	5.44	6.05	#
Environmental Indicators											
Sulphate	SO_4	mg/L	N/A	N/A	N/A	4	129	N/A	<1	5	500
Bicarbonate	HCO3	mg/L	N/A	N/A	N/A	13	N/A	N/A	15	18	#
Unfiltered Alkalinity	$CaCO_3$	mg/L	N/A	N/A	N/A	13	N/A	N/A	15	18	#
Hardness	Hardness CaCO3	mg/L	N/A	N/A	N/A	6	N/A	N/A	<3	7	#
Total Dissolved Solids	TDS	mg/L	N/A	N/A	N/A	70	N/A	N/A	11	78	#
Total Suspended Solids	TSS	mg/L	N/A	N/A	N/A	24	N/A	N/A	6	9	#
Total Solids	TS	mg/L	N/A	N/A	N/A	86	N/A	N/A	17	87	#
Sodium	Na	mg/L	N/A	N/A	N/A	2.3	N/A	N/A	1.2	2.8	#
Chloride	Cl	mg/L	N/A	N/A	N/A	1	N/A	N/A	1	1	#
Calcium	Ca	mg/L	N/A	N/A	N/A	0.8	N/A	N/A	<0.5	0.7	#
Total Cyanide	Cn	mg/L	N/A	N/A	N/A	<0.004	N/A	N/A	<0.004	<0.004	80
WAD Cyanide	WAD Cn	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#

 # ANZECC has insufficient data to set a guideline value based on health guidelines

** Monitoring Value for RP3 only*

4. Conclusion

The controlled discharges of RP3 and RP1 water from the Mt Todd mine site that occurred on the 3rd of April and ceased at 0045 hours on the 4th of April 2013met required dilution ratios at SW4 of 1:1123 and 1:1000 respectively.

Due to the non-functional status of the flow meter on the RP1 siphons, controlled discharge of RP1 water was conservatively estimated and controlled via manipulation of the two smallest siphon valves (160 mm and 250 mm) in such a manner as to ensure as far as reasonably possible the required dilution ratio of 1:1000 was not exceeded.

This manipulation was calculated through interrogation of historic RP1 siphoning records. Under the previous WDL, discharge of RP1 water resulted in sustained discharge over lengthy periods (at times exceeding three weeks duration) with no observable impact downstream. The RP1 discharge from the 3rd of April was for 12 hours and 15 minutes duration.

Surface water monitoring results indicate that the copper and zinc Monitoring Values of 3.0 and 33.8 µg/L were not exceeded at SW4 during the RP3 discharge

Sampling performed by the NT EPA indicate that the copper Monitoring Value of 4.2 µg/L was not exceeded at SW4 during the RP1 discharge.

Sampling results from the 6th of April did not show a measureable impact. Results also indicate that there is a high upstream background concentration of iron and aluminium in the Edith River and that there is a significant source(s) of copper downstream of the Mt Todd mine site that contributes excess copper to the environment during high flow events of the Edith River. Elevated copper levels are not observed during low flow events as observed on the 6th of April 2013.