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By e.mail

7 February 2013

Dear Kylie

Update on Callide Mine post flood event including notification of exceedances/ non-compliances (as per Condition W15)

Dunn Creek Dam release

This is an update on the notification that was sent to EHP on 25 January 2013 about the commencement of release from Dunn Creek Dam. As explained in that notification, the passive release of mine-affected water from Dunn Creek Dam commenced at about 2am on Friday 25 January 2012 and this release was compliant with both water quality and flow parameters under Schedule W of Callide Mine's Environmental Authority MIN 100507307. However, shortly after that, access to Callide Mine became unsafe due to ex-cyclone Oswald and also there were disruptions to communications systems in the area, so at that time it was physically impossible to supply some of the normal data under model condition W13.

Callide Mine has now received preliminary data from Bureau Veritas, who were engaged to obtain samples of the water from the release point and also upstream and downstream monitoring points. A copy of this data is below in the Appendix. Dunn Creek Dam is still passively releasing water. A notification of cessation will be provided within 24hrs of becoming aware of the cessation.

Notification of exceedances/non-compliances (as per Condition W15)

1. Exceedance of Condition W4

Recent Field EC results have shown that the water being released from RP Dunn Creek Dam has been recorded over the 1400us/cm limit described in Table W2 Part A.

2. Non-compliance with Condition W8

The stream flow gauging station at Callide Headwaters for Dunn Creek Dam has not been operating during the release event due to the sheer amount of water through the headwaters that has damaged the station.

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3. Non-compliance with Condition W9

With the stream flow gauging station being damaged, representative flow data was being obtained from SunWater. The flow in the headwaters had dropped below the flow limit of $1.5\text{m}^3/\text{s}$ as Dunn Creek Dam was still releasing.

73(2)Irrelevant

As you know, Callide Mine currently has a monitoring difficulty in relation to flow, for Lake Gasteen Dam. The SunWater gauge at Callide Dam, which is used to measure background flow, has been damaged, so we do not have this flow data. Callide Mine is still seeking to obtain some data on the flow in Callide. Photos have been taken by the Environmental Staff at various points in Callide Creek that demonstrate good flow.

73(2)Irrelevant

73(2)Irrelevant

Update about actions on erosion and sediment control at the Bluff mining lease, Callide Dam

Last week I telephoned and forwarded a letter to you advising on a Erosion event from the Bluff mining lease spoil dump escarpment that occurred over the long weekend, but which was fully contained by Callide Mine's sediment dams. In that letter, we promised to be in contact again with a further update, including an update on the action program steps that are underway.

The area has been inspected again in more detail, together with a representative from our Technical Services team and I am pleased to advise that our more detailed inspection confirmed the impression I had gained at my preliminary inspection that the material from the slip over the weekend had been fully contained.

Callide Mine is undertaking the following immediate actions:

- (a) Callide Mine has re-instated the flow line into the previous formed rock drainage line (Completed 1 February);
- (b) We have already undertaken inspections of the upper rills to ensure that they have not been compromised and we can confirm that this is the case(Completed 1 February);
- (c) Work is being undertaken this week to re-instate the access ramp below the Bluff spoil dump, which will then enable access for the purpose of the de-silting work on the sediment dams;
- (d) Once the access ramp has been properly re-instated, a contractor will undertake the de-silting of the sediment dams over the coming weeks starting with Sediment Basin D. The contractor has already been engaged, but it is not physically possible for the

contractor to undertake the work until the access has been re-instated due to how wet the area is;

- (e) Similarly, upon restoration of access, work will be undertaken in the coming weeks to re-profile the eroded area and clad with a more competent material, in accordance with the final closure landform requirements of our environmental authority applicable to these slopes.

At this stage, we have no reason to anticipate any disruptions or delays to the timeframes for the actions set out in the action program of the approved VTEP for the Bluff.

Please contact me if you have any questions about this notification, either by e.mail or on my mobile telephone 0417 322 005.

Yours sincerely _

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John McDougall
Environmental Superintendent

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Dunn Creek Dam Release – Quality Results

	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb
	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Upstream (Callide Headwaters)	8.05	6.95	7.05	7.5	7.13	7.43	7.78	7.39	7.56	6.7	7.84	7.68	7.78
Dunn Creek Dam	7.72	6.91	7.11	7.33	7.2	7.54	7.56	7.42	7.23	7.1	8.04	7.71	8.08
Downstream (Callide Dam)	7.81		7.8	7.62	7.53	7.51	7.84		7.5	7.1	7.76	7.76	7.62
	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC
Upstream (Callide Headwaters)	0.11	0.27	0.16	0.19	0.26	0.3	0.35	0.42	0.41	0.45	0.46	0.52	0.57
Dunn Creek Dam	1.3	0.81	0.57	0.52	0.58	0.82	1.07	1.29	1.31				
Downstream (Callide Dam)	0.3		0.15	0.09	0.11	0.12	0.1		0.15	0.15	0.16	0.15	0.16

73(2)Irrelevant

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28 days Report
For
Dunn Creek Dam release
February-April 2013

Submitted by:

Anglo Coal (Callide Management) Pty Ltd
On behalf of the holders of the EA MIN100507307
Anglo Coal (Callide) Pty Ltd and Anglo Coal (Callide) No. 2 Pty Limited
PO Box 144
BILOELA QLD 4715

Dated:

21st May 2013

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1.0 Background

This report has been prepared in accordance with conditions W14 and W16 of Environmental Authority MIN100507307 and relates to the passive releases of water from Dunn Creek Dam, as described in our Notification of Release Event dated 21st February 2013 and Notification of Cessation of Flow dated 22nd April 2013.

In summary:

- Releases were in accordance with water quality parameters under Table W4, but there were minor exceedances for a brief initial period when passive releases commenced before required flow was reached in receiving waters;
- Water quality was generally very good, but there was a gap between when threshold flow in receiving waters had ceased and when passive flow from Dunn Creek Dam ceased, notwithstanding pumping out of Dunn Creek Dam to an interim storage location while we worked to finalise the infrastructure to operate our controlled release point from the Trap Gully pipeline.

2.0 28 Day Cessation Report Information (W14)

2.1 Release cessation date/time

This release from Dunn Creek Dam ceased at 4:40am on the 21st April 2013.

2.2 Natural flow volume in receiving water

The flow gauging station for Dunn Creek Dam, located at the Callide Dam headwaters, was damaged as a result of flooding caused by ex-cyclone Oswald and was not capable of recording flow volumes for receiving waters, so Callide Mine has been relying on representative flow data provided by SunWater until the flow gauging station is able to be repaired or replaced. All receiving flow data has been obtained from the SunWater gauging station from the Callide Dam Headwaters and summarised in Appendix 4. The instantaneous flow rate in the receiving waters at time of release cessation was 3.24m³/s. The daily average for the 24 hours prior to release cessation was 3.24m³/s. Receiving waters flow remained above the receiving flow trigger of 1.5m³/s from three hours after release commencement until release cessation.

2.3 Volume of water released

The total amount of water released from Dunn Creek Dam during the period 19th February to 21st April 2013 was 271ML. Calculations of total flow are based on average daily release flow volumes included in Appendix 4. There is currently no release limit for Dunn Creek Dam in terms of volumes of releases.

2.4 Details regarding compliance of the release

The water quality of the release waters was generally good and the release flow volume did not cause any signs of erosion or destabilisation of the receiving environment. No serious or material environmental harm would have occurred as a result of this release. The release from Dunn Creek Dam was largely compliant, but there were minor non-compliances that are detailed below.

1. Exceedance of Condition W4

There have been minor exceedances for some water quality parameters. During first flush from Dunn Creek Dam, there was a minor 'spike' for EC. There were also very minor spikes of TSS on the 3rd and 4th of March. During the entire release period, water quality remained of high quality.

2. Non-compliance with Condition W9

With the stream flow gauging station having been damaged, representative flow data was being obtained from SunWater. This release commenced before the receiving flow trigger (1.5m³/s) had been reached. Receiving waters flow reached the release flow trigger three hours later and remained above the trigger level for the duration of the release.

The water quality of the release waters was generally good and the release flow volume did not cause any signs of erosion or destabilisation of the receiving environment. No serious or material environmental harm would have occurred as a result of this release.

3. Table W3 Exceedances

There were several exceedances of the water quality limits specified in Table W3 – Release Contaminant Trigger Investigation Levels. Of these exceedances, ten contaminants triggered 2(b) of Condition W6 (aluminium, cadmium, chromium, copper, iron, nickel, zinc, cobalt, selenium and sodium). These exceedances are addressed in section 3.3 below.

2.5 In-situ water quality monitoring results

Finalised water quality results have been received from both NATA accredited sampling agencies, Bureau Veritas (BV) and SGS Australia and are provided in Appendix 1 and 2.

2.6 Any other matters pertinent to the water release event

As outlined above, it is suggested that the following issues were of particular relevance to the release event:

- The release was caused by rainfall events, involving unprecedented rainfall and flooding in the area and leading to damage to equipment and safety problems in terms of physical access;
- In preparation for the wet season, Callide Mine had reduced the water level in Dunn Creek Dam to about 20%, to try to maximise freeboard. Capacity had also been created in the nearby interim storage dam, East Dam, in preparation for the wet season.

3.0 28 Day Exceedance Report Information (W16)

3.1 The reason for the release

In preparation for the 2012-2013 wet season, Dunn Creek Dam was lowered to a capacity of approximately 20%. However, due to the large amount of rainfall received in January and February 2013, the dam reached 100% and began discharging. The water that was released from Dunn Creek Dam during this period was a direct result of rainfall and overland flow from the surrounding terrain. Figure 1 below shows rainfall events for January, February and March 2013, as measured at the Dunn Creek Dam monitoring station.

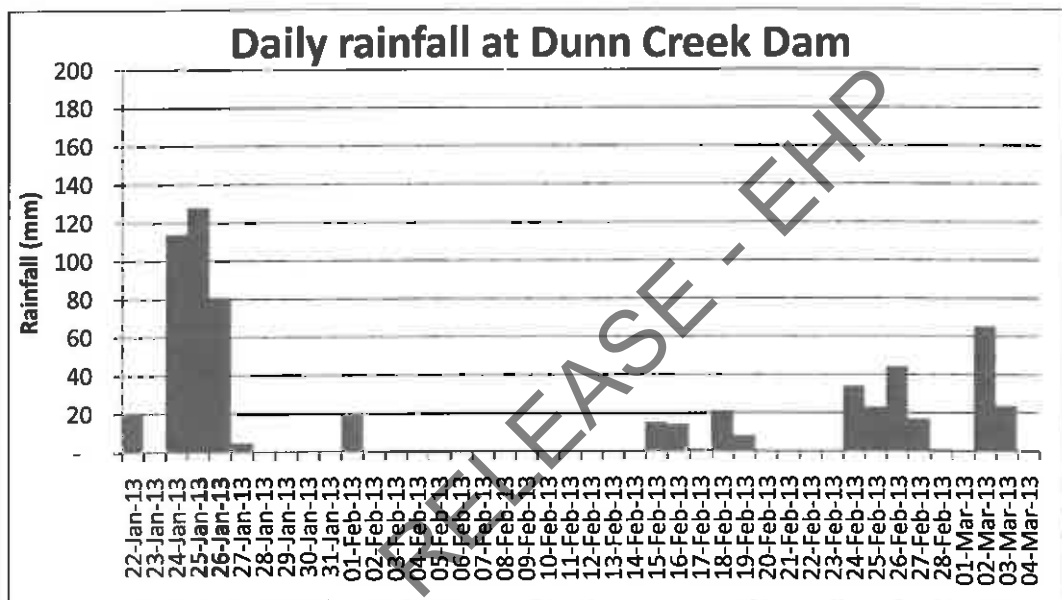


Figure 1 Rainfall data for Dunn Creek Dam

3.2 The location of the release

Water was released from the Dunn Creek Dam spillway at the Dunn Creek mining area, please refer to Figure 2. This is Dunn Creek Dam's authorised discharge location as described under EA MIN 100507307 is located at Latitude (GDA94) -24.3237 and Longitude (GDA94) 150.6695, please refer to Figure 2.

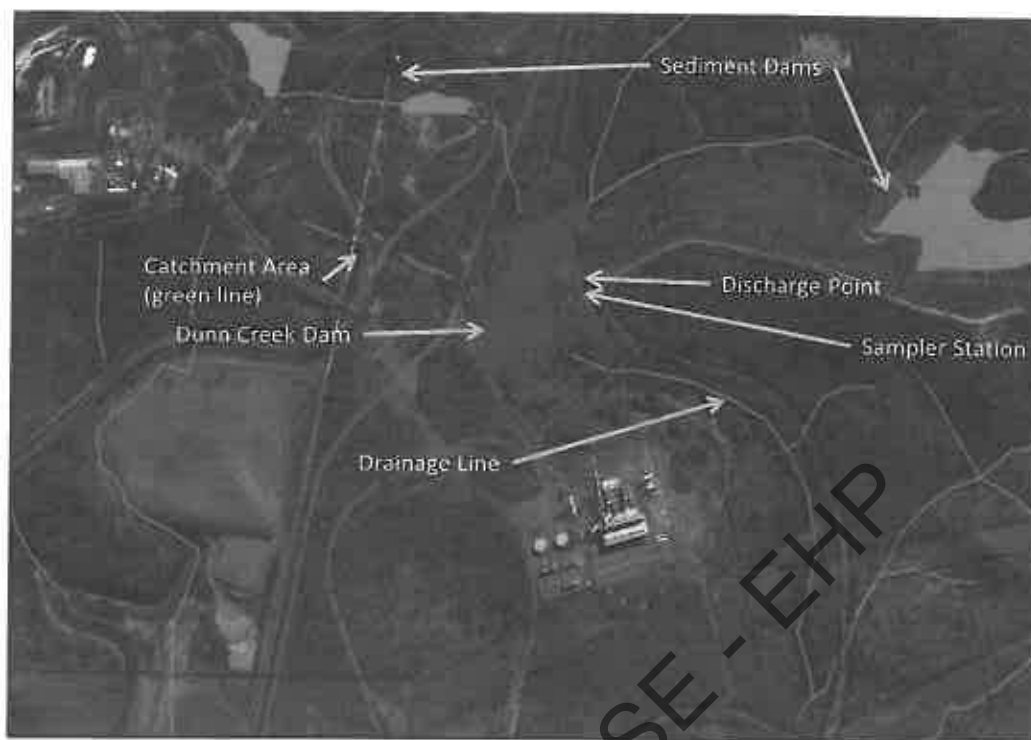


Figure 2. Dunn Creek Dam – Site Layout

3.3 Water quality monitoring results

- **Discharge Waters (Dunn Creek Dam)**

This discharge occurred between the dates of the 19th February 2013 to the 21st April 2013. Monitoring has occurred daily at 10 minute intervals at the Dunn Creek Dam automated sample station which also takes samples during flow events. In addition, in-situ sampling was completed daily as soon as Callide Mine staff notified Bureau Veritas and Wes Pitt contractors of the need to commence sampling.

A summary of the water quality results pursuant to EA MIN100507307 Table W2 Part A - Contaminant Release Limits – Dunn Creek Dam and Table W3 - Release Contaminant Trigger Investigation Levels is provided in Appendix 1.

- **Receiving waters (Callide Dam)**

Please refer to Appendix 2 for all water monitoring results from Callide Dam for the periods of February to April prepared by Bureau Veritas and SGS Australia.

- **Summary of Release Contaminant Trigger Investigation Levels**

Aluminium, Copper, Zinc, Chromium, Iron and Cobalt were the contaminants that triggered 2(b) of condition W6 and there were two pH results that triggered Part 2 of condition W20. An investigation will be conducted into these results and will be provided as soon as the investigation is completed by the consultant. The table in Appendix 3 summarises the physical water quality results for the release point, downstream and upstream monitoring points relating specifically to condition W6.

3.4 General observations and 3.6 any other matters pertinent to the water release event

On-going inspections during the discharge period did not yield evidence of turbidity, or any form of erosion or sedimentation from the discharge event.

3.5 Calculations

The discharge monitoring stations installed at the discharge point allows Callide Mine to collect and compare data with the receiving waters data to monitor compliance with the EA Conditions. The volume of water that was released from Dunn Creek Dam during the period 19/02/2013 – 21/04/2013 was approximately 271ML.

Please refer to Appendix 4 for the daily discharge and receiving flow volumes. Calculations will be provided to DEHP upon request.

Yours Sincerely

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4.0 Appendices

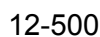
4.1 Appendix 1 – Dunn Creek Dam Release Water Quality Results

Analyte Name	Units	Sample Date	Sample Time	Table W2 & W4 Trigger	Result	19/02/2013	21/02/2013	22/02/2013	23/02/2013	24/02/2013	25/02/2013	26/02/2013	27/02/2013	28/02/2013	19/03/2013	20/03/2013	30/03/2013
pH	pH Units					7.1	6.9	7.7	7.4	7.8	7.8	8.0	7.7	7.6	7.6	7.8	8.2
EC @ 25 C	µS/cm					1400	1280	1280	1300	1340	1280	1170	1050	1040	1060	870	710
Turbidity	NTU					4	180	37	38	11	64	94	150	310	48	180	530
TSS	mg/L					5	80	19	15	6	33	45	80	140	100	190	250
Sulphate, SO4	mg/L					260	250	270	270	280	250	240	200	210	200	150	120

Analyte Name	Units	Sample Date	Sample Time	Table W2 & W4 Trigger	Result	01/03/2013	02/03/2013	03/03/2013	04/03/2013	05/03/2013	06/03/2013	07/03/2013	08/03/2013	09/03/2013	10/03/2013	11/03/2013	12/03/2013	13/03/2013	14/03/2013	15/03/2013	16/03/2013
pH	pH Units					7.7	7.8	7.6	7.7	7.8	7.8	7.9	7.9	7.7	7.7	7.7	7.9	7.8	7.8	7.8	7.7
EC @ 25 C	µS/cm					1400	1110	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
Turbidity	NTU					200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
TSS	mg/L					210	160	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Sulphate, SO4	mg/L					140	160	200	200	200	200	200	200	200	200	200	200	200	200	200	200

Analyte Name	Units	Sample Date	Sample Time	Table W2 & W4 Trigger	Result	17/03/2013	18/03/2013	19/03/2013	20/03/2013	21/03/2013	22/03/2013	23/03/2013	24/03/2013	25/03/2013	26/03/2013	27/03/2013	28/03/2013	29/03/2013
pH	pH Units					7.8	7.7	7.7	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.7	7.6	7.5
EC @ 25 C	µS/cm					1200	1200	1200	1100	1100	1200	1200	1200	1200	1200	1200	1300	1200
Turbidity	NTU					23	21	25	25	26	55	10	15	5.2	8.1	3.7	4.8	3.5
TSS	mg/L					230	18	22	22	24	36	9	8	<5	6	<5	<5	<5
Sulphate, SO4	mg/L					280	270	250	250	270	290	290	290	290	290	290	290	290

Analyte Name	Units	Sample Date	Sample Time	Table W2 & W4 Trigger	Result	30/03/2013	31/03/2013	01/04/2013	02/04/2013	03/04/2013	04/04/2013	05/04/2013	06/04/2013	07/04/2013	08/04/2013	09/04/2013	10/04/2013	11/04/2013
pH	pH Units					7.6	7.6	7.6	7.6	7.5	7.6	7.6	7.7	7.7	7.7	7.5	7.6	7.5
EC @ 25 C	µS/cm					1200	1200	1200	1100	1100	1200	1200	1200	1200	1200	1200	1200	1200
Turbidity	NTU					8.5	7.9	57	15	15	16	15	15	8.8	7.9	4.7	6.9	8.9
TSS	mg/L					5	6	31	<5	8	12	12	8	7	6	<5	<5	13
Sulphate, SO4	mg/L					290	290	280	280	280	280	280	280	290	280	280	300	290

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Total Mercury	mg/L	0.0002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium, Na	mg/L	180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Sodium	mg/L	180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrate Nitrogen	mg/L	1.1	<0.005	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0

4.2 Appendix 2 - Callide Dam Water Quality Results

Sample Date	Sample Time	Table Trigger	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
25/02/2013	13:00	W7	pH	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
			pH Units	6.5-8.0	6.5	7.6	7.3	8.0	8.5	7.6	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
			EC @ 25 C	1150	160	140	190	200	150	200	140	180	180	180	180	180	180	180	180
			TSS	1000	110	90	62	57	85	65	78	120	200	77	100	100	100	100	100
			Sulphate, SO4	mg/L	250	5	5	6	6	5	4	5	5	5	4	5	4	4	3

Sample Date	Sample Time	Table Trigger	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
5/03/2013	10:15	W7	pH	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
			pH Units	6.5-8.0	7.8	8.1	7.9	7.5	7.9	7.8	7.4	7.5	7.3	7.4	7.4	7.4	7.4	7.4	7.4
			EC @ 25 C	1150	160	180	150	160	210	180	170	160	160	170	170	170	170	170	170
			TSS	1000	120	70	110	85	88	85	34	120	30	31	17	18	17	18	18
			Sulphate, SO4	mg/L	250	5	4	5	5	5	5	5	5	5	5	5	5	5	5

Sample Date	Sample Time	Table Trigger	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
18/03/2013	08:55	W7	pH	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
			pH Units	6.5-8.0	7.8	7.4	7.4	7.0	7.3	7.2	7.6	7.8	7.7	7.7	7.2	7.1	7.1	7.5	7.5
			EC @ 25 C	1150	160	170	180	170	180	180	180	180	180	180	190	200	190	190	190
			TSS	1000	80	230	86	96	27	27	34	26	20	25	23	19	16	16	16
			Sulphate, SO4	mg/L	250	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Sample Date	Sample Time	Table Trigger	Units	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
31/03/2013	06:39	W7	pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
			pH Units	6.5-8.0	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
			EC @ 25 C	1150	190	180	190	190	190	190	190	190	190	190	190	190	190	190	190
			TSS	1000	17	10	17	12	21	50	24	13	18	14	27	42	23	23	23
			Sulphate, SO4	mg/L	250	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Sample Date	13/04/2013	14/04/2013	15/04/2013	18/04/2013	17/04/2013	18/04/2013	19/04/2013	20/04/2013	21/04/2013
Sample Time	06:27	06:43	06:24	06:35	06:45	07:00	06:47		
Table W7									
Analyte Name	Units	Result	Result	Result	Result	Result	Result	Result	Result
pH	6.5-8.0	7.6	7.6	7.7	7.5	7.6	7.9	7.7	7.4
EC @ 25 C	µS/cm	190	190	190	200	200	200	210	210
TSS	mg/L	20	19	20	13	15	13	16	14
Sulphate, SO4	mg/L	250	6	6	6	7	7	7	7

4.3 Appendix 3 - Trigger Level Analysis

Parameter	Aluminium, µg/L	Total Aluminium							Copper, µg/L
Unit	µg/L	µg/L							µg/L
Trigger Level	55	155							2
Date	7/03/2013	14/03/2013	25/02/2013	7/03/2013	25/03/2013	4/04/2013	11/04/2013	18/04/2013	28/04/2013
RP Result	89	98	52	140	280	66	110	140	3
Downstream MP	1600	140	1900	1900	2900	4200	3500	2900	3
Upstream MP	120	12	400	350	110	19	20	13	1

Parameter	Unit	Total Copper							21/03/2013			
Trigger Level	µg/L	2							2			
Date		19/02/2013	20/02/2013	20/03/2013	14/04/2013	21/03/2013	14/03/2013	4/04/2013	11/04/2013	18/04/2013	7/03/2013	4/04/2013
RP Result		3	11	6	6	3	3	3	3	3	20	2
Downstream MP		5	6	7	5	5	5	5	5	5	21	2
Upstream MP		<1	5	<1	3	<1	2	4	4	4	6	2

Parameter	Total Zinc µg/L								Total Chromium µg/L			
Unit												
Trigger Level	5								1			
Date	2/03/2013	7/03/2013	14/03/2013	21/03/2013	28/03/2013	4/04/2013	11/04/2013	18/04/2013	21/03/2013	28/03/2013	4/04/2013	
RP Result	24	22	38	62	44	71	81		7	2	3	
Downstream MP	10	11	17	11	11	13	7		2	3	3	
Upstream MP	7	<1	10	5	5	6	<1		0	<1	1	

Parameter	Total Iron						Total Cobalt
Unit	µg/L						µg/L
Trigger Level	300						14
Date	7/03/2013	21/03/2013	28/03/2013	4/04/2013	11/04/2013	18/04/2013	7/03/2013
RP Result	330	630	420	340	340	560	5
Downstream MP	3400	3500	3500	3100	3400	2300	2
Upstream MP	110	780	750	600	560	1000	4

28 days Report
For
Dunn Creek Dam release
– Ex-tropical cyclone Oswald –
January-February 2013

Submitted by:

Anglo Coal (Callide Management) Pty Ltd
On behalf of the holders of the EA MIN100507307
Anglo Coal (Callide) Pty Ltd and Anglo Coal (Callide) No. 2 Pty Limited
PO Box 144
BILOELA QLD 4715

Dated:

15th March 2013

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1.0 Background

This report has been prepared in accordance with conditions W14 and W16 of Environmental Authority MIN100507307 and relates directly to the passive releases of water from Dunn Creek Dam, as described in our Notification of Release Event dated 25th January 2013 and Notification of Cessation of Flow dated 16th February 2013.

On 14 December 2012, Callide Mine received an amended environmental authority from the Department of Environment and Heritage Protection (EHP), making significant changes to water release conditions. Accordingly, on 14 December 2012, Callide Mine discussed with John Frankish of EHP that, given our EA amendment was issued at a time which did not allow us to install some parts of the relevant infrastructure before the commencement of the wet season, this would need to be taken into consideration on an interim basis for the current wet season. In reliance on that discussion, Callide Mine did not seek review or appeal of the amended conditions so as to include an interim condition for the current wet season. Of particular relevance to Dunn Creek Dam, our EA amendment application dated 28 May 2012 included a proposal for transfer of water from this dam (which is located above Callide Dam), via the new Trap Gully pipeline to a new Trap Gully release point, which is a controlled release point, into the less sensitive receiving environment of Oaky Creek. Due to the fact that the EA amendment was not granted until mid-December, there was insufficient time to complete the associated infrastructure for the new Trap Gully release point before ex-cyclone Oswald and there were also physical access problems associated with a new monitoring location on timber reserve land for the Trap Gully release point.

The authorised flow gauge for monitoring receiving water flow for Dunn Creek Dam, located at the Callide Dam headwaters, was damaged by ex-cyclone Oswald. As discussed with EHP, we used representative data provided by SunWater. This meant that there was a slight delay between when threshold flow in receiving waters ceased and when Callide Mine became aware of that situation.

Water quality was generally very good, but there was a gap between when threshold flow in receiving waters had ceased and when passive flow from Dunn Creek Dam ceased, notwithstanding pumping out of Dunn Creek Dam to an interim storage location while we worked to finalise the infrastructure to operate our controlled release point from the Trap Gully pipeline.

2.0 28 Day Cessation Report Information (W14)

2.1 Release cessation date/time

This release from Dunn Creek Dam ceased at 6:00am on the 16th February 2013.

2.2 Natural flow volume in receiving water

As previously discussed with EHP, it was impossible to obtain data for natural flow volume in the receiving water in accordance with the monitoring requirements under Callide Mine's EA (Table W4 Part A). The flow gauging station for Dunn Creek Dam, located at the Callide Dam headwaters, was damaged as a result of flooding caused by ex-cyclone Oswald and was not

capable of recording flow volumes for receiving waters, so Callide Mine has been relying on representative flow data provided by SunWater until the flow gauging station is able to be repaired or replaced. EHP confirmed (in an email from Kylie Dunlop dated Friday 8th March), that it was accepted by EHP that SunWater gauging station data was to be used for receiving flow data as an interim measure. In addition, Callide Mine provided photographs to EHP demonstrating the high natural flow caused by ex-cyclone Oswald. All receiving flow data has been obtained from the SunWater gauging station from the Callide Dam Headwaters. This data is set out in Attachment 1 and Attachment 2.

In summary, this data indicates that the minimum flow in receiving waters of 1.5m³/sec would have been met for the period from before commencement of passive flow from Dunn Creek Dam until Sunday afternoon 3 February 2013. Callide Mine only became aware that the minimum flow threshold was no longer available when Callide Mine received an update from SunWater at 10.20am on Monday 4 February 2013.

2.3 Volume of water released

Interim updates have been provided to EHP about volumes of releases. Callide Mine now has available data on the total volume of water released from Dunn Creek Dam. The total amount of water released from Dunn Creek Dam during the period 25 January to 16 February 2013 was 249,910m³. Calculations of total flow are provided in Attachment 1. Due to what appears to have been a typographical error in the amended EA issued on 14 December 2012, there is currently no release limit for Dunn Creek Dam in terms of volumes of releases. Callide Mine's EA amendment application dated 28 May 2012 did not seek to change the existing release limit for Dunn Creek Dam, which used to be a flow rate not exceeding 20% of receiving water flow rate, but in fact that limit was deleted on 14 December 2012.

Callide Mine has raised with EHP (twice in January 2012) that we had a concern that there appeared to be numerous typographical or clerical errors in the amended EA relating to release parameters, not reflecting what had earlier been proposed by AERDS and accepted by Callide Mine, but in the case of errors for release parameters, EHP has declined to make those corrections by agreement and has advised Callide Mine to lodge a fresh EA amendment application to correct the errors. Callide Mine intends to lodge that application shortly.

2.4 Details regarding compliance of the release

Previous updates have been provided to EHP about compliance with EA parameters. The two exceedances/non-compliances below were notified to EHP on the 27th February 2013.

1. Exceedance of Condition W4

There have been minor exceedances for some water quality parameters. During first flush from Dunn Creek Dam, while ex-tropical cyclone Oswald was passing through the region, there were minor 'spikes' for suspended solids and EC. After that, water quality remained of high quality while threshold flows remained in receiving waters. After receiving waters had dropped back to low flow, there was a period when water quality deteriorated slightly, that is, with spikes up to 1530 EC. That is obviously still reasonably good water quality compared

with normal limits for other mines, but it was above Callide Mine's authorised limit for this release point. It would not have happened if Callide Mine had an opportunity to finalise infrastructure for the Trap Gully pipeline in time for the 2012-13 wet season, which we did not have a reasonable opportunity to do because of the EA amendment only having been approved on 14 December 2012.

The attached results from the sampling agency are still 'preliminary' and have not yet been formally certified, but Bureau Veritas was reasonably confident of the results. Callide Mine was unable to use continuous monitoring results because the sensors for the equipment became contaminated (silted up) and was unable to be accessed for maintenance as a result of ex-cyclone Oswald.

2. Non-compliance with Condition W9

With the stream flow gauging station having been damaged, representative flow data was being obtained from SunWater. The threshold flow for receiving waters dropped below 1.5m³/s at about 4pm on Sunday 4pm. Callide Mine became aware of this at about 10.20am on Monday 4 February, upon receiving the data from SunWater.

On that day, we immediately directed employees to direct any in-flows away from Dunn Creek Dam. Within about a day after that, pumping commenced from Dunn Creek Dam to a reserve storage known as East Dam, but this was not enough to prevent passive flows from Dunn Creek Dam. Pumping to East Dam was only an interim measure while Callide Mine worked on trying to set up a transfer from Dunn Creek Dam to the controlled release point via the Trap Gully pipeline. Pumping to the Trap Gully pipeline from Dunn Creek Dam had commenced by Friday 8 February 2013, but Callide Mine was still not able to commence pumping from the Trap Gully release point at that time because of lack of safe access (as a result of conditions caused by ex-cyclone Oswald) to be able to complete the work required to enable controlled releases from the Trap Gully pipeline until shortly after that, by which time Oaky Creek had dropped back to low flow. Fortunately, further heavy rainfall was then received, raising receiving water flow above the medium threshold in Oaky Creek and allowing controlled releases to commence from the Trap Gully pipeline on 20 February 2013.

This situation would not have occurred if our EA amendment application dated 28 May 2012 had been approved earlier than mid-December 2012, because we would then have had the infrastructure already in place to direct water from Dunn Creek Dam immediately to the controlled Trap Gully release point.

2.5 In-situ water quality monitoring results

Preliminary results have been provided of which the trigger level analysis has been completed. Preliminary water quality data is provided in Appendix 1. Finalised water quality results are yet to be received from the NATA accredited sampling agency, Bureau Veritas (BV). With the recent release events it has proven difficult for these results to be quickly available due to the high volume of water quality sampling occurring across the region post the 2013 wet weather events. Once the finalised results have been received they will be provided in full and with trigger level analysis completed. BV have supplied a written explanation as to why these results were not able to be supplied within the standard 28 day timeframe (Attachment 3).

2.6 Any other matters pertinent to the water release event

Callide Mine has provided a series of interim updates about the context and management steps taken in relation to this release.

As outlined above, it is suggested that the following issues were of particular relevance to the release event:

- The release was caused by an ex-tropical cyclone, involving unprecedented rainfall and flooding in the area and leading to damage to equipment and safety problems in terms of physical access;
- In preparation for the wet season, Callide Mine had reduced the water level in Dunn Creek Dam to about 20%, to try to maximise freeboard. Capacity had also been created in the nearby interim storage dam, East Dam, in preparation for the wet season.
- Water quality was generally very good, but deteriorated slightly towards the end of the passive releases, apparently due to passive overflow from another dam upstream (Lake McCauley).
- There was no restriction on the volume of releases from Dunn Creek Dam, apparently due to a typographical error in the amended EA issued 14 December 2012.
- Releases from Dunn Creek Dam after the threshold flow in receiving waters had dropped to low flow would not have happened if our amended EA could have been issued earlier than mid-December 2012. The fact that this timing was likely to be an issue for this wet season, particularly in terms of the infrastructure for the new controlled release points, was a topic that was raised with John Frankish of EHP on 14 December 2012.

3.0 28 Day Exceedance Report Information (W16)

3.1 The reason for the release

During the Australia Day long weekend (24th January 2012 to the 27th January 2013) Callide Mine and the Callide Valley in general received unprecedented rainfall from ex-tropical cyclone Oswald. During the period Dunn Creek Dam commenced passive flow release of a combination of mine affected and non-mine affected waters from the nominated release point (RP Dunn Creek Dam). Notification of the event was sent to EHP on the 25th January 2013 and cessation notice of the event was sent on the 18th February 2013.

In preparation for the 2012-2013 wet season, Dunn Creek Dam was lowered to a capacity of approximately 20%. However, due to the large amount of rainfall, the dam reached 100% and began discharging, at a time when receiving waters had reached the minimum natural flow threshold. The water that was released from Dunn Creek Dam during this period was a direct result of rainfall and overland flow from the surrounding terrain. Figure 1 below shows rainfall events for January and February 2013, as measured at the Dunn Creek Dam monitoring station.

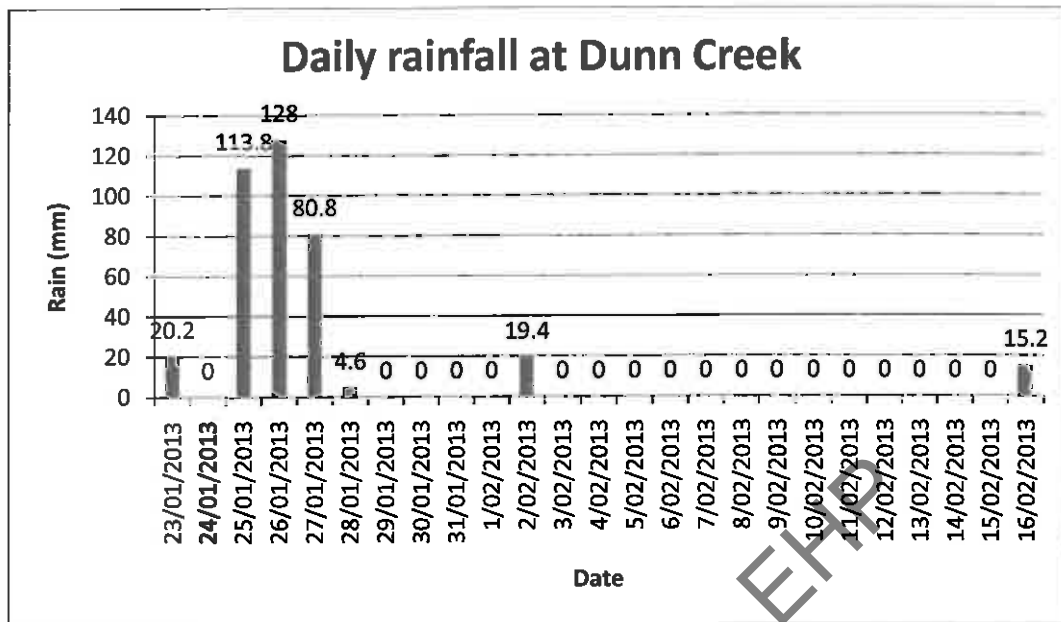


Figure 1 Rainfall data for Dunn Creek Dam

3.2 The location of the release

Water was released from the Dunn Creek Dam spillway at the Dunn Creek mining area, please refer to Figure 2. This is Dunn Creek Dam's authorised discharge location as described under EA MIN 100507307 is located at Latitude (GDA94) - 24.3237 and Longitude (GDA94) 150.6695, please refer to Figure 2.

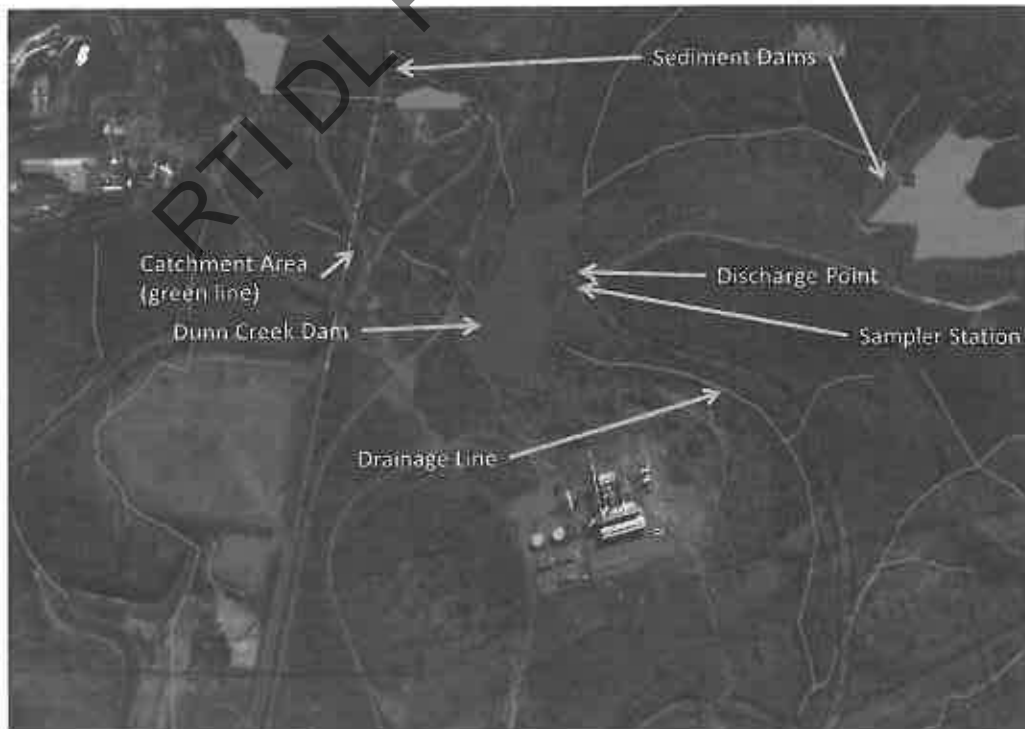


Figure 2. Dunn Creek Dam – Site Layout

3.3 Water quality monitoring results

- **Discharge Waters (Dunn Creek Dam)**

This discharge occurred between the dates of the 25th January 2013 to the 16th February 2013. Monitoring has occurred daily at 10 minute intervals at the Dunn Creek Dam automated sample station which also takes samples during flow events. In addition, in-situ sampling was completed by Bureau Veritas daily as soon as Callide Mine staff notified the Bureau Veritas of the need to commence sampling.

A summary of the water quality results pursuant to EA MIN100507307 Table W2 Part A - Contaminant Release Limits – Dunn Creek Dam and Table W3 - Release Contaminant Trigger Investigation Levels is provided in Appendix 1.

- **Receiving waters (Callide Dam)**

Please refer to Appendix 2 for all water monitoring results from Callide Dam for the periods of January and February prepared by Bureau Veritas.

- **Summary of Release Contaminant Trigger Investigation Levels**

Aluminium was the only contaminant that triggered 2(b) of condition W6 and there were two pH results that triggered Part 2 of condition W20. An investigation will be conducted into these results and will be provided in the next Annual Return. The below table summarises the physical water quality results for the release point, downstream and upstream monitoring points relating specifically to condition W6 (Table W3) and W20 (Table W7).

Table 1 Dunn Creek Dam Water Quality Release Contaminant Trigger Investigation Levels

	4/02/2013	8/02/2013	14/02/2013
	Aluminium	pH	pH
Release Limit	8 (Table W3)	6.5-8 (Table W7)	6.5-8 (Table W7)
Release point	920		
Downstream	55	8.3	8.1
Upstream	320	7.7	7.8

3.4 General observations and 3.6 any other matters pertinent to the water release event

On-going inspections during the discharge period did not yield evidence of turbidity, or any form of erosion or sedimentation from the discharge event.

3.5 Calculations

The automatic sampler stations installed at the discharge point allows Callide Mine to collect and compare data with the receiving waters data to monitor compliance with the EA Conditions. The volume of water that was released from Dunn Creek Dam during the period 25/01/2013 – 16/02/2013 was approximately 254,910 m³/s.

Please refer to Attachment 1 for the daily discharge volume break downs. The attachment also includes following:



- All calculations
- Average
- Maximum
- Sum/totals

Yours Sincerely

49-Sch4

John McDougall

Environmental Superintendent

T: (07) 4990 1840

E: John.McDougall@angloamerican.com.au

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RTI DL RELEASE - EHP



Dunn Creek Dam Release Preliminary Water Quality Results

[illegible]

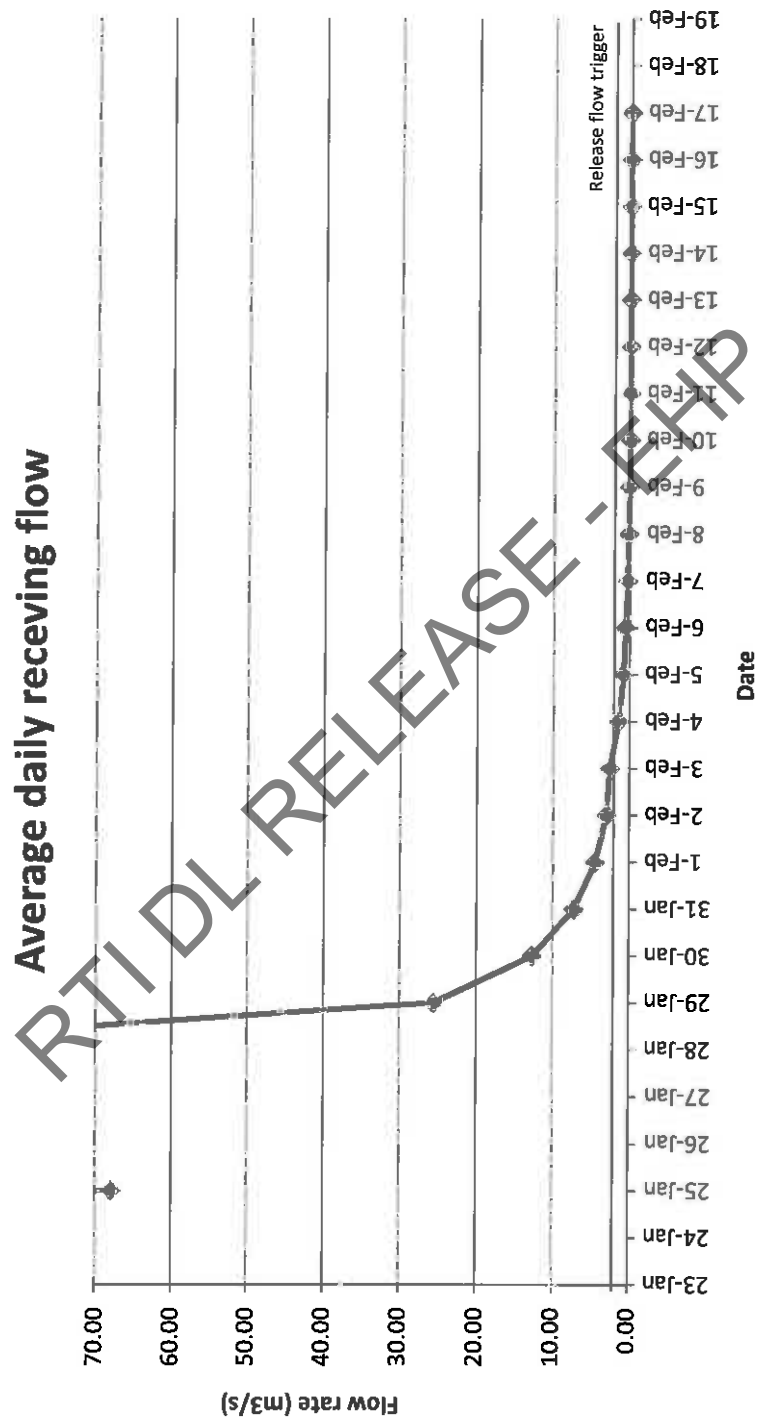


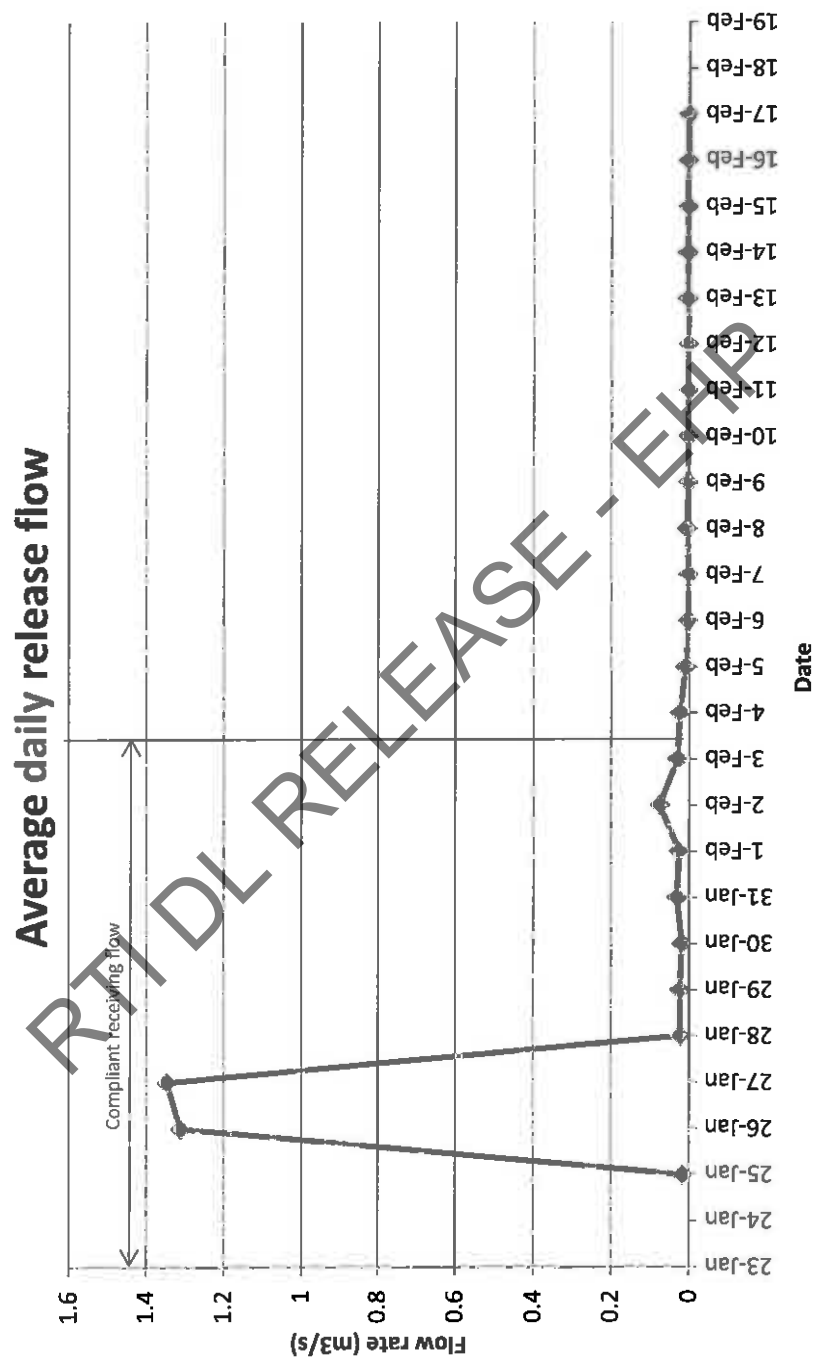
16	37	18	11	24	10	12
6	27	7	<5	14	9	8
300	850	820	850	930	860	940
310	230	300	310	300	300	310
120	200	190	41	48	7	<5
				<10		
				230		
				<0.1		
				<1		
				<1		
				1		
				<10		
				<1		
				<5		
				<0.05		
				7		
				1		
				<1*		
				<0.5		
				1		
				2		
				40		
				200		
				<0.1		
				<1		
				<1		
				1		
				25		
				<1		

Appendix 2
Callide Dam Preliminary Water Quality Results

Sample ID		Units	Table W7 Trigger Level	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam
Date Sampled			25/01/2013	26/01/2013	27/01/2013	28/01/2013	29/01/2013	30/01/2013	31/01/2013	1/02/2013	2/02/2013	3/02/2013	4/02/2013
Time Sampled			9:20	-	12:45	12:35	12:40	12:00	12:50	12:30	11:50	15:20	09:20
Sample type (grab sample/ sample bottle)			Grab	Road Closed due	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Water status (flowing/pooled/no flow)			Flowing	to flood	Flowing	Flowing	Flowing	Flowing	Flowing	Flowing	Flowing	Not Flowing / Pool	Not Flowing / Pool
pH			6.5-8.0	-	7.8	7.8	7.5	7.5	7.8	7.9	7.5	7.1	7.8
Conductivity		uS/cm	1150	300	-	150	90	110	120	180	150	150	160
Turbidity		NTU	N/A	270	-	560	730	470	880	160	160	230	140
Total Suspended Solids		mg/L	1000	260	-	77	310	34	320	71	140	130	62
Total Dissolved Solids		mg/L	N/A	160	-	160	190	150	150	150	130	120	140
Sulphate		mg/L	250	7	-	5	5	6	8	5	5	5	3

Sample ID	Units	Table W7 Trigger Level	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam	Callide Dam
Date Sampled			5/02/2013	08:15	08:15	08:15	08:15	08:15	08:15
Time Sampled			08:15	08:15	08:15	08:15	08:15	08:15	08:15
Sample type (grab sampler/sample bottle)			Grab	Not Flowing / Pool	Grab	Not Flowing / Pool	Grab	Not Flowing / Pool	Grab
Water status (flowing/cooled/no flow)			Grab	Not Flowing / Pool	Grab	Not Flowing / Pool	Grab	Not Flowing / Pool	Grab
pH		6.5-9.0	7.8	150	7.8	150	7.8	150	7.8
Conductivity	uS/cm	1150	160	160	160	160	160	160	160
Turbidity	NTU	N/A	160	160	160	160	160	160	160
Total Suspended Solids	mg/L	1000	71	69	110	59	57	51	79
Total Dissolved Solids	mg/L	N/A	120	130	130	140	170	160	150
Sulphate	mg/L	250	6	6	5	5	5	5	5







**BUREAU
VERITAS**

15th March 2013

Mr Brenton Wagner
Environmental Officer
Anglo American Metallurgical Coal (Callide Management)
PO Box 144
Biloela, QLD 4715

Dear Brenton,

In regard to your enquiry regarding the delay in reporting water analysis:

Samples for the sites and dates that were requested in your email on the 7/03/13 had been despatched previously, with the last sample batch being sent on 27/02/13.

We received a sample receipt advice for this batch with an expected reporting date of 12/03/13. We received the preliminary report containing the physical results on 8/03/13 and Ellen Mathieson issued this to Callide as preliminary report number 2 on 11/03/13 with the advice that the checked results would be available as a final once received from the external laboratory after the sample identification issue was resolved. Ellen had requested some verification of results and a check of a sample identification that was used twice on the report. The final report for this was received after COB on 13/03/13 and Ellen had then checked the final report results against the preliminary results and issued preliminary report number 3.

The root cause for the delayed report was the delay in receiving the final, vetted report from the testing laboratory with the correct sample identification.

Regards,

49-Sch4

Michael Armstrong
Business Unit Manager
Gladstone and Biloela Laboratories
Bureau Veritas International Trade

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Date	Time	Flow (ML/day)	Flow (m3/s)
24/01/2013	9:00:00	0.2	0.00
24/01/2013	10:00:00	0.3	0.00
24/01/2013	11:00:00	0.4	0.00
24/01/2013	12:00:00	0.4	0.00
24/01/2013	13:00:00	0.4	0.00
24/01/2013	14:00:00	0.3	0.00
24/01/2013	15:00:00	0.3	0.00
24/01/2013	16:00:00	0.5	0.01
24/01/2013	17:00:00	0.8	0.01
24/01/2013	18:00:00	1	0.01
24/01/2013	19:00:00	1	0.01
24/01/2013	20:00:00	1.3	0.02
24/01/2013	21:00:00	1.7	0.02
24/01/2013	22:00:00	2.3	0.03
24/01/2013	23:00:00	2.7	0.03
25/01/2013	0:00:00	2.6	0.03
25/01/2013	1:00:00	2.3	0.03
25/01/2013	2:00:00	320	3.70
25/01/2013	2:15:00	2104.1	24.35
25/01/2013	2:30:00	3729.1	43.16
25/01/2013	2:45:00	5135	60.01
25/01/2013	3:00:00	6045	69.97
25/01/2013	3:30:00	6241.1	72.23
25/01/2013	3:45:00	6636.6	76.81
25/01/2013	4:00:00	6397.4	74.04
25/01/2013	4:30:00	6198.1	71.74
25/01/2013	5:00:00	5803.5	67.17
25/01/2013	5:15:00	5472.8	63.34
25/01/2013	6:00:00	5927.6	68.61
25/01/2013	6:15:00	7739.9	89.58
25/01/2013	6:30:00	10788.8	124.81
25/01/2013	6:45:00	12755.5	147.63
25/01/2013	7:00:00	15732.8	182.09
25/01/2013	7:15:00	18337	212.23
25/01/2013	7:30:00	19322.7	223.64
25/01/2013	7:45:00	20602.2	238.45
25/01/2013	8:00:00	20770.6	240.40
25/01/2013	8:30:00	21147.9	244.77
25/01/2013	8:45:00	21414.7	247.86
25/01/2013	9:00:00	21896.5	253.43
25/01/2013	9:30:00	22169.3	256.59
25/01/2013	10:00:00	22464.1	260.00
25/01/2013	10:15:00	23101.3	267.38
25/01/2013	10:45:00	23832	275.83
25/01/2013	11:00:00	26419.3	305.78
25/01/2013	11:15:00	28325	327.84
25/01/2013	11:30:00	30150.2	348.96
25/01/2013	11:45:00	31876.2	368.94
25/01/2013	12:00:00	33973.5	393.21
25/01/2013	12:15:00	36454.2	421.92
25/01/2013	12:30:00	39332.1	455.23

25/01/2013	12.45.00	41232.5	477.23
25/01/2013	13.00.00	43523.5	503.74
25/01/2013	13.30.00	54763.4	633.84
25/01/2013	13.45.00	62619.2	724.76
25/01/2013	14.00.00	71336.1	825.65
25/01/2013	14.15.00	75729.4	876.50
25/01/2013	14.30.00	78800.7	912.05
25/01/2013	14.45.00	82664.6	956.77
25/01/2013	15.00.00	85003.9	983.84
25/01/2013	15.15.00	85959.3	994.90
25/01/2013	15.30.00	87751.8	1015.65
25/01/2013	16.00.00	88135.2	1020.08
25/01/2013	16.15.00	87908.6	1017.46
25/01/2013	16.45.00	87142.2	1008.59
25/01/2013	17.00.00	87281.5	1010.20
25/01/2013	17.15.00	86620.1	1002.55
25/01/2013	17.30.00	85594.3	990.67
25/01/2013	17.45.00	84483.4	977.82
25/01/2013	18.00.00	83166.4	962.57
25/01/2013	18.15.00	81713.8	945.76
25/01/2013	18.30.00	80298.7	929.38
25/01/2013	19.00.00	79902.4	924.80
25/01/2013	19.15.00	79437.4	919.41
25/01/2013	19.30.00	78972.7	914.04
25/01/2013	19.45.00	79179.2	916.43
25/01/2013	20.00.00	79695.7	922.40
25/01/2013	20.15.00	80954.1	936.97
25/01/2013	20.30.00	81420.2	942.86
25/01/2013	20.45.00	82820.3	958.57
25/01/2013	21.00.00	82820.3	958.57
25/01/2013	21.15.00	83772.6	969.59
25/01/2013	21.30.00	84674.2	980.03
25/01/2013	22.00.00	85281.7	987.06
25/01/2013	22.30.00	84726.3	980.63
25/01/2013	22.45.00	83651.3	968.19
25/01/2013	23.00.00	82578.1	955.77
25/01/2013	23.15.00	82266.8	952.16
25/01/2013	23.30.00	80936.9	936.77
26/01/2013	0.00.00	80695.3	933.97
26/01/2013	0.15.00	81005.9	937.57
26/01/2013	0.30.00	81679.2	945.36
26/01/2013	0.45.00	82353.3	953.16
26/01/2013	1.00.00	82405.1	953.76
26/01/2013	1.15.00	81454.7	942.76
26/01/2013	1.30.00	81144	939.17
26/01/2013	1.45.00	78766.3	911.65
26/01/2013	2.00.00	77271.8	894.35
26/01/2013	2.15.00	75472.7	873.53
26/01/2013	2.30.00	72089	834.36
26/01/2013	2.45.00	67648.2	782.97
26/01/2013	3.00.00	63427	734.11
26/01/2013	3.15.00	59974.4	694.15
26/01/2013	3.30.00	56359	652.30

26/01/2013	3.45.00	55468.9	642.00
26/01/2013	4.00.00	52101.6	603.03
26/01/2013	4.15.00	49722.7	575.49
26/01/2013	4.30.00	51796.1	599.49
26/01/2013	4.45.00	51222.1	592.85
26/01/2013	5.00.00	53335.4	617.31
26/01/2013	5.15.00	58679.6	679.16
26/01/2013	5.30.00	66486.7	769.52
26/01/2013	5.45.00	74720.3	864.82
26/01/2013	6.00.00	77340.4	895.14
26/01/2013	6.15.00	80816.1	935.37
26/01/2013	6.30.00	85455.4	989.07
26/01/2013	6.45.00	95561.1	1106.03
26/01/2013	7.00.00	107485.9	1244.05
26/01/2013	7.15.00	117415.1	1358.97
26/01/2013	7.30.00	121089.5	1401.50
26/01/2013	8.00.00	119860.5	1387.27
26/01/2013	8.15.00	116893.2	1352.93
26/01/2013	8.30.00	115208.6	1333.43
26/01/2013	8.45.00	112942.2	1307.20
26/01/2013	9.00.00	108381.1	1254.41
26/01/2013	9.15.00	104503.7	1209.53
26/01/2013	9.30.00	101952.6	1180.01
26/01/2013	9.45.00	99822.8	1155.36
26/01/2013	10.00.00	98246.8	1137.12
26/01/2013	10.15.00	99964.3	1156.99
26/01/2013	10.30.00	106520.9	1232.88
26/01/2013	10.45.00	110861.3	1283.12
26/01/2013	11.00.00	115208.6	1333.43
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26/01/2013	11.30.00	124673.8	1442.98
26/01/2013	11.45.00	128010.7	1481.61
26/01/2013	12.45.00	129445.9	1498.22
26/01/2013	13.00.00	118511	1371.66
26/01/2013	13.15.00	116297.7	1346.04
26/01/2013	13.30.00	115109.7	1332.29
26/01/2013	13.45.00	114517.3	1325.43
26/01/2013	14.00.00	111154.3	1286.51
26/01/2013	14.15.00	107630.9	1245.73
26/01/2013	14.30.00	103428.3	1197.09
26/01/2013	14.45.00	96585.8	1117.89
26/01/2013	15.00.00	89810.8	1039.48
26/01/2013	15.15.00	83841.9	970.39
26/01/2013	15.30.00	78319.3	906.47
26/01/2013	15.45.00	73440	850.00
26/01/2013	16.00.00	64906	751.23
26/01/2013	16.15.00	56717.6	656.45
26/01/2013	16.30.00	50385.6	583.17
26/01/2013	16.45.00	45364.7	525.05
26/01/2013	17.00.00	41584.3	481.30
26/01/2013	17.15.00	38823.9	449.35
26/01/2013	17.30.00	36724.8	425.06
26/01/2013	17.45.00	36292.5	420.05

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26/01/2013	19:30:00	30630.1	354.52
26/01/2013	19:45:00	29416	340.46
26/01/2013	20:00:00	28005.2	324.13
26/01/2013	20:15:00	27440	317.59
26/01/2013	20:30:00	26727.3	309.34
26/01/2013	21:00:00	26485.1	306.54
26/01/2013	21:15:00	27037.6	312.94
26/01/2013	21:30:00	28302.1	327.57
26/01/2013	21:45:00	29817.1	345.11
26/01/2013	22:00:00	33027.9	382.27
26/01/2013	22:15:00	39077.4	452.28
26/01/2013	22:30:00	48446.5	560.72
26/01/2013	22:45:00	60572.4	701.07
26/01/2013	23:00:00	68863.4	797.03
26/01/2013	23:15:00	72804.7	842.65
26/01/2013	23:45:00	70878.6	820.35
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27/01/2013	0:45:00	74071.3	857.31
27/01/2013	1:00:00	76140.3	881.25
27/01/2013	1:15:00	77186	893.36
27/01/2013	1:30:00	77975.6	902.50
27/01/2013	1:45:00	76620.1	886.81
27/01/2013	2:00:00	74754.5	865.21
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27/01/2013	3:00:00	55186	638.73
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27/01/2013	3:45:00	44009.7	509.37
27/01/2013	4:00:00	41320.2	478.24
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27/01/2013	4:45:00	35650.2	412.62
27/01/2013	5:00:00	34206.1	395.90
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27/01/2013	5:45:00	29510	341.55
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27/01/2013	6:15:00	26926.5	311.65
27/01/2013	6:30:00	25316.7	293.02
27/01/2013	6:45:00	24703.3	285.92
27/01/2013	7:00:00	23363.5	270.41
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27/01/2013	7:30:00	21548.9	249.41
27/01/2013	7:45:00	20620.9	238.67
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27/01/2013	8:15:00	18878.5	218.50

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27/01/2013	8:45:00	17401.1	201.40
27/01/2013	9:00:00	16561.5	191.68
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27/01/2013	9:45:00	14886.1	172.29
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27/01/2013	10:30:00	13395	155.03
27/01/2013	10:45:00	13017.2	150.66
27/01/2013	11:00:00	12605.6	145.90
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28/01/2013	15:00:00	2784.1	32.22
28/01/2013	15:45:00	2728.9	31.58
28/01/2013	16:00:00	2704.1	31.30
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28/01/2013	17:00:00	2625.6	30.39
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28/01/2013	18:00:00	2524.8	29.22
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28/01/2013	20:00:00	2339.8	27.08
28/01/2013	20:45:00	2272.7	26.30
28/01/2013	21:00:00	2246.2	26.00
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28/01/2013	22:00:00	2150.8	24.89
28/01/2013	22:30:00	2104.1	24.35
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29/01/2013	5:00:00	1632.7	18.90
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29/01/2013	13:00:00	1258.5	14.57
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29/01/2013	17:00:00	1132.5	13.11
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29/01/2013	22:00:00	991	11.47
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30/01/2013	9.00.00	839.5	9.72
30/01/2013	10.00.00	824.9	9.55
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31/01/2013	3.00.00	504.5	5.84
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31/01/2013	7.00.00	453.5	5.25
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31/01/2013	14.00.00	378.4	4.38
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31/01/2013	18.00.00	412.4	4.77
31/01/2013	19.00.00	403	4.66
31/01/2013	20.00.00	389	4.50
31/01/2013	21.00.00	379.9	4.40
31/01/2013	22.00.00	378.4	4.38
31/01/2013	23.00.00	373.9	4.33
1/02/2013	0.00.00	363.5	4.21
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1/02/2013	2.00.00	344.8	3.99
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1/02/2013	4.00.00	365	4.22
1/02/2013	5.00.00	367.9	4.26
1/02/2013	6.00.00	362.1	4.19
1/02/2013	7.00.00	356.3	4.12
1/02/2013	8.00.00	347.6	4.02

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1/02/2013	16:00:00	266.8	3.09
1/02/2013	17:00:00	261.9	3.03
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1/02/2013	21:00:00	235.9	2.73
1/02/2013	22:00:00	230.4	2.67
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2/02/2013	3:00:00	206.4	2.39
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2/02/2013	10:00:00	260.9	3.02
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3/02/2013	1:00:00	198.7	2.30
3/02/2013	2:00:00	193.7	2.24
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3/02/2013	5:00:00	181.6	2.10
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3/02/2013	12:00:00	145	1.68

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3/02/2013	17:00:00	128.1	1.48
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3/02/2013	20:00:00	116.6	1.35
3/02/2013	21:00:00	112.1	1.30
3/02/2013	22:00:00	108.8	1.26
3/02/2013	23:00:00	106.1	1.23
4/02/2013	0:00:00	105	1.22
4/02/2013	1:00:00	102.9	1.19
4/02/2013	2:00:00	100.8	1.17
4/02/2013	3:00:00	98.8	1.14
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4/02/2013	7:00:00	92.7	1.07
4/02/2013	8:00:00	90.7	1.05
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4/02/2013	12:00:00	84.5	0.98
4/02/2013	13:00:00	83.1	0.96
4/02/2013	14:00:00	81.7	0.95
4/02/2013	15:00:00	79	0.91
4/02/2013	15:30:00	73.4	0.85
4/02/2013	16:00:00	75.9	0.88
4/02/2013	17:00:00	75.5	0.87
4/02/2013	18:00:00	73.4	0.85
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4/02/2013	20:00:00	70.8	0.82
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4/02/2013	22:00:00	69.2	0.80
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5/02/2013	7:00:00	59.5	0.69
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5/02/2013	20:00:00	43.8	0.51
5/02/2013	21:00:00	42.1	0.49
5/02/2013	22:00:00	40.9	0.47
5/02/2013	23:00:00	40.2	0.47
6/02/2013	0:00:00	39.4	0.46
6/02/2013	1:00:00	39.4	0.46
6/02/2013	2:00:00	38.6	0.45
6/02/2013	3:00:00	37.9	0.44
6/02/2013	4:00:00	37.1	0.43
6/02/2013	5:00:00	37.1	0.43
6/02/2013	6:00:00	36.4	0.42
6/02/2013	7:00:00	36	0.42
6/02/2013	8:00:00	34.6	0.40
6/02/2013	9:00:00	34.6	0.40
6/02/2013	10:00:00	33.8	0.39
6/02/2013	11:00:00	32.3	0.37
6/02/2013	12:00:00	32	0.37
6/02/2013	13:00:00	31.3	0.36
6/02/2013	14:00:00	30.2	0.35
6/02/2013	15:00:00	29.5	0.34
6/02/2013	16:00:00	28.2	0.33
6/02/2013	17:00:00	27.9	0.32
6/02/2013	18:00:00	26.3	0.30
6/02/2013	19:00:00	25.7	0.30
6/02/2013	20:00:00	24.8	0.29
6/02/2013	21:00:00	24.2	0.28
6/02/2013	22:00:00	23.6	0.27
6/02/2013	23:00:00	23	0.27
7/02/2013	0:00:00	22.4	0.26
7/02/2013	1:00:00	22.2	0.26
7/02/2013	2:00:00	21.9	0.25
7/02/2013	3:00:00	21.6	0.25
7/02/2013	4:00:00	21.6	0.25
7/02/2013	5:00:00	20.6	0.24
7/02/2013	6:00:00	19.9	0.23
7/02/2013	7:00:00	19.9	0.23
7/02/2013	8:00:00	19.5	0.23
7/02/2013	9:00:00	18.3	0.21
7/02/2013	10:00:00	18	0.21
7/02/2013	11:00:00	17.6	0.20
7/02/2013	12:00:00	17.3	0.20
7/02/2013	13:00:00	16.2	0.19
7/02/2013	14:00:00	15.6	0.18
7/02/2013	15:00:00	14.8	0.17
7/02/2013	16:00:00	14	0.16
7/02/2013	17:00:00	13.5	0.16
7/02/2013	18:00:00	12.8	0.15

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7/02/2013	19:00:00	12.5	0.14
7/02/2013	20:00:00	11.9	0.14
7/02/2013	21:00:00	11.6	0.13
7/02/2013	22:00:00	11	0.13
7/02/2013	23:00:00	10.6	0.12
8/02/2013	0:00:00	10.6	0.12
8/02/2013	1:00:00	10.1	0.12
8/02/2013	2:00:00	10	0.12
8/02/2013	3:00:00	9.4	0.11
8/02/2013	4:00:00	9.2	0.11
8/02/2013	5:00:00	9	0.10
8/02/2013	6:00:00	8.8	0.10
8/02/2013	7:00:00	8.1	0.09
8/02/2013	8:00:00	7.8	0.09
8/02/2013	9:00:00	7.6	0.09
8/02/2013	10:00:00	7.4	0.09
8/02/2013	11:00:00	7	0.08
8/02/2013	12:00:00	6.8	0.08
8/02/2013	13:00:00	6.7	0.08
8/02/2013	14:00:00	6	0.07
8/02/2013	15:00:00	6	0.07
8/02/2013	16:00:00	5.9	0.07
8/02/2013	17:00:00	5.7	0.07
8/02/2013	18:00:00	5.5	0.06
8/02/2013	19:00:00	5.5	0.06
8/02/2013	20:00:00	5.1	0.06
8/02/2013	21:00:00	5.1	0.06
8/02/2013	22:00:00	4.9	0.06
8/02/2013	23:00:00	4.9	0.06
9/02/2013	0:00:00	4.8	0.06
9/02/2013	1:00:00	4.6	0.05
9/02/2013	2:00:00	4.6	0.05
9/02/2013	3:00:00	4.4	0.05
9/02/2013	4:00:00	4.4	0.05
9/02/2013	5:00:00	4.3	0.05
9/02/2013	6:00:00	4.2	0.05
9/02/2013	7:00:00	4.1	0.05
9/02/2013	8:00:00	4.1	0.05
9/02/2013	9:00:00	4	0.05
9/02/2013	10:00:00	3.9	0.05
9/02/2013	11:00:00	3.8	0.04
9/02/2013	12:00:00	3.5	0.04
9/02/2013	13:00:00	3.6	0.04
9/02/2013	14:00:00	3.3	0.04
9/02/2013	15:00:00	3.3	0.04
9/02/2013	16:00:00	3.1	0.04
9/02/2013	17:00:00	3.1	0.04
9/02/2013	18:00:00	2.9	0.03
9/02/2013	19:00:00	2.9	0.03
9/02/2013	20:00:00	2.7	0.03
9/02/2013	21:00:00	2.7	0.03
9/02/2013	22:00:00	2.4	0.03

9/02/2013	23:00:00	2.5	0.03
10/02/2013	0:00:00	2.5	0.03
10/02/2013	1:00:00	2.4	0.03
10/02/2013	2:00:00	2.4	0.03
10/02/2013	3:00:00	2.4	0.03
10/02/2013	4:00:00	2.4	0.03
10/02/2013	5:00:00	2.4	0.03
10/02/2013	6:00:00	2.4	0.03
10/02/2013	7:00:00	2.4	0.03
10/02/2013	8:00:00	2.5	0.03
10/02/2013	9:00:00	2.5	0.03
10/02/2013	10:00:00	2.4	0.03
10/02/2013	11:00:00	2.4	0.03
10/02/2013	12:00:00	2.1	0.02
10/02/2013	13:00:00	2.1	0.02
10/02/2013	14:00:00	2	0.02
10/02/2013	15:00:00	1.7	0.02
10/02/2013	16:00:00	1.8	0.02
10/02/2013	17:00:00	1.7	0.02
10/02/2013	18:00:00	1.6	0.02
10/02/2013	19:00:00	1.1	0.01
10/02/2013	19:15:00	0.5	0.01
10/02/2013	19:30:00	0.2	0.00
10/02/2013	20:00:00	0	0.00
10/02/2013	21:00:00	0.2	0.00
10/02/2013	21:45:00	0.5	0.01
10/02/2013	22:00:00	0.7	0.01
10/02/2013	23:00:00	1	0.01
11/02/2013	0:00:00	1	0.01
11/02/2013	1:00:00	1	0.01
11/02/2013	2:00:00	1	0.01
11/02/2013	3:00:00	1	0.01
11/02/2013	4:00:00	1	0.01
11/02/2013	5:00:00	0.9	0.01
11/02/2013	6:00:00	0.9	0.01
11/02/2013	7:00:00	0.9	0.01
11/02/2013	8:00:00	0.9	0.01
11/02/2013	9:00:00	0.9	0.01
11/02/2013	10:00:00	0.9	0.01
11/02/2013	11:00:00	0.8	0.01
11/02/2013	12:00:00	0.8	0.01
11/02/2013	13:00:00	0.6	0.01
11/02/2013	14:00:00	0.5	0.01
11/02/2013	15:00:00	0.5	0.01
11/02/2013	16:00:00	0.4	0.00
11/02/2013	17:00:00	0.4	0.00
11/02/2013	18:00:00	0.3	0.00
11/02/2013	19:00:00	0.3	0.00
11/02/2013	20:00:00	0.3	0.00
11/02/2013	21:00:00	0.3	0.00
11/02/2013	22:00:00	0.2	0.00
11/02/2013	23:00:00	0.2	0.00

12/02/2013	0:00:00	0.2	0.00
12/02/2013	1:00:00	0.2	0.00
12/02/2013	2:00:00	0.2	0.00
12/02/2013	3:00:00	0.2	0.00
12/02/2013	4:00:00	0.2	0.00
12/02/2013	5:00:00	0.2	0.00
12/02/2013	6:00:00	0.2	0.00
12/02/2013	7:00:00	0.2	0.00
12/02/2013	8:00:00	0.1	0.00
12/02/2013	9:00:00	0.2	0.00
12/02/2013	10:00:00	0.2	0.00
12/02/2013	11:00:00	0.1	0.00
12/02/2013	12:00:00	0.1	0.00
12/02/2013	13:00:00	0.1	0.00
12/02/2013	14:00:00	0	0.00
12/02/2013	15:00:00	0	0.00
12/02/2013	16:00:00	0	0.00
12/02/2013	17:00:00	0	0.00
12/02/2013	18:00:00	0	0.00
12/02/2013	19:00:00	0	0.00
12/02/2013	20:00:00	0	0.00
12/02/2013	21:00:00	0	0.00
12/02/2013	22:00:00	0	0.00
12/02/2013	23:00:00	0	0.00
13/02/2013	0:00:00	0	0.00
13/02/2013	1:00:00	0	0.00
13/02/2013	2:00:00	0	0.00
13/02/2013	3:00:00	0	0.00
13/02/2013	4:00:00	0	0.00
13/02/2013	5:00:00	0	0.00
13/02/2013	6:00:00	0	0.00
13/02/2013	7:00:00	0	0.00
13/02/2013	8:00:00	0	0.00
13/02/2013	9:00:00	0	0.00
13/02/2013	10:00:00	0	0.00
13/02/2013	11:00:00	0	0.00
13/02/2013	12:00:00	0	0.00
13/02/2013	13:00:00	0	0.00
13/02/2013	14:00:00	0	0.00
13/02/2013	15:00:00	0	0.00
13/02/2013	16:00:00	0	0.00
13/02/2013	17:00:00	0	0.00
13/02/2013	18:00:00	0	0.00
13/02/2013	19:00:00	0	0.00
13/02/2013	20:00:00	0	0.00
13/02/2013	21:00:00	0	0.00
13/02/2013	22:00:00	0	0.00
13/02/2013	23:00:00	0	0.00
14/02/2013	0:00:00	0	0.00
14/02/2013	1:00:00	0	0.00
14/02/2013	2:00:00	0	0.00
14/02/2013	3:00:00	0	0.00

14/02/2013	4:00:00	0	0.00
14/02/2013	5:00:00	0	0.00
14/02/2013	6:00:00	0	0.00
14/02/2013	7:00:00	0	0.00
14/02/2013	8:00:00	0	0.00
14/02/2013	9:00:00	0	0.00
14/02/2013	10:00:00	0	0.00
14/02/2013	11:00:00	0	0.00
14/02/2013	12:00:00	0	0.00
14/02/2013	13:00:00	0	0.00
14/02/2013	14:00:00	0	0.00
14/02/2013	15:00:00	0	0.00
14/02/2013	16:00:00	0	0.00
14/02/2013	17:00:00	0	0.00
14/02/2013	18:00:00	0	0.00
14/02/2013	19:00:00	0	0.00
14/02/2013	20:00:00	0	0.00
14/02/2013	21:00:00	0	0.00
14/02/2013	22:00:00	0	0.00
14/02/2013	23:00:00	0	0.00
15/02/2013	0:00:00	0	0.00
15/02/2013	1:00:00	0	0.00
15/02/2013	2:00:00	0	0.00
15/02/2013	3:00:00	0	0.00
15/02/2013	4:00:00	0	0.00
15/02/2013	5:00:00	0	0.00
15/02/2013	6:00:00	0	0.00
15/02/2013	7:00:00	0	0.00
15/02/2013	8:00:00	0	0.00
15/02/2013	9:00:00	0	0.00
15/02/2013	10:00:00	0	0.00
15/02/2013	11:00:00	0	0.00
15/02/2013	12:00:00	0	0.00
15/02/2013	13:00:00	0	0.00
15/02/2013	14:00:00	0	0.00
15/02/2013	15:00:00	0	0.00
15/02/2013	16:00:00	0	0.00
15/02/2013	16:45:00	0	0.00
15/02/2013	17:00:00	0	0.00
15/02/2013	17:45:00	0	0.00
15/02/2013	18:00:00	0	0.00
15/02/2013	18:15:00	44.2	0.51
15/02/2013	18:30:00	363.5	4.21
15/02/2013	19:00:00	360.6	4.17
15/02/2013	19:30:00	287.5	3.33
15/02/2013	19:45:00	236.9	2.74
15/02/2013	20:00:00	189.6	2.19
15/02/2013	20:15:00	175.3	2.03
15/02/2013	20:30:00	154.2	1.78
15/02/2013	21:00:00	137.5	1.59
15/02/2013	21:15:00	122.3	1.42
15/02/2013	21:30:00	106.1	1.23

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15/02/2013	21:45:00	93.7	1.08
15/02/2013	22:00:00	81.7	0.95
15/02/2013	22:15:00	75.1	0.87
15/02/2013	22:30:00	67.6	0.78
15/02/2013	22:45:00	56	0.65
15/02/2013	23:00:00	52.2	0.60
15/02/2013	23:15:00	42.1	0.49
15/02/2013	23:45:00	30.9	0.36
16/02/2013	0:00:00	28.9	0.33
16/02/2013	0:15:00	25.4	0.29
16/02/2013	0:45:00	19.5	0.23
16/02/2013	1:00:00	17.6	0.20
16/02/2013	1:30:00	12.5	0.14
16/02/2013	2:00:00	10.4	0.12
16/02/2013	2:45:00	7.8	0.09
16/02/2013	3:00:00	7.3	0.08
16/02/2013	4:00:00	5.9	0.07
16/02/2013	5:00:00	5	0.06
16/02/2013	6:00:00	4.3	0.05
16/02/2013	7:00:00	3.6	0.04
16/02/2013	8:00:00	3.1	0.04
16/02/2013	9:00:00	2.7	0.03
16/02/2013	10:00:00	2.6	0.03
16/02/2013	11:00:00	2.3	0.03
16/02/2013	12:00:00	1.3	0.02
16/02/2013	13:00:00	1	0.01
16/02/2013	14:00:00	0.9	0.01
16/02/2013	15:00:00	0.8	0.01
16/02/2013	16:00:00	0.8	0.01
16/02/2013	16:30:00	2.1	0.02
16/02/2013	16:45:00	3.8	0.04
16/02/2013	17:00:00	4.9	0.06
16/02/2013	17:15:00	6.1	0.07
16/02/2013	17:30:00	7.6	0.09
16/02/2013	17:45:00	10.1	0.12
16/02/2013	18:00:00	11.2	0.13
16/02/2013	18:15:00	15.1	0.17
16/02/2013	18:45:00	21.2	0.25
16/02/2013	19:00:00	25.1	0.29
16/02/2013	20:00:00	27.2	0.31
16/02/2013	21:00:00	26.9	0.31
16/02/2013	22:00:00	24.5	0.28
16/02/2013	23:00:00	23.6	0.27
17/02/2013	0:00:00	22.7	0.26
17/02/2013	1:00:00	21.9	0.25
17/02/2013	2:00:00	20.9	0.24
17/02/2013	3:00:00	19.2	0.22
17/02/2013	4:00:00	18.9	0.22
17/02/2013	5:00:00	16.8	0.19
17/02/2013	6:00:00	15.6	0.18
17/02/2013	7:00:00	14.5	0.17
17/02/2013	8:00:00	13.8	0.16

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17/02/2013	9:00:00	12.3	0.14
17/02/2013	10:00:00	11	0.13
17/02/2013	11:00:00	10	0.12
17/02/2013	12:00:00	9.6	0.11
17/02/2013	13:00:00	9	0.10
17/02/2013	14:00:00	8.1	0.09
17/02/2013	15:00:00	7.2	0.08
17/02/2013	16:00:00	7	0.08
17/02/2013	17:00:00	6.6	0.08
17/02/2013	18:00:00	6.3	0.07
17/02/2013	19:00:00	6.1	0.07
17/02/2013	20:00:00	6.1	0.07
17/02/2013	21:00:00	6	0.07
17/02/2013	22:00:00	5.8	0.07
17/02/2013	23:00:00	5.4	0.06
18/02/2013	0:00:00	5.1	0.06
18/02/2013	1:00:00	4.8	0.06
18/02/2013	2:00:00	4.6	0.05
18/02/2013	3:00:00	4.6	0.05
18/02/2013	4:00:00	4.4	0.05
18/02/2013	5:00:00	4.5	0.05
18/02/2013	6:00:00	4.3	0.05
18/02/2013	7:00:00	4.2	0.05
18/02/2013	8:00:00	4	0.05
18/02/2013	9:00:00	3.9	0.05
18/02/2013	10:00:00	3.6	0.04
18/02/2013	11:00:00	3.5	0.04
18/02/2013	12:00:00	3.7	0.04
18/02/2013	13:00:00	3.5	0.04
18/02/2013	14:00:00	3.6	0.04
18/02/2013	15:00:00	3.7	0.04
18/02/2013	16:00:00	3.6	0.04
18/02/2013	17:00:00	3.5	0.04
18/02/2013	18:00:00	3.5	0.04
18/02/2013	19:00:00	3.6	0.04
18/02/2013	20:00:00	3.4	0.04
18/02/2013	21:00:00	3.4	0.04
18/02/2013	22:00:00	3.3	0.04
18/02/2013	23:00:00	3.1	0.04
19/02/2013	0:00:00	3.1	0.04
19/02/2013	1:00:00	3.1	0.04
19/02/2013	2:00:00	3.5	0.04
19/02/2013	3:00:00	4.4	0.05
19/02/2013	4:00:00	4.6	0.05
19/02/2013	5:00:00	4.6	0.05
19/02/2013	6:00:00	4.9	0.06
19/02/2013	7:00:00	5.3	0.06
19/02/2013	8:00:00	5.6	0.06
19/02/2013	9:00:00	6	0.07
19/02/2013	9:45:00	7.3	0.08
19/02/2013	10:00:00	7.9	0.09
19/02/2013	11:00:00	9.6	0.11

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19/02/2013	12:00:00	12.1	0.14
19/02/2013	12:30:00	15.1	0.17
19/02/2013	12:31:02	15.9	0.18
19/02/2013	12:33:38	321.3	3.72
19/02/2013	12:45:00	324	3.75
19/02/2013	13:00:00	337.8	3.91
19/02/2013	13:30:00	353.4	4.00
19/02/2013	14:00:00	375.4	4.34
19/02/2013	14:45:00	399.8	4.63
19/02/2013	15:00:00	407.7	4.72
19/02/2013	16:00:00	423.7	4.90
19/02/2013	17:00:00	428.6	4.96
19/02/2013	18:00:00	426.9	4.94
19/02/2013	19:00:00	422.1	4.89
19/02/2013	20:00:00	415.6	4.81
19/02/2013	21:00:00	414	4.79
19/02/2013	22:00:00	417.2	4.83
19/02/2013	23:00:00	420.5	4.87
20/02/2013	0:00:00	436.8	5.06
20/02/2013	0:30:00	463.8	5.27
20/02/2013	0:45:00	484.8	5.61
20/02/2013	1:00:00	510	5.90
20/02/2013	1:30:00	543.7	6.29
20/02/2013	2:00:00	584.8	6.77
20/02/2013	2:30:00	621.7	7.20
20/02/2013	3:00:00	649.2	7.51
20/02/2013	3:30:00	686.5	7.95
20/02/2013	4:00:00	722.8	8.37
20/02/2013	4:30:00	748.5	8.66
20/02/2013	5:00:00	770.2	8.91
20/02/2013	5:45:00	796.3	9.22
20/02/2013	6:00:00	802.4	9.29
20/02/2013	7:00:00	818.7	9.48
20/02/2013	8:00:00	829.1	9.60
20/02/2013	9:00:00	827	9.57
20/02/2013	10:00:00	820.8	9.50
20/02/2013	11:00:00	812.6	9.41
20/02/2013	12:00:00	800.3	9.26
20/02/2013	13:00:00	788.2	9.12
20/02/2013	14:00:00	774.2	8.96
20/02/2013	15:00:00	758.4	8.78
20/02/2013	16:00:00	750.5	8.69
20/02/2013	17:00:00	748.5	8.66
20/02/2013	18:00:00	740.8	8.57
20/02/2013	19:00:00	731.1	8.46
20/02/2013	20:00:00	731.1	8.46
20/02/2013	21:00:00	725.3	8.39
20/02/2013	22:00:00	719.6	8.33
20/02/2013	23:00:00	697.7	8.08
21/02/2013	0:00:00	686.5	7.95
21/02/2013	1:00:00	666.6	7.72
21/02/2013	2:00:00	655.7	7.59

21/02/2013	3:00:00	642.8	7.44
21/02/2013	4:00:00	634.3	7.34
21/02/2013	5:00:00	630.1	7.29
21/02/2013	6:00:00	628	7.27
21/02/2013	7:00:00	625.9	7.24
21/02/2013	8:00:00	623.8	7.22
21/02/2013	9:00:00	625.9	7.24
21/02/2013	10:00:00	625.9	7.24
21/02/2013	11:00:00	621.7	7.20
21/02/2013	12:00:00	617.5	7.15
21/02/2013	13:00:00	613.4	7.10
21/02/2013	14:00:00	607.2	7.03
21/02/2013	15:00:00	603.1	6.98
21/02/2013	16:00:00	596.9	6.91
21/02/2013	17:00:00	594.9	6.89
21/02/2013	18:00:00	586.8	6.79
21/02/2013	19:00:00	580.8	6.72
21/02/2013	20:00:00	572.9	6.63
21/02/2013	21:00:00	565	6.54
21/02/2013	22:00:00	555.2	6.43
21/02/2013	23:00:00	547.5	6.34
22/02/2013	0:00:00	541.8	6.27
22/02/2013	1:00:00	530.4	6.14
22/02/2013	2:00:00	522.9	6.05
22/02/2013	3:00:00	515.5	5.97
22/02/2013	4:00:00	502.7	5.82
22/02/2013	5:00:00	497.3	5.76
22/02/2013	6:00:00	488.3	5.65
22/02/2013	7:00:00	479.5	5.55
22/02/2013	8:00:00	472.5	5.47
22/02/2013	9:00:00	465.5	5.39
22/02/2013	10:00:00	453.5	5.25
22/02/2013	11:00:00	445.1	5.15
22/02/2013	12:00:00	435.1	5.04
22/02/2013	13:00:00	431.9	5.00
22/02/2013	14:00:00	423.7	4.90
22/02/2013	15:00:00	415.6	4.81
22/02/2013	16:00:00	410.9	4.76
22/02/2013	17:00:00	399.8	4.63
22/02/2013	18:00:00	396.7	4.59
22/02/2013	19:00:00	386	4.47
22/02/2013	20:00:00	376.9	4.36
22/02/2013	21:00:00	369.4	4.28
22/02/2013	22:00:00	362.1	4.19
22/02/2013	23:00:00	357.7	4.14
23/02/2013	0:00:00	351.9	4.07
23/02/2013	1:00:00	347.6	4.02
23/02/2013	2:00:00	343.4	3.97
23/02/2013	3:00:00	337.8	3.91
23/02/2013	4:00:00	333.6	3.86
23/02/2013	5:00:00	328.1	3.80
23/02/2013	6:00:00	324	3.75
23/02/2013	7:00:00	318.6	3.69

23/02/2013	8:00:00	314.6	3.64
23/02/2013	9:00:00	310.6	3.59
23/02/2013	10:00:00	301.5	3.49
23/02/2013	11:00:00	298.9	3.46
23/02/2013	12:00:00	295	3.41
23/02/2013	13:00:00	292.5	3.39
23/02/2013	14:00:00	287.5	3.33
23/02/2013	15:00:00	283.7	3.28
23/02/2013	16:00:00	280	3.24
23/02/2013	16:30:00	280.9	3.02
23/02/2013	17:00:00	270.2	3.13
23/02/2013	18:00:00	271.4	3.14
23/02/2013	19:00:00	267.8	3.10
23/02/2013	20:00:00	263.8	3.05
23/02/2013	21:00:00	261.9	3.03
23/02/2013	22:00:00	259.9	3.01
23/02/2013	23:00:00	256	2.96
24/02/2013	0:00:00	255	2.95
24/02/2013	1:00:00	252.1	2.92
24/02/2013	2:00:00	250.1	2.89
24/02/2013	3:00:00	246.3	2.85
24/02/2013	4:00:00	244.4	2.83
24/02/2013	5:00:00	243.4	2.82
24/02/2013	6:00:00	239.7	2.77
24/02/2013	7:00:00	238.7	2.76
24/02/2013	8:00:00	237.8	2.75
24/02/2013	9:00:00	235.9	2.73
24/02/2013	10:00:00	232.2	2.69
24/02/2013	11:00:00	233.1	2.70
24/02/2013	12:00:00	235	2.72
24/02/2013	12:15:00	247.3	2.86
24/02/2013	13:00:00	254	2.94
24/02/2013	13:45:00	288.7	3.34
24/02/2013	14:00:00	298.9	3.46
24/02/2013	15:00:00	308	3.56
24/02/2013	16:00:00	292.5	3.39
24/02/2013	17:00:00	283.7	3.28
24/02/2013	18:00:00	282.5	3.27
24/02/2013	19:00:00	285	3.30
24/02/2013	20:00:00	291.2	3.37
24/02/2013	21:00:00	296.3	3.43
24/02/2013	22:00:00	297.6	3.44
24/02/2013	23:00:00	297.6	3.44
25/02/2013	0:00:00	300.2	3.47
25/02/2013	1:00:00	298.9	3.46
25/02/2013	2:00:00	298.9	3.46
25/02/2013	3:00:00	300.2	3.47
25/02/2013	4:00:00	301.5	3.49
25/02/2013	5:00:00	308	3.56
25/02/2013	6:00:00	320	3.70
25/02/2013	6:30:00	337.8	3.91
25/02/2013	7:00:00	351.9	4.07

25/02/2013	7:30:00	373.9	4.33
25/02/2013	8:00:00	399.8	4.63
25/02/2013	8:45:00	422.1	4.89
25/02/2013	9:00:00	431.9	5.00
25/02/2013	9:30:00	448.5	5.19
25/02/2013	10:00:00	463.8	5.37
25/02/2013	10:45:00	483	5.59
25/02/2013	11:00:00	486.5	5.63
25/02/2013	12:00:00	506.3	5.86
25/02/2013	13:00:00	526.7	6.10
25/02/2013	14:00:00	547.5	6.34
25/02/2013	15:00:00	563	6.52
25/02/2013	16:00:00	570.9	6.61
25/02/2013	17:00:00	572.9	6.63
25/02/2013	18:00:00	580.8	6.72
25/02/2013	19:00:00	578.8	6.70
25/02/2013	20:00:00	582.8	6.75
25/02/2013	21:00:00	592.9	6.86
25/02/2013	21:15:00	668.8	7.74
25/02/2013	21:30:00	782.2	9.05
25/02/2013	21:45:00	888.4	10.28
25/02/2013	22:00:00	1107.7	12.82
25/02/2013	22:15:00	1690.7	19.57
25/02/2013	22:30:00	2738.9	31.70
25/02/2013	22:45:00	3808.7	44.08
25/02/2013	23:00:00	8061	93.30
25/02/2013	23:15:00	15390.5	178.13
25/02/2013	23:30:00	17856.6	206.67
25/02/2013	23:45:00	15421.4	178.49
26/02/2013	0:00:00	13565.2	157.00
26/02/2013	0:15:00	11807.9	136.67
26/02/2013	0:30:00	11421.6	132.19
26/02/2013	0:45:00	11269.4	130.43
26/02/2013	1:00:00	15717.2	181.91
26/02/2013	1:15:00	24829.4	287.38
26/02/2013	1:30:00	33716.2	390.23
26/02/2013	1:45:00	38852	449.68
26/02/2013	2:00:00	58093.8	672.38
26/02/2013	2:15:00	77316.7	894.87
26/02/2013	2:30:00	80890.9	936.24
26/02/2013	2:45:00	83152.3	962.41
26/02/2013	3:00:00	84511.9	978.15
26/02/2013	3:30:00	84936.7	983.06
26/02/2013	3:45:00	84013.6	972.38
26/02/2013	4:00:00	83034.1	961.04
26/02/2013	4:15:00	81789.7	946.64
26/02/2013	4:30:00	80383.4	930.36
26/02/2013	4:45:00	78896.3	913.15
26/02/2013	5:00:00	77535.3	897.40
26/02/2013	5:15:00	76206.9	882.02
26/02/2013	5:30:00	74949.5	867.47
26/02/2013	5:45:00	73462.3	850.26
26/02/2013	6:00:00	67206.1	777.85

26/02/2013	6:15:00	60422.5	699.33
26/02/2013	6:30:00	55080.2	637.50
26/02/2013	6:45:00	50719.1	587.03
26/02/2013	7:00:00	46020.8	532.65
26/02/2013	7:15:00	43402.5	502.34
26/02/2013	7:30:00	40390.3	467.48
26/02/2013	7:45:00	38041.7	440.30
26/02/2013	8:00:00	35305.4	408.63
26/02/2013	8:15:00	33281.7	385.20
26/02/2013	8:30:00	31481.8	364.37
26/02/2013	8:45:00	30078.6	348.13

RTI DL RELEASE - EHP

Year	Day	Time	Flow (m3/s)	Flow (m3/10min)	
2013	25	30	0	0	TOTAL FLOW 254910.6
2013	25	40	0	0	
2013	25	50	0	0	
2013	25	110	0	0	
2013	25	130	0	0	
2013	25	150	0	0	
2013	25	200	0.002	1.2	
2013	25	210	0.002	1.2	
2013	25	220	0.002	1.2	
2013	25	230	0.003	1.8	
2013	25	240	0.003	1.8	
2013	25	250	0.003	1.8	
2013	25	300	0.004	2.4	
2013	25	310	0.005	3	
2013	25	320	0.006	3.6	
2013	25	330	0.006	3.6	
2013	25	340	0.007	4.2	
2013	25	350	0.007	4.2	
2013	25	400	0.008	4.8	
2013	25	410	0.009	5.4	
2013	25	420	0.01	6	
2013	25	430	0.01	6	
2013	25	440	0.012	7.2	
2013	25	450	0.012	7.2	
2013	25	500	0.013	7.8	
2013	25	510	0.013	7.8	
2013	25	520	0.014	8.4	
2013	25	530	0.015	9	
2013	25	540	0.016	9.6	
2013	25	550	0.016	9.6	
2013	25	600	0.017	10.2	
2013	25	610	0.017	10.2	
2013	25	620	0.018	10.8	
2013	25	630	0.018	10.8	
2013	25	640	0.018	10.8	
2013	25	650	0.019	11.4	
2013	25	700	0.02	12	
2013	25	710	0.02	12	
2013	25	720	0.021	12.6	
2013	25	730	0.022	13.2	
2013	25	740	0.023	13.8	
2013	25	750	0.024	14.4	
2013	25	800	0.025	15	
2013	25	810	0.027	16.2	
2013	25	820	0.028	16.8	
2013	25	830	-0.007	-4.2	
2013	25	840	0.035	21	
2013	25	850	0.146	87.6	
2013	25	900	0.193	115.8	
2013	25	910	0.216	129.6	
2013	25	920	0.314	188.4	
2013	25	930	0.364	218.4	
2013	25	940	0.442	265.2	
2013	25	950	0.442	265.2	
2013	25	1000	0.55	330	
2013	25	1010	0.55	330	
2013	25	1020	0.634	380.4	
2013	25	1030	0.663	397.8	

2013	25	1040	0.692	415.2
2013	25	1050	0.721	432.6
2013	25	1100	0.81	486
2013	25	1110	0.81	486
2013	25	1120	0.81	486
2013	25	1130	0.87	522
2013	25	1140	0.932	559.2
2013	25	1150	0.932	559.2
2013	25	1200	1.092	655.2
2013	25	1210	1.125	675
2013	25	1220	1.293	775.8
2013	25	1230	1.397	838.2
2013	25	1240	1.54	924
2013	25	1250	1.687	1012.2
2013	25	1300	1.916	1149.6
2013	25	1310	2.115	1269
2013	25	1320	2.156	1293.6
2013	25	1330	2.238	1342.8
2013	25	1340	2.363	1417.8
2013	25	1350	2.238	1342.8
2013	25	1400	2.238	1342.8
2013	25	1410	2.279	1367.4
2013	25	1420	2.156	1293.6
2013	25	1430	1.995	1197
2013	25	1440	1.916	1149.6
2013	25	1450	1.839	1103.4
2013	25	1500	1.687	1012.2
2013	25	1510	1.687	1012.2
2013	25	1520	1.65	990
2013	25	1530	1.613	967.8
2013	25	1540	1.613	967.8
2013	25	1550	1.54	924
2013	25	1600	1.576	945.6
2013	25	1610	1.576	945.6
2013	25	1620	1.468	880.8
2013	25	1630	1.468	880.8
2013	25	1640	1.397	838.2
2013	25	1650	1.327	796.2
2013	25	1700	1.327	796.2
2013	25	1710	1.259	755.4
2013	25	1720	1.259	755.4
2013	25	1730	1.191	714.6
2013	25	1740	1.225	735
2013	25	1750	1.327	796.2
2013	25	1800	1.504	902.4
2013	25	1810	1.54	924
2013	25	1820	1.687	1012.2
2013	25	1830	1.839	1103.4
2013	25	1840	2.075	1245
2013	25	1850	2.156	1293.6
2013	25	1900	2.156	1293.6
2013	25	1910	2.156	1293.6
2013	25	1920	1.995	1197
2013	25	1930	1.956	1173.6
2013	25	1940	1.725	1035
2013	25	1950	1.65	990
2013	25	2000	1.54	924
2013	25	2010	1.468	880.8
2013	25	2020	1.468	880.8

2013	25	2030	1.504	902.4
2013	25	2040	1.468	880.8
2013	25	2050	1.468	880.8
2013	25	2100	1.504	902.4
2013	25	2110	1.432	859.2
2013	25	2120	1.468	880.8
2013	25	2130	1.327	796.2
2013	25	2140	1.397	838.2
2013	25	2150	1.191	714.6
2013	25	2200	1.125	675
2013	25	2210	1.059	635.4
2013	25	2220	0.932	559.2
2013	25	2230	0.964	578.4
2013	25	2240	0.87	522
2013	25	2250	0.81	486
2013	25	2300	0.75	450
2013	25	2310	0.721	432.6
2013	25	2320	0.634	380.4
2013	25	2330	0.634	380.4
2013	25	2340	0.634	380.4
2013	25	2350	0.578	346.8
2013	25	2400	0.578	346.8
2013	26	10	0.578	346.8
2013	26	20	0.523	313.8
2013	26	30	0.578	346.8
2013	26	40	0.578	346.8
2013	26	50	0.578	346.8
2013	26	100	0.523	313.8
2013	26	110	0.523	313.8
2013	26	120	0.55	330
2013	26	130	0.55	330
2013	26	140	0.523	313.8
2013	26	150	0.55	330
2013	26	200	0.523	313.8
2013	26	210	0.523	313.8
2013	26	220	0.523	313.8
2013	26	230	0.469	281.4
2013	26	240	0.496	297.6
2013	26	250	0.55	330
2013	26	300	0.496	297.6
2013	26	310	0.523	313.8
2013	26	320	0.523	313.8
2013	26	330	0.523	313.8
2013	26	340	0.523	313.8
2013	26	350	0.634	380.4
2013	26	400	0.634	380.4
2013	26	410	0.78	468
2013	26	420	0.692	415.2
2013	26	430	0.84	504
2013	26	440	0.87	522
2013	26	450	0.964	578.4
2013	26	500	0.995	597
2013	26	510	1.092	655.2
2013	26	520	1.191	714.6
2013	26	530	1.259	755.4
2013	26	540	1.327	796.2
2013	26	550	1.54	924
2013	26	600	1.839	1103.4
2013	26	610	2.238	1342.8

2013	26	620	2.797	1678.2
2013	26	630	3.117	1870.2
2013	26	640	3.499	2099.4
2013	26	650	3.499	2099.4
2013	26	700	3.306	1983.6
2013	26	710	3.154	1898.4
2013	26	720	2.978	1786.8
2013	26	730	2.664	1598.4
2013	26	740	2.405	1443
2013	26	750	2.156	1293.6
2013	26	800	1.995	1197
2013	26	810	1.839	1103.4
2013	26	820	1.613	967.8
2013	26	830	1.576	945.6
2013	26	840	1.468	880.8
2013	26	850	1.397	838.2
2013	26	900	1.468	880.8
2013	26	910	1.54	924
2013	26	920	1.687	1012.2
2013	26	930	1.995	1197
2013	26	940	2.447	1468.2
2013	26	950	3.184	1898.4
2013	26	1000	3.646	2167.6
2013	26	1010	4.052	2431.2
2013	26	1020	4.208	2524.8
2013	26	1030	4	2400
2013	26	1040	3.796	2277.6
2013	26	1050	3.499	2099.4
2013	26	1100	3.117	1870.2
2013	26	1110	2.797	1678.2
2013	26	1120	2.49	1494
2013	26	1130	2.238	1342.8
2013	26	1140	2.035	1221
2013	26	1150	1.839	1103.4
2013	26	1200	1.613	967.8
2013	26	1210	1.54	924
2013	26	1220	1.327	796.2
2013	26	1230	1.257	754.2
2013	26	1240	1.19	714
2013	26	1250	1.087	652.2
2013	26	1300	0.992	595.2
2013	26	1310	0.93	558
2013	26	1320	0.86	516
2013	26	1330	0.891	534.6
2013	26	1340	0.738	442.8
2013	26	1350	0.68	408
2013	26	1400	0.679	407.4
2013	26	1410	0.621	372.6
2013	26	1420	0.621	372.6
2013	26	1430	0.62	372
2013	26	1440	0.765	459
2013	26	1450	1.109	665.4
2013	26	1500	2.426	1455.6
2013	26	1510	5.052	3031.2
2013	26	1520	7.26	4356
2013	26	1530	8.48	5088
2013	26	1540	7.79	4674
2013	26	1550	7.39	4434
2013	26	1600	6.61	3966

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2013	26	1610	6.112	3667.2
2013	26	1620	5.396	3237.6
2013	26	1630	4.928	2896.8
2013	26	1640	4.399	2639.4
2013	26	1650	3.879	2327.4
2013	26	1700	3.291	1974.6
2013	26	1710	2.914	1748.4
2013	26	1720	2.648	1588.8
2013	26	1730	2.31	1386
2013	26	1740	2.066	1239.6
2013	26	1750	1.911	1146.6
2013	26	1800	1.681	1008.6
2013	26	1810	1.535	921
2013	26	1820	1.392	835.2
2013	26	1830	1.288	772.8
2013	26	1840	1.121	672.6
2013	26	1850	1.119	671.4
2013	26	1900	0.928	556.8
2013	26	1910	0.867	520.2
2013	26	1920	0.867	520.2
2013	26	1930	0.777	466.2
2013	26	1940	0.749	449.4
2013	26	1950	0.69	414
2013	26	2000	0.633	379.8
2013	26	2010	0.632	379.2
2013	26	2020	0.661	396.6
2013	26	2030	0.633	379.8
2013	26	2040	0.632	379.2
2013	26	2050	0.633	379.8
2013	26	2100	0.634	380.4
2013	26	2110	0.634	380.4
2013	26	2120	0.634	380.4
2013	26	2130	0.634	380.4
2013	26	2140	0.663	397.8
2013	26	2150	0.663	397.8
2013	26	2200	0.634	380.4
2013	26	2210	0.634	380.4
2013	26	2220	0.663	397.8
2013	26	2230	0.663	397.8
2013	26	2240	0.634	380.4
2013	26	2250	0.606	363.6
2013	26	2300	0.578	346.8
2013	26	2310	0.578	346.8
2013	26	2320	0.55	330
2013	26	2330	0.523	313.8
2013	26	2340	0.523	313.8
2013	26	2350	0.55	330
2013	26	2400	0.523	313.8
2013	27	10	0.469	281.4
2013	27	20	0.469	281.4
2013	27	30	0.469	281.4
2013	27	40	0.496	297.6
2013	27	50	0.416	249.6
2013	27	100	0.416	249.6
2013	27	110	0.416	249.6
2013	27	120	0.416	249.6
2013	27	130	0.416	249.6
2013	27	140	0.416	249.6
2013	27	150	0.364	218.4

2013	27	200	0.314	188.4
2013	27	210	0.364	218.4
2013	27	220	0.339	203.4
2013	27	230	0.364	218.4
2013	27	240	0.339	203.4
2013	27	250	0.339	203.4
2013	27	300	0.339	203.4
2013	27	310	0.314	188.4
2013	27	320	0.314	188.4
2013	27	330	0.314	188.4
2013	27	340	0.265	159
2013	27	350	0.265	159
2013	27	400	0.24	144
2013	27	410	0.24	144
2013	27	420	0.24	144
2013	27	430	0.216	129.6
2013	27	440	0.216	129.6
2013	27	450	0.169	101.4
2013	27	500	0.169	101.4
2013	27	510	0.169	101.4
2013	27	520	0.169	101.4
2013	27	530	0.169	101.4
2013	27	540	0.169	101.4
2013	27	550	0.169	101.4
2013	27	600	0.169	101.4
2013	27	610	0.146	87.6
2013	27	620	0.146	87.6
2013	27	630	0.124	74.4
2013	27	640	0.193	115.8
2013	27	650	0.124	74.4
2013	27	700	0.079	47.4
2013	27	710	0.124	74.4
2013	27	720	0.124	74.4
2013	27	730	0.124	74.4
2013	27	740	0.124	74.4
2013	27	750	0.124	74.4
2013	27	800	0.124	74.4
2013	27	810	0.124	74.4
2013	27	820	0.079	47.4
2013	27	830	0.101	60.6
2013	27	840	0.079	47.4
2013	27	850	0.079	47.4
2013	27	900	0.079	47.4
2013	27	910	0.079	47.4
2013	27	920	0.101	60.6
2013	27	930	0.079	47.4
2013	27	940	0.079	47.4
2013	27	950	0.079	47.4
2013	27	1000	0.079	47.4
2013	27	1010	0.035	21
2013	27	1020	0.057	34.2
2013	27	1030	0.035	21
2013	27	1040	0.013	7.8
2013	27	1050	0.035	21
2013	27	1100	-0.01	-6
2013	27	1110	-0.011	-6.6
2013	27	1120	0.029	17.4
2013	27	1130	-0.015	-9
2013	27	1140	0.005	3

2013	27	1150	0.004	2.4
2013	27	1200	0.025	15
2013	27	1210	-0.017	-10.2
2013	27	1220	-0.017	-10.2
2013	27	1230	-0.017	-10.2
2013	27	1240	-0.017	-10.2
2013	27	1250	-0.017	-10.2
2013	27	1300	-0.017	-10.2
2013	27	1310	-0.017	-10.2
2013	27	1320	0.028	16.8
2013	27	1330	0.028	16.8
2013	27	1340	-0.017	-10.2
2013	27	1350	0.028	16.8
2013	27	1400	0.028	16.8
2013	27	1410	-0.017	-10.2
2013	27	1420	0.028	16.8
2013	27	1430	-0.017	-10.2
2013	27	1440	0.028	16.8
2013	27	1450	0.028	16.8
2013	27	1500	0.028	16.8
2013	27	1510	0.028	16.8
2013	27	1520	0.028	16.8
2013	27	1530	0.027	16.2
2013	27	1540	0.028	16.8
2013	27	1550	0.028	16.8
2013	27	1600	0.027	16.2
2013	27	1610	0.027	16.2
2013	27	1620	0.028	16.8
2013	27	1630	0.027	16.2
2013	27	1640	0.028	16.8
2013	27	1650	0.028	16.8
2013	27	1700	0.028	16.8
2013	27	1710	0.028	16.8
2013	27	1720	0.028	16.8
2013	27	1730	0.027	16.2
2013	27	1740	0.027	16.2
2013	27	1750	0.027	16.2
2013	27	1800	0.028	16.8
2013	27	1810	0.028	16.8
2013	27	1820	0.028	16.8
2013	27	1830	0.028	16.8
2013	27	1840	0.028	16.8
2013	27	1850	0.028	16.8
2013	27	1900	-0.017	-10.2
2013	27	1910	-0.017	-10.2
2013	27	1920	0.028	16.8
2013	27	1930	0.028	16.8
2013	27	1940	0.028	16.8
2013	27	1950	-0.017	-10.2
2013	27	2000	-0.017	-10.2
2013	27	2010	0.025	15
2013	27	2020	-0.017	-10.2
2013	27	2030	0.025	15
2013	27	2040	0.025	15
2013	27	2050	0.025	15
2013	27	2100	-0.017	-10.2
2013	27	2110	-0.017	-10.2
2013	27	2120	-0.017	-10.2
2013	27	2130	0.025	15

2013	27	2140	0.046	27.6
2013	27	2150	0.004	2.4
2013	27	2200	0.027	16.2
2013	27	2210	-0.014	-8.4
2013	27	2220	-0.014	-8.4
2013	27	2230	-0.011	-6.6
2013	27	2240	-0.01	-6
2013	27	2250	0.028	16.8
2013	27	2300	0.028	16.8
2013	27	2310	0.028	16.8
2013	27	2320	0.028	16.8
2013	27	2330	0.029	17.4
2013	27	2340	0.027	16.2
2013	27	2350	0.027	16.2
2013	27	2400	0.027	16.2
2013	28	10	0.027	16.2
2013	28	20	0.027	16.2
2013	28	30	0.027	16.2
2013	28	40	0.027	16.2
2013	28	50	0.027	16.2
2013	28	100	0.027	16.2
2013	28	110	0.027	16.2
2013	28	120	0.027	16.2
2013	28	130	0.027	16.2
2013	28	140	0.027	16.2
2013	28	150	0.027	16.2
2013	28	200	0.025	15
2013	28	210	0.027	16.2
2013	28	220	0.027	16.2
2013	28	230	0.027	16.2
2013	28	240	0.027	16.2
2013	28	250	0.026	15.6
2013	28	300	0.025	15
2013	28	310	0.024	14.4
2013	28	320	0.025	15
2013	28	330	0.025	15
2013	28	340	0.025	15
2013	28	350	0.025	15
2013	28	400	0.026	15.6
2013	28	410	0.025	15
2013	28	420	0.025	15
2013	28	430	0.024	14.4
2013	28	440	0.025	15
2013	28	450	0.024	14.4
2013	28	500	0.024	14.4
2013	28	510	0.024	14.4
2013	28	520	0.024	14.4
2013	28	530	0.025	15
2013	28	540	0.024	14.4
2013	28	550	0.023	13.8
2013	28	600	0.024	14.4
2013	28	610	0.025	15
2013	28	620	0.023	13.8
2013	28	630	0.024	14.4
2013	28	640	0.025	15
2013	28	650	0.023	13.8
2013	28	700	0.025	15
2013	28	710	0.023	13.8
2013	28	720	0.023	13.8

2013	28	730	0.022	13.2
2013	28	740	0.022	13.2
2013	28	750	0.023	13.8
2013	28	800	0.022	13.2
2013	28	810	0.022	13.2
2013	28	820	0.022	13.2
2013	28	830	0.022	13.2
2013	28	840	0.022	13.2
2013	28	850	0.022	13.2
2013	28	900	0.022	13.2
2013	28	910	0.022	13.2
2013	28	920	0.022	13.2
2013	28	930	0.022	13.2
2013	28	940	0.022	13.2
2013	28	950	0.021	12.6
2013	28	1000	0.021	12.6
2013	28	1010	0.021	12.6
2013	28	1020	0.021	12.6
2013	28	1030	0.021	12.6
2013	28	1040	0.021	12.6
2013	28	1050	0.022	13.2
2013	28	1100	0.022	13.2
2013	28	1110	0.023	13.8
2013	28	1120	0.022	13.2
2013	28	1130	0.022	13.2
2013	28	1140	0.023	13.8
2013	28	1150	0.022	13.2
2013	28	1200	0.023	13.8
2013	28	1210	0.023	13.8
2013	28	1220	0.023	13.8
2013	28	1230	0.024	14.4
2013	28	1240	0.023	13.8
2013	28	1250	0.024	14.4
2013	28	1300	0.024	14.4
2013	28	1310	0.024	14.4
2013	28	1320	0.024	14.4
2013	28	1330	0.024	14.4
2013	28	1340	0.024	14.4
2013	28	1350	0.024	14.4
2013	28	1400	0.025	15
2013	28	1410	0.025	15
2013	28	1420	0.025	15
2013	28	1430	0.025	15
2013	28	1440	0.025	15
2013	28	1450	0.025	15
2013	28	1500	0.025	15
2013	28	1510	0.025	15
2013	28	1520	0.025	15
2013	28	1530	0.025	15
2013	28	1540	0.025	15
2013	28	1550	0.026	15.6
2013	28	1600	0.026	15.6
2013	28	1610	0.025	15
2013	28	1620	0.025	15
2013	28	1630	0.025	15
2013	28	1640	0.025	15
2013	28	1650	0.025	15
2013	28	1700	0.025	15
2013	28	1710	0.026	15.6

2013	28	1720	0.026	15.6
2013	28	1730	0.026	15.6
2013	28	1740	0.026	15.6
2013	28	1750	0.026	15.6
2013	28	1800	0.026	15.6
2013	28	1810	0.026	15.6
2013	28	1820	0.026	15.6
2013	28	1830	0.026	15.6
2013	28	1840	0.026	15.6
2013	28	1850	0.027	16.2
2013	28	1900	0.027	16.2
2013	28	1910	0.027	16.2
2013	28	1920	0.027	16.2
2013	28	1930	0.027	16.2
2013	28	1940	0.027	16.2
2013	28	1950	0.027	16.2
2013	28	2000	0.028	16.8
2013	28	2010	0.027	16.2
2013	28	2020	0.027	16.2
2013	28	2030	0.027	16.2
2013	28	2040	0.027	16.2
2013	28	2050	0.027	16.2
2013	28	2100	0.027	16.2
2013	28	2110	0.027	16.2
2013	28	2120	0.027	16.2
2013	28	2130	-0.016	-10.8
2013	28	2140	0.028	16.8
2013	28	2150	0.028	16.8
2013	28	2200	0.028	16.8
2013	28	2210	0.028	16.8
2013	28	2220	-0.017	-10.2
2013	28	2230	0.028	16.8
2013	28	2240	-0.017	-10.2
2013	28	2250	0.028	16.8
2013	28	2300	0.028	16.8
2013	28	2310	0.028	16.8
2013	28	2320	0.028	16.8
2013	28	2330	0.028	16.8
2013	28	2340	0.028	16.8
2013	28	2350	0.028	16.8
2013	28	2400	0.028	16.8
2013	29	10	0.028	16.8
2013	29	20	0.028	16.8
2013	29	30	0.028	16.8
2013	29	40	0.028	16.8
2013	29	50	0.028	16.8
2013	29	100	0.028	16.8
2013	29	110	-0.017	-10.2
2013	29	120	-0.017	-10.2
2013	29	130	-0.017	-10.2
2013	29	140	-0.017	-10.2
2013	29	150	-0.017	-10.2
2013	29	200	0.028	16.8
2013	29	210	0.028	16.8
2013	29	220	0.028	16.8
2013	29	230	0.028	16.8
2013	29	240	0.028	16.8
2013	29	250	0.028	16.8
2013	29	300	0.028	16.8

2013	29	310	0.028	16.8
2013	29	320	0.028	16.8
2013	29	330	0.028	16.8
2013	29	340	0.029	17.4
2013	29	350	0.028	16.8
2013	29	400	0.028	16.8
2013	29	410	-0.007	-4.2
2013	29	420	0.014	8.4
2013	29	430	-0.007	-4.2
2013	29	440	-0.007	-4.2
2013	29	450	0.029	17.4
2013	29	500	0.028	16.8
2013	29	510	0.028	16.8
2013	29	520	0.028	16.8
2013	29	530	0.029	17.4
2013	29	540	0.028	16.8
2013	29	550	0.028	16.8
2013	29	600	0.028	16.8
2013	29	610	0.028	16.8
2013	29	620	0.028	16.8
2013	29	630	0.028	16.8
2013	29	640	0.029	17.4
2013	29	650	0.028	16.8
2013	29	700	0.028	16.8
2013	29	710	0.029	17.4
2013	29	720	0.028	16.8
2013	29	730	0.028	16.8
2013	29	740	0.028	16.8
2013	29	750	0.028	16.8
2013	29	800	0.027	16.2
2013	29	810	0.028	16.8
2013	29	820	0.027	16.2
2013	29	830	0.028	16.8
2013	29	840	0.028	16.8
2013	29	850	0.028	16.8
2013	29	900	0.028	16.8
2013	29	910	0.028	16.8
2013	29	920	0.028	16.8
2013	29	930	0.028	16.8
2013	29	940	0.028	16.8
2013	29	950	0.028	16.8
2013	29	1000	0.028	16.8
2013	29	1010	0.027	16.2
2013	29	1020	0.027	16.2
2013	29	1030	0.028	16.8
2013	29	1040	0.029	17.4
2013	29	1050	0.027	16.2
2013	29	1100	0.029	17.4
2013	29	1110	0.027	16.2
2013	29	1120	0.029	17.4
2013	29	1130	0.029	17.4
2013	29	1140	0.029	17.4
2013	29	1150	0.028	16.8
2013	29	1200	0.028	16.8
2013	29	1210	0.028	16.8
2013	29	1220	0.028	16.8
2013	29	1230	0.028	16.8
2013	29	1240	-0.016	-9.6
2013	29	1250	0.028	16.8

2013	29	1300	0.028	16.8
2013	29	1310	0.028	16.8
2013	29	1320	0.028	16.8
2013	29	1330	0.028	16.8
2013	29	1340	0.005	3
2013	29	1350	0.028	16.8
2013	29	1400	0.028	16.8
2013	29	1410	0.028	16.8
2013	29	1420	0.028	16.8
2013	29	1430	0.028	16.8
2013	29	1440	0.028	16.8
2013	29	1450	0.028	16.8
2013	29	1500	0.028	16.8
2013	29	1510	0.028	16.8
2013	29	1520	0.028	16.8
2013	29	1530	0.028	16.8
2013	29	1540	0.028	16.8
2013	29	1550	0.028	16.8
2013	29	1600	0.005	3
2013	29	1610	0.028	16.8
2013	29	1620	0.028	16.8
2013	29	1630	-0.017	-10.2
2013	29	1640	0.028	16.8
2013	29	1650	0.028	16.8
2013	29	1700	-0.018	-10.8
2013	29	1710	0.028	16.8
2013	29	1720	0.028	16.8
2013	29	1730	0.028	16.8
2013	29	1740	0.028	16.8
2013	29	1750	0.028	16.8
2013	29	1800	0.028	16.8
2013	29	1810	0.028	16.8
2013	29	1820	0.028	16.8
2013	29	1830	0.028	16.8
2013	29	1840	0.028	16.8
2013	29	1850	0.028	16.8
2013	29	1900	0.028	16.8
2013	29	1910	0.027	16.2
2013	29	1920	0.028	16.8
2013	29	1930	0.028	16.8
2013	29	1940	0.028	16.8
2013	29	1950	0.004	2.4
2013	29	2000	0.004	2.4
2013	29	2010	-0.016	-9.6
2013	29	2020	0.004	2.4
2013	29	2030	0.004	2.4
2013	29	2040	0.004	2.4
2013	29	2050	0.028	16.8
2013	29	2100	0.006	3.6
2013	29	2110	0.009	5.4
2013	29	2120	0.009	5.4
2013	29	2130	0.012	7.2
2013	29	2140	0.013	7.8
2013	29	2150	0.014	8.4
2013	29	2200	0.014	8.4
2013	29	2210	0.014	8.4
2013	29	2220	0.015	9
2013	29	2230	0.015	9
2013	29	2240	0.029	17.4

2013	29	2250	0.015	9
2013	29	2300	0.015	9
2013	29	2310	0.015	9
2013	29	2320	0.036	21.6
2013	29	2330	0.015	9
2013	29	2340	0.015	9
2013	29	2350	0.015	9
2013	29	2400	0.015	9
2013	30	10	0.015	9
2013	30	20	0.015	9
2013	30	30	0.015	9
2013	30	40	-0.006	-3.6
2013	30	50	0.029	17.4
2013	30	100	-0.003	-1.8
2013	30	110	0.021	12.6
2013	30	120	0.023	13.8
2013	30	130	-0.019	-11.4
2013	30	140	-0.018	-10.8
2013	30	150	-0.018	-10.8
2013	30	200	-0.017	-10.2
2013	30	210	0.025	15
2013	30	220	-0.017	-10.2
2013	30	230	-0.017	-10.2
2013	30	240	0.025	15
2013	30	250	0.025	15
2013	30	300	0.025	15
2013	30	310	0.025	15
2013	30	320	-0.017	-10.2
2013	30	330	-0.017	-10.2
2013	30	340	0.025	15
2013	30	350	0.025	15
2013	30	400	-0.017	-10.2
2013	30	410	0.025	15
2013	30	420	0.025	15
2013	30	430	0.025	15
2013	30	440	0.025	15
2013	30	450	0.025	15
2013	30	500	0.025	15
2013	30	510	0.026	15.6
2013	30	520	-0.015	-9
2013	30	530	0.03	18
2013	30	540	0.031	18.6
2013	30	550	0.01	6
2013	30	600	0.033	19.8
2013	30	610	0.012	7.2
2013	30	620	-0.008	-4.8
2013	30	630	0.014	8.4
2013	30	640	-0.007	-4.2
2013	30	650	-0.007	-4.2
2013	30	700	-0.007	-4.2
2013	30	710	-0.007	-4.2
2013	30	720	-0.007	-4.2
2013	30	730	-0.007	-4.2
2013	30	740	-0.007	-4.2
2013	30	750	-0.007	-4.2
2013	30	800	-0.007	-4.2
2013	30	810	0.035	21
2013	30	820	0.057	34.2
2013	30	830	0.035	21

2013	30	840	0.031	18.6
2013	30	850	0.072	43.2
2013	30	900	0.07	42
2013	30	910	0.069	41.4
2013	30	920	0.069	41.4
2013	30	930	0.025	15
2013	30	940	0.068	40.8
2013	30	950	0.068	40.8
2013	30	1000	0.065	39
2013	30	1010	0.06	36
2013	30	1020	0.059	35.4
2013	30	1030	0.058	34.8
2013	30	1040	0.058	34.8
2013	30	1050	0.058	34.8
2013	30	1100	0.102	61.2
2013	30	1110	0.102	61.2
2013	30	1120	0.058	34.8
2013	30	1130	0.036	21.6
2013	30	1140	0.056	33.6
2013	30	1150	0.052	31.2
2013	30	1200	0.05	30
2013	30	1210	0.049	29.4
2013	30	1220	0.048	28.8
2013	30	1230	0.047	28.2
2013	30	1240	0.047	28.2
2013	30	1250	0.047	28.2
2013	30	1300	0.005	3
2013	30	1310	0.047	28.2
2013	30	1320	0.047	28.2
2013	30	1330	0.005	3
2013	30	1340	0.005	3
2013	30	1350	0.026	15.6
2013	30	1400	0.047	28.2
2013	30	1410	0.047	28.2
2013	30	1420	0.047	28.2
2013	30	1430	0.005	3
2013	30	1440	0.005	3
2013	30	1450	0.047	28.2
2013	30	1500	0.047	28.2
2013	30	1510	0.005	3
2013	30	1520	0.005	3
2013	30	1530	0.005	3
2013	30	1540	0.005	3
2013	30	1550	0.047	28.2
2013	30	1600	0.047	28.2
2013	30	1610	0.004	2.4
2013	30	1620	0.002	1.2
2013	30	1630	0.003	1.8
2013	30	1640	0.046	27.6
2013	30	1650	0.046	27.6
2013	30	1700	0.046	27.6
2013	30	1710	0.046	27.6
2013	30	1720	0.046	27.6
2013	30	1730	0.003	1.8
2013	30	1740	0.003	1.8
2013	30	1750	0.004	2.4
2013	30	1800	0.004	2.4
2013	30	1810	0.028	16.8
2013	30	1820	0.004	2.4

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2013	30	1830	0.028	16.8
2013	30	1840	0.004	2.4
2013	30	1850	0.028	16.8
2013	30	1900	0.004	2.4
2013	30	1910	0.028	16.8
2013	30	1920	0.004	2.4
2013	30	1930	0.004	2.4
2013	30	1940	0.028	16.8
2013	30	1950	0.028	16.8
2013	30	2000	0.028	16.8
2013	30	2010	0.028	16.8
2013	30	2020	0.028	16.8
2013	30	2030	0.028	16.8
2013	30	2040	0.028	16.8
2013	30	2050	0.028	16.8
2013	30	2100	0.028	16.8
2013	30	2110	0.027	16.2
2013	30	2120	0.027	16.2
2013	30	2130	0.027	16.2
2013	30	2140	0.027	16.2
2013	30	2150	0.027	16.2
2013	30	2200	0.027	16.2
2013	30	2210	0.027	16.2
2013	30	2220	0.027	16.2
2013	30	2230	0.026	15.6
2013	30	2240	0.027	16.2
2013	30	2250	0.026	15.6
2013	30	2300	0.027	16.2
2013	30	2310	0.027	16.2
2013	30	2320	0.026	15.6
2013	30	2330	0.027	16.2
2013	30	2340	0.027	16.2
2013	30	2350	0.026	15.6
2013	30	2400	0.027	16.2
2013	31	10	0.027	16.2
2013	31	20	0.026	15.6
2013	31	30	0.026	15.6
2013	31	40	0.027	16.2
2013	31	50	0.027	16.2
2013	31	100	0.027	16.2
2013	31	110	0.026	15.6
2013	31	120	0.026	15.6
2013	31	130	0.026	15.6
2013	31	140	0.026	15.6
2013	31	150	0.026	15.6
2013	31	200	0.026	15.6
2013	31	210	0.026	15.6
2013	31	220	0.026	15.6
2013	31	230	0.026	15.6
2013	31	240	0.026	15.6
2013	31	250	0.026	15.6
2013	31	300	0.026	15.6
2013	31	310	0.026	15.6
2013	31	320	0.026	15.6
2013	31	330	0.026	15.6
2013	31	340	0.026	15.6
2013	31	350	0.026	15.6
2013	31	400	0.026	15.6
2013	31	410	0.026	15.6

2013	31	420	0.026	15.6
2013	31	430	0.026	15.6
2013	31	440	0.026	15.6
2013	31	450	0.026	15.6
2013	31	500	0.028	16.8
2013	31	510	0.028	16.8
2013	31	520	0.028	16.8
2013	31	530	0.028	16.8
2013	31	540	0.028	16.8
2013	31	550	0.026	15.6
2013	31	600	0.028	16.8
2013	31	610	0.026	15.6
2013	31	620	0.026	15.6
2013	31	630	0.026	15.6
2013	31	640	0.025	15
2013	31	650	0.026	15.6
2013	31	700	0.026	15.6
2013	31	710	0.026	15.6
2013	31	720	0.026	15.6
2013	31	730	0.026	15.6
2013	31	740	0.026	15.6
2013	31	750	0.026	15.6
2013	31	800	0.026	15.6
2013	31	810	0.026	15.6
2013	31	820	0.026	15.6
2013	31	830	0.028	16.8
2013	31	840	0.026	15.6
2013	31	850	0.026	15.6
2013	31	900	0.026	15.6
2013	31	910	0.026	15.6
2013	31	920	0.026	15.6
2013	31	930	0.026	15.6
2013	31	940	0.026	15.6
2013	31	950	0.028	16.8
2013	31	1000	0.028	16.8
2013	31	1010	0.026	15.6
2013	31	1020	0.027	16.2
2013	31	1030	0.027	16.2
2013	31	1040	0.026	15.6
2013	31	1050	0.027	16.2
2013	31	1100	0.027	16.2
2013	31	1110	0.027	16.2
2013	31	1120	0.027	16.2
2013	31	1130	0.026	15.6
2013	31	1140	0.027	16.2
2013	31	1150	0.027	16.2
2013	31	1200	0.026	15.6
2013	31	1210	0.027	16.2
2013	31	1220	0.027	16.2
2013	31	1230	0.027	16.2
2013	31	1240	0.027	16.2
2013	31	1250	0.027	16.2
2013	31	1300	0.027	16.2
2013	31	1310	0.026	15.6
2013	31	1320	0.027	16.2
2013	31	1330	0.027	16.2
2013	31	1340	0.027	16.2
2013	31	1350	0.026	15.6
2013	31	1400	0.027	16.2

2013	31	1410	0.027	16.2
2013	31	1420	0.027	16.2
2013	31	1430	0.027	16.2
2013	31	1440	0.027	16.2
2013	31	1450	0.027	16.2
2013	31	1500	0.027	16.2
2013	31	1510	0.027	16.2
2013	31	1520	0.027	16.2
2013	31	1530	0.026	15.6
2013	31	1540	0.026	15.6
2013	31	1550	0.027	16.2
2013	31	1600	0.027	16.2
2013	31	1610	0.027	16.2
2013	31	1620	0.028	16.8
2013	31	1630	0.027	16.2
2013	31	1640	0.027	16.2
2013	31	1650	0.028	16.8
2013	31	1700	0.027	16.2
2013	31	1710	0.027	16.2
2013	31	1720	0.028	16.8
2013	31	1730	0.028	16.8
2013	31	1740	0.028	16.8
2013	31	1750	0.028	16.8
2013	31	1800	0.028	16.8
2013	31	1810	0.028	16.8
2013	31	1820	0.029	17.4
2013	31	1830	0.029	17.4
2013	31	1840	0.029	17.4
2013	31	1850	0.029	17.4
2013	31	1900	0.027	16.2
2013	31	1910	0.029	17.4
2013	31	1920	0.027	16.2
2013	31	1930	0.029	17.4
2013	31	1940	0.029	17.4
2013	31	1950	0.029	17.4
2013	31	2000	0.029	17.4
2013	31	2010	0.029	17.4
2013	31	2020	0.027	16.2
2013	31	2030	0.029	17.4
2013	31	2040	0.027	16.2
2013	31	2050	0.029	17.4
2013	31	2100	0.029	17.4
2013	31	2110	0.027	16.2
2013	31	2120	0.027	16.2
2013	31	2130	0.029	17.4
2013	31	2140	0.029	17.4
2013	31	2150	0.029	17.4
2013	31	2200	0.027	16.2
2013	31	2210	-0.018	-10.8
2013	31	2220	-0.018	-10.8
2013	31	2230	-0.017	-10.2
2013	31	2240	-0.017	-10.2
2013	31	2250	-0.017	-10.2
2013	31	2300	-0.017	-10.2
2013	31	2310	-0.017	-10.2
2013	31	2320	0.028	16.8
2013	31	2330	0.028	16.8
2013	31	2340	0.028	16.8
2013	31	2350	0.028	16.8

2013	31	2400	0.028	16.8
2013	32	10	0.028	16.8
2013	32	20	0.028	16.8
2013	32	30	0.028	16.8
2013	32	40	0.028	16.8
2013	32	50	0.028	16.8
2013	32	100	0.028	16.8
2013	32	110	0.028	16.8
2013	32	120	0.028	16.8
2013	32	130	0.028	16.8
2013	32	140	0.028	16.8
2013	32	150	0.028	16.8
2013	32	200	0.028	16.8
2013	32	210	0.028	16.8
2013	32	220	0.028	16.8
2013	32	230	0.028	16.8
2013	32	240	0.028	16.8
2013	32	250	0.028	16.8
2013	32	300	0.028	16.8
2013	32	310	0.028	16.8
2013	32	320	0.028	16.8
2013	32	330	0.028	16.8
2013	32	340	0.028	16.8
2013	32	350	0.028	16.8
2013	32	400	0.029	17.4
2013	32	410	0.028	16.8
2013	32	420	0.027	16.2
2013	32	430	0.029	17.4
2013	32	440	0.028	16.8
2013	32	450	0.028	16.8
2013	32	500	0.027	16.2
2013	32	510	0.028	16.8
2013	32	520	0.028	16.8
2013	32	530	0.029	17.4
2013	32	540	0.028	16.8
2013	32	550	0.027	16.2
2013	32	600	0.028	16.8
2013	32	610	0.028	16.8
2013	32	620	0.028	16.8
2013	32	630	0.028	16.8
2013	32	640	0.027	16.2
2013	32	650	0.027	16.2
2013	32	700	0.029	17.4
2013	32	710	0.028	16.8
2013	32	720	0.028	16.8
2013	32	730	0.027	16.2
2013	32	740	0.027	16.2
2013	32	750	0.028	16.8
2013	32	800	0.028	16.8
2013	32	810	0.028	16.8
2013	32	820	0.027	16.2
2013	32	830	0.028	16.8
2013	32	840	0.028	16.8
2013	32	850	0.028	16.8
2013	32	900	0.028	16.8
2013	32	910	0.028	16.8
2013	32	920	0.028	16.8
2013	32	930	0.028	16.8
2013	32	940	0.028	16.8

2013	32	950	0.028	16.8
2013	32	1000	0.028	16.8
2013	32	1010	0.028	16.8
2013	32	1020	0.028	16.8
2013	32	1030	0.027	16.2
2013	32	1040	0.028	16.8
2013	32	1050	0.027	16.2
2013	32	1100	0.027	16.2
2013	32	1110	0.027	16.2
2013	32	1120	0.027	16.2
2013	32	1130	0.029	17.4
2013	32	1140	0.029	17.4
2013	32	1150	0.027	16.2
2013	32	1200	0.027	16.2
2013	32	1210	0.027	16.2
2013	32	1220	0.027	16.2
2013	32	1230	0.027	16.2
2013	32	1240	0.027	16.2
2013	32	1250	0.027	16.2
2013	32	1300	0.027	16.2
2013	32	1310	0.027	16.2
2013	32	1320	0.029	17.4
2013	32	1330	0.027	16.2
2013	32	1340	0.029	17.4
2013	32	1350	0.029	17.4
2013	32	1400	0.027	16.2
2013	32	1410	0.029	17.4
2013	32	1420	0.029	17.4
2013	32	1430	0.027	16.2
2013	32	1440	0.027	16.2
2013	32	1450	0.029	17.4
2013	32	1500	0.029	17.4
2013	32	1510	0.027	16.2
2013	32	1520	0.027	16.2
2013	32	1530	0.027	16.2
2013	32	1540	0.027	16.2
2013	32	1550	0.028	16.8
2013	32	1600	0.028	16.8
2013	32	1610	0.027	16.2
2013	32	1620	0.028	16.8
2013	32	1630	0.028	16.8
2013	32	1640	0.028	16.8
2013	32	1650	0.027	16.2
2013	32	1700	0.028	16.8
2013	32	1710	0.028	16.8
2013	32	1720	0.028	16.8
2013	32	1730	0.027	16.2
2013	32	1740	0.027	16.2
2013	32	1750	0.028	16.8
2013	32	1800	0.027	16.2
2013	32	1810	0.028	16.8
2013	32	1820	0.028	16.8
2013	32	1830	0.028	16.8
2013	32	1840	0.028	16.8
2013	32	1850	0.028	16.8
2013	32	1900	0.027	16.2
2013	32	1910	0.027	16.2
2013	32	1920	0.029	17.4
2013	32	1930	0.027	16.2

2013	32	1940	0.027	16.2
2013	32	1950	0.027	16.2
2013	32	2000	0.027	16.2
2013	32	2010	0.027	16.2
2013	32	2020	0.027	16.2
2013	32	2030	0.027	16.2
2013	32	2040	0.027	16.2
2013	32	2050	0.027	16.2
2013	32	2100	0.029	17.4
2013	32	2110	0.029	17.4
2013	32	2120	0.028	16.8
2013	32	2130	0.027	16.2
2013	32	2140	0.028	16.8
2013	32	2150	0.027	16.2
2013	32	2200	0.027	16.2
2013	32	2210	0.027	16.2
2013	32	2220	0.028	16.8
2013	32	2230	0.029	17.4
2013	32	2240	0.029	17.4
2013	32	2250	0.029	17.4
2013	32	2300	0.029	17.4
2013	32	2310	0.029	17.4
2013	32	2320	-0.018	-10.8
2013	32	2330	-0.018	-10.8
2013	32	2340	-0.017	-10.2
2013	32	2350	-0.017	-10.2
2013	32	2400	-0.017	-10.2
2013	33	10	-0.017	-10.2
2013	33	20	0.028	16.8
2013	33	30	-0.017	-10.2
2013	33	40	-0.017	-10.2
2013	33	50	-0.017	-10.2
2013	33	100	-0.017	-10.2
2013	33	110	0.028	16.8
2013	33	120	0.025	15
2013	33	130	-0.017	-10.2
2013	33	140	-0.017	-10.2
2013	33	150	0.025	15
2013	33	200	-0.017	-10.2
2013	33	210	-0.017	-10.2
2013	33	220	-0.017	-10.2
2013	33	230	-0.017	-10.2
2013	33	240	-0.017	-10.2
2013	33	250	0.025	15
2013	33	300	-0.017	-10.2
2013	33	310	-0.017	-10.2
2013	33	320	-0.017	-10.2
2013	33	330	-0.017	-10.2
2013	33	340	-0.017	-10.2
2013	33	350	-0.016	-9.6
2013	33	400	0.115	69
2013	33	410	0.16	96
2013	33	420	0.267	154.2
2013	33	430	0.305	183
2013	33	440	0.357	214.2
2013	33	450	0.359	215.4
2013	33	500	0.362	217.2
2013	33	510	0.363	217.8
2013	33	520	0.363	217.8

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2013	33	530	0.364	218.4
2013	33	540	0.416	249.6
2013	33	550	0.364	218.4
2013	33	600	0.416	249.6
2013	33	610	0.364	218.4
2013	33	620	0.364	218.4
2013	33	630	0.339	203.4
2013	33	640	0.314	188.4
2013	33	650	0.314	188.4
2013	33	700	0.314	188.4
2013	33	710	0.265	159
2013	33	720	0.265	159
2013	33	730	0.216	129.6
2013	33	740	0.216	129.6
2013	33	750	0.216	129.6
2013	33	800	0.169	101.4
2013	33	810	0.193	115.8
2013	33	820	0.169	101.4
2013	33	830	0.169	101.4
2013	33	840	0.193	115.8
2013	33	850	0.123	73.8
2013	33	900	0.122	73.2
2013	33	910	0.119	71.4
2013	33	920	0.116	69.6
2013	33	930	0.114	68.4
2013	33	940	0.113	67.8
2013	33	950	0.069	41.4
2013	33	1000	0.068	40.8
2013	33	1010	0.068	40.8
2013	33	1020	0.068	40.8
2013	33	1030	0.067	40.2
2013	33	1040	0.067	40.2
2013	33	1050	0.063	37.8
2013	33	1100	0.018	10.8
2013	33	1110	0.016	9.6
2013	33	1120	0.015	9
2013	33	1130	0.015	9
2013	33	1140	0.029	17.4
2013	33	1150	0.029	17.4
2013	33	1200	0.015	9
2013	33	1210	0.015	9
2013	33	1220	0.015	9
2013	33	1230	0.015	9
2013	33	1240	0.029	17.4
2013	33	1250	0.029	17.4
2013	33	1300	0.015	9
2013	33	1310	0.015	9
2013	33	1320	0.029	17.4
2013	33	1330	0.029	17.4
2013	33	1340	0.029	17.4
2013	33	1350	0.029	17.4
2013	33	1400	0.029	17.4
2013	33	1410	0.029	17.4
2013	33	1420	0.029	17.4
2013	33	1430	0.029	17.4
2013	33	1440	0.012	7.2
2013	33	1450	0.028	16.8
2013	33	1500	0.01	6
2013	33	1510	0.008	4.8

R

2013	33	1520	0.006	3.6
2013	33	1530	0.005	3
2013	33	1540	0.005	3
2013	33	1550	0.047	28.2
2013	33	1600	0.005	3
2013	33	1610	0.005	3
2013	33	1620	0.047	28.2
2013	33	1630	0.047	28.2
2013	33	1640	0.005	3
2013	33	1650	0.069	41.4
2013	33	1700	0.091	54.6
2013	33	1710	0.047	28.2
2013	33	1720	0.047	28.2
2013	33	1730	0.047	28.2
2013	33	1740	0.091	54.6
2013	33	1750	0.048	28.8
2013	33	1800	0.092	55.2
2013	33	1810	0.052	31.2
2013	33	1820	0.054	32.4
2013	33	1830	0.013	7.8
2013	33	1840	0.057	34.2
2013	33	1850	0.101	60.6
2013	33	1900	0.057	34.2
2013	33	1910	0.058	34.8
2013	33	1920	0.058	34.8
2013	33	1930	0.058	34.8
2013	33	1940	0.058	34.8
2013	33	1950	0.058	34.8
2013	33	2000	0.058	34.8
2013	33	2010	0.058	34.8
2013	33	2020	0.058	34.8
2013	33	2030	0.058	34.8
2013	33	2040	0.058	34.8
2013	33	2050	0.015	9
2013	33	2100	0.058	34.8
2013	33	2110	0.058	34.8
2013	33	2120	0.061	36.6
2013	33	2130	0.064	38.4
2013	33	2140	0.066	39.6
2013	33	2150	0.024	14.4
2013	33	2200	0.024	14.4
2013	33	2210	0.025	15
2013	33	2220	0.025	15
2013	33	2230	0.025	15
2013	33	2240	0.025	15
2013	33	2250	0.025	15
2013	33	2300	0.025	15
2013	33	2310	0.025	15
2013	33	2320	0.025	15
2013	33	2330	0.025	15
2013	33	2340	-0.017	-10.2
2013	33	2350	0.025	15
2013	33	2400	-0.017	-10.2
2013	34	10	0.025	15
2013	34	20	0.026	15.6
2013	34	30	0.027	16.2
2013	34	40	0.009	5.4
2013	34	50	-0.009	-5.4
2013	34	100	0.012	7.2

2013	34	110	-0.009	-5.4
2013	34	120	-0.008	-4.8
2013	34	130	-0.008	-4.8
2013	34	140	-0.007	-4.2
2013	34	150	-0.007	-4.2
2013	34	200	-0.007	-4.2
2013	34	210	-0.007	-4.2
2013	34	220	-0.007	-4.2
2013	34	230	-0.007	-4.2
2013	34	240	-0.007	-4.2
2013	34	250	-0.007	-4.2
2013	34	300	0.014	8.4
2013	34	310	0.014	8.4
2013	34	320	0.014	8.4
2013	34	330	-0.007	-4.2
2013	34	340	-0.007	-4.2
2013	34	350	0.014	8.4
2013	34	400	-0.007	-4.2
2013	34	410	-0.007	-4.2
2013	34	420	0.029	17.4
2013	34	430	-0.007	-4.2
2013	34	440	0.028	16.8
2013	34	450	0.015	9
2013	34	500	0.029	17.4
2013	34	510	-0.003	-1.8
2013	34	520	0.028	16.8
2013	34	530	0.028	16.8
2013	34	540	0.029	17.4
2013	34	550	0.029	17.4
2013	34	600	-0.019	-11.4
2013	34	610	0.028	16.8
2013	34	620	0.028	16.8
2013	34	630	0.028	16.8
2013	34	640	-0.018	-10.8
2013	34	650	-0.018	-10.8
2013	34	700	0.003	1.8
2013	34	710	-0.018	-10.8
2013	34	720	0.028	16.8
2013	34	730	-0.018	-10.8
2013	34	740	0.003	1.8
2013	34	750	0.003	1.8
2013	34	800	-0.018	-10.8
2013	34	810	0.028	16.8
2013	34	820	0.028	16.8
2013	34	830	0.029	17.4
2013	34	840	0.029	17.4
2013	34	850	-0.003	-1.8
2013	34	900	0.016	9.6
2013	34	910	0.015	9
2013	34	920	-0.007	-4.2
2013	34	930	-0.007	-4.2
2013	34	940	-0.008	-4.8
2013	34	950	-0.009	-5.4
2013	34	1000	-0.013	-7.8
2013	34	1010	-0.015	-9
2013	34	1020	0.028	16.8
2013	34	1030	0.028	16.8
2013	34	1040	-0.017	-10.2
2013	34	1050	-0.017	-10.2

2013	34	1100	-0.019	-11.4
2013	34	1110	0.029	17.4
2013	34	1120	0.029	17.4
2013	34	1130	0.029	17.4
2013	34	1140	0.029	17.4
2013	34	1150	0.029	17.4
2013	34	1200	0.029	17.4
2013	34	1210	0.015	9
2013	34	1220	0.029	17.4
2013	34	1230	0.029	17.4
2013	34	1240	0.015	9
2013	34	1250	0.029	17.4
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2013	34	1320	0.029	17.4
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2013	34	1610	0.027	16.2
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2013	34	1650	0.027	16.2
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2013	34	1710	0.027	16.2
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2013	34	1730	0.027	16.2
2013	34	1740	0.027	16.2
2013	34	1750	0.027	16.2
2013	34	1800	0.027	16.2
2013	34	1810	0.026	15.6
2013	34	1820	0.027	16.2
2013	34	1830	0.027	16.2
2013	34	1840	0.027	16.2
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2013	34	1900	0.026	15.6
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2013	34	1940	0.027	16.2
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2013	34	2020	0.027	16.2
2013	34	2030	0.027	16.2
2013	34	2040	0.026	15.6

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2013	34	2100	0.026	15.6
2013	34	2110	0.027	16.2
2013	34	2120	0.027	16.2
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2013	34	2140	0.026	15.6
2013	34	2150	0.026	15.6
2013	34	2200	0.027	16.2
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2013	35	210	0.025	15
2013	35	220	0.026	15.6
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2013	35	240	0.025	15
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2013	35	300	0.025	15
2013	35	310	0.025	15
2013	35	320	0.025	15
2013	35	330	0.025	15
2013	35	340	0.025	15
2013	35	350	0.025	15
2013	35	400	0.025	15
2013	35	410	0.025	15
2013	35	420	0.025	15
2013	35	430	0.025	15
2013	35	440	0.025	15
2013	35	450	0.025	15
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2013	35	520	0.024	14.4
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2013	35	540	0.025	15
2013	35	550	0.025	15
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2013	35	630	0.026	15.6

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2013	35	650	0.024	14.4
2013	35	700	0.024	14.4
2013	35	710	0.024	14.4
2013	35	720	0.024	14.4
2013	35	730	0.024	14.4
2013	35	740	0.024	14.4
2013	35	750	0.024	14.4
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2013	35	840	0.023	13.8
2013	35	850	0.023	13.8
2013	35	900	0.023	13.8
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2013	35	920	0.022	13.2
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2013	35	940	0.022	13.2
2013	35	950	0.021	12.6
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2013	35	1010	0.02	12
2013	35	1020	0.02	12
2013	35	1030	0.02	12
2013	35	1040	0.02	12
2013	35	1050	0.019	11.4
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2013	35	1120	0.019	11.4
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2013	35	1140	0.019	11.4
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2013	36	120	0.006	3.6
2013	36	130	0.006	3.6
2013	36	140	0.006	3.6
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2013	36	210	0.005	3

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2013	37	1850	0.003	1.8
2013	37	1900	0.003	1.8
2013	37	1910	0.003	1.8
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2013	37	1930	0.003	1.8
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2013	37	1950	0.003	1.8
2013	37	2000	0.003	1.8
2013	37	2010	0.003	1.8
2013	37	2020	0.003	1.8
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2013	37	2110	0.003	1.8
2013	37	2120	0.003	1.8
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2013	38	150	0.003	1.8
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2013	38	220	0.003	1.8
2013	38	230	0.003	1.8
2013	38	240	0.003	1.8
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2013	38	300	0.002	1.2
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2013	38	320	0.003	1.8

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2013	38	350	0.003	1.8
2013	38	400	0.003	1.8
2013	38	410	0.003	1.8
2013	38	420	0.003	1.8
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2013	38	1250	0.006	3.6
2013	38	1300	0.006	3.6
2013	38	1310	0.006	3.6

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2013	39	1840	0.003	1.8

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2013	41	1910	0.004	2.4
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2013	41	1930	0.003	1.8
2013	41	1940	0.003	1.8
2013	41	1950	0.003	1.8

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2013	41	2000	0.003	1.8
2013	41	2010	0.003	1.8
2013	41	2020	0.003	1.8
2013	41	2030	0.003	1.8
2013	41	2040	0.003	1.8
2013	41	2050	0.003	1.8
2013	41	2100	0.003	1.8
2013	41	2110	0.003	1.8
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2013	41	2130	0.003	1.8
2013	41	2140	0.003	1.8
2013	41	2150	0.003	1.8
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2013	41	2210	0.003	1.8
2013	41	2220	0.003	1.8
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2013	41	2240	0.003	1.8
2013	41	2250	0.003	1.8
2013	41	2300	0.003	1.8
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2013	42	120	0.003	1.8
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2013	42	140	0.003	1.8
2013	42	150	0.003	1.8
2013	42	200	0.003	1.8
2013	42	210	0.003	1.8
2013	42	220	0.003	1.8
2013	42	230	0.003	1.8
2013	42	240	0.003	1.8
2013	42	250	0.003	1.8
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2013	42	310	0.003	1.8
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2013	42	410	0.003	1.8
2013	42	420	0.003	1.8
2013	42	430	0.003	1.8
2013	42	440	0.003	1.8
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2013	42	500	0.003	1.8
2013	42	510	0.003	1.8
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2013	42	540	0.003	1.8

2013	42	550	0.003	1.8
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2013	42	610	0.003	1.8
2013	42	620	0.003	1.8
2013	42	630	0.003	1.8
2013	42	640	0.003	1.8
2013	42	650	0.003	1.8
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2013	42	710	0.003	1.8
2013	42	720	0.003	1.8
2013	42	730	0.003	1.8
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2013	42	750	0.003	1.8
2013	42	800	0.003	1.8
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2013	42	830	0.003	1.8
2013	42	840	0.003	1.8
2013	42	850	0.003	1.8
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2013	42	1100	0.003	1.8
2013	42	1110	0.003	1.8
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2013	42	1510	0.003	1.8
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2013	42	1530	0.003	1.8

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2013	42	1600	0.003	1.8
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2013	42	2250	0.003	1.8
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2013	42	2340	0.003	1.8
2013	42	2350	0.003	1.8
2013	42	2400	0.003	1.8
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2013	43	20	0.003	1.8
2013	43	30	0.003	1.8
2013	43	40	0.003	1.8
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2013	43	100	0.003	1.8
2013	43	110	0.003	1.8
2013	43	120	0.003	1.8

2013	43	130	0.003	1.8
2013	43	140	0.003	1.8
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2013	43	410	0.003	1.8
2013	43	420	0.003	1.8
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2013	43	520	0.003	1.8
2013	43	530	0.003	1.8
2013	43	540	0.003	1.8
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2013	43	620	0.003	1.8
2013	43	630	0.003	1.8
2013	43	640	0.003	1.8
2013	43	650	0.003	1.8
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2013	43	710	0.003	1.8
2013	43	720	0.003	1.8
2013	43	730	0.003	1.8
2013	43	740	0.003	1.8
2013	43	750	0.003	1.8
2013	43	800	0.002	1.2
2013	43	810	0.002	1.2
2013	43	820	0.002	1.2
2013	43	830	0.003	1.8
2013	43	840	0.003	1.8
2013	43	850	0.003	1.8
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2013	43	920	0.003	1.8
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2013	43	1000	0.003	1.8
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2013	43	1020	0.003	1.8
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2013	43	1040	0.003	1.8
2013	43	1050	0.003	1.8
2013	43	1100	0.003	1.8
2013	43	1110	0.003	1.8

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2013	43	1120	0.003	1.8
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2013	43	1140	0.003	1.8
2013	43	1150	0.003	1.8
2013	43	1200	0.003	1.8
2013	43	1210	0.003	1.8
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2013	43	1240	0.003	1.8
2013	43	1250	0.003	1.8
2013	43	1300	0.003	1.8
2013	43	1310	0.003	1.8
2013	43	1320	0.003	1.8
2013	43	1330	0.003	1.8
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2013	43	1510	0.003	1.8
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2013	43	1540	0.003	1.8
2013	43	1550	0.003	1.8
2013	43	1600	0.003	1.8
2013	43	1610	0.003	1.8
2013	43	1620	0.003	1.8
2013	43	1630	0.003	1.8
2013	43	1640	0.003	1.8
2013	43	1650	0.003	1.8
2013	43	1700	0.003	1.8
2013	43	1710	0.003	1.8
2013	43	1720	0.003	1.8
2013	43	1730	0.002	1.2
2013	43	1740	0.003	1.8
2013	43	1750	0.003	1.8
2013	43	1800	0.002	1.2
2013	43	1810	0.003	1.8
2013	43	1820	0.003	1.8
2013	43	1830	0.002	1.2
2013	43	1840	0.003	1.8
2013	43	1850	0.002	1.2
2013	43	1900	0.003	1.8
2013	43	1910	0.003	1.8
2013	43	1920	0.003	1.8
2013	43	1930	0.002	1.2
2013	43	1940	0.002	1.2
2013	43	1950	0.003	1.8
2013	43	2000	0.003	1.8
2013	43	2010	0.003	1.8
2013	43	2020	0.003	1.8
2013	43	2030	0.003	1.8
2013	43	2040	0.003	1.8
2013	43	2050	0.003	1.8
2013	43	2100	0.003	1.8

2013	43	2110	0.003	1.8
2013	43	2120	0.003	1.8
2013	43	2130	0.003	1.8
2013	43	2140	0.003	1.8
2013	43	2150	0.003	1.8
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2013	43	2210	0.003	1.8
2013	43	2220	0.003	1.8
2013	43	2230	0.003	1.8
2013	43	2240	0.003	1.8
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2013	43	2300	0.002	1.2
2013	43	2310	0.002	1.2
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2013	43	2340	0.002	1.2
2013	43	2350	0.002	1.2
2013	43	2400	0.002	1.2
2013	44	10	0.002	1.2
2013	44	20	0.002	1.2
2013	44	30	0.002	1.2
2013	44	40	0.002	1.2
2013	44	50	0.002	1.2
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2013	44	110	0.002	1.2
2013	44	120	0.002	1.2
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2013	44	200	0.002	1.2
2013	44	210	0.002	1.2
2013	44	220	0.002	1.2
2013	44	230	0.002	1.2
2013	44	240	0.002	1.2
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2013	44	310	0.002	1.2
2013	44	320	0.002	1.2
2013	44	330	0.002	1.2
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2013	44	420	0.002	1.2
2013	44	430	0.002	1.2
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2013	44	520	0.002	1.2
2013	44	530	0.002	1.2
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2013	44	550	0.002	1.2
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2013	44	620	0.002	1.2
2013	44	630	0.002	1.2
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2013	44	930	0.002	1.2
2013	44	940	0.002	1.2
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2013	44	1010	0.002	1.2
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2013	44	1030	0.002	1.2
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2013	44	1050	0.002	1.2
2013	44	1100	0.002	1.2
2013	44	1110	0.002	1.2
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2013	44	1600	0.003	1.8
2013	44	1610	0.003	1.8
2013	44	1620	0.003	1.8
2013	44	1630	0.003	1.8
2013	44	1640	0.003	1.8

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2013	44	1650	0.003	1.8
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2013	44	1710	0.003	1.8
2013	44	1720	0.003	1.8
2013	44	1730	0.003	1.8
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2013	44	2020	0.003	1.8
2013	44	2030	0.003	1.8
2013	44	2040	0.003	1.8
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2013	44	2110	0.003	1.8
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2013	44	2210	0.003	1.8
2013	44	2220	0.003	1.8
2013	44	2230	0.003	1.8
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2013	44	2330	0.003	1.8
2013	44	2340	0.003	1.8
2013	44	2350	0.003	1.8
2013	44	2400	0.003	1.8
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2013	45	30	0.003	1.8
2013	45	40	0.003	1.8
2013	45	50	0.003	1.8
2013	45	100	0.003	1.8
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2013	45	130	0.003	1.8
2013	45	140	0.003	1.8
2013	45	150	0.003	1.8
2013	45	200	0.003	1.8
2013	45	210	0.003	1.8
2013	45	220	0.002	1.2
2013	45	230	0.002	1.2

2013	45	240	0.002	1.2
2013	45	250	0.002	1.2
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2013	45	330	0.003	1.8
2013	45	340	0.002	1.2
2013	45	350	0.003	1.8
2013	45	400	0.003	1.8
2013	45	410	0.002	1.2
2013	45	420	0.002	1.2
2013	45	430	0.003	1.8
2013	45	440	0.002	1.2
2013	45	450	0.003	1.8
2013	45	500	0.003	1.8
2013	45	510	0.002	1.2
2013	45	520	0.002	1.2
2013	45	530	0.002	1.2
2013	45	540	0.003	1.8
2013	45	550	0.002	1.2
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2013	45	610	0.003	1.8
2013	45	620	0.003	1.8
2013	45	630	0.002	1.2
2013	45	640	0.003	1.8
2013	45	650	0.002	1.2
2013	45	700	0.002	1.2
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2013	45	720	0.003	1.8
2013	45	730	0.003	1.8
2013	45	740	0.003	1.8
2013	45	750	0.003	1.8
2013	45	800	0.003	1.8
2013	45	810	0.002	1.2
2013	45	820	0.002	1.2
2013	45	830	0.003	1.8
2013	45	840	0.003	1.8
2013	45	850	0.003	1.8
2013	45	900	0.002	1.2
2013	45	910	0.003	1.8
2013	45	920	0.003	1.8
2013	45	930	0.003	1.8
2013	45	940	0.003	1.8
2013	45	950	0.003	1.8
2013	45	1000	0.002	1.2
2013	45	1010	0.002	1.2
2013	45	1020	0.003	1.8
2013	45	1030	0.003	1.8
2013	45	1040	0.003	1.8
2013	45	1050	0.003	1.8
2013	45	1100	0.003	1.8
2013	45	1110	0.003	1.8
2013	45	1120	0.003	1.8
2013	45	1130	0.003	1.8
2013	45	1140	0.003	1.8
2013	45	1150	0.003	1.8
2013	45	1200	0.003	1.8
2013	45	1210	0.003	1.8
2013	45	1220	0.003	1.8

R

2013	45	1230	0.003	1.8
2013	45	1240	0.003	1.8
2013	45	1250	0.003	1.8
2013	45	1300	0.003	1.8
2013	45	1310	0.003	1.8
2013	45	1320	0.003	1.8
2013	45	1330	0.003	1.8
2013	45	1340	0.003	1.8
2013	45	1350	0.003	1.8
2013	45	1400	0.003	1.8
2013	45	1410	0.002	1.2
2013	45	1420	0.003	1.8
2013	45	1430	0.003	1.8
2013	45	1440	0.003	1.8
2013	45	1450	0.003	1.8
2013	45	1500	0.002	1.2
2013	45	1510	0.003	1.8
2013	45	1520	0.002	1.2
2013	45	1530	0.003	1.8
2013	45	1540	0.003	1.8
2013	45	1550	0.002	1.2
2013	45	1600	0.002	1.2
2013	45	1610	0.003	1.8
2013	45	1620	0.003	1.8
2013	45	1630	0.002	1.2
2013	45	1640	0.002	1.2
2013	45	1650	0.002	1.2
2013	45	1700	0.002	1.2
2013	45	1710	0.002	1.2
2013	45	1720	0.003	1.8
2013	45	1730	0.003	1.8
2013	45	1740	0.003	1.8
2013	45	1750	0.003	1.8
2013	45	1800	0.003	1.8
2013	45	1810	0.002	1.2
2013	45	1820	0.002	1.2
2013	45	1830	0.002	1.2
2013	45	1840	0.002	1.2
2013	45	1850	0.003	1.8
2013	45	1900	0.003	1.8
2013	45	1910	0.003	1.8
2013	45	1920	0.003	1.8
2013	45	1930	0.003	1.8
2013	45	1940	0.003	1.8
2013	45	1950	0.003	1.8
2013	45	2000	0.002	1.2
2013	45	2010	0.003	1.8
2013	45	2020	0.003	1.8
2013	45	2030	0.002	1.2
2013	45	2040	0.002	1.2
2013	45	2050	0.003	1.8
2013	45	2100	0.002	1.2
2013	45	2110	0.002	1.2
2013	45	2120	0.002	1.2
2013	45	2130	0.003	1.8
2013	45	2140	0.003	1.8
2013	45	2150	0.003	1.8
2013	45	2200	0.002	1.2
2013	45	2210	0.003	1.8

R

2013	45	2220	0.002	1.2
2013	45	2230	0.002	1.2
2013	45	2240	0.002	1.2
2013	45	2250	0.002	1.2
2013	45	2300	0.002	1.2
2013	45	2310	0.002	1.2
2013	45	2320	0.002	1.2
2013	45	2330	0.002	1.2
2013	45	2340	0.002	1.2
2013	45	2350	0.002	1.2
2013	45	2400	0.002	1.2
2013	46	10	0.002	1.2
2013	46	20	0.002	1.2
2013	46	30	0.002	1.2
2013	46	40	0.002	1.2
2013	46	50	0.002	1.2
2013	46	100	0.002	1.2
2013	46	110	0.002	1.2
2013	46	120	0.002	1.2
2013	46	130	0.002	1.2
2013	46	140	0.002	1.2
2013	46	150	0.002	1.2
2013	46	200	0.002	1.2
2013	46	210	0.002	1.2
2013	46	220	0.002	1.2
2013	46	230	0.002	1.2
2013	46	240	0.002	1.2
2013	46	250	0.002	1.2
2013	46	300	0.002	1.2
2013	46	310	0.002	1.2
2013	46	320	0.002	1.2
2013	46	330	0.002	1.2
2013	46	340	0.002	1.2
2013	46	350	0.002	1.2
2013	46	400	0.002	1.2
2013	46	410	0.003	1.8
2013	46	420	0.002	1.2
2013	46	430	0.002	1.2
2013	46	440	0.002	1.2
2013	46	450	0.002	1.2
2013	46	500	0.002	1.2
2013	46	510	0.002	1.2
2013	46	520	0.002	1.2
2013	46	530	0.002	1.2
2013	46	540	0.002	1.2
2013	46	550	0.002	1.2
2013	46	600	0.002	1.2
2013	46	610	0.002	1.2
2013	46	620	0.002	1.2
2013	46	630	0.002	1.2
2013	46	640	0.002	1.2
2013	46	650	0.002	1.2
2013	46	700	0.002	1.2
2013	46	710	0.002	1.2
2013	46	720	0.002	1.2
2013	46	730	0.002	1.2
2013	46	740	0.002	1.2
2013	46	750	0.002	1.2
2013	46	800	0.002	1.2

R

2013	46	810	0.002	1.2
2013	46	820	0.002	1.2
2013	46	830	0.002	1.2
2013	46	840	0.002	1.2
2013	46	850	0.003	1.8
2013	46	900	0.002	1.2
2013	46	910	0.003	1.8
2013	46	920	0.002	1.2
2013	46	930	0.003	1.8
2013	46	940	0.002	1.2
2013	46	950	0.002	1.2
2013	46	1000	0.003	1.8
2013	46	1010	0.002	1.2
2013	46	1020	0.002	1.2
2013	46	1030	0.002	1.2
2013	46	1040	0.002	1.2
2013	46	1050	0.002	1.2
2013	46	1100	0.002	1.2
2013	46	1110	0.002	1.2
2013	46	1120	0.003	1.8
2013	46	1130	0.002	1.2
2013	46	1140	0.002	1.2
2013	46	1150	0.002	1.2
2013	46	1200	0.002	1.2
2013	46	1210	0.002	1.2
2013	46	1220	0.002	1.2
2013	46	1230	0.003	1.8
2013	46	1240	0.003	1.8
2013	46	1250	0.003	1.8
2013	46	1300	0.003	1.8
2013	46	1310	0.003	1.8
2013	46	1320	0.002	1.2
2013	46	1330	0.003	1.8
2013	46	1340	0.002	1.2
2013	46	1350	0.003	1.8
2013	46	1400	0.002	1.2
2013	46	1410	0.002	1.2
2013	46	1420	0.002	1.2
2013	46	1430	0.002	1.2
2013	46	1440	0.002	1.2
2013	46	1450	0.002	1.2
2013	46	1500	0.002	1.2
2013	46	1510	0.002	1.2
2013	46	1520	0.002	1.2
2013	46	1530	0.002	1.2
2013	46	1540	0.002	1.2
2013	46	1550	0.002	1.2
2013	46	1600	0.002	1.2
2013	46	1610	0.002	1.2
2013	46	1620	0.002	1.2
2013	46	1630	0.002	1.2
2013	46	1640	0.002	1.2
2013	46	1650	0.002	1.2
2013	46	1700	0.002	1.2
2013	46	1710	0.003	1.8
2013	46	1720	0.003	1.8
2013	46	1730	0.002	1.2
2013	46	1740	0.003	1.8
2013	46	1750	0.003	1.8

R

2013	46	1800	0.002	1.2
2013	46	1810	0.002	1.2
2013	46	1820	0.002	1.2
2013	46	1830	0.002	1.2
2013	46	1840	0.002	1.2
2013	46	1850	0.002	1.2
2013	46	1900	0.002	1.2
2013	46	1910	0.002	1.2
2013	46	1920	0.002	1.2
2013	46	1930	0.002	1.2
2013	46	1940	0.002	1.2
2013	46	1950	0.002	1.2
2013	46	2000	0.002	1.2
2013	46	2010	0.002	1.2
2013	46	2020	0.002	1.2
2013	46	2030	0.002	1.2
2013	46	2040	0.002	1.2
2013	46	2050	0.002	1.2
2013	46	2100	0.002	1.2
2013	46	2110	0.002	1.2
2013	46	2120	0.002	1.2
2013	46	2130	0.002	1.2
2013	46	2140	0.002	1.2
2013	46	2150	0.002	1.2
2013	46	2200	0.002	1.2
2013	46	2210	0.002	1.2
2013	46	2220	0.002	1.2
2013	46	2230	0.002	1.2
2013	46	2240	0.002	1.2
2013	46	2250	0.002	1.2
2013	46	2300	0.002	1.2
2013	46	2310	0.002	1.2
2013	46	2320	0.002	1.2
2013	46	2330	0.002	1.2
2013	46	2340	0.002	1.2
2013	46	2350	0.002	1.2
2013	46	2400	0.002	1.2
2013	47	10	0.002	1.2
2013	47	20	0.002	1.2
2013	47	30	0.002	1.2
2013	47	40	0.002	1.2
2013	47	50	0.002	1.2
2013	47	100	0.002	1.2
2013	47	110	0.002	1.2
2013	47	120	0.002	1.2
2013	47	130	0.002	1.2
2013	47	140	0.002	1.2
2013	47	150	0.002	1.2
2013	47	200	0.002	1.2
2013	47	210	0.002	1.2
2013	47	220	0.002	1.2
2013	47	230	0.002	1.2
2013	47	240	0.002	1.2
2013	47	250	0.002	1.2
2013	47	300	0.002	1.2
2013	47	310	0.002	1.2
2013	47	320	0.002	1.2
2013	47	330	0.002	1.2
2013	47	340	0.002	1.2

2013	47	350	0.002	1.2
2013	47	400	0.002	1.2
2013	47	410	0.002	1.2
2013	47	420	0.002	1.2
2013	47	430	0.002	1.2
2013	47	440	0.002	1.2
2013	47	450	0.002	1.2
2013	47	520	0.002	1.2
2013	47	540	0.002	1.2
2013	47	550	0.002	1.2
2013	47	600	0	0
2013	47	1200	0	0
2013	47	1800	0	0
2013	47	2400	0	0

RTI DL RELEASE - EHP

Average Daily Release Flows

Date	Receiving Flow (m3/s)	Release Flow (m3/s)
25-Jan	67.87	0.0164
26-Jan	836.08	1.311
27-Jan	703.67	1.346
28-Jan	115.75	0.022
29-Jan	25.53	0.023
30-Jan	12.71	0.018
31-Jan	7.25	0.031
1-Feb	4.43	0.025
2-Feb	2.98	0.073
3-Feb	2.54	0.029
4-Feb	1.37	0.023
5-Feb	0.83	0.01
6-Feb	0.51	0.003
7-Feb	0.30	0.003
8-Feb	0.14	0.006
9-Feb	0.06	0.003
10-Feb	0.03	0.003
11-Feb	0.01	0.003
12-Feb	0.00	0.003
13-Feb	0.00	0.003
14-Feb	0.00	0.003
15-Feb	0.00	0.002
16-Feb	0.00	0.002
17-Feb	0.00	0

RTI DL RELEASE - EIR

Attachment 1. Dunn Creek Dam release water quality results

Sample Date		19/02/2013	20/02/2013	21/02/2013	22/02/2013	23/02/2013	24/02/2013	25/02/2013	26/02/2013	27/02/2013	28/02/2013	01/03/2013	04/03/2013
Sample Time		11:00	11:45	11:30	11:30	11:00	07:30	13:40	13:10	14:50	13:40	14:20	13:05
Analyte Name	Units	Result											
	Table W2 & W4 Trigger	Result											
pH	6.5-9.0	7.1	6.6	7.7	7.4	7.8	7.8	8.0	7.4	7.7	7.6	7.6	7.8
EC @ 25 C	1400	1690	1280	1280	1300	1340	1280	1170	1050	1050	1040	1080	870
Turbidity	NA	4	190	37	35	11	64	94	150	310	48	190	360
TSS		5	30	19	15	6	33	45	80	140	86	100	190
Sulphate, SO4	mg/L	260	260	270	270	280	250	240	200	210	200	200	150

Sample Date		03/03/2013	05/03/2013	06/03/2013	07/03/2013	08/03/2013	09/03/2013	10/03/2013	11/03/2013	12/03/2013	13/03/2013	14/03/2013	15/03/2013
Sample Time		13:30	10:55	12:45	13:00	11:45	11:10	10:00	12:10	15:55	14:30	12:50	10:55
Analyte Name	Units	Result											
	Table W2 & W4 Trigger	Result											
pH	6.5-9.0	7.7	7.8	7.6	7.7	7.8	7.5	8.0	7.7	7.9	7.8	7.8	7.7
EC @ 25 C	1400	710	880	950	950	1030	1040	1150	1110	1200	1200	1200	1200
Turbidity	NA	460	320	260	180	140	120	99	76	38	43	19	23
TSS		210	160	130	84	76	54	50	37	27	26	25	23
Sulphate, SO4	mg/L	400	180	200	210	220	220	230	230	270	270	270	280

Sample Date		17/03/2013	18/03/2013	19/03/2013	20/03/2013	21/03/2013	22/03/2013	23/03/2013	24/03/2013	25/03/2013	26/03/2013	27/03/2013	28/03/2013
Sample Time		08:11	11:04	09:56	08:15	10:46	10:00	09:12	08:45	08:51	06:33	07:13	07:00
Analyte Name	Units	Result											
	Table W2 & W4 Trigger	Result											
pH	6.5-9.0	7.8	7.7	7.6	7.6	7.7	7.7	7.7	7.9	7.7	7.7	7.6	7.5
EC @ 25 C	1400	1200	1200	1100	1100	1200	1200	1200	1200	1200	1200	1300	1200
Turbidity	NA	13	21	25	26	55	10	15	5.2	8.6	8.1	3.7	3.5
TSS		200	23	18	22	24	35	9	8	6	6	<5	<5
Sulphate, SO4	mg/L	280	270	250	270	280	280	290	290	290	290	280	280

Sample Date		30/03/2013	31/03/2013	01/04/2013	02/04/2013	03/04/2013	04/04/2013	05/04/2013	06/04/2013	07/04/2013	08/04/2013	09/04/2013	10/04/2013
Sample Time		07:19	07:15	07:00	07:28	07:23	07:23	07:50	07:03	06:59	07:00	06:55	07:11
Analyte Name	Units	Result											
	Table W2 & W4 Trigger	Result											
pH	6.5-9.0	7.6	7.6	7.6	7.5	7.6	7.6	7.7	7.5	7.5	7.7	7.5	7.7
EC @ 25 C	1400	1200	1200	1100	1100	1200	1200	1200	1200	1200	1200	1200	1200
Turbidity	NA	8.5	7.9	57	15	15	15	15	6.1	8.8	7.9	4.7	6.9
TSS		200	5	6	31	8	12	7	8	7	6	<5	<5
Sulphate, SO4	mg/L	290	290	280	280	280	280	290	290	290	280	280	300

From: McDougall, John [john.mcdougall@angloamerican.com]
Sent: Thursday, 24 January 2013 5:09 PM
To: sam.tarlinton@ehp.qld.gov.au; Dunlop Kylie; Loveday Chris
CC: Hampson, Michael; 1 49-Sch4
Subject: Callide Mine Potential Release

Hi Kylie/Sam/Chris

Kylie, thanks for our phone hook up this morning. Please find attached email with details we spoke about this morning. I also would like to refer to previous conversations and emails about our ability to comply with the EA post the amendment on 14 December 2012.

To paraphrase what we committed to providing you I noted the following:

1. What is our actual strategy to manage mine affected water?
2. What is the water quality results of storages on site (BV have been engaged to undertake these as per EA)?
3. What is the predicted impacts including time frames for potential release even following the rain ceasing due to the lack of ability to control flow?
4. What is the approximate storage capacities on site?
5. What are the mitigation measures implemented on site to prevent and control release.

Detail:

Our number one priority is still to maintain the stance that we don't want to release from site and will do what we can to achieve this. Reality says with our current infrastructure that if this rain continues we will be forced to release.

1. The only 2 points we will be able to release water from at this point in time will be Dunn Creek and Lake Gasteen providing the following boxes are ticked.
 - a. We need to have sufficient receiving water flow in Callide Headwaters (for release out of Dunn Creek) and Callide Creek (for release out of Lake Gasteen)
 - b. We also need to have appropriate water quality in both storages that meet the EA release limits.
2. We won't be seeking to actively release from the 3 other release points (Golding's Dam, Turkeys Nest and downstream at Oaky Creek) as we haven't got sufficient infrastructure to achieve release. In saying that if we receive bulk rain and can't contain the water due to the sheer size of the storage it will be an uncontrolled release situation. The likelihood of this occurring is low.

As you are aware and as per point 2 above we haven't got adequate infrastructure in place at some of our release points at this point in time. I have had the contractor (ALS) here yesterday to provide me with a quote to install such infrastructure to meet the EA. This will be communicated directly to DEHP for transparency once this is available. Marc, from ALS should have the quote and timeframes back to me by the end of next week. He has indicated that it will take several months for them to order, receive and install such infrastructure.

All notices have been pre drafted in the event that we need to notify DEHP of a release.

The Strategy:

Level 1

Aim: Do what we can to prevent release of Mine affected water from site.

- a. Continue to pump water from Dunn Creek Dam to internal storages
- b. Continue to utilize as much water from Lake Gasteen, McCauleys Dam and Magazine Dam for internal purposes
- c. Do not actively pump into Lake Gasteen or Dunn Creek Dam
- d. Engage BV to undertake sampling of water storages on site and send to DEHP
- e. Continue to monitor the receiving waters flow
- f. Environmental Staff to monitor storage capacities at least daily
- g. Environmental staff to consult with ALS to ensure alarm systems and monitoring stations are operating effectively
- h. Environmental Staff to keep DEHP fully informed of the situation

Level 2

Aim: Once adequate flow in the receiving waters is identified and quality of water is determined as acceptable under the EA we move to actively release water from site

- a. Notify DEHP of the release under the EA
- b. 2 storages have been identified as the only options for active release, as receiving waters flow can be determined and so can quality on site. Those two being Dunn Creek Dam and Lake Gasteen. We have automatic monitoring stations on both that determine quality (along with daily grab samples from BV) and we can utilize the Sunwater flow data that we receive daily to determine flow (as discussed with Kylie Dunlop) in both receiving waters.
- c. While we have got conditions conducive for release we will continue to actively release from site at those two points only
- d. We are aware that we don't have the ability to control or stop flow rapidly through a valve or pump type set up should the flow in the receiving waters reduce or water quality deteriorates below EA limits. Accordingly what we intend to do is to continue to locate a pump on Dunn Creek Dam and actively pump from this storage back to internal storages to shorten the time taken to stop discharging. From Lake Gasteen we will increase water cart usage on site to draw down on the water as quickly as possible. Based on previous water releases for Dunn Creek and Lake Gasteen this will take 7-10 days to stop discharging once the rain completely stops

Level 3

Aim: instigate mitigation measures to minimize the amount of mine affected waters released from site if conditions are not conducive for release (ie insufficient flow in receiving waters and or water quality doesn't meet the EA) should the storages reach capacity and passively overflow

- a. Notify DEHP of the uncontrolled release under the EA
- b. Continue to pump water from Dunn Creek Dam to internal storages
- c. Continue to utilize as much water from Lake Gasteen for internal purposes
- d. Do not actively pump into Lake Gasteen or Dunn Creek Dam
- e. Engage BV to undertake sampling of water storages on site and send to DEHP. We have automatic monitoring stations on both points that determine quality (along with daily grab samples from BV) and we can utilize the Sunwater flow data that we receive daily to determine flow if any (as discussed with Kylie Dunlop) in both receiving waters.
- e. Continue to monitor the receiving waters flow
- f. As per Level 2 above once the rain stops and based on previous release it generally takes 7-10 days to stop releasing.

NOTE:

1. Callide is not actively pumping any mine affected water into the Turkeys Nest at the Hut and will continue not to during this rain event.
2. The levels of water in Ghost Rhyders dam is being closely monitored for levels.
3. The Bluff mining area and in particular those structures associated with the Bluff VTEP are closely being monitored for compliance. At a visual inspection at 2 30pm on 24/01/2013 all structures were holding up very well including sediment basins and drainage infrastructure maintained/installed as a result of the VTEP.

4. Capacity levels of the storages currently on site will be forwarded through to DEHP on 25/01/2012
5. All water quality results will be forwarded through to DEHP when available.

Please let me know if you have any questions. I am available on my mobile 24 hours a day. We will shoot through the other details as committed to above tomorrow.

Cheers

John McDougall
Environmental Superintendent

Anglo American

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From: McDougall, John [john.mcdougall@angloamerican.com]
Sent: Thursday, 7 February 2013 5:37 PM
To: Dunlop Kylie; Frankish John; Loveday Chris
CC: 49-Sch4 Hampson, Michael
Subject: Callide Mine Update including notification of exceedances/non-compliances (as per Condition W15)
Attachments: SKMBT_C45213020717460.pdf

Kylie

As requested please find the Callide Mine Update including notification of exceedances/non-compliances (as per Condition W15)

Please let me know if you have any questions.

Regards

John

John McDougall
Environmental Superintendent

Anglo American

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Kylie Dunlop
Senior Environmental Officer
Department of Environmental and Heritage Protection
PO Box 1762
ROCKHAMPTON QLD 4700

By e.mail

7 February 2013

Dear Kylie

Update on Callide Mine post flood event including notification of exceedances/ non-compliances (as per Condition W15)

Dunn Creek Dam release

This is an update on the notification that was sent to EHP on 25 January 2013 about the commencement of release from Dunn Creek Dam. As explained in that notification, the passive release of mine-affected water from Dunn Creek Dam commenced at about 2am on Friday 25 January 2012 and this release was compliant with both water quality and flow parameters under Schedule W of Callide Mine's Environmental Authority MIN 100507307. However, shortly after that, access to Callide Mine became unsafe due to ex-cyclone Oswald and also there were disruptions to communications systems in the area, so at that time it was physically impossible to supply some of the normal data under model condition W13.

Callide Mine has now received preliminary data from Bureau Veritas, who were engaged to obtain samples of the water from the release point and also upstream and downstream monitoring points. A copy of this data is below in the Appendix. Dunn Creek Dam is still passively releasing water. A notification of cessation will be provided within 24hrs of becoming aware of the cessation.

Notification of exceedances/non-compliances (as per Condition W15)

1. Exceedance of Condition W4

Recent Field EC results have shown that the water being released from RP Dunn Creek Dam has been recorded over the 1400us/cm limit described in Table W2 Part A.

2. Non-compliance with Condition W8

The stream flow gauging station at Callide Headwaters for Dunn Creek Dam has not been operating during the release event due to the sheer amount of water through the headwaters that has damaged the station.

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ABN 75 009 686 200

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3. Non-compliance with Condition W9

With the stream flow gauging station being damaged, representative flow data was being obtained from SunWater. The flow in the headwaters had dropped below the flow limit of $1.5\text{m}^3/\text{s}$ as Dunn Creek Dam was still releasing.

73(2)Irrelevant

As you know, Callide Mine currently has a monitoring difficulty in relation to flow, for Lake Gasteen Dam. The SunWater gauge at Callide Dam, which is used to measure background flow, has been damaged, so we do not have this flow data. Callide Mine is still seeking to obtain some data on the flow in Callide. Photos have been taken by the Environmental Staff at various points in Callide Creek that demonstrate good flow.

73(2)Irrelevant

73(2)Irrelevant

Update about actions on erosion and sediment control at the Bluff mining lease, Callide Dam

Last week I telephoned and forwarded a letter to you advising on a Erosion event from the Bluff mining lease spoil dump escarpment that occurred over the long weekend, but which was fully contained by Callide Mine's sediment dams. In that letter, we promised to be in contact again with a further update, including an update on the action program steps that are underway.

The area has been inspected again in more detail, together with a representative from our Technical Services team and I am pleased to advise that our more detailed inspection confirmed the impression I had gained at my preliminary inspection that the material from the slip over the weekend had been fully contained.

Callide Mine is undertaking the following immediate actions:

- (a) Callide Mine has re-instated the flow line into the previous formed rock drainage line (Completed 1 February);
- (b) We have already undertaken inspections of the upper rills to ensure that they have not been compromised and we can confirm that this is the case(Completed 1 February);
- (c) Work is being undertaken this week to re-instate the access ramp below the Bluff spoil dump, which will then enable access for the purpose of the de-silting work on the sediment dams;
- (d) Once the access ramp has been properly re-instated, a contractor will undertake the de-silting of the sediment dams over the coming weeks starting with Sediment Basin D. The contractor has already been engaged, but it is not physically possible for the



contractor to undertake the work until the access has been re-instated due to how wet the area is;

- (e) Similarly, upon restoration of access, work will be undertaken in the coming weeks to re-profile the eroded area and clad with a more competent material, in accordance with the final closure landform requirements of our environmental authority applicable to these slopes.

At this stage, we have no reason to anticipate any disruptions or delays to the timeframes for the actions set out in the action program of the approved VTEP for the Bluff.

Please contact me if you have any questions about this notification, either by e-mail or on my mobile telephone. 49-Sch4

Yours sincerely

49-Sch4

John McDougall
Environmental Superintendent
T: (07) 4990 1840
E: john.mcdougall@angloamerican.com.au
www.angloamerican.com.au

cc: John Frankish and Chris Loveday, EHP by e-mail



Dunn Creek Dam Release – Quality Results

	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb
	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Upstream (Callide Headwaters)	8.05	6.95	7.05	7.5	7.13	7.43	7.78	7.39	7.56	6.7	7.84	7.68	7.78
Dunn Creek Dam	7.72	6.91	7.11	7.33	7.2	7.54	7.56	7.42	7.23	7.1	8.04	7.71	8.08
Downstream (Callide Dam)	7.81		7.8	7.62	7.53	7.51	7.84		7.5	7.1	7.76	7.76	7.62
	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC
Upstream (Callide Headwaters)	0.11	0.27	0.16	0.19	0.25	0.3	0.35	0.42	0.41	0.45	0.46	0.52	0.57
Dunn Creek Dam	1.3	0.81	0.57	0.52	0.58	0.82	1.07	1.29	1.31				
Downstream (Callide Dam)	0.3		0.15	0.09	0.11	0.12	0.1		0.15	0.15	0.16	0.15	0.16

Lake Gastreen Release – Quality Results

73(2) Irrelevant

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 AEN 76 008 688 200

From: 49-Sch4
Sent: Tuesday, 21 May 2013 4:07 PM
To: Manager MiningCWR
CC: Dunlop Kylie; McDougall, John; 49-Sch4
Subject: Dunn Creek Dam 28 Day Report
Attachments: 20130521_Dunn Creek Dam 28 Day Report.pdf

Good afternoon Kylie,

Please find attached the 28 Day Report for the release from Dunn Creek Dam.

If you have any questions, please don't hesitate to contact John McDougall on 4990 1840.

Regards,

49-Sch4
Environmental Officer

 logo_signature

49-Sch4

CALLIDE MINE
PO Box 144 Coal Road, Biloela, QLD, 4715

RTI DL RELEASE - EHP

28 days Report
For
Dunn Creek Dam release
February-April 2013

Submitted by:

Anglo Coal (Callide Management) Pty Ltd
On behalf of the holders of the EA MIN100507307
Anglo Coal (Callide) Pty Ltd and Anglo Coal (Callide) No. 2 Pty Limited
PO Box 144
BILOELA QLD 4715

Dated:

21st May 2013

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Table 1	Dunn Creek Dam Water Quality Release Contaminant Trigger Investigation Levels	Error! Bookmark not defined.
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1.0 Background

This report has been prepared in accordance with conditions W14 and W16 of Environmental Authority MIN100507307 and relates to the passive releases of water from Dunn Creek Dam, as described in our Notification of Release Event dated 21st February 2013 and Notification of Cessation of Flow dated 22nd April 2013.

In summary:

- Releases were in accordance with water quality parameters under Table W4, but there were minor exceedances for a brief initial period when passive releases commenced before required flow was reached in receiving waters;
- Water quality was generally very good, but there was a gap between when threshold flow in receiving waters had ceased and when passive flow from Dunn Creek Dam ceased, notwithstanding pumping out of Dunn Creek Dam to an interim storage location while we worked to finalise the infrastructure to operate our controlled release point from the Trap Gully pipeline.

2.0 28 Day Cessation Report Information (W14)

2.1 Release cessation date/time

This release from Dunn Creek Dam ceased at 4.40am on the 21st April 2013.

2.2 Natural flow volume in receiving water

The flow gauging station for Dunn Creek Dam, located at the Callide Dam headwaters, was damaged as a result of flooding caused by ex-cyclone Oswald and was not capable of recording flow volumes for receiving waters, so Callide Mine has been relying on representative flow data provided by SunWater until the flow gauging station is able to be repaired or replaced. All receiving flow data has been obtained from the SunWater gauging station from the Callide Dam Headwaters and summarised in Appendix 4. The instantaneous flow rate in the receiving waters at time of release cessation was 3.24m³/s. The daily average for the 24 hours prior to release cessation was 3.24m³/s. Receiving waters flow remained above the receiving flow trigger of 1.5m³/s from three hours after release commencement until release cessation.

2.3 Volume of water released

The total amount of water released from Dunn Creek Dam during the period 19th February to 21st April 2013 was 271ML. Calculations of total flow are based on average daily release flow volumes included in Appendix 4. There is currently no release limit for Dunn Creek Dam in terms of volumes of releases.

2.4 Details regarding compliance of the release

The water quality of the release waters was generally good and the release flow volume did not cause any signs of erosion or destabilisation of the receiving environment. No serious or material environmental harm would have occurred as a result of this release. The release from Dunn Creek Dam was largely compliant, but there were minor non-compliances that are detailed below.

1. Exceedance of Condition W4

There have been minor exceedances for some water quality parameters. During first flush from Dunn Creek Dam, there was a minor 'spike' for EC. There were also very minor spikes of TSS on the 3rd and 4th of March. During the entire release period, water quality remained of high quality.

2. Non-compliance with Condition W9

With the stream flow gauging station having been damaged, representative flow data was being obtained from SunWater. This release commenced before the receiving flow trigger (1.5m³/s) had been reached. Receiving waters flow reached the release flow trigger three hours later and remained above the trigger level for the duration of the release.

The water quality of the release waters was generally good and the release flow volume did not cause any signs of erosion or destabilisation of the receiving environment. No serious or material environmental harm would have occurred as a result of this release.

3. Table W3 Exceedances

There were several exceedances of the water quality limits specified in Table W3 – Release Contaminant Trigger Investigation Levels. Of these exceedances, ten contaminants triggered 2(b) of Condition W6 (aluminium, cadmium, chromium, copper, iron, nickel, zinc, cobalt, selenium and sodium). These exceedances are addressed in section 3.3 below.

2.5 In-situ water quality monitoring results

Finalised water quality results have been received from both NATA accredited sampling agencies, Bureau Veritas (BV) and SGS Australia and are provided in Appendix 1 and 2.

2.6 Any other matters pertinent to the water release event

As outlined above, it is suggested that the following issues were of particular relevance to the release event:

- The release was caused by rainfall events, involving unprecedented rainfall and flooding in the area and leading to damage to equipment and safety problems in terms of physical access;
- In preparation for the wet season, Callide Mine had reduced the water level in Dunn Creek Dam to about 20%, to try to maximise freeboard. Capacity had also been created in the nearby interim storage dam, East Dam, in preparation for the wet season.

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3.0 28 Day Exceedance Report Information (W16)

3.1 The reason for the release

In preparation for the 2012-2013 wet season, Dunn Creek Dam was lowered to a capacity of approximately 20%. However, due to the large amount of rainfall received in January and February 2013, the dam reached 100% and began discharging. The water that was released from Dunn Creek Dam during this period was a direct result of rainfall and overland flow from the surrounding terrain. Figure 1 below shows rainfall events for January, February and March 2013, as measured at the Dunn Creek Dam monitoring station.

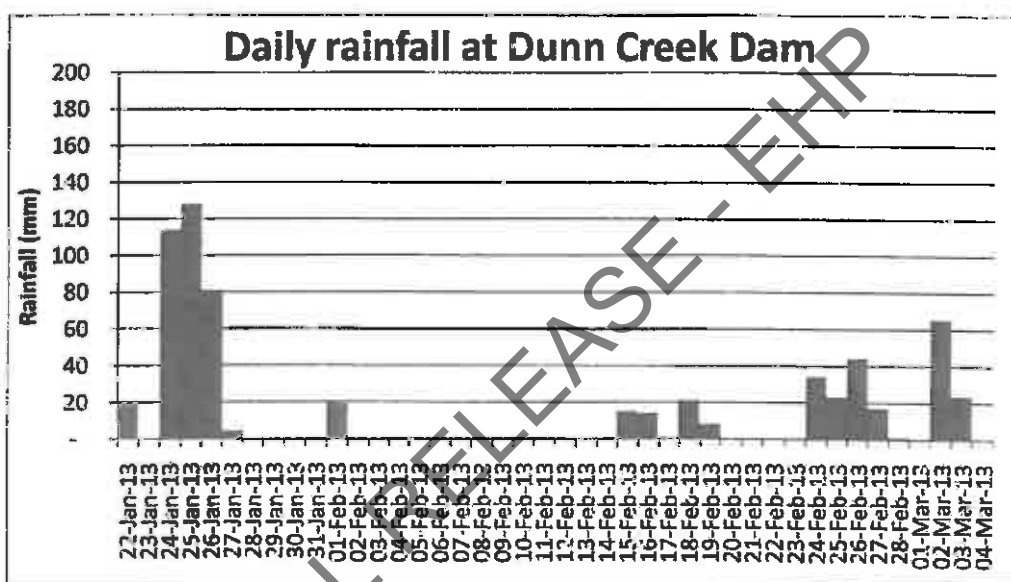


Figure 1 Rainfall data for Dunn Creek Dam

3.2 The location of the release

Water was released from the Dunn Creek Dam spillway at the Dunn Creek mining area, please refer to Figure 2. This is Dunn Creek Dam's authorised discharge location as described under EA MIN 100507307 is located at Latitude (GDA94) -24.3237 and Longitude (GDA94) 150.6695, please refer to Figure 2.

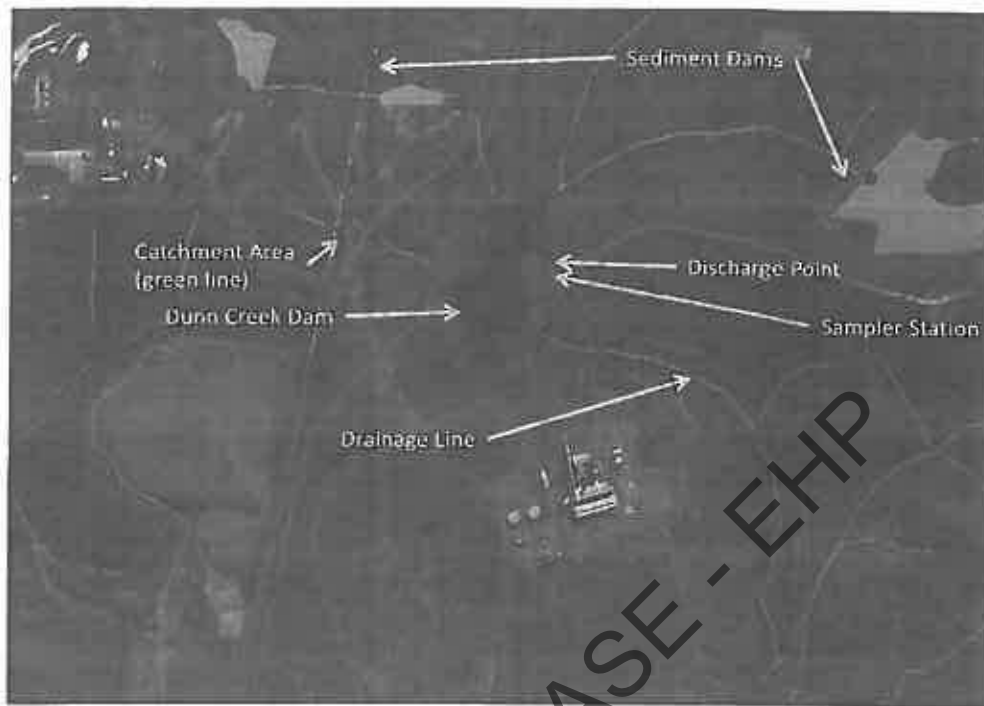


Figure 2. Dunn Creek Dam – Site Layout

3.3 Water quality monitoring results

- **Discharge Waters (Dunn Creek Dam)**

This discharge occurred between the dates of the 19th February 2013 to the 21st April 2013. Monitoring has occurred daily at 10 minute intervals at the Dunn Creek Dam automated sample station which also takes samples during flow events. In addition, in-situ sampling was completed daily as soon as Callide Mine staff notified Bureau Veritas and Wes Pitt contractors of the need to commence sampling.

A summary of the water quality results pursuant to EA MIN100507307 Table W2 Part A - Contaminant Release Limits – Dunn Creek Dam and Table W3 - Release Contaminant Trigger Investigation Levels is provided in Appendix 1.

- **Receiving waters (Callide Dam)**

Please refer to Appendix 2 for all water monitoring results from Callide Dam for the periods of February to April prepared by Bureau Veritas and SGS Australia.

- **Summary of Release Contaminant Trigger Investigation Levels**

Aluminium, Copper, Zinc, Chromium, Iron and Cobalt were the contaminants that triggered 2(b) of condition W6 and there were two pH results that triggered Part 2 of condition W20. An investigation will be conducted into these results and will be provided as soon as the investigation is completed by the consultant. The table in Appendix 3 summarises the physical water quality results for the release point, downstream and upstream monitoring points relating specifically to condition W6.

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3.4 General observations and 3.6 any other matters pertinent to the water release event

On-going inspections during the discharge period did not yield evidence of turbidity, or any form of erosion or sedimentation from the discharge event.

3.5 Calculations

The discharge monitoring stations installed at the discharge point allows Callide Mine to collect and compare data with the receiving waters data to monitor compliance with the EA Conditions. The volume of water that was released from Dunn Creek Dam during the period 19/02/2013 – 21/04/2013 was approximately 271ML.

Please refer to Appendix 4 for the daily discharge and receiving flow volumes. Calculations will be provided to DEHP upon request.

Yours Sincerely

49-Sch4

John McDougall

Environmental Superintendent

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RTI DL RELEASE - EHP



4.0 Appendices

4.1 Appendix 1 – Dunn Creek Dam Release Water Quality Results

Sample Date	Sample Time	Table W2 & W4	Units	19/02/2013	20/02/2013	22/02/2013	23/02/2013	24/02/2013	25/02/2013	26/02/2013	27/02/2013	28/02/2013	01/03/2013	03/03/2013	05/03/2013	07/03/2013	09/03/2013	11/03/2013	13/03/2013	14/03/2013	15/03/2013	16/03/2013
pH	6.5-9.0	7.1	pH Units	7.1	6.6	7.4	7.8	7.8	7.8	8.0	7.7	7.5	7.6	7.5	7.6	7.5	7.5	7.5	7.5	7.5	7.5	7.5
EC @ 25 C	1400	1699	µS/cm	1699	1290	1299	1340	1340	1340	1370	1650	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050	1050
Turbidity	NA	NA	NTU	NA	180	36	11	34	34	34	150	34	34	34	34	34	34	34	34	34	34	34
TSS	200	5	mg/L	5	60	19	15	33	33	45	80	140	140	140	140	140	140	140	140	140	140	140
Sulphate SO4	400	260	mg/L	260	260	270	260	260	260	240	300	240	240	240	240	240	240	240	240	240	240	240

Sample Date	Sample Time	Table W2 & W4	Units	04/03/2013	05/03/2013	06/03/2013	07/03/2013	08/03/2013	09/03/2013	10/03/2013	11/03/2013	12/03/2013	13/03/2013	14/03/2013	15/03/2013	16/03/2013	17/03/2013	18/03/2013	19/03/2013	20/03/2013	21/03/2013	22/03/2013	23/03/2013	24/03/2013	25/03/2013	26/03/2013	27/03/2013	28/03/2013	29/03/2013	30/03/2013	31/03/2013	01/04/2013	02/04/2013	03/04/2013	04/04/2013	05/04/2013	06/04/2013	07/04/2013	08/04/2013	09/04/2013	10/04/2013	11/04/2013	12/04/2013	13/04/2013	14/04/2013	15/04/2013	16/04/2013	17/04/2013	18/04/2013	19/04/2013	20/04/2013	21/04/2013	22/04/2013	23/04/2013	24/04/2013	25/04/2013	26/04/2013	27/04/2013	28/04/2013	29/04/2013	30/04/2013	01/05/2013	02/05/2013	03/05/2013	04/05/2013	05/05/2013	06/05/2013	07/05/2013	08/05/2013	09/05/2013	10/05/2013	11/05/2013	12/05/2013	13/05/2013	14/05/2013	15/05/2013	16/05/2013	17/05/2013	18/05/2013	19/05/2013	20/05/2013	21/05/2013	22/05/2013	23/05/2013	24/05/2013	25/05/2013	26/05/2013	27/05/2013	28/05/2013	29/05/2013	30/05/2013	31/05/2013	01/06/2013	02/06/2013	03/06/2013	04/06/2013	05/06/2013	06/06/2013	07/06/2013	08/06/2013	09/06/2013	10/06/2013	11/06/2013	12/06/2013	13/06/2013	14/06/2013	15/06/2013	16/06/2013	17/06/2013	18/06/2013	19/06/2013	20/06/2013	21/06/2013	22/06/2013	23/06/2013	24/06/2013	25/06/2013	26/06/2013	27/06/2013	28/06/2013	29/06/2013	30/06/2013	01/07/2013	02/07/2013	03/07/2013	04/07/2013	05/07/2013	06/07/2013	07/07/2013	08/07/2013	09/07/2013	10/07/2013	11/07/2013	12/07/2013	13/07/2013	14/07/2013	15/07/2013	16/07/2013	17/07/2013	18/07/2013	19/07/2013	20/07/2013	21/07/2013	22/07/2013	23/07/2013	24/07/2013	25/07/2013	26/07/2013	27/07/2013	28/07/2013	29/07/2013	30/07/2013	31/07/2013	01/08/2013	02/08/2013	03/08/2013	04/08/2013	05/08/2013	06/08/2013	07/08/2013	08/08/2013	09/08/2013	10/08/2013	11/08/2013	12/08/2013	13/08/2013	14/08/2013	15/08/2013	16/08/2013	17/08/2013	18/08/2013	19/08/2013	20/08/2013	21/08/2013	22/08/2013	23/08/2013	24/08/2013	25/08/2013	26/08/2013	27/08/2013	28/08/2013	29/08/2013	30/08/2013	31/08/2013	01/09/2013	02/09/2013	03/
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	Sample Date	12/04/2013 09:04	13/04/2013 07:03	14/04/2013 07:07	15/04/2013 07:02	16/04/2013 07:17	17/04/2013 07:30	18/04/2013 07:45	19/04/2013 07:22	20/04/2013	21/04/2013
	Sample Time										
	Tide W2 & W4 Tidegar										
Analyte Name	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
pH	pH Units	7.7	7.7	7.7	7.8	7.7	7.3	7.9	7.9	7.0	6.6
EC @ 25 C	µS/cm	1200	1200	1100	1100	1200	1200	1200	1200	1200	1200
Turbidity	NTU	NA	9.4	10	4.7	7.2	6.2	5.1	7.2	6	7
TSS	mg/L	300	9	10	<5	<5	<5	<5	8	<5	8
sulfate SO4	mg/L	400	278	280	280	300	280	300	300	300	300

[illegible]

Total Mercury	mg/L	D.602	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Sodium, Na	mg/L	180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Sodium	mg/L	180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrate Nitrogen	mg/L	1.1	<0.005	0	0	1	1	1	1	1	1	1	1

4.2 Appendix 2 - Callide Dam Water Quality Results

Sample Date	Sample Time	Table Trigger	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
21/02/2013	10:00	W7	pH	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
21/02/2013	10:00	W7	EC @ 25 C	140	140	140	140	140	140	140	140	140	140
21/02/2013	10:00	W7	TSS	90	90	90	90	90	90	90	90	90	90
21/02/2013	10:00	W7	Sulphate, SO4	5	5	5	5	5	5	5	5	5	5

Sample Date	Sample Time	Table Trigger	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
21/02/2013	10:00	W7	pH	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
21/02/2013	10:00	W7	EC @ 25 C	140	140	140	140	140	140	140	140	140	140
21/02/2013	10:00	W7	TSS	90	90	90	90	90	90	90	90	90	90
21/02/2013	10:00	W7	Sulphate, SO4	5	5	5	5	5	5	5	5	5	5

Sample Date	Sample Time	Table Trigger	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
21/02/2013	10:00	W7	pH	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
21/02/2013	10:00	W7	EC @ 25 C	140	140	140	140	140	140	140	140	140	140
21/02/2013	10:00	W7	TSS	90	90	90	90	90	90	90	90	90	90
21/02/2013	10:00	W7	Sulphate, SO4	5	5	5	5	5	5	5	5	5	5

Sample Date	Sample Time	Table Trigger	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
21/02/2013	10:00	W7	pH	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
21/02/2013	10:00	W7	EC @ 25 C	140	140	140	140	140	140	140	140	140	140
21/02/2013	10:00	W7	TSS	90	90	90	90	90	90	90	90	90	90
21/02/2013	10:00	W7	Sulphate, SO4	5	5	5	5	5	5	5	5	5	5

Sample Date	13/04/2013	14/04/2013	15/04/2013	16/04/2013	17/04/2013	18/04/2013	19/04/2013	20/04/2013	21/04/2013
Sample Time	06:27	06:55	06:24	06:55	06:48	07:00	05:47		
Units	Table W7								
Analysis Name	Units	Result	Result	Result	Result	Result	Result	Result	Result
pH	6.5-8.0	7.6	7.7	7.5	7.3	7.9	7.7	7.5	7.4
EC @ 25 °C	1150	190	190	200	200	200	200	210	210
TSS	1000	20	19	20	14	13	13	16	14
Sulphate SO4	250	5	6	6	7	7	7	7	7

4.3 Appendix 3 - Trigger Level Analysis

Parameter	Aluminium Al	Total Aluminium					Copper Cu
Unit	µg/L	µg/L					µg/L
Trigger Level	35	95					2
7/03/2013	14/03/2013	21/03/2013	28/03/2013	4/04/2013	11/04/2013	18/04/2013	
RP Result	89	162	280	210	66	110	140
Downstream MP	1600	1000	2500	4200	1400	1500	2500
Upstream MP	120	490	110	15	20	13	12

Parameter	Total Copper									
Unit	µg/L									
Trigger Level	2									
Date	19/02/2013	20/02/2013	7/03/2013	14/03/2013	21/03/2013	28/03/2013	4/04/2013	11/04/2013	17/03/2013	4/03/2013
RP Result	3	11	6	8	3	2	3	3	20	48
Downstream MP	5	6	8	7	5	5	6	5	21	12
Upstream MP	<1	5	<1	5	2	<1	2	2	6	22

Parameter	Total Zinc												Total Chromium			
Unit	µg/L												µg/L			
Trigger Level	8												1			
Date	27/03/2013	7/03/2013	14/03/2013	21/03/2013	28/03/2013	4/04/2013	11/04/2013	14/03/2013	21/03/2013	28/03/2013	10/04/2013					
RP Result	24	22	38	62	44	71	81	7	2	3	3					
Downstream MP	10	11	11	11	11	10	13	7	3	3	5					
Upstream MP	7	<1	10	3	2	3	7	8	<1	2	3					

Parameter	Total Iron						Total Cobalt
Unit	µg/L						µg/L
Trigger Level	800						1.4
Date	7/03/2013	21/03/2013	28/03/2013	4/04/2013	11/04/2013	18/04/2013	2/03/2013
RP Result	330	630	420	340	340	580	5
Downstream MP	3400	3500	3500	3100	2400	2800	2
Upstream MP	110	750	750	800	560	1000	<1