



# Trefil Quarry Annual Monitoring Report - 2012 and 2013

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## Prepared for

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**Prepared by**  
**ESI Ltd**

## Trefil Quarry Annual Monitoring Report - 2012 and 2013

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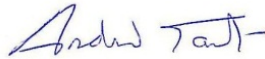

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## 1 INTRODUCTION

### 1.1 Background

Gryphonn Quarries Limited was granted planning permission for the deepening of Trefil Quarry in February 2009. Planning Condition 20 of this permission states that *A Water Management Plan will be submitted for the approval of the Planning Authority prior to commencement of the deepening operations at the site.*

The Environmental Impact Assessment (EIA) that supported the application for the revised planning permission at the quarry included a series of recommendations for monitoring and mitigation that would form the basis of the Water Management Plan (WMP) for the site (ESI, 2008).

The WMP for the site was presented by ESI (2009) which specified requirements for three key activities:

1. Monitoring
2. Mitigation measures
3. Annual review

It was intended that the WMP would be subject to regular review and modification as necessary in the light of on-going data collection and presentation in annual monitoring reports.

ESI Ltd. (2012) presents the 2011 annual monitoring report with data to December 2011. This annual report presents the data collected between January 2012 and December 2013 as well as a water balance.

### 1.2 The Quarry Development

Gryphonn Quarries Ltd is permitted to work to approximately 412 mAOD (the base of the Dowlais Limestone), with the lowest point in the quarry base currently at 423.57 mAOD. Prior to this permission, the consented level was 439 mAOD.

Dewatering is required to facilitate the dry excavation of the mineral. Maximum dewatering depths of 27 m will be required when the quarry reaches its permitted depth. The estimated rate of dewatering required to facilitate dry working is discussed in ESI (2008).

### 1.3 Potential Receptors

The main receptors identified in the hydrogeological impact assessment (ESI, 2008) are

- Shon Sheffrey Spring;
- The Nant Trefil; and
- Groundwater in the Carboniferous Limestone.

The impact assessment (ESI, 2008) concluded that proposed dewatering activities will not have any significant effect on flows in the Nant Trefil or Shon Sheffrey spring due to the re-circulation of water discharged to the Nant Trefil.

The development involves two main hazards with respect to groundwater and surface water quality:

- Spills from plant operating on site.
- Discharge of sediment-laden water to surface water features including the Nant Trefil.

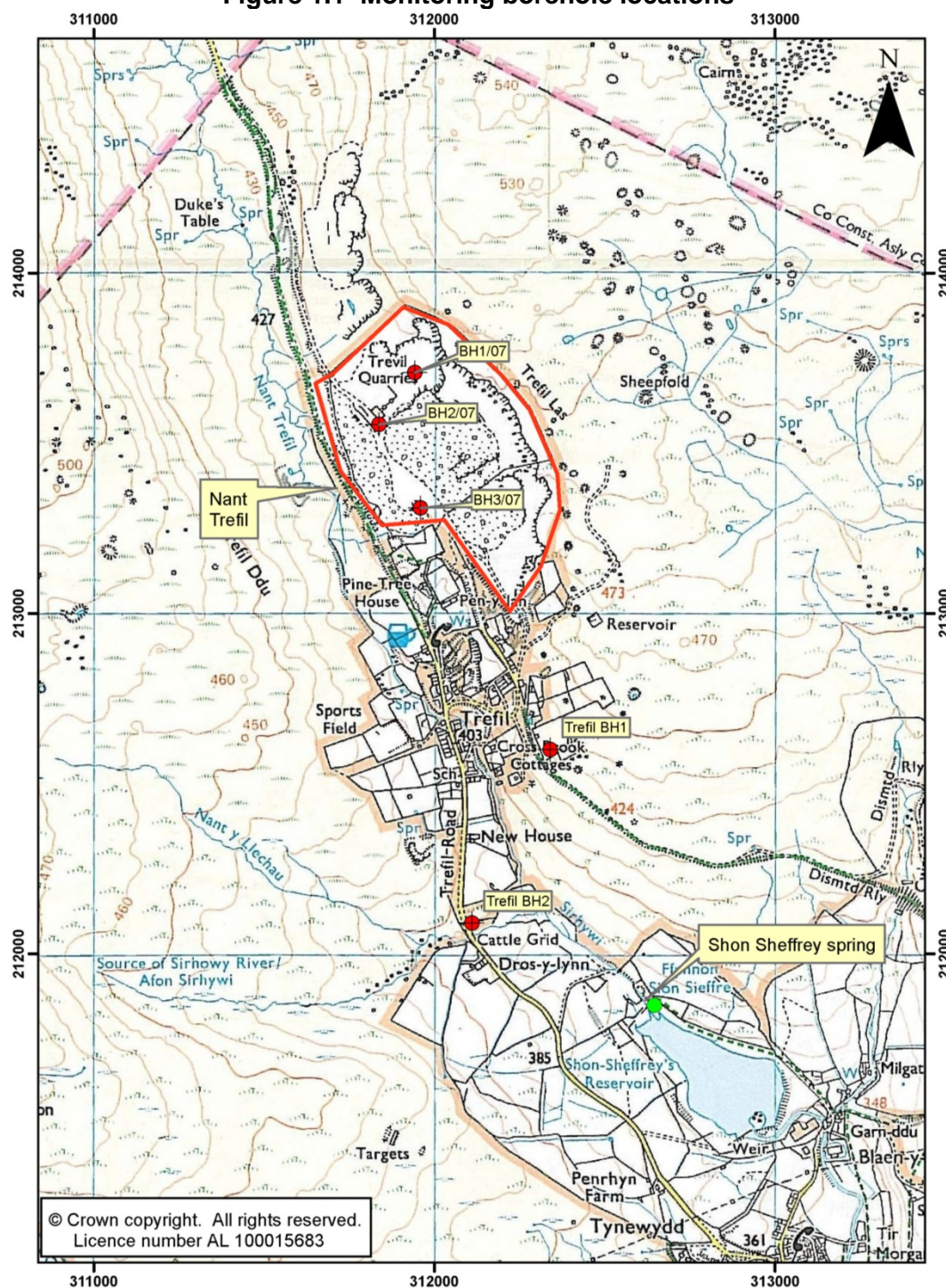
#### 1.4 Monitoring Regime

In order to quantify the level of impact at key sites and to make sure that the system is continuing to behave as predicted on the basis of the current conceptual model, a monitoring system is implemented. The following monitoring regime is in place:

- Groundwater levels in the three boreholes on site (BH1/07, 2/07 and 3/07) are measured at weekly intervals (see Figure 1.1).
- Groundwater levels in Trefil Boreholes 1 and 2 are monitored at monthly intervals (see Figure 1.1).
- The rate of quarry pumping from the sump is monitored at weekly intervals by means of an in-line flow meter.
- The suspended solids/turbidity of the quarry discharge is measured by the quarry operator at weekly intervals together with a note of the weather conditions at the time.
- Daily rainfall data is monitored by means of a site rain gauge.
- The site drainage system is inspected on a daily basis to ensure that the oil booms are in place and that there is no visible oil downstream of the booms.

It will be necessary to continue monitoring until water levels in the quarries have recovered to their equilibrium position. It is anticipated that this will be one or two years after quarry dewatering ceases.



**Figure 1.1 Monitoring borehole locations**



## 2 MONITORING DATA

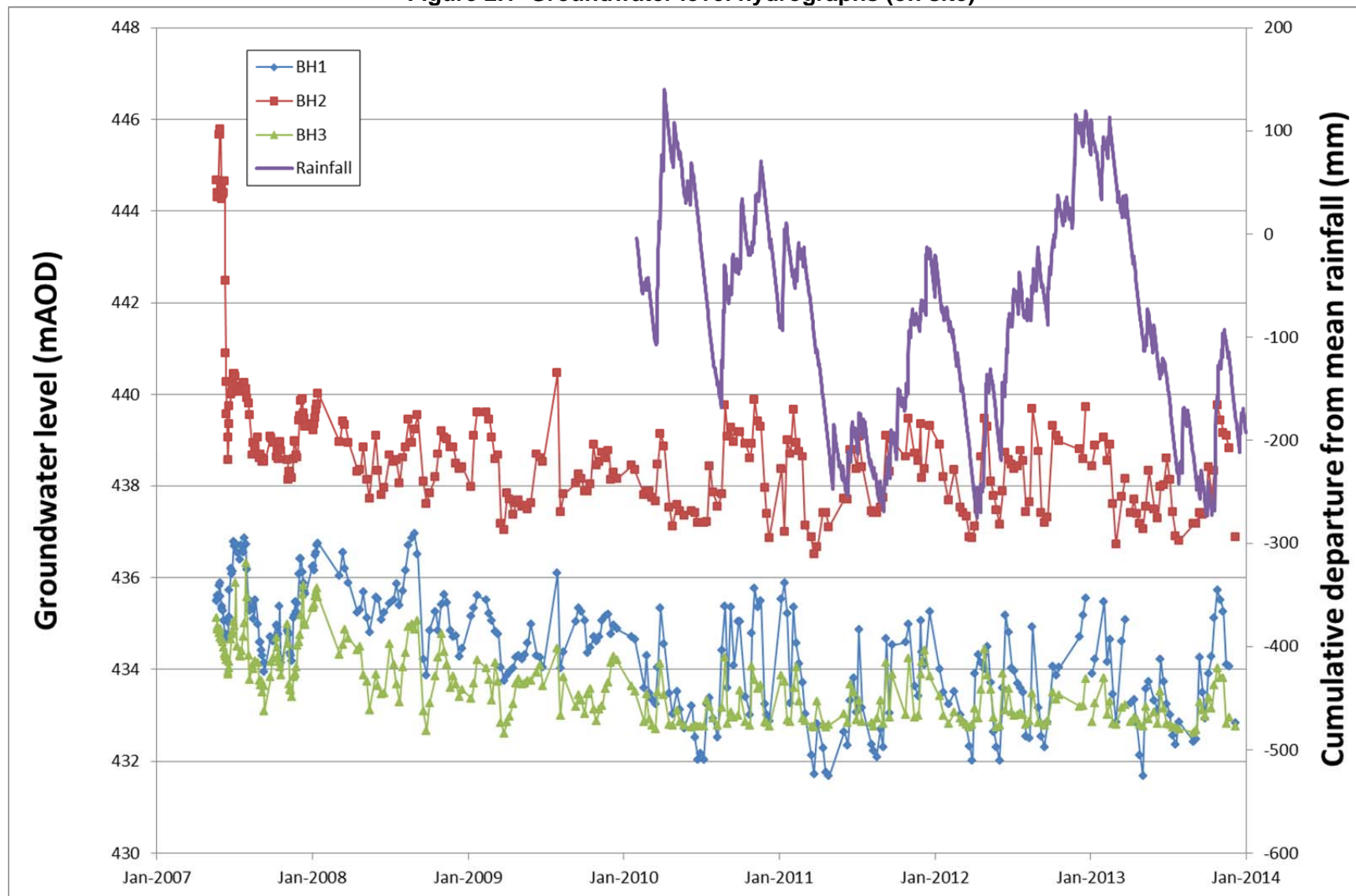
### 2.1 Groundwater Levels

Groundwater level data monitored at both on site and off site observation boreholes are shown in Figure 2.1 and **Error! Reference source not found.** respectively. Groundwater level data recorded at on-site boreholes (BH1/07, BH2/07, BH3/07) have been monitored weekly since 30 September 2007 with off-site boreholes (Trefil 1 and Trefil 2) monitored monthly since 30 July 2009. The full dataset to end 2013 is summarised in Table 2.1 with the raw data given in Appendix A.

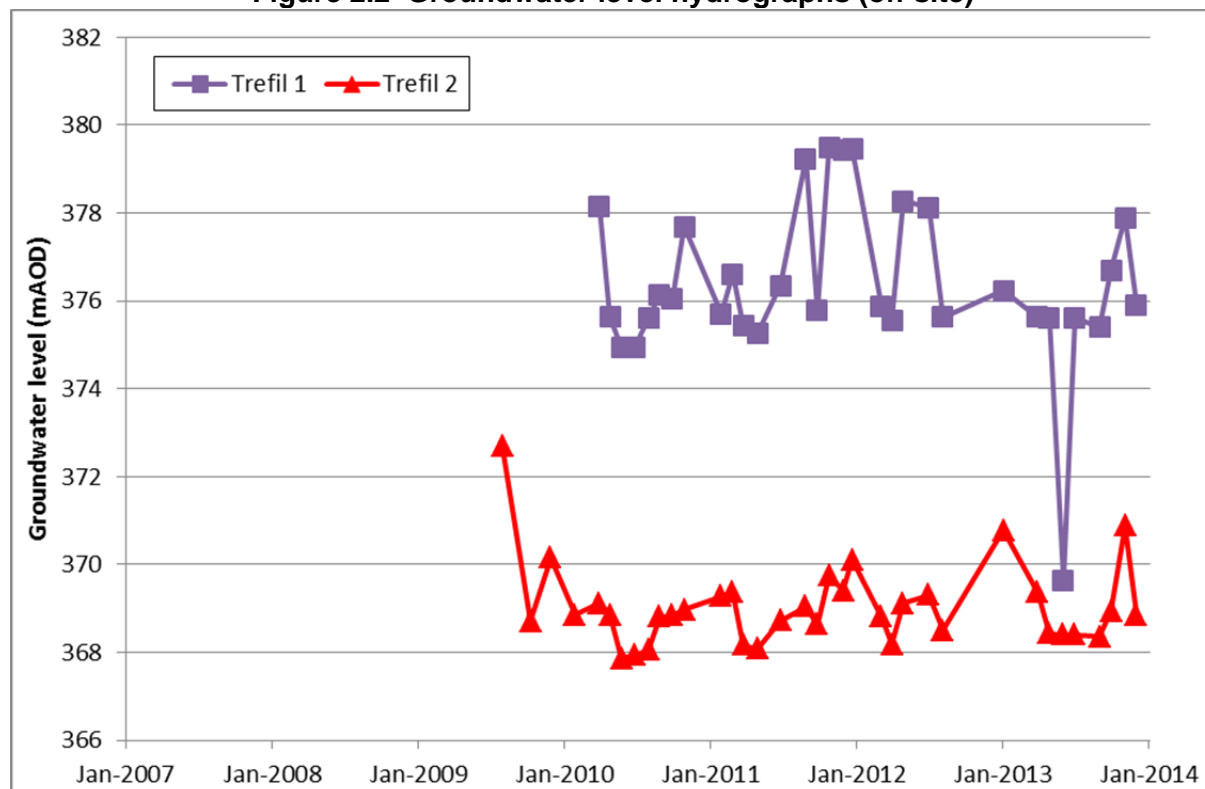
**Table 2.1 Groundwater levels statistics**

<b>Statistic</b>	<b>BH1</b>	<b>BH2</b>	<b>BH3</b>	<b>Trefil 1</b>	<b>Trefil 2</b>
No. of readings	312	312	312	32	36
Maximum (mAOD)	437	446	436	379	373
Minimum (mAOD)	432	437	433	370	368
Average (mAOD)	434	439	434	376	369
range	5.3	9.3	3.7	9.9	4.8

Figure 2.1 Groundwater level hydrographs (on site)



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**Figure 2.2 Groundwater level hydrographs (off site)**

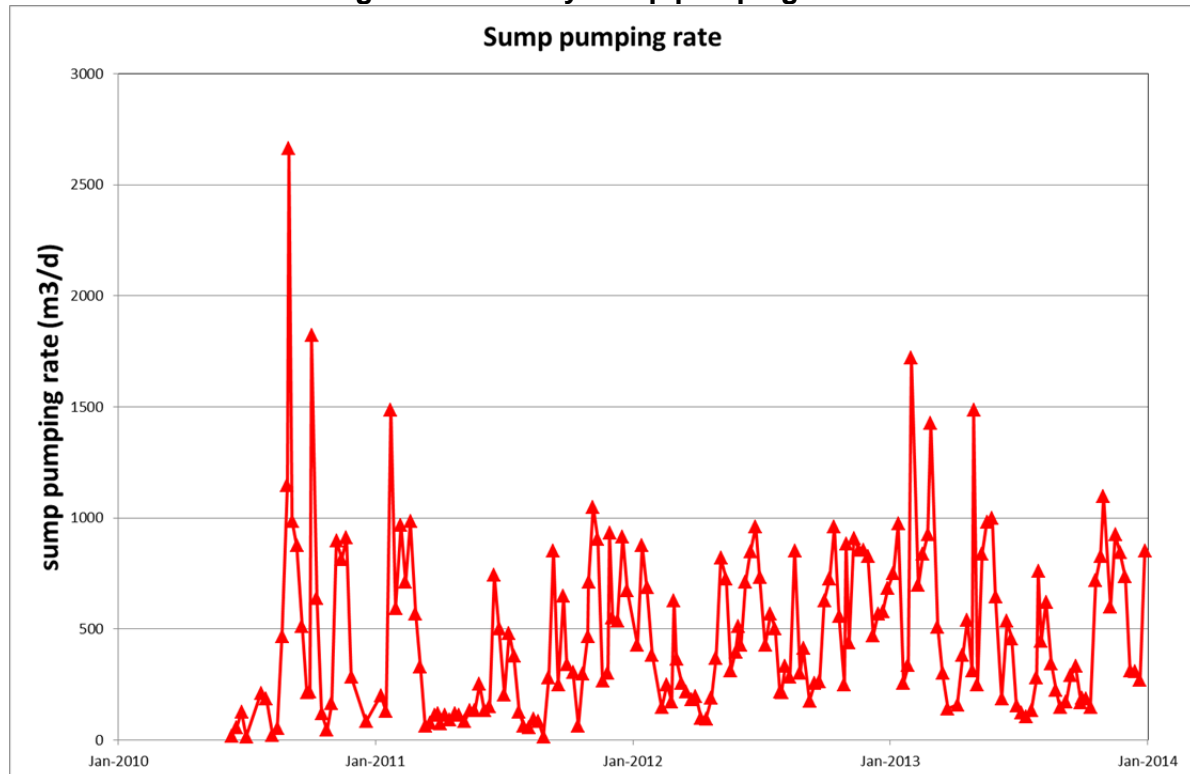
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## 2.2 Quarry Pumping

The rate of quarry pumping from the sump is monitored at weekly intervals by means of an in-line flow meter. The pump is operated manually when water levels in the base of the quarry are required to be lowered to carry out stone extraction. Records are available between 31 May 2010 to 31 December 2013, with monthly totals given in Table 2.2 and raw data given in Appendix B. A time series plot is given in Figure 2.3.

**Table 2.2 Monthly pumping totals**

Date	Pumped volume (m <sup>3</sup> )			
	2010	2011	2012	2013
Jan		19,680	19,610	23,860
Feb		22,590	6,860	25,020
Mar		4,540	7,220	8,150
Apr		3,140	5,340	13,820
May	430	4,300	17,820	24,210
Jun	1,460	10,670	23,320	9,690
Jul	5,830	8,760	12,830	6,740
Aug	17,180	1,750	13,790	10,970
Sep	17,000	15,900	9,600	6,900
Oct	12,220	9,240	20,080	17,520
Nov	20,330	19,400	20,070	18,370
Dec	1,750	17,040	21,060	17,300
<b>Average m<sup>3</sup></b>	<b>9,525</b>	<b>11,418</b>	<b>14,800</b>	<b>15,213</b>
<b>m<sup>3</sup>/d</b>	<b>313</b>	<b>375</b>	<b>486</b>	<b>500</b>

**Figure 2.3 Quarry sump pumping rates**

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### 2.3 Suspended Solids/Turbidity of the Quarry Discharge

A discharge consent (reference: AN0258201) is associated with Trefil Quarry for discharge of trade effluent to the Nant Trefil. It specifies that the total suspended solids shall not exceed 100 mg/l and the concentration of total oil and grease shall not exceed 10 mg/l.

The turbidity of the quarry discharge is measured by the quarry operator at weekly intervals together with a note of the weather conditions at the time. This has been carried out since 9 April 2010 with 84 results to 28 November 2013 provided in Appendix C. The 2012 and 2013 results are presented in Table 2.3 below. None of the values measured by the quarry exceeded the limits of the discharge consent. A very high value was recorded by the EA on 10 May 2013 and a CAR breach notice was issued. The EA also spoke to the quarry operators about the water quality on 14 June 2013. These were both days on which heavy rainfall occurred.

Suspended solids have been measured by a laboratory on eight occasions and a relationship between turbidity and suspended solids has been established.

**Table 2.3 Discharge turbidity and suspended solids results**

Date	Weather Conditions	Turbidity Reading (NTU)	Suspended Solids Reading	Comment
12-Jan-12	Light rain showers & misty	198	99	
19-Jan-12	Light showers then dry	148	76	
29-Feb-12	Dull but bright later	99	53	
8-Mar-12	Overcast	178	90	
27-Apr-12	Heavy rain	200	99	
4-May-12	Overcast	187	94	
9-May-12	Showers	33	23	
11-Jun-12	Overcast	50	30	
19-Jun-12	Overcast following overnight rain	160	81	
26-Jun-12	Overcast with showers later	164	83	
2-Jul-12	Rain & mist	102	54	
11-Jul-12	Bright with showers	51	31	
17-Jul-12	Bright with showers	73	41	
16-Aug-12	Dull, cool with showers	139	71	
12-Sep-12	Dry but overcast	20	17	
26-Sep-12	Raining	143	73	
4-Oct-12	Overcast with showers	192	96	
10-Oct-01	Wet & misty	167	84	
19-Oct-12	Misty then bright	159	81	
7-Nov-12	Bright and cold	86	47	
14-Nov-12	Misty damp and cool	89	48	EA
22-Nov-12	Dull with showers	152	78	
29-Nov-12	Bright and cold	99	53	
7-Dec-12	Showers	150	77	
13-Dec-12	Cold and dry	107	57	
20-Dec-12	Raining	183	92	
9-Jan-13	Bright and cold	153	78	
15-Jan-13	Snow and ice	147	75	
25-Jan-13	Dull and very cold	163	82	
5-Feb-13	Bright, breezy with light snow.	87	48	EA
15-Feb-13	Milder and bright	141	72	
22-Feb-13	Dull and very cold	130	67	
8-Mar-13	Misty with showers	150	77	
18-Apr-13	Wet	139	71	
10-May-13	Raining		622	EA very cloudy. A CAR breach was issued
16-May-13	Bright, cool, breezy with showers	158	80	
24-May-13	Dull and cool.	129	67	
30-May-13	Misty, clearing with light showers	149	76	
14-Jun-13	Very heavy rain storm			EA Very dirty - EA made contact
18-Jun-13	Dull and overcast	65	38	
31-Jul-13	Sunny intervals	126	66	
5-Aug-13	Heavy rain	195	97	
15-Aug-13	Raining	164	83	
12-Sep-13	Overcast following overnight rain	159	81	

Date	Weather Conditions	Turbidity Reading (NTU)	Suspended Solids Reading	Comment
19-Sep-13	Showers	155	79	
17-Oct-13	Raining	140	72	
21-Oct-13	Heavy rain	194	97	
29-Oct-13	Changeable	165	83	
8-Nov-13	Dull with showers	193	96	
14-Nov-13	Showers	147	75	
21-Nov-13	Heavy rain	161	82	
28-Nov-13	Dull. Cool but dry	154	78	

## 2.4 Rainfall

Monthly rainfall data were provided by the Environment Agency for a rain gauge located at Rhymney about 3 km to the south west of the Site from 1971 to 2003 (ESI, 2008). Average long term monthly mean rainfall data in this period is 1655 mm/a.

Daily readings of rainfall have been recorded from a rain gauge at the site (Appendix D) between 1 February 2010 to 25 December 2013. In 2012, a total rainfall of 1569 mm was recorded and in 2013 a total rainfall of 1159 mm was recorded up to the end of the record period.

**Table 2.4 Monthly rainfall data**

Date	Rainfall (mm)			
	2010	2011	2012	2013
Jan		161	100	126
Feb	68	133	52	84
Mar	228	23	18	77
Apr	143	12	190	15
May	65	114	89	118
Jun	81	149	233	66
Jul	2	99	133	44
Aug	198	85	179	126
Sep	132	168	95	64
Oct	149	210	178	270
Nov	158	162	211	91
Dec	13	140*	93	79**
<b>Tot</b>	<b>1237***</b>	<b>1456</b>	<b>1571</b>	<b>1160</b>

\* This is the total for 1 December 2011 to 22 December 2011.

\*\* This is the total for 1 December 2013 to 25 December 2013.

\*\*\*11 months only

## 2.5 Site Drainage System Inspections

The site drainage system is inspected on a daily basis to ensure that the oil booms are in place and that there is no visible oil downstream of the booms.

Additionally, the quarry is inspected for the presence of voids (which might indicate the presence of fast pathways from the quarry to local receptors) on a weekly basis. These records have been kept since 1 July 2009 with no significant voids or drainage issues identified. The data to 23 December 2013 is presented in Appendix E.

During the 17 years that the quarry has been operated by its current owners there have been no reports of any contamination from hydrocarbons in any of the local water courses. This suggests that the current precautionary measures are effective at protecting the local water environment from accidental spillages from operating heavy plant in the area.

### 3 WATER BALANCE

Average quarry pumping rates for 2012 and 2013 were 487 m<sup>3</sup>/d and 500 m<sup>3</sup>/d respectively. The total rainfall for 2012 and 2013 was 1569 mm and 1159 mm respectively (see Table 2.4).

No data on Potential Evapotranspiration were available for the annual report period but ESI, 2008 suggests an LTA of 1000 mm/a effective precipitation from ~1700 mm/a LTA rainfall (e.g. ~60%).

The quarry catchment area is estimated to be about 20 hectares (2% of Shon Sheffrey Spring catchment area: ~10 km<sup>2</sup>).

Assuming a total rainfall of ~1570 mm for 2012 (effective precipitation of ~940 mm/a assuming ~60%), this would imply ~516 m<sup>3</sup>/d recharge in quarry catchment. Similarly, assuming a total rainfall of 1159 mm for 2013, recharge in quarry catchment would be ~380 m<sup>3</sup>/d (NB Missing a week's data from the end of December 2013 from this annual total).

The average pumping rate of c 486/500 m<sup>3</sup>/d in 2012/13 is similar to the estimated recharge over the quarry catchment area suggesting that the quarry is intercepting all the recharge over the local area and discharging this to the Nant Trefil. However, it is unlikely to be having a more widespread effect on the local groundwater system.



#### 4 REFERENCES

**ESI Ltd. (2008).** Trefil Quarry: Hydrogeological Impact Assessment. Ref 6878R1rev1.

**ESI Ltd. (2009).** Water Management Plan - Trefil Quarry Deepening. Ref 6878TN1.

**ESI Ltd. (2012).** Trefil Quarry Annual Monitoring Report – 2011. Ref 6878R3.

**Welsh Water Authority (1980).** South East Wales Groundwater Study – Reconnaissance Report (by Howard Humphreys and Partners).

# APPENDICES

# APPENDIX A

## Groundwater level data

Groundwater levels (m b top of casing)

	BH1	BH2	BH3	BH1 off	BH2 off
Top of casing	442.691	452.753	453.499	427.060	393.310
23/05/2007	7.202	8.090	18.370		
24/05/2007	7.080	8.360	18.580		
25/05/2007	7.150	8.460	18.640		
29/05/2007	6.870	7.090	18.710		
30/05/2007	6.800	7.080	18.610		
31/05/2007	7.100	7.010	18.655		
01/06/2007	7.110	6.970	18.800		
04/06/2007	7.320	8.270	18.820		
05/06/2007	7.380	8.500	18.850		
07/06/2007	7.420	8.400	18.900		
08/06/2007	7.620	8.350	19.030		
11/06/2007	7.950	8.100	19.150		
12/06/2007	7.930	10.260	19.170		
13/06/2007	7.970	11.860	19.210		
14/06/2007	7.980	12.470	19.200		
15/06/2007	8.010	13.170	19.300		
18/06/2007	7.940	14.200	19.600		
19/06/2007	7.670	13.680	19.550		
20/06/2007	7.550	13.400	19.480		
22/06/2007	6.960	13.000	19.330		
26/06/2007	6.500	12.750	18.850		
27/06/2007	6.620	12.700	18.720		
29/06/2007	6.550	12.550	18.680		
02/07/2007	5.90	12.30	18.45		
04/07/2007	6.00	12.30	18.56		
06/07/2007	5.95	12.35	17.61		
09/07/2007	6.15	12.65	19.00		
16/07/2007	6.30	12.69	19.19		
18/07/2007	5.99	12.58	19.22		
20/07/2007	6.00	12.60	19.10		
24/07/2007	6.15	12.54	18.78		
27/07/2007	5.84	12.49	18.49		
30/07/2007	5.97	12.64	17.19		
02/08/2007	6.52	12.83	17.93		
06/08/2007	7.18	12.94	19.19		
08/08/2007	7.42	13.19	19.72		
15/08/2007	7.32	14.07	19.42		
17/08/2007	7.59	13.80	19.49		
22/08/2007	7.18	13.90	19.32		
28/08/2007	7.71	13.69	19.35		
31/08/2007	8.10	14.16	19.75		
03/09/2007	8.10	14.05	19.84		
05/09/2007	8.27	14.14	19.74		
07/09/2007	8.39	14.23	19.99		
10/09/2007	8.56	14.18	19.86		
12/09/2007	8.74	14.24	20.40		
26/09/2007	7.97	13.67	19.67		
28/09/2007	7.99	13.71	19.34		
01/10/2007	8.08	13.81	19.25		
10/10/2007	7.72	14.12	18.81		
12/10/2007	7.77	13.99	19.03		
15/10/2007	7.93	14.17	19.19		
17/10/2007	7.32	13.81	19.33		
19/10/2007	8.44	13.79	19.46		
22/10/2007	8.55	13.97	19.63		
05/11/2007	7.84	14.2	18.52		
07/11/2007	7.89	14.63	18.95		
09/11/2007	7.93	14.44	19.83		
12/11/2007	8.33	14.45	19.94		
14/11/2007	8.39	14.59	19.95		
16/11/2007	8.5	14.59	20.1		
19/11/2007	7.56	14.17	19.67		
21/11/2007	7.52	13.77	19.63		
23/11/2007	7.22	13.78	19.59		
26/11/2007	7.44	14.08	19.45		
28/11/2007	7.25	14.13	18.98		
03/12/2007	6.61	13.31	18.9		
05/12/2007	6.28	13.22	18.74		
07-Dec-07	6.28	12.89	18.31		
10-Dec-07	6.57	12.84	17.87		
12-Dec-07	6.8	13.15	17.68		
14-Dec-07	6.98	13.28	18.48		
17-Dec-07	7.04	13.46	18.53		
02-Jan-08	6.46	13.39	18.17		
04-Jan-08	6.43	13.53	18.14		
07-Jan-08	6.54	13.39	18.09		
09-Jan-08	6.2	13.25	17.9		
11-Jan-08	6.14	13.08	17.82		
14-Jan-08	5.99	12.96	17.73		
16-Jan-08	5.94	12.72	17.92		

Groundwater levels (m AOD)

Date	BH1	BH2	BH3	Trefil 1	Trefil 2
	442.691	452.753	453.499	427.060	393.31
23/05/2007	435.489	444.663	435.129		
24/05/2007	435.611	444.393	434.919		
25/05/2007	435.541	444.293	434.859		
29/05/2007	435.821	445.663	434.789		
30/05/2007	435.891	445.673	434.889		
31/05/2007	435.591	445.743	434.844		
01/06/2007	435.581	445.783	434.699		
04/06/2007	435.371	444.483	434.679		
05/06/2007	435.311	444.253	434.649		
07/06/2007	435.271	444.353	434.599		
08/06/2007	435.071	444.403	434.469		
11/06/2007	434.741	444.653	434.349		
12/06/2007	434.761	442.493	434.329		
13/06/2007	434.721	440.893	434.289		
14/06/2007	434.711	440.283	434.299		
15/06/2007	434.681	439.583	434.199		
18/06/2007	434.751	438.553	433.899		
19/06/2007	435.021	439.073	433.949		
20/06/2007	435.141	439.353	434.019		
22/06/2007	435.731	439.753	434.169		
26/06/2007	436.191	440.003	434.649		
27/06/2007	436.071	440.053	434.779		
29/06/2007	436.141	440.203	434.819		
02/07/2007	436.791	440.453	435.049		
04/07/2007	436.691	440.453	434.939		
06/07/2007	436.741	440.403	435.889		
09/07/2007	436.541	440.103	434.499		
16/07/2007	436.391	440.063	434.309		
18/07/2007	436.701	440.173	434.279		
20/07/2007	436.691	440.153	434.399		
24/07/2007	436.541	440.213	434.719		
27/07/2007	436.851	440.263	435.009		
30/07/2007	436.721	440.113	436.309		
02/08/2007	436.171	439.923	435.569		
06/08/2007	435.511	439.813	434.309		
08/08/2007	435.271	439.563	433.779		
15/08/2007	435.371	438.683	434.079		
17/08/2007	435.101	438.953	434.009		
22/08/2007	435.511	438.853	434.179		
28/08/2007	434.981	439.063	434.149		
31/08/2007	434.591	438.593	433.749		
03/09/2007	434.591	438.703	433.659		
05/09/2007	434.421	438.613	433.759		
07/09/2007	434.301	438.523	433.509		
10/09/2007	434.136	438.573	433.639		
12/09/2007	433.951	438.513	433.099		
26/09/2007	434.721	439.083	433.829		
28/09/2007	434.701	439.043	434.159		
01/10/2007	434.611	438.943	434.249		
10/10/2007	434.971	438.633	434.689		
12/10/2007	434.921	438.763	434.469		
15/10/2007	434.761	438.583	434.309		
17/10/2007	435.371	438.943	434.169		
19/10/2007	434.251	438.963	434.039		
22/10/2007	434.141	438.783	433.869		
05/11/2007	434.851	438.553	434.979		
07/11/2007	434.801	438.123	434.549		
09/11/2007	434.761	438.313	433.669		
12/11/2007	434.361	438.303	433.559		
14/11/2007	434.301	438.163	433.549		
16/11/2007	434.191	438.163	433.399		
19/11/2007	435.131	438.583	433.829		
21/11/2007	435.171	438.983	433.869		
23/11/2007	435.471	438.973	433.909		
26/11/2007	435.251	438.673	434.049		
28/11/2007	435.441	438.623	434.519		
03/12/2007	436.081	439.443	434.599		
05/12/2007	436.411	439.533	434.759		
07-Dec-07	436.411	439.863	435.189		
10-Dec-07	436.121	439.913	435.629		
12-Dec-07	435.891	439.603	435.819		
14-Dec-07	435.711	439.473	435.019		
17-Dec-07	435.651	439.293	434.969		
02-Jan-08	436.231	439.363	435.329		
04-Jan-08	436.261	439.223	435.359		
07-Jan-08	436.151	439.363	435.409		
09-Jan-08	436.491	439.503	435.599		
11-Jan-08	436.551	439.673	435.679		
14-Jan-08	436.701	439.793	435.769		
16-Jan-08	436.751	440.033	435.579		

Groundwater levels (m b top of casing)

	BH1	BH2	BH3	BH1 off	BH2 off
Top of casing	442.691	452.753	453.499	427.060	393.310
06-Mar-08	6.65	13.79	19.17		
13-Mar-08	6.14	13.34	18.96		
19-Mar-08	6.5	13.41	18.64		
27-Mar-08	6.8	13.8	18.82		
17-Apr-08	7.46	14.44	19.08		
24-Apr-08	7.39	14.41	19.01		
01-May-08	7.01	13.9	19.62		
09-May-08	7.57	14.63	19.77		
16-May-08	7.88	15.03	20.38		
30-May-08	7.12	13.64	19.61		
05-Jun-08	7.15	14.43	19.86		
12-Jun-08	7.6	14.96	20.04		
19-Jun-08	7.46	14.8	20.01		
02-Jul-08	7.26	14.08	18.95		
11-Jul-08	7.18	14.23	19.4		
18-Jul-08	6.82	14.2	19.83		
25-Jul-08	7.3	14.7	20.22		
01-Aug-08	6.98	14.13	19.46		
08-Aug-08	6.54	13.9	19.13		
15-Aug-08	5.99	13.3	18.57		
22-Aug-08	5.83	13.8	18.51		
29-Aug-08	5.74	13.52	18.63		
05-Sep-08	6.18	13.2	18.44		
19-Sep-08	8.46	14.66	20.4		
26-Sep-08	8.81	15.15	20.83		
03-Oct-08	7.84	14.91	20.24		
17-Oct-08	7.43	14.57	19.65		
24-Oct-08	7.84	14.06	19.24		
31-Oct-08	7.27	13.55	18.73		
07-Nov-08	7.06	13.69	19.12		
14-Nov-08	7.23	13.73	19.39		
21-Nov-08	7.84	13.9	19.9		
28-Nov-08	7.98	13.91	19.64		
05-Dec-08	7.96	14.27	19.83		
12-Dec-08	8.41	14.39	20.09		
19-Dec-08	8.23	14.36	19.94		
09-Jan-09	7.54	14.78	20.13		
16-Jan-09	7.36	13.65	19.81		
23-Jan-09	7.09	13.14	19.29		
13-Feb-09	7.17	13.14	19.47		
20-Feb-09	7.48	13.29	19.72		
27-Feb-09	7.62	13.69	20.17		
06-Mar-09	7.86	14.17	19.36		
13-Mar-09	7.92	14.08	19.77		
20-Mar-09	8.64	15.58	20.66		
27-Mar-09	8.93	15.71	20.89		
03-Apr-09	8.81	14.92	20.64		
09-Apr-09	8.75	15.06	20.53		
17-Apr-09	8.67	15.39	20.26		
24-Apr-09	8.42	15.13	19.8		
01-May-09	8.38	15.07	19.71		
08-May-09	8.46	15.21	19.83		
15-May-09	8.37	15.19	19.8		
22-May-09	8.12	15.26	19.75		
29-May-09	7.7	15.13	19.74		
12-Jun-09	8.38	14.05	19.56		
19-Jun-09	8.42	14.14	19.41		
26-Jun-09	8.65	14.23	19.87		
30-Jul-09	6.595	12.28	19.05	>60	20.61
07-Aug-09	8.67	15.33	20.51		
14-Aug-09	8.31	14.94	19.67		
11-Sep-09	7.64	14.71	20.32		
18-Sep-09	7.36	14.51	20.06		
25-Sep-09	7.43	14.61	20.18		
02-Oct-09	7.63	14.87	20.47		
09-Oct-09	8.33	14.88	20.04		24.6
16-Oct-09	8.21	14.72	19.93		
23-Oct-09	7.97	13.85	20.37		
30-Oct-09	8.07	14.31	20.63		
06-Nov-09	7.98	14.23	20.37		
12-Nov-09	7.62	14.01	20.3		
20-Nov-09	7.54	14.16	19.93		
27-Nov-09	7.49	13.97	19.79	Cant get reliable reading from dip-meter (intermittant alarm)?	23.16
03-Dec-09	7.92	14.63	19.36		
10-Dec-09	7.73	14.47	19.21		
17-Dec-09	7.81	14.61	19.3		

Groundwater levels (m AOD)

Date	BH1	BH2	BH3	Trefil 1	Trefil 2
	442.691	452.753	453.499	427.060	393.31
06-Mar-08	436.041	438.963	434.329		
13-Mar-08	436.551	439.413	434.539		
19-Mar-08	436.191	439.343	434.859		
27-Mar-08	435.891	438.953	434.679		
17-Apr-08	435.231	438.313	434.419		
24-Apr-08	435.301	438.343	434.489		
01-May-08	435.681	438.853	433.879		
09-May-08	435.121	438.123	433.729		
16-May-08	434.811	437.723	433.119		
30-May-08	435.571	439.113	433.889		
05-Jun-08	435.541	438.323	433.639		
12-Jun-08	435.091	437.793	433.459		
19-Jun-08	435.231	437.953	433.489		
02/07/2008	435.431	438.673	434.549		
11/07/2008	435.511	438.523	434.099		
18/07/2008	435.871	438.553	433.669		
25/07/2008	435.391	438.053	433.279		
01/08/2008	435.711	438.623	434.039		
08/08/2008	436.151	438.853	434.369		
15/08/2008	436.701	439.453	434.929		
22/08/2008	436.861	438.953	434.989		
29/08/2008	436.951	439.233	434.869		
05/09/2008	436.511	439.553	435.059		
19/09/2008	434.231	438.093	433.099		
26/09/2008	433.881	437.603	432.669		
03/10/2008	434.851	437.843	433.259		
17/10/2008	435.261	438.183	433.849		
24/10/2008	434.851	438.693	434.259		
31/10/2008	435.421	439.203	434.769		
07/11/2008	435.631	439.063	434.379		
14/11/2008	435.461	439.023	434.109		
21/11/2008	434.851	438.853	433.599		
28/11/2008	434.711	438.843	433.859		
05/12/2008	434.731	438.483	433.669		
12/12/2008	434.281	438.363	433.409		
19/12/2008	434.461	438.393	433.559		
09/01/2009	435.151	437.973	433.369		
16/01/2009	435.331	439.103	433.689		
23/01/2009	435.601	439.613	434.209		
13/02/2009	435.521	439.613	434.029		
20/02/2009	435.211	439.463	433.779		
27/02/2009	435.071	439.063	433.329		
06/03/2009	434.831	438.583	434.139		
13/03/2009	434.771	438.673	433.729		
20/03/2009	434.051	437.173	432.839		
27/03/2009	433.761	437.043	432.609		
03/04/2009	433.881	437.833	432.859		
09/04/2009	433.941	437.693	432.969		
17/04/2009	434.021	437.363	433.239		
24/04/2009	434.271	437.623	433.699		
01/05/2009	434.311	437.683	433.789		
08/05/2009	434.231	437.543	433.669		
15/05/2009	434.321	437.563	433.699		
22/05/2009	434.571	437.493	433.749		
29/05/2009	434.991	437.623	433.759		
12/06/2009	434.311	438.703	433.939		
19/06/2009	434.271	438.613	434.089		
26/06/2009	434.041	438.523	433.629		
30/07/2009	436.096	440.473	434.449		372.70
07/08/2009	434.021	437.423	432.989		
14/08/2009	434.381	437.813	433.829		
11/09/2009	435.051	438.043	433.179		
18/09/2009	435.331	438.243	433.439		
25/09/2009	435.261	438.143	433.319		
02/10/2009	435.061	437.883	433.029		
09/10/2009	434.361	437.873	433.459		368.71
16/10/2009	434.481	438.033	433.569		
23/10/2009	434.721	438.903	433.129		
30/10/2009	434.621	438.443	432.869		
06/11/2009	434.711	438.523	433.129		
12/11/2009	435.071	438.743	433.199		
20/11/2009	435.151	438.593	433.569		
27/11/2009	435.201	438.783	433.709		370.15
03/12/2009	434.771	438.123	434.139		
10/12/2009	434.961	438.283	434.289		
17/12/2009	434.881	438.143	434.199		

Groundwater levels (m b top of casing)

	BH1	BH2	BH3	BH1 off	BH2 off
Top of casing	442.691	452.753	453.499	427.060	393.310
21-Jan-10	7.98	14.32	19.87		
28-Jan-10	8.03	14.41	19.97	Cant get reliable reading from dip-meter (intermittant alarm)?	24.45
19-Feb-10	9.1	14.958	20.65		
24-Feb-10	8.38	14.875	20.035	Cant get reliable reading from dip-meter (intermittant alarm)?	
03-Mar-10	9.215	14.88	20.59		
10-Mar-10	9.345	15.01	20.715		
17-Mar-10	9.435	15.095	20.795		
23-Mar-10	8.64	14.285	19.99		
29-Mar-10	7.36	13.61	19.38	48.92	24.2
06-Apr-10	8.13	13.88	20.05		
19-Apr-10	9.205	15.22	20.71		
26-Apr-10	9.665	15.64	20.715	51.43	24.45
07-May-10	9.18	15.18	20.395		
14-May-10	9.56	15.31	20.645		
24-May-10	9.97	15.4	20.725	52.11	25.45
11-Jun-10	9.49	15.3	20.76		
18-Jun-10	10.17	15.35	20.73		
25-Jun-10	10.65	15.56	20.745	52.13	25.375
02-Jul-10	10.525	15.56	20.74		
09-Jul-10	10.663	15.569	20.745		
16-Jul-10	9.441	15.546	20.182		
23-Jul-10	9.304	14.33	20.32		
30-Jul-10	9.75	14.896	20.56	51.46	25.265
11-Aug-10	10.17	15.2	20.72		
20-Aug-10	8.27	14.94	20.325		
27-Aug-10	7.306	12.985	19.234	50.915	24.5
03-Sep-10	9.1	13.676	20.677		
10-Sep-10	7.34	13.48	20.435		
17-Sep-10	8.602	13.785	20.537		
28-Sep-10	7.65	13.56	20.51	51.01	24.465
01-Oct-10	7.65	13.56	19.963		
15-Oct-10	9.29	13.83	20.65		
25-Oct-10	9.675	14.15	20.727		
29-Oct-10	7.9	13.823	19.43	49.373	24.338
05-Nov-10	6.92	12.87	19.733		
12-Nov-10	7.338	13.332	19.92		
19-Nov-10	7.195	13.458	19.846		
29-Nov-10	9.446	14.794	20.644		
03-Dec-10	9.677	15.359	20.665		
10-Dec-10	9.82	15.895	20.748		
07-Jan-11	7.166	14.387	19.635		
14-Jan-11	6.801	15.747	19.76		
21-Jan-11	7.463	13.746	20.607		
28-Jan-11	9.42	14.048	20.641	51.353	24.03
04-Feb-11	7.337	13.087	19.893		
11-Feb-11	8.125	13.795	19.454		
18-Feb-11	8.573	13.997	20.19		
25-Feb-11	8.976	14.115	20.56	50.445	23.95
04-Mar-11	9.659	15.626	20.615		
18-Mar-11	10.563	15.875	20.738		
25-Mar-11	10.96	16.247	20.752	51.622	25.148
01-Apr-11	9.875	16.092	20.2		
15-Apr-11	10.395	15.34	20.695		
21-Apr-11	10.929	15.34	20.755		
28-Apr-11	11.012	15.653	20.702	51.812	25.231
03-Jun-11	10.044	15.035	20.473		
11-Jun-11	10.336	15.059	20.668		
18-Jun-11	9.368	13.965	19.832		
25-Jun-11	8.87	13.95	20.005	50.719	24.585
02-Jul-11	9.62	14.38	20.613		
08-Jul-11	7.814	13.665	20.183		
15-Jul-11	9.513	14.343	20.65		
06-Aug-11	10.32	15.306	20.67		
11-Aug-11	10.468	15.337	20.734		
19-Aug-11	10.59	15.355	20.567		
27-Aug-11	9.992	15.222	20.168	47.82	24.26
03-Sep-11	10.375	15.008	20.69		
10-Sep-11	8.019	13.642	19.348		
17-Sep-11	9.645	14.447	20.553		
24-Sep-11	8.16	13.717	19.616	51.282	24.681
25-Oct-11	8.1	14.12	20.48	47.58	23.56
02-Nov-11	7.698	13.271	19.25		
15-Nov-11	9.05	14.045	20.54		

Groundwater levels (m AOD)

Date	BH1	BH2	BH3	Trefil 1	Trefil 2
	442.691	452.753	453.499	427.060	393.31
21/01/2010	434.711	438.433	433.629		
28/01/2010	434.661	438.343	433.529		368.86
19/02/2010	433.591	437.795	432.849		
24/02/2010	434.311	437.878	433.464		
03/03/2010	433.476	437.873	432.909		
10/03/2010	433.346	437.743	432.784		
17/03/2010	433.256	437.658	432.704		
23/03/2010	434.051	438.468	433.509		
29/03/2010	435.331	439.143	434.119	378.140	369.11
06/04/2010	434.561	438.873	433.449		
19/04/2010	433.486	437.533	432.789		
26/04/2010	433.026	437.113	432.784	375.630	368.86
07/05/2010	433.511	437.573	433.104		
14/05/2010	433.131	437.443	432.854		
24/05/2010	432.721	437.353	432.774	374.950	367.86
11/06/2010	433.201	437.453	432.739		
18/06/2010	432.521	437.403	432.769		
25/06/2010	432.041	437.193	432.754	374.930	367.94
02/07/2010	432.166	437.193	432.759		
09/07/2010	432.028	437.184	432.754		
16/07/2010	433.250	437.207	433.317		
23/07/2010	433.387	438.423	433.179		
30/07/2010	432.941	437.857	432.939	375.600	368.05
11/08/2010	432.521	437.553	432.779		
20/08/2010	434.421	437.813	433.174		
27/08/2010	435.385	439.768	434.265	376.145	368.81
03/09/2010	433.591	439.077	432.822		
10/09/2010	435.351	439.273	433.064		
17/09/2010	434.089	438.968	432.962		
28/09/2010	435.041	439.193	432.989	376.050	368.85
01/10/2010	435.041	439.193	433.536		
15/10/2010	433.401	438.923	432.849		
25/10/2010	433.016	438.603	432.772		
29/10/2010	434.791	438.930	434.069	377.687	368.97
05/11/2010	435.771	439.883	433.766		
12/11/2010	435.353	439.421	433.579		
19/11/2010	435.496	439.295	433.653		
29/11/2010	433.245	437.959	432.855		
03/12/2010	433.014	437.394	432.834		
10/12/2010	432.871	436.858	432.751		
07/01/2011	435.525	438.366	433.864		
14/01/2011	435.890	437.006	433.739		
21/01/2011	435.228	439.007	432.892		
28/01/2011	433.271	438.705	432.858	375.707	369.28
04/02/2011	435.354	439.666	433.606		
11/02/2011	434.566	438.958	434.045		
18/02/2011	434.118	438.756	433.309		
25/02/2011	433.715	438.638	432.939	376.615	369.36
04/03/2011	433.032	437.127	432.884		
18/03/2011	432.128	436.878	432.761		
25/03/2011	431.731	436.506	432.747	375.438	368.16
01/04/2011	432.816	436.661	433.299		
15/04/2011	432.296	437.413	432.804		
21/04/2011	431.762	437.413	432.744		
28/04/2011	431.679	437.100	432.797	375.248	368.08
03/06/2011	432.647	437.718	433.026		
11/06/2011	432.355	437.694	432.831		
18/06/2011	433.323	438.788	433.667		
25/06/2011	433.821	438.803	433.494	376.341	368.73
02/07/2011	433.071	438.373	432.886		
08/07/2011	434.877	439.088	433.316		
15/07/2011	433.178	438.410	432.849		
06/08/2011	432.371	437.447	432.829		
11/08/2011	432.223	437.416	432.765		
19/08/2011	432.101	437.398	432.932		
27/08/2011	432.699	437.531	433.331	379.240	369.05
03/09/2011	432.316	437.745	432.809		
10/09/2011	434.672	439.111	434.151		
17/09/2011	433.046	438.306	432.946		
24/09/2011	434.531	439.036	433.883	375.778	368.63
25/10/2011	434.591	438.633	433.019	379.480	369.75
02/11/2011	434.993	439.482	434.249		
15/11/2011	433.641	438.708	432.959		

Groundwater levels (m b top of casing)

	BH1	BH2	BH3	BH1 off	BH2 off
Top of casing	442.691	452.753	453.499	427.060	393.310
25-Nov-11	9.273	14.205	20.51		
30-Nov-11	7.62	13.4	19.6	47.63	23.9
02-Dec-11	8.305	14.585	19.325		
09-Dec-11	8.585	14.395	19.085		
21-Dec-11	7.44	13.43	19.655	47.6	23.2
13-Jan-12	8.680	13.840	20.080		
23-Jan-12	9.190	14.570	20.510		
03-Feb-12	9.453	15.070	20.673		
17-Feb-12	9.180	14.405	20.433		
02-Mar-12	9.682	15.221	20.572	51.184	24.497
09-Mar-12	9.835	15.350	20.651		
16-Mar-12	9.935	15.433	20.700		
23-Mar-12	10.367	15.875	20.752		
30-Mar-12	10.675	15.887	20.703	51.498	25.134
05-Apr-12	8.786	15.630	20.341		
13-Apr-12	8.375	15.263	20.561		
20-Apr-12	8.555	14.124	19.936		
27-Apr-12	8.691	13.267	19.060	48.782	24.192
05-May-12	8.190	13.460	19.622		
12-May-12	8.975	14.659	19.934		
19-May-12	10.050	14.970	20.554		
26-May-12	10.375	15.294	20.752		
02-Jun-12	10.683	15.597	20.725		
09-Jun-12	9.093	14.874	19.582		
16-Jun-12	7.512	14.023	20.394		
23-Jun-12	7.886	14.198	19.912		
30-Jun-12	8.660	14.300	20.423	48.937	24.010
06-Jul-12	8.730	14.397	20.503		
14-Jul-12	8.995	14.332	20.483		
21-Jul-12	9.102	13.980	20.453		
27-Jul-12	9.195	14.215	20.483		
03-Aug-12	10.150	15.321	20.692	51.432	24.801
11-Aug-12	10.193	15.120	20.622		
18-Aug-12	7.763	13.065	20.010		
01-Sep-12	9.524	13.995	20.653		
08-Sep-12	10.143	15.338	20.660		
15-Sep-12	10.378	15.570	20.715		
22-Sep-12	9.832	15.437	20.617		
05-Oct-12	8.618	13.430	19.989		
13-Oct-12	8.817	13.656	20.153		
20-Oct-12	8.652	13.770	20.051		
07-Dec-12	7.977	13.948	20.306		
15-Dec-12	7.515	14.169	20.298		
21-Dec-12	7.143	13.030	19.702		
02-Jan-13				50.835	22.539
05-Jan-13	8.785	14.338	20.647		
12-Jan-13	8.472	13.863	20.230		
02-Feb-13	7.212	13.682	19.682		
09-Feb-13	8.527	14.222	20.489		
16-Feb-13	8.033	13.842	20.197		
23-Feb-13	9.230	15.155	20.689		
02-Mar-13	9.842	16.034	20.693		
16-Mar-13	8.080	14.992	20.330		
23-Mar-13	7.600	14.613	20.281		
28-Mar-13				51.425	23.943
06-Apr-13	9.432	15.343	20.643		
13-Apr-13	9.347	15.060	20.538		
20-Apr-13	9.854	15.369	20.593		
27-Apr-13	10.548	15.575	20.696	51.446	24.886
04-May-13	11.015	15.689	20.742		
11-May-13	9.105	15.200	20.310		
18-May-13	8.957	14.432	20.576		
31-May-13	9.368	15.260	20.432	57.435	24.912
08-Jun-13	9.589	15.461	20.682		
14-Jun-13	8.473	14.778	19.985		
22-Jun-13	8.958	14.749	20.351		
29-Jun-13	9.437	14.159	20.685	51.443	24.913
06-Jul-13	9.675	14.633	20.698		
13-Jul-13	10.125	15.332	20.759		
20-Jul-13	10.330	15.849	20.758		
27-Jul-13	9.830	15.960	20.792		
31-Aug-13	10.264	15.584	20.876	51.667	24.955
07-Sep-13	10.200	15.574	20.827		
14-Sep-13	8.435	15.343	20.205		
21-Sep-13	9.199	15.387	20.395		
28-Sep-13	9.756	15.352	20.533	50.362	24.370
05-Oct-13	8.773	14.353	20.124		
12-Oct-13	8.415	14.962	20.347		
19-Oct-13	7.573	14.436	19.833		
26-Oct-13	6.965	12.984	19.477		

Groundwater levels (m AOD)

Date	BH1	BH2	BH3	Trefil 1	Trefil 2
	442.691	452.753	453.499	427.060	393.31
25/11/2011	433.418	438.548	432.989		
30/11/2011	435.071	439.353	433.899	379.430	369.41
02/12/2011	434.386	438.168	434.174		
09/12/2011	434.106	438.358	434.414		
21/12/2011	435.251	439.323	433.844	379.460	370.11
13/01/2012	434.011	438.913	433.419		
23/01/2012	433.501	438.183	432.989		
03/02/2012	433.238	437.683	432.826		
17/02/2012	433.511	438.348	433.066		
02/03/2012	433.009	437.532	432.927	375.876	368.81
09/03/2012	432.856	437.403	432.848		
16/03/2012	432.756	437.320	432.799		
23/03/2012	432.324	436.878	432.747		
30/03/2012	432.016	436.866	432.796	375.562	368.18
05/04/2012	433.905	437.123	433.158		
13/04/2012	434.316	437.490	432.938		
20/04/2012	434.136	438.629	433.563		
27/04/2012	434.000	439.486	434.439	378.278	369.12
05/05/2012	434.501	439.293	433.877		
12/05/2012	433.716	438.094	433.565		
19/05/2012	432.641	437.783	432.945		
26/05/2012	432.316	437.459	432.747		
02/06/2012	432.008	437.156	432.774		
09/06/2012	433.598	437.879	433.917		
16/06/2012	435.179	438.730	433.105		
23/06/2012	434.805	438.555	433.587		
30/06/2012	434.031	438.453	433.076	378.123	369.30
06/07/2012	433.961	438.356	432.996		
14/07/2012	433.696	438.421	433.016		
21/07/2012	433.589	438.773	433.046		
27/07/2012	433.496	438.538	433.016		
03/08/2012	432.541	437.432	432.807	375.628	368.51
11/08/2012	432.498	437.633	432.877		
18/08/2012	434.928	439.688	433.489		
01/09/2012	433.167	438.758	432.846		
08/09/2012	432.548	437.415	432.839		
15/09/2012	432.313	437.183	432.784		
22/09/2012	432.859	437.316	432.882		
05/10/2012	434.073	439.323	433.510		
13/10/2012	433.874	439.097	433.346		
20/10/2012	434.039	438.983	433.448		
07/12/2012	434.714	438.805	433.193		
15/12/2012	435.176	438.584	433.201		
21/12/2012	435.548	439.723	433.797		
02/01/2013				376.225	370.77
05/01/2013	433.906	438.415	432.852		
12/01/2013	434.219	438.890	433.269		
02/02/2013	435.479	439.071	433.817		
09/02/2013	434.164	438.531	433.010		
16/02/2013	434.658	438.911	433.302		
23/02/2013	433.461	437.598	432.810		
02/03/2013	432.849	436.719	432.806		
16/03/2013	434.611	437.761	433.169		
23/03/2013	435.091	438.140	433.218		
28/03/2013				375.635	369.37
06/04/2013	433.259	437.410	432.856		
13/04/2013	433.344	437.693	432.961		
20/04/2013	432.837	437.384	432.906		
27/04/2013	432.143	437.178	432.803	375.614	368.42
04/05/2013	431.676	437.064	432.757		
11/05/2013	433.586	437.553	433.189		
18/05/2013	433.734	438.321	432.923		
31/05/2013	433.323	437.493	433.067	369.625	368.40
08/06/2013	433.102	437.292	432.817		
14/06/2013	434.218	437.975	433.514		
22/06/2013	433.733	438.004	433.148		
29/06/2013	433.254	438.594	432.814	375.617	368.40
06/07/2013	433.016	438.120	432.801		
13/07/2013	432.566	437.421	432.740		
20/07/2013	432.361	436.904	432.741		
27/07/2013	432.861	436.793	432.707		
31/08/2013	432.427	437.169	432.623	375.393	368.36
07/09/2013	432.491	437.179	432.672		
14/09/2013	434.256	437.410	433.294		
21/09/2013	433.492	437.366	433.104		
28/09/2013	432.935	437.401	432.966	376.698	368.94
05/10/2013	433.918	438.400	433.375		
12/10/2013	434.276	437.791	433.152		
19/10/2013	435.118	438.317	433.666		
26/10/2013	435.726	439.769	434.022		



Groundwater levels (m b top of casing)

	BH1	BH2	BH3	BH1 off	BH2 off
<b>Top of casing</b>	<b>442.691</b>	<b>452.753</b>	<b>453.499</b>	<b>427.060</b>	<b>393.310</b>
02-Nov-13	7.180	13.314	19.693	49.174	22.430
09-Nov-13	7.430	13.580	19.693		
16-Nov-13	8.593	13.650	20.685		
22-Nov-13	8.630	13.920	20.550		
30-Nov-13				51.155	24.450
07-Dec-13	9.857	15.877	20.747		
20-Dec-13	Dip meter readings are unreliable?				

Groundwater levels (m AOD)

Date	BH1	BH2	BH3	Trefil 1	Trefil 2
	<b>442.691</b>	<b>452.753</b>	<b>453.499</b>	<b>427.060</b>	<b>393.31</b>
02/11/2013	435.511	439.439	433.806	377.886	370.88
09/11/2013	435.261	439.173	433.806		
16/11/2013	434.098	439.103	432.814		
22/11/2013	434.061	438.833	432.949		
30/11/2013				375.905	368.86
07/12/2013	432.834	436.876	432.752		
20/12/2013	Dip meter readings are unreliable?				

# APPENDIX B

## Quarry pumping data

Date	Day	Month	Year	Pumped since last measurment (m3)	Days	Average (m3/d)
31/05/2010	31	5	2010	430		
11/06/2010	11	6	2010	190	11	17
18/06/2010	18	6	2010	390	7	56
25/06/2010	25	6	2010	880	7	126
02/07/2010	2	7	2010	100	7	14
23/07/2010	23	7	2010	4430	21	211
30/07/2010	30	7	2010	1300	7	186
08/08/2010	8	8	2010	200	9	22
15/08/2010	15	8	2010	370	7	53
22/08/2010	22	8	2010	3270	7	467
29/08/2010	29	8	2010	8010	7	1144
31/08/2010	31	8	2010	5330	2	2665
05/09/2010	5	9	2010	4930	5	986
12/09/2010	12	9	2010	6130	7	876
19/09/2010	19	9	2010	3580	7	511
26/09/2010	26	9	2010	1490	7	213
30/09/2010	30	9	2010	870	4	218
03/10/2010	3	10	2010	5470	3	1823
10/10/2010	10	10	2010	4460	7	637
17/10/2010	17	10	2010	840	7	120
24/10/2010	24	10	2010	310	7	44
31/10/2010	31	10	2010	1140	7	163
07/11/2010	7	11	2010	6280	7	897
14/11/2010	14	11	2010	5690	7	813
21/11/2010	21	11	2010	6370	7	910
28/11/2010	28	11	2010	1990	7	284
19/12/2010	19	12	2010	1750	21	83
09/01/2011	9	1	2011	4220	21	201
16/01/2011	16	1	2011	900	7	129
23/01/2011	23	1	2011	10410	7	1487
30/01/2011	30	1	2011	4150	7	593
06/02/2011	6	2	2011	6770	7	967
13/02/2011	13	2	2011	4970	7	710
20/02/2011	20	2	2011	6890	7	984
27/02/2011	27	2	2011	3960	7	566
06/03/2011	6	3	2011	2310	7	330
13/03/2011	13	3	2011	440	7	63
20/03/2011	20	3	2011	530	7	76
27/03/2011	27	3	2011	790	7	113
31/03/2011	31	3	2011	470	4	118
03/04/2011	3	4	2011	220	3	73
10/04/2011	10	4	2011	780	7	111
17/04/2011	17	4	2011	630	7	90
24/04/2011	24	4	2011	840	7	120
30/04/2011	30	4	2011	670	6	112
08/05/2011	8	5	2011	680	8	85
15/05/2011	15	5	2011	920	7	131
22/05/2011	22	5	2011	940	7	134
29/05/2011	29	5	2011	1760	7	251
05/06/2011	5	6	2011	940	7	134
12/06/2011	12	6	2011	1040	7	149
19/06/2011	19	6	2011	5190	7	741
26/06/2011	26	6	2011	3500	7	500
03/07/2011	3	7	2011	1430	7	204
10/07/2011	10	7	2011	3370	7	481
17/07/2011	17	7	2011	2640	7	377
24/07/2011	24	7	2011	890	7	127
31/07/2011	31	7	2011	430	7	61
07/08/2011	7	8	2011	400	7	57
14/08/2011	14	8	2011	670	7	96
21/08/2011	21	8	2011	580	7	83
28/08/2011	28	8	2011	100	7	14
04/09/2011	4	9	2011	1960	7	280
11/09/2011	11	9	2011	5970	7	853
18/09/2011	18	9	2011	1740	7	249

Date	Day	Month	Year	Pumped since last measurment (m3)	Days	Average (m3/d)
25/09/2011	25	9	2011	4530	7	647
30/09/2011	30	9	2011	1700	5	340
09/10/2011	9	10	2011	2750	9	306
16/10/2011	16	10	2011	440	7	63
23/10/2011	23	10	2011	2070	7	296
30/10/2011	30	10	2011	3270	7	467
31/10/2011	31	10	2011	710	1	710
06/11/2011	6	11	2011	6290	6	1048
13/11/2011	13	11	2011	6330	7	904
20/11/2011	20	11	2011	1870	7	267
27/11/2011	27	11	2011	2110	7	301
30/11/2011	30	11	2011	2800	3	933
04/12/2011	4	12	2011	2200	4	550
11/12/2011	11	12	2011	3740	7	534
18/12/2011	18	12	2011	6400	7	914
25/12/2011	25	12	2011	4700	7	671
08/01/2012	8	1	2012	6000	14	429
15/01/2012	15	1	2012	6130	7	876
22/01/2012	22	1	2012	4800	7	686
29/01/2012	29	1	2012	2680	7	383
12/02/2012	12	2	2012	2040	14	146
19/02/2012	19	2	2012	1740	7	249
26/02/2012	26	2	2012	1200	7	171
29/02/2012	29	2	2012	1880	3	627
04/03/2012	4	3	2012	1450	4	363
11/03/2012	11	3	2012	1780	7	254
18/03/2012	18	3	2012	1530	7	219
25/03/2012	25	3	2012	1280	7	183
31/03/2012	31	3	2012	1180	6	197
08/04/2012	8	4	2012	780	8	98
15/04/2012	15	4	2012	660	7	94
22/04/2012	22	4	2012	1320	7	189
29/04/2012	29	4	2012	2580	7	369
06/05/2012	6	5	2012	5730	7	819
13/05/2012	13	5	2012	5080	7	726
20/05/2012	20	5	2012	2190	7	313
27/05/2012	27	5	2012	2780	7	397
31/05/2012	31	5	2012	2040	4	510
03/06/2012	3	6	2012	1280	3	427
10/06/2012	10	6	2012	4990	7	713
17/06/2012	17	6	2012	5930	7	847
24/06/2012	24	6	2012	6730	7	961
30/06/2012	30	6	2012	4390	6	732
08/07/2012	8	7	2012	3410	8	426
15/07/2012	15	7	2012	3980	7	569
22/07/2012	22	7	2012	3500	7	500
29/07/2012	29	7	2012	1510	7	216
31/07/2012	31	7	2012	430	2	215
05/08/2012	5	8	2012	1670	5	334
12/08/2012	12	8	2012	1990	7	284
19/08/2012	19	8	2012	5970	7	853
26/08/2012	26	8	2012	2100	7	300
31/08/2012	31	8	2012	2060	5	412
09/09/2012	9	9	2012	1580	9	176
16/09/2012	16	9	2012	1790	7	256
23/09/2012	23	9	2012	1840	7	263
30/09/2012	30	9	2012	4390	7	627
07/10/2012	7	10	2012	5080	7	726
14/10/2012	14	10	2012	6720	7	960
21/10/2012	21	10	2012	3890	7	556
28/10/2012	28	10	2012	1740	7	249
31/10/2012	31	10	2012	2650	3	883
04/11/2012	4	11	2012	1750	4	438
11/11/2012	11	11	2012	6350	7	907
18/11/2012	18	11	2012	5990	7	856

Date	Day	Month	Year	Pumped since last measurment (m3)	Days	Average (m3/d)
25/11/2012	25	11	2012	5980	7	854
01/12/2012	1	12	2012	4970	6	828
08/12/2012	8	12	2012	3290	7	470
15/12/2012	15	12	2012	3970	7	567
22/12/2012	22	12	2012	4040	7	577
29/12/2012	29	12	2012	4790	7	684
06/01/2013	6	1	2013	6010	8	751
13/01/2013	13	1	2013	6810	7	973
20/01/2013	20	1	2013	1800	7	257
27/01/2013	27	1	2013	2350	7	336
31/01/2013	31	1	2013	6890	4	1723
10/02/2013	10	2	2013	6970	10	697
17/02/2013	17	2	2013	5870	7	839
24/02/2013	24	2	2013	6470	7	924
28/02/2013	28	2	2013	5710	4	1428
10/03/2013	10	3	2013	5070	10	507
17/03/2013	17	3	2013	2100	7	300
24/03/2013	24	3	2013	980	7	140
07/04/2013	7	4	2013	2220	14	159
14/04/2013	14	4	2013	2670	7	381
21/04/2013	21	4	2013	3780	7	540
28/04/2013	28	4	2013	2180	7	311
30/04/2013	30	4	2013	2970	2	1485
05/05/2013	5	5	2013	1250	5	250
12/05/2013	12	5	2013	5870	7	839
19/05/2013	19	5	2013	6870	7	981
26/05/2013	26	5	2013	6990	7	999
31/05/2013	31	5	2013	3230	5	646
09/06/2013	9	6	2013	1680	9	187
16/06/2013	16	6	2013	3750	7	536
23/06/2013	23	6	2013	3190	7	456
30/06/2013	30	6	2013	1070	7	153
07/07/2013	7	7	2013	860	7	123
14/07/2013	14	7	2013	730	7	104
21/07/2013	21	7	2013	920	7	131
28/07/2013	28	7	2013	1950	7	279
31/07/2013	31	7	2013	2280	3	760
04/08/2013	4	8	2013	1780	4	445
11/08/2013	11	8	2013	4350	7	621
18/08/2013	18	8	2013	2390	7	341
25/08/2013	25	8	2013	1570	7	224
31/08/2013	31	8	2013	880	6	147
08/09/2013	8	9	2013	1370	8	171
15/09/2013	15	9	2013	2030	7	290
22/09/2013	22	9	2013	2320	7	331
29/09/2013	29	9	2013	1180	7	169
01/10/2013	1	10	2013	380	2	190
06/10/2013	6	10	2013	920	5	184
13/10/2013	13	10	2013	1020	7	146
20/10/2013	20	10	2013	5030	7	719
27/10/2013	27	10	2013	5780	7	826
31/10/2013	31	10	2013	4390	4	1098
10/11/2013	10	11	2013	5980	10	598
17/11/2013	17	11	2013	6480	7	926
24/11/2013	24	11	2013	5910	7	844
01/12/2013	1	12	2013	5140	7	734
08/12/2013	8	12	2013	2170	7	310
15/12/2013	15	12	2013	2150	7	307
22/12/2013	22	12	2013	1890	7	270
29/12/2013	29	12	2013	5950	7	850

# APPENDIX C

## **Discharge turbidity and suspended solids results**

Date	Weather Conditions	Turbidity Reading (NTU)	Suspended Solids Reading	Comment
09-Apr-10	Dry	82	50	lab analysis of suspended solids
22-Jul-10	Wet	76.6	42	
17-Aug-10	Wet becoming dry	85.5	52	
24-Aug-10	Showers	17.13	12	
31-Aug-10	Dry	11	16.3	Suspended solids calculated based on correlation with turbidity reading
06-Sep-10	Wet	5.24	13.9	
23-Sep-10	Heavy rain	41.8	29.3	
06-Oct-10	Dry following overnight rain	103.5	55.3	
03-Nov-10	Overcast & drizzle	271	125.8	
18-Nov-10	Wet & misty	206.66	98.7	
06-Jan-11	Overcast	75.1	43.3	
20-Jan-11	Dry	38.7	28	
25-Jan-11	Wet	19.52	19.9	
03-Feb-11	Dry & bright	208	99.3	lab analysis of suspended solids
10-Feb-11	Wet & misty	36.4	27	
15-Feb-11	Wet & misty	159	67	
04-Mar-11	Clear & dry	116	73	
16-Jun-11	Showers	34.78	26.3	Suspended solids calculated based on correlation with turbidity reading
24-Jun-11	Dry to start heavy rain later	87.3	48.5	
07-Jul-11	Showers	198	95.1	
18-Jul-11	Showers	97.3	52.7	
07-Sep-11	Showers	33.67	25.9	
20-Sep-11	Heavy rain	179	87.1	
05-Oct-11	Heavy rain	23.73	21.7	
18-Oct-11	Dry & cold	189.6	91.5	
27-Oct-11	Wet	181.3	88	
02-Nov-11	Overcast & damp	41.26	29.1	
11-Nov-11	Heavy showers	199.8	95.8	
28-Nov-11	Overcast	178	86.7	
07-Dec-11	Dry and cold	168	82.4	
15-Dec-11	Showers	149.58	74.7	
21-Dec-11	Overcast with showers	142.68	71.8	
12-Jan-12	Light rain showers & misty	197.68	98.52	
19-Jan-12	Light showers then dry	148.23	75.8	
29-Feb-12	Dull but bright later	99.42	53.38	
08-Mar-12	Overcast	178.2	89.57	
27-Apr-12	Heavy rain	199.6	99.4	
04-May-12	Overcast	187.2	93.71	
09-May-12	Showers	33.1	22.91	
11-Jun-12	Overcast	49.6	30.49	
19-Jun-12	Overcast following overnight rain	159.68	81.06	
26-Jun-12	Overcast with showers later	163.54	82.84	
02-Jul-12	Rain & mist	101.8	54.47	
11-Jul-12	Bright with showers	51.4	31.32	
17-Jul-12	Bright with showers	73.4	41.43	
16-Aug-12	Dull, cool with showers	138.7	71.43	
12-Sep-12	Dry but overcast	20.36	17.06	
26-Sep-12	Raining	142.8	73.31	
04-Oct-12	Overcast with showers	192.4	96.1	
10-Oct-12	Wet & misty	166.7	84.29	
19-Oct-12	Misty then bright	158.9	80.71	
07-Nov-12	Bright and cold	85.7	47.08	
14-Nov-12	Misty damp and cool	88.63	48.42	EA
22-Nov-12	Dull with showers	152.3	77.67	
29-Nov-12	Bright and cold	98.7	53.05	



Date	Weather Conditions	Turbidity Reading (NTU)	Suspended Solids Reading	Comment
07-Dec-12	Showers	149.75	76.5	
13-Dec-12	Cold and dry	107.35	57.02	
20-Dec-12	Raining	183.47	91.99	
09-Jan-13	Bright and cold	152.78	77.89	
15-Jan-13	Snow and ice	147.25	75.35	
25-Jan-13	Dull and very cold	162.57	82.39	
05-Feb-13	Bright, breezy with light snow.	86.73	47.55	EA
15-Feb-13	Milder and bright	141.02	72.49	
22-Feb-13	Dull and very cold	129.5	67.2	
08-Mar-13	Misty with showers	149.78	76.52	
18-Apr-13	Wet	138.59	71.38	
10-May-13	Raining		622	EA very cloudy. A CAR breach was issued
16-May-13	Bright, cool, breezy with showers	158.15	80.36	
24-May-13	Dull and cool.	128.79	66.87	
30-May-13	Misty, clearing with light showers	149.37	76.33	
14-Jun-13	Very heavy rain storm			EA Very dirty - EA made contact
18-Jun-13	Dull and overcast	65.33	37.72	
31-Jul-13	Sunny intervals	125.8	65.5	
05-Aug-13	Heavy rain	194.5	97.06	
15-Aug-13	Raining	163.8	82.96	
12-Sep-13	Overcast following overnight rain	158.9	80.71	
19-Sep-13	Showers	155.1	78.96	
17-Oct-13	Raining	140.26	72.14	
21-Oct-13	Heavy rain	193.78	96.73	
29-Oct-13	Changeable	164.88	83.45	
08-Nov-13	Dull with showers	193.03	96.39	
14-Nov-13	Showers	147.38	75.41	
21-Nov-13	Heavy rain	160.87	81.61	
28-Nov-13	Dull. Cool but dry	154.08	78.49	

# APPENDIX D

## Rainfall data

Date	Rain (mm)	Comment
01/02/2010	0	Dry
02/02/2010	0	Wet
03/02/2010	0	Wet
04/02/2010	0	Wet
05/02/2010	0	Dry
06/02/2010	0	Dry
07/02/2010	0	Wet
08/02/2010	0	Dry & cold
09/02/2010	0	Dry & cold
10/02/2010	0	Dry & cold
11/02/2010	0	Dry & cold
12/02/2010	0	Dry & cold
13/02/2010	0	Dry
14/02/2010	0	Wet
15/02/2010	1.5	Wet
16/02/2010	11	Dry
17/02/2010	0	Snowing
18/02/2010	3.5	Snowing
19/02/2010	12	Dry & cold, snow on ground
20/02/2010	0	Dry
21/02/2010	0	Snowing
22/02/2010	8	Snowing
23/02/2010	0	Snowing
24/02/2010	15.5	Misty, snow turning to slush.
25/02/2010	0	Dry
26/02/2010	0	Dry
27/02/2010	0	
28/02/2010	16.5	
01/03/2010	0	Dry
02/03/2010	0	Dry
03/03/2010	0	Dry
04/03/2010	0	Dry
05/03/2010	0	Dry
06/03/2010	0	Dry
07/03/2010	0	Dry
08/03/2010	0	Dry
09/03/2010	0	Dry
10/03/2010	0	Dry
11/03/2010	0	Dry
12/03/2010	0	Dry
13/03/2010	0	Dry
14/03/2010	0	Dry
15/03/2010	0	Dry
16/03/2010	0	Dry
17/03/2010	5	Wet & misty
18/03/2010	0	Dry & overcast
19/03/2010	14	Dry & overcast
20/03/2010	0	Wet
21/03/2010	0	Dry
22/03/2010	55	Wet
23/03/2010	9	Wet & misty
24/03/2010	39	Wet & misty
25/03/2010	11	Overcast & dry
26/03/2010	23	Wet
27/03/2010	0	Dry
28/03/2010	0	Dry
29/03/2010	33	Wet
30/03/2010	22	Wet
31/03/2010	17	Snow
01/04/2010	16	Snow
02/04/2010	0	Wet
03/04/2010	0	Wet
04/04/2010	0	Dry
05/04/2010	0	Showers
06/04/2010	83	Overcast
07/04/2010	3	Showers
08/04/2010	0.75	Dry
09/04/2010	0	Dry
10/04/2010	0	Dry
11/04/2010	0	Dry
12/04/2010	0	Dry
13/04/2010	0	Dry
14/04/2010	0	Dry
15/04/2010	0	Dry
16/04/2010	0	Dry
17/04/2010	0	Dry
18/04/2010	0	Dry
19/04/2010	0	Dry
20/04/2010	0	Dry
21/04/2010	0	Dry
22/04/2010	0	Dry
23/04/2010	0	Dry
24/04/2010	0	Dry
25/04/2010	0	Wet
26/04/2010	11	Overcast
27/04/2010	0	Dry
28/04/2010	0	Dry
29/04/2010	0	Wet
30/04/2010	29	Wet
01/05/2010	22	Wet
02/05/2010	0	Dry
03/05/2010	0	Dry
04/05/2010	0	Dry
05/05/2010	0	Dry

Date	Rain (mm)	Comment
06/05/2010	1	Wet
07/05/2010	5	Rain then snow
08/05/2010	1.5	Showers
09/05/2010	0	Dry
10/05/2010	0	Overcast
11/05/2010	0.75	Wet
12/05/2010	0	Showers
13/05/2010	11	Dry
14/05/2010	2	Wet
15/05/2010	0	Dry
16/05/2010	0	Dry
17/05/2010	0.5	Dry
18/05/2010	0	Dry
19/05/2010	0.5	Dry
20/05/2010	0	Dry
21/05/2010	0	Dry
22/05/2010	0	Dry
23/05/2010	0	Dry
24/05/2010	0	Dry
25/05/2010	0	Dry
26/05/2010	6	Dry
27/05/2010	0	Dry
28/05/2010	0	Dry
29/05/2010	15	Wet
30/05/2010	0	Dry
31/05/2010		Dry
01/06/2010	22	Wet
02/06/2010	0.5	Dry
03/06/2010	0	Dry
04/06/2010	0	Dry
05/06/2010	0	Dry
06/06/2010	0	Dry
07/06/2010	0	Showers
08/06/2010	28.5	Showers
09/06/2010	13	Wet
10/06/2010	11	Showers
11/06/2010	0	Dry
12/06/2010	0	Dry
13/06/2010	0	Showers
14/06/2010	5.5	Showers
15/06/2010	0	Dry
16/06/2010	0	Dry
17/06/2010	0	Dry
18/06/2010	0	Dry
19/06/2010	0	Dry
20/06/2010	0	Dry
21/06/2010	0	Dry
22/06/2010	0	Dry
23/06/2010	0	Dry
24/06/2010	0	Dry
25/06/2010	0	Dry
26/06/2010	0	Dry
27/06/2010	0	Dry
28/06/2010	0	Dry
29/06/2010	in guage has be stolen	Wet
30/06/2010	0	Dry
01/07/2010	0	Overcast
02/07/2010	No rain guage.	Overnight rain
03/07/2010	0	Dry
04/07/2010	No rain gauge	Showers
05/07/2010	No rain guage.	Dry
06/07/2010	0	Dry
07/07/2010	No rain guage.	Wet
08/07/2010	No rain guage.	Wet
09/07/2010	0	Dry
10/07/2010	0	Dry
11/07/2010	0	Dry
12/07/2010	No rain guage.	Showers
13/07/2010	No rain guage.	Showers
14/07/2010	No rain guage.	Wet
15/07/2010	No rain guage.	Heavy showers
16/07/2010	0	Overcast
17/07/2010	No rain gauge	Showers
18/07/2010	No rain gauge	Showers
19/07/2010	0	Dry
20/07/2010	No rain guage.	Wet
21/07/2010	0	Dry
22/07/2010	No rain guage.	Wet
23/07/2010	placement guage in u	Wet
24/07/2010	0	Light showers
25/07/2010	0	Dry
26/07/2010	1.25	Dry
27/07/2010	0.25	Fine drizzle
28/07/2010	0	Dry
29/07/2010	0	Dry
30/07/2010	0	Overcast am wet pm
31/07/2010	0	Dry
01/08/2010	0	Showers
02/08/2010	2	Dry
03/08/2010	5	Showers
04/08/2010	2	Showers
05/08/2010	0	Dry
06/08/2010	1	Wet & misty
07/08/2010	3	Showers

Date	Rain (mm)	Comment
08/08/2010	0	Dry
09/08/2010	0	Slight drizzle
10/08/2010	8	Wet
11/08/2010	3.5	Dry
12/08/2010	0	Dry
13/08/2010	0	Dry
14/08/2010	0	Wet
15/08/2010	0	Dry
16/08/2010	4.25	Dry
17/08/2010	1	Wet first thing dry later
18/08/2010	0	Dry
19/08/2010	1	Wet
20/08/2010	50	Wet
21/08/2010	0	Wet
22/08/2010	0	Dry
23/08/2010	53	Wet
24/08/2010	11	Showers
25/08/2010	1	Overcast @ first then heavy rain la
26/08/2010	50	Rain & mist
27/08/2010	2	Overcast but dry
28/08/2010	0	Dry
29/08/2010	0	Dry
30/08/2010	0	Dry
31/08/2010	0	Dry
01/09/2010	0	Dry
02/09/2010	0	Dry
03/09/2010	0	Dry
04/09/2010	0	Dry
05/09/2010	0	Wet
06/09/2010	5	Wet
07/09/2010	17	Wet
08/09/2010	6	Dry
09/09/2010	1	Dry
10/09/2010	7	Wet
11/09/2010	0	Wet
12/09/2010	0	Light Showers
13/09/2010	33	Wet
14/09/2010	11	Wet
15/09/2010	7	Dry
16/09/2010	1	Dry
17/09/2010	0	Dry
18/09/2010	0	Dry
19/09/2010	0	Wet
20/09/2010	9	Wet
21/09/2010	0	Dry
22/09/2010	0	Dry
23/09/2010	15	Wet
24/09/2010	6	Overcast
25/09/2010	0	Dry
26/09/2010	0	Dry
27/09/2010	0	Overcast
28/09/2010	1	Showers
29/09/2010	11	Wet
30/09/2010	1.5	Showers
01/10/2010	12	Heavy rain
02/10/2010	0	Showers
03/10/2010	0	Heavy rain
04/10/2010	65	Dry
05/10/2010	4.5	Dry
06/10/2010	10	Dry following overnight rain
07/10/2010	0	Dry
08/10/2010	0	Dry
09/10/2010	0	Showers
10/10/2010	0	Dry
11/10/2010	1.5	Dry
12/10/2010	0	Dry
13/10/2010	0	Dry
14/10/2010	0	Dry and overcast
15/10/2010	0	Dry and overcast
16/10/2010	0	Dry
17/10/2010	0	Dry
18/10/2010	1.5	Light shower
19/10/2010	1.5	Light shower
20/10/2010	2.5	Showers
21/10/2010	0	Light shower
22/10/2010	1	Light shower
23/10/2010	12	Showers
24/10/2010	0	Dry
25/10/2010	0	Dry
26/10/2010	6.5	Wet
27/10/2010	8	Overcast
28/10/2010	5	Wet & misty
29/10/2010	2.5	Wet & misty
30/10/2010	0	Showers
31/10/2010	15	Showers
01/11/2010	0	Dry
02/11/2010	5	Wet
03/11/2010	5	Overcast
04/11/2010	13	Wet
05/11/2010	21	Wet
06/11/2010	0	Wet
07/11/2010	0	Wet
08/11/2010	32	Wet
09/11/2010	1.5	Showers

Date	Rain (mm)	Comment
10/11/2010	0	Dry
11/11/2010	12	Heavy rain
12/11/2010	4	Wet
13/11/2010	0	Dry
14/11/2010	0	Dry
15/11/2010	12	Dry
16/11/2010	1	Dry
17/11/2010	23	Heavy rain
18/11/2010	6	Wet and misty
19/11/2010	16	Wet and misty
20/11/2010	4.5	Wet & misty
21/11/2010	0	Dry
22/11/2010	2	Wet and misty
23/11/2010	0	Dry
24/11/2010	0	Dry
25/11/2010	0	Dry
26/11/2010	0	Snow & ice
27/11/2010	0	Dry & ice
28/11/2010	0	Dry & ice
29/11/2010	0	Dry & ice
30/11/2010	0	Snow & ice
01/12/2010	0	Snow & ice
02/12/2010	0	Light snow & ice
03/12/2010	0	Light snow & ice
04/12/2010	0	Icy
05/12/2010	0	Icy
06/12/2010	0	Icy
07/12/2010	0	Icy
08/12/2010	0	Icy
09/12/2010	0	D ry
10/12/2010	0	Dry
11/12/2010	0	Dry
12/12/2010	0	Dry
13/12/2010	13	Dry
14/12/2010	0	Dry
15/12/2010	0	Dry
16/12/2010	0.5	Wet
17/12/2010	0	Heavy snow - close quarry
18/12/2010	0	Snow & ice
19/12/2010	0	Snow & ice
20/12/2010	0	Heavy snow - close quarry early
21/12/2010	0	Snow & ice
22/12/2010	0	Snow & ice
23/12/2010	0	Snow & ice
24/12/2010	0	
25/12/2010	0	
26/12/2010	0	
27/12/2010	0	
28/12/2010	0	
29/12/2010	0	
30/12/2010	0	
31/12/2010	0	
01/01/2011		
02/01/2011		
03/01/2011		
04/01/2011		Misty & damp
05/01/2011	12	Rain & mist
06/01/2011	4.5	Overcast
07/01/2011		Snow overnight turning to rain
08/01/2011		
09/01/2011		
10/01/2011	35	Rain & misty
11/01/2011	23	Rain & wind
12/01/2011	15	Heavy rain
13/01/2011	22	Rain
14/01/2011	23	Rain
15/01/2011		Rain
16/01/2011		Rain
17/01/2011	18	Dry
18/01/2011	4	Dry following overnight rain
19/01/2011		Dry
20/01/2011		Dry
21/01/2011		Dry
22/01/2011		Dry
23/01/2011		Dry
24/01/2011		Dry
25/01/2011		Light rain
26/01/2011	4	Overcast, damp & misty
27/01/2011	0.5	Overcast & freezing
28/01/2011	0	Bright & freezing
29/01/2011	0	Dry & freezing
30/01/2011	0	Dry & freezing
31/01/2011	0	Dry & freezing
01/02/2011	1	Rain to start clear later
02/02/2011	0.5	Rain & mist
03/02/2011	9	Dry & sunny
04/02/2011	0	Wet & windy
05/02/2011	0	Wet & windy
06/02/2011	0	Wet & windy
07/02/2011	0	Rain
08/02/2011	22	Dry & sunny
09/02/2011	1	Rain & mist
10/02/2011	4	Rain & mist
11/02/2011	3	Rain & mist

Date	Rain (mm)	Comment
12/02/2011	0	Rain
13/02/2011	0	Showers
14/02/2011	33	Sleet & rain
15/02/2011	3	Rain & mist
16/02/2011	13	Showers & misty
17/02/2011	0.5	Dry & sunny
18/02/2011	0	Damp & misty
19/02/2011	0	Dry & clear
20/02/2011	0	Overcast
21/02/2011	13	Damp & misty
22/02/2011	3.5	Overcast
23/02/2011	3	Rain & mist
24/02/2011	0	Rain
25/02/2011	0	Rain
26/02/2011	0	Overcast
27/02/2011	0	Showers
28/02/2011	23	Overcast
01/03/2011	0	Overcast
02/03/2011	0	Dry & bright
03/03/2011	0	Freezing mist
04/03/2011	0	Clear & dry
05/03/2011	0	Clear & dry
06/03/2011	0	Clear & dry
07/03/2011	0	Clear & dry
08/03/2011	0	Clear & dry
09/03/2011	3	Wet
10/03/2011	1	Overcast
11/03/2011	0.5	Showers
12/03/2011	0	Showers
13/03/2011	0	Clear & dry
14/03/2011	4.5	Overcast
15/03/2011	0	Damp & misty
16/03/2011	0	Damp & misty
17/03/2011	0	Dry & bright
18/03/2011	0	Wet
19/03/2011	0	Clear & dry
20/03/2011	0	Clear & dry
21/03/2011	1.5	Showers
22/03/2011	0.5	Dry & bright
23/03/2011	0	Dry & bright
24/03/2011	0	Dry & bright
25/03/2011	0	Dry & bright
26/03/2011	0	Clear & dry
27/03/2011	0	Clear & dry
28/03/2011	0	Overcast
29/03/2011	0	Overcast
30/03/2011	4	Showers
31/03/2011	8	Damp & misty
01/04/2011	0	Wet & misty
02/04/2011	0	Wet then sunny later
03/04/2011	0	Dry
04/04/2011	0	Overcast
05/04/2011	5	Rain & wind
06/04/2011	2	Dry & bright
07/04/2011	0	Dry & bright
08/04/2011	0	Dry & bright
09/04/2011	0	Sunny & dry
10/04/2011	0	Sunny & dry
11/04/2011	0	Damp & misty
12/04/2011	0	Dry & bright
13/04/2011	1	Wet & dull
14/04/2011	3	Wet & dull
15/04/2011	1	Overcast
16/04/2011	0	Sunny & dry
17/04/2011	0	Sunny & dry
18/04/2011	0	Dry & bright
19/04/2011	0	Dry & bright
20/04/2011	0	Dry & bright
21/04/2011	0	Dry & bright
22/04/2011	0	Dry & bright
23/04/2011	0	Sunny & dry
24/04/2011	0	Sunny & dry
25/04/2011	0	Dry & bright
26/04/2011	0	Dry & bright
27/04/2011	0	Overcast
28/04/2011	0	Dry & bright
29/04/2011	0	Dry & bright
30/04/2011	0	Sunny & dry
01/05/2011	0	Sunny & dry
02/05/2011	0	Dry & bright
03/05/2011	0	Dry
04/05/2011	0	Dry
05/05/2011	0	Overcast
06/05/2011	0	Showers
07/05/2011	0	Overnight thunder storms
08/05/2011	0	Showers
09/05/2011	41	Thunder storms
10/05/2011	31	Showers
11/05/2011	0	Overcast
12/05/2011	0	Showers
13/05/2011	0	Showers
14/05/2011	0	Overcast
15/05/2011	0	Showers
16/05/2011	1.5	Showers



Date	Rain (mm)	Comment
17/05/2011	1	Showers
18/05/2011	2.5	Showers
19/05/2011	0	Dry & bright
20/05/2011	0	Dry
21/05/2011	0	Dry
22/05/2011	0	Showers
23/05/2011	10	Wet, cold & windy
24/05/2011	2	Dry, bright but cool.
25/05/2011	0	Changeable
26/05/2011	5	Rain
27/05/2011	1	Changeable
28/05/2011	0	Rain
29/05/2011	0	Rain
30/05/2011	0	Rain
31/05/2011	18	Sunny & dry
01/06/2011	0	Dry
02/06/2011	0	Dry
03/06/2011	0	Sunny
04/06/2011	0	Sunny
05/06/2011	0	Light showers
06/06/2011	1.5	Dry
07/06/2011	0	Light showers then sunny
08/06/2011	13	Raining
09/06/2011	3	Sunny
10/06/2011	0	Overcast & light showers
11/06/2011	0	Sunny
12/06/2011	0	Heavy rain
13/06/2011	48	Wet following overnight showers
14/06/2011	0	Sunny
15/06/2011	6	Raining
16/06/2011	1.5	Showers
17/06/2011	5.5	Rain & cold
18/06/2011	0	Raining
19/06/2011	0	Raining
20/06/2011	26	Sunny
21/06/2011	15	Heavy showers
22/06/2011	10	Showers
23/06/2011	1	Showers
24/06/2011	0	Dry to start heavy rain later
25/06/2011	0	Overcast with light showers
26/06/2011	0	Sunny & hot
27/06/2011	13	Sunny & hot
28/06/2011	3.5	Overcast
29/06/2011	0	Overcast light showers later
30/06/2011	1.5	Overcast brightening up later
01/07/2011	0	Sunny intervals
02/07/2011	0	Sunny
03/07/2011	0	Sunny
04/07/2011	0	Sunny
05/07/2011	0	Showers
06/07/2011	15	Heavy showers
07/07/2011	20	Showers
08/07/2011	18	Heavy showers
09/07/2011	0	showers
10/07/2011	0	Sunny
11/07/2011	11	Sunny
12/07/2011	0	Overcast but dry
13/07/2011	0	Overcast but dry
14/07/2011	0	Sunny
15/07/2011	0	Overcast but dry
16/07/2011	0	Heavy showers
17/07/2011	0	Overcast but dry
18/07/2011	22	Showers
19/07/2011	0	Overcast but dry
20/07/2011	2.5	Overcast with showers later
21/07/2011	0	Overcast but dry
22/07/2011	10.5	Heavy showers
23/07/2011	0	Sunny
24/07/2011	0	Overcast
25/07/2011	0	Sunny
26/07/2011	0	Sunny
27/07/2011	0	Sunny
28/07/2011	0	Warm & dry am showers pm
29/07/2011	0	Misty & dull
30/07/2011	0	Sunny intervals
31/07/2011	0	Sunny intervals
01/08/2011	2.5	Wet & misty
02/08/2011	1	Wet & misty
03/08/2011	0	Overcast but dry
04/08/2011	10	Raining
05/08/2011	0	Sunny
06/08/2011	0	Heavy showers & sunshine
07/08/2011	0	Heavy showers & sunshine
08/08/2011	9	Sunny, cool and wet following ove
09/08/2011	0	Dry and cool
10/08/2011	0	Overcast but dry
11/08/2011	0	Heavy rain
12/08/2011	15	Wet & dull
13/08/2011	0	Showers
14/08/2011	0	Overcast
15/08/2011	4	Light showers
16/08/2011	5	Showers (heavy at times)
17/08/2011	0	Sunny
18/08/2011	0	Overcast

Date	Rain (mm)	Comment
19/08/2011	0	Bright
20/08/2011	0	Showers
21/08/2011	0	Bright
22/08/2011	5.5	Bright
23/08/2011	0	Overcast
24/08/2011	0	Overcast
25/08/2011	3.5	Bright first then heavy rain
26/08/2011	23.5	Overcast heavy rain later
27/08/2011	0	Light rain
28/08/2011	0	Dry
29/08/2011	0	Dry
30/08/2011	6	Drizzle
31/08/2011	0	Overcast
01/09/2011	0	Dry
02/09/2011	0	Dry
03/09/2011	0	Dry
04/09/2011	0	Dry
05/09/2011	17	Showers
06/09/2011	21	Heavy rain
07/09/2011	1	Showers
08/09/2011	10	Heavy rain
09/09/2011	4	Showers
10/09/2011	0	Showers
11/09/2011	0	Showers
12/09/2011	31	Heavy rain & wind
13/09/2011	1	Heavy showers
14/09/2011	2	Bright
15/09/2011	0	Dry
16/09/2011	0	Overcast
17/09/2011	0	Heavy rain
18/09/2011	0	Heavy rain
19/09/2011	27	Overcast light showers
20/09/2011	23	Heavy rain
21/09/2011	6	Overcast
22/09/2011	7	Dry
23/09/2011	0	Dry
24/09/2011	0	Dry
25/09/2011	0	Wet
26/09/2011	9	Dry
27/09/2011	8	Showers
28/09/2011	1	Dry
29/09/2011	0	Dry
30/09/2011	0	Dry
01/10/2011	0	Dry
02/10/2011	0	Dry
03/10/2011	0	Dry
04/10/2011	0	Dry
05/10/2011	30	Heavy rain
06/10/2011	16	Dry
07/10/2011	35	Heavy rain
08/10/2011	0	Dry
09/10/2011	0	
10/10/2011	0	Dry
11/10/2011	5	Wet
12/10/2011	13	Wet following overnight rain
13/10/2011	0	Dry and overcast
14/10/2011	0	Dry
15/10/2011	0	Dry following overnight rain
16/10/2011	0	Dry
17/10/2011	4	Heavy rain
18/10/2011	13	Dry & cold
19/10/2011	3.5	Showers
20/10/2011	0	Dry & clod
21/10/2011	3	Dull & cold
22/10/2011	0	Dry
23/10/2011	0	Dry
24/10/2011	7	Dull & wet following overnight rain
25/10/2011	13	Overcast following overnight rain
26/10/2011	5	Dry
27/10/2011	17	Wet
28/10/2011	2	sunny & cold
29/10/2011	0	Showers
30/10/2011	0	Showers
31/10/2011	43	Raining
01/11/2011	16	Heavy showers
02/11/2011	1	Overcast & damp
03/11/2011	16	Heavy rain
04/11/2011	6	Misty with heavy showers
05/11/2011	0	Dry following heavy overnight rain
06/11/2011	0	Dry
07/11/2011	21	Misty & damp
08/11/2011	2	Misty & damp
09/11/2011	7	Heavy rain
10/11/2011	13	Overcast
11/11/2011	0	Heavy showers
12/11/2011	0	Dry
13/11/2011	0	Dry
14/11/2011	0	Dry
15/11/2011	15	Dry
16/11/2011	0.5	Misty & damp
17/11/2011	6	Bright but cold
18/11/2011	6	Wet
19/11/2011	0	Misty & damp
20/11/2011	0	Dry

Date	Rain (mm)	Comment
21/11/2011	2	Misty & damp
22/11/2011	10	Dry
23/11/2011	0	Misty & damp
24/11/2011	0	Dry
25/11/2011	6	Dry
26/11/2011	0	Dry but heavy rain later
27/11/2011	0	Dry
28/11/2011	11	Overcast
29/11/2011	9	Wet & windy
30/11/2011	14	Dry & cold
01/12/2011	12	Overcast with a cool wind
02/12/2011	1	Overcast with a cool wind
03/12/2011	0	Dry and cold
04/12/2011	0	Showers
05/12/2011	14	Dry and cold
06/12/2011	0	Dry and cold
07/12/2011	7	Dry and cold
08/12/2011	2	Wet & windy
09/12/2011	0	Dry and cold
10/12/2011	0	Dry and cold
11/12/2011	0	Wet
12/12/2011	32	Dry and cold
13/12/2011	35	Snow showers & cold
14/12/2011	0	Snow showers & cold
15/12/2011	15	Showers
16/12/2011	0	Snow & freezing
17/12/2011	0	Wintry showers
18/12/2011	0	Rain showers
19/12/2011	9	Rain showers
20/12/2011	7	Overcast with showers
21/12/2011	6	Overcast with showers
22/12/2011	0	Dry & bright
23/12/2011	no data	no data
24/12/2011	no data	no data
25/12/2011	no data	no data
26/12/2011	no data	no data
27/12/2011	no data	no data
28/12/2011	no data	no data
29/12/2011	no data	no data
30/12/2011	no data	no data
31/12/2011	no data	no data
01/01/2012	no data	no data
02/01/2012	no data	no data
03/01/2012	45	Storms and high winds
04/01/2012	2	Overcast with showers
05/01/2012	0	Rain & high winds
06/01/2012	0	Dry & bright
07/01/2012	0	Dry
08/01/2012	0	Dry
09/01/2012	0	Dry & dull
10/01/2012	0	Wet & misty
11/01/2012	0	Wet & misty
12/01/2012	0	Wet & misty
13/01/2012	0	Bright but cold
14/01/2012	0	Bright and cold
15/01/2012	0	Bright and cold
16/01/2012	0	Bright but cold
17/01/2012	0	Dull and icy
18/01/2012	1	Showers & misty
19/01/2012	10	Showers at first then clear
20/01/2012	1	Showers with a cold wind
21/01/2012	0	Showers
22/01/2012	0	Overcast
23/01/2012	1	Overcast
24/01/2012	9	Wet & misty
25/01/2012	2	Wet & misty
26/01/2012	5	Raining, cold with snow later.
27/01/2012	8	Bright, cold and icy
28/01/2012	0	Bright & cold
29/01/2012	0	Overcast some snow flurries
30/01/2012	16	Snow, ice and very cold
31/01/2012	0	Snow, ice and very cold
01/02/2012	0	Snow, ice and very cold
02/02/2012	0	Snow, ice and very cold
03/02/2012	0	Snow, ice and very cold
04/02/2012	0	Snowing
05/02/2012	0	Raining
06/02/2012	14	Light rain onto snow covered ground.
07/02/2012	1	Misty and cold
08/02/2012	0	Bright & cold
09/02/2012	0	Bright & cold
10/02/2012	6	Misty snow flurries and cold
11/02/2012	0	Dry and cold
12/02/2012	0	Dry and cold
13/02/2012	12	Overcast
14/02/2012	0	Overcast
15/02/2012	0	Overcast
16/02/2012	0	Dry
17/02/2012	0	Dry
18/02/2012	0	Raining
19/02/2012	0	
20/02/2012	0	Snow flurries
21/02/2012	0	Wet

Date	Rain (mm)	Comment
22/02/2012	0	Wet
23/02/2012	17	Misty
24/02/2012	1	Misty and damp
25/02/2012	0	Sunny
26/02/2012	0	Sunny
27/02/2012	0	Misty then raining
28/02/2012	1	Misty and damp
29/02/2012	0	Dull to start brighter later.
01/03/2012	0	Bright & cold
02/03/2012	0	Sunny
03/03/2012	0	Sunny
04/03/2012	0	Snow & rain showers
05/03/2012	10	Overcast & windy
06/03/2012	0	Sunny
07/03/2012	5	Heavy showers
08/03/2012	0	Overcast
09/03/2012	1	Raining
10/03/2012	0	Sunny
11/03/2012	0	Sunny
12/03/2012	0	Sunny
13/03/2012	0	Sunny
14/03/2012	0	Misty
15/03/2012	0	Sunny at first then misty
16/03/2012	0	Overcast
17/03/2012	0	Sunny with afternoon showers.
18/03/2012	0	Sunny
19/03/2012	2	Bright
20/03/2012	0	Overcast
21/03/2012	0	Overcast
22/03/2012	0	Bright
23/03/2012	0	Bright
24/03/2012	0	Sunny & warm
25/03/2012	0	Sunny & warm
26/03/2012	0	Bright
27/03/2012	0	Bright
28/03/2012	0	Bright
29/03/2012	0	Bright
30/03/2012	0	Bright
31/03/2012	0	
01/04/2012	0	Sunny
02/04/2012	0	Sunny
03/04/2012	0	Showers
04/04/2012	0	Snowing
05/04/2012	0	Snow on ground very cold
06/04/2012	0	Dry
07/04/2012	0	Dry
08/04/2012	0	Dry
09/04/2012	0	Heavy rain
10/04/2012	33	Dry
11/04/2012	2	Dry am showers pm
12/04/2012	0	Dry but overcast
13/04/2012	0	Sunny intervals
14/04/2012	0	Raining
15/04/2012	0	Dry
16/04/2012	5	Dry
17/04/2012	0	Showers
18/04/2012	0	Wet
19/04/2012	31	Showers at first then brighter.
20/04/2012	5	Bright
21/04/2012	0	Dry
22/04/2012	0	Wet
23/04/2012	12	Wet
24/04/2012	4	Sunny to start dull later
25/04/2012	0	Raining heavy at times
26/04/2012	43	Rain
27/04/2012	14	Raining heavy at times
28/04/2012	0	Heavy rain and gales
29/04/2012	0	Heavy rain
30/04/2012	41	Heavy rain showers am
01/05/2012	27	Heavy rain showers am then wet & misty pm
02/05/2012	2	Overcast
03/05/2012	15	Heavy rain showers
04/05/2012	2	Overcast
05/05/2012	0	Bright
06/05/2012	0	Overcast
07/05/2012	0	Wet
08/05/2012	0	Sunny
09/05/2012	14	Showers
10/05/2012	4	Heavy rain
11/05/2012	16	Overcast
12/05/2012	0	Sunny
13/05/2012	0	Sunny
14/05/2012	2	Heavy showers dry later
15/05/2012	3	Overcast
16/05/2012	1	Overcast
17/05/2012	2	Overcast
18/05/2012	0	Bright
19/05/2012	0	Bright
20/05/2012	0	Bright
21/05/2012	0	Sunny
22/05/2012	0	Sunny
23/05/2012	0	Sunny
24/05/2012	0	Sunny

Date	Rain (mm)	Comment
25/05/2012	0	Sunny
26/05/2012	0	Sunny
27/05/2012	0	Sunny
28/05/2012	0	Sunny
29/05/2012	0	Sunny
30/05/2012	0	Sunny
31/05/2012	0.5	Overcast & light shower
01/06/2012	0	Showers
02/06/2012	0	Overcast
03/06/2012	0	Showers
04/06/2012	0	Showers
05/06/2012	0	Showers
06/06/2012	35	Showers
07/06/2012	12	Heavy rain & windy
08/06/2012	42	Heavy rain & windy
09/06/2012	0	Fine
10/06/2012	0	Showers
11/06/2012	5	Overcast
12/06/2012	3	Wet & misty
13/06/2012	1	Bright
14/06/2012	0	Showers
15/06/2012	26	Heavy rain showers
16/06/2012	0	Showers
17/06/2012	0	Sunny intervals with light showers
18/06/2012	37	Bright
19/06/2012	3	Overcast following overnight rain
20/06/2012	0	Bright
21/06/2012	23	Raining
22/06/2012	18	Heavy rain showers
23/06/2012	0	Showers
24/06/2012	0	Showers
25/06/2012	17	Bright
26/06/2012	0	Overcast, showers later
27/06/2012	2	Overcast
28/06/2012	7	Wet & misty
29/06/2012	2	Wet & misty
30/06/2012	0	Showers
01/07/2012	0	Showers
02/07/2012	18	Rain and mist
03/07/2012	17	Rain and mist
04/07/2012	10	Rain and mist
05/07/2012	7	Overcast
06/07/2012	0	Overcast & showers
07/07/2012	0	Showers
08/07/2012	0	Showers
09/07/2012	14	Overcast & showers
10/07/2012	1	Changeable
11/07/2012	0	Bright with some very light showers
12/07/2012	4	Bright followed by rain
13/07/2012	0	Showers
14/07/2012	0	Showers
15/07/2012	0	Bright
16/07/2012	0	Heavy rain
17/07/2012	30	Bright at first followed by showers.
18/07/2012	18	Heavy rain brighter later
19/07/2012	1	Changeable
20/07/2012	0	Bright
21/07/2012	0	Sunny
22/07/2012	0	Sunny
23/07/2012	0	Sunny
24/07/2012	0	Sunny
25/07/2012	0	Sunny
26/07/2012	0	Sunny
27/07/2012	0	Sunny
28/07/2012	0	Sunny
29/07/2012	0	Showers
30/07/2012	2	Sunny but cool
31/07/2012	11	Raining & dull
01/08/2012	2	Wet & misty
02/08/2012	6	Raining
03/08/2012	2	Raining
04/08/2012	0	Showers
05/08/2012	0	Showers
06/08/2012	25	Overcast
07/08/2012	1.5	Wet and misty
08/08/2012	5	Showers
09/08/2012	0	Bright & dry
10/08/2012	0	Sunny
11/08/2012	0	Sunny
12/08/2012	0	Showers
13/08/2012	6	Rain and misty
14/08/2012	2	Overcast
15/08/2012	0	Heavy showers
16/08/2012	25	Dull, cool and showers
17/08/2012	16	Rain and misty
18/08/2012	0	Heavy showers
19/08/2012	0	Showers then fine
20/08/2012	29	Showers and overcast
21/08/2012	1.5	Dull, misty with showers
22/08/2012	2.5	Dull
23/08/2012	0	Dull
24/08/2012	1.5	Overcast, misty & damp
25/08/2012	0	Showers
26/08/2012	0	fine

Date	Rain (mm)	Comment
27/08/2012	0	Rain
28/08/2012	23	Lights showers then bright
29/08/2012	13	Raining
30/08/2012	18	Bright but cool
31/08/2012	0	Bright
01/09/2012	0	Dry
02/09/2012	0	Dry
03/09/2012	0	Dry and bright
04/09/2012	0	Dry with low cloud.
05/09/2012	0	Dry and sunny
06/09/2012	0	Dry and sunny
07/09/2012	0	Dry and sunny
08/09/2012	0	Dry and sunny
09/09/2012	0	Light Showers
10/09/2012	6.5	Wet / Light rain
11/09/2012	4	Dry and Sunny
12/09/2012	0	Dry and Overcast
13/09/2012	0.5	Dry and Sunny
14/09/2012	1.5	Light Showers
15/09/2012	0	Dry
16/09/2012	0	Light Showers
17/09/2012	3.5	Dry
18/09/2012	2	Dry
19/09/2012	0	Dry
20/09/2012	0.5	Dry and Overcast
21/09/2012	0	Dry and Overcast
22/09/2012	0	Dry
23/09/2012	0	Rain
24/09/2012	41	Rain
25/09/2012	2	Rain
26/09/2012	9.5	Rain
27/09/2012	19	Overcast following heavy overnight rain
28/09/2012	4.5	Rain at first brighter later
29/09/2012	0	Dry
30/09/2012	0	Raining
01/10/2012	19	Raining and misty
02/10/2012	8	Heavy overnight rain brighter later.
03/10/2012	13	Heavy rain showers and overcast
04/10/2012	1	Overcast and showers
05/10/2012	14	Overcast and showers
06/10/2012	0	Dry
07/10/2012	0	Dry
08/10/2012	16	Wet & misty
09/10/2012	1	Wet & misty
10/10/2012	3	Wet & misty
11/10/2012	13	Wet & misty
12/10/2012	23	bright but cool
13/10/2012	0	bright but cool
14/10/2012	0	Light showers
15/10/2012	6	Dull and cool
16/10/2012	13	bright but cool
17/10/2012	14	Dull and wet
18/10/2012	0	Dull with showers
19/10/2012	4	Misty then bright
20/10/2012	0	Dry
21/10/2012	0	Dry
22/10/2012	1	Wet & misty
23/10/2012	5	Wet & misty
24/10/2012	0.5	Damp & misty
25/10/2012	0.5	Damp & misty
26/10/2012	3	Raining
27/10/2012	0	Dry
28/10/2012	0	Raining
29/10/2012	13	Dull then brighter.
30/10/2012	2	Overcast with showers later
31/10/2012	5	Overcast with showers later
01/11/2012	0	Cold and wet following heavy overnight rain
02/11/2012	22	Cold and wet following overnight rain
03/11/2012	6	Raining
04/11/2012	0	Dry
05/11/2012	0	Dry, bright and cold
06/11/2012	15	Dry, bright and cold
07/11/2012	0	Dry, bright and cold
08/11/2012	0	Dry, bright and cold
09/11/2012	0.5	Dull, misty with light showers
10/11/2012	1.5	Dry
11/11/2012	0	Dry following overnight rain
12/11/2012	0	Wet and misty
13/11/2012	15	Dull and windy
14/11/2012	2.5	Misty, damp and cool
15/11/2012	0.5	Misty, damp but brighter later
16/11/2012	0	Misty, damp and cool
17/11/2012	0.5	Dry following overnight rain
18/11/2012	0	Dry
19/11/2012	0	Dull, cold and raining
20/11/2012	13	Dull, cold and raining
21/11/2012	23	Clear following heavy overnight rain
22/11/2012	25	Dull with showers
23/11/2012	2	Bright following heavy rain
24/11/2012	25	Heavy rain
25/11/2012	0	Heavy rain
26/11/2012	0	Overcast turning brighter

Date	Rain (mm)	Comment
27/11/2012	45	Dull with showers
28/11/2012	13	Bright but cold and windy
29/11/2012	1	Bright but cold
30/11/2012	0	Bright but cold
01/12/2012	0	Sunny/Showers
02/12/2012	0	Rain
03/12/2012	9	Overcast
04/12/2012	2	Showers
05/12/2012	0.5	Sunny
06/12/2012	0	Rain/Sleet/Snow
07/12/2012	15	Showers
08/12/2012	0	Dry
09/12/2012	0	Dry
10/12/2012	0	Cold, dry & bright
11/12/2012	0	Cold, dry & bright
12/12/2012	0	Cold, dry & misty
13/12/2012	0	Cold, dry & misty
14/12/2012	15	Heavy rain & mist
15/12/2012	0	Raining
16/12/2012	0	Raining
17/12/2012	25	Bright but cold
18/12/2012	2	Bright but cold
19/12/2012	2	Raining
20/12/2012	14	Raining
21/12/2012	8	Bright and cold
22/12/2012	0	
23/12/2012	0	
24/12/2012	0	
25/12/2012	0	
26/12/2012	0	
27/12/2012	0	
28/12/2012	0	
29/12/2012	0	
30/12/2012	0	
31/12/2012	0	
01/01/2013	0	Misty & damp
02/01/2013	38	Misty & damp
03/01/2013	1	Misty & damp
04/01/2013	0	Misty & damp
05/01/2013	0	Misty & damp
06/01/2013	0	Misty & damp
07/01/2013	0	Misty & damp
08/01/2013	1	Bright and cold
09/01/2013	5	Misty & damp
10/01/2013	0	Bright and cold
11/01/2013	5	Wet
12/01/2013	0	Bright
13/01/2013	0	Snow & ice
14/01/2013	4	Snow & ice
15/01/2013	5	Icy and very cold
16/01/2013	0	Snow forecasted, (red alert)
17/01/2013	0	<b>Heavy snow (red alert). Quarry closed.</b>
18/01/2013	0	Deep snow & ice - quarry closed
19/01/2013	0	
20/01/2013	0	Snow on ground and freezing conditions.
21/01/2013	0	Heavy snow and blizzards
22/01/2013	0	Further overnight snow fell.
23/01/2013	0	Bright and very cold with snow covered ground
24/01/2013	0	Dull and very cold
25/01/2013	0	Thaw and raining
26/01/2013	0	Thaw and raining
27/01/2013	0	Heavy rain
28/01/2013	28	Heavy rain and storms
29/01/2013	13	Bright, cold and windy
30/01/2013	23	Raining at first then brighter
31/01/2013	3	bright following overnight rain
01/02/2013	13	Dry
02/02/2013	0	Showers
03/02/2013	0	Bright but breezy with light showers later.
04/02/2013	3.5	Bright but breezy with light snow flurry.
05/02/2013	3.5	Dull with showers
06/02/2013	3.5	Bright and breezy
07/02/2013	0	Dull with showers
08/02/2013	4	Dry
09/02/2013	0	Raining
10/02/2013	0	Snow flurry, misty and very cold
11/02/2013	25	Dull and very cold
12/02/2013	0	Snowing and very cold
13/02/2013	0	Milder & brighter
14/02/2013	31	Milder & brighter
15/02/2013	0	Bright and dry
16/02/2013	0	Bright and dry
17/02/2013	0	Bright and dry
18/02/2013	0	Bright and dry
19/02/2013	0	Freezing mist and very cold
20/02/2013	0	Dull and very cold
21/02/2013	0	Dull & very cold
22/02/2013	0	Dry and cold
23/02/2013	0	Dry and cold
24/02/2013	0	Dull & very cold

Date	Rain (mm)	Comment
25/02/2013	0	Misty and very cold
26/02/2013	0	Misty and very cold
27/02/2013	0	Dull and very cold
28/02/2013	0	Showers
01/03/2013	0	Dry and bright
02/03/2013	0	Dry
03/03/2013	0	Bright
04/03/2013	0	Bright
05/03/2013	0	Raining
06/03/2013	0	Misty, damp and showers
07/03/2013	0	Misty, damp and showers
08/03/2013	14	Showers
09/03/2013	0	Dry
10/03/2013	0	Very cold and windy with snow flurries.
11/03/2013	3	Very cold and windy with snow flurries.
12/03/2013	0	Very cold
13/03/2013	0	Bright and cool
14/03/2013	0	Showers and dull
15/03/2013	7	Snow
16/03/2013	0	Showers
17/03/2013	0	Bright following overnight snow flurry.
18/03/2013	25	Dull & misty
19/03/2013	0	Dull & misty
20/03/2013	1	Dull with freezing mist
21/03/2013	2	Snow and heavy rain
22/03/2013	0	Snow
23/03/2013	0	Freezing but dry
24/03/2013	0	Snow on ground, freezing and windy
25/03/2013	25	Snow on ground, freezing and windy
26/03/2013	0	Snow on ground, freezing and windy
27/03/2013	0	Snow on ground, freezing and windy
28/03/2013	0	
29/03/2013	0	
30/03/2013	0	
31/03/2013	0	
01/04/2013	0	Bright, cool but dry
02/04/2013	0	Bright, cool but dry
03/04/2013	0	Bright, cool but dry
04/04/2013	0	Dull & very cold with high winds.
05/04/2013	0	Dry
06/04/2013	0	Dry
07/04/2013	0	Dull but dry
08/04/2013	0	Dull, windy and cold
09/04/2013	0	Dry and cold
10/04/2013	0	Damp, misty and cold
11/04/2013	0	Wet and misty at first brightening up later
12/04/2013	12	Wet
13/04/2013	0	Wet
14/04/2013	0	Wet and dull
15/04/2013	0	Dry
16/04/2013	0	Wet
17/04/2013	0	Wet
18/04/2013	0	
19/04/2013	0	Dry
20/04/2013	0	Showers
21/04/2013	0	Dry
22/04/2013	0	Fine
23/04/2013	0	Dull and misty
24/04/2013	0	Dull and misty
25/04/2013	0	Sunny intervals and light showers
26/04/2013	0	Cold, windy and dull
27/04/2013	0	Showers
28/04/2013	0	Bright and windy
29/04/2013	3	Bright
30/04/2013	0	Bright
01/05/2013	0	Bright
02/05/2013	0	Dull and breezy
03/05/2013	0	Bright following overnight rain
04/05/2013	3	Sunny
05/05/2013	0	Sunny
06/05/2013	0	Bright
07/05/2013	0	Rain and overcast
08/05/2013	8	Heavy rain
09/05/2013	0	Raining
10/05/2013	17	Raining
11/05/2013	0	Raining
12/05/2013	0	Raining
13/05/2013	15	Dull with showers
14/05/2013	4	Bright, dry but cool.
15/05/2013	28	Bright , cool breezy & showers
16/05/2013	0	Overcast
17/05/2013	5	Dry
18/05/2013	0	Dry
19/05/2013	0	Dry & dull
20/05/2013	0	Dry but low cloud cover
21/05/2013	0	Dull and cool
22/05/2013	0	Dull and cool
23/05/2013	0	Dull and cool



Date	Rain (mm)	Comment
24/05/2013	0	Sunny
25/05/2013	0	Sunny
26/05/2013	0	Wet
27/05/2013	0	Wet
28/05/2013	15	Wet and misty
29/05/2013	18	Misty to start then clear some rain
30/05/2013	5	Sunny
31/05/2013	0	Sunny
01/06/2013	0	Sunny
02/06/2013	0	Sunny
03/06/2013	0	Sunny
04/06/2013	0	Sunny
05/06/2013	0	Dull
06/06/2013	0	Sunny
07/06/2013	0	Sunny
08/06/2013	0	Sunny
09/06/2013	0	Dry, dull and cool
10/06/2013	0	Wet and misty
11/06/2013	2	Wet and misty
12/06/2013	1	Wet and misty
13/06/2013	0	Heavy rain
14/06/2013	16	Raining
15/06/2013	0	Raining
16/06/2013	0	Raining first thing dry later
17/06/2013	15	Dry but overcast
18/06/2013	0	Bright and dry
19/06/2013	0	Heavy rain showers
20/06/2013	17	Dry but dull
21/06/2013	2	Heavy rain
22/06/2013	0	Showers
23/06/2013	0	Dull
24/06/2013	10	Bright
25/06/2013	0	Dry but dull
26/06/2013	0	Sunny start showers later
27/06/2013	0	Showers
28/06/2013	3	Bright
29/06/2013	0	Changeable
30/06/2013	0	Overcast
01/07/2013	0	Overcast
02/07/2013	0	Overnight rain then dull
03/07/2013	3	Raining
04/07/2013	1	Sunny
05/07/2013	0	Sunny
06/07/2013	0	Sunny
07/07/2013	0	Sunny
08/07/2013	0	Sunny
09/07/2013	0	Sunny
10/07/2013	0	Sunny
11/07/2013	0	Sunny
12/07/2013	0	Sunny
13/07/2013	0	Sunny
14/07/2013	0	Sunny
15/07/2013	0	Sunny
16/07/2013	0	Sunny
17/07/2013	0	Sunny
18/07/2013	0	Sunny
19/07/2013	0	Sunny
20/07/2013	0	Sunny
21/07/2013	0	Sunny
22/07/2013	0	Sunny following overnight shower
23/07/2013	0	Bright
24/07/2013	1	Sunny following overnight shower
25/07/2013	6	Bright
26/07/2013	0	Heavy showers
27/07/2013	0	Heavy showers
28/07/2013	0	Showers an dull
29/07/2013	24	Showers an dull
30/07/2013	4	Sunny intervals
31/07/2013	5	Sunny intervals
01/08/2013	5	Sunny intervals
02/08/2013	0	Dry then rain
03/08/2013	0	Heavy rain
04/08/2013	0	Heavy rain
05/08/2013	39	Dull
06/08/2013	32	Dull with rain in the evening
07/08/2013	0	Dull
08/08/2013	9	Wet
09/08/2013	4	Dry
10/08/2013	0	Dry
11/08/2013	0	Dull
12/08/2013	0	Dull
13/08/2013	0	Raining
14/08/2013	1	Raining
15/08/2013	12	Wet followed by sunshine
16/08/2013	12	Raining
17/08/2013	0	Bright
18/08/2013	0	Showers then bright
19/08/2013	7	Dry with bright intervals
20/08/2013	0	Dull but dry
21/08/2013	0	Dull brighter later
22/08/2013	2	Dull light rain showers pm
23/08/2013	0	Dry
24/08/2013	0	Dry
25/08/2013	0	Sunny

Date	Rain (mm)	Comment
26/08/2013	0	Dry
27/08/2013	0	Dull but dry
28/08/2013	0	Dull but dry
29/08/2013	0	Wet
30/08/2013	3	Sunny
31/08/2013	0	Sunny
01/09/2013	0	Bright
02/09/2013	0	Bright
03/09/2013	0	Sunny
04/09/2013	0	Sunny
05/09/2013	0	Showers then bright
06/09/2013	0	Showers
07/09/2013	0	Heavy showers
08/09/2013	0	Showers
09/09/2013	17	Bright
10/09/2013	0	Overcast
11/09/2013	0	Overcast following overnight showers
12/09/2013	0	Showers
13/09/2013	2	Dry
14/09/2013	0	Raining
15/09/2013	0	Wet
16/09/2013	25	Wet
17/09/2013	2	Showers
18/09/2013	12	Showers
19/09/2013	0	Overcast
20/09/2013	0	
21/09/2013	0	
22/09/2013	0	Misty and damp
23/09/2013	4	Misty then sunny
24/09/2013	0	Dry and changeable
25/09/2013	0	Misty with drizzle
26/09/2013	0	Overcast
27/09/2013	1.5	Dry
28/09/2013	0	Dry
29/09/2013	0	Overcast and misty
30/09/2013	0	Misty and damp
01/10/2013	1	Misty and damp
02/10/2013	7	Misty & heavy showers
03/10/2013	12	Misty & heavy showers
04/10/2013	26	Bright
05/10/2013	0	Bright
06/10/2013	0	Misty and damp
07/10/2013	1.5	Low cloud with drizzle
08/10/2013	0	Overcast
09/10/2013	1.5	Clear and cool
10/10/2013	0	Overcast, cold and windy
11/10/2013	0	Showers
12/10/2013	0	Raining
13/10/2013	0	Raining
14/10/2013	15	Bright and dry
15/10/2013	3	Raining
16/10/2013	1	Dry and bright raining later
17/10/2013	12	Misty and damp
18/10/2013	1	Showers
19/10/2013	0	Heavy showers
20/10/2013	0	Heavy rain
21/10/2013	42	Heavy rain
22/10/2013	50	Heavy rain
23/10/2013	22	Misty, brightening up later
24/10/2013	1	Heavy rain
25/10/2013	17	Raining
26/10/2013	0	Heavy rain showers
27/10/2013	0	Heavy rain showers
28/10/2013	41	Changeable
29/10/2013	3	Damp & misty
30/10/2013	1	Damp & overcast
31/10/2013	12	Raining and misty
01/11/2013	4	Heavy rain with gales
02/11/2013	0	Heavy rain
03/11/2013	0	Bright following overnight rain
04/11/2013	23	Showers
05/11/2013	0	Heavy rain and gales
06/11/2013	0	Changeable followed by heavy rain
07/11/2013	21	Dull with heavy showers
08/11/2013	10	Raining
09/11/2013	0	Dry & bright
10/11/2013	0	Wet & misty
11/11/2013	16	Bright
12/11/2013	0	Bright at first then turning dull
13/11/2013	0	Showers
14/11/2013	0	Overcast
15/11/2013	5	Dry
16/11/2013	0	Drizzle
17/11/2013	0	Bright
18/11/2013	2	Bright & icy
19/11/2013	0	Heavy rain
20/11/2013	0	Windy, cold but bright
21/11/2013	10	Heavy rain
22/11/2013	0	Bright & cold
23/11/2013	0	Bright & cold
24/11/2013	0	Bright
25/11/2013	0	Dull, cool but dry
26/11/2013	0	Dull, cool but dry

Date	Rain (mm)	Comment
27/11/2013	0	Dull, cool but dry
28/11/2013	0	Dull, cool but dry
29/11/2013	0	Dull cool but dry
30/11/2013	0	Dull, cool but dry
01/12/2013	0	Overcast but dry
02/12/2013	0	Overcast but dry
03/12/2013	0	Showers & overcast
04/12/2013	0	Dry with high winds
05/12/2013	0	Bright and cool
06/12/2013	0	Dry
07/12/2013	0	Dry
08/12/2013	0	Bright and cool following overnight rain
09/12/2013	4	Overcast but dry
10/12/2013	0	Overcast but dry
11/12/2013	0	Misty, cool with showers later
12/12/2013	0	Raining
13/12/2013	0	Raining
14/12/2013	0	Raining
15/12/2013	0	Heavy rain
16/12/2013	0	Dull with bright intervals
17/12/2013	0	Rain and wind
18/12/2013	27	Dry and cold
19/12/2013	0	Dry with frost
20/12/2013	10	Showers
21/12/2013	15	Heavy rain
22/12/2013	7	Heavy rain
23/12/2013	0	
24/12/2013	0	
25/12/2013	16	
26/12/2013	no data	no data
27/12/2013	no data	no data
28/12/2013	no data	no data
29/12/2013	no data	no data
30/12/2013	no data	no data
31/12/2013	no data	no data

# APPENDIX E

## **Site drainage system inspection records**

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = ✗	OK = ✓	Fault = ✗		
01/07/09			✓			
02/07/09			✓			
03/07/09	✓		✓			
04/07/09			✓			
05/07/09						
06/07/09			✓			
07/07/09			✓			
08/07/09			✓			
09/07/09			✓			
10/07/09	✓		✓			
11/07/09			✓			
12/07/09						
13/07/09			✓			
14/07/09			✓			
15/07/09			✓			
16/07/09			✓			
17/07/09	✓		✓			
18/07/09			✓			
19/07/09			✓			
20/07/09			✓			
21/07/09			✓			
22/07/09				✗	Oil boom misplaced. No sightings of hydrocarbons	Reposition oil boom at final lagoon out-fall.
23/07/09			✓			
24/07/09	✓		✓			
25/07/09			✓			
26/07/09						
27/07/09			✓			
28/07/09			✓			
29/07/09			✓			
30/07/09			✓			
31/07/09	✓		✓			
01/08/09						
02/08/09						
03/08/09			✓			
04/08/09			✓			
05/08/09			✓			
06/08/09			✓			Change oil booms
07/08/09	✓		✓			
08/08/09			✓			
09/08/09						
10/08/09			✓			
11/08/09			✓			
12/08/09			✓			
13/08/09			✓			
14/08/09	✓		✓			
15/08/09			✓			
16/08/09						
17/08/09			✓			
18/08/09			✓			
19/08/09			✓			
20/08/09			✓			
21/08/09	✓		✓			
22/08/09			✓			
23/08/09						
24/08/09			✓			
25/08/09			✓			
26/08/09			✓			
27/08/09			✓			
28/08/09	✓		✓			
29/08/09						
30/08/09						
31/08/09						
01/09/09			✓			
02/09/09			✓			
03/09/09			✓			
04/09/09	✓		✓			
05/09/09			✓			
06/09/09						
07/09/09			✓			
08/09/09			✓			
09/09/09			✓			
10/09/09			✓			
11/09/09	✓		✓			
12/09/09						
13/09/09						
14/09/09			✓			
15/09/09			✓			
16/09/09			✓			
17/09/09			✓			
18/09/09	✓		✓			
19/09/09						
20/09/09						
21/09/09			✓			
22/09/09			✓			
23/09/09			✓			
24/09/09			✓			
25/09/09	✓		✓			
26/09/09						
27/09/09						
28/09/09			✓			
29/09/09			✓			
30/09/09			✓			
01/10/09			✓			
02/10/09	✓		✓			
03/10/09						
04/10/09						
05/10/09			✓			
06/10/09			✓			
07/10/09			✓			
08/10/09			✓			
09/10/09	✓		✓			
10/10/09						
11/10/09						
12/10/09			✓			
13/10/09			✓			
14/10/09			✓			
15/10/09						
16/10/09						
17/10/09						
18/10/09						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = x	OK = ✓	Fault = x		
19/10/09			✓			
20/10/09			✓			
21/10/09			✓			
22/10/09			✓			
23/10/09	✓		✓			
24/10/09						
25/10/09						
26/10/09			✓			
27/10/09			✓			
28/10/09			✓			
29/10/09			✓			
30/10/09	✓		✓			
31/10/09						
01/11/09						
02/11/09			✓			
03/11/09			✓			
04/11/09			✓			
05/11/09			✓			
06/11/09	✓		✓			
07/11/09						
08/11/09						
09/11/09			✓			
10/11/09			✓			
11/11/09			✓			
12/11/09			✓			
13/11/09	✓		✓			
14/11/09						
15/11/09						
16/11/09			✓			
17/11/09			✓			
18/11/09			✓			
19/11/09			✓			
20/11/09	✓		✓			
21/11/09						
22/11/09						
23/11/09			✓			
24/11/09			✓			
25/11/09			✓			
26/11/09			✓			
27/11/09	✓		✓			
28/11/09						
29/11/09						
30/11/09			✓		Oil booms should be changed in the near future.	
01/12/09			✓			
02/12/09			✓			
03/12/09			✓			
04/12/09	✓		✓			
05/12/09						
06/12/09						
07/12/09			✓			
08/12/09			✓			
09/12/09			✓			
10/12/09			✓			
11/12/09	✓		✓			
12/12/09						
13/12/09						
14/12/09			✓			
15/12/09			✓			
16/12/09			✓		18th Open culverts & settling ponds frozen, (the discharge from the final lagoon is restricted by ice and as a result water levels	
17/12/09			✓			
18/12/09	✓		✓			
19/12/09						
20/12/09						
21/12/09			✓			
22/12/09			✓			
23/12/09	✓		✓			
24/12/09						
25/12/09						
26/12/09						
27/12/09						
28/12/09						
29/12/09						
30/12/09						
31/12/09						
01/01/10						
02/01/10						
03/01/10						
04/01/10				x	No pumping/run-off. Freezing conditions	
05/01/10				x	No pumping/run-off. Freezing conditions	
06/01/10				x	Quarry closed. No pumping/run-off. Unable to inspect	
07/01/10				x	No pumping/run-off. Freezing conditions	
08/01/10		x		x	Quarry closed. No pumping/run-off. Unable to inspect	
09/01/10				x	Quarry closed. No pumping/run-off. Unable to inspect	
10/01/10				x	Quarry closed. No pumping/run-off. Unable to inspect	
11/01/10				x	No pumping/run-off. Freezing conditions	
12/01/10				x	No pumping/run-off. Freezing conditions	
13/01/10				x	No pumping/run-off. Freezing conditions	
14/01/10				x	No pumping/run-off. Freezing conditions	
15/01/10		x		x	Quarry open for sales only. No pumping/run-off.	
16/01/10						
17/01/10						
18/01/10				✓		
19/01/10				✓		
20/01/10				✓		

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
21/01/10				✓		
22/01/10	✓			✓		
23/01/10						
24/01/10						
25/01/10				✓		
26/01/10				✓		
27/01/10				✓		
28/01/10				✓		
29/01/10	✓			✓		
30/01/10						
31/01/10						
01/02/10			✓			
02/02/10			✓			
03/02/10			✓			
04/02/10			✓			
05/02/10	✓		✓			
06/02/10						
07/02/10						
08/02/10			✓			
09/02/10			✓		BGCBC visit to quarry (Permit to Operate)	
10/02/10			✓			
11/02/10			✓			
12/02/10	✓		✓			
13/02/10						
14/02/10			✓			
15/02/10			✓			
16/02/10			✓			
17/02/10			✓			
18/02/10			✓			
19/02/10	X		✓		Unable to carry out a adequate inspection because of overlaying snow.	
20/02/10						
21/02/10						
22/02/10			✓			
23/02/10			✓			
24/02/10			✓			
25/02/10			✓			
26/02/10	✓		✓			
27/02/10						
28/02/10						
01/03/2010			✓			
02/03/2010			✓			
03/03/2010			✓			
04/03/2010			✓			
05/03/2010	✓		✓			
06/03/2010						
07/03/2010						
08/03/2010			✓			
09/03/2010			✓			
10/03/2010			✓			
11/03/2010			✓			
12/03/2010	✓		✓			
13/03/2010						
14/03/2010						
15/03/2010			✓			
16/03/2010			✓			
17/03/2010			✓			
18/03/2010			✓			
19/03/2010	✓		✓			
20/03/2010						
21/03/2010						
22/03/2010			✓			
23/03/2010			✓			
24/03/2010			✓			
25/03/2010			✓			
26/03/2010	✓		✓			
27/03/2010						
28/03/2010						
29/03/2010			✓			
30/03/2010			✓			
31/03/2010			✓			
01/04/2010	✓		✓			
02/04/2010					Easter Bank Holiday	
03/04/2010						
04/04/2010						
05/04/2010					Easter Bank Holiday	
06/04/2010			✓			
07/04/2010			✓			
08/04/2010			✓			
09/04/2010	✓		✓			
10/04/2010						
11/04/2010						
12/04/2010			✓			
13/04/2010			✓			
14/04/2010			✓			
15/04/2010			✓			
16/04/2010	✓		✓			
17/04/2010						
18/04/2010						
19/04/2010			✓			
20/04/2010			✓			
21/04/2010			✓			
22/04/2010			✓			
23/04/2010	✓		✓			
24/04/2010						
25/04/2010						
26/04/2010			✓			
27/04/2010			✓			
28/04/2010			✓			
29/04/2010			✓			
30/04/2010	✓		✓			
01/05/10						
02/05/10						
03/05/10						
04/05/2010			✓			
05/05/2010			✓			
06/05/2010			✓			
07/05/2010	✓		✓			
08/05/10						
09/05/10						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = ✗	OK = ✓	Fault = ✗		
10/05/2010			✓			
11/05/2010			✓			
12/05/2010			✓			
13/05/2010			✓			
14/05/2010	✓		✓			
15/05/10						
16/05/10						
17/05/2010			✓			
18/05/2010			✓			
19/05/2010			✓			
20/05/2010			✓			
21/05/2010	✓		✓		Oil booms need changing	
22/05/10						
23/05/10						
24/05/2010			✓			
25/05/2010			✓			
26/05/2010			✓			Replaced oil booms.
27/05/2010			✓			
28/05/2010	✓		✓			
29/05/10						
30/05/10						
31/05/10						
01/06/2010			✓			
02/06/2010			✓			
03/06/2010			✓			
04/06/2010	✓		✓			
05/06/10						
06/06/10						
07/06/2010			✓			
08/06/2010			✓			
09/06/2010			✓			
10/06/2010			✓			
11/06/2010	✓		✓			
12/06/10						
13/06/10						
14/06/2010			✓			
15/06/2010			✓		a.m. Roads dusty.	Tractor broke-down waiting for parts - running in the afternoon
16/06/2010			✓			
17/06/2010			✓			
18/06/2010	✓		✓			
19/06/10						
20/06/10						
21/06/2010			✓		a.m. Roads dusty.	Move pump to reach receding water level. Running from 10.30 am.
22/06/2010			✓			
23/06/2010			✓			
24/06/2010			✓			Clean silt from pond No. 6
25/06/2010	✓		✓			Clean silt from pond No. 6
26/06/10						
27/06/10						
28/06/2010			✓			Clean silt from pond No.6
29/06/2010			✓			
30/06/2010			✓			
01/07/2010			✓			
02/07/10	P		✓			
03/07/10						
04/07/10						
05/07/2010			✓			
06/07/2010			✓			
07/07/2010			✓			
08/07/2010			✓			
09/07/2010	✓		✓			
10/07/10						
11/07/10						
12/07/2010			✓			
13/07/2010			✓			
14/07/2010			✓			
15/07/2010			✓			
16/07/2010	✓		✓			
17/07/10						
18/07/10						
19/07/2010			✓			
20/07/2010			✓			
21/07/2010			✓			
22/07/2010			✓			
23/07/2010	✓		✓			
24/07/10						
25/07/10						
26/07/2010			✓			
27/07/2010			✓			
28/07/2010			✓			
29/07/2010			✓			
30/07/2010	✓		✓			
31/07/2010						
01/08/2010						
02/08/2010			✓			
03/08/2010			✓			
04/08/2010			✓			
05/08/2010			✓			
06/08/2010	✓		✓			
07/08/2010						
08/08/2010						
09/08/2010			✓			
10/08/2010			✓			
11/08/2010			✓			
12/08/2010			✓			
13/08/2010	✓		✓			
14/08/2010						
15/08/2010						
16/08/2010			✓			
17/08/2010			✓			
18/08/2010			✓			
19/08/2010			✓			
20/08/2010	✓		✓			
21/08/2010						
22/08/2010						
23/08/2010			✓			
24/08/2010			✓			



	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
25/08/2010			✓			
26/08/2010			✓			
27/08/2010	✓		✓			
28/08/2010			✓			
29/08/2010						
30/08/2010					Bank Holiday Monday	
31/08/2010			✓			
01/09/2010			✓			
02/09/2010			✓			
03/09/2010	✓		✓			
04/09/2010			✓			
05/09/2010						
06/09/2010			✓			
07/09/2010			✓			
08/09/2010			✓			
09/09/2010			✓			
10/09/2010	✓		✓			
11/09/2010			✓			
12/09/2010						
13/09/2010			✓			
14/09/2010			✓			
15/09/2010			✓			
16/09/2010			✓			
17/09/2010	✓		✓			
18/09/2010						
19/09/2010						
20/09/2010			✓		Excavating additional settlement pond (Western Bund Area).	
21/09/2010			✓		As above	
22/09/2010			✓		As above	
23/09/2010			✓		As above	
24/09/2010	✓		✓		As above	
25/09/2010						
26/09/2010						
27/09/2010			✓			
28/09/2010			✓			
29/09/2010			✓			
30/09/2010			✓			
01/10/2010	✓		✓			
02/10/2010						
03/10/2010						
04/10/2010			✓			
05/10/2010			✓			
06/10/2010			✓			
07/10/2010			✓			
08/10/2010	✓		✓			
09/10/2010						
10/10/2010						
11/10/2010			✓			
12/10/2010			✓			
13/10/2010			✓			
14/10/2010			✓			
15/10/2010	✓		✓			
16/10/2010						
17/10/2010						
18/10/2010			✓			
19/10/2010			✓			
20/10/2010			✓			
21/10/2010			✓			
22/10/2010	✓		✓			
23/10/2010						
24/10/2010						
25/10/2010			✓			
26/10/2010			✓			
27/10/2010			✓			
28/10/2010			✓			
29/10/2010	✓		✓			
30/10/2010						
31/10/2010						
01/11/2010			✓			
02/11/2010			✓			
03/11/2010			✓			
04/11/2010			✓			
05/11/2010	✓		✓			
06/11/2010						
07/11/2010						
08/11/2010			✓			
09/11/2010			✓			
10/11/2010			✓			
11/11/2010			✓			
12/11/2010	✓		✓			
13/11/2010						
14/11/2010						
15/11/2010			✓			
16/11/2010			✓			
17/11/2010			✓			
18/11/2010			✓			
19/11/2010	✓		✓			
20/11/2010						
21/11/2010						
22/11/2010			✓			
23/11/2010			✓			
24/11/2010			✓			
25/11/2010			✓			
26/11/2010	✓		✓			
27/11/2010						
28/11/2010						
29/11/2010			✓			
30/11/2010			✓			
01/12/2010			✓			
02/12/2010			✓			
03/12/2010	✓		✓			
04/12/2010						
05/12/2010						
06/12/2010			✓			
07/12/2010			✓			
08/12/2010			✓			
09/12/2010			✓			
10/12/2010	✓		✓			
11/12/2010			✓			
12/12/2010						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
13/12/2010			✓			
14/12/2010			✓			
15/12/2010			✓			
16/12/2010			✓			
17/12/2010	✓		✓			
18/12/2010						
19/12/2010						
20/12/2010			✓			
21/12/2010			✓			
22/12/2010			✓			
23/12/2010			✓			
24/12/2010						
25/12/2010						
26/12/2010						
27/12/2010						
28/12/2010						
29/12/2010						
30/12/2010						
31/12/2010						
01/01/2011						
02/01/2011						
03/01/2011						
04/01/2011						
05/01/2011			✓			
06/01/2011			✓			
07/01/2011	✓		✓			
08/01/2011						
09/01/2011						
10/01/2011				X	slight hydraulic oil leak from the 6" pumps submersible head.	The oil used is synthetic & biodegradable (Hydra 46) however the pump has been stopped until replacement parts can be fitted.
11/01/2011			✓			
12/01/2011			✓			
13/01/2011			✓			
14/01/2011	✓		✓		Oil booms should be replaced.	Replacement submersible head has been fitted - pump ready to test & run.
15/01/2011						
16/01/2011						
17/01/2011			✓			5 Oil booms replaced (awaiting delivery of another 5).
18/01/2011			✓			
19/01/2011			✓			
20/01/2011			✓			
21/01/2011	✓		✓			
22/01/2011						
23/01/2011						
24/01/2011			✓			Balance of 5 oil booms replaced
25/01/2011			✓			
26/01/2011			✓			
27/01/2011			✓			
28/01/2011	✓		✓			
29/01/2011						
30/01/2011						
31/01/2011			✓			
01/02/2011			✓			
02/02/2011			✓			
03/02/2011			✓			
04/02/2011	✓		✓			
05/02/2011						
06/02/2011						
07/02/2011			✓			
08/02/2011			✓			
09/02/2011			✓			
10/02/2011			✓			
11/02/2011	✓		✓			
12/02/2011						
13/02/2011						
14/02/2011			✓			
15/02/2011			✓			
16/02/2011			✓			
17/02/2011			✓			
18/02/2011	✓		✓			
19/02/2011						
20/02/2011						
21/02/2011			✓			
22/02/2011			✓			
23/02/2011			✓			
24/02/2011			✓			
25/02/2011	✓		✓			
26/02/2011						
27/02/2011						
28/02/2011			✓		Pump broke down	Called Hydrainer to repair.
01/03/2011			✓			Power-pack replaced - pump ok.
02/03/2011			✓			
03/03/2011			✓			
04/03/2011	✓		✓			
05/03/2011						
06/03/2011						
07/03/2011			✓			
08/03/2011			✓			
09/03/2011			✓			
10/03/2011			✓			
11/03/2011	✓		✓			
12/03/2011						
13/03/2011						
14/03/2011			✓			
15/03/2011			✓			
16/03/2011			✓			
17/03/2011			✓			
18/03/2011	✓		✓			
19/03/2011						
20/03/2011						
21/03/2011			✓			
22/03/2011			✓			

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = ✗	OK = ✓	Fault = ✗		
23/03/2011			✓			
24/03/2011			✓			
25/03/2011	✓		✓			
26/03/2011			✓			
27/03/2011						
28/03/2011			✓			
29/03/2011			✓			
30/03/2011			✓			
31/03/2011			✓			
01/04/2011	✓		✓			
02/04/2011						
03/04/2011						
04/04/2011			✓			
05/04/2011			✓			
06/04/2011			✓			
07/04/2011			✓			
08/04/2011	✓		✓			
09/04/2011			✓			
10/04/2011						
11/04/2011			✓			
12/04/2011			✓			
13/04/2011			✓			
14/04/2011			✓			
15/04/2011	✓		✓			
16/04/2011						
17/04/2011						
18/04/2011			✓			
19/04/2011			✓			
20/04/2011			✓			
21/04/2011	✓		✓			
22/04/2011						
23/04/2011						
24/04/2011						
25/04/2011						
26/04/2011			✓			
27/04/2011			✓			
28/04/2011	✓		✓			
29/04/2011						
30/04/2011						
01/05/2011						
02/05/2011						
03/05/2011			✓			
04/05/2011			✓			
05/05/2011			✓			
06/05/2011	✓		✓			
07/05/2011						
08/05/2011						
09/05/2011			✓			
10/05/2011			✓			
11/05/2011			✓			
12/05/2011			✓			
13/05/2011	✓		✓			
14/05/2011						
15/05/2011						
16/05/2011			✓			
17/05/2011			✓			
18/05/2011			✓			
19/05/2011			✓			
20/05/2011	✓		✓			
21/05/2011						
22/05/2011						
23/05/2011			✓			
24/05/2011			✓			
25/05/2011			✓			
26/05/2011			✓			
27/05/2011	✓		✓			
28/05/2011						
29/05/2011						
30/05/2011						
31/05/2011			✓			
01/06/2011			✓			
02/06/2011			✓		Water pump broke down	Call out Hydrainer.
03/06/2011	✓		✓			
04/06/2011					Roads dusty - tractor broke down	Ask road users to drive slowly being mindful of airborne dust.
05/06/2011						
06/06/2011			✓			
07/06/2011			✓			
08/06/2011			✓			
09/06/2011			✓			
10/06/2011	✓		✓			
11/06/2011						
12/06/2011						
13/06/2011			✓			
14/06/2011			✓			
15/06/2011			✓			
16/06/2011			✓			
17/06/2011	✓		✓			
18/06/2011						
19/06/2011						
20/06/2011			✓		Recommend Oil booms are changed	
21/06/2011			✓			
22/06/2011			✓			
23/06/2011			✓			
24/06/2011	✓		✓			Changed oil booms.
25/06/2011						
26/06/2011						
27/06/2011			✓			
28/06/2011			✓			
29/06/2011			✓			
30/06/2011			✓			
01/07/2011	✓		✓			
02/07/2011						
03/07/2011						
04/07/2011			✓			
05/07/2011			✓			
06/07/2011			✓			
07/07/2011			✓			
08/07/2011	✓		✓			
09/07/2011						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
10/07/2011						
11/07/2011			✓			
12/07/2011			✓			
13/07/2011			✓			
14/07/2011			✓			
15/07/2011	✓		✓			
16/07/2011						
17/07/2011						
18/07/2011			✓			
19/07/2011			✓			
20/07/2011			✓			
21/07/2011			✓			
22/07/2011	✓		✓			
23/07/2011						
24/07/2011						
25/07/2011			✓			
26/07/2011			✓			
27/07/2011			✓			
28/07/2011			✓			
29/07/2011	✓		✓			
30/07/2011						
31/07/2011						
01/08/2011			✓			
02/08/2011			✓			
03/08/2011			✓			
04/08/2011			✓			
05/08/2011	✓		✓			
06/08/2011						
07/08/2011						
08/08/2011			✓			
09/08/2011			✓			
10/08/2011			✓			
11/08/2011			✓			
12/08/2011	✓		✓			
13/08/2011						
14/08/2011						
15/08/2011			✓			
16/08/2011			✓			
17/08/2011			✓			
18/08/2011			✓			
19/08/2011	✓		✓			
20/08/2011						
21/08/2011						
22/08/2011			✓			
23/08/2011			✓			
24/08/2011			✓			
25/08/2011			✓			
26/08/2011	✓		✓			
27/08/2011						
28/08/2011						
29/08/2011						
30/08/2011			✓			
31/08/2011			✓			
01/09/2011			✓			
02/09/2011	✓		✓			
03/09/2011						
04/09/2011						
05/09/2011			✓			
06/09/2011			✓			
07/09/2011			✓			
08/09/2011			✓			
09/09/2011	✓		✓			
10/09/2011						
11/09/2011						
12/09/2011			✓			
13/09/2011			✓			
14/09/2011			✓			
15/09/2011			✓			
16/09/2011	✓		✓			
17/09/2011						
18/09/2011						
19/09/2011			✓			
20/09/2011			✓			
21/09/2011			✓			
22/09/2011			✓			
23/09/2011	✓		✓			
24/09/2011						
25/09/2011						
26/09/2011			✓			
27/09/2011			✓			
28/09/2011			✓			
29/09/2011			✓			
30/09/2011	✓		✓			
01/10/2011						
02/10/2011						
03/10/2011			✓			
04/10/2011			✓			
05/10/2011			✓			
06/10/2011			✓			
07/10/2011	✓		✓			
08/10/2011						
09/10/2011						
10/10/2011			✓			
11/10/2011			✓			
12/10/2011			✓			
13/10/2011			✓			
14/10/2011	✓		✓			
15/10/2011						
16/10/2011						
17/10/2011			✓			
18/10/2011			✓			
19/10/2011			✓			
20/10/2011			✓			
21/10/2011	✓		✓			
22/10/2011						
23/10/2011						
24/10/2011			✓			
25/10/2011			✓			
26/10/2011				X	Oil boom in Northern Settling pond was found to be broken-up?	Collect debris and dispose of plus install replacement
27/10/2011			✓			

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = ✗	OK = ✓	Fault = ✗		
28/10/2011	✓		✓			
29/10/2011						
30/10/2011						
31/10/2011			✓			
01/11/2011			✓			
02/11/2011			✓			
03/11/2011			✓			
04/11/2011	✓		✓			
05/11/2011						
06/11/2011						
07/11/2011			✓			
08/11/2011			✓			
09/11/2011			✓			
10/11/2011			✓			
11/11/2011	✓		✓			
12/11/2011						
13/11/2011						
14/11/2011			✓			
15/11/2011			✓			
16/11/2011			✓			
17/11/2011			✓			
18/11/2011	✓		✓			
19/11/2011						
20/11/2011						
21/11/2011			✓			
22/11/2011			✓			
23/11/2011			✓			
24/11/2011			✓			
25/11/2011	✓		✓			
26/11/2011						
27/11/2011						
28/11/2011			✓			
29/11/2011			✓			
30/11/2011			✓			
01/12/2011			✓			
02/12/2011	✓		✓			
03/12/2011						
04/12/2011						
05/12/2011			✓		Another oil boom damaged? (wonder if being done by a animal a fox maybe)?	Make arrangement to change all oil booms
06/12/2011			✓			
07/12/2011			✓			
08/12/2011			✓			
09/12/2011	✓		✓			
10/12/2011						
11/12/2011						
12/12/2011			✓			
13/12/2011			✓			
14/12/2011			✓			
15/12/2011			✓			
16/12/2011	✓		✓			
17/12/2011						
18/12/2011						
19/12/2011			✓			
20/12/2011			✓			
21/12/2011			✓			
22/12/2011	✓		✓			
01/01/2012						
02/01/2012						
03/01/2012			✓			
04/01/2012			✓			
05/01/2012			✓			
06/01/2012	✓		✓			Change oil booms.
07/01/2012						
08/01/2012						
09/01/2012			✓			
10/01/2012			✓			
11/01/2012			✓			
12/01/2012			✓			
13/01/2012	✓		✓			
14/01/2012						
15/01/2012						
16/01/2012			✓			
17/01/2012			✓			
18/01/2012			✓			
19/01/2012			✓			
20/01/2012	✓		✓			
21/01/2012						
22/01/2012						
23/01/2012			✓			
24/01/2012			✓			
25/01/2012			✓			
26/01/2012			✓			
27/01/2012	✓		✓			
28/01/2012						
29/01/2012						
30/01/2012			✓			
31/01/2012			✓		No water flowing - frozen	
01/02/2012			✓		No water flowing - frozen	
02/02/2012			✓		No water flowing - frozen	
03/02/2012	✓		✓		No water flowing - frozen	
04/02/2012						
05/02/2012						
06/02/2012			✓			
07/02/2012			✓			
08/02/2012			✓			
09/02/2012			✓			
10/02/2012	✓		✓			
11/02/2012						
12/02/2012						
13/02/2012			✓			
14/02/2012			✓			
15/02/2012			✓			
16/02/2012			✓			
17/02/2012	✓		✓			
18/02/2012						
19/02/2012						
20/02/2012						
21/02/2012						
22/02/2012						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = ✗	OK = ✓	Fault = ✗		
23/02/2012			✓			
24/02/2012	✓		✓			
25/02/2012						
26/02/2012						
27/02/2012			✓			
28/02/2012			✓			
29/02/2012			✓			
01/03/2012			✓			
02/03/2012	✓		✓			
03/03/2012						
04/03/2012			✓			
05/03/2012			✓			
06/03/2012			✓			
07/03/2012			✓			
08/03/2012			✓			
09/03/2012	✓		✓			
10/03/2012						
11/03/2012			✓			
12/03/2012			✓			
13/03/2012			✓			
14/03/2012			✓			
15/03/2012			✓			
16/03/2012	✓		✓			
17/03/2012						
18/03/2012						
19/03/2012			✓			
20/03/2012			✓			
21/03/2012			✓			
22/03/2012			✓			
23/03/2012	✓		✓			
24/03/2012						
25/03/2012						
26/03/2012			✓			
27/03/2012			✓			
28/03/2012			✓			
29/03/2012			✓			
30/03/2012	✓		✓			
31/03/2012						
01/04/2012						
02/04/2012			✓			
03/04/2012			✓			
04/04/2012			✓			
05/04/2012	✓		✓			
06/04/2012						
07/04/2012						
08/04/2012						
09/04/2012						
10/04/2012			✓			
11/04/2012			✓			
12/04/2012			✓			
13/04/2012	✓		✓			
14/04/2012						
15/04/2012						
16/04/2012			✓			
17/04/2012			✓			
18/04/2012			✓			
19/04/2012			✓			Change oil booms.
20/04/2012	✓		✓			
21/04/2012						
22/04/2012						
23/04/2012			✓			
24/04/2012			✓			
25/04/2012			✓			
26/04/2012			✓			
27/04/2012	✓		✓			
28/04/2012						
29/04/2012						
30/04/2012			✓			
01/05/2012			✓			
02/05/2012			✓			
03/05/2012			✓			
04/05/2012	✓		✓			
05/05/2012						
06/05/2012						
07/05/2012						
08/05/2012			✓			
09/05/2012			✓			
10/05/2012			✓			
11/05/2012	✓		✓			
12/05/2012						
13/05/2012						
14/05/2012			✓			
15/05/2012			✓			
16/05/2012			✓			
17/05/2012			✓			
18/05/2012	✓		✓			
19/05/2012						
20/05/2012						
21/05/2012			✓			
22/05/2012			✓			
23/05/2012			✓			
24/05/2012			✓			
25/05/2012	✓		✓			
26/05/2012						
27/05/2012						
28/05/2012			✓			
29/05/2012			✓			
30/05/2012			✓			
31/05/2012			✓			
01/06/2012	✓		✓			
02/06/2012						
03/06/2012						
04/06/2012						
05/06/2012						
06/06/2012			✓			
07/06/2012			✓			
08/06/2012	✓		✓			
09/06/2012						
10/06/2012						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
11/06/2012			✓		Oil booms will need to be replaced soon	
12/06/2012			✓			
13/06/2012			✓			
14/06/2012			✓			
15/06/2012	✓		✓			
16/06/2012						
17/06/2012						
18/06/2012			✓			
19/06/2012			✓			
20/06/2012			✓			
21/06/2012			✓			
22/06/2012	✓		✓			
23/06/2012						
24/06/2012						
25/06/2012			✓			
26/06/2012			✓			
27/06/2012			✓			
28/06/2012			✓			
29/06/2012	✓		✓			
30/06/2012						
01/07/2012						
02/07/2012			✓			
03/07/2012			✓			
04/07/2012			✓			
05/07/2012			✓			
06/07/2012	P		✓			
07/07/2012						
08/07/2012						
09/07/2012			✓			
10/07/2012			✓			
11/07/2012			✓			
12/07/2012			✓			
13/07/2012	P		✓			
14/07/2012						
15/07/2012						
16/07/2012			✓			
17/07/2012			✓			
18/07/2012			✓			
19/07/2012			✓			
20/07/2012	P		✓			
21/07/2012						
22/07/2012						
23/07/2012			✓			
24/07/2012			✓			
25/07/2012			✓			
26/07/2012			✓			
27/07/2012	P		✓			
28/07/2012						
29/07/2012						
30/07/2012			✓			
31/07/2012			✓			
01/08/2012			✓			
02/08/2012			✓			
03/08/2012	P		✓			
04/08/2012						
05/08/2012						
06/08/2012			✓			
07/08/2012			✓			Replaced oil booms
08/08/2012			✓		Site inspection by E.A. Maria Healan & Kevin ?	
09/08/2012			✓			
10/08/2012	P		✓			
11/08/2012						
12/08/2012						
13/08/2012			✓			
14/08/2012			✓			
15/08/2012			✓			
16/08/2012			✓			
17/08/2012	P		✓			
18/08/2012						
19/08/2012						
20/08/2012			✓			
21/08/2012			✓			
22/08/2012			✓			
23/08/2012			✓			
24/08/2012	P		✓			
25/08/2012						
26/08/2012						
27/08/2012						
28/08/2012			✓			
29/08/2012			✓			
30/08/2012			✓			
31/08/2012	P		✓			
01/09/2012						
02/09/2012						
03/09/2012			✓			
04/09/2012			✓			
05/09/2012			✓			
06/09/2012			✓			
07/09/2012	P		✓			
08/09/2012						
09/09/2012						
10/09/2012			✓			
11/09/2012			✓			
12/09/2012			✓			
13/09/2012			✓			
14/09/2012	P		✓			
15/09/2012						
16/09/2012						
17/09/2012			✓			
18/09/2012			✓			
19/09/2012			✓			
20/09/2012			✓			
21/09/2012	P		✓			
22/09/2012						
23/09/2012						
24/09/2012			✓			
25/09/2012			✓			
26/09/2012			✓			
27/09/2012			✓			

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
28/09/2012	P		✓			
29/09/2012						
30/09/2012						
01/10/2012			✓			
02/10/2012			✓			
03/10/2012			✓			
04/10/2012			✓			
05/10/2012	P		✓			
06/10/2012						
07/10/2012						
08/10/2012			✓			
09/10/2012			✓			
10/10/2012			✓			
11/10/2012			✓			
12/10/2012	P		✓			
13/10/2012						
14/10/2012						
15/10/2012			✓			
16/10/2012			✓			
17/10/2012			✓			
18/10/2012			✓			
19/10/2012	P		✓			
20/10/2012						
21/10/2012						
22/10/2012			✓			
23/10/2012			✓			
24/10/2012			✓			
25/10/2012			✓			
26/10/2012	P		✓			
27/10/2012						
28/10/2012						
29/10/2012			✓			
30/10/2012			✓			
31/10/2012			✓			
01/11/2012			✓			
02/11/2012	P		✓			
03/11/2012						
04/11/2012						
05/11/2012			✓			
06/11/2012			✓			
07/11/2012			✓			
08/11/2012			✓			
09/11/2012	P		✓			
10/11/2012						
11/11/2012						
12/11/2012			✓			
13/11/2012			✓			
14/11/2012			✓			
15/11/2012			✓			
16/11/2012	P		✓			
17/11/2012						
18/11/2012						
19/11/2012			✓			
20/11/2012			✓			
21/11/2012			✓			
22/11/2012			✓			
23/11/2012	P		✓			
24/11/2012						
25/11/2012						
26/11/2012			✓			
27/11/2012			✓			
28/11/2012			✓			
29/11/2012			✓			
30/11/2012	P		✓			
01/12/2012						
02/12/2012						
03/12/2012			✓			
04/12/2012			✓			
05/12/2012			✓			
06/12/2012			✓			
07/12/2012	P		✓			
08/12/2012						
09/12/2012						
10/12/2012			✓			
11/12/2012			✓			
12/12/2012			✓			
13/12/2012			✓			
14/12/2012	P		✓			
15/12/2012						
16/12/2012						
17/12/2012			✓			
18/12/2012			✓			
19/12/2012			✓			
20/12/2012			✓			
21/12/2012	P		✓			
22/12/2012						
23/12/2012						
24/12/2012						
25/12/2012						
26/12/2012						
27/12/2012						
28/12/2012						
29/12/2012						
30/12/2012						
01/01/2013						
02/01/2013			✓			
03/01/2013			✓			
04/01/2013	✓		✓			
05/01/2013						
06/01/2013						
07/01/2013			✓			
08/01/2013			✓			
09/01/2013			✓			
10/01/2013			✓			
11/01/2013	✓		✓			
12/01/2013						
13/01/2013						
14/01/2013			✓			
15/01/2013			✓			
16/01/2013			✓			
17/01/2013						
18/01/2013						



	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
19/01/2013						
20/01/2013						
21/01/2013			✓			
22/01/2013			✓			
23/01/2013			✓			
24/01/2013			✓			
25/01/2013	✓		✓			
26/01/2013						
27/01/2013						
28/01/2013			✓			
29/01/2013			✓			
30/01/2013			✓			
31/01/2013			✓			
01/02/2013	✓		✓			
02/02/2013						
03/02/2013						
04/02/2013			✓			
05/02/2013			✓			
06/02/2013			✓			
07/02/2013			✓			
08/02/2013	✓		✓			
09/02/2013						
10/02/2013						
11/02/2013			✓			
12/02/2013			✓			
13/02/2013			✓			
14/02/2013			✓			
15/02/2013	✓		✓			
16/02/2013						
17/02/2013						
18/02/2013			✓			
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	✓		✓			
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						
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	P		✓			
04/05/2013						
05/05/2013						
06/05/2013						
07/05/2013			✓			
08/05/2013			✓			
09/05/2013			✓			
10/05/2013	P		✓		Sample was very cloudy	

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
11/05/2013						
12/05/2013						
13/05/2013			✓			
14/05/2013			✓			
15/05/2013			✓			
16/05/2013			✓			
17/05/2013	P		✓			
18/05/2013						
19/05/2013						
20/05/2013			✓			
21/05/2013			✓			
22/05/2013			✓			
23/05/2013			✓			
24/05/2013	P		✓			
25/05/2013						
26/05/2013						
27/05/2013						
28/05/2013			✓			
29/05/2013			✓			
30/05/2013			✓			
31/05/2013	P		✓			
01/06/2013						
02/06/2013						
03/06/2013			✓			
04/06/2013			✓			
05/06/2013			✓			
06/06/2013			✓			
07/06/2013	P		✓		Oil booms need replacing	
08/06/2013						
09/06/2013						
10/06/2013			✓			
11/06/2013			✓			
12/06/2013			✓			
13/06/2013			✓			
14/06/2013	P		✓		Site discharge very dirty	Suspend pumping and overburden operation
15/06/2013						
16/06/2013						
17/06/2013			✓			
18/06/2013			✓			
19/06/2013			✓			
20/06/2013			✓			Replace all oil booms
21/06/2013	P		✓			
22/06/2013						
23/06/2013						
24/06/2013			✓			
25/06/2013			✓			
26/06/2013			✓			
27/06/2013			✓			
28/06/2013	P		✓			
29/06/2013						
30/06/2013						
01/07/2013			✓			
02/07/2013			✓			
03/07/2013			✓			
04/07/2013			✓			
05/07/2013	P		✓			
06/07/2013						
07/07/2013						
08/07/2013			✓			
09/07/2013			✓			
10/07/2013			✓			
11/07/2013			✓			
12/07/2013	P		✓			
13/07/2013						
14/07/2013						
15/07/2013			✓			
16/07/2013			✓			
17/07/2013			✓			
18/07/2013			✓			
19/07/2013	P		✓			
20/07/2013						
21/07/2013						
22/07/2013			✓			
23/07/2013			✓			
24/07/2013			✓			
25/07/2013			✓			
26/07/2013	P		✓			
27/07/2013						
28/07/2013						
29/07/2013			✓			
30/07/2013			✓			
31/07/2013			✓			
01/08/2013			✓			
02/08/2013	P		✓			
03/08/2013						
04/08/2013						
05/08/2013			✓			
06/08/2013			✓			
07/08/2013			✓			
08/08/2013			✓			
09/08/2013	P		✓			
10/08/2013						
11/08/2013						
12/08/2013			✓			
13/08/2013			✓			
14/08/2013			✓			
15/08/2013			✓			
16/08/2013	P		✓			
17/08/2013						
18/08/2013						
19/08/2013			✓			
20/08/2013			✓			
21/08/2013			✓			
22/08/2013			✓			
23/08/2013	P		✓			
24/08/2013						
25/08/2013						
26/08/2013						
27/08/2013			✓			
28/08/2013			✓			
29/08/2013			✓			

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = X	OK = ✓	Fault = X		
30/08/2013	P		✓			
31/08/2013						
01/09/2013			✓			
02/09/2013			✓			
03/09/2013			✓			
04/09/2013			✓			
05/09/2013			✓			
06/09/2013	P		✓			
07/09/2013						
08/09/2013			✓			
09/09/2013			✓			
10/09/2013			✓			
11/09/2013			✓			
12/09/2013			✓			
13/09/2013	P		✓			
14/09/2013						
15/09/2013			✓			
16/09/2013			✓			
17/09/2013			✓			
18/09/2013			✓			
19/09/2013			✓			
20/09/2013	P		✓			
21/09/2013						
22/09/2013			✓			
23/09/2013			✓			
24/09/2013			✓			
25/09/2013			✓			
26/09/2013			✓			
27/09/2013	P		✓			
28/09/2013						
29/09/2013			✓			
30/09/2013			✓			
01/10/2013			✓			
02/10/2013			✓			
03/10/2013			✓			
04/10/2013	✓		✓			
05/10/2013						
06/10/2013			✓			
07/10/2013			✓			
08/10/2013			✓			
09/10/2013			✓			
10/10/2013			✓			
11/10/2013	✓		✓			
12/10/2013						
13/10/2013			✓			
14/10/2013			✓			
15/10/2013			✓			
16/10/2013			✓			
17/10/2013			✓			
18/10/2013	✓		✓			
19/10/2013						
20/10/2013					Discharges from site are discoloured	Do not start overburden and pumping operations
21/10/2013			✓			
22/10/2013			✓			No overburden and pumping operations. Do not use top road to concrete plant or No1 tip.
23/10/2013			✓			No overburden and pumping operations. Not using top road to concrete plant or No1 tip.
24/10/2013			✓			No overburden and pumping operations. Not using top road to concrete plant or No1 tip.
25/10/2013	✓		✓			No overburden and pumping operations. Not using top road to concrete plant or No1 tip.
26/10/2013						Pumping water from Level 4 because its flooded.
27/10/2013						
28/10/2013			✓			Not overburden operations. Not using top road to concrete plant or No1 tip.
29/10/2013			✓			
30/10/2013			✓			
31/10/2013			✓			
01/11/2013	✓		✓			
02/11/2013						
03/11/2013			✓			
04/11/2013			✓			
05/11/2013			✓			
06/11/2013			✓			
07/11/2013			✓			
08/11/2013	✓		✓			
09/11/2013						
10/11/2013			✓			
11/11/2013			✓			
12/11/2013			✓			
13/11/2013			✓			
14/11/2013			✓			
15/11/2013	✓		✓		Oil booms need to be replaced	
16/11/2013						
17/11/2013			✓			
18/11/2013			✓			
19/11/2013			✓			
20/11/2013			✓			
21/11/2013			✓			
22/11/2013	✓		✓			
23/11/2013						
24/11/2013			✓			
25/11/2013			✓			
26/11/2013			✓			
27/11/2013			✓			
28/11/2013			✓			
29/11/2013	✓		✓			
30/11/2013						

	Visual Inspection				Comment	
	Weekly		Daily...		Observation	Action
	OK = ✓	Fault = ✗	OK = ✓	Fault = ✗		
01/12/2013						
02/12/2013			✓			
03/12/2013			✓			
04/12/2013			✓			
05/12/2013			✓			
06/12/2013	✓		✓			
07/12/2013						
08/12/2013						
09/12/2013			✓			
10/12/2013			✓			
11/12/2013			✓			
12/12/2013			✓			
13/12/2013	✓		✓			
14/12/2013						
15/12/2013						
16/12/2013			✓			
17/12/2013			✓			
18/12/2013			✓			
19/12/2013			✓			
20/12/2013	✓		✓			Oil booms changed
21/12/2013						
22/12/2013						
23/12/2013			✓			
24/12/2013						
25/12/2013						
26/12/2013						
27/12/2013						
28/12/2013						
29/12/2013						
30/12/2013						
31/12/2013						