

**TERRAMIN AUSTRALIA LIMITED**

**ANGAS MINE**

**ENVIRONMENTAL MONITORING PORGRAM**

**QUATERLY REPORT #2**

**(NOVEMBER 2006 TO JANUARY 2007)**

**For Terramin Management and the Community Consultation Committee**



**24 January 2007**

**NATURAL RESOURCE SERVICES PTY LTD**

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## General Introduction

Terramin Australia is currently awaiting approval of the Mining and Rehabilitation Program (MARF) from the Department of Primary Industries and Resources of South Australia (PIRSA) for the Angas Mine (ML6229). In keeping with its undertaking in the MARF to implement an environmental monitoring program (EMP) Terramin has undertaken an monitoring program along the lines of the EMP proposed in the MARF, to collect baseline data and test the monitoring program before mining commences.

This quarterly report (QR) is intended to update management and the stakeholders of the results of environmental monitoring activities between November 2006 and January 2007. The data presented in this report will continue to build the baseline data set until mining activities commence. Any elevated levels reported in this QR are not caused by mining activities, in effect they quantify and document the existing environmental conditions before mining commences.

## Surface Water Quality

### Introduction

The aim of the surface water quality monitoring program is to track Terramin's performance and confirm that its activities are not polluting runoff into the Angas River.

### Surface Water Sampling Locations

Table 1 and Figure 1 describe and show where the surface water sampling sites are geographically located. During this monitoring period surface water was sampled and analysed at two monitoring sites; at Croser and Hogben on the Angas River. There was no flow at the time of sampling in the Burnside Creek sites and at Croser on the January 2007.

**Table 1** Surface Water Quality Monitoring Sites

Site	Site Description	Flow
<b>Culvert</b>	in Burnside Creek at the Swamp Road culvert immediately up stream of the wastewater lagoons	Only flows after significant storm event.
<b>Weir</b>	in Burnside Creek at the weir immediately down stream of the wastewater lagoons	Only flows after significant storm event.
<b>Garwood</b>	in Burnside Creek at the Callington Road bridge crossing (adjacent to Garwood Earthmovers depot)	Only flows after significant storm event.
<b>Croser</b>	In the Angas River immediately upstream of Burnside Creek.	Generally flows all year.
<b>Hogben</b>	In the Angas River immediately downstream of Burnside Creek.	Generally flows all year.

**Sampling Methodology**

The Angas River sites were sampled during the first week of November, December and January 2007. The samples were collected from the watercourse by directly filling the sample bottles with water, as detailed in the Terramin sampling protocol. The pre-labelled bottles were placed in an ice cooler with ice packs for temporary storage and the field record sheet was completed on site.

At the Terramin Strathalbyn Office the field record sheet was placed in the surface water sampling records folder, a Chain-of-Custody (CoC) form was completed and sent with the water samples to ALSE Laboratories (NATA accredited) for analysis. The samples were kept at around 4 °C using a combination of cooler boxes with icepacks (in the field and in transport) and refrigerator (in storage).

Angas River water samples were tested for protons, salinity, total metals (iron, arsenic, cadmium, chromium, copper, lead, silver, thallium and zinc) and nutrients. ALSE Laboratories confirmed that the samples arrived in timely and well preserved condition on each occasion demonstrating good quality control.

**Results**

All metals were found to be below the EPA water quality guidelines<sup>1</sup> trigger levels for fresh water except salinity, Table 2.

**Table 2 Surface Water Quality -Laboratory Results**

Site Date	Units	LOR	CROSER 7/11/2006	HOGBEN 7/11/2006	CROSER 6/12/2006	HOGBEN 6/12/2006	HOGBEN 8/01/2007	Average +2 Std Dv
pH Value	pH Unit	0.01			6.69	7.8	4.84	NA
Electrical Conductivity @ 25°C	µS/cm	1			<b>5730</b>	<b>5690</b>	<b>6620</b>	8867
Total Dissolved Solids @180°C	mg/L	1			<b>3290</b>	<b>3330</b>	<b>3770</b>	4906
Turbidity	NTU	0.1			1.9	1.9	0.9	4.8
D-Sulphate as SO4 2-	mg/L	1	215	158	316	186	<b>669</b>	661
T-Iron	mg/L	0.01	0.11	0.19	0.3	0.29	0.07	0.399
T-Arsenic	mg/L	0.001	0.001	<0.001	0.003	0.002	0.002	0.003
T-Cadmium	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-
T-Chromium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
T-Copper	mg/L	0.001	0.002	0.003	0.002	<0.001	0.002	0.003
T-Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
T-Nickel	mg/L	0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.002
T-Selenium	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	-
T-Silver	mg/L	0.001	<0.010	<0.010	<0.010	<0.010	<0.010	-
T-Thallium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
T-Zinc	mg/L	0.005	0.009	0.008	<0.005	<0.005	<0.005	0.011
Nitrite + Nitrate as N	mg/L	0.01			0.02	0.802	0.118	
Total Kjeldahl Nitrogen as N	mg/L	0.1			0.4	0.5	0.7	
Total Nitrogen as N	mg/L	0.1			0.5	1.3	0.8	
Total Phosphorus as P	mg/L	0.01			0.09	0.05	0.09	

<sup>1</sup> Environment Protection (Water Quality) Policy 2003 and Explanatory Report, Environment Protection Authority, May 2003; Schedule 2 Table 1.



Terramin intends to prevent pollution from reaching the Angas River, success in implementing the appropriate control measures will be demonstrated by showing that samples collected upstream of mining activities at Crosier have similar water quality as downstream of the mine site at Hogben. Additionally Terramin will use the criteria of not exceeding 2 standard deviations from the Angas River mean water quality. All metal values reported in this monitoring period were within 2 standard deviations of the mean.

Salinity (measured as electrical conductivity and total dissolved solids) in this pre mining stage, technically exceeded the EPA trigger value because it was more than 10% of the background mean; this was attributed to very few samples collected so far to establish background levels and the unusually dry summer conditions. These values are considered to be a natural seasonal occurrence.

**Figure 1 Surface and Ground Water Monitoring Sites**



## **Groundwater Quality**

### **Introduction**

Nine bores were sampled between November and January 2007 to test water quality. The target number of ground water monitoring locations suggested in the MARP was six but additional bores were installed to provide redundancy and backup monitoring sites once mining commences. Some bores were not sampled as scheduled due to technical problems with the pumps.

The long term aim of this monitoring program is to track Terramin’s performance in preventing pollution of regional groundwater. Before mining commences, groundwater monitoring data will be used to establish a natural background level. This is required to track Terramin’s impact on groundwater and to demonstrate that groundwater quality does not exceed background by more than two standard deviations of the natural mean.

The data presented in this Quarterly Report essentially constitutes background data, because mining (other than the existing quarrying and exploration drilling) has not begun on the Angas Mine site.

### **Groundwater Sampling Locations**

Groundwater sampling sites monitored during period are presented in Table 3 below and shown in Figure 1.

**Table 3 Groundwater Monitoring Wells**

<b>Well</b>	<b>Site Description</b>	<b>Well Depth (m)</b>
AWE 1	South of the sewage effluent lagoons near the Callington Rd, completed to weathered Cambrian basement.	14.2
LG1	Immediately south of the Effluent Lagoon completed to the unweathered Cambrian basement.	2.5
LG2	Immediately south of the Effluent Lagoon completed to the weathered Cambrian basement.	22.5
RG1	North of the mining lease boundary near the Victor Harbour - Adelaide railway line and completed in the weathered Cambrian basement.	21
RG2	West of the mining lease boundary near Burnside Creek and completed in the shallow weathered Cambrian basement.	14.8
RG3	West of the mining lease boundary near Burnside Creek and completed in Quaternary sediments that overlie the unweathered Cambrian basement.	45
RG4	South of the mining lease boundary near Summerhill Road and completed in the unweathered Cambrian basement.	50

Well	Site Description	Well Depth (m)
RG7	North eastern corner of the mine near the Callington Rd and completed in Tertiary sediment.	10
RG8	North eastern corner of the mine near the Callington Rd and completed in unweathered Cambrian basement.	45

### Sampling Methodology

Bores RG1, RG2, RG3, RG4, RG7, RG8, LG1, LG2 and AWE1 are fitted with dedicated Waterra HDPE or LDPE tubing and foot valves, to reduce the potential for cross contamination between sites.

Prior to purging, depth to water was measured from a reference point (top of casing) using a calibrated dipmeter. A minimum of 3 well volumes of water (volume calculated by Terramin hydrologist) were removed by purging prior to sample collection.

Samples were collected by attaching the upper portion of the tubing to a hydrolift pump, powered by a portable generator. A Waterra pump was used for both purging and sampling. During purging, water produced by pumping was discharged to a container and the volume per unit time was recorded periodically.

Measurements of depth to water, flow rate, pH and EC were made in the field using a dip meter and Hanna pH, temperature and conductivity metres. The meters were calibrated prior to each sampling trip.

The groundwater samples were collected directly from the Waterra tubing into specially treated sampling bottles supplied by the analytical laboratories. All sample bottles were supplied by ALS Laboratories with the appropriate preservative.

Duplicate water samples were also collected for quality assurance by directly pumping bore water into a large plastic container, which was cleaned with laboratory grade detergent and rinsed with laboratory grade water prior to sampling. This container was only used for preparing water monitoring duplicate samples.

The sample bottles were sealed with the lids provided and labelled. Separate sample bottles were used for metals, nutrients, major ions and microbiological work. At the end of the sampling round the field record sheet was completed and placed in the surface water sampling records folder and the samples were sent to ALSE Laboratories (NATA accredited) in an ice-cooler with ice packs by air freight with a Chain-of-Custody form.

**Results**

Nine bores were sampled at once a month; this monthly frequency is to rapidly build up a pre-mining data base, Terramin proposed a quarterly sampling frequency once the baseline is established. The results of field testing are presented in Table 4 below.

**Table 4 Field Groundwater Measurements**

Site ID	Date sampled	SWL	Appearance	Temp °C	pH	EC mS/cm	Purge vol (L)
LG1	06-Nov-06	0.74		16.7	6.9	29.4	8
LG2	06-Nov-06	0.8	dirty	18	6.85	21.2	525
RG1	06-Nov-06	9.84	slightly	18.3	6.97	9.6	265
RG2	06-Nov-06	8.4	Light grey	18.1	6.91	6.1	135
RG3	06-Nov-06	8.24	clear	18.2	6.95	7.7	900
RG7	06-Nov-06	8.24		18.6	6.63	26.8	5
RG8	06-Nov-06	7.68	clear	19.7	6.77	25.2	225
AWE1	07-Nov-06	8.1	slightly	18.6	7.18	19.2	40
RG9	07-Nov-06	8.1	slightly	18.6	7.18	19.2	40
RG4	07-Nov-06	28.2	clear	19.5	7.1	8.6	480
LG1	22-Nov-06						9
LG2	22-Nov-06						528
RG7	04-Dec-06	8.24	slightly	19.4	6.56	26.8	4
RG8	04-Dec-06	7.68	slightly	20.5	6.65	24.6	265
LG2	04-Dec-06	0.9	light brown	18.4	6.68	20.9	525
LG1	04-Dec-06	0.99		19.1	6.83	26.4	3
RG2	05-Dec-06	8.4	Slightly grey	18.8	6.81	5.6	130
RG3	05-Dec-06	8.25	clear	19.4	6.81	7.2	900
RG1	06-Dec-06	9.88	Light grey	18.9	6.91	12.5	265
RG4	19-Dec-06	27.95	Clear			9.5	490
RG9	19-Dec-06	27.95	Clear			10.5	490
AWE1	19-Dec-06	8.4	Slightly turbid			19.9	40
RG4	08-Jan-07	28.3	Clear	20.9	6.9	8.4	490
RG1	08-Jan-07	9.88	Clear	19	7.04	9.5	265
RG8	09-Jan-07	7.76	Clear	19.9	6.75	25.4	265
RG9	09-Jan-07	7.76	Clear	19.9	6.75	25.4	266
RG2	09-Jan-07	8.44	medium grey	18.6	7	5.9	145
RG3	09-Jan-07	8.28	Clear	19.6	7.1	7.4	900
RG7	09-Jan-07	8.3		20.4	6.6	26.9	4
AWE1	09-Jan-07	8.53	Turbid	20	7.17	18.5	40

\* Sites highlighted in blue are replicates of the previous site.

The results of laboratory testing on the groundwater samples are presented in Table 5.





## Environmental Monitoring Quarterly Report #2 (November to January 2007)

Locality			EPA	RG4	RG4	RG4	RG4	RG7	RG7	RG8	RG8
Date	Units	LOR	fresh water	7/11/2006	19/12/2006	19/12/2006	10/01/2007	6/11/2006	4/12/2006	6/11/2006	4/12/2006
pH Value	pH Unit	0.01	6.5-9		7.26	7.38					
EC @ 25°C	mS/cm	1	10% var		<b>10.3</b>	<b>10.8</b>					
Turbidity	NTU	0.1	20		0.019	0.009	<0.005				
Sulphate_SO4--	mg/L	1	-	530	534	528	543	2440	2130	816	2240
T-Iron	mg/L	0.01	1	0.11	4.97	1.5	0.22	<b>63.8</b>	0.92	20	3.06
T-Arsenic	mg/L	0.001	0.05	0.003	0.005	0.004	0.002	0.028	0.005	0.002	0.001
T-Cadmium	mg/L	0.0001	0.002	0.0004	0.0004	0.0002	<0.0001	<b>0.0052</b>	0.0001	0.0005	0.0003
T-Chromium	mg/L	0.001	0.001	0.002	0.006	0.002	<0.001	0.099	0.002	0.027	0.001
T-Copper	mg/L	0.001	0.01	0.003	0.004	0.002	0.002	<b>0.063</b>	0.011	0.01	0.008
T-Lead	mg/L	0.001	0.005	<0.001	0.005	0.003	<0.001	0.072	0.009	0.006	0.002
T-Nickel	mg/L	0.001	0.15	0.001	0.004	0.002	<0.001	<b>0.052</b>	0.005	0.024	0.002
T-Selenium	mg/L	0.01	0.005	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	0.034	<0.010
T-Silver	mg/L	0.001	0.0001	0.017	0.002	<0.001	<0.010	0.044	<0.010	<0.010	<0.010
T-Thallium	mg/L	0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
T-Zinc	mg/L	0.005	0.05	0.007	0.019	0.009	<0.005	0.923	0.007	0.051	<0.005
Coliforms	MPN/100mL	2	1								
Escherichia coli	MPN/100mL	2	1								
Faecal Coliforms	MPN/100mL	2	1								

\* Sites labelled in blue are replicates for quality control purposes. Pink boxes are values that exceed the EPA Fresh Water Quality Guidelines; numbers in bold red print are more than 2 standard deviations above the average.

## Interpretation of the Water Quality Results

Groundwater salinity falls in two groups, the relatively low salinity i.e. between 5 and 10mS/cm and the high salinity between 15 and 30 mS/cm. Note that electrical conductivity of more than 4 mS/cm is classified as C5 irrigation water (very high salinity) and more than 6 mS/cm is classified as C6 (excessively high salinity) both unsuitable for irrigation. There seems to be no correlation between salinity and surface water level or between weathered or unweathered Cambrian aquifers.

Detailed investigations of the major ions in groundwater by Terramin during the preparation of the MARP found that the salinity comes mostly from sodium and chloride ions. The calculated sodium adsorption ratio (SAR) for AWE1 was 35.8 and when adjusted for the bicarbonates the value increases to 110.9. An SAR > 9 has a severe risk of increasing soil sodicity on most soils (NSW Department of Primary Industry, Agfacts 26 May 2004). Groundwater is not used for irrigation purposes in the area.

Groundwater in the vicinity of the Angas Deposit is generally neutral, reporting a pH range between 6.5 and 7.5. Total metals concentrations were found in naturally high levels during the preliminary investigations for the MARP and remain high during this baseline data acquisition phase<sup>2</sup>.

The following summarise the observations made during this monitoring period:

- Total silver was more than 100 times higher than EPA fresh water quality guidelines<sup>3</sup> at sites AWE1, LG1, LG2, RG2, RG3, RG4 and RG7;
- Total chromium was more than 100 times higher than the EPA guideline at sites LG1 and LG2 and more than 10 times higher AWE1, RG1, RG7 and RG8;
- Iron was more than 10 times the EPA guideline value at sites AWE1, LG2, RG7 and RG8;
- Lead was more than 10 times higher at LG1, LG2, RG1 and RG7; and
- Zinc was more than 10 times higher at AWE1, LG2 and RG7.

The highest levels were found in the bores drilled within the Angas mineralization; AWE1, LG1 and LG2, supporting the observations reported in the MARP and Quarterly Report #1.

## Groundwater Levels

The groundwater levels were plotted to evaluate seasonal trends, in Figure 2. These graphs show three water level groupings:

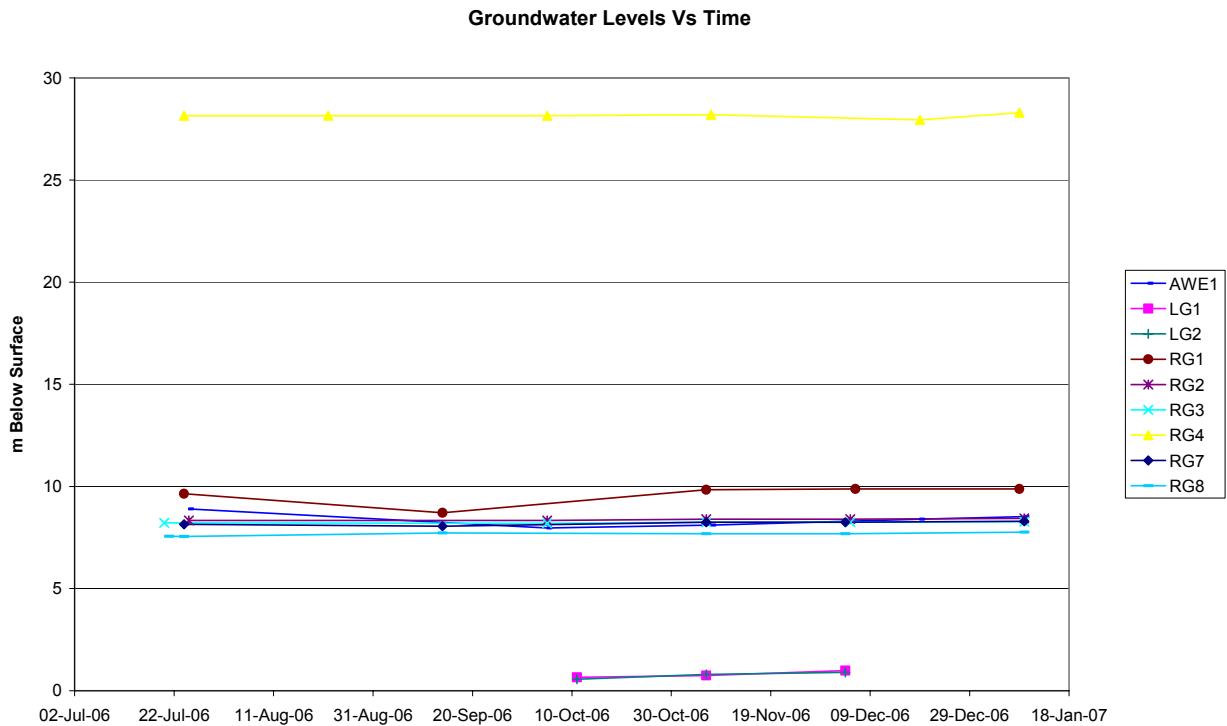
- Deep (between 27 and 29 m below the surface) at site RG4;
- Shallow, less than 1 m below ground level around the ponds (LG1 and LG2); and
- Intermediate, between 7 and 10 m below the surface at all other sites.

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<sup>2</sup> Baseline water quality data is deemed to be data collected before mining operations begin.

<sup>3</sup> Environmental Protection (Water Quality) Policy 2003 and Explanation Report. Environmental Protection Authority, May 2003

Figure 2 Groundwater Levels



## Dust Monitoring Program

### Introduction

In the MARP Terramin proposed to implement several control measures to ensure that no significant dust from mining activities will leave the property. Terramin has been using two high volume samplers (HVS) located on the proposed mine site, to track Total Suspended Particulates (TSP) levels and ten dust deposition gauges (DDG) placed strategically around the property to establish a baseline for suspended dust prior to commencing mine operations. The dust monitoring sites are shown in Figure 3.

The HVS will be relocated in consultation with the CCC before mining starts to strategic locations that best detect suspended particulates emanating from mining activities. Lead in dust is also being monitoring in this program.

Deposition of lead bearing dust from mining activities has the potential to impact soil downwind of the mine. While there are no criteria for lead deposited in DDG, the criterion for soil lead content is 200 mg/kg. Terramin has been monitoring lead levels in dust collected by DDG gauges placed at ten strategic locations around the mine.



Figure 3 Dust Monitoring Locations



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**MAP DETAILS**  
 Cadastre/Title: 004  
 Job Number: 2003-0434  
 Filename: new\_dust\_locations3.wor  
 Created: Tom Dawley  
 Date: 28/01/2006

**Terramin Australia Limited**  
 Strathalbyn  
**LOCATIONS OF DUST MONITORING SITES**

### Methods for Monitoring Total Suspended Particulates and Particulate Lead

Total Suspended Particulates and Particulate Lead are monitored on site using two HVS. The frequency of sampling during this monitoring period was six days for each HVS but offset by three days so that a dust sample was collected every three days. This was intended to build up the background database for interpreting future dust monitoring.

Every six days the site was visited to collect and install a new pre-weighed filter in the HVS. The timers were set to collect dust for 24 hours. The filter papers were removed and sent for analysis to NATA certified laboratories. The laboratories measured concentrations of TSP and lead in microgram/m<sup>3</sup>.

### Methods for Monitoring Ambient Dust and Lead Deposition

Ten DDG are used to monitor dust fallout and particulate lead on site. The fallout bottles were collected every 30 days  $\pm$  2 days from the DDG and replaced with a new bottle. The samples were sent to a NATA certified laboratory for analysis according to AS/NZS 3580.10.1:2003 [5] for the following:

- Total solids
- Soluble matter
- Insoluble matter
- Combustible matter
- Ash content
- Particulate Lead

### Results of Dust Monitoring Between November 2006 and January 2007

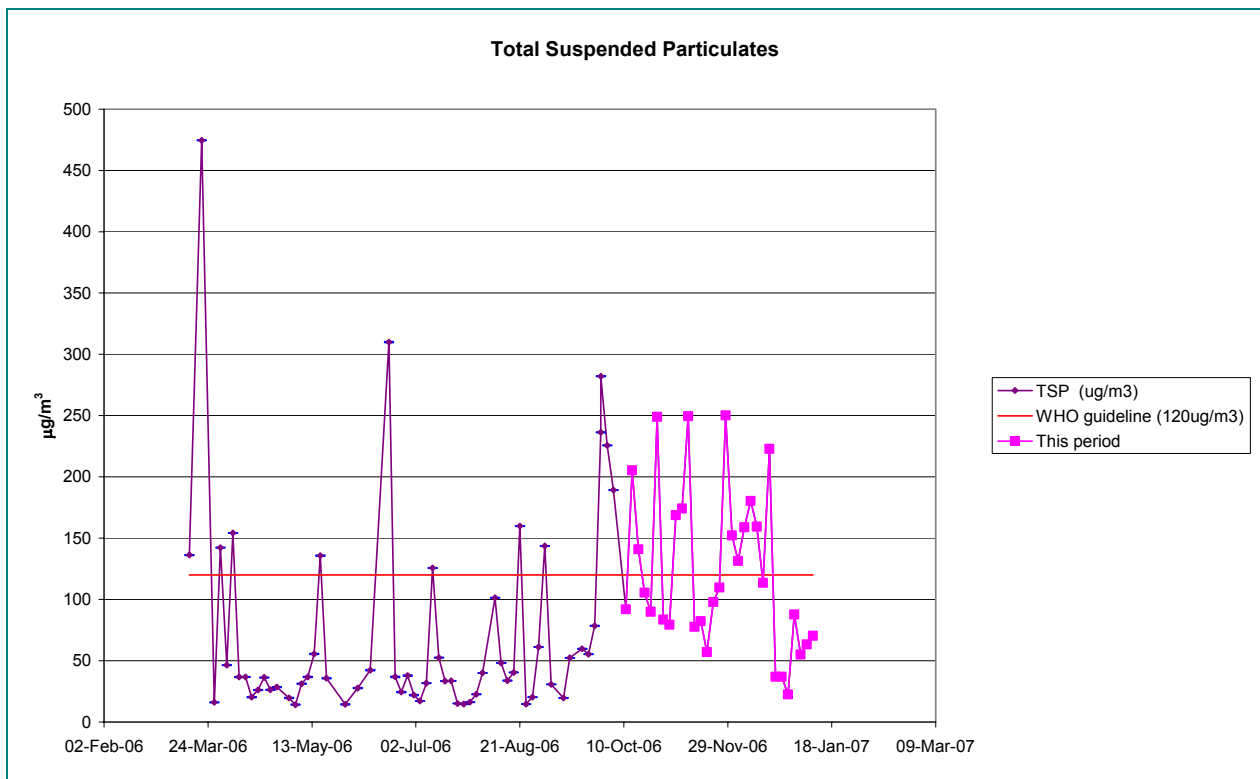
The HVS results for this reporting period are presented in Table 6. All dust lead levels from the HVS were below the laboratory detection limit of 0.01  $\mu$ g/m<sup>3</sup>. A graph TSP levels since monitoring commenced in March 2006 is presented in Figure 4. Dust levels during this monitoring period are shown in pink.

**Table 6 Results of HVS Monitoring**

Date	TSP (ug/m <sup>3</sup> )	Comments
11/10/2006	91.9	
14/10/2006	<b>205.4</b>	
17/10/2006	<b>140.9</b>	
20/10/2006	105.5	
23/10/2006	89.9	
26/10/2006	<b>249.1</b>	
29/10/2006	83.5	
1/11/2006	79.3	
4/11/2006	<b>168.8</b>	
7/11/2006	<b>174.1</b>	
10/11/2006	<b>249.4</b>	
13/11/2006	77.7	
16/11/2006	82.3	
19/11/2006	57.0	Sampler ran for 18.4 Hours, Power failure??
22/11/2006	97.8	
25/11/2006	109.8	
28/11/2006	<b>250.1</b>	
1/12/2006	<b>152.2</b>	
4/12/2006	<b>131.4</b>	
7/12/2006	<b>158.9</b>	
10/12/2006	<b>180.3</b>	
13/12/2006	<b>159.3</b>	
16/12/2006	113.7	
19/12/2006	<b>222.8</b>	
22/12/2006	37.0	
25/12/2006	37.0	
28/12/2006	22.5	
31/12/2006	87.7	
3/01/2007	55.0	
6/01/2007	63.2	
9/01/2007	70.4	

\* Bold values represent exceedence of the World Health Organisation health guideline value of 120 µg/m<sup>3</sup>.

**Figure 4 Total Suspended Particulates**



The laboratory results from ten DDG are presented in Table 7, total solids and the ash content is shown in Figure 5.

**Table 7 Results from Dust Deposition Gauges**

Analyte	Date Collected	Ash Content	Combustible Matter	Total Solids	Total Soluble Matter	Total Insoluble Matter	Lead
Trap #	Units	g/(m <sup>2</sup> month)	g/(m <sup>2</sup> month)	g/(m <sup>2</sup> month)	g/(m <sup>2</sup> month)	g/m <sup>2</sup> /month	mg/kg
	LOR	0.1	0.1	0.1	0.1	0.1	0.5
ONE	2/11/2006	1.2	<0.1	3.7	2.5	1.2	<0.5
TWO	2/11/2006	1.9	0.2	6	4	2	<0.5
THREE	2/11/2006	1.2	0.8	4.7	2.8	2	<0.5
FOUR	2/11/2006	2.3	0.1	6.4	4	2.4	<0.5
FIVE	2/11/2006	1.1	1.4	6.8	4.3	2.5	<0.5
SIX	2/11/2006	1.2	0.2	9.4	7.9	1.4	<0.5
SEVEN	2/11/2006	1	0.2	4.9	3.7	1.2	<0.5
EIGHT	2/11/2006	1	1.2	5.5	3.3	2.2	<0.5
NINE	2/11/2006	2	4.7	12.1	5.4	6.7	<0.5
TEN	2/11/2006	<0.1	<0.1	3.3	3.2	<0.1	<0.5
ONE	6/12/2006	0.8	<0.1	3.7	2.8	0.9	
TWO	6/12/2006	2.2	0.3	8.5	6	2.5	
THREE	6/12/2006	0.7	0.8	3	1.4	1.5	
FOUR	6/12/2006	3.3	1.1	7.9	3.6	4.4	
FIVE	6/12/2006	2.6	0.9	6.5	3	3.5	
SIX	6/12/2006	1.3	2.3	5	1.4	3.6	
SEVEN	6/12/2006	1.2	1.2	4.2	1.8	2.4	
EIGHT	6/12/2006	1	1.8	4.6	1.7	2.9	
NINE	6/12/2006	0.9	1.8	3.8	1.2	2.6	
TEN	6/12/2006	0.6	0.3	1.2	0.3	0.9	

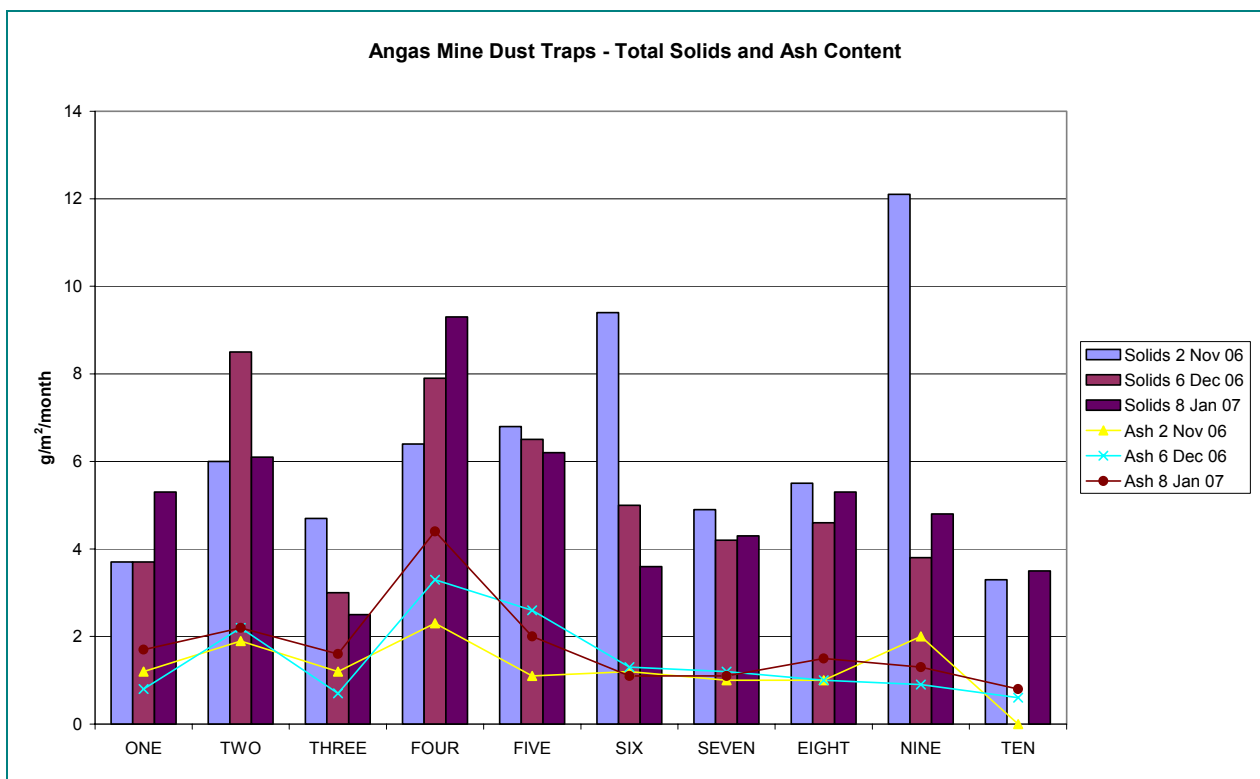


## Environmental Monitoring Quarterly Report #2 (November to January 2007)

Analyte	Date Collected	Ash Content	Combustible Matter	Total Solids	Total Soluble Matter	Total Insoluble Matter	Lead
ONE	8/01/2007	1.7	1.7	5.3	1.9	3.4	
TWO	8/01/2007	2.2	2	6.1	1.9	4.2	
THREE	8/01/2007	1.6	0.7	2.5	0.2	2.3	
FOUR	8/01/2007	4.4	2.6	9.3	2.3	7	
FIVE	8/01/2007	2	1.8	6.2	2.4	3.8	
SIX	8/01/2007	1.1	0.7	3.6	1.8	1.8	
SEVEN	8/01/2007	1.1	1	4.3	2.2	2.1	
EIGHT	8/01/2007	1.5	1.4	5.3	2.4	2.9	
NINE	8/01/2007	1.3	1.4	4.8	2.1	2.7	
TEN	8/01/2007	0.8	0.8	3.5	1.9	1.6	

\* Lead dust levels for December and January 2007 were not received in time for this report's deadline.

**Figure 5 Total Solids and Ash Content Deposited Around the Angas Mine Lease**



### Interpretation of the Dust Monitoring Results

The dust baseline data shows that the site can experience dusty conditions; this is not surprising since the property is currently used as a quarry and is surrounded by farms which at times generate extensive dust depending on the activities (e.g. cropping) or vegetation cover. Out of 31 TSP readings 1 was invalid (the HVS did not run for a full 24 hrs due to a power outage) and 13 exceeded the WHO health guideline value of  $120 \mu\text{g}/\text{m}^3$ . Anecdotal evidence suggests that this may be mostly attributed to increased extraction, crushing and transportation of quarry products from the site during this reporting period.

Dust deposition was generally evenly spread during this reporting period with one exception of high deposition at Site 12 in November 2006. There is insufficient data to determine trends or associate this with predominant winds.

Lead levels for both the HVS and DDG were below detection limits indicating that no detectable lead bearing dust occurs around the quarry and proposed mine site.

Terramin intends to continue building the dust monitoring database for the tracking their performance against the background dust and lead levels.