

## Teven Quarry Annual Review 2015- 2016

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**Title:** Teven Quarry Annual Review

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**Company:** Holcim Australia (Teven Quarry)

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On behalf of the Secretary NSW Department of  
Planning & Environment

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## 1. INTRODUCTION

Holcim (Australia) Pty Ltd (Holcim Australia) operates the Teven Quarry, an existing hard rock quarry located at Stokers Lane, Teven, approximately eight kilometres north-west of Ballina (Figure 1). Teven Quarry has been producing construction materials since the 1940s and has approval to continue operation until 2056.

A State Significant Development (SSD) application (SSD 6422) was approved by the New South Wales (NSW) Department of Planning & Environment (DP&E) on July 15, 2015. The sites general location in the Northern Rivers region is shown in Figure 1 below.

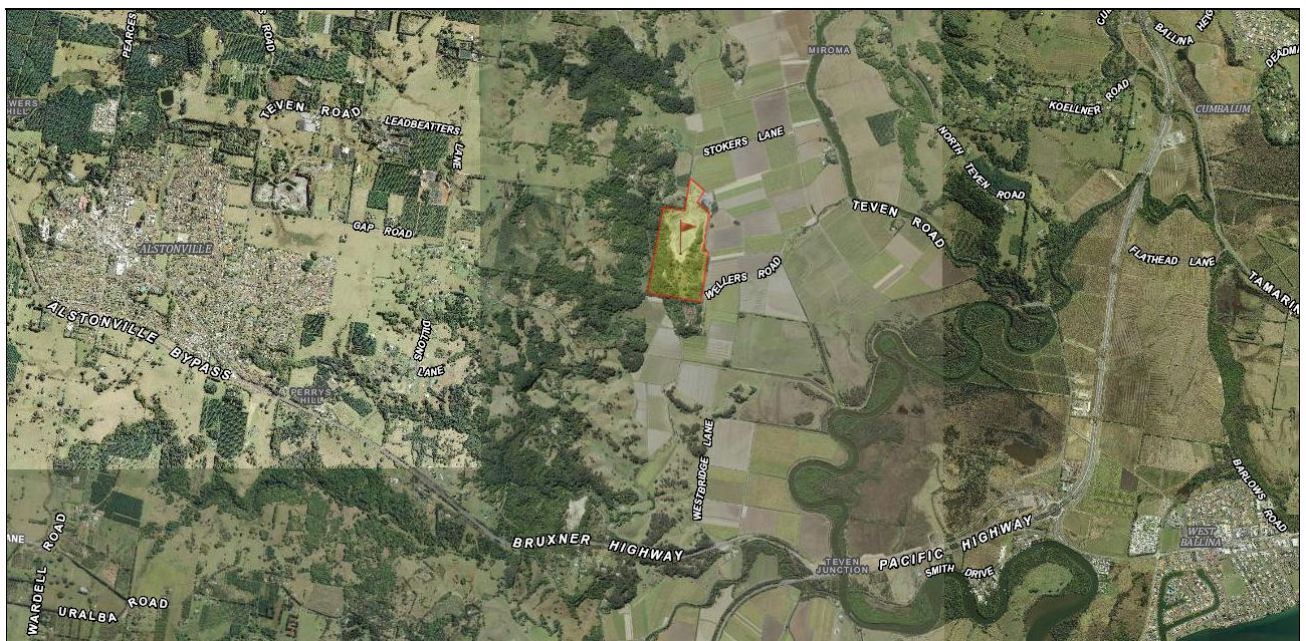


Figure 1: Regional location of Teven Quarry.

In accordance with Schedule 5, Condition 4 of the new Development Consent the site is required to undertake an Annual Review of the site in the following manner:

### Annual Review

4. *By the end of March each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:*

*(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;*

*(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:*

- *relevant statutory requirements, limits or performance measures/criteria;*
- *requirements of any plan or program required under this consent;*
- *the monitoring results of previous years; and*
- *the relevant predictions in the EIS;*

(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;

(d) identify any trends in the monitoring data over the life of the development;

(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

This report provides an overview of the sites environmental performance during the period from January 1- December 31 2015. The report also provides an overview of improvement measures to improve performance in 2016.

## **2. DESCRIPTION OF DEVELOPMENT**

The site undertook activities during the first half of the year in accordance with the conditions listed in Development Consent DA1995-263. A new State Significant Development (SSD) Consent 6422 was granted by the Department of Planning and Environment (DP&E) on July 15, 2016. Condition 10, Schedule 2 of SSD 6422 identifies the following requirements:

*"Within 6 months of the date of this consent, or as otherwise agreed by the Secretary, the Applicant shall surrender all existing development consents for the site in accordance with Section 104A of the EP&A Act. Prior to the surrender of such development consents, the conditions of this consent shall prevail to the extent of any inconsistency with the conditions of these consents."*

In accordance with this condition, DA 1995-263 was surrendered to Ballina Shire Council (the Administering Authority) on December 21, 2015, leaving the site operating under one Development Consent (SSD 6442).

The site also operates in accordance with the conditions of consent listed in Environmental Protection Licence (EPL) No. 3293. The monitoring data obtained as part of the compliance activities for the EPL have been included in this report as per the requirements of the Annual Review.

### **2.1 Extractive Activities 2015**

Extractive activities were undertaken throughout 2015 in accordance with the conditions of the Development Consent and EPL No. 3293. Quarry operations undertaken throughout 2015 and Quarter One 2016 included the following activities:

- Overburden removal and Vegetation Clearing.
- Rehabilitation.
- Crushing and Screening (Production).

### 2.1.1 Overburden removal and Vegetation Clearing

The site cleared 12 trees in 2015 in preparation for development of the quarry pit in accordance with the Teven Quarry Management Plan. This vegetation removal coincided with the removal of overburden in preparation for expansion of the pit in 2016.

No vegetation was located on the overburden cleared in 2015, with this area located in the existing disturbance area of the quarry.

### 2.1.2 Rehabilitation

The site has rehabilitated approximately 0.4 hectares of quarry land and planted 250 trees in 2015. The site undertakes regular maintenance of this area including weeding and mulching activities to ensure rehabilitation is successful.

### 2.1.3 Crushing and Screening

The site crushed and screened approximately 245,845.00 Tonnes of material between January 1- December 31 2015. A breakdown of the material produced is listed in the table below:

<b>Product</b>	<b>Description</b>	<b>Quantity (Tonnes)</b>
Over 75mm	Overburden, Primary Raw Feed Aggregate	7950.00
Over 30mm to 75mm	-40mm Aggregate	1023.00
5mm to 30mm	20mm, 14mm and 7mm Aggregate	81581.00
Manufactured Sand	Teven Manufactured Sand	74628.00
Prepared Road-base & Sub-base	Untreated Road-base, -40mm Unspecified Road-Base and Unprocessed Road-base.	80663.00
<b>Total Production</b>		<b>245,845.00</b>

## **2.2 Development Activities (2016)**

The site will continue to quarry in a southern direction in 2016 with extraction of materials in the area cleared of vegetation and overburden in 2015. The site has already cleared vegetation and overburden along the western boundary of the extraction area in preparation for developing the southern benches in 2016.

## **3. REVIEW OF MONITORING RESULTS**

In accordance with the requirements of the Development Consent a comprehensive review of all monitoring results has been undertaken for Teven Quarry as well as the complaints recorded over the

previous calendar year. This review includes assessment against:

- Relevant statutory requirements, limits or performance measures/criteria;
- Requirements of any plan or program required under this consent.

It should be noted that site management plans (including Air Quality, Noise, Blasting, Transport, Soil & Water and Biodiversity & Rehabilitation) are in the final stages of approval. Draft Plans (following receipt of agency comments) were sent to DP&E for review on January 16, 2016.

Management plans contain detailed proposals on how environmental monitoring programs will be implemented. No environmental monitoring activities are to be undertaken until the management plans have been approved by DP&E. Consequently, monitoring results in this Annual Review focus on those contained within the site Environmental Protection Licence (EPL). EPL monitoring is focused on water and blasting.

**3.1 Noise**

Noise criteria for Teven Quarry is shown in the table below

*Table 2: Noise criteria dB(A)*

Receiver	Day dB(A) (L <sub>Aeq</sub> (15 min))	Evening dB(A) (L <sub>Aeq</sub> (15 min))
R3, R4, R13, R15, R16, R17, R18, R20	38	35
All other residences	37	35

**Figure 2: Noise Criteria outlined in the Teven Development Consent.**

*Note: final approval of site management plans is pending, thus no noise monitoring (as per DA requirements) was undertaken in 2015.*

**3.2 Blasting**

Blasting was undertaken at Teven Quarry throughout 2015 in accordance with the conditions of Development Consent DA 1995-263 and EPL No. 3293. As a consequence to the new Development Consent SSD 6422 taking affect, a Blast Management plan is currently under development.

A copy of the draft Teven Noise Management Plan was submitted to DP&E on the January 16, 2016. The approved monitoring and management measures will be undertaken by Holcim staff once the Management Plan has been approved by the DP&E in 2016.

#### L4 Blasting

L4.1 Blasting operations at the premises may only take place between 09:00 to 15:00 Monday to Friday. (Where compelling safety reasons exist, the Authority may permit a blast to occur outside the abovementioned hours. Prior written (or facsimile) notification of any such blast must be made to the Authority).

L4.2 The airblast overpressure level from blasting operations in or on the premises must not exceed:

- a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and
- b) 120 dB (Lin Peak) at any time.

At any point within 1 metre of any affected residential property or other sensitive noise location.

L4.3 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:

- a) 5 mm/s for more than 5% of the total number of blasts carried out on the premises during each

Figure 3: Blast criteria requirements in accordance with the Teven Environmental Protection Licence (EPL) No. 3293

Location	Test	Sample Date	Result	Comments
Wellers Rd	Overpressure	2/04/2015	No Result Registered	No result triggered on the monitor.
	Vibration	2/04/2015	No Result Registered	No result triggered on the monitor.
Wellers Rd	Overpressure	15/04/2015	102.5	Nil
	Vibration	15/04/2015	0.66	Nil
Wellers Rd	Overpressure	29/05/2015	113.1	Nil
	Vibration	29/05/2015	0.32	Nil
Wellers Rd	Overpressure	6/07/2015	109.2	Nil
	Vibration	6/07/2015	0.39	Nil
Wellers Rd	Overpressure	29/07/2015	112.6	Nil
	Vibration	29/07/2015	0.39	Nil
Wellers Rd	Overpressure	14/08/2015	No Result Registered	No recording on the monitor. Results under the seismograph trigger.
	Vibration	14/08/2015	No Result Registered	

Wellers Rd	Overpressure	10/09/2015	No Result Registered	No trigger on monitor. Blast was an overburden shot (shot No. 214).
	Vibration	10/09/2015	No Result Registered	No result triggered on the monitor.
Wellers Rd	Overpressure	22/09/2015	No Result Registered	No measurement triggered on the monitor.
	Vibration	22/09/2015	No Result Registered	No result triggered on the monitor.
Wellers Rd	Overpressure	3/11/2015	No Result Registered	No result triggered on the monitor.
	Vibration	3/11/2015	No Result Registered	No result triggered on the monitor.
Wellers Rd	Overpressure	11/11/2015	No Result Registered	No result triggered on the monitor.
	Vibration	11/11/2015	No Result Registered	No result triggered on the monitor.
Wellers Rd	Overpressure	30/11/2015	No Result Registered	No result triggered on the monitor.
	Vibration	30/11/2015	No Result Registered	No result triggered on the monitor.

### 3.3 Air Quality

Air Quality monitoring required for Teven Quarry is described in the table below:

*Table 4: Air quality criteria*

<b>Pollutant</b>	<b>Averaging Period</b>	<b>Criterion</b>	
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	a,d 30 µg/m <sup>3</sup>	
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	b 50 µg/m <sup>3</sup>	
Total suspended particulates (TSP)	Annual	a,d 90 µg/m <sup>3</sup>	
<sup>c</sup> Deposited dust	Annual	b 2 g/m <sup>2</sup> /month	a,d 4 g/m <sup>2</sup> /month

**Figure 4: Air Quality Criteria outlined in the Teven Development Consent.**

*Note: final approval of site management plans is pending, thus no air quality monitoring (as per DA requirements) was undertaken in 2015.*

### 3.4 Soil and Water

Water samples were undertaken on a weekly basis throughout 2015 in accordance with the conditions of EPA licence No. 3293. As a consequence to the new Development Consent SSD 6422 taking affect, a Soil and Water Management Plan dealing specifically with control of water catchment and erosion management is currently under development.

A copy of the draft Teven Soil and Water Management Plan was submitted to DP&E on January 16, 2016. The approved monitoring and management measures will be undertaken by Holcim staff once the Management Plan has been approved by the DP&E in 2016.

A copy of the results of water monitoring conducted in 2015 are listed in the tables below:

POINT 1					
Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

Figure 5: Water monitoring criteria at Point 1 in accordance with the Teven EPL No. 3293

POINT 1			
Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Yearly during discharge	Grab sample
pH	-	Weekly	No method specified
Total suspended solids	milligrams per litre	Yearly during discharge	Grab sample

Figure 6: Frequency and water sampling method at Point 1 in accordance with the Teven EPL No. 3293

Sample Date	Limit		Unit	Result	Pass/ Fail
5/1/2015	6.5	8.5	pH	6.91	Pass
12/1/2015	6.5	8.5	pH	7.08	Pass
19/01/2015	6.5	8.5	pH	7.02	Pass
27/01/2015	6.5	8.5	pH	7.11	Pass
2/2/2015	6.5	8.5	pH	7.19	Pass
6/2/2015	6.5	8.5	pH	7.16	Pass



16/02/2015	6.5	8.5	pH	6.94	Pass
23/02/2015	6.5	8.5	pH	7.05	Pass
2/3/2015	6.5	8.5	pH	7.04	Pass
9/3/2015	6.5	8.5	pH	7.13	Pass
23/03/2015	6.5	8.5	pH	7.01	Pass
30/03/2015	6.5	8.5	pH	6.82	Pass
7/4/2015	6.5	8.5	pH	7.21	Pass
13/04/2015	6.5	8.5	pH	7.06	Pass
20/04/2015	6.5	8.5	pH	7.29	Pass
27/04/2015	6.5	8.5	pH	7.17	Pass
4/5/2015	6.5	8.5	pH	7.43	Pass
11/5/2015	6.5	8.5	pH	7.36	Pass
1/6/2015	6.5	8.5	pH	6.99	Pass
18/05/2015	6.5	8.5	pH	6.71	Pass
25/05/2015	6.5	8.5	pH	6.82	Pass
9/6/2015	6.5	8.5	pH	7.21	Pass
15/06/2015	6.5	8.5	pH	6.68	Pass
22/06/2015	6.5	8.5	pH	7.03	Pass
6/7/2015	6.5	8.5	pH	7.16	Pass
13/07/2015	6.5	8.5	pH	7.22	Pass
20/07/2015	6.5	8.5	pH	6.89	Pass
27/07/2015	6.5	8.5	pH	7.01	Pass
3/8/2015	6.5	8.5	pH	7.29	Pass
10/8/2015	6.5	8.5	pH	7.11	Pass
17/08/2015	6.5	8.5	pH	7.16	Pass
24/08/2015	6.5	8.5	pH	7.38	Pass
7/9/2015	6.5	8.5	pH	6.98	Pass
14/09/2015	6.5	8.5	pH	7.02	Pass
21/09/2015	6.5	8.5	pH	6.62	Pass
28/09/2015	6.5	8.5	pH	6.86	Pass
6/10/2015	6.5	8.5	pH	7.31	Pass
12/10/2015	6.5	8.5	pH	7.43	Pass
19/10/2015	6.5	8.5	pH	7.11	Pass
26/10/2015	6.5	8.5	pH	7.85	Pass
2/11/2015	6.5	8.5	pH	7.48	Pass
9/11/2015	6.5	8.5	pH	7.67	Pass
16/11/2015	6.5	8.5	pH	6.92	Pass

23/11/2015	6.5	8.5	pH	7.18	Pass
1/12/2015	6.5	8.5	pH	7.52	Pass
7/12/2015	6.5	8.5	pH	7.36	Pass
7/12/2015	6.5	8.5	pH	6.99	Pass
14/12/2015	6.5	8.5	pH	7.05	Pass

Sample Data	Limit		Units	Result	Pass/ Fail
11/8/2015	0	10	mg/L	2	Pass
11/8/2015	0	50	mg/L	5	Pass

### **3.5 Transport**

The site is required to prepare a Transport Management Plan in accordance with the following requirements:

#### **Transport Management Plan**

25. The Applicant shall prepare and implement a Transport Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with RMS and Council and submitted to the Secretary for approval within 6 months of the date of this consent, unless otherwise agreed by the Secretary;
  - (b) provide a clear description of the primary and secondary transport routes and the circumstances during which the secondary transport route is to be utilised;
  - (c) include a Drivers' Code of Conduct that details the safe and quiet driving practices that must be used by drivers transporting products to and from the quarry, particular having regard to school bus routes and the location of residential properties; and
  - (d) describe the measures that would be put in place to ensure compliance with the Drivers' Code of Conduct.

Figure 7: Transport Management Plan requirements listed in the Teven Development Consent.

*Note: final approval of site management plans is pending, thus no transport monitoring (as per DA requirements) was undertaken in 2015.*

### **3.6 Aboriginal Heritage**

No potential or verified items of Aboriginal Heritage were found on the site between the January 1, 2015 and 31st December 2015. Site staff are aware of the requirements under Schedule 3, Condition 26 of the Development Consent in the event that staff find any item or potential object of Aboriginal heritage.

### **3.7 Biodiversity and Rehabilitation**

The site is required to prepare a Biodiversity and Rehabilitation Management Plan in accordance with the following requirements:

**Biodiversity and Rehabilitation Management Plan**

29. The Applicant shall prepare and implement a Biodiversity and Rehabilitation Management Plan for the site to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with OEH, and be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise;
  - (b) provide details of the conceptual final landform and associated land uses for the site;
  - (c) describe how the management of biodiversity would be integrated with the overall rehabilitation of the site;
  - (d) include detailed performance and completion criteria for evaluating the performance of the biodiversity management measures and rehabilitation of the site, including triggers for any necessary remedial action;
  - (e) describe the short, medium and long-term measures that would be implemented to:
    - protect and enhance the remnant vegetation and habitat on the site;
    - ensure compliance with the biodiversity and rehabilitation objectives, and the progressive rehabilitation obligations in this consent;
  - (f) include a detailed description of the measures that would be implemented over the next 3 years (to be updated for each 3 year period following initial approval of the plan) including the procedures to be implemented for:
    - maximising the salvage of environmental resources within the approved disturbance area, including tree hollows, vegetative and soil resources, for beneficial reuse in site;

- restoring and enhancing the quality of native vegetation and fauna habitat on site through assisted natural regeneration, targeted vegetation establishment and the introduction of fauna habitat features;
  - protecting vegetation and fauna habitat outside the approved disturbance area on-site;
  - minimising the impacts on native fauna, including undertaking pre-clearance surveys;
  - establishing vegetation screening to minimise the visual impacts of the site on surrounding receivers;
  - ensuring minimal environmental consequences for threatened species, populations and habitats;
  - collecting and propagating seed;
  - controlling weeds and feral pests;
  - controlling erosion;
  - controlling access; and
  - managing bushfire risk;
- (g) include a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;
  - (h) identify the potential risks to the successful implementation of the plan and include a description of the contingency measures that would be implemented to mitigate these risks; and
  - (i) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

**Figure 8: Biodiversity & Rehabilitation Management Plan required under the Teven Consent.**

*Note: final approval of site management plans is pending, thus no biodiversity or rehabilitation works (as per DA requirements) was undertaken in accordance with the Consent in 2015.*

### **3.8 Waste**

In accordance with Schedule 2, Condition 9(b) of the Consent the site can accept and recycle a maximum of 10,000 tonnes of clean, surplus concrete in a calendar year. The Teven Quarry did not receive any concrete waste in 2015.

#### **4. NON-COMPLIANCE ITEMS IN 2015**

The following items have been identified as non-compliant with the conditions of consent.

##### **Schedule 3, Condition 15: Meteorological Monitoring**

Suitable meteorological station operating in the vicinity of the site.

**Action/Update:** Holcim are currently sourcing a meteorological station (in accordance with Schedule 3, Condition 15 and the Air Quality Management Plan) to satisfy the requirements of this condition.

Holcim have committed to the installation of a weather station at the Teven Quarry to satisfy this condition. This action will be completed following the approval of the site management plans.

##### **Schedule 3, Condition 23: Monitoring of Product Transport**

Publication of vehicle movement records has not been completed for each calendar half year.

**Action/Update:** Publication of movement records will be completed for all 2015 data in 2016. Data will be published in April 2016. Processes will be put in place to ensure records are published as required.

##### **Schedule 4, Condition 11: Access to Information**

Publication of relevant information to the Holcim website has not been completed. It should be noted that all EPL monitoring data is available via the public website.

**Action/Update:** Publication of relevant information to the Holcim website (independent link for Teven Quarry information) will be completed in April 2016.

#### **5. COMMUNITY COMPLAINTS IN 2015**

<b>Ref No.</b>	<b>Event Date</b>	<b>Detailed Observation</b>	<b>Immediate Action Taken</b>
189057	11/11/2015	<p>Community member submitted a detailed report regarding concerns with environmental impacts along the site's western boundary.</p> <p>Stripping activities have been undertaken close to this boundary recently. The complaint was also submitted to the Ballina Shire Council.</p> <p>Primary concerns are related to disturbance of vegetation from fallen trees, material rolling down hill and outside of site boundary and sedimentation/runoff.</p>	<p>Response email was sent to community member on Friday 13/11/15.</p> <p>A site visit was conducted showing the community member around the site and explaining the processes involved in quarrying. All concerns regarding Holcim operations were addressed during this visit.</p> <p>A detailed report and summary of the visit was provided to the Ballina Shire Council and the community member on 14/12/15.</p>

## **6.. TRENDS IN MONITORING DATA IN 2015**

The site undertook water and blast monitoring in 2015, with no exceedances registered. Trends in monitoring data will be assessed following the implementation of the sites Management Plans in 2016.

## **7. PREDICTED AND ACTUAL IMPACTS IN 2015**

An Environmental Management Strategy (EMS) as well as Management Plans have been prepared in accordance with Development Consent SSD 6442 however these Management Plans as well as the EMS are currently under review by DP&E and require approval before they are implemented on-site.

Actual impacts will be monitored following the implementation of these plans. It should be noted that no environmental complaints were received in 2015.

## **8. ENVIRONMENTAL IMPROVEMENT MEASURES 2016**

Holcim staff will undertake the following improvement measures and projects in 2016 to ensure compliance with the consent and to ensure that effective environmental management controls are in place and operating in accordance with the requirements of the Consent.

<b>Improvement Measure</b>	<b>Activities</b>
Holcim EMS Audit (internal)	Close out all outstanding actions identified in the Teven Environmental Management System Audit (undertaken in September 2015).
Progressive Rehabilitation	The site will continue to progressively rehabilitate available areas .
Introduction of Environmental Management Plans	The site will implement the new Management Plans once approved by the DP&E.
Independent Environmental Audit	The site will commission an independent and qualified consultant to undertake an Independent Environmental Audit in accordance with Schedule 5, Condition 9 of the Consent.