

Jandra Quarry Annual Review: 2015

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Title:	Jandra Quarry Annual Review
Company:	Holcim Australia (Jandra Quarry)
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INTRODUCTION

Holcim (Australia) Pty Ltd (Holcim Australia) operates the Jandra Quarry, a hard rock quarry located on the Pacific Highway at Possum Brush, approximately 17 kilometres south of Taree in the Greater Taree Local Government Area.

A modification to the sites Development Consent (DA 213-10-99) was approved by the New South Wales (NSW) Department of Planning & Environment (DP&E) on 13th March 2015.

In accordance with Schedule 5, Condition 4 of the modified 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, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:*

(a) describe the development (including 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;*
- *the monitoring results of previous years; and*
- *the relevant predictions in the documents listed in condition 2 of Schedule 2;*

(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 documents the environmental performance of the site in 2015, including the period prior to the modification approval in March 2015.

DESCRIPTION OF DEVELOPMENT

(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;

Development activities undertaken at the Jandra Quarry in 2015 included:

- Stripping of topsoil and overburden to the western extraction limit boundary.
- Development of a light-vehicle access road and water management bund along the western extraction limit boundary. Bunding provides for management of water runoff from disturbed areas.

Future quarry development westward will remove the requirement for the bund as all water runoff will be directed back to the main pit.

- Westward extraction in current pit. Extraction has been at RL 74 and RL 62, continuing development of already established benches.
- Crushing and screening of product as per 2014 Environmental Assessment (Element Environment, 2014).
- Importation of concrete washout waste for recycling in to saleable product.
- Removal of old asphalt plant from site, including associated infrastructure.
- Electrical upgrade works to crushing and screening plant.
- Progressive rehabilitation of southern benches (RL 62 and RL 74) (when at terminal). Involving: replacement of topsoil, re-vegetation activities with native species and weed control.

Production volumes for the 2015 calendar year are detailed below.

PRODUCT	DESCRIPTION	QUANTITY (t)
Over 75mm	Raw feed, gabion, shot rock	4,545
30mm - 75mm	Ballast, 20-30mm stemming	11,962
5mm - 30mm	All size aggregates	90,730
Road base & Sub base	20 and 40mm	99,147
Other	Dust	25,644
TOTAL		232,028

Development activities proposed to be carried out at Jandra Quarry in 2016, include:

- Development of quarry pit to western extraction extent (Note: pit development will not push to the furthest extent of the western extraction limit). Development westward will be at RL 62 and RL 50.
- Development of a drop-cut in the current pit floor, to RL 35.
- Development of the new heavy-vehicle access track and expanded stockpile area.
- Progressive rehabilitation of southern benches (RL 62 and RL 74) (when at terminal). Involving: replacement of topsoil, re-vegetation activities with native species and weed control.

REVIEW OF MONITORING RESULTS

(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;*
- *the monitoring results of previous years; and*
- *the relevant predictions in the documents listed in condition 2 of Schedule 2;*

It should be noted that site management plans (including Air Quality, Noise, Blasting, Water and

Biodiversity & Rehabilitation) are in the final stages of approval. Updated plans (following receipt of agency comments) were sent to DP&E for final approval on 11 March 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.


Water Quality

Current water quality objectives for the site are taken from the EPL. The site limits detailed within the EPL are listed below:

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 2796



POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

EPL Water Monitoring Requirements:

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
pH	pH	Each overflow event	Grab sample
Total suspended solids	milligrams per litre	2 times daily during discharge	Grab sample
Turbidity	nephelometric turbidity units	2 times daily during discharge	Grab sample

Water sampling results for 2015 are contained in Appendix 1. Water monitoring is undertaken at a sample point prior to discharge. Should sampling results not indicate compliance with EPL limits then discharge will not be undertaken. The site has capacity across the Pit and Main Dam to allow for water to settle to within allowable limits prior to discharge being required.

It is noted that a TSS reading of 53 mg/L was recorded on 14/04/2015. No discharge was undertaken following this sampling.

Discharge was undertaken once in 2015 (1/04/15). These results were reported via the Pollution Monitoring link on the Holcim Australia website.

Location	Test	Freq	Limit	Units	Sample Date	NSW Environment Protection Licence Requirement	Result
Water							
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH	1/04/2015	7.9
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L	1/04/2015	17
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L	1/04/2015	23
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu	1/04/2015	18
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu	1/04/2015	24

Air Quality

Site Development Consent air quality limits are detailed in the tables below:

Table 5: Long-term impact assessment criteria for particulate matter		
Pollutant	Averaging Period	^d Criterion
Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³

Table 6: Short-term impact assessment criteria for particulate matter		
Pollutant	Averaging Period	^d Criterion
Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³

Table 7: Long-term impact assessment criteria for deposited dust			
Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

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

Noise Monitoring

Site noise criteria are detailed in the tables below:

Table 2: Noise criteria – quarrying operations only dB(A)

Location	6 am – 10 pm (L _{Aeq} (15 min))
R1	46
R5	40
R2, R4, R6	36
R7	35

Table 3: Noise criteria – quarrying operations & asphalt plant production combined dB(A)

Location	6 am – 10 pm (L _{Aeq} (15 min))	10 pm – 6 am	
		(L _{Aeq} (15 min))	(L _{A1} (1 min))
R1	48	46	51
R5	41	39	51
R4	40	39	51
R2, R6	40	35	48
R7	36	35	48

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

Blast Monitoring

Table 4: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Any residence on privately owned land, or any public infrastructure	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

Blast monitoring results (2015):

Monitoring Location	Date of Blast	Over pressure (dB)	Ground Vibration (mm/s)	Result
R1 (Loveday)	6/02/15	105.4	0.5	Pass
R1 (Loveday)	19/03/15	107.9	2.48	Pass
R1 (Loveday)	23/03/15	107.9	1.92	Pass

R1 (Loveday)	03/06/15	114.2	1.4	Pass
R1 (Loveday)	21/07/15	109.7	1.2	Pass
R1 (Loveday)	4/08/15	110.8	1.67	Pass
R1 (Loveday)	26/08/15	106.3	1.12	Pass
R1 (Loveday)	15/09/15	111.9	1.57	Pass
R1 (Loveday)	16/09/15	114.9	1.57	Pass
R1 (Loveday)	19/10/15	109.8	2.45	Pass

Operating Hours

Day	Extraction and processing operations	Transportation operations	Asphalt Plant and associated transport (on a campaign basis)
Monday – Friday	6 am to 10 pm	6 am to 10 pm	24 hours a day
Saturday	6 am to 6 pm	6 am to 10 pm	24 hours a day
Sundays and Public Holidays	None	None	24 hours a day

Operating hours in 2015 were from 7am to 6pm, Monday to Saturday. No activities took place outside of approved operating hours in 2015.

NON-COMPLIANCE ITEMS IN 2015

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

No community complaints were received for the site in 2015.

Non-compliant items in 2015, associated with the Development Consent:

Schedule 2, Condition 16: Identification of Approved Limits of Extraction

Exceedance of time-frame (due date - 31 August 2015) to submit survey plan of the approved limits of extraction.

Action/Update: Survey of the extraction limit was completed in 2010. A survey plan from registered surveyors McGlashan & Crisp was provided at this time. Note that the 2015 modification to consent did not change the site extraction limit (nor have there been any separate changes since the work was completed in 2010). The survey plan is attached to this report (Appendix 2), to close out Condition 16.

Schedule 3, Condition 15: Meteorological Monitoring

Suitable meteorological station operating in the vicinity of the site.

Action/Update: Holcim proposed the use of the Taree Airport meteorological station (within the Air Quality Management Plan) to satisfy the requirements of this condition. However, DP&E were not supportive of this proposal. Holcim have committed to the installation of a weather station at the Jandra Quarry to satisfy this condition. This action will be completed following the approval of the site management plans.

Schedule 3, Condition 33: Monitoring of Product Transport

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

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 each quarter.

Schedule 4, Condition 10: 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 Jandra Quarry information) will be completed in April 2015.

TRENDS IN MONITORING DATA IN 2015

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

Environmental monitoring data has shown a consistent trend in 2015, with results not deviating substantially (refer to water monitoring results graph and blast monitoring table) between monitoring dates. One outlier in water monitoring results was recorded in 2015. The cause of this result is not known. All water and blast monitoring results have been compliant with limits.

PREDICTED AND ACTUAL IMPACTS IN 2015

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

Correlation between actual environmental impacts (ie – monitoring results) and predicted impacts (as per the 2014 Environmental Assessment) will be undertaken in the 2016 Annual Report. The environmental

monitoring network has not yet been established.

EPL monitoring results from 2015 are in line with results from previous years. There were no significant discrepancies.

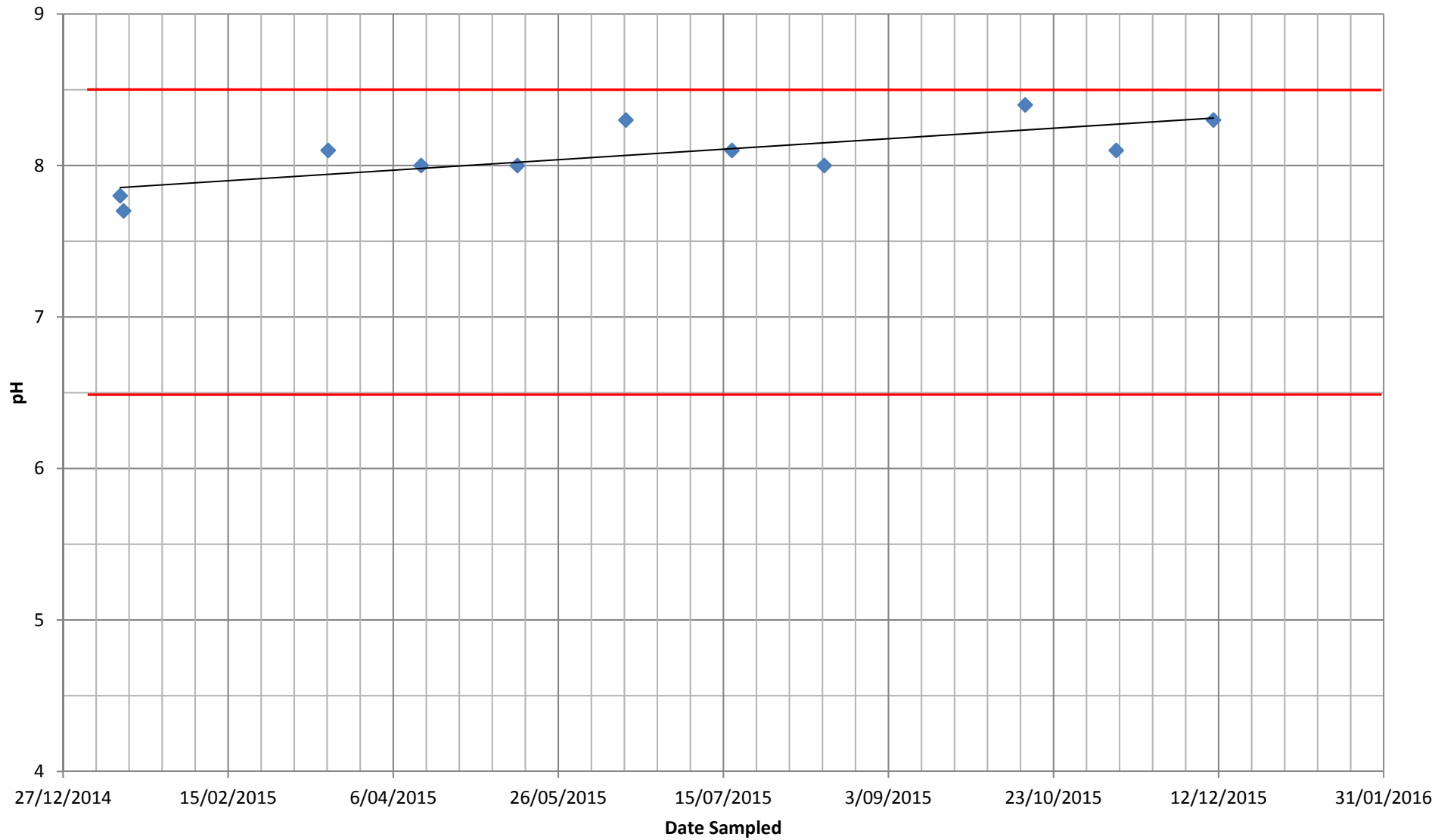
ENVIRONMENTAL IMPROVEMENT MEASURES 2016

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

- Completion of Independent Environmental Audit of the site, with submission of findings (including recommended measures and improvement actions) by 30 June 2016.
- Launch of the Jandra Quarry website to provide the public with access to relevant site management plans and environmental monitoring results.
- Implementation of environmental management plan actions following DP&E approval.
 - Actions are related to noise and air quality controls, water management and the implementation of the environmental monitoring network.
- Implementation of the site biodiversity management strategy, which will involve protection and enhancement of native vegetation on site.

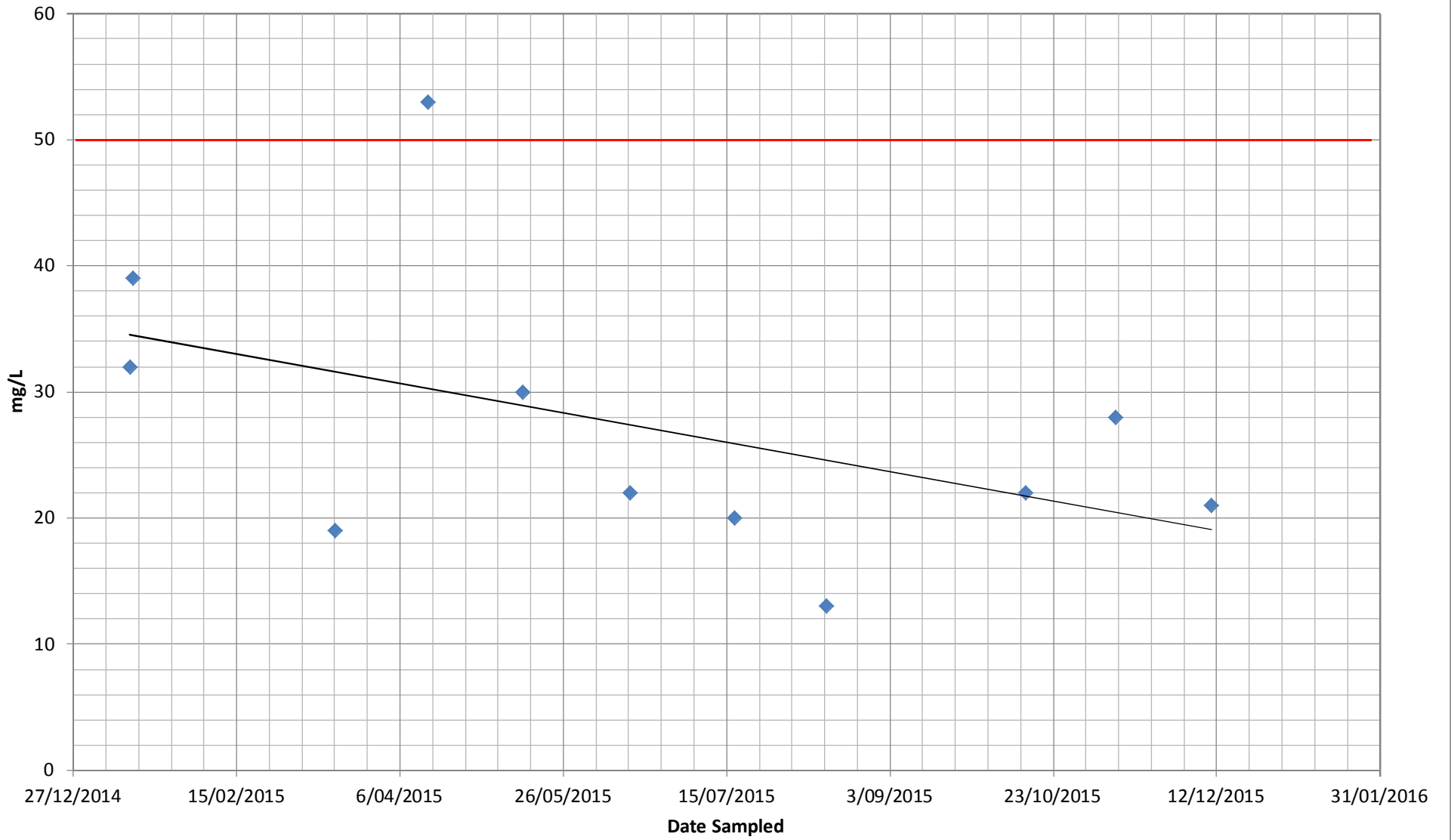
APPENDIX 1: WATER MONITORING RESULTS - 2015

pH



◆ pH — Linear (pH)

Total Suspended Solids



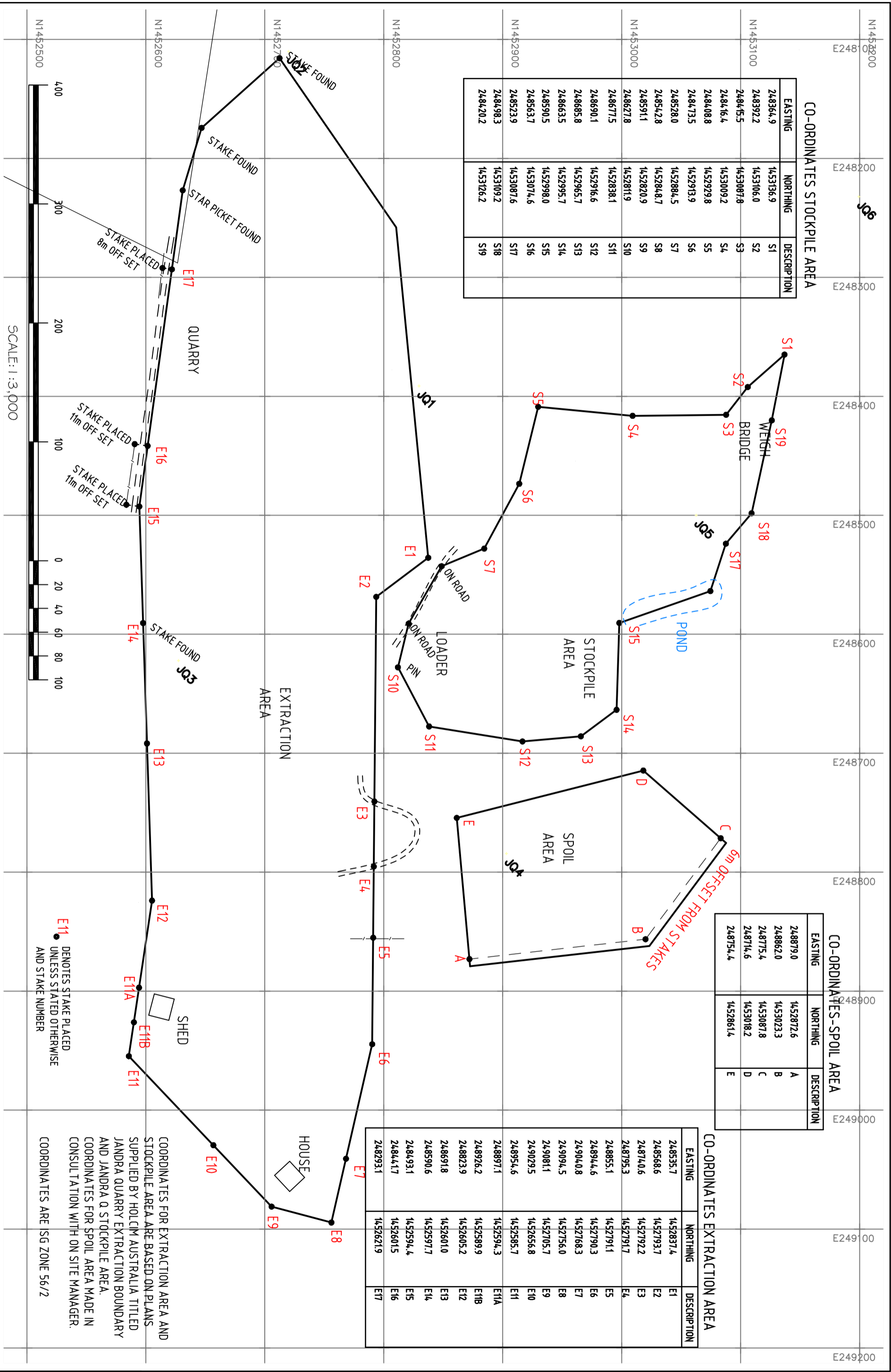
◆ Total Suspended Solids — Linear (Total Suspended Solids)

APPENDIX 2: SITE SURVEY PLAN

EASTING	NORTHING	DESCRIPTION
248364.9	1453136.9	S1
248392.2	1453106.0	S2
248445.5	1453087.8	S3
248446.4	1453009.2	S4
248408.8	1452929.8	S5
248473.5	1452913.9	S6
248528.0	1452884.5	S7
248542.8	1452848.7	S8
248591.1	1452820.9	S9
248627.8	1452811.9	S10
248677.5	1452838.1	S11
248690.1	1452916.6	S12
248685.8	1452965.7	S13
248663.5	1452995.7	S14
248590.5	1452998.0	S15
248563.7	1453074.6	S16
248523.9	1453087.6	S17
248498.3	1453109.2	S18
248420.2	1453126.2	S19

EASTING	NORTHING	DESCRIPTION
248879.0	1452872.6	A
248862.0	1453023.3	B
248775.4	1453087.8	C
248714.6	1453016.2	D
248754.4	1452861.4	E

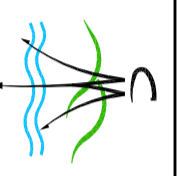
EASTING	NORTHING	DESCRIPTION
248535.7	1452837.4	E1
248568.6	1452793.7	E2
248740.6	1452792.2	E3
248795.3	1452791.7	E4
248855.1	1452791.1	E5
248944.6	1452790.3	E6
249040.8	1452768.3	E7
249094.5	1452756.0	E8
249081.1	1452705.7	E9
249029.5	1452656.8	E10
248954.6	1452585.7	E11
248897.1	1452594.3	E11A
248926.2	1452589.9	E11B
248823.9	1452605.2	E12
248691.8	1452601.0	E13
248590.6	1452597.7	E14
248493.1	1452594.4	E15
248441.7	1452601.5	E16
248293.1	1452621.9	E17



E11 DENOTES STAKE PLACED UNLESS STATED OTHERWISE AND STAKE NUMBER

COORDINATES FOR EXTRACTION AREA AND STOCKPILE AREA ARE BASED ON PLANS SUPPLIED BY HOLCIM AUSTRALIA TITLED JANDRA QUARRY EXTRACTION BOUNDARY AND JANDRA Q STOCKPILE AREA. COORDINATES FOR SPOIL AREA MADE IN CONSULTATION WITH ON SITE MANAGER. COORDINATES ARE ISG ZONE 56/2

PLAN
SHOWING MARKS PLACED ON THE EXTRACTION BOUNDARY, STOCKPILE BOUNDARY AND SPOIL BOUNDARY
JANDRA QUARRY, PACIFIC HIGHWAY, POSSUM BRUSH



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