

Three Kings Quarry

2017 Biennial - Air Report

This report has been prepared in accordance with Condition 30 of the Three Kings Quarry Air Discharge Permit (Permit Number 40041).

CONTENTS

- 1.0 Introduction**
- 2.0 Extraction**
- 3.0 Rehabilitation**
- 4.0 Stockpiles**
- 5.0 Weekly Water Usage**
- 6.0 Dust Control**

Appendices

Appendix 1 Expected Future Site Layout

Appendix 2 Weekly Water Usage

1.0 Introduction

This air report is required by Condition 30 of the Air Discharge Permit 40041 which authorises the discharge of contaminants to air at Three Kings Quarry. Condition 30 states:

That, by 1 November 2015 and every 2 years thereafter the Consent Holder shall provide a suitable report, including scale plans, to the Team Leader – Air Quality detailing:

- (a) The volume and type of rock and areas where extraction has occurred over the previous two years (include a 1:5000 scale plan);*
- (b) Areas where rehabilitation has occurred over the previous two years, including the areas fully quarried out and replanted and those areas where temporary planting and the periods when and areas where hydroseeding or grassing was undertaken (include a 1:5000 scale plan);*
- (c) Location of stockpiles, including volumes and aggregate types;*
- (d) A summary of the weekly water usage, including water cart usage;*
- (e) Projections for the coming two years for items (a) to (d) of this condition; and*
- (f) Any dust trials or additional dust control measures undertaken for the past two years or proposed for the next two years.*

This report covers the period of November 2015 to October 2017. In addition, projections for the coming two years, being November 2017 to October 2019, have been made (subject to consent).

2.0 Extraction

No extraction has occurred over the reporting period November 2015 to October 2017.

Fletcher Residential Limited has lodged an application for consent to remediate the southern and eastern portion of the quarry as well as part of the Council administered southern reserve area. This involves extraction and reuse onsite of approx. 90,000 m³ of rock and fill material in the southern and eastern portion of the site (as shown in Appendix 1). Subject to consent, these works are anticipated to commence within the next two years and continue beyond that period. A crusher may be used to process the rock material.

3.0 Rehabilitation

The quarry batters, along the Mt Eden Road frontage, around the office and weighbridge and along the main quarry haul road are areas that are currently vegetated. Ongoing maintenance to keep growth controlled and minimise weed populations is undertaken across these areas.

No specific rehabilitation is scheduled except for ongoing maintenance of the currently vegetated areas. It is not expected that there will be exposed areas that will remain inactive for extended periods.

4.0 Stockpiles

The stockpiling of imported products on site for resale ceased in November 2015.

Stockpiling of incoming fill material prior to placement has been undertaken in this period and stockpiling of extracted material is proposed to occur over the next two year period and beyond.

Construction of soakage devices is currently taking place around the Southern and Eastern perimeter of the site. This requires the temporary stockpiling of materials on site for use during construction works. This will continue over the next two year period and beyond.

5.0 Weekly Water Usage

The average weekly water usage over the reporting period was in the order of 3233m³. Specific values of the usage per week over the reporting period are provided in Appendix 2. The values reported include the water used to feed the site's sprinklers, water cart and wheel washes.

Water usage over the upcoming two year period is expected to be similar to that used over this reporting period.

6.0 Dust Control

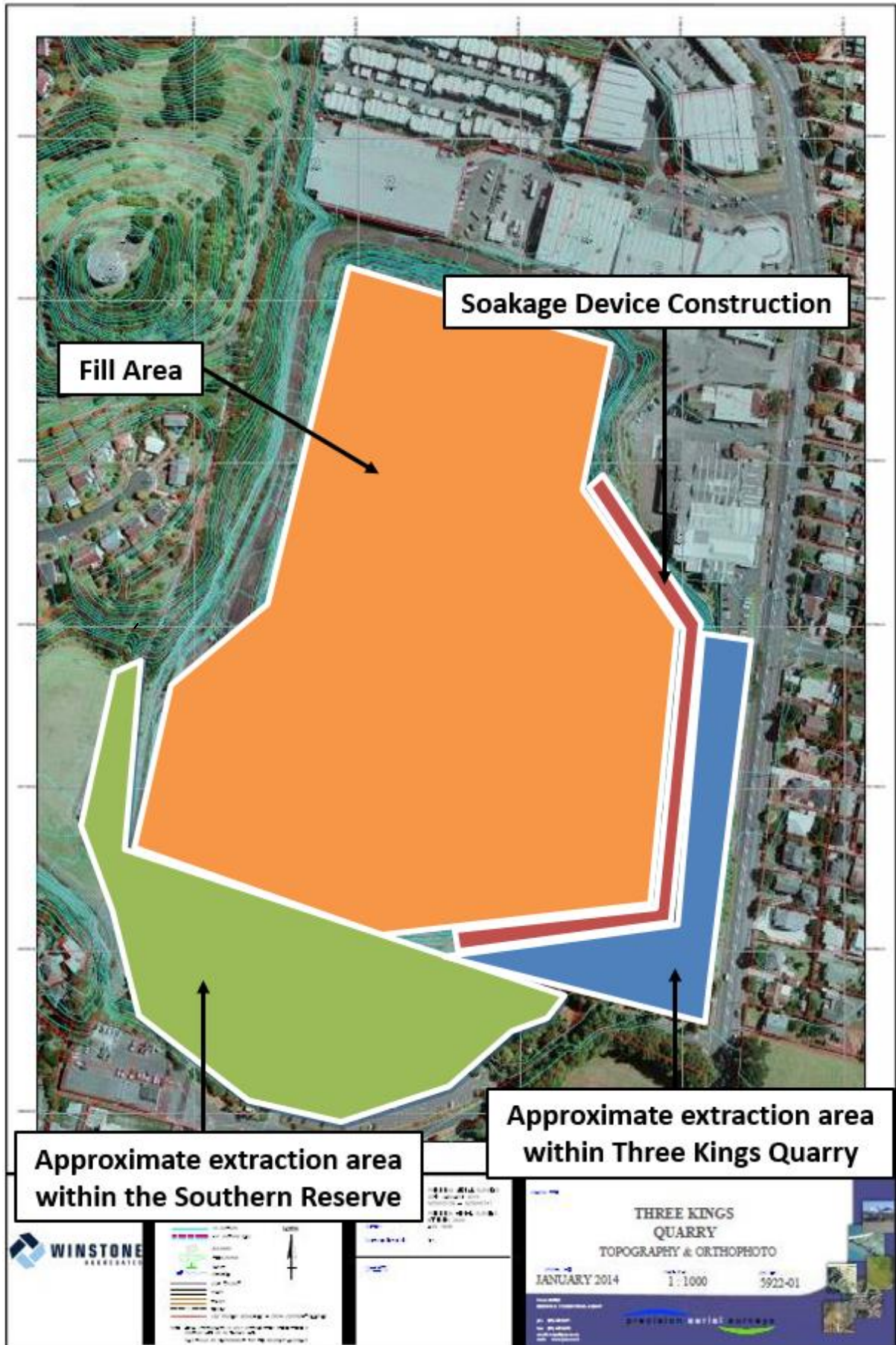
Extensive management of dust issues and air quality monitoring is undertaken on site. The results of this monitoring are submitted to Council quarterly.

The site uses automated sprinklers with rotating spray heads which are currently set up along the main haul road and the clean rubble area in the Southwest corner. All operational areas are addressed by the 12m³ capacity watercart which is permanently located at the site. The sprinkler system, onsite watercart and wheel washes continue to be fed by reusing water that is removed from the quarry as a result of the requirement to dewater the site.

In regards to dust trials none have been undertaken in the last reporting period. A trial into the use of a dust suppression additive was undertaken in 2009, however, results showed little improvement over the use of untreated water.

The ongoing maintenance of the sprinkler system and the watercart has proven successful in minimising air quality issues related to the site. The current procedures will continue and any issues addressed as required over the upcoming two year period.

Appendix 1 – Expected Future Site Layout



Appendix 2 - Weekly Water Usage

2015	
Week Of:	Total Water Usage (m3)
4/11/2015	4110
11/11/2015	3430
18/11/2015	3220
25/11/2015	3730
2/12/2015	3170
9/12/2015	3980
16/12/2015	4580
23/12/2015	3940
30/12/2015	2690

2016	
Week Of:	Total Water Usage (m3)
6/01/2016	2690
13/01/2016	2970
20/01/2016	3990
27/01/2016	5760
3/02/2016	4890
10/02/2016	5620
17/02/2016	4710
24/02/2016	4870
2/03/2016	4640
9/03/2016	4770
16/03/2016	4620
23/03/2016	4630
30/03/2016	4140
6/04/2016	4710
13/04/2016	4590
20/04/2016	4470
27/04/2016	4410
4/05/2016	3900
11/05/2016	3670
18/05/2016	3010
25/05/2016	1920
1/06/2016	1610
8/06/2016	2370
15/06/2016	3230
22/06/2016	2980
29/06/2016	2460
6/07/2016	2630
13/07/2016	3020
20/07/2016	3250
27/07/2016	3590
3/08/2016	3240
10/08/2016	3400
17/08/2016	3380
24/08/2016	3850
31/08/2016	3600
7/09/2016	3940
14/09/2016	4220
21/09/2016	4000
28/09/2016	3540
5/10/2016	3140
12/10/2016	2890
19/10/2016	2010
26/10/2016	2410
2/11/2016	4000
9/11/2016	4430
16/11/2016	4110
23/11/2016	4180
30/11/2016	3460
7/12/2016	4010
14/12/2016	4270
21/12/2016	4210
28/12/2016	3930

2017	
Week Of:	Total Water Usage (m3)
4/01/2017	4280
11/01/2017	4570
18/01/2017	4950
25/01/2017	4280
1/02/2017	4360
8/02/2017	4130
15/02/2017	4020
22/02/2017	3830
1/03/2017	3600
8/03/2017	3640
15/03/2017	3610
22/03/2017	3650
29/03/2017	3220
5/04/2017	2810
12/04/2017	2370
19/04/2017	1530
26/04/2017	2190
3/05/2017	2360
10/05/2017	3080
17/05/2017	2060
24/05/2017	2550
31/05/2017	2320
7/06/2017	1590
14/06/2017	1650
21/06/2017	2520
28/06/2017	1680
5/07/2017	1670
12/07/2017	1600
19/07/2017	2030
26/07/2017	1650
2/08/2017	1520
9/08/2017	1590
16/08/2017	1630
23/08/2017	1770
30/08/2017	1290
6/09/2017	1370
13/09/2017	1310
20/09/2017	1400
27/09/2017	1450
4/10/2017	1280
11/10/2017	1970
18/10/2017	2140
25/10/2017	2500