



Three Kings Quarry – Permit No 12977

Groundwater Take To Dewater Three Kings Quarry

Quarterly Report

December 2009

QUARTERLY REPORT

Three Kings Quarry – Permit No 12977

The following report is made with regard to Condition 7 of Permit No 12977.

This report contains the groundwater levels within boreholes surrounding the take point

A plan showing the location of boreholes in which groundwater levels were measured is attached.

This report contains records for the period of the 1st September to 30th November 2009.

THREE KINGS GROUNDWATER LEVEL RECORD SHEET

Date	BH 1B		BH 2B		BH 5B		BH 6A		BH6B		BH 6C		BH 7		BH 10a	
16-Sep-09	11.47	34.75	1.16	34.09	44.18	34.08	32.81	45.98	38.77	40.02	43.60	35.19	28.52	40.09	29.82	50.94
21-Oct-09	10.85	35.37			43.55	34.71	32.82	45.97	38.46	40.33	42.92	35.87	28.08	40.53	29.80	50.96
18-Nov-09	11.23	34.99	0.92	34.33	43.95	34.31	32.72	46.07	38.60	40.19	43.32	35.47	28.62	39.99	29.81	50.95

Date	BH 10b		BH 11b		BH 12a		BH 12b		BH 13a		BH13c		BH 16		BH 17	
16-Sep-09	8.07	72.69	7.68	72.31	21.25	50.98	5.03	67.10	12.70	59.47	7.07	66.34	48.85	51.29	43.82	34.06
21-Oct-09	8.07	72.69	7.69	72.30	21.13	51.10	4.97	67.16	11.27	60.90	7.07	66.34	48.81	51.33	43.20	34.68
18-Nov-09	8.08	72.68	7.70	72.29	21.18	51.05	5.15	66.98	13.32	58.85	7.08	66.33	48.75	51.39	43.58	34.30

Date	BH 18A		BH 18B		BH 19A		BH 19B		BH 20		BH 20a		BH 21		BH 22	
16-Sep-09	48.78	35.72	38.32	46.18	45.92	34.13	41.43	38.62	1.51	55.15	5.43	51.31	36.02	36.29	33.97	41.27
21-Oct-09	48.58	35.92	38.55	45.95	45.33	34.72	41.54	38.51	1.42	55.24	5.25	51.49	33.13	39.18	33.97	41.27
18-Nov-09	48.46	36.04	38.18	46.32	45.68	34.37	41.64	38.41	1.49	55.17	5.36	51.38	34.14	38.17	33.98	41.26

Date	BH 22a		BH 23		BH 23a		BH 24		BH 24a		BH 25		BH 25a		BH25b1	
16-Sep-09	10.47	64.67	5.63	51.57	6.14	51.20	6.66	56.14	1.64	61.12	22.43	37.02	10.50	48.94	9.43	48.32
21-Oct-09	10.29	64.85	5.58	51.62	6.14	51.20	6.59	56.21	1.67	61.09	22.32	37.13	10.31	49.13	9.94	48.83
18-Nov-09	10.38	64.76	5.57	51.63	6.15	51.19	6.62	56.18	1.70	61.06	22.21	37.24	11.65	47.79	10.02	48.91

Date	BH25b2		BH 26		BH 26a		BH 27		BH28a		BH28b		BH29		BH30	
16-Sep-09	7.83	51.22	0.17	59.27	5.13	54.28	0.01	49.59	6.49	51.14	3.43	52.48	8.41	58.19	16.84	55.07
21-Oct-09	8.52	51.91	0.15	59.29	5.04	54.37	0.01	49.59	6.67	51.32	3.95	53.00	8.34	58.26	17.07	55.30
18-Nov-09	8.42	51.81	0.15	59.29	5.13	54.28	0.01	49.59	6.37	51.02	3.79	52.84	8.34	58.26	16.97	55.20

Date	BH31a		BH31b		BH32		BH33		BH34		BH35a		BH35b		BH36a	
16-Sep-09	15.16	48.75	12.81	50.10	3.83	54.83	0.43	59.84	9.36	49.39	17.42	48.84	10.90	55.36	7.63	58.90
21-Oct-09	15.31	48.90	13.02	50.31	3.52	55.14	0.43	59.84	9.13	49.62	17.47	48.79	10.87	55.39	7.56	58.97
18-Nov-09	15.06	48.65	12.8	50.09	3.81	54.85	0.56	59.71	9.64	49.11	17.58	48.68	10.81	55.45	7.55	58.98

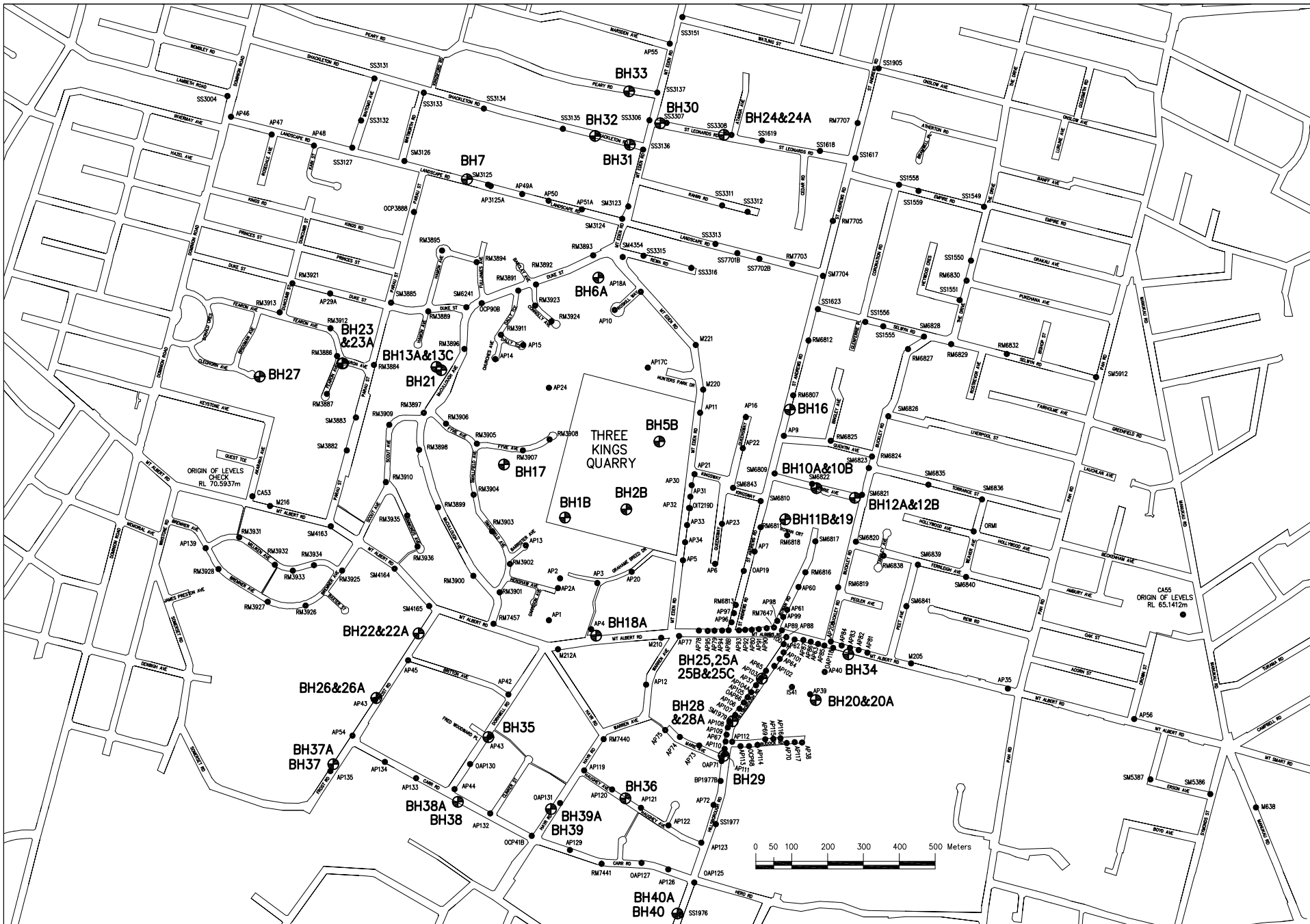
Date	BH36b		BH37a		BH37b		BH38a		BH38b		BH39a		BH39b		BH40a	
16-Sep-09	7.56	58.97	3.53	54.01	3.68	53.92	4.14	54.34	4.83	53.64	7.13	54.86	4.96	57.17	10.71	60.61
21-Oct-09	7.51	59.02	3.52	54.02	3.67	53.93	4.11	54.37	4.78	53.69	7.12	54.87	4.94	57.19	10.64	60.68
18-Nov-09	7.54	58.99	3.6	53.94	3.76	53.84	4.21	54.27	4.86	53.61	7.10	54.89	4.96	57.17	10.73	60.59

Date	BH40b															
16-Sep-09	8.57	62.79														
21-Oct-09	8.59	62.77														
18-Nov-09	8.70	62.66														

Locations of boreholes are marked on the attached plan

Waterlevels within standpipe piezometers are expressed as depth below surface levels (first column) and as elevations above sealevel (second column).

Waterlevels within pneumatic piezometers are expressed as head of water above piezometer tip (first column) and as elevations above sealevel (second column).



Note:
 Origin of Levels
 CA55 S049930
 RL65.1412m
 in same terms as
 M205 S054417
 RL59.305m

- SS3316 = Precise Level Survey Benchmarks
- ⊕ BH16 = Borehole Location

DESIGNED:	DATE:	SIGNATURE:	PLOT DATE:	10/5/05
DRAWN:	DATE:	SIGNATURE:	CD REF:	BOREHOLES
CHECKED:	DATE:	SIGNATURE:	CD REF:	
APPROVED:	DATE:	SIGNATURE:	SURVEY BY:	MJD
BY:	DATE:	SIGNATURE:	SURVEY DATE:	10/3/05
			CD REF:	BOR

ISO 9001 QUALITY ASSURED

HARRISON GRIERSON
 CONSULTING ENGINEERS SURVEYORS PLANNERS

Level 5 Capital House, 20 Amerham Way, Manukau City Ph 09 966 3380 Fax 09 966 3390

PROJECT: WINSTONE AGGREGATES LTD
 THREE KINGS QUARRY

TITLE: BOREHOLE LOCATION PLAN
 AS AT 10-3-05

PLOT STATUS:	PROJECT No:	SCALE:	A1 1:5000	A1
	1130/006451	A3 1:10000		A3
	DRAWING No:			REV
	6451-100			B