



APPENDIX E
GROUNDWATER MONITORING &
BOREHOLE LOCATION PLAN – WILSON BAILEY

24 March 2013

Your ref:
 Planning ref:
 Our ref: J11002/DB/c05

Mr J Jones
 Barratt David Wilson Homes Southampton
 Tollbar House
 Tollbar Way
 Hedge End
 Southampton
 Hampshire
 SO30 2UH

Dear Mr Jones,

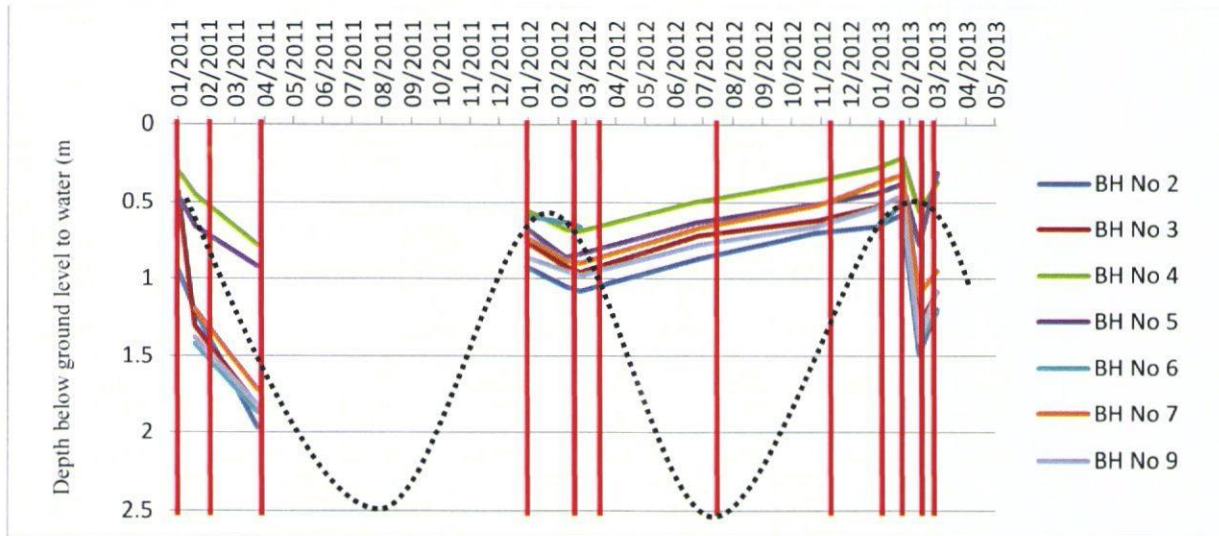
RE: DENVILLES FARM SITE, HALLETT ROAD, HAVANT, HAMPSHIRE
UPDATE ON GROUNDWATER LEVEL MONITORING CARRIED OUT TO DATE

Further to our meeting with the EA and Havant BC we returned to site to carry out an additional water monitoring visit and have rechecked our previously issued results; we are not able to find any error in our monitoring resulted dated 4 March 2013.

The updated results of the monitoring to date are detailed in the table below and indicated as depth below ground level in metres, together with a plot showing the data trends.

Date	BH No 2 (14.00 mOD)	BH No 3 (14.05 mOD)	BH No 4 (13.50 mOD)	BH No 5 (13.60 mOD)	BH No 6 (14.10 mOD)	BH No 7 (14.20 mOD)	BH No 9 (14.10 mOD)
21/01/2011	0.94	0.43	0.30	0.46	--	--	--
08/02/2011	1.21	1.31	0.45	0.66	1.42	1.20	1.38
14/04/2011	1.97	1.83	0.78	0.92	1.87	1.72	1.82
19/01/2012	0.92	0.76	0.55	0.67	0.59	0.73	0.86
29/02/2012	1.05	0.92	0.68	0.86	0.63	0.88	0.95
15/03/2012	1.08	0.96	0.69	0.84	0.66	0.90	0.98
16/07/2012	0.87	0.72	0.49	0.63	--	0.67	0.78
16/11/2012	0.70	0.62	0.36	0.51	--	0.52	0.66
17/01/2013	0.66	0.53	0.28	0.44	0.68	0.38	0.54
14/02/2013	0.58	0.46	0.21	0.38	0.50	0.32	0.45
04/03/2013	1.49	1.30	0.56	0.78	1.40	1.10	1.40
22/03/2013	1.20	1.09	0.37	0.31	1.22	0.95	1.08

Fig 1: Plot showing depth to ground water below ground level from Jan 2011 to March 2013.
(Red lines indicate actual timing of each monitoring visit, black dashed line indicates a typical seasonal variation)



From the above plot it is apparent that there is a general rising trend of groundwater during 2012, which is consistent with the unusually consistent heavy rainfall experienced throughout the year.

The summer rainfall has prevented the summer trough in water levels from occurring during 2012, although the peak levels during the winter of 2012 to 2013 are not shown to be significantly higher than those measured on site during previous winters. This considered to be due to the ability of the existing surface water drainage network to adequately drain the site, albeit causing surface water drainage issues further down-stream.

These results would therefore support the view that even during sustained periods of heavy rainfall the site does not become flooded.

New surface water attenuation features that are to be constructed as part of the revised surface water management scheme for the proposed development. These attenuation features would be expected to alleviate the off-site down-stream surface water management issues that have been highlighted by the Environment Agency.

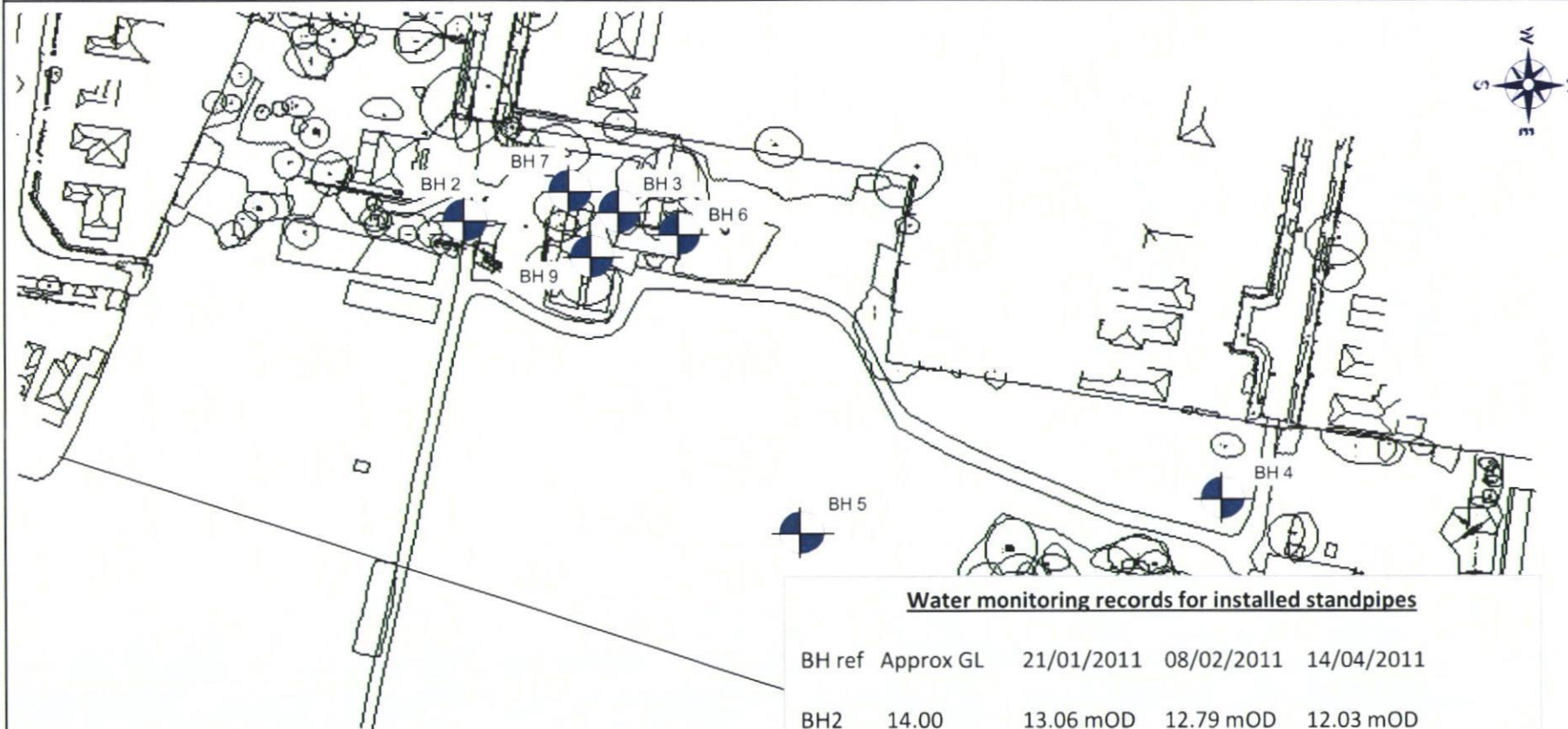
We trust that this letter provides a useful update to the existing monitoring data.

Yours sincerely
Wilson Bailey Partnership

Dominic Brightman
BSc MSc DIC FGS CGeol ARSM

Site Manor Farm, Denvilles

Client BDW Southampton



Water monitoring records for installed standpipes

BH ref	Approx GL	21/01/2011	08/02/2011	14/04/2011
BH2	14.00	13.06 mOD	12.79 mOD	12.03 mOD
BH3	14.05	13.62 mOD	12.74 mOD	12.22 mOD
BH4	13.50	13.20 mOD	13.05 mOD	12.72 mOD
BH5	13.60	13.14 mOD	12.94 mOD	12.68 mOD
BH6	14.10	--	12.68 mOD	12.23 mOD
BH7	14.20	--	13.00 mOD	12.48 mOD
BH9	14.10	--	12.72 mOD	12.28 mOD

Approximate Scale in metres

APPENDIX F

SUDS MANAGEMENT & MAINTENANCE PLAN