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Groundwater Science Corp.

328 Daleview Place,
Waterloo, ON N2L 5M5
Phone: (519) 746-6916
groundwaterscience.ca

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Transmittal

Township of Puslinch

To: Cox Construction Limited From: Andrew Pentney
 P.O. Box 427, 687 Eramosa Rd. Ref: Nigro Pit, Licence No. 20749
 Guelph, ON N1H 6K5 2013 Monitoring Report
 Attn: Bill Hartung Date: February 11, 2014

For Review As Requested Returned With Thanks For Analysis For your information

Enclosed:

2013 Annual Groundwater Monitoring Letter Report

Remarks:

Bill:

Here is a copy of the 2013 report for your files. As requested we have also sent copies to the following:

Sarah deBortoli, Aggregates Technical Specialist,
MNR – Guelph District, 1 Stone Road West, Guelph, ON, N1G 4Y2

District Manager, MOE, 1 Stone Road West, Guelph, ON, N1G 4Y2

Township of Puslinch, 7404 Wellington Road 34, RR3 Guelph, ON, N1H 6H9

CLERK'S DEPARTMENT	
TO	NL. - SD - comments Feb 2014
Copy	
Please Handle	
For Your Information	
Council Agenda	March 19 14
File	E13-COX.

Thank you for the opportunity to complete this work. If you have any questions, or require further assistance, please do not hesitate to call.

Sincerely,



Groundwater Science Corp.

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Waterloo, ON N2L 5M5
Phone: (519) 746-6916
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February 11, 2014

Bill Hartung
General Manager,
Cox Construction Limited
P.O. Box 427
687 Eramosa Rd.
Guelph, Ontario
N1H 6K5

Dear Mr. Hartung:

**RE: 2013 Groundwater Monitoring Summary,
Cox Construction Limited Nigro Pit, Licence No. 20749
Part Lots 11 and 12, Concession 4A, Puslinch Township**

This letter provides a summary of the results of the 2013 groundwater monitoring program completed for the above reference property. Property ownership was transferred from CMB to Cox Construction Limited in early 2013.

The original pit Licence was issued on May 28, 1999. The Licence conditions include quarterly groundwater monitoring at established locations and annual reporting. The monitoring report is submitted to the MNR, the MOE and the Township of Puslinch.

1.0 Water Level Monitoring Program

The overall site setting and monitoring locations are shown on Figure 1. The current groundwater monitoring locations include boreholes BH1, BH2-S, BH2-D, BH3, BH4 and BH5, private dug well DW2, drive-point piezometers DP1, DP2, DP3, DP4, DP5 and DP6. Note that private well DW1 has been abandoned (removed) by the owner, and is no longer monitored. At each of these locations a groundwater level is obtained on a routine basis as conditions allow. At drive-point locations within natural ponds a surface water measurement is also obtained (if possible). In addition, surface water flow is monitored at a culvert across Concession 4 Sideroad (SW1).

The monitoring well and drive-point installation details are shown in Table 1. The water level monitoring data is presented in Tables 2 and 3. Hydrographs of the water level data are also presented. Water level data has been collected at the site since October 1997.

2.0 Monitoring Results

Water level measurements and surface water flow observations for the year 2013 program were obtained on four occasions (March, June, August and December). Extraction at the site occurs intermittently. Groundwater and surface water levels observed in 2013 at the site are within the historical "average" range, and were consistent with pre-extraction (1997/1998) levels.

For comparison to the hydrographs, a plot of the monthly precipitation and current 30-year monthly precipitation normal (1981-2010) reported by Environment Canada for the Kitchener/Waterloo (former Waterloo-Wellington) Airport Station (and overall area) for the years 1994 to 2013 is attached to this report. In 2013 the estimated total reported precipitation of 886.3 mm is approximately 30.18 mm below the current 30-yr mean value of 916.48 mm. As indicated by the

graph, January, April, June and October were relatively “wet” compared to average conditions, and, March, May, August, September, November and December were relatively “dry”.

3.0 Proposed Thresholds

The intent of the program is to measure seasonal variation in groundwater levels at the site. The Licence conditions indicate that "after a minimum of two years of data is obtained the seasonal water table variations should be determined and a seasonal low water table recommended for each monitoring location ...". Based on the minimum water table elevations observed the following “thresholds” were proposed in the 2001 Monitoring Report:

<u>Monitor</u>	<u>Threshold (mAMSL)</u>
BH1	323.8
BH2-S	dry and BH2-D is lower than threshold
BH2-D	323.5
BH3	322.5
BH4	320.5
BH5	320.9
DP1	dry and DP2 is lower than threshold
DP2	325.5
DP3	325.4
DP4	329.2
DP5	dry and BH5 is lower than threshold
DP6	324.0
DW2	318.4 at static level (non-use conditions)
SW1	not applicable

In addition, the following comments regarding the threshold values and the “action response plan” were included with the 2001 report recommendations:

Note that no specific season is specified, the lowest water levels observed have occurred either during the fall or winter period of each year monitored. Due to the variability in precipitation during the monitoring period to date, other seasonal norms are not as definable as the minimum observed "natural" water table elevations listed above. Please also note that if seasonal or annual precipitation continues to be low, or decreases, the water table may naturally fall below the thresholds listed above. These thresholds are "indicators", once water levels reach threshold levels more detailed monitoring should be implemented (as per the Licence conditions) and the overall situation should be assessed.

If water table elevations drop below these minimum values, then further investigation will be necessary to determine the cause of the low water levels (as per the Licence conditions). If the cause is determined to be natural then no further action would be necessary. If the cause is determined to be a result of the excavation then mitigation options would be developed at that time in conjunction with the appropriate agencies.

To date no final comment has been received from the review agencies regarding the proposed thresholds and action response plan, and therefore it is unknown if the proposed thresholds and plan (as outlined above) have been accepted by MNR. However, for the purposes of this report, and in order to meet the intent of the monitoring program, the 2013 monitoring results have been compared to the proposed thresholds and action plan.

4.0 Discussion

The overall water level trends at the site indicate that the extraction activities at the site to date have had no significant influence on groundwater levels. Average groundwater levels at the site remain

consistent with historical results. The pattern of groundwater levels across the site has remained consistent over the monitoring period, indicating that local groundwater flow directions and patterns have been maintained. Theoretically the reduction in runoff associated with the extraction to date has likely led to additional recharge as compared to the original condition, which would tend to slightly increase local seasonal water table fluctuation and average annual groundwater levels. As illustrated by the hydrographs however, it is likely that the on-going seasonal and annual variation in recharge has a larger influence on local water table elevations, and masks any potential small-scale effect that may be related to extraction.

The monitoring results indicate that the measured water level and water level fluctuation at the ponds adjacent to the site is dependent on precipitation patterns and is not related to groundwater levels or groundwater recharge within the extraction area. In addition, the measured water level elevations indicate that these ponds are perched above the water table within the extraction area and consistent downward gradients exist between the ponds and the underlying sand and gravel aquifer.

Surface water observations at SW1 indicate intermittent flow (or presence of water) over the historical monitoring period. Flow occurs at SW1 primarily during snowmelt or major precipitation events. Monitoring to date indicates that flow at SW1 is not influenced by site extraction activities.

The water level at the dug well southwest of the Licenced area has not been adversely affected by the extraction. Groundwater levels and seasonal fluctuation at the dug well is generally consistent with historical values and patterns observed over the entire site.

The monitoring results indicate that groundwater levels were above the proposed thresholds at all locations in 2013. Based on the conclusions of the review no threshold response action was recommended.

5.0 Recommendations

The current approved monitoring program consists of the following:

RECOMMENDED GROUND WATER MONITORING

QUARTERLY MONITORING (APRIL, JULY, SEPTEMBER, NOVEMBER) AT LOCATIONS: BH1, BH2, BH3, BH4, BH5 AROUND THE PERIMETER OF THE EXTRACTION AREA; LOCATIONS DP1, DP2, DP3, AND A NEW PIEZOMETER DP4 IN THE THREE PONDS LOCATED TO THE SOUTH OF THE EXTRACTION AREA; THE TWO SHALLOW DUG WELLS (DW1 AND DW2) LOCATED TO THE NORTH AND WEST OF THE EXTRACTION AREA, AND A NEW WELL (BH6) TO BE INSTALLED IN THE WETLAND AREA ADJACENT TO SIDE ROAD 10, SOUTH OF THE WESTERN BOUNDARY. THE MONITORING SHOULD BE COMPLETED FOR PERIOD PRIOR TO AND THROUGHOUT THE ENTIRE EXTRACTION PERIOD. ANY WELLS DAMAGED DUE TO PIT OPERATIONS SHOULD BE REPLACED IN THE GENERAL VICINITY OF THE DAMAGED WELL AND LEVEL SURVEYED TO A GEODETIC DATUM.

ANNUAL REPORTING OF THE MONITORING DATA SHALL BE COMPLETED AND THE REPORTS SUBMITTED TO OMNR, MOE, AND TOWNSHIP BY JANUARY 30 OF EACH YEAR. QUARTERLY DATA WILL BE REVIEWED IMMEDIATELY BY A QUALIFIED HYDROGEOLOGIST TO EVALUATE TRENDS IN THE DATA AND TO CHECK COMPLIANCE WITH THE TRIGGER LEVELS.

AFTER A MINIMUM OF TWO YEARS OF DATA IS OBTAINED, THE SEASONAL WATER TABLE VARIATIONS SHOULD BE DETERMINED AND A SEASONAL LOW WATER TABLE LEVEL RECOMMENDED FOR EACH MONITORING LOCATION. IN THE TIME PROCEEDING BELOW WATER TABLE EXTRACTION, THE HISTORICAL WATER LEVEL DATA SHOULD BE ASSESSED ON AN ON-GOING BASIS TO ENSURE THAT THE LOW WATER LEVELS ARE REFLECTIVE OF LONG TERM CLIMATIC VARIATIONS. THE LOW WATER LEVELS SHOULD BE USED AS A TRIGGER MECHANISM FOR ASSESSING POTENTIAL IMPACTS AS A RESULT OF BELOW WATER TABLE EXTRACTION. IF AT ANY TIME THE WATER LEVEL IN A MONITOR IS APPROACHING THE TRIGGER LEVEL WITH A RATE OF CHANGE GREATER THAN EXPECTED (INDEPENDENT OF SEASONAL VARIATIONS), OR THE WATER LEVELS REACH THE LOW WATER LEVEL, THE OPERATOR WILL INFORM THE OMNR, MOE, AND TOWNSHIP AND INCREASE THE MONITORING TO WEEKLY. IF WATER LEVELS CONTINUE TO DECLINE DURING TWO SUBSEQUENT MONITORING EVENTS, THE OPERATOR WILL CEASE BELOW WATER TABLE EXTRACTION AND CONTINUE MONITORING WATER LEVEL VARIATIONS TO DETERMINE THE CAUSE OF THE LOW WATER LEVELS. APPROPRIATE ACTION (e.g. MONITORING, MITIGATION, COMPENSATION) WILL BE TAKEN AS REQUIRED BY THE OMNR, MOE AND/OR THE TOWNSHIP OF PUSLINCH.

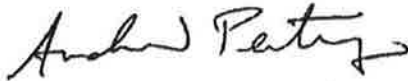
Since the monitoring program was developed extraction has proceeded over most of the site and the portion of the (original) License east of Side Road 12 was surrendered (i.e. is no longer part of the License). Several of the monitoring locations are outside of the existing Licensed area, including monitors near the former extraction area east of Side Road 12. In addition, monitoring to date has shown no impacts related to on-site extraction. No threshold exceedances have occurred and no mitigation measures have been required. It is our understanding that extraction is almost complete at the site, and that any additional extraction will not involve any removal of material below water table. Future monitoring related to the remaining above water table extraction should assess the water table elevation within the current extraction area. No further below water table extraction related thresholds or mitigation measures are needed.

Therefore we recommend that in light of the findings to date and the limited amount of future extraction that will occur, the monitoring program be revised. The Site Plan conditions listed under Recommended Ground Water Monitoring should be revised to the following:

- quarterly water level monitoring at BH3, BH4 and BH5
- annual reporting of the monitoring results to be submitted by January 30th to the MNR.

If you have any questions or require further assistance please do not hesitate to contact me.

Sincerely,

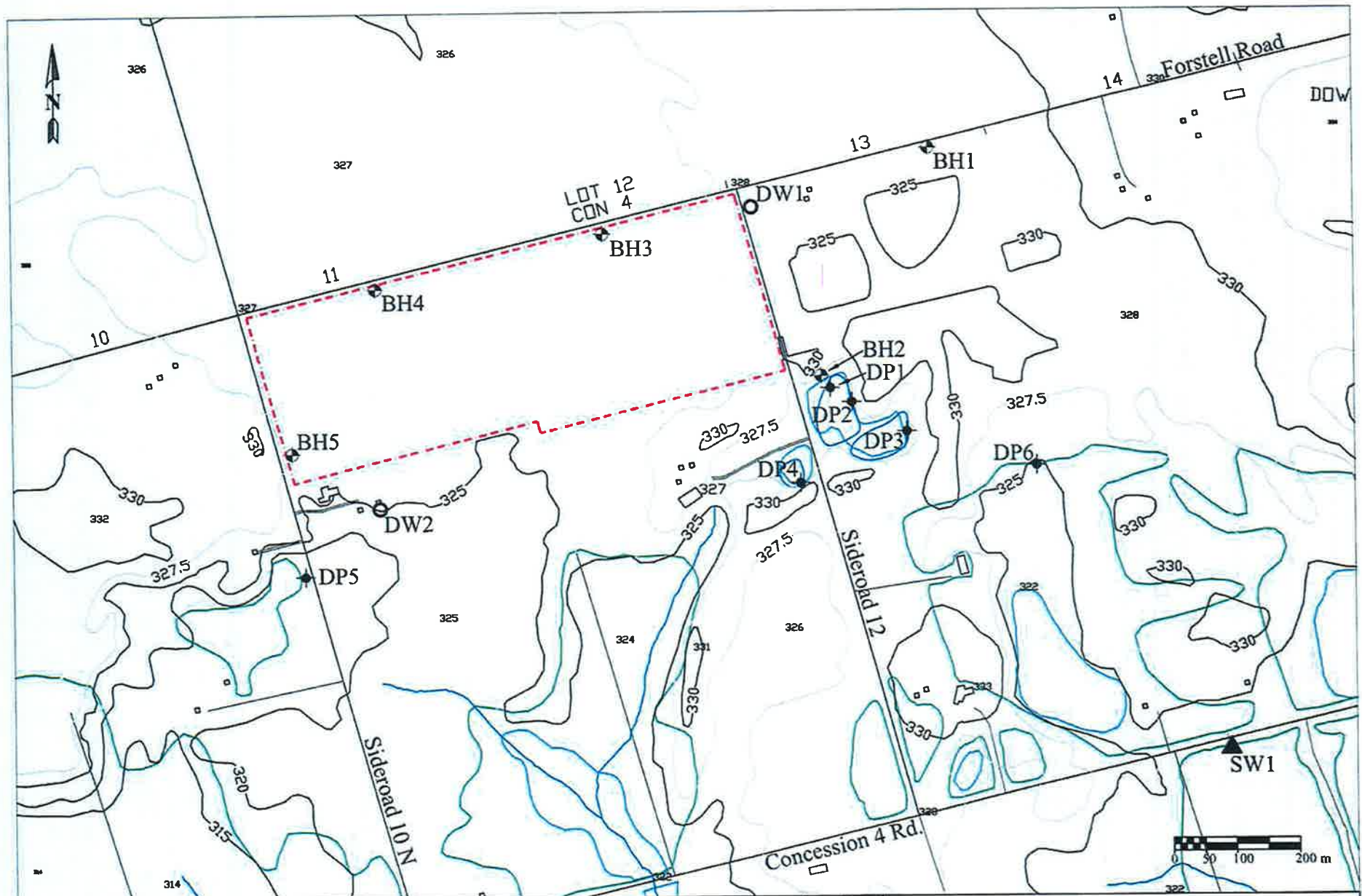


Andrew Pentney, B.Sc., P.Geo.
Hydrogeologist



Cc: MNR, MOE, Township of Puslinch

Attached: Figure 1 Site Plan and Monitoring Locations
Table 1 Completion Details
Table 2 Water Level Measurements, Monitoring Wells
Table 3 Water Level Measurements, Pond Piezometers
Table 4 Surface Water Flow Measurements
Water Level Hydrograph, Monitors Surrounding Excavation Area
Precipitation Comparison



- ⊕ monitoring well
- ◆ drive point piezometer
- private well
- ▲ surface water location
- - - - Licenced boundary (approx.)
- surface water (pond, creek)
- mapped wetlands
- contour interval as shown

scale : as shown
January 2014

Figure 1: Site and Monitoring Locations

Groundwater Monitoring Program Report

Cox Construction Limited Nigro Pit, Licence No. 20749
Part Lots 11, 12, 13, Con. 4, Township of Puslinch

modified from: 1:10,000 OBM Mapping
UNDER LICENSE WITHOUT PREJUDICE OR
ENDORSEMENT FROM THE QUEEN'S PRINTER OF ONTARIO

<i>Monitoring Location</i>	<i>Casing Stick-Up (mAGS)</i>	<i>Total Depth (mBGS)</i>	<i>Ground Surface</i>	<i>Elevations* (mAMSL)</i>		
				<i>Top of Casing</i>	<i>Top of Screen</i>	<i>Bottom of Screen</i>
BH1	0.63	8.23	330.70	331.33	323.99	322.47
BH2-S	0.69	4.57	328.00	328.69	323.53	323.43
BH2-D	0.69	7.60	328.00	328.69	321.92	320.40
BH3	0.62	6.71	327.01	327.63	321.82	320.30
BH4	0.63	7.60	327.40	328.03	321.32	319.80
BH5	1.02	8.23	328.40	329.42 ***	321.69	320.17
DP5	0.10 ****	1.85	319 **	319.10	317.57	317.15
DP1	0.93	0.61	326.45	327.38	326.14	325.84
DP2	0.82	1.14	326.66	327.47	325.82	325.52
DP3	0.79	1.13	326.59	327.38	325.76	325.46
DP4	0.79	1.19	330 **	330.79	329.23	328.88
DP6	0.76	1.86	325 **	325.76	323.56	323.14
DW1 (Dug Rd 12)	0.25	5.40	327.75 **	328	na	na
DW2 (Dug Rd 10 N)	0.00	5.85	324 **	324	na	na

Notes:
* Elevations relative to BH2 ground surface, assumed to be 328.00 mAMSL
** Ground elevation at DP4, DP5, DP6, DW1, and DW2 estimated from topographic mapping (Figure 1).
*** The casing at BH5 has been broken several times. As of Oct 1998, the casing stick-up was 0.13 m above ground surface. It was repaired in June 1999 and is now 1.02 m.
**** casing stick-up was noted to be altered in August 2004 - correction to tables made in May 2008
mAMSL = metres above mean sea level
mAGS = metres above ground surface
mBGS = metres below ground surface
na = not available

**Table 1:
Monitoring Well and Drive-Point Piezometer Installation Details**

Date	BH1		BH2-S		BH2-D		BH2 S-D	BH3		BH4		BH5		DP5		DW1 (Rd12)		DW2 (Rd 10N)	
	Groundwater		Groundwater		Groundwater		Vertical	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Gradient	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)
9-Oct-97	324.66	6.04	326.86	1.14	324.73	3.27	0.92	323.29	3.72	321.64	5.77	321.47	6.93	#N/A	ni	#N/A	nm	#N/A	nm
16-Oct-97	324.62	6.09	326.89	1.12	324.68	3.32	0.95	323.26	3.76	321.60	5.81	321.44	6.97	#N/A	ni	#N/A	nm	#N/A	nm
28-Oct-97	324.56	6.15	324.78	3.23	324.56	3.44	0.09	323.58	3.43	321.51	5.90	321.36	7.05	#N/A	ni	#N/A	nm	#N/A	nm
17-Nov-97	324.50	6.21	n/a	nm	324.67	3.34	#N/A	323.14	3.87	321.43	5.97	321.32	7.09	#N/A	ni	#N/A	nm	#N/A	nm
17-Dec-97	324.43	6.27	324.78	3.22	324.56	3.44	0.09	323.10	3.91	321.32	6.08	321.24	7.16	#N/A	ni	#N/A	nm	#N/A	nm
21-Jan-98	324.94	5.77	325.48	2.52	325.30	2.71	0.08	323.67	3.34	321.70	5.70	321.55	6.86	#N/A	ni	#N/A	nm	#N/A	nm
10-Jun-98	325.22	5.49	325.63	2.37	325.35	2.65	0.12	323.82	3.20	321.96	5.44	321.82	6.58	#N/A	ni	#N/A	nm	#N/A	nm
23-Jun-98	325.17	5.53	325.69	2.31	325.44	2.56	0.11	323.91	3.11	322.00	5.40	321.83	6.57	#N/A	ni	#N/A	nm	#N/A	nm
16-Jul-98	325.04	5.66	325.52	2.49	325.26	2.75	0.11	323.75	3.26	321.93	5.47	321.89	6.51	#N/A	ni	323.93	3.82	320.05	3.95
17-Jul-98	325.01	5.69	325.47	2.54	325.21	2.80	0.11	323.72	3.29	321.91	5.49	321.88	6.52	#N/A	ni	#N/A	nm	#N/A	nm
25-Jul-98	324.95	5.75	325.31	2.69	325.07	2.94	0.11	323.65	3.37	321.87	5.54	321.83	6.57	#N/A	ni	323.81	3.94	319.95	4.05
23-Oct-98	324.25	6.45	323.99	4.01	323.92	4.08	0.03	322.97	4.04	321.26	6.14	321.10	6.41	#N/A	ni	323.14	4.61	318.89	5.11
6-Apr-99	324.59	6.11	325.09	2.91	324.74	3.26	0.15	323.17	3.84	321.26	6.14	321.34	6.17	#N/A	ni	323.25	4.50	319.72	4.28
17-Jun-99	324.37	6.33	324.55	3.46	324.39	3.61	0.07	322.97	4.04	321.06	6.34	321.06	7.34	317.61	1.39	323.08	4.67	319.32	4.68
30-Jul-99	324.17	6.53	324.06	3.94	323.93	4.07	0.06	322.81	4.20	320.90	6.50	321.05	7.35	317.20	1.80	322.87	4.88	318.48	5.52
17-Sep-99	323.94	6.77	323.55	4.45	323.53	4.48	0.01	322.64	4.37	320.82	6.58	321.02	7.38	317.16	1.84	322.65	5.10	318.73	5.27
19-Nov-99	323.83	6.87	#N/A	dry	323.72	4.28	#N/A	322.68	4.33	320.78	6.62	321.01	7.39	317.47	1.53	322.63	5.12	318.87	5.13
28-Apr-00	324.51	6.19	325.07	2.94	324.65	3.36	0.18	323.18	3.83	321.21	6.20	321.03	7.38	318.57	0.44	323.02	4.73	319.72	4.28
25-Jul-00	324.98	5.72	325.68	2.32	325.26	2.74	0.18	323.60	3.41	321.68	5.72	321.67	6.73	317.95	1.05	323.66	3.89	319.96	4.04
1-Dec-00	324.12	6.58	324.20	3.80	324.07	3.93	0.06	322.81	4.20	320.96	6.45	321.05	7.35	317.85	1.15	322.88	4.87	319.15	4.85
24-Jan-01	323.94	6.76	324.05	3.95	323.92	4.08	0.06	322.58	4.43	320.61	6.79	321.04	7.36	317.74	1.26	322.62	5.13	319.00	5.00
20-Apr-01	324.82	5.88	325.59	2.41	325.13	2.87	0.20	323.18	3.83	321.04	6.36	321.18	7.22	318.10	0.90	323.48	4.28	319.88	4.12
6-Jul-01	324.77	5.93	325.39	2.61	324.88	3.13	0.22	323.18	3.83	321.05	6.35	321.24	7.16	317.56	1.44	323.40	4.35	319.52	4.48
10-Sep-01	324.25	6.45	324.02	3.98	323.82	4.18	0.09	322.72	4.29	320.65	6.75	321.08	7.32	#N/A	dry	322.83	4.92	318.88	5.12
26-Nov-01	324.10	6.60	324.27	3.73	324.16	3.84	0.05	322.79	4.22	320.54	6.86	321.09	7.32	#N/A	dry	322.84	4.91	318.97	5.03
9-Jan-02	324.43	6.27	324.69	3.31	324.53	3.47	0.07	322.92	4.09	320.73	6.67	321.09	7.31	317.95	1.05	323.00	4.75	319.26	4.75
6-Mar-02	324.82	5.88	#N/A	fr	324.62	3.39	#N/A	323.26	3.75	321.03	6.37	321.13	7.28	318.46	0.55	323.58	4.18	319.93	4.07
17-Apr-02	325.28	5.42	326.10	1.90	325.62	2.38	0.21	323.48	3.53	321.29	6.11	321.41	6.99	318.59	0.41	323.98	3.77	320.50	3.50
22-May-02	325.40	5.30	326.19	1.81	325.65	2.35	0.23	323.49	3.52	321.40	6.00	321.63	6.77	318.52	0.48	324.02	3.73	319.69	4.31
18-Jun-02	325.20	5.50	326.00	2.00	325.36	2.65	0.28	323.38	3.63	321.27	6.13	321.53	6.87	318.11	0.89	323.79	3.96	#N/A	nm
24-Jul-02	324.92	5.78	325.62	2.38	324.93	3.07	0.30	323.23	3.78	321.14	6.26	321.35	7.05	317.57	1.43	323.56	4.19	319.32	4.68
26-Aug-02	324.61	6.09	324.79	3.21	324.36	3.64	0.19	322.92	4.09	320.89	6.51	321.11	7.29	317.21	1.79	323.17	4.58	319.04	4.96
23-Sep-02	324.40	6.30	324.32	3.68	323.98	4.02	0.15	322.83	4.18	320.78	6.62	321.09	7.31	317.22	1.78	323.03	4.72	318.95	5.05
24-Oct-02	324.19	6.51	324.22	3.78	323.79	4.21	0.19	322.69	4.32	320.58	6.82	321.08	7.32	317.23	1.77	322.83	4.92	318.82	5.18
21-Nov-02	324.07	6.63	324.13	3.87	323.79	4.21	0.15	322.70	4.31	320.52	6.88	321.08	7.32	317.23	1.77	322.79	4.96	318.79	5.21
19-Dec-02	323.95	6.75	#N/A	fr	323.66	4.34	#N/A	322.51	4.50	320.39	7.01	321.08	7.32	317.21	1.79	322.61	5.14	318.67	5.33
23-Jan-03	323.84	6.86	#N/A	fr	323.57	4.43	#N/A	322.41	4.60	320.27	7.13	321.07	7.33	317.21	1.79	322.50	5.25	318.60	5.40
20-Feb-03	323.79	6.91	#N/A	fr	323.46	4.54	#N/A	322.31	4.70	320.21	7.19	321.08	7.32	317.21	1.79	322.33	5.42	318.48	5.52
24-Mar-03	324.20	6.50	#N/A	fr	323.89	4.11	#N/A	322.78	4.23	320.63	6.77	321.08	7.32	318.37	0.63	323.11	4.64	319.02	4.98
23-Apr-03	324.66	6.04	325.47	2.53	324.82	3.18	0.28	323.02	4.00	320.83	6.57	321.08	7.32	318.37	0.63	323.34	4.41	319.63	4.37
26-May-03	324.74	5.96	325.17	2.83	325.09	2.91	0.03	323.15	3.86	320.83	6.57	321.08	7.32	318.52	0.48	323.44	4.31	319.79	4.21
23-Jun-03	324.74	5.96	325.78	2.22	325.06	2.94	0.31	323.04	3.98	320.83	6.57	321.09	7.31	317.98	1.02	323.38	4.37	319.56	4.44
21-Jul-03	324.61	6.09	325.17	2.83	324.75	3.25	0.18	323.01	4.00	320.77	6.63	321.08	7.32	317.68	1.32	323.24	4.51	319.33	4.67
19-Aug-03	324.53	6.17	324.88	3.12	324.66	3.34	0.09	323.09	3.92	320.81	6.59	321.08	7.32	317.82	1.18	323.32	4.43	319.32	4.68
30-Sep-03	324.39	6.31	#N/A	blocked	324.36	3.64	#N/A	323.06	3.95	320.82	6.58	321.07	7.33	317.76	1.24	323.22	4.54	319.17	4.83

Date	BH1 Groundwater		BH2-S Groundwater		BH2-D Groundwater		BH2 S-D Vertical	BH3 Groundwater		BH4 Groundwater		BH5 Groundwater		DP5 Groundwater		DW1 (Rd12) Groundwater		DW2 (Rd 10N) Groundwater	
	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Gradient	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)
21-Oct-03	324.33	6.37	324.69	3.31	324.49	3.51	0.09	322.97	4.04	320.70	6.70	321.07	7.33	317.85	1.15	323.14	4.61	319.26	4.74
17-Nov-03	324.59	6.11	325.16	2.84	324.89	3.11	0.12	323.16	3.85	320.90	6.50	321.07	7.33	318.38	0.62	323.40	4.35	319.75	4.25
17-Dec-03	324.95	5.75	#N/A	fr	325.40	2.60	#N/A	323.23	3.78	321.16	6.24	321.39	7.01	318.51	0.49	323.69	4.06	320.20	3.80
19-Jan-04	325.23	5.47	#N/A	fr	325.44	2.56	#N/A	323.25	3.76	321.21	6.19	321.49	6.91	318.30	0.70	323.72	4.03	320.08	3.92
19-Feb-04	324.97	5.73	#N/A	fr	325.11	2.89	#N/A	#N/A	nm	321.00	6.40	321.30	7.10	318.08	0.92	#N/A	nm	#N/A	nm
31-Mar-04	325.62	5.08	326.61	1.39	325.97	2.03	0.28	323.58	3.43	321.65	5.75	321.76	6.64	318.81	0.19	324.13	3.62	320.92	3.08
27-Apr-04	325.68	5.02	326.41	1.59	325.90	2.10	0.22	323.48	3.53	321.74	5.67	321.95	6.45	318.66	0.34	324.10	3.65	320.58	3.42
25-May-04	325.66	5.04	326.47	1.53	325.86	2.14	0.26	323.45	3.56	321.77	5.63	322.01	6.39	318.62	0.38	324.07	3.68	320.48	3.52
21-Jun-04	325.31	5.39	326.30	1.70	325.56	2.44	0.32	323.27	3.74	321.56	5.84	321.80	6.60	318.04	0.96	323.80	3.95	319.99	4.01
22-Jul-04	324.99	5.71	326.13	1.87	325.17	2.83	0.41	323.11	3.90	321.23	6.17	321.54	6.86	318.00	1.00	323.52	4.23	319.60	4.40
31-Aug-04	324.74	5.96	325.56	2.44	324.80	3.20	0.33	323.09	3.92	321.05	6.35	321.25	7.15	317.48	1.52	323.23	4.52	319.26	4.74
27-Sep-04	324.56	6.14	325.21	2.79	324.53	3.47	0.29	322.87	4.14	320.86	6.55	321.11	7.29	317.21	1.79	323.08	4.67	319.13	4.87
20-Oct-04	324.40	6.30	#N/A	nm	324.26	3.74	#N/A	322.79	4.22	320.73	6.67	321.08	7.32	317.47	1.53	322.96	4.79	318.95	5.05
18-Nov-04	324.32	6.38	324.66	3.35	324.33	3.67	0.14	322.79	4.22	320.70	6.70	321.09	7.31	#N/A	nm	322.75	5.00	319.12	4.88
14-Dec-04	324.36	6.34	#N/A	nm	324.54	3.46	#N/A	322.99	4.02	320.80	6.60	321.08	7.32	318.07	0.93	323.12	4.63	319.30	4.70
21-Jan-05	325.03	5.67	325.74	2.26	325.34	2.66	0.17	323.27	3.74	321.25	6.16	321.41	7.00	318.38	0.63	323.78	3.97	320.19	3.81
17-Feb-05	325.16	5.54	#N/A	fr	325.38	2.62	#N/A	323.49	3.52	321.33	6.07	321.52	6.88	318.74	0.26	323.81	3.95	320.32	3.68
18-Mar-05	325.11	5.59	#N/A	fr	325.32	2.68	#N/A	323.34	3.67	321.20	6.20	321.44	6.96	#N/A	nm	323.68	4.07	320.00	4.00
14-Apr-05	325.63	5.07	326.28	1.72	325.88	2.12	0.17	323.51	3.50	321.71	5.69	321.86	6.54	318.56	0.44	324.08	3.67	320.51	3.49
7-May-05	325.40	5.30	326.27	1.73	325.70	2.30	0.25	323.27	3.74	321.59	5.81	321.79	6.61	318.39	0.61	323.89	3.86	320.27	3.73
22-Jun-05	324.99	5.71	325.97	2.03	325.19	2.81	0.34	323.04	3.97	321.15	6.25	321.45	6.95	317.73	1.27	323.46	4.29	319.67	4.33
21-Jul-05	324.77	5.93	325.50	2.50	324.87	3.13	0.27	323.08	3.93	321.35	6.05	321.42	6.98	317.80	1.98	323.37	4.38	319.60	4.40
10-Aug-05	324.62	6.08	#N/A	nm	324.59	3.41	#N/A	322.94	4.07	321.07	6.33	321.31	7.09	317.65	2.13	323.17	4.58	318.93	5.07
21-Sep-05	324.37	6.33	#N/A	nm	324.18	3.82	#N/A	322.78	4.23	320.83	6.57	321.10	7.30	#N/A	dry	322.94	4.81	319.12	4.88
24-Oct-05	324.23	6.47	325.08	2.92	324.04	3.96	0.45	322.71	4.30	320.74	6.66	321.08	7.32	#N/A	dry	322.84	4.91	319.02	4.98
22-Nov-05	324.19	6.51	324.29	3.71	324.15	3.85	0.06	322.80	4.21	320.86	6.54	321.10	7.30	317.90	1.88	322.91	4.84	319.14	4.86
21-Dec-05	324.31	6.39	#N/A	nm	324.41	3.59	#N/A	322.77	4.24	320.79	6.61	321.09	7.31	317.95	1.83	322.94	4.81	319.37	4.63
16-Jan-06	324.46	6.24	324.86	3.14	324.71	3.29	0.06	322.97	4.04	320.96	6.44	321.08	7.32	318.29	1.49	323.17	4.58	319.77	4.23
14-Feb-06	325.05	5.65	#N/A	nm	325.50	2.50	#N/A	323.25	3.76	321.42	5.98	321.56	6.84	318.50	0.50	323.72	4.03	320.39	3.61
21-Mar-06	325.20	5.50	326.35	1.65	325.90	2.10	0.19	323.46	3.55	321.80	5.60	321.89	6.51	318.58	0.42	323.99	3.76	320.73	3.27
19-Apr-06	324.99	5.71	326.20	1.80	325.59	2.41	0.26	323.28	3.75	321.64	5.76	321.75	6.65	318.48	0.52	323.72	4.03	320.35	3.65
19-May-06	324.95	5.75	326.17	1.83	325.53	2.47	0.28	323.34	3.67	321.63	5.77	321.76	6.64	318.85	0.15	323.72	4.03	320.43	3.57
20-Jun-06	324.81	5.89	325.96	2.04	325.23	2.77	0.31	323.10	3.91	321.31	6.09	321.59	6.81	317.88	1.12	323.43	4.32	319.60	4.40
25-Jul-06	324.61	6.09	#N/A	nm	324.82	3.18	#N/A	323.03	3.98	321.17	6.23	321.37	7.03	317.69	1.31	323.28	4.47	319.68	4.32
18-Aug-06	324.43	6.27	325.12	2.88	324.46	3.54	0.28	322.94	4.07	320.97	6.43	321.20	7.20	317.65	1.35	323.12	4.63	318.98	5.02
24-Sep-06	324.22	6.48	324.47	3.53	324.17	3.83	0.13	322.80	4.21	321.01	6.39	321.10	7.30	317.77	1.23	322.87	4.88	319.19	4.81
28-Oct-06	324.31	6.39	325.15	2.85	324.89	3.11	0.11	323.05	3.96	321.49	5.91	321.39	7.01	318.68	0.32	323.18	4.57	320.08	3.92
26-Nov-06	324.54	6.16	325.80	2.20	325.26	2.74	0.23	323.15	3.86	321.82	5.58	321.64	6.76	318.50	0.50	323.28	4.47	320.35	3.65
29-Dec-06	324.64	6.06	326.01	1.99	325.47	2.53	0.23	323.23	3.78	322.17	5.23	321.89	6.51	318.68	0.32	323.35	4.40	320.58	3.42
23-Jan-07	324.73	5.97	326.10	1.90	325.52	2.48	0.25	323.24	3.77	322.18	5.22	321.99	6.41	318.53	0.47	323.37	4.38	#N/A	#N/A
28-Feb-07	324.52	6.18	325.99	2.01	325.03	2.97	0.41	322.96	4.05	322.02	5.38	321.65	6.75	318.21	0.79	323.10	4.65	319.87	4.13
23-Mar-07	324.76	5.94	#N/A	nm	325.56	2.44	#N/A	323.38	3.63	322.24	5.16	321.97	6.43	318.80	0.20	323.48	4.27	320.72	3.28
30-Apr-07	324.91	5.79	326.24	1.76	325.63	2.37	0.26	323.33	3.68	322.47	4.93	322.18	6.22	318.84	0.16	323.50	4.25	320.66	3.34
28-May-07	324.71	5.99	#N/A	nm	325.37	2.63	#N/A	323.10	3.91	322.24	5.16	321.99	6.41	318.47	0.53	323.24	4.51	320.24	3.76
27-Jun-07	324.55	6.15	325.84	2.16	325.05	2.95	0.34	322.92	4.09	321.76	5.64	321.77	6.63	317.88	1.12	323.15	4.60	319.88	4.12

Date	BH1		BH2-S		BH2-D		BH2 S-D Vertical Gradient	BH3		BH4		BH5		DP5		DW1 (Rd12)		DW2 (Rd 10N)	
	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)		Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)
26-Jul-07	324.40	6.30	#N/A	nm	324.49	3.51	#N/A	322.76	4.25	321.37	6.03	321.43	6.97	317.65	1.35	322.94	4.81	319.37	4.63
30-Aug-07	324.25	6.45	#N/A	nm	323.96	4.04	#N/A	322.63	4.38	321.07	6.33	321.12	7.28	<317.15	dry	322.78	4.97	319.12	4.88
26-Sep-07	324.14	6.56	324.38	3.62	323.60	4.40	0.34	322.53	4.48	320.90	6.50	321.11	7.29	<317.15	dry	322.63	5.12	318.90	5.10
25-Oct-07	324.04	6.66	323.83	4.17	323.48	4.52	0.15	322.58	4.43	320.80	6.60	321.08	7.32	<317.15	dry	322.53	5.22	318.84	5.16
27-Nov-07	324.03	6.67	#N/A	nm	323.52	4.48	#N/A	322.52	4.49	320.88	6.52	321.11	7.29	<317.15	dry	#N/A	#N/A	#N/A	#N/A
20-Dec-07	324.01	6.69	323.89	4.11	323.80	4.20	0.04	322.61	4.40	320.81	6.59	321.08	7.32	<317.15	dry	322.66	5.09	318.97	5.03
28-Jan-08	324.80	5.91	325.24	2.76	325.00	3.00	0.10	323.09	3.92	321.59	5.82	321.52	6.88	318.32	0.68	323.34	4.41	320.18	3.82
25-Feb-08	324.96	5.74	325.80	2.20	325.33	2.67	0.20	323.24	3.77	321.78	5.62	321.73	6.67	318.61	0.39	323.50	4.25	320.57	3.43
14-Mar-08	324.98	5.72	#N/A	fr	325.40	2.60	#N/A	323.25	3.76	321.89	5.51	321.79	6.61	318.48	0.52	323.49	4.26	320.52	3.48
29-Apr-08	325.40	5.30	326.48	1.52	325.92	2.08	0.24	323.43	3.58	322.68	4.72	322.44	5.96	318.54	0.46	323.76	3.99	320.70	3.30
21-May-08	325.21	5.49	326.26	1.74	325.63	2.37	0.27	323.23	3.78	322.59	4.81	322.30	6.10	318.48	0.52	323.11	4.64	320.56	3.44
25-Jun-08	324.93	5.77	325.99	2.01	325.26	2.75	0.32	323.02	3.99	322.07	5.33	321.94	6.46	318.23	0.77	323.28	4.47	320.14	3.86
22-Jul-08	324.90	5.80	325.92	2.08	325.02	2.98	0.39	323.02	3.99	322.02	5.38	321.87	6.53	318.77	0.23	323.23	4.52	320.17	3.83
20-Aug-08	324.79	5.91	325.96	2.04	325.16	2.84	0.34	323.01	4.00	321.83	5.57	321.78	6.62	318.39	0.61	323.22	4.53	320.10	3.90
25-Sep-08	324.71	5.99	325.65	2.35	324.97	3.03	0.29	322.98	4.03	321.69	5.71	321.62	6.78	318.27	0.73	323.17	4.58	319.96	4.04
15-Oct-08	324.59	6.11	325.59	2.42	324.84	3.16	0.32	322.89	4.12	321.46	5.94	321.48	6.92	318.08	0.92	323.05	4.70	319.79	4.21
11-Nov-08	324.49	6.21	325.20	2.80	324.61	3.39	0.25	322.82	4.19	321.25	6.15	321.30	7.10	318.08	0.92	322.94	4.81	319.64	4.37
5-Dec-08	324.68	6.02	325.32	2.68	324.91	3.09	0.18	323.03	3.98	321.56	5.84	321.45	6.95	318.53	0.47	323.17	4.58	320.11	3.89
23-Jan-09	325.09	5.62	#N/A	fr	325.46	2.54	#N/A	323.20	3.82	322.00	5.40	321.93	6.47	#N/A	nm	323.49	4.26	320.26	3.74
17-Feb-09	325.39	5.31	#N/A	fr	325.98	2.02	#N/A	323.65	3.36	322.51	4.89	322.29	6.11	318.85	0.15	323.98	3.77	321.01	2.99
13-Mar-09	325.39	5.31	#N/A	fr	325.99	2.01	#N/A	323.61	3.40	322.65	4.75	322.39	6.01	318.85	0.15	323.91	3.84	321.00	3.00
23-Apr-09	325.33	5.37	326.15	1.85	325.91	2.09	0.10	323.47	3.55	322.65	4.75	322.41	5.99	318.87	0.13	323.78	3.97	320.75	3.25
30-May-09	325.29	5.42	#N/A	nm	325.72	2.28	#N/A	323.36	3.65	322.64	4.76	322.37	6.03	318.88	0.12	323.67	4.08	#N/A	nm
23-Jun-09	325.09	5.61	326.13	1.87	325.42	2.58	0.31	323.16	3.85	322.28	5.12	322.10	6.30	318.37	0.63	323.47	4.28	320.17	3.83
28-Jul-09	324.88	5.82	325.84	2.16	325.10	2.90	0.32	323.01	4.00	321.93	5.47	321.82	6.58	318.18	0.82	323.21	4.54	319.91	4.09
27-Aug-09	324.72	5.98	325.75	2.25	325.29	2.71	0.20	322.95	4.06	321.72	5.68	321.69	6.71	318.09	0.91	323.03	4.72	319.96	4.04
29-Sep-09	324.54	6.16	325.15	2.85	324.49	3.51	0.28	322.81	4.20	321.39	6.01	321.40	7.00	317.69	1.31	322.96	4.79	319.59	4.41
29-Oct-09	324.50	6.20	324.84	3.16	324.47	3.53	0.16	322.79	4.22	321.27	6.13	321.28	7.12	318.01	0.99	322.94	4.81	319.59	4.41
24-Nov-09	324.43	6.27	324.73	3.27	324.36	3.64	0.16	322.79	4.22	321.12	6.29	321.15	7.25	317.87	1.13	322.93	4.82	319.38	4.62
23-Dec-09	324.51	6.19	#N/A	fr	324.54	3.46	#N/A	323.01	4.00	321.14	6.26	321.15	7.25	318.17	0.83	323.14	4.61	319.58	4.42
22-Jan-10	324.57	6.13	324.77	3.23	324.48	3.52	0.12	322.97	4.04	321.05	6.35	321.09	7.31	317.97	1.03	323.10	4.65	319.39	4.61
20-Feb-10	324.57	6.13	#N/A	fr	324.35	3.65	#N/A	322.92	4.09	320.97	6.43	321.08	7.32	317.86	1.14	323.08	4.67	319.26	4.74
20-Mar-10	325.13	5.57	#N/A	fr	325.19	2.81	#N/A	323.73	3.28	322.02	5.38	321.48	6.92	318.79	0.21	323.88	3.87	320.50	3.50
22-Apr-10	325.11	5.59	325.95	2.05	325.47	2.53	0.21	323.67	3.34	321.84	5.56	321.72	6.68	318.51	0.49	323.91	3.84	320.23	3.77
20-May-10	324.96	5.74	325.70	2.30	325.19	2.81	0.22	323.46	3.55	321.61	5.79	321.57	6.83	318.29	0.71	323.68	4.07	319.89	4.11
17-Jun-10	324.85	5.85	325.37	2.63	324.94	3.06	0.19	323.33	3.68	321.51	5.89	321.42	6.98	318.38	0.62	323.49	4.26	319.75	4.25
15-Jul-10	324.70	6.00	325.34	2.66	324.77	3.23	0.25	323.21	3.80	321.40	6.00	321.37	7.03	317.77	1.23	323.38	4.37	319.62	4.38
18-Aug-10	324.53	6.17	325.06	2.94	324.53	3.48	0.23	323.04	3.97	321.30	6.10	321.28	7.12	317.63	1.37	323.20	4.55	319.47	4.53
21-Sep-10	324.39	6.31	324.78	3.22	324.17	3.83	0.26	322.88	4.13	321.11	6.29	321.08	7.32	#N/A	dry	322.99	4.76	319.05	4.95
21-Oct-10	324.29	6.41	324.56	3.44	324.12	3.88	0.19	322.84	4.17	321.03	6.37	321.08	7.32	#N/A	dry	323.18	4.57	319.17	4.83
18-Nov-10	324.25	6.45	324.51	3.49	324.09	3.91	0.18	322.81	4.20	321.00	6.40	321.08	7.32	317.83	1.17	322.87	4.88	319.18	4.82
21-Dec-10	324.34	6.36	#N/A	fr	324.36	3.64	#N/A	322.91	4.10	321.00	6.40	321.07	7.33	317.97	1.03	323.03	4.72	319.35	4.65
17-Jan-11	324.33	6.37	#N/A	fr	324.27	3.73	#N/A	322.87	4.14	320.92	6.48	321.07	7.33	317.94	1.06	322.97	4.78	319.10	4.90
22-Feb-11	324.50	6.20	#N/A	fr	324.24	3.76	#N/A	323.09	3.92	#N/A	#N/A	321.07	7.33	318.39	0.61	323.15	4.60	319.31	4.69

Date	BH1 Groundwater		BH2-S Groundwater		BH2-D Groundwater		BH2 S-D Vertical Gradient	BH3 Groundwater		BH4 Groundwater		BH5 Groundwater		DP5 Groundwater		DW1 (Rd12) Groundwater		DW2 (Rd 10N) Groundwater	
	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)		Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)	Elevation (mAMSL)	Depth (mBGS)
31-Mar-11	325.20	5.50	#N/A	fr	325.52	2.48	#N/A	323.74	3.27	321.50	5.90	321.57	6.83	318.68	0.32	323.99	3.76	320.28	3.72
21-Apr-11	325.19	5.51	326.13	fr	325.58	2.42	0.24	323.78	3.23	321.70	5.70	321.68	6.72	318.66	0.34	323.98	3.77	320.35	3.65
20-May-11	325.36	5.34	326.56	fr	325.96	2.04	0.26	324.09	2.92	322.08	5.32	321.99	6.41	318.76	0.24	324.35	3.40	320.79	3.21
16-Jun-11	325.25	5.45	#N/A	blocked	325.91	2.09	#N/A	323.82	3.19	322.18	5.22	322.16	6.24	318.56	0.44	324.06	3.69	320.50	3.50
19-Jul-11	324.87	5.83	#N/A	blocked	325.29	2.71	#N/A	323.31	3.70	321.84	5.56	321.87	6.53	317.90	1.10	#N/A	removed	319.86	4.14
18-Aug-11	324.61	6.09	#N/A	blocked	324.61	3.39	#N/A	322.98	4.03	321.53	5.87	321.56	6.84	317.64	1.36	#N/A	-	319.51	4.49
22-Sep-11	324.45	6.25	#N/A	blocked	324.14	3.86	#N/A	322.82	4.19	321.29	6.11	321.27	7.13	317.64	1.36	#N/A	-	319.30	4.70
18-Oct-11	324.39	6.31	#N/A	blocked	323.99	4.01	#N/A	322.80	4.21	321.18	6.22	321.15	7.25	#N/A	dry	#N/A	-	319.23	4.77
15-Nov-11	324.41	6.29	#N/A	blocked	324.30	3.70	#N/A	322.96	4.05	321.28	6.12	321.23	7.17	317.70	1.30	#N/A	-	319.33	4.67
20-Dec-11	324.87	5.83	#N/A	blocked	325.23	2.77	#N/A	323.70	3.31	321.73	5.67	321.67	6.73	318.63	0.37	#N/A	-	320.43	3.57
28-Jan-12	324.93	5.77	#N/A	blocked	325.37	2.63	#N/A	323.58	3.43	321.77	5.63	321.79	6.61	318.57	0.43	#N/A	-	320.30	3.70
21-Feb-12	324.94	5.76	#N/A	blocked	325.38	2.62	#N/A	323.55	3.46	321.79	5.61	321.82	6.58	318.48	0.52	#N/A	-	320.20	3.80
14-Jun-12	#N/A	#N/A	#N/A	blocked	324.74	3.26	#N/A	323.01	4.00	321.36	6.04	321.37	7.03	#N/A	#N/A	#N/A	-	319.52	4.48
18-Sep-12	324.04	6.66	#N/A	blocked	323.48	4.52	#N/A	322.58	4.43	320.83	6.57	321.07	7.33	#N/A	#N/A	#N/A	-	#N/A	#N/A
13-Dec-12	324.13	6.57	#N/A	blocked	324.35	3.65	#N/A	322.97	4.04	321.16	6.24	321.10	7.30	318.14	0.86	#N/A	-	318.91	5.09
15-Mar-13	325.34	5.36	#N/A	blocked	325.69	2.31	#N/A	324.07	2.94	321.93	5.47	321.87	6.53	318.72	0.28	#N/A	-	320.96	3.04
20-Jun-13	325.10	5.60	#N/A	blocked	325.52	2.48	#N/A	323.58	3.43	322.02	5.38	322.04	6.36	318.79	0.21	#N/A	-	320.50	3.50
2-Aug-13	324.87	5.83	#N/A	blocked	325.34	2.66	#N/A	323.34	3.67	321.83	5.57	321.88	6.52	317.95	1.05	#N/A	-	320.23	3.77
12-Dec-13	324.75	5.95	#N/A	blocked	325.03	2.97	#N/A	323.28	3.73	321.57	5.83	321.60	6.80	318.27	0.73	#N/A	-	320.11	3.89

mAMSL = metres above mean sea level
mBGS = metres below ground surface

#N/A = no elevation available
ni = not yet installed

nm = not measured
fr = frozen, no measurement

dry = dry, no measurement
positive gradient = downward gradient

Date	DP1			DP2			DP3			DP4			DP6		
	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)
16-Oct-97	326.35	0.10	326.65	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
28-Oct-97	326.63	-0.18	326.64	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17-Nov-97	326.70	-0.25	326.69	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17-Dec-97	326.68	-0.23	326.68	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
21-Jan-98	#N/A	fr	fr	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10-Jun-98	#N/A	nm	nm	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
23-Jun-98	326.86	-0.41	326.86	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
16-Jul-98	326.77	-0.32	326.77	#N/A	#N/A	326.77	#N/A	#N/A	326.77	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17-Jul-98	326.75	-0.30	326.75	326.75	-0.08	326.75	326.74	-0.15	326.75	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
25-Jul-98	326.67	-0.22	326.67	326.68	-0.02	326.68	326.63	-0.04	326.67	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
23-Oct-98	#N/A	dry	dry	325.57	1.09	dry	326.00	0.59	dry	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
6-Apr-99	326.59	-0.14	326.59	326.57	0.10	dry	326.64	-0.05	dry	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17-Jun-99	326.42	0.03	dry	326.33	0.34	dry	326.42	0.17	dry	329.23	0.77	dry	323.58	1.42	dry
30-Jul-99	#N/A	dry	dry	325.54	1.13	dry	325.70	0.89	dry	329.34	0.66	dry	324.47	0.53	dry
17-Sep-99	#N/A	dry	dry	325.54	1.13	dry	#N/A	dry	dry	329.28	0.72	dry	324.18	0.82	dry
19-Nov-99	#N/A	dry	dry	325.58	1.08	dry	326.08	0.51	dry	329.49	0.51	dry	324.49	0.51	dry
28-Apr-00	326.58	-0.13	326.61	326.59	0.08	dry	326.63	-0.04	326.63	330.19	-0.19	330.19	325.29	-0.28	325.23
25-Jul-00	326.70	-0.25	326.65	326.61	0.06	326.65	#N/A	nm	nm	330.23	-0.23	330.09	325.23	-0.23	325.08
1-Dec-00	326.45	0.00	dry	326.32	0.34	dry	326.50	0.09	dry	329.91	0.09	dry	324.76	0.24	dry
24-Jan-01	326.07	0.38	dry	325.65	1.01	dry	326.45	0.14	dry	329.84	0.16	dry	324.98	0.03	dry
20-Apr-01	326.90	-0.45	326.90	326.91	-0.24	326.91	326.90	-0.31	326.90	330.52	-0.52	330.52	325.28	-0.28	325.26
6-Jul-01	326.72	-0.27	326.66	326.63	0.04	dry	326.67	-0.08	dry	330.23	-0.23	330.22	325.10	-0.10	325.03
10-Sep-01	325.91	0.55	dry	325.58	1.09	dry	325.67	0.92	dry	329.32	0.68	dry	324.06	0.94	dry
28-Nov-01	326.21	0.24	dry	326.32	0.35	dry	326.38	0.21	dry	329.82	0.18	dry	324.64	0.36	dry
9-Jan-02	326.33	0.12	dry	326.26	0.41	dry	326.49	0.10	dry	329.89	0.11	dry	325.04	-0.04	fr
6-Mar-02	326.57	-0.12	326.60	326.61	0.06	dry	#N/A	nm	nm	#N/A	nm	nm	#N/A	nm	nm
17-Apr-02	326.77	-0.32	326.80	326.80	-0.13	326.80	326.80	-0.21	dry	330.41	-0.41	dry	325.28	-0.28	325.26
22-May-02	326.87	-0.42	326.87	326.89	-0.22	326.89	326.90	-0.31	326.90	330.49	-0.49	330.22	325.28	-0.28	325.28
18-Jun-02	326.90	-0.45	326.82	326.81	-0.14	326.81	326.83	-0.24	dry	330.42	-0.42	330.11	325.22	-0.22	325.14
24-Jul-02	326.77	-0.32	326.62	326.62	0.05	dry	326.66	-0.06	dry	330.21	-0.21	329.93	325.00	0.00	dry
26-Aug-02	326.54	-0.09	dry	326.21	0.46	dry	326.42	0.17	dry	329.91	0.09	dry	324.45	0.55	dry
23-Sep-02	326.06	0.39	dry	325.70	0.97	dry	325.83	0.76	dry	329.68	0.32	dry	324.12	0.88	dry
24-Oct-02	325.88	0.57	dry	325.65	1.02	dry	325.68	0.91	dry	329.49	0.51	dry	324.05	0.95	dry
21-Nov-02	325.99	0.46	dry	325.78	0.89	dry	325.92	0.67	dry	329.65	0.35	dry	324.11	0.89	dry
19-Dec-02	325.88	0.57	dry	325.57	1.10	dry	325.68	0.91	dry	329.33	0.67	dry	324.13	0.87	dry
23-Jan-03	325.88	0.57	dry	325.52	1.15	dry	#N/A	nm	nm	329.21	0.79	dry	324.15	0.85	dry
20-Feb-03	#N/A	dry	dry	325.55	1.12	dry	325.66	0.94	dry	329.22	0.78	dry	324.06	0.94	dry
24-Mar-03	326.64	-0.19	326.70	326.62	0.05	326.71	326.69	-0.10	326.69	330.12	-0.12	330.15	324.61	0.39	325.24
23-Apr-03	326.75	-0.30	326.75	326.72	-0.05	326.75	326.74	-0.15	326.74	330.33	-0.33	330.35	325.17	-0.17	325.22
26-May-03	326.86	-0.41	326.81	326.78	-0.11	326.81	326.80	-0.21	326.80	330.40	-0.40	330.41	325.26	-0.26	325.24
23-Jun-03	326.87	-0.42	326.75	326.76	-0.09	326.75	326.83	-0.24	326.74	330.33	-0.33	330.33	325.21	-0.21	325.16
21-Jul-03	326.78	-0.31	326.60	326.52	0.15	dry	326.63	-0.04	dry	330.19	-0.19	330.17	325.06	-0.06	dry
19-Aug-03	326.77	-0.32	326.60	326.49	0.18	dry	326.58	0.01	dry	330.14	-0.14	330.13	325.00	0.00	325.03
30-Sep-03	326.61	-0.16	dry	326.35	0.32	dry	326.52	0.07	dry	330.03	-0.03	330.04	324.86	0.14	dry
21-Oct-03	326.63	-0.18	dry	326.36	0.31	dry	326.54	0.05	326.62	330.03	-0.03	dry	324.97	0.03	325.05

Date	DP1			DP2			DP3			DP4			DP6		
	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Depth (mBGS)	Pond Elevation (mAMSL)
17-Nov-03	326.69	-0.24	326.58	326.54	0.13	dry	326.64	-0.05	326.65	330.16	-0.16	330.17	325.20	-0.20	325.25
17-Dec-03	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
19-Jan-04	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
19-Feb-04	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
31-Mar-04	#N/A	nm	nm	326.98	-0.31	327.16	327.08	-0.49	327.15	#N/A	nm	330.69	325.04	-0.04	325.29
27-Apr-04	#N/A	nm	nm	327.16	-0.49	327.16	327.15	-0.56	327.15	#N/A	nm	nm	324.98	0.02	325.26
25-May-04	#N/A	nm	nm	327.14	-0.47	327.17	327.15	-0.56	327.15	#N/A	nm	nm	325.26	-0.26	325.27
21-Jun-04	#N/A	nm	nm	327.07	-0.40	327.03	327.06	-0.47	327.02	330.59	-0.59	330.59	325.20	-0.20	325.18
22-Jul-04	327.06	-0.61	326.87	326.90	-0.23	326.87	326.87	-0.28	326.87	330.45	-0.45	330.45	325.10	-0.10	dry
31-Aug-04	327.04	-0.59	326.73	326.72	-0.05	326.75	326.74	-0.15	326.74	330.31	-0.31	330.32	324.78	0.22	dry
27-Sep-04	326.84	-0.39	326.45	326.57	0.10	dry	326.61	-0.02	dry	330.14	-0.14	dry	#N/A	nm	nm
20-Oct-04	326.77	-0.32	326.45	326.48	0.19	dry	326.57	0.02	dry	330.10	-0.10	dry	#N/A	m	nm
14-Dec-04	#N/A	fr	326.62	326.62	0.05	326.65	#N/A	nm	fr	#N/A	nm	fr	325.00	0.00	325.16
21-Jan-05	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
17-Feb-05	#N/A	fr	fr	#N/A	fr	326.99	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
18-Mar-05	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
14-Apr-05	#N/A	nm	nm	327.14	-0.47	327.12	327.12	-0.53	327.12	330.68	-0.68	330.68	325.33	-0.33	325.26
12-May-05	#N/A	nm	nm	327.10	-0.43	327.10	327.09	-0.50	327.09	330.64	-0.64	330.66	325.28	-0.28	325.24
22-Jun-05	327.07	-0.62	326.88	326.87	-0.20	326.87	326.86	-0.27	326.86	330.47	-0.47	330.45	325.12	-0.12	325.06
21-Jul-05	326.97	-0.52	326.72	326.74	-0.07	dry	326.71	-0.12	326.70	330.31	-0.31	330.29	324.80	0.20	dry
10-Aug-05	#N/A	nm	nm	#N/A	nm	nm	326.55	0.04	dry	330.13	-0.13	dry	324.61	0.39	dry
21-Sep-05	326.77	-0.32	dry	326.11	0.56	dry	326.41	0.19	dry	329.96	0.04	dry	324.34	0.66	dry
24-Oct-05	326.73	-0.28	dry	326.15	0.52	dry	326.45	0.14	dry	329.87	0.13	dry	324.40	0.60	dry
22-Nov-05	#N/A	fr	dry	326.35	-0.32	dry	326.54	0.05	dry	329.99	0.01	dry	324.59	0.41	dry
21-Dec-05	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
16-Jan-06	#N/A	fr	fr	326.57	0.10	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
14-Feb-06	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
21-Mar-06	#N/A	fr	fr	#N/A	fr	fr	326.92	-0.33	fr	#N/A	fr	fr	#N/A	fr	fr
19-Apr-06	#N/A	nm	nm	327.03	-0.36	327.01	327.00	-0.41	327.01	330.60	-0.60	330.61	325.30	-0.30	325.26
19-May-06	#N/A	nm	nm	327.04	-0.37	327.03	327.02	-0.43	327.02	#N/A	nm	nm	325.32	-0.32	325.30
20-Jun-06	327.03	-0.58	326.84	326.91	-0.24	326.84	326.86	-0.27	326.83	330.46	-0.46	330.43	325.18	-0.18	dry
25-Jul-06	326.91	-0.46	326.71	326.70	-0.03	dry	326.70	-0.11	326.68	330.32	-0.32	330.29	324.90	0.10	dry
18-Aug-06	326.89	-0.44	dry	326.49	0.18	dry	326.58	0.01	dry	330.19	-0.19	dry	324.49	0.51	dry
24-Sep-06	326.71	-0.26	dry	326.49	0.18	dry	326.57	0.02	dry	330.10	-0.10	330.10	324.24	0.76	dry
28-Oct-06	326.83	-0.38	326.67	326.67	0.00	dry	326.69	-0.10	326.69	330.27	-0.27	330.27	325.11	-0.11	325.29
26-Nov-06	326.86	-0.41	326.77	326.78	-0.11	326.77	326.77	-0.18	326.77	330.39	-0.39	330.39	325.28	-0.28	325.27
29-Dec-06	#N/A	fr	fr	#N/A	fr	326.91	#N/A	fr	326.91	#N/A	fr	fr	#N/A	fr	325.28
23-Jan-07	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
28-Feb-07	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
23-Mar-07	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
30-Apr-07	#N/A	nm	nm	#N/A	nm	nm	327.13	-0.54	327.12	#N/A	nm	nm	325.34	-0.34	325.31
28-May-07	#N/A	nm	nm	327.04	-0.37	327.02	327.12	-0.53	327.01	#N/A	nm	nm	325.32	-0.32	325.26
27-Jun-07	#N/A	nm	nm	326.82	-0.16	dry	326.82	-0.23	326.82	330.41	-0.41	330.40	325.14	-0.14	dry
28-Jul-07	326.77	-0.32	326.57	326.55	0.12	dry	326.60	-0.01	dry	330.17	-0.17	330.14	324.62	0.38	dry
30-Aug-07	326.44	0.01	dry	#N/A	dry	dry	#N/A	nm	dry	329.86	0.14	dry	#N/A	nm	dry

Date	DP1			DP2			DP3			DP4			DP6		
	Groundwater Elevation (mAMSL)	Pond Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Pond Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Pond Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Pond Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Pond Depth (mBGS)	Pond Elevation (mAMSL)
26-Sep-07	325.95	0.50	dry	#N/A	dry	dry	325.88	0.71	dry	329.42	0.58	dry	323.69	1.31	dry
25-Oct-07	325.92	0.53	dry	325.63	1.04	dry	326.14	0.45	dry	329.56	0.44	dry	323.71	1.29	dry
27-Nov-07	326.11	0.34	dry	325.98	0.69	dry	326.35	0.24	dry	329.75	0.25	dry	323.79	1.21	dry
20-Dec-07	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
28-Jan-08	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
25-Feb-08	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
14-Mar-08	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
29-Apr-08	#N/A	nm	nm	327.09	-0.42	327.12	327.09	-0.50	327.09	#N/A	nm	330.65	325.33	-0.33	325.28
21-May-08	327.10	-0.65	327.08	327.10	-0.43	327.08	327.05	-0.46	327.08	330.65	-0.65	330.65	325.30	-0.30	325.28
25-Jun-08	#N/A	nm	nm	326.89	-0.22	326.94	326.90	-0.31	326.90	330.53	-0.53	330.51	325.22	-0.22	325.18
22-Jul-08	326.98	-0.53	326.88	326.84	-0.17	326.90	326.84	-0.25	326.86	330.50	-0.50	330.49	325.20	-0.20	325.27
20-Aug-08	326.96	-0.51	326.81	326.79	-0.12	326.83	326.79	-0.20	326.79	330.42	-0.42	330.42	325.22	-0.22	325.20
25-Sep-08	326.89	-0.44	326.72	326.71	-0.04	326.74	326.71	-0.12	326.71	330.33	-0.33	330.33	325.17	-0.17	325.19
15-Oct-08	326.83	-0.38	326.68	326.66	0.00	dry	326.70	-0.11	326.67	330.27	-0.27	330.28	325.16	-0.16	325.16
11-Nov-08	325.91	0.54	326.64	326.63	0.04	dry	326.63	-0.04	326.63	330.21	-0.21	330.25	325.13	-0.13	325.17
5-Dec-08	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
23-Jan-09	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
17-Feb-09	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
13-Mar-09	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
23-Apr-09	#N/A	fr	327.28	#N/A	fr	327.27	#N/A	fr	327.23	#N/A	fr	330.76	325.32	-0.32	325.32
24-May-09	#N/A	nm	nm	#N/A	nm	nm	327.18	-0.59	327.16	#N/A	nm	nm	325.34	-0.34	325.29
23-Jun-09	#N/A	nm	nm	327.05	-0.38	327.06	327.05	-0.46	327.03	#N/A	nm	nm	325.27	-0.27	325.21
24-Jul-09	#N/A	nm	nm	326.91	-0.24	326.89	326.89	-0.30	326.87	330.56	-0.56	330.51	325.11	-0.11	325.09
27-Aug-09	327.05	-0.60	326.79	326.79	-0.12	326.78	326.78	-0.19	326.76	330.45	-0.45	330.41	325.09	-0.09	dry
29-Sep-09	326.93	-0.48	326.63	326.62	0.05	dry	326.65	-0.06	dry	330.27	-0.27	330.24	324.84	0.16	dry
29-Oct-09	326.84	-0.39	326.60	326.59	0.08	dry	326.65	-0.06	dry	330.26	-0.26	330.24	324.87	0.13	dry
24-Nov-09	326.78	-0.33	dry	326.53	0.14	dry	326.62	-0.03	dry	330.19	-0.19	330.17	324.91	0.09	dry
23-Dec-09	#N/A	fr	fr	326.57	0.10	dry	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
22-Jan-10	#N/A	fr	fr	326.48	0.19	dry	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
20-Feb-10	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
20-Mar-10	326.73	-0.28	326.78	326.80	-0.13	326.80	326.76	-0.17	326.75	330.42	-0.42	330.43	325.23	-0.23	325.28
22-Apr-10	#N/A	nm	nm	326.83	-0.16	326.81	326.78	-0.19	326.76	330.48	-0.48	330.46	325.28	-0.28	325.27
20-May-10	326.84	-0.39	326.76	326.78	-0.11	326.78	326.74	-0.15	326.72	330.42	-0.42	330.40	325.30	-0.30	325.26
17-Jun-10	326.83	-0.38	326.71	326.73	-0.06	326.73	326.69	-0.10	326.68	330.38	-0.38	330.34	325.25	-0.25	325.25
15-Jul-10	326.77	-0.32	326.60	326.61	0.06	dry	326.60	-0.01	dry	330.27	-0.27	330.24	325.22	-0.22	325.11
18-Aug-10	326.70	-0.25	dry	#N/A	nm	nm	326.50	0.09	dry	330.16	-0.16	330.12	325.07	-0.07	dry
21-Sep-10	325.93	0.52	dry	326.22	0.45	dry	326.38	0.21	dry	330.04	-0.04	dry	324.79	0.21	dry
21-Oct-10	326.55	-0.10	dry	326.13	0.54	dry	326.43	0.16	dry	330.01	-0.01	dry	324.75	0.25	dry
18-Nov-10	326.50	-0.05	dry	326.27	0.40	dry	326.47	0.13	dry	329.98	0.02	dry	324.84	0.16	dry
21-Dec-10	#N/A	fr	fr	325.90	0.77	dry	326.48	0.11	dry	#N/A	fr	fr	#N/A	fr	fr
17-Jan-11	#N/A	fr	fr	325.66	1.01	dry	326.45	0.14	dry	#N/A	fr	fr	#N/A	fr	fr
22-Feb-11	#N/A	fr	fr	326.37	0.30	dry	#N/A	fr	dry	#N/A	fr	fr	#N/A	fr	fr
31-Mar-11	#N/A	#N/A	fr	326.93	-0.26	326.93	326.91	-0.31	326.91	#N/A	nm	nm	325.21	-0.21	325.33
21-Apr-11	#N/A	#N/A	fr	327.01	-0.34	327.01	326.98	-0.39	326.96	#N/A	nm	nm	325.32	-0.32	325.29
20-May-11	#N/A	#N/A	fr	327.13	-0.46	327.12	327.09	-0.50	327.08	#N/A	nm	nm	325.38	-0.38	325.34

Date	DP1			DP2			DP3			DP4			DP6		
	Groundwater Elevation (mAMSL)	Groundwater Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Groundwater Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Groundwater Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Groundwater Depth (mBGS)	Pond Elevation (mAMSL)	Groundwater Elevation (mAMSL)	Groundwater Depth (mBGS)	Pond Elevation (mAMSL)
16-Jun-11	#N/A	#N/A	fr	327.15	-0.48	327.15	327.12	-0.53	327.09	330.74	-0.74	330.72	325.37	-0.37	325.25
19-Jul-11	#N/A	#N/A	fr	326.90	-0.23	326.90	326.88	-0.29	326.85	330.55	-0.55	330.51	325.17	-0.17	dry
18-Aug-11	326.87	-0.42	326.64	326.64	0.03	dry	326.64	-0.05	dry	330.31	-0.31	330.30	324.66	0.34	dry
22-Sep-11	326.73	-0.28	dry	326.49	0.18	dry	326.52	0.07	dry	330.16	-0.16	330.13	324.29	0.71	dry
18-Oct-11	326.69	-0.24	dry	326.42	0.25	dry	326.51	0.08	dry	330.12	-0.12	dry	324.22	0.78	dry
15-Nov-11	326.75	-0.30	326.52	326.54	0.13	dry	326.60	-0.01	dry	330.22	-0.22	330.19	324.64	0.36	dry
20-Dec-11	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	325.19	-0.19	325.27
26-Jan-12	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
21-Feb-12	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr
14-Jun-12	326.82	-0.37	326.68	326.70	-0.03	dry	326.68	-0.09	326.64	330.37	-0.37	330.32	325.13	-0.13	dry
18-Sep-12	#N/A	dry	dry	#N/A	dry	dry	#N/A	dry	dry	329.55	0.45	dry	#N/A	dry	dry
13-Dec-12	326.30	0.15	dry	326.28	0.39	dry	326.44	0.15	dry	329.99	0.01	dry	325.03	-0.03	fr
15-Mar-13	#N/A	fr	fr	#N/A	fr	326.86	#N/A	fr	326.82	#N/A	fr	fr	#N/A	fr	fr
20-Jun-13	#N/A	nm	nm	#N/A	nm	nm	#N/A	nm	nm	#N/A	nm	nm	#N/A	nm	nm
2-Aug-13	326.95	-0.50	326.85	326.87	-0.20	326.85	326.84	-0.25	326.79	330.49	-0.49	330.48	325.23	-0.23	325.32
12-Dec-13	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr	#N/A	fr	fr

mAMSL = metres above mean sea level

mBGS = metres below ground surface

#N/A = no elevation available

ni = not yet installed

nm = not measured

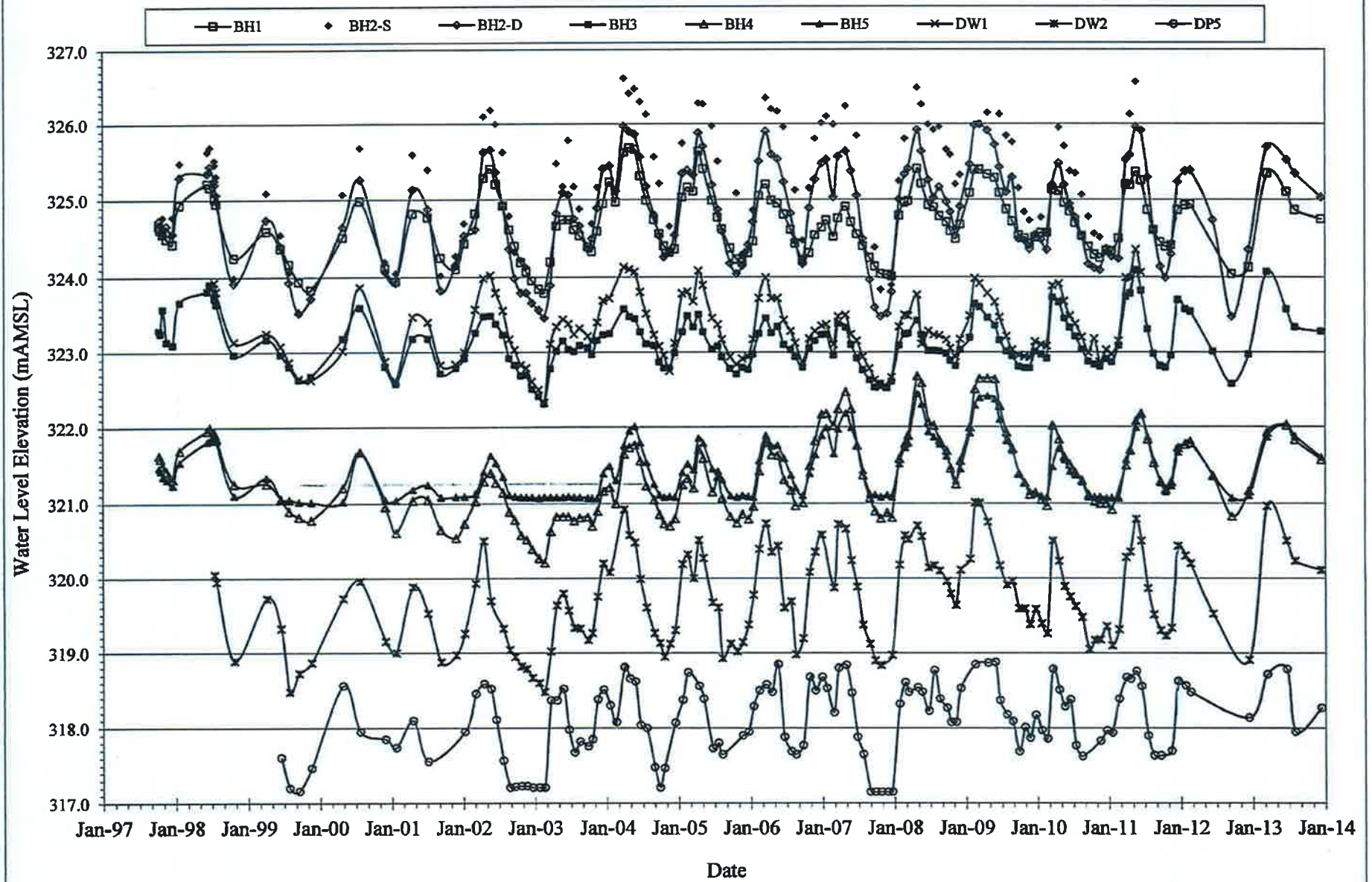
fr = frozen, no measurement

dry = dry, no measurement

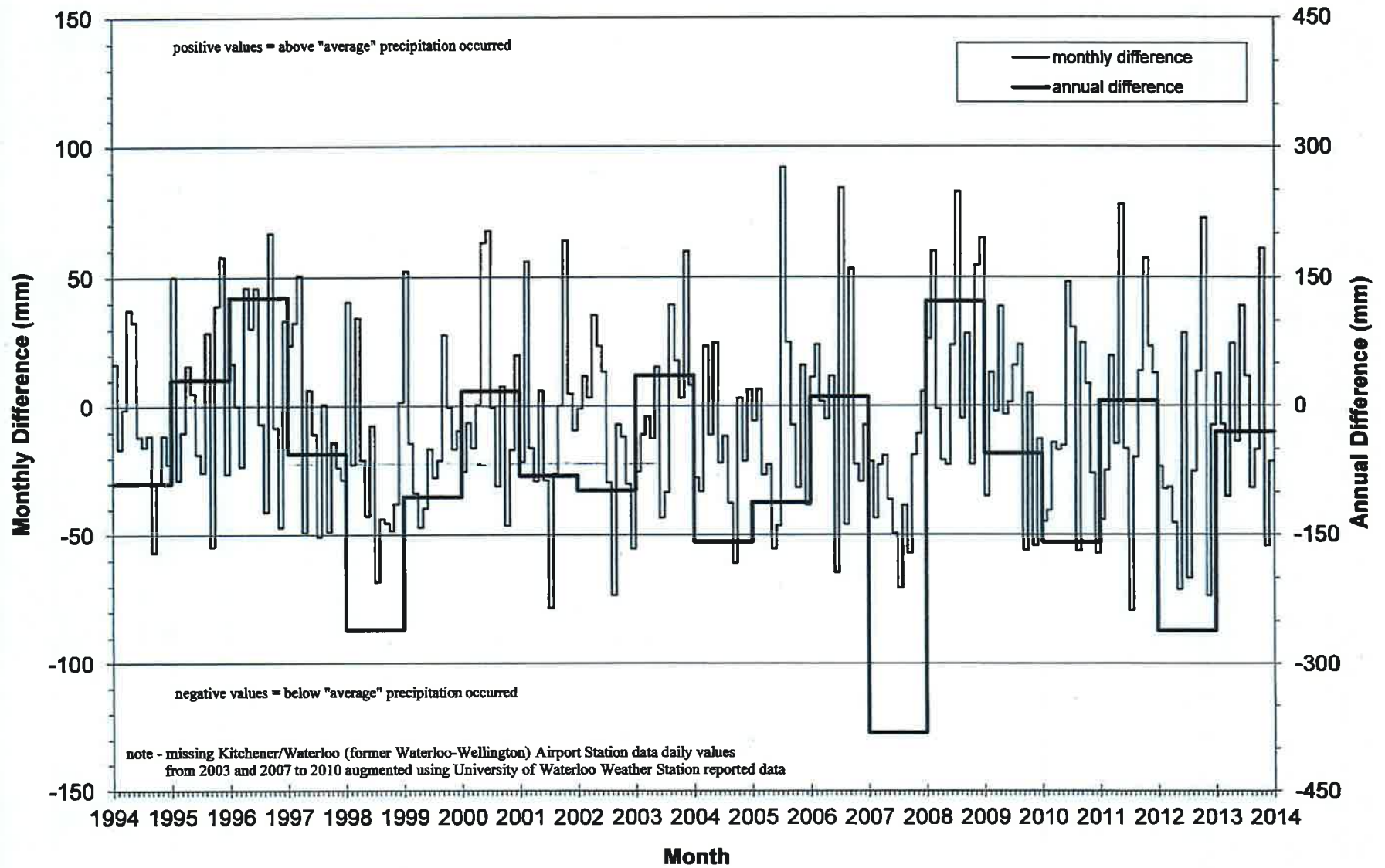
negative depth = water level in piezometer above ground surface

Date	Measured Water Depth (m)	Measured Water Width (m)	Cross-Sectional Area (m ²)	Estimated Flow (L/s)	Measurement Method
24-Apr-99	0.03	0.095	0.0045	n/a	area
17-Jun-99	dry	dry	0	0	observation
30-Jul-99	dry	dry	0	0	observation
17-Sep-99	dry	dry	0	0	observation
19-Nov-99	dry	dry	0	0	observation
28-Apr-00	n/a	n/a	n/a	0	observation
25-Jul-00	n/a	n/a	n/a	0	observation
1-Dec-00	n/a	n/a	n/a	0.2	pail / stopwatch
24-Jan-01	n/a	n/a	n/a	0	observation
20-Apr-01	0.08	0.35	0.014	1.8	area / velocity
6-Jul-01	dry	dry	n/a	0	observation
10-Sep-01	dry	dry	n/a	0	observation
26-Nov-01	0.03	0.22	0.0044	0.1	area / velocity
9-Jan-02	0.03	0.22	0.0033	0.01	area / velocity
6-Mar-02	0.065	0.3	0.012	0.7	area / velocity
17-Apr-02	0.08	0.4	n/a	2.4	area / velocity
22-May-02	0.09	0.43	0.032	6.7	area / velocity
18-Jun-02	0.04	0.34	0.01	0.9	area / velocity
24-Jul-02	dry	dry	n/a	0	observation
26-Aug-02	dry	dry	n/a	0	observation
23-Sep-02	dry	dry	n/a	0	observation
24-Oct-02	dry	dry	n/a	0	observation
21-Nov-02	dry	dry	n/a	0	observation
19-Dec-02	dry	dry	n/a	0	observation
23-Jan-03	dry	dry	n/a	0	observation
20-Feb-03	dry	dry	n/a	0	observation
24-Mar-03	0.05	n/a	n/a	n/a	observation
23-Apr-03	0.08	0.8	0.032	1.9	area / velocity
26-May-03	0.08	0.82	0.033	8.2	area / velocity
23-Jun-03	dry	dry	n/a	0	observation
21-Jul-03	dry	dry	n/a	0	observation
19-Aug-03	dry	dry	n/a	0	observation
30-Sep-03	dry	dry	n/a	0	observation
21-Oct-03	dry	dry	n/a	0	observation
17-Nov-03	dry	dry	n/a	0	observation
17-Dec-03	dry	dry	n/a	0	observation
19-Jan-04	dry	dry	n/a	0	observation
19-Feb-04	dry	dry	n/a	0	observation
31-Mar-04	0.13	0.93	0.08	55.9	area / velocity
27-Apr-04	0.09	0.87	0.05	2.7	area / velocity
25-May-04	0.08	0.82	0.04	8.2	area / velocity
21-Jun-04	0.01	n/a	n/a	0	observation
22-Jul-04	dry	dry	n/a	0	observation
31-Aug-04	dry	dry	n/a	0	observation
27-Sep-04	dry	dry	n/a	0	observation
20-Oct-04	dry	dry	n/a	0	observation
18-Nov-04	dry	dry	n/a	0	observation
14-Dec-04	dry	dry	n/a	0	observation
21-Jan-05	dry	dry	n/a	0	observation
17-Feb-05	dry	dry	n/a	0	observation
18-Mar-05	dry	dry	n/a	0	observation
14-Apr-05	dry	dry	n/a	0	observation
7-May-05	dry	dry	n/a	0	observation
22-Jun-05	dry	dry	n/a	0	observation
21-Jul-05	dry	dry	n/a	0	observation

Hydrograph - Monitors Surrounding Excavation Area



Precipitation Analysis - Kitchener/Waterloo (Airport) Station Reported Precipitation minus 30-yr Normal(1981 to 2010)



6.4(c)



4622 Nassagaweya-Puslinch Townline R.R. 1
 Moffat Ontario Canada L0P 1J0
 Phone: 519.826.0099 fax: 519.826.9099 www.hardenv.com

- Groundwater Studies
- Geochemistry
- Phase I / II
- Regional Flow Studies
- Contaminant Investigations
- OMB Hearings
- Water Quality Sampling
- Monitoring
- Groundwater Protection Studies
- Groundwater Modelling
- Groundwater Mapping

Our File: 9812

February 24, 2014

Township of Puslinch
 7404 Wellington Road 34
 Guelph, ON
 N1H 6H9

Attention: Karen Landry
 CAO

CLERK'S DEPARTMENT	
TO	
Copy	Sarah deBorfolio ✓ Feb 27 2014 on file - ce - MNR
Please Handle	
For Your Information	
Council Agenda	MAR 19/14
File	E13-COX

Dear Mrs. Landry:

Re: Nigro Pit 2013 Monitoring Report

We have reviewed the 2013 Groundwater Monitoring Summary for the CBM Nigro pit.

Groundwater levels are measured monthly at six monitoring wells, six drive point locations, one private well and surface water flows are measured at one location. 2013 data show no significant change in water levels aside from seasonal variations.

Although proposed threshold levels have not received final approval, they were used to compare to groundwater levels and no levels were below proposed threshold limits. There do not appear to be any significant groundwater or surface water level changes as a result of the extractive operations.

A request has been made to the MNR to reduce the monitoring requirements. The request is to limit groundwater monitoring to on-site monitors BH2, BH3 and BH5. We suggest also monitoring BH1 but are otherwise satisfied with the request for monitoring reduction.

Sincerely,
 Harden Environmental Services Ltd.

A handwritten signature in blue ink that reads "Stan Denhoed".

Stan Denhoed, P.Eng., M.Sc.