

Your ref: DP3733BK

Our ref: 14739/075/CBH/VKR



24<sup>th</sup> September 2018

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**Attn: Mr David Willey**

Dear David

**RE: DP3733BK - Docksway Disposal Site. Latest Area 2 Groundwater and Leachate Quality Monitoring Report, Round 172, June 2018.**

Please find enclosed the results of the groundwater and leachate quality monitoring undertaken at Area 2 of Docksway Disposal Site. Groundwater and leachate sampling is required quarterly at the site in order to comply with Conditions 3.6.1 and 3.6.2 of the site PPC Permit. This report includes discussion on results obtained from monitoring undertaken on 28<sup>th</sup> June 2018. We enclose with this letter report the laboratory analytical certificates for the testing undertaken.

**Field Observations**

Details of the field testing of the Area 2 groundwater samples during Round 172 are presented in Table 1.

Table 1 – Field Testing Results and Observations

Monitoring Point	Date Monitored	Depth to Groundwater/Leachate (m)	pH	Electrical Conductivity (µS/cm)	Temperature (°c)	Dissolved Oxygen (%)
GW06_39	-	No access to monitoring well				
GW07_40	-	Not available – operator error				
GW12_30	-	No access to monitoring well				
GW09_31	28/06/2018	6.10	7.57		11.98	0.70
GW03_09	28/06/2018	8.95	7.88		13.55	29.40
GW09_32	-	Not available – operator error				
GW12_33	28/06/2018	8.60	7.59		14.83	3.20
GW06_34	28/06/2018	8.60	7.74		14.03	2.30
GW09_35	28/06/2018	8.00	7.78		14.65	0.20
GW09_36	28/06/2018	8.25	7.84		15.70	4.70
GW06_37	28/06/2018	7.30	7.88		17.28	3.00
GW06_13	28/06/2018	7.40	8.11		13.59	0.50
GW12_38	28/06/2018	8.10	7.64		13.65	2.80
GW06_14a	28/06/2018	7.80	Not available – unable to pump			
	-					
LF08_07	28/06/2018	14.50	Not available – unable to pump			
C2A	28/06/2018	14.30	8.00	N/A - error	20.97	45.20
C2B	28/06/2018	23.20	7.78	8467	20.59	45.90
C3B	28/06/2018	No access to monitoring well				

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## Laboratory Testing Results

### Compliance Levels

The Control and Compliance limits for Area 2 are reproduced in Tables 2 and 3.

Table 2 – PPC Permit Compliance Levels for Emissions to Groundwater (Hazardous Substances)

Monitoring Well	Benzene	Naphthalene	Xylene	EPH	Arsenic
	Compliance Limit	Compliance Limit	Compliance Limit	Compliance Limit	Compliance Limit
	ug/l	ug/l	ug/l	ug/l	ug/l
GW03_09	2	5	3	Not Required	35
GW06_13	2	5	3	Not Required	50
GW06_14a	2	5	3	Not Required	25
GW06_34	2	5	3	Not Required	65
GW09_36	2	5	3	Not Required	30
GW06_37	2	5	3	Not Required	60
GW06_39	2	5	3	Not Required	50
GW07_40	2	5	3	Not Required	35
GW09_31	13	5	3	Not Required	80
GW09_32	3	5	3	Not Required	30
GW09_35	2	5	3	Not Required	50
GW12_30*	1	1	1	Not Required	160
GW12_33*	1	1	1	Not Required	560
GW12_38*	1	1	1	Not Required	26

Table 3 –PPC Permit Compliance Levels for Emissions to Groundwater (Non-Hazardous Substances)

Monitoring Well	Nickel		Potassium		Ammoniacal Nitrogen	
	Control Level	Compliance Limit	Control Level	Compliance Limit	Control Level	Compliance Limit
	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l
GW03_09	8	10	160	180	30	35
GW06_13	12	14	100	110	30	35
GW06_14a	12	14	160	180	53	60
GW06_34	12	14	310	350	30	35
GW06_36	8	10	100	110	20	23
GW06_37	8	10	100	110	30	35
GW06_39	26.4	30	100	110	20	23
GW07_40	8	10	39.6	45	20	23
GW09_31	8	10	100	110	50	50
GW09_32	8	10	160	180	50	50
GW09_35	8	10	100	110	30	35
GW12_30*	25	30	35	40	10	12
GW12_33*	5	6	50	55	15	18
GW12_38*	25	30	65	70	10	12



\*Compliance levels proposed in the 2017 AEPR for Area 2 and assumed to have been accepted as no further correspondence received from NRW.

Hazardous Substances (formally List I substances)

None of the hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 172.

Non-hazardous Substances

None of the non-hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 172, with the exception of the marginal exceedance (17.8mg/l) of the Control Level (15mg/l) for Ammoniacal Nitrogen in GW12\_33.

**Leachate Measurements**

Leachate levels were recorded at C1B, C1D, C1E, C2A, C2B and LF08\_07 in June, July and August 2018 and the leachate head levels are indicated to be as follows;

Table 4 – Leachate Head

<b>Monitoring Location</b>	<b>Leachate Head (m) in June 2018</b>	<b>Leachate Head (m) in July 2018</b>	<b>Leachate Head (m) in August 2018</b>
C1B	1.52	1.12	1.42
C1D	1.01	1.11	1.51
C1E	1.52	1.26	1.46
C2A	1.08	0.98	1.38
C2B	2.54	2.24	2.74
C2C	n/a	1.86	3.06
LF08_07	1.99	2.04	2.19
C3B	n/a	1.77	1.90

The volumes of leachate removed from Area 2 during June, July and August 2018 are presented in Table 5. The leachate was sampled during R172 from side risers closest to the monitoring location at C2B, and the laboratory analytical certificates are attached to this letter report.

Leachate Removed

The volume of leachate removed from Area 2 (both Cell 1 and Cell 2 combined) is summarised in Table 5 below:

Table 5 – Quarterly Leachate Data from Area 2

<b>Monitoring Round</b>	<b>Leachate Removed (tonnes)</b>
Round 172 June 2018	2008.5
Round 173 July 2018	866.4
Round 174 August 2018	100.6

Concluding Remarks

None of the hazardous or non-hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 172 with the exception of Ammoniacal Nitrogen at GW12\_33 where the Control Level was marginally exceeded. It is not considered that this marginal exceedance of the Control Level requires further investigation at the current time.



The leachate head levels at C2B, C2C and LF08\_07 have been recorded above the permitted level of 2m during the report period.

PBA will continue to monitor and comment on the groundwater quality within subsequent reports. If you have any questions regarding the data, then please do not hesitate to contact us.

Yours sincerely

**Kate Riley**

For and on behalf of

**PETER BRETT ASSOCIATES LLP**

Cc. Jonathan Davey – NCC (Docksway Disposal Site)