



Your Ref: DP3733BK  
Our Ref: 14739/075/CBH/VKR

10<sup>th</sup> February 2020

PPC Team  
Natural Resources Wales  
Rivers House  
Fortran Road  
St. Mellons Business Park  
Cardiff  
CF3 0EY

**Attention of: David Griffiths**

Dear David,

**Re: DP3733BK - Docksway Disposal Site. Latest Area 2 Groundwater Quality Monitoring Report, Round 190, December 2019.**

Please find enclosed the results of the groundwater and leachate quality monitoring undertaken at Area 2 of Docksway Disposal Site. Groundwater and leachate monitoring is required quarterly at the site in order to comply with Conditions 3.6.1 and 3.6.2 of the Environmental Permit (DP3733BK). This report includes discussion on results obtained from monitoring during December 2019.

We enclose with this letter report, Figure 2, a plan showing the locations of the available monitoring points. We also enclose the laboratory analytical certificates.

### Field Observations

Details of the field testing of the Area 2 groundwater and leachate samples during Round 190 are presented in Table 1, together with depths to groundwater and leachate.

*Table 1 - Field Testing Results and Observations – December 2019*

Monitoring Point	Dates Monitored	Depth to Groundwater/Leachate (m)	pH	Electrical Conductivity ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Dissolved Oxygen (%)
GW06_39	18/12/2019	3.34	7.93	4594	11.57	13.9
GW07_40	18/12/2019	4.54	8.61	984	10.00	70.3
GW12_30	18/12/2019	3.68	7.90	2676	10.12	29.8

Caversham Bridge House  
Waterman Place  
Reading  
Berkshire RG1 8DN  
Telephone: +44 (0)118 950 0761  
email: PBA.Reading@stantec.com

Registered Office:  
Stantec UK Ltd  
Buckingham Court  
Kingsmead Business Park  
Frederick Place, London Road  
High Wycombe HP11 1JU  
Registered in England No. 1188070

Monitoring Point	Dates Monitored	Depth to Groundwater/Leachate (m)	pH	Electrical Conductivity ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Dissolved Oxygen (%)
GW09_31	18/12/2019	3.97	8.30	1186	10.89	29.2
GW03_09	18/12/2019	7.52	8.54	4763	10.95	53.1
GW09_32	18/12/2019	8.33	7.97	1647	11.25	23.2
GW12_33	18/12/2019	7.76	7.96	1626	11.57	20.5
GW06_34	18/12/2019	8.13	8.31	1194	9.56	8.1
GW09_35	17/12/2019	8.54	8.43	15,080	11.21	22.6
GW09_36	17/12/2019	7.77	8.49	11,080	11.51	15.1
GW06_37	17/12/2019	8.23	8.52	13,780	10.98	22.3
GW06_13	17/12/2019	5.58	8.69	4.1	9.09	39.9
GW12_38	17/12/2019	7.25	8.49	10,400	10.90	25.0
GW06_14a	17/12/2019	5.58	8.12	18,967	9.24	44.6
LF08_07	17/12/2019	14.47	8.44	9352	11.86	59.9
C1B	20/12/2019	19.87	-	-	-	-
C1D	20/12/2019	10.25	-	-	-	-
C1E	20/12/2019	23.14	-	-	-	-
C2A	20/12/2019	13.36	-	-	-	-
C2B	17/12/2019	23.64	9.13	17,340	6.61	62.1
C3B	20/12/2019	11.66	n/a	n/a	n/a	n/a
C4	20/12/2019	5.00	n/a	n/a	n/a	n/a

n/a = no access

### Laboratory Testing Results

#### Compliance Levels

The agreed Control levels and Compliance limits for Area 2 'priority contaminants' are reproduced in Tables 2 and 3 below.

**Table 1 - 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
	µg/l	µg/l	µg/l	µg/l	µg/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
GW06_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 2 - 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
	µg/l	µg/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

#### Hazardous Substances (formally List I substances)

All the hazardous substances specified as “priority contaminants” in the Area 2 Hydrogeological Risk Assessment were monitored in groundwater samples from compliance wells in December 2019 and were recorded below the Control Level and Compliance Limits.

#### Non-hazardous Substances

None of the non-hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits in the groundwater sampled during Round 190 with the exception of Nickel at GW09\_32. At this location the concentration of Nickel was recorded at 11.1µg/l which is marginally above the Compliance Limit (10 µg/l).

#### **Leachate Measurements and Laboratory Test Results**

Leachate levels were recorded at C1B, C1D, C1E C2A, C2B, C2C, C3B, C4 and LF08\_07 in September 2019 and the leachate head levels are indicated to be as follows:

*Table 4 - Leachate Head*

Monitoring Location	Leachate Head (m) in December
C1A	N/R
C1B	3.05
C1D	1.66
C1E	1.52
C2A	2.02
C2B	2.10
C2C	N/R
C3B	0.24
C4	0.00
LF08_07 (Cell 1)	2.02

N/R = Not Recorded

Of the eight leachate head levels measured, four (C1D, C1E, C3B and C4) are below the permitted level of 2m. Of the remaining four, three (C2A, C2B, LF08\_07) are within 10% of the permitted level of 2m. C1B is in excess of 1m above the permitted level.

#### Leachate Removed

During October to December 2019, a total of 3,218,220 kg of leachate was removed from Area 2 (Cells 1 to 4 combined).

### Concluding Remarks

None of the hazardous or non-hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits and Control Levels at the wells sampled during Round 188 to Round 190 with the exception of Nickel at GW09\_32. This single marginal exceedance of the well specific compliance limit is not considered to represent a significant risk to the environment and therefore no mitigation measures are considered necessary. The concentration of Nickel will be reviewed at this location in subsequent monitoring rounds and reported.

The leachate head recorded at C1B is greater than 1m above the permitted level.

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



**Kate Riley**

**Associate**

on behalf of Stantec UK Ltd

Encs – Laboratory Certificates

Figure 2

CC. Silvia Gonzalez-Lopez – Newport City Council  
Robert Hughes – NCC (Docksway Disposal Site)