

Your Ref: DP3733BK

Our Ref: 49428/3501/CBH/VKR/MRG/AREA 2 GW & LEACHATE

4th May 2021

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

Attn: Tyrone Ward

Dear Tyrone,

Re: DP3733BK – Docksway Disposal Site. Latest Area 2 Groundwater and Leachate Quality Monitoring Report, Round 205, March 2021.

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 of results obtained from monitoring during March 2021.

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 205 are presented in Table 1, together with depths to groundwater and leachate.

Table 1 Field Testing Results and Observations – March 2021

Monitoring Point	Dates Monitored	Depth to Groundwater/Leachate (m)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Dissolved Oxygen (%)
GW06_39	22/03/2021	4.09	8.48	6062	12.22	43.3
GW07_40	22/03/2021	5.13	9.34	2235	11.79	49
GW12_30	22/03/2021	4.25	8.54	2444	11.63	45.2
GW09_31	22/03/2021	5.79	8.86	2280	11.89	56.6
GW03_09	23/03/2021	7.7	8.74	10262	11.7	49.5
GW09_32	22/03/2021	8.87	8.64	13260	12.54	26.9
GW12_33	22/03/2021	7.91	8.56	22117	12.46	32.3
GW06_34	22/03/2021	8.46	9.22	1395	11.8	46.6
GW09_35	23/03/2021	8.96	8.78	15940	12.64	48.5
GW06_36	23/03/2021	8.54	8.97	12548	13.87	49.4
GW06_37	23/03/2021	8.12	9.07	12056	12.91	41.2
GW06_13	23/03/2021	7.73	9.15	11790	12.41	34.6

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Monitoring Point	Date Monitored	Depth to Groundwater/ Leachate (m)	pH	Electrical Conductivity (µS/cm)	Temperature (°c)	Dissolved Oxygen (%)
GW12_38	23/03/2021	7.96	9.13	2165	12.15	72.7
GW06_14a	23/03/2021	4.25	9.22	6136	12.00	57.2
LF08_07 (leachate)	17/03/2021	13.93	8.59	9960	18.96	55.6
C1A (leachate)	30/03/2021	18.97	Not sampled (dip level only)			
C1B (leachate)	30/03/2021	19.86				
C1D (leachate)	30/03/2021	10.28				
C1E (leachate)	30/03/2021	22.48				
C2A (leachate)	30/03/2021	12.12				
C2B (leachate)	17/03/2021	-				
C2C (leachate)	30/03/2021	17.75	Not sampled (dip level only)			
C3B (leachate)	30/03/2021	12.3	9.2	28464	24.7	7
C4 (leachate)*	17/03/2021	-	8.72	15320	16.9	36.9

*Sample taken from tanker as unable to access location

Groundwater 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 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
	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 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
	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

Priority Contaminants

Hazardous Substances (formally List I substances)

All of the hazardous substances specified as “priority contaminants” in the Area 2 Hydrogeological Risk Assessment were monitored in groundwater samples from compliance wells in March 2021 and were recorded below the Control Level and Compliance Limits.

Non-hazardous Substances

The majority of the non-hazardous substances agreed as “priority contaminants” did not exceed the well specific Compliance Limits in the groundwater sampled during Round 205. The exception to this was Potassium and Ammoniacal Nitrogen in GW12_33. In this sample a concentration of 133mg/l of Potassium was recorded compared to a compliance limit of 55mg/l. This is the highest concentration of Potassium recorded at this well since commencement of monitoring. For Ammoniacal Nitrogen a concentration of 57.5mg/l was recorded against a compliance limit of 18mg/l. This is the highest concentration of Ammoniacal Nitrogen recorded at this well since commencement of monitoring.

Leachate Measurements and Laboratory Test Results

Leachate levels were recorded at C1A, C1B, C1D, C1E C2A, C2B, C2C, C3B, C4 and LF08_07 in March 2021 and the leachate head levels are indicated to be as follows:

Table 4 Leachate Head

Monitoring Location	Leachate Head (m)
C1A	2.87
C1B	3.06
C1D	1.63
C1E	2.18
C2A	3.26
C2B	Unable to dip
C2C	2.62
C3B	2.60
C4	1.50
LF08_07 (Cell 1)	2.56

Of the nine monitoring points, seven (C1A, C1B, C1E, C2A, C2C, C3B and LF08_07) are above the permitted level of 2m. Monitoring point C2B was unable to be dipped. At the remaining two monitoring points, leachate head levels are at or below the permitted level.

Leachate Removed

During January 2021 to March 2021 a total of 10,896,120kg of Leachate was removed from Area 2 (Cells 1 to 4 combined).

Concluding Remarks

The exceedance of Potassium and Ammoniacal Nitrogen at GW12_33 in March 2021 is not, at this time, considered to represent a significant deterioration in groundwater quality and remedial action is not being considered. However, the concentrations of these parameters will be closely monitored during subsequent monitoring rounds.

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.

Yours sincerely



Kate Riley

Senior Associate

on behalf of Stantec UK Ltd

Encls: Laboratory Certificates

Figure 2

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