



2183

Final Report

Report No.: 23-19888-1

Initial Date of Issue: 21-Jun-2023

Re-Issue Details:

Client Jackson Geo Services

Client Address: Northwood Farm
Coxbridge Road
Baltonsborough
Somerset
BA68 RA

Contact(s): Adam Putt

Project G23012B GCRE Bridge Works

Quotation No.: Q22-29781

Date Received: 12-Jun-2023

Order No.:

Date Instructed: 12-Jun-2023

No. of Samples: 2

Turnaround (Wkdays): 7

Results Due: 20-Jun-2023

Date Approved: 21-Jun-2023

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: G23012B GCRE Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-19888	23-19888
Quotation No.: Q22-29781	Chemtest Sample ID.:				1655699	1655700
	Sample Location:				BR-TP03	BR-TP04
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.20	0.50
	Bottom Depth (m):				0.30	0.60
	Date Sampled:				02-Jun-2023	02-Jun-2023
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	11	13
pH	U	2010		4.0	8.5	9.8
Acid Neutralisation Capacity	N	2015	mol/kg	0.0020	0.013	0.010
Total Organic Carbon	U	2625	%	0.20	25	25

Results - 2 Stage WAC

Project: G23012B GCRE Bridge Works

Chemtest Job No: 23-19888							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1655699							Limits			
Sample Ref:							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID:										
Sample Location: BR-TP03										
Top Depth(m): 0.20										
Bottom Depth(m): 0.30										
Sampling Date: 02-Jun-2023										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	U	%				25	3	5	6
Loss on Ignition								--	--	10
Total BTEX								6	--	--
Total PCBs (7 congeners)								1	--	--
TPH Total WAC (Mineral Oil)								500	--	--
Total (of 17) PAHs								100	--	--
pH	2010	U						8.5	--	>6
Acid Neutralisation Capacity						--	To evaluate	To evaluate		
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1455	U	0.0007	0.0008	0.0014	0.0078	0.5	2	25	
Barium	1455	U	0.25	0.090	0.50	1.1	20	100	300	
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5	
Chromium	1455	U	0.0012	0.0009	0.0024	0.0094	0.5	10	70	
Copper	1455	U	0.0042	0.0025	0.0083	0.0057	2	50	100	
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2	
Molybdenum	1455	U	0.0050	0.0021	0.010	0.025	0.5	10	30	
Nickel	1455	U	0.0008	0.0006	0.0016	0.0059	0.4	10	40	
Lead	1455	U	< 0.0005	0.0026	< 0.0005	0.022	0.5	10	50	
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5	
Selenium	1455	U	0.0016	< 0.0005	0.0032	0.0022	0.1	0.5	7	
Zinc	1455	U	0.006	0.008	0.012	0.075	4	50	200	
Chloride	1220	U	4.0	< 1.0	< 10	< 10	800	15000	25000	
Fluoride	1220	U	0.13	0.11	< 1.0	1.1	10	150	500	
Sulphate	1220	U	22	4.3	44	67	1000	20000	50000	
Total Dissolved Solids	1020	N	220	63	430	850	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	9.5	4.5	< 50	52	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.329
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.241

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: G23012B GCRE Bridge Works

Chemtest Job No: 23-19888							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1655700							Limits			
Sample Ref:							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID:										
Sample Location: BR-TP04										
Top Depth(m): 0.50										
Bottom Depth(m): 0.60										
Sampling Date: 02-Jun-2023										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	U	%				25	3	5	6
Loss on Ignition								--	--	10
Total BTEX								6	--	--
Total PCBs (7 congeners)								1	--	--
TPH Total WAC (Mineral Oil)								500	--	--
Total (of 17) PAHs								100	--	--
pH	2010	U						9.8	--	>6
Acid Neutralisation Capacity							--	To evaluate	To evaluate	
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1455	U	0.0013	0.0007	0.0027	0.0076	0.5	2	25	
Barium	1455	U	0.16	0.075	0.31	0.86	20	100	300	
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5	
Chromium	1455	U	0.048	0.022	0.095	0.25	0.5	10	70	
Copper	1455	U	0.071	0.0064	0.14	0.095	2	50	100	
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2	
Molybdenum	1455	U	0.094	0.053	0.19	0.58	0.5	10	30	
Nickel	1455	U	0.015	0.0014	0.029	0.031	0.4	10	40	
Lead	1455	U	< 0.0005	0.0006	< 0.0005	0.0050	0.5	10	50	
Antimony	1455	U	0.0051	0.0018	0.010	0.022	0.06	0.7	5	
Selenium	1455	U	0.014	0.0069	0.028	0.079	0.1	0.5	7	
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200	
Chloride	1220	U	35	5.7	69	96	800	15000	25000	
Fluoride	1220	U	0.37	0.31	< 1.0	3.2	10	150	500	
Sulphate	1220	U	29	32	57	320	1000	20000	50000	
Total Dissolved Solids	1020	N	1200	1500	2400	15000	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	11	2.9	< 50	< 50	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	13

Leachate Test Information	
Leachant volume 1st extract/l	0.323
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.234

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Amended Report

Report No.:	23-22472-2		
Initial Date of Issue:	07-Jul-2023	Date of Re-Issue:	07-Jul-2023
Re-Issue Details:	This report has been revised and directly supersedes 23-22472-1 in its entirety		
Client	Jackson Geo Services		
Client Address:	Northwood Farm Coxbridge Road Baltonsborough Somerset BA68 RA		
Contact(s):	Adam Putt		
Project	G23012B Global Centre Of Excellence Stage II		
Quotation No.:	Q22-29781	Date Received:	03-Jul-2023
Order No.:		Date Instructed:	03-Jul-2023
No. of Samples:	5		
Turnaround (Wkdays):	5	Results Due:	07-Jul-2023
Date Approved:	07-Jul-2023		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: G23012B Global Centre Of Excellence Stage II

Client: Jackson Geo Services	Chemtest Job No.:				23-22472	23-22472	23-22472	23-22472	23-22472
Quotation No.: Q22-29781	Chemtest Sample ID.:				1667781	1667782	1667783	1667784	1667785
Order No.:	Client Sample Ref.:				2	101	3	4	102
	Client Sample ID.:				#86967780574 50002	#20950023886 20004	#86353901674 10003	#18009364892 70004	#18009364892 70007
	Sample Location:				BR-BH01	BR-BH01	BR-BH02	BR-BH02	BR-BH02
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.40	2.00	0.50	1.00	2.80
	Bottom Depth (m):				0.60	2.20	0.70	1.45	3.00
Determinand	Accred.	SOP	Units	LOD					
Moisture	N	2030	%	0.020	6.0	0.32	4.9	15	1.2
pH (2.5:1)	N	2010		4.0	[A] 8.4	[A] 8.8	[A] 8.5	[A] 6.5	[A] 7.4
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] < 0.010	[A] 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total Sulphur	U	2175	%	0.010	[A] 0.32	[A] 0.21	[A] 0.32	[A] 0.069	[A] 0.027
Sulphate (Acid Soluble)	U	2430	%	0.010	[A] 0.21	[A] 0.019	[A] 0.056	[A] < 0.010	[A] < 0.010

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1667781	2	#8696778057450002	BR-BH01		A	Plastic Tub 500g
1667782	101	#2095002388620004	BR-BH01		A	Plastic Tub 500g
1667783	3	#8635390167410003	BR-BH02		A	Plastic Tub 500g
1667784	4	#1800936489270004	BR-BH02		A	Plastic Tub 500g
1667785	102	#1800936489270007	BR-BH02		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

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The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

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Sample Deviation Codes

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- B - Sample age exceeds stability time (sampling to extraction)
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- D - Broken Container
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Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

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Amended Report

Report No.:	23-18994-2		
Initial Date of Issue:	19-Jun-2023	Date of Re-Issue:	27-Jun-2023
Re-Issue Details:	This report has been revised and directly supersedes 23-18994-1 in its entirety		
Client	Jackson Geo Services		
Client Address:	Northwood Farm Coxbridge Road Baltonsborough Somerset BA68 RA		
Contact(s):	Adam Putt James Power		
Project	G23012B Global Centre of Rail Excellence (GCRE) Bridge Works		
Quotation No.:	Q23-31554	Date Received:	06-Jun-2023
Order No.:		Date Instructed:	12-Jun-2023
No. of Samples:	4		
Turnaround (Wkdays):	13	Results Due:	28-Jun-2023
Date Approved:	27-Jun-2023		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Leachate

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:					23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:					1651776	1651778
Order No.:	Client Sample Ref.:					3	1
	Sample Location:					BR-TP04	BR-TP01
	Sample Type:					SOIL	SOIL
	Top Depth (m):					0.50	0.20
	Bottom Depth (m):					0.60	0.30
	Date Sampled:					02-Jun-2023	02-Jun-2023
Determinand	Accred.	SOP	Type	Units	LOD		
pH	U	1010	10:1		N/A	10.7	8.5
Sulphate	U	1220	10:1	mg/l	1.0	35	2.4
Cyanide (Total)	U	1300	10:1	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	10:1	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1455	10:1	µg/l	0.20	1.5	0.63
Cadmium (Dissolved)	U	1455	10:1	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	10:1	µg/l	0.50	8.8	< 0.50
Copper (Dissolved)	U	1455	10:1	µg/l	0.50	33	2.1
Mercury (Dissolved)	U	1455	10:1	µg/l	0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	10:1	µg/l	0.50	4.6	0.50
Lead (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	1.9
Selenium (Dissolved)	U	1455	10:1	µg/l	0.50	1.9	< 0.50
Vanadium (Dissolved)	U	1455	10:1	µg/l	0.50	8.0	< 0.50
Zinc (Dissolved)	U	1455	10:1	µg/l	2.5	< 2.5	2.9
Chromium (Hexavalent)	U	1490	10:1	µg/l	20	< 20	< 20
Total Phenols	U	1920	10:1	mg/l	0.030	< 0.030	< 0.030

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-		-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	18	7.6	12	18
pH	U	2010		4.0	9.6		8.4	8.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40		< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	630		< 10	< 10
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.8		3.0	4.6
Arsenic	U	2455	mg/kg	0.5	18		24	23
Cadmium	U	2455	mg/kg	0.10	0.45		0.82	3.0
Chromium	U	2455	mg/kg	0.5	11		17	17
Copper	U	2455	mg/kg	0.50	82		130	81
Mercury	U	2455	mg/kg	0.05	0.11		0.32	0.32
Nickel	U	2455	mg/kg	0.50	25		38	43
Lead	U	2455	mg/kg	0.50	79		480	470
Selenium	U	2455	mg/kg	0.25	0.79		1.2	1.7
Vanadium	U	2455	mg/kg	0.5	19		36	34
Zinc	U	2455	mg/kg	0.50	190		580	950
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Aliphatic VPH >C5-C6	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C7	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	N	2780	mg/kg	0.10	< 0.10		< 0.10	< 0.10
Total Aliphatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25
Aliphatic EPH >C10-C12	U	2690	mg/kg	2.00	8.1		23	11
Aliphatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05
Aliphatic EPH >C12-C16	U	2690	mg/kg	1.00	4.7		69	4.1
Aliphatic EPH >C16-C21	U	2690	mg/kg	2.00	< 2.0		11	4.9
Aliphatic EPH >C21-C35	U	2690	mg/kg	3.00	< 3.0		< 3.0	14
Aliphatic EPH >C35-C40	N	2690	mg/kg	10.00	< 10		< 10	< 10
Total Aliphatic EPH >C10-C35	U	2690	mg/kg	5.00	17		110	34
Total Aliphatic EPH >C10-C40	N	2690	mg/kg	10.00	17		110	34
Aromatic VPH >C5-C7	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05
Aromatic VPH >C7-C8	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic VPH >C8-C10	U	2780	mg/kg	0.05	< 0.05		< 0.05	< 0.05
Total Aromatic VPH >C5-C10	U	2780	mg/kg	0.25	< 0.25		< 0.25	< 0.25
Aromatic EPH >C10-C12	U	2690	mg/kg	1.00	< 1.0		5.9	< 1.0
Aromatic EPH >C12-C16	U	2690	mg/kg	1.00	< 1.0		38	1.8
Aromatic EPH >C16-C21	U	2690	mg/kg	2.00	5.0		200	24
Aromatic EPH >C21-C35	U	2690	mg/kg	2.00	26		1900	160
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.0		430	27
Total Aromatic EPH >C10-C35	U	2690	mg/kg	5.00	31		2100	180
Total Aromatic EPH >C10-C40	N	2690	mg/kg	10.00	32		2500	210
Total VPH >C5-C10	U	2780	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Total EPH >C10-C35	U	2690	mg/kg	10.00	48		2200	220
Total EPH >C10-C40	N	2690	mg/kg	10.00	49		2700	240
Organic Matter	U	2625	%	0.40	32		27	48
Total Organic Carbon	U	2625	%	0.20	18	6.4	16	28
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20		< 20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0		< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Dichloromethane	N	2760	µg/kg	50	< 50		< 50	< 50
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0		< 5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0		< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0		< 5.0	< 5.0

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10		< 10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10		< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10		< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0		< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10		< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0		< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0		< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50		< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50		< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0		< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Phenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50		4.0	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50		1.3	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	1.2		5.6	7.7
Anthracene	U	2790	mg/kg	0.50	< 0.50		8.0	2.2
Carbazole	U	2790	mg/kg	0.50	< 0.50		1.7	0.67
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	2.3		31	19
Pyrene	U	2790	mg/kg	0.50	1.6		24	14
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	1.3		37	7.5
Chrysene	U	2790	mg/kg	0.50	1.5		50	8.2
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	2.0		57	9.8
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		19	3.2
Benzo[a]pyrene	U	2790	mg/kg	0.50	1.0		< 0.50	6.3
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	0.63		< 0.50	3.3
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		7.8	1.1
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	0.80		< 0.50	3.5
Naphthalene	U	2800	mg/kg	0.10	1.4		7.3	3.3
Acenaphthylene	N	2800	mg/kg	0.10	0.13		20	1.4
Acenaphthene	U	2800	mg/kg	0.10	0.29		2.1	0.60
Fluorene	U	2800	mg/kg	0.10	0.27		7.5	1.6
Phenanthrene	U	2800	mg/kg	0.10	2.4		27	20
Anthracene	U	2800	mg/kg	0.10	0.56		31	4.7
Fluoranthene	U	2800	mg/kg	0.10	3.8		110	43
Pyrene	U	2800	mg/kg	0.10	2.8		85	31
Benzo[a]anthracene	U	2800	mg/kg	0.10	2.3		130	17
Chrysene	U	2800	mg/kg	0.10	2.6		170	19

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	3.6		220	24
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	1.1		68	7.4
Benzo[a]pyrene	U	2800	mg/kg	0.10	2.0		140	16
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	1.6		100	12
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.44		26	1.6
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	1.2		75	9.5
Total Of 16 PAH's	N	2800	mg/kg	2.0	27		1200	210
PCB 81	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 77	U	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010		< 0.010	< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12		< 0.12	< 0.12
Demeton-O	N	2820	mg/kg	0.20				< 0.20
Phorate	N	2820	mg/kg	0.20				< 0.20
Demeton-S	N	2820	mg/kg	0.20				< 0.20
Disulfoton	N	2820	mg/kg	0.20				< 0.20
Fenthion	N	2820	mg/kg	0.20				< 0.20
Trichloronate	N	2820	mg/kg	0.20				< 0.20
Prothiofos	N	2820	mg/kg	0.20				< 0.20
Fensulphothion	N	2820	mg/kg	0.20				< 0.20
Sulprofos	N	2820	mg/kg	0.20				< 0.20
Azinphos-Methyl	N	2820	mg/kg	0.20				< 0.20
Coumaphos	N	2820	mg/kg	0.20				< 0.20
Dichlorvos	N	2820	mg/kg	0.20				< 0.20
Atraton	N	2830	mg/kg	0.20				< 0.20
Prometon	N	2830	mg/kg	0.20				< 0.20
Simazine	N	2830	mg/kg	0.20				< 0.20
Atrazine	N	2830	mg/kg	0.20				< 0.20

Results - Soil

Project: G23012B Global Centre of Rail Excellence (GCRE) Bridge Works

Client: Jackson Geo Services	Chemtest Job No.:				23-18994	23-18994	23-18994	23-18994
Quotation No.: Q23-31554	Chemtest Sample ID.:				1651776	1651777	1651778	1651780
Order No.:	Client Sample Ref.:				3	4	1	1
	Sample Location:				BR-TP04	BR-TP04	BR-TP01	BR-TP03
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.90	0.20	0.20
	Bottom Depth (m):				0.60	1.00	0.30	0.30
	Date Sampled:				02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
	Asbestos Lab:				COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Propazine	N	2830	mg/kg	0.20				< 0.20
Terbutylazine	N	2830	mg/kg	0.20				< 0.20
Secbumeton	N	2830	mg/kg	0.20				< 0.20
Simetryn	N	2830	mg/kg	0.20				< 0.20
Ametryn	N	2830	mg/kg	0.20				< 0.20
Prometryn	N	2830	mg/kg	0.20				< 0.20
Terbutryn	N	2830	mg/kg	0.20				< 0.20
Alpha-HCH	N	2840	mg/kg	0.20				< 0.20
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20				< 0.20
Beta-HCH	N	2840	mg/kg	0.20				< 0.20
Delta-HCH	N	2840	mg/kg	0.20				< 0.20
Heptachlor	N	2840	mg/kg	0.20				< 0.20
Aldrin	N	2840	mg/kg	0.20				< 0.20
Heptachlor Epoxide	N	2840	mg/kg	0.20				< 0.20
Gamma-Chlordane	N	2840	mg/kg	0.20				< 0.20
Alpha-Chlordane	N	2840	mg/kg	0.20				< 0.20
Endosulfan I	N	2840	mg/kg	0.20				< 0.20
4,4-DDE	N	2840	mg/kg	0.20				< 0.20
Dieldrin	N	2840	mg/kg	0.20				< 0.20
Endrin	N	2840	mg/kg	0.20				< 0.20
4,4-DDD	N	2840	mg/kg	0.20				< 0.20
Endosulfan II	N	2840	mg/kg	0.20				< 0.20
Endrin Aldehyde	N	2840	mg/kg	0.20				< 0.20
4,4-DDT	N	2840	mg/kg	0.20				< 0.20
Endosulfan Sulphate	N	2840	mg/kg	0.20				< 0.20
Methoxychlor	N	2840	mg/kg	0.20				< 0.20
Endrin Ketone	N	2840	mg/kg	0.20				< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10		< 0.10	0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Diben[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quantitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Appendix C – Coal Mining Risk Assessment

Coal Mining Risk Assessment

For development at: Site at Onllwyn Road, Onllwyn, Neath Port Talbot, SA10 9HN

For proposal: Realignment of road bridge

Assessment Summary

Assessment Result	MEDIUM RISK
Recommended Further Work	INTRUSIVE GROUND INVESTIGATION

The Coal Authority works to resolve the impacts of mining by growing its expertise, innovation, organisational capability and efficiency.

It manages the effects of past coal mining, including subsidence damage claims which are not the responsibility of licensed coal mine operators and is an executive non-departmental public body, sponsored by the Department for Energy Security and Net Zero. This report is valid for 90 days.

Limit of liability

This report is provided for the applicant and is in respect of the property identified on its face. Any conclusions or recommendations made are those based on information obtained for the report and our current knowledge and practices. The information and data set out in this report is based on information provided by or obtained from third parties which is held by the Coal Authority. Any limitations of the data are identified within the report. The Coal Authority does not accept liability for the accuracy of third party data. Should new data or information become available these results, conclusions and recommendations may require amending. The Authority is not and cannot be liable for any harm, loss or damage of whatever nature, including consequential loss, occasioned to any third party by the inaccuracy of the information set out in this report and any person seeking to rely upon it should if necessary undertake their own investigations and professional advice. The report should only be used in the stated context.

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Any advice provided in this report does not prejudice our position as a statutory consultee.

Version	Compiled	Checked	Date
1.1	PB	HB	18 th July 2023

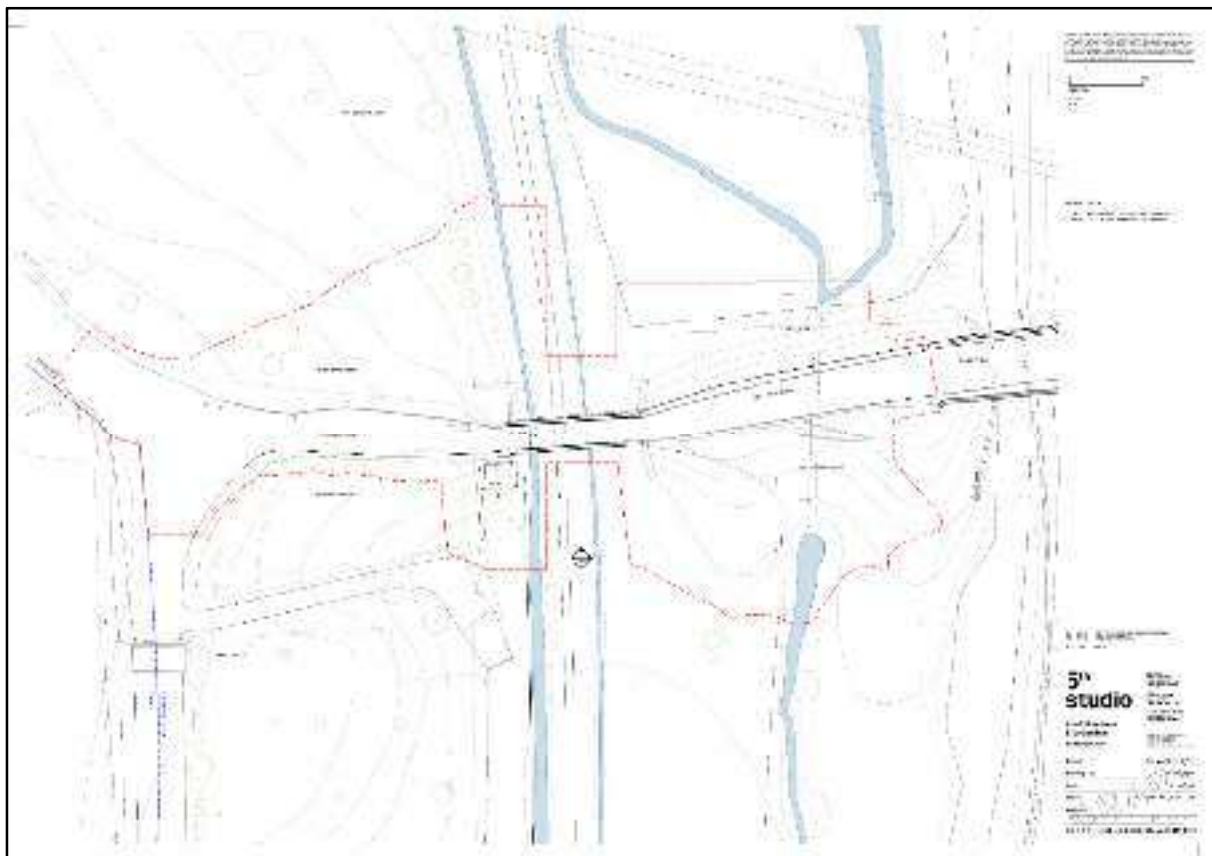
Section 1 – Description of site and proposed development

a) Site location and Description

The Coal Authority has been commissioned to prepare a Coal Mining Risk Assessment Report for a proposed development at Onllwyn Road, Onllwyn, Neath Port Talbot, SA10 9HN (see Figure 1), in order to provide the Local Planning Authority with information on coal mining and an assessment of its impact on land stability.

The approximate site centre co-ordinates are E284127, N210508. The proposed development area requires access via Onllwyn Road. The site has an approximate elevation 228-233m AOD.

Figure 1: Site location plan



b) Description and layout of proposed development

The Coal Authority understands that the developer plans to realign an existing road bridge (see Appendix A).

c) Scope of coal mining risk assessment

The purpose of this Coal Mining Risk Assessment Report is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site.
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues.
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development.
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

Any works that intersect coal mine workings, mine entries or coal seams may have implications for mine gas, spontaneous combustion and surface collapse. Coal Authority permission is required prior to any such works taking place. Further detailed advice can be provided upon request.

The Coal Authority's adopted policies regarding building over or close to mine entries and managing gas risks can be viewed at:

www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries

www.gov.uk/government/publications/guidance-on-managing-the-risk-of-hazardous-gases

Section 2 – Sources of information used to inform this report

Source reviewed	Yes	No	Remarks
Coal mining report	X		Consultants Coal Mining Report (Appendix B)
Other mining records	X		Abandonment plans – 11207, SW164
Geological plans	X		OS Geological Sheet SN81SW
BGS Boreholes	X		SN81SW38, SN81SW39
Other	X		BGS GeoIndex

The above information sources have been used to provide an assessment of the potential mining risk within the remainder of the report.

Section 3 – Identification and assessment of site specific coal mining related risks

The Coal Authority's search of its detailed coal mining information identifies the following site specific coal mining legacy risks to the site.

Coal mining issue	Reported		Risk assessment	
	Yes	No	Rating	Comment
a) Underground coal mining (recorded at shallow depths)	X		Medium risk	Workings in Bute (Peacock) seam may have insufficient cover if overlying Nine Feet seam worked
b) Underground coal mining (probable at shallow depths)	X		Medium risk	Possible unrecorded workings in the Nine Feet seam
c) Mine entries (shafts and adits)	X		Low risk	Two recorded within 100m not considered to influence the proposed development
d) Coal mining geology (faults and fissures)		X	Low risk	Fault recorded 122m west of site locally displacing coal seams
e) Record of past mine gas emissions or potential		X	Medium risk	All mine workings pose a potential gas risk which should be considered in any future investigations and development
f) Recorded coal mining surface hazard		X	Low risk	None recorded
g) Surface mining (opencast workings)	X		Low risk	Onllwyn site recorded to intersect the development site boundary however no workings considered to be of influence

A desk based study of the coal mining information has been used to risk assess the coal mining features above. A summary of the risk posed by these features is summarised after thorough analysis of the information sources. Comment on each specific coal mining issue follows below:

a) Underground Coal Mining (recorded at shallow depths)

Coal mining at depths shallower than 30m beneath ground level can typically pose challenges to ground stability at the surface. The magnitude of this effect depends upon the exact depth of any workings, the thickness of competent rock cover and the extraction thickness of any coal mine workings.

The Coal Authority Consultants Coal Mining Report in Appendix B states that the development site is in an area of recorded shallow coal mine workings. The Consultants Report indicates that the site is underlain by workings in two seams of coal at between 29m to 78m below ground level (bgl). The shallowest of these is the Bute seam, recorded to have been worked beneath the development area at 29m bgl with an extraction thickness of 1.2m and last worked in 1925.

The workings in the Bute seam are shown on abandonment plan 11207 with the seam shown to be locally referred to as the Peacock seam. A section on the plan shows the seam to be 2ft 11in (0.89m) in thickness including a 1in (0.025m) clod parting. Abandonment plan SWR2909 records the Peacock seam in two horizons (Upper Peacock – Bute repeat) and Peacock 2 (Bute/Brass) with the seams shown to be 0.75ft (0.23m) AND 1.58ft (0.48m) in thickness respectively. The two seams are shown to be separated by a 7.9ft (2.41m) mudstone parting.

Abandonment plan 11207 shows workings to the immediate north of the bridge location with a seam level 55m east showing the seam at 671.46ft (204.66m) AOD, equating to a depth of 24.24m bgl. Given the depth to rockhead discussed within section 3d (0.45-1.1m), it is considered that sufficient competent cover is likely to exist above workings in this seam if the overlying Nine Feet seam is found to be intact. If unrecorded workings are found to be present in the Nine Feet seam then it would be prudent to prove sufficient cover above the Bute (Peacock) seam.

Consequently at this time the risk to this development from underground coal mining (recorded at shallow depths) is medium.

b) Underground coal mining (probable at shallow depths)

Areas of probable shallow coal mine workings are identified as part of the Development High Risk Area for which no recorded plan exists, but where it is likely that workable coal at shallow depths has been mined before records were kept. The data has been estimated from available mining records by qualified mining surveyors. Since 1872 there has been a law that requires all coal mine operators to deposit working plans of the mine with the government following the cessation of operations. Prior to this date the plans were often destroyed or kept in private ownership.

Where the extraction of coal has occurred there is the potential for voids to remain long after mining has ceased. The depth of workings generally dictates the length of time that significant voids may remain, but other factors including the size of mine roof supports and the competency of overlying strata can influence the time for natural consolidation to occur. Waste material produced during mining was sometimes used to backfill abandoned sections of mine workings, therefore reducing the volume of open cavities or voids that remain. The method of backfilling workings is typically not recorded and cannot be relied upon as a satisfactory form of remediation.

The Coal Authority Consultants Coal Mining Report in Appendix B states that the development site is not in an area of probable shallow coal mine workings however does record the Lower Nine Foot Top Leaf seam to outcrop within the development site boundary, with the outcrop shown to be orientated approximately NNW-SSE within the development site boundary.

The OS geological sheet SN81SW records the Nine Feet seam to outcrop to the immediate north of the development site boundary, with the generalised vertical section (GVS) recording the seam to be “about 6ft” (1.83m) in thickness and is present 18m above the Bute (Peacock) seam recorded worked and discussed within section 3a.

Abandonment plan SWR164 records the Nine Feet seam to have been extracted by opencast approximately 20m north of the site with the plan recording 50% old workings within the seam.

Given the recorded seam thickness, and likely depth below ground level, it is considered that unrecorded shallow workings may be present in the seam. No further seams are considered likely to influence the proposed development. If unrecorded workings are found to be present in the Nine Feet seam then it would be prudent to prove sufficient cover above the recorded workings in Bute (Peacock) seam.

Consequently the risk to this development from underground coal mining (probable at shallow depths) in the Nine Feet seam is medium.

c) Mine entries (shafts and adits)

The Coal Authority Consultants Coal Mining Report in Appendix B shows two mine entries, both adits, are recorded within 100m of the development site, details of which are recorded in the table below:

Reference	Adit Orientation	Easting	Northing	Plot distance from site boundary	Source
284210-008	165° (SSW)	284177	210379	80m S	1/2500 O.S Sheet Glamorgan 111:12, 1900 & 1920 Edition and SN8410 OS sheets, Ab plans SW61, SW133, SWR75a, SW404, SW150. Geological Sheet Glamorgan 111SE
284210-013	161° (SSW)	284185	210368	94m S	OS 1/2500 Glamorgan 3/12 (1919, 1878)

The Coal Authority seeks to ensure that development is avoided above, or within the zone of influence of, all mine entries where possible. The zone of influence can be calculated as the sum of the departure value (up to 10m to account for discrepancies in source material), plus the local depth to rockhead (discussed in 3d below as likely to be up to 1.1m), plus the entry radius (nominally assumed to be 1.25m unless proven otherwise). On the basis of the above the zone of influence for these entries can be assumed to be a

distance of 12.35m from the recorded positions detailed above. Based on the distance of these entries from the site boundary, the risk to the development from recorded mine entries is considered to be low.

The development site sits within a historical mining area and therefore there is a residual risk of unrecorded mine entries to be present on site. All site operatives should be made aware of this potential risk and a watching brief should be maintained during site works.

d) Coal mining geology (Faults and fissures)

The development site sits upon the South Wales Middle Coal Measures Formation. The closest BGS borehole to the site, SN81SW39 located 75m west of the site records surficial deposits to consist of made ground and clay with a typical thickness of 0.45m in the local area. Borehole SN81SW38 located 95m west records made ground and clay to 1.1m depth.

No faults, fissures or break lines are known to affect the development site, however a fault is recorded to be present approximately 122m west of site, orientated approximately N-S and downthrown to the east, locally displacing coal seams.

Faults can act as pathways for gas and water, cause surface instability and result in dissimilar coal conditions/hazards due to their relative displacement of strata.

e) Record of past mine gas emissions or potential

There are no recorded past gas emissions recorded in the surrounding area, however, coal seams and coal mine workings pose a potential gas risk which should be considered in any future investigations and development. At development sites with shallow coal workings, probable shallow coal mine workings, or pathway features such as mine entries and geological disturbances on or nearby the site, the Coal Authority recommends that a more detailed gas risk assessment to be undertaken in accordance with relevant guidance.

No seam mentioned in this report is recorded as being prone to spontaneous combustion.

f) Recorded coal mining surface hazard

None recorded.

g) Surface mining (opencast workings)

The Consultants Coal Mining Report in Appendix B indicates that a former opencast site to intersect with the development site boundary. Abandonment plan SW164 records workings at the Onllwyn site with the plan showing the site boundary to intersect with the northern extents of the development site boundary. No workings are shown within

the development site boundary and the bridge to be realigned is shown present on the abandonment plan, indicating that the structure falls outside the extraction area. Consequently the risk is considered to be low.

Caution should be applied to any works/loading/vehicle movements in areas where opencast backfill/highwalls may be present.

Section 4 – Proposed mitigation strategy

a) Site investigation and/or remediation

Due to the presence of recorded shallow mine workings in the Bute (Peacock) seam and possible unrecorded shallow mine workings in the Nine Feet seam, an intrusive site investigation will be required.

The site investigations will need to be carried out by a competent contractor, taking into account the findings of this report. The results should be interpreted by a qualified and competent person so that an appropriate remedial strategy can be developed.

Guidance on drilling or piling through coal can be found at:

www.gov.uk/government/publications/guidance-on-managing-the-risk-of-hazardous-gases

Due to the difficulties in identifying coal related gas hazards, it may be prudent to consider completing a gas risk assessment for the development site. This may recommend basic gas protection measures within the foundation design, which are resistant to permanent gases (carbon dioxide, methane, carbon monoxide) and comparable to that suggested in BR211, as commonly used to protect against radon in residential properties.

Where development is proposed over areas of coal or past coal workings at shallow depth, developers should consider wherever possible removing any remnant shallow coal. This will enable the ground to be stabilised and remove a hazard prior to construction of any foundations associated with the development. Prior extraction of surface coal requires an Incidental Coal Agreement from the Coal Authority. Further information can be found at:

www.gov.uk/get-a-licence-for-coal-mining

Should coal seams be found, at or near the depth of the development's foundations, they may pose a risk of spontaneous combustion if exposed to air or may act as pathways for ground gases to reach the development. A competent engineer should be consulted if coal is encountered in, or adjacent to, the foundations of the proposed development.

Concrete, cements and renders may be susceptible to attack from elevated levels of sulfates in the ground. The Building Research Establishment reports that most cases of sulfate attack occur in and adjacent to coal field areas and related industrial centres. It would be prudent for the issue of sulfate attack to be considered during the foundation design to ensure they comply with the Building Regulations 2010.

You may also wish to refer to the Construction Industry Research and Information Association (CIRIA) publication C758 "Abandoned Mine Workings Manual".

b) Coal Authority permit

Any intrusive activities, including initial site investigation boreholes and any subsequent treatment of coal mine workings/coal mine entries for ground stability purposes require the prior written permission of the Coal Authority. Application forms for Coal Authority permission and further guidance on this matter can be obtained from the Coal Authority's website at:

www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property

Follow on services can be requested using the details in the contacts section.

Section 5 – Conclusions

This report has identified that the proposed development site has been subject to past coal mining activity, namely the presence of recorded shallow mine workings in the Bute (Peacock) seam and possible unrecorded shallow mine workings in the Nine Feet seam. The risk to the site from legacy mining features is medium.

Nevertheless, subject to the undertaking of appropriate site investigations and any potential necessary remedial measures as outlined in Section 4a of this report, the Coal Authority considers that the site may be made safe and stable for future development and the risk to the development reduced to low. The recorded coal mining legacy issues present within the site do not pose any particular implications for the layout of the proposed development.

The Coal Authority advises the developer undertake a detailed Gas Risk Assessment where proposed development occurs over shallow coal reserves as is the case here.

Section 6 – Contacts

Planning and Local Authority Liaison Service

Tel: 01623 637 119

Email: planningconsultation@coal.gov.uk

Website: www.gov.uk/planning-applications-coal-mining-risk-assessments

Surface Hazards Emergency Service

Tel: 0800 288 4242 (open 24 hours a day, 7 days a week)

24-hour number for reporting public safety hazards and incidents associated with coal mining

Mining Reports Service

To purchase site specific coal mining information go to our website;

www.groundstability.com

Licensing and Permitting Service

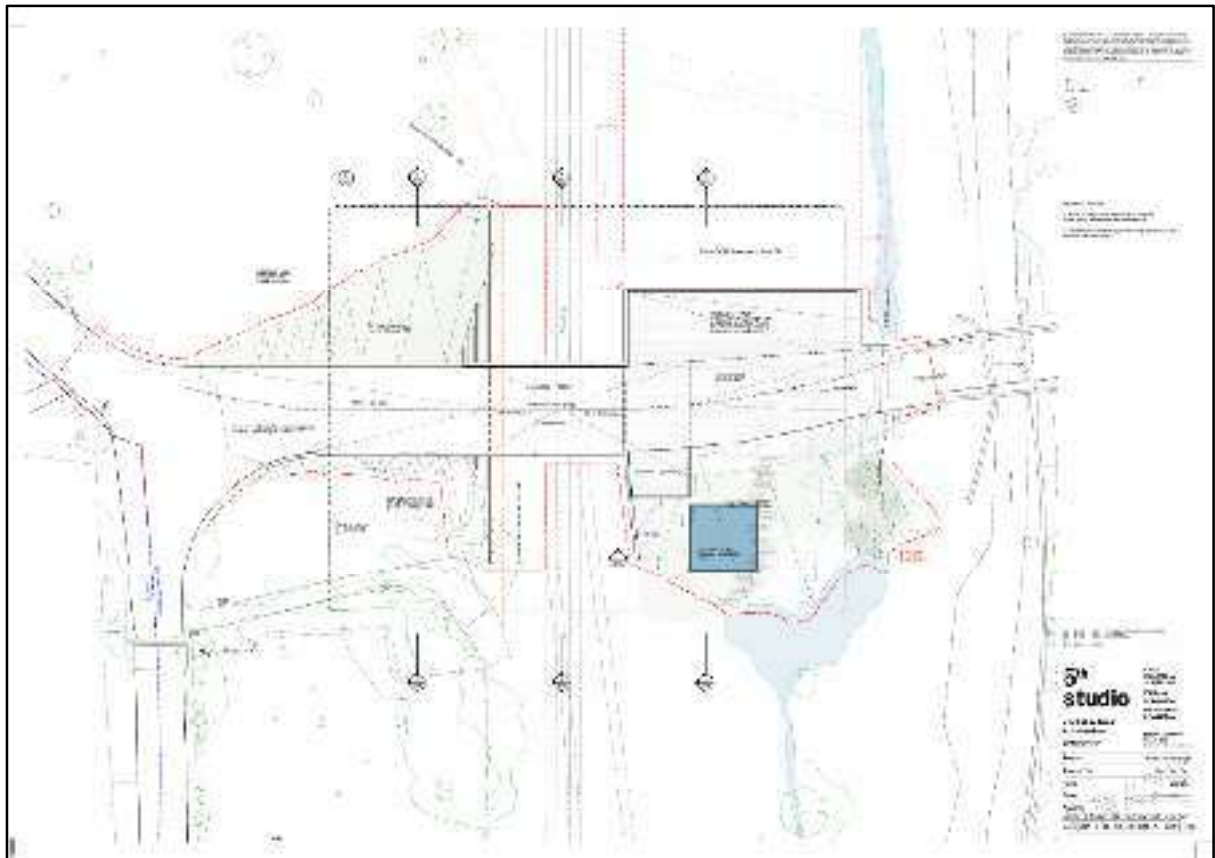
Email: permissions@coal.gov.uk

Tel: 01623 637 320

For permission to enter or disturb coal mine entries and coal seams.

Section 7 – Appendices

Appendix A – Plan showing proposed development layout



Appendix B – Non-Residential Coal Mining Consultants Report



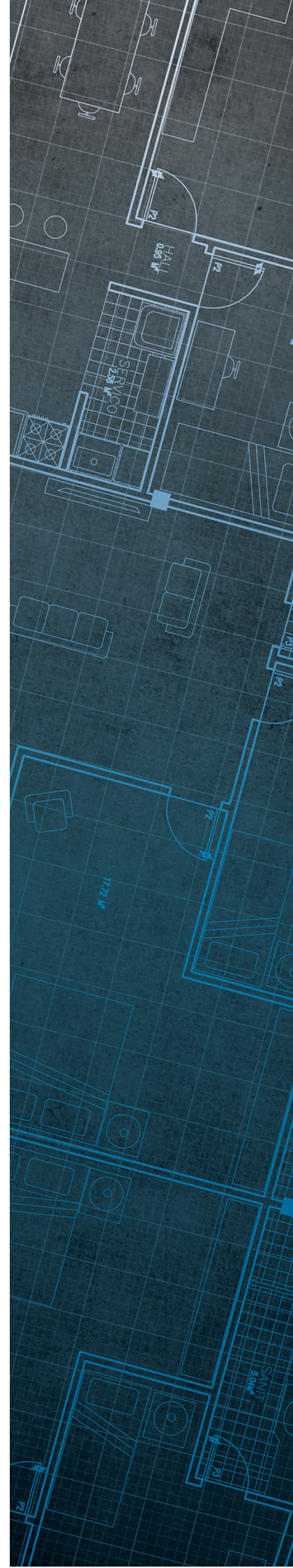
The Coal
Authority

Consultants Coal Mining Report

Site At Onllwyn Road
Onllwyn
Neath Port Talbot
SA10 9HN

Date of enquiry: 19 July 2023
Date enquiry received: 19 July 2023
Issue date: 19 July 2023

Our reference: 71009630927001
Your reference:



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

CMRA THE COAL AUTHORITY

Enquiry address

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Onllwyn
Neath Port Talbot
SA10 9HN

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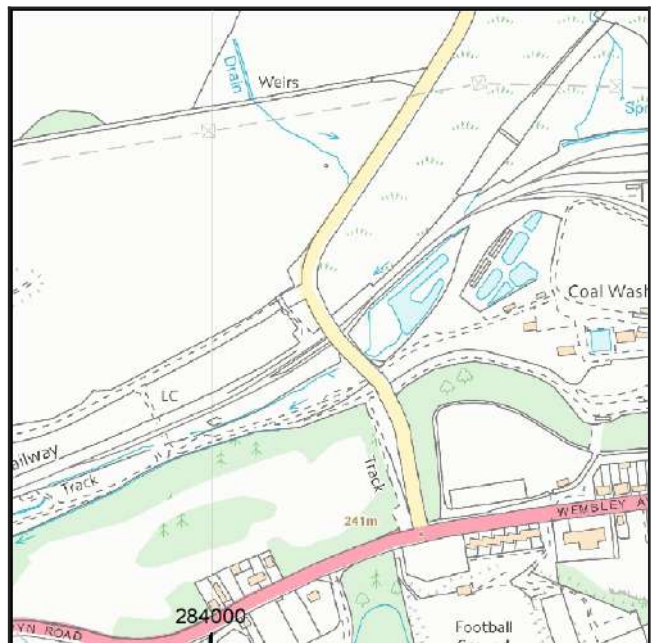
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 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
DULAIS	BUTE	Coal	4HSP	29	Beneath Property	5.4	South	120	1925
DULAIS	LOWER 7FT BOTTOM LEAF	Coal	4HSW	78	Beneath Property	5.3	South	100	1913

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	284210-008	284177 210379	This entry is reported to have been sealed by a heavy steel door. There are no details on the method or date of construction.	Coal	Neath Borough Council 22/07/1985
Adit	284210-013	284185 210368		Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

SWR3710	SW404	11207
SW133	SW150	SWT4094
6784	SWR750	9796

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LOWER NINE FOOT TOP LEAF	Coal	Yes	Within	N/A	159

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

Status	Licence type	Distance (m)	Direction
Past	Opencast	Within	N/A

See Section 4 for further information.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Coal mining licensing

The report has highlighted that the site is close to a Coal Authority license area for coal mining operations. Please contact us if you require further information.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

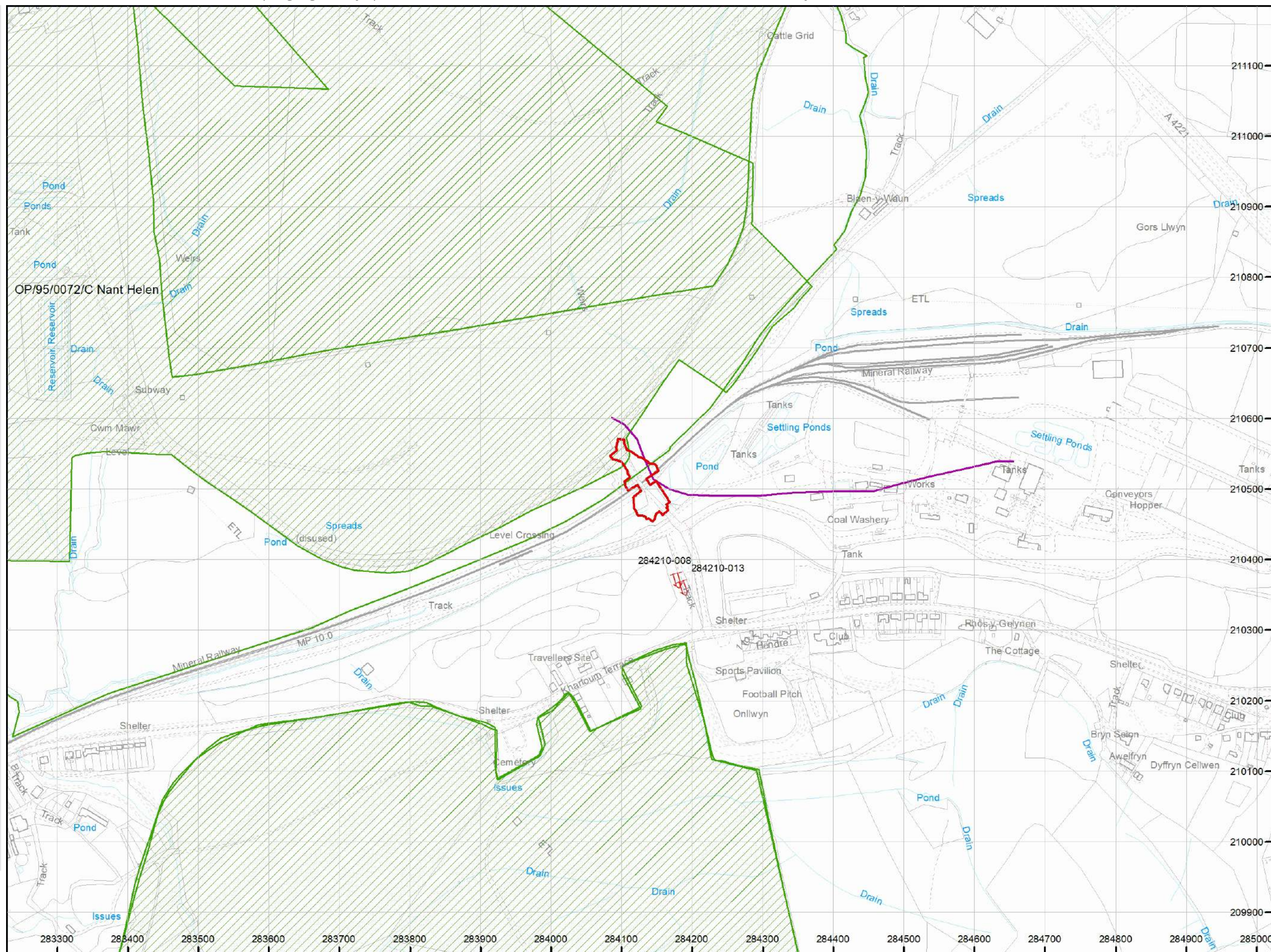
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

Key

Approximate position of the enquiry boundary shown	
Disused adit	
Outcrop (Proven)	
Opencast mine licence area	
Unlicensed opencast site	



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