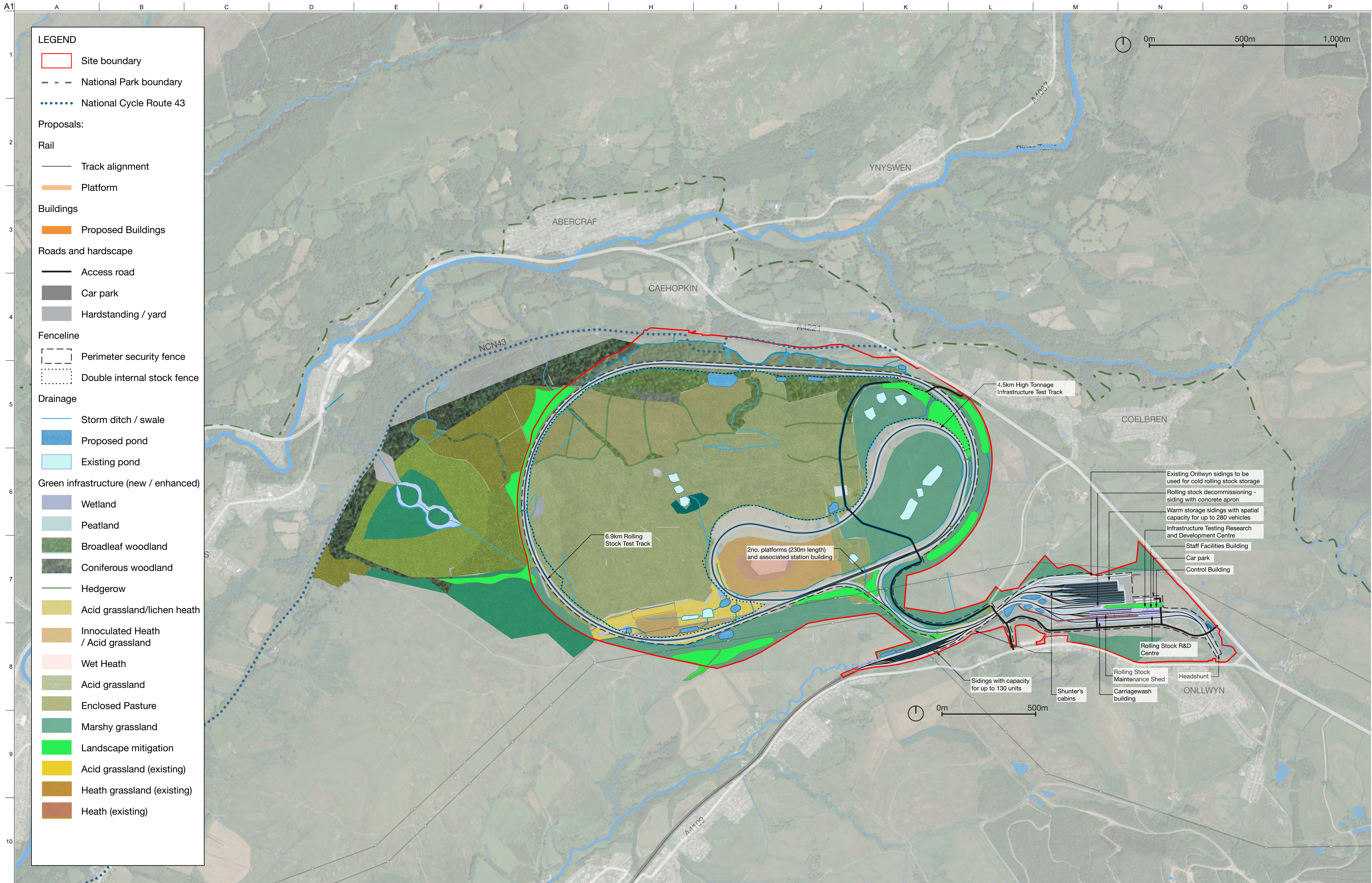




LEGEND

Site boundary

National Park boundary

National Cycle Route 43

Proposals:

Rail

Track alignment

Platform

Buildings

Proposed Buildings

Roads and hardscape

Access road

Car park

Hardstanding / yard

Fenceline

Perimeter security fence

Double internal stock fence

Drainage

Storm ditch / swale

Proposed pond

Existing pond

Green infrastructure (new / enhanced)

Wetland

Peatland

Broadleaf woodland

Coniferous woodland

Hedgerow

Acid grassland/lichen heath

Innoculated Heath / Acid grassland

Wet Heath

Acid grassland

Enclosed Pasture

Marshy grassland

Landscape mitigation

Acid grassland (existing)

Heath grassland (existing)

Heath (existing)

- Existing Onllwyn sidings to be used for cold rolling stock storage
- Rolling stock decommissioning - siding with concrete apron
- Warm storage sidings with spatial capacity for up to 280 vehicles
- Infrastructure Testing Research and Development Centre
- Staff Facilities Building
- Car park
- Control Building
- Rolling Stock R&D Centre
- Rolling Stock Maintenance Shed
- Carriagewash building
- Headshunt
- Sidings with capacity for up to 130 units
- Shunter's cabins

Appendix A - Geological Sections



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Legend

Borehole - Washery

Borehole - Nant Helen Sonic

Cross section lines

Borehole - Nant Helen Conventional

Trial pit

Geophysical Survey Area

F1	2022-01-07	EB	TBW	DR
Rev	Date	By	Chkd	Appd

ARUP

4 Pierhead Street
Cardiff CF10 4QP

Client

Welsh Government

Project Title

Global Centre of Rail Excellence

Drawing Title

Geological sections plan

Scale at A1
1:10,873

Role
Geotechnical

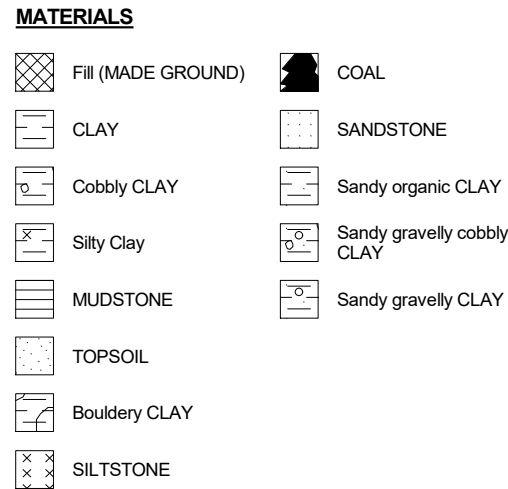
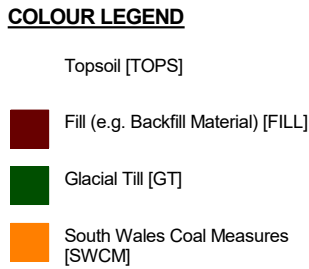
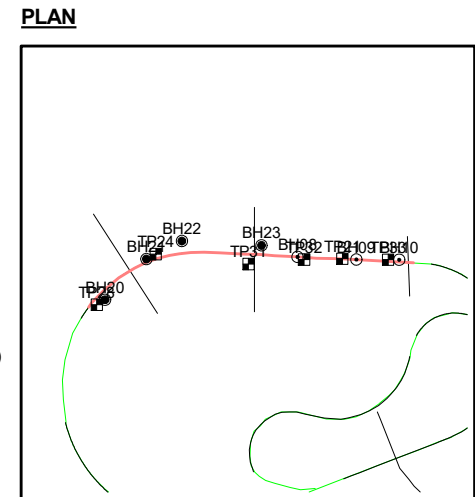
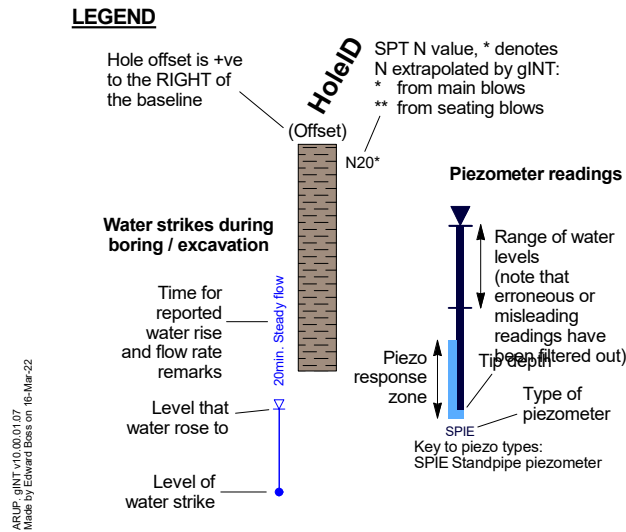
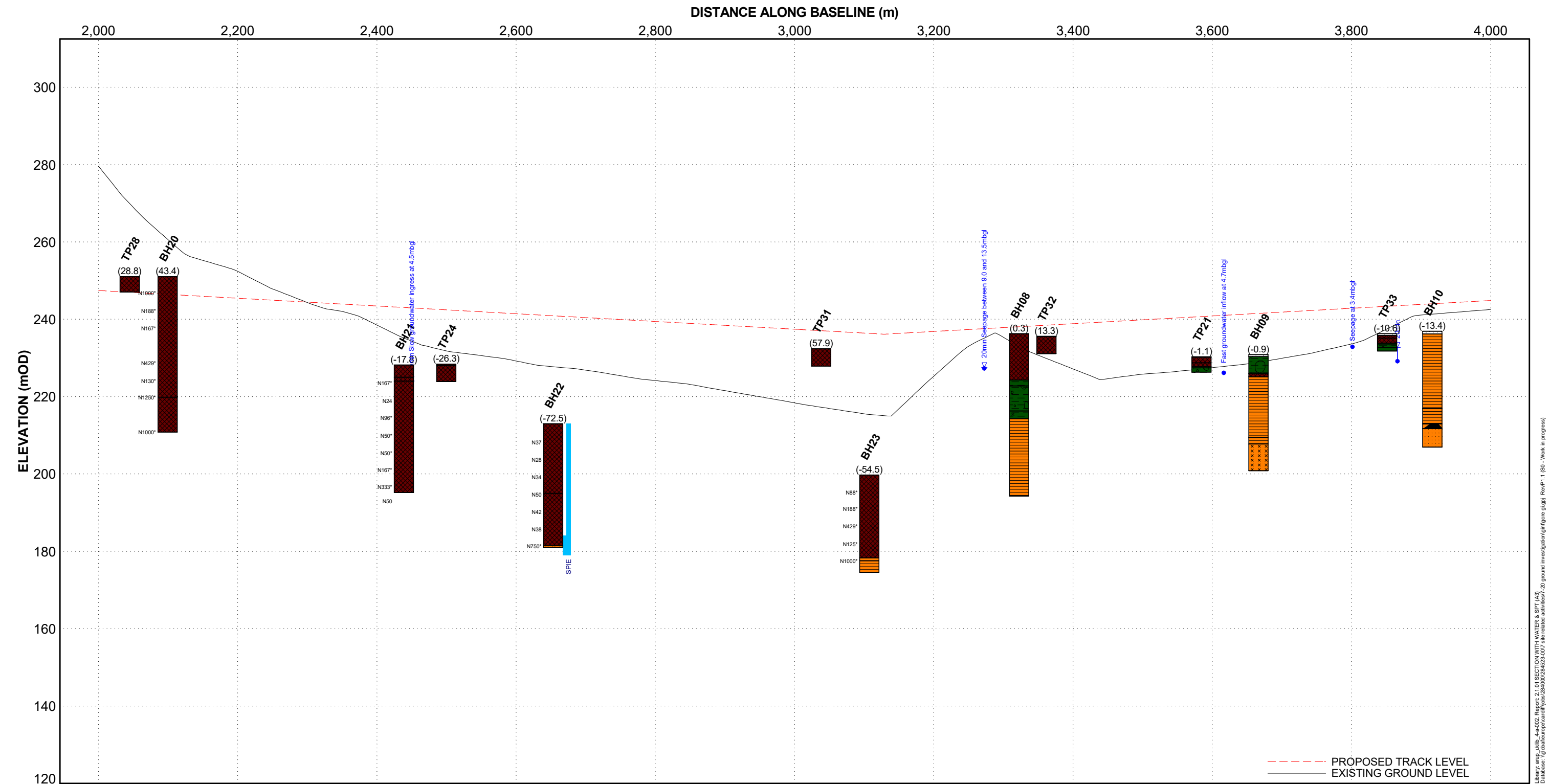
Suitability
For Issue

Anup Job No
264904

Name

Rev
F1

C:\Users\Edward Boss\Desktop\GIS\IGCRE\Drawing 2 - GI Spec.mxd © Arup 24/03/2021 16:16:26

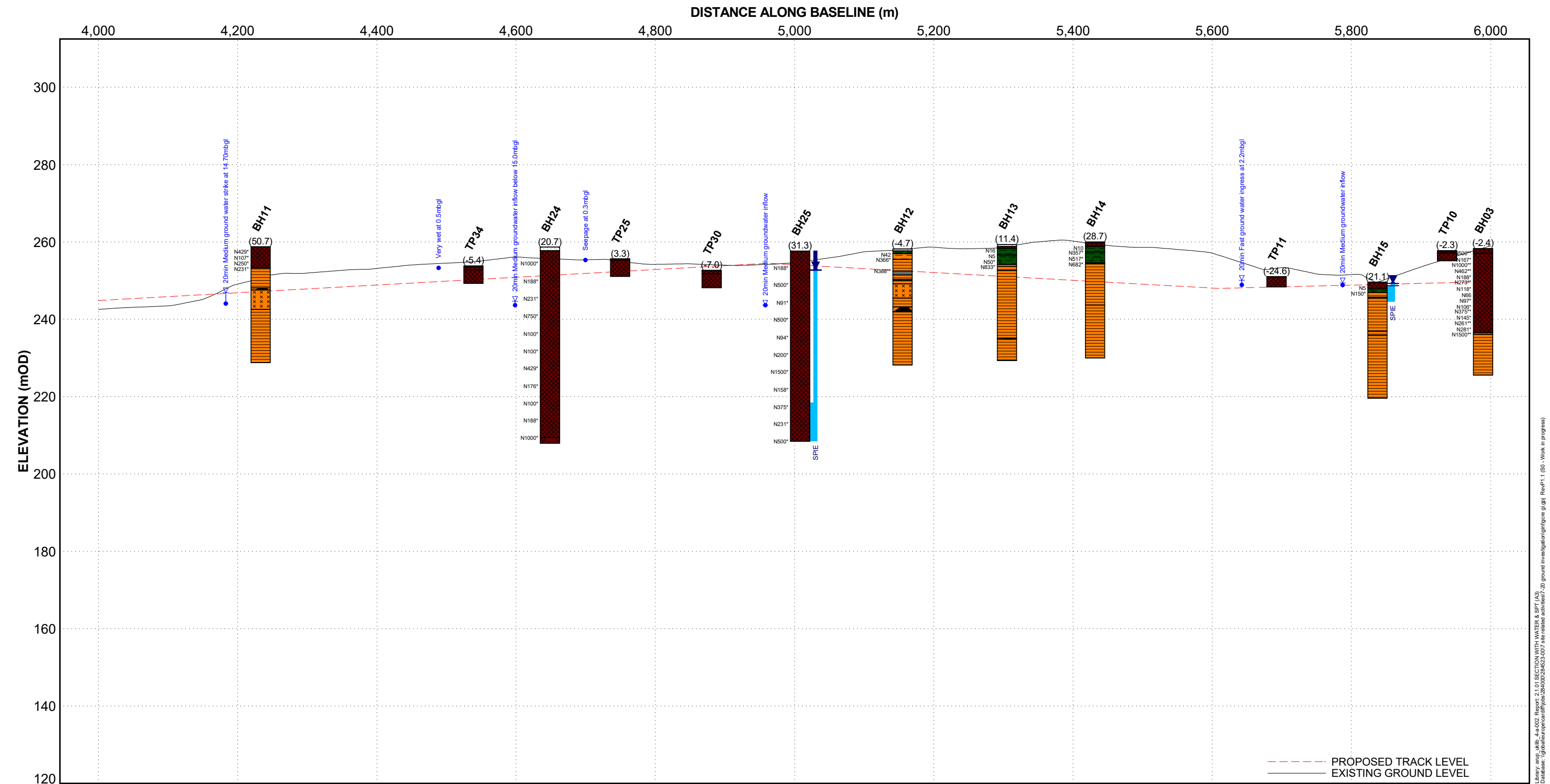


**GLOBAL CENTRE OF RAIL
EXCELLENCE
GEOLOGICAL CROSS SECTION
MAIN LOOP**

284523-03

FIGURE

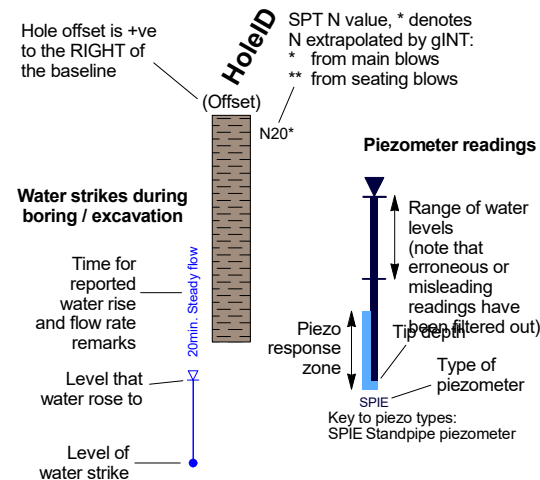
A2



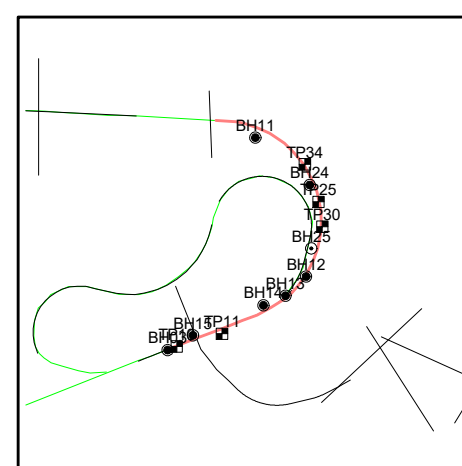
Library: aug_2016_4-a-002_Report 23.10 SECTION WITH WATER & SPT (A3)
Database: /gdata/arcgis/arcmap/figs/284523-03/23.10 SECTION WITH WATER & SPT (A3) Rev P11 (ISO - Work in progress)

SCALE 1:1000V 1:5556H @ A3-L

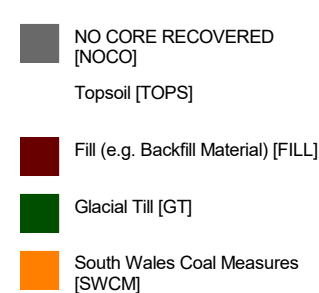
LEGEND



PLAN



COLOUR LEGEND



MATERIALS

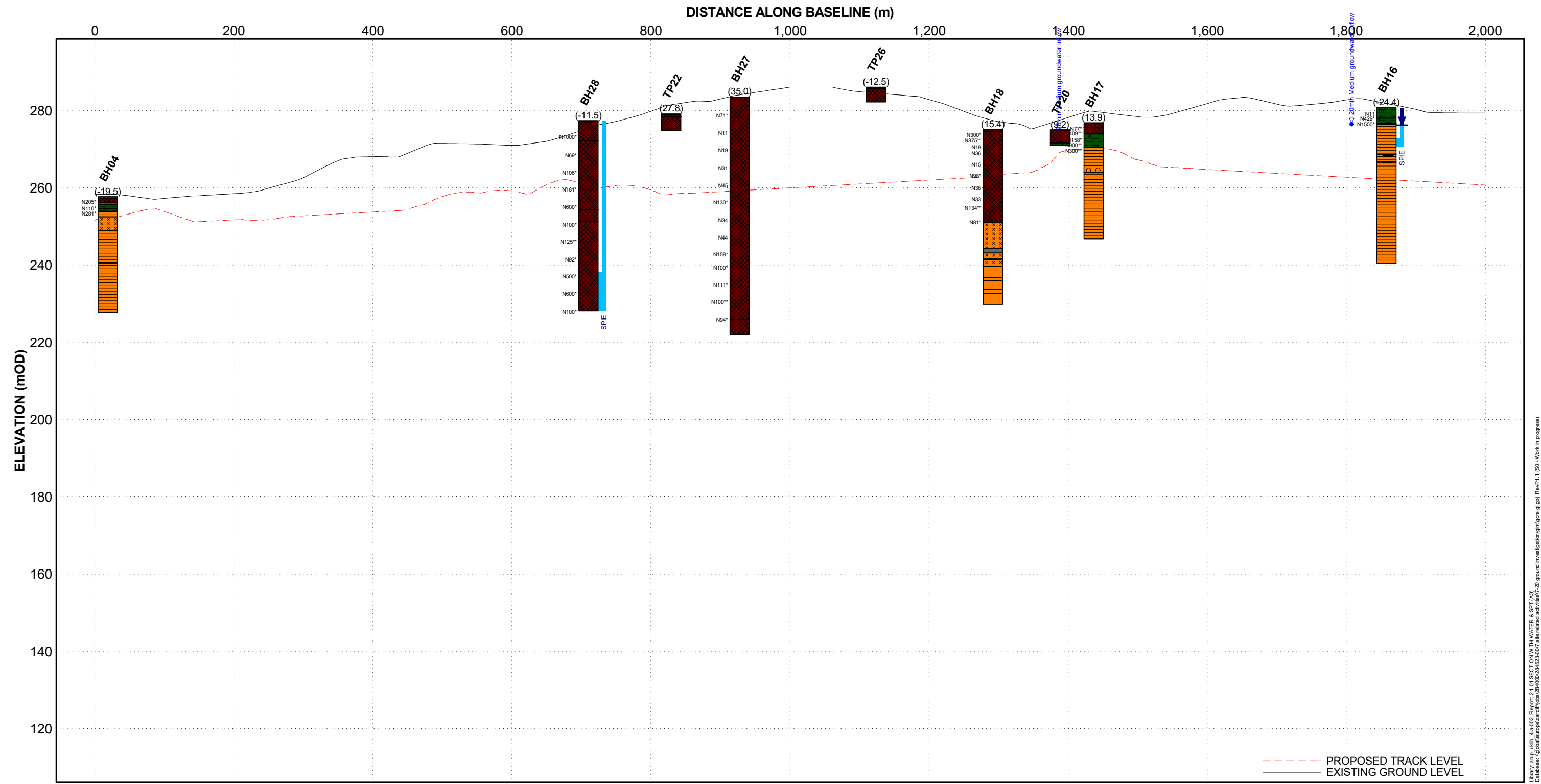


**GLOBAL CENTRE OF RAIL
EXCELLENCE
GEOLOGICAL CROSS SECTION
MAIN LOOP**

284523-03

FIGURE

A3



LEGEND

Hole offset is +ve to the RIGHT of the baseline

HoleID

(Offset)

N20*

SPT N value, * denotes N extrapolated by gINT:
* from main blows
** from seating blows

Piezometer readings

Range of water levels (note that erroneous or misleading readings have been filtered out)

Piezo response zone

Type of piezometer

Key to piezo types: SPIE Standpipe piezometer

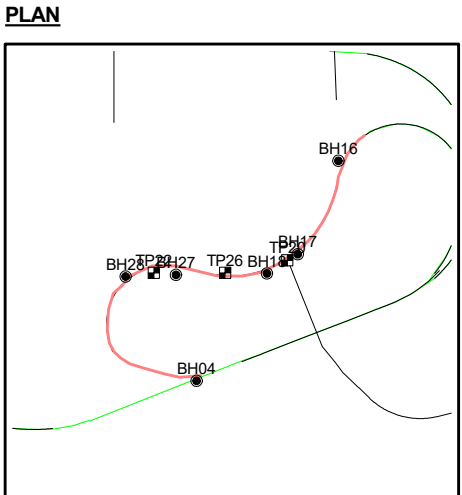
Water strikes during boring / excavation

Time for reported water rise and flow rate remarks

Level that water rose to

Level of water strike

20min. Steady flow



COLOUR LEGEND

- NO CORE RECOVERED [NOCO]
- Topsoil [TOPS]
- Fill (e.g. Backfill Material) [FILL]
- Glacial Till [GT]
- Peat [PEAT]
- South Wales Coal Measures [SWCM]

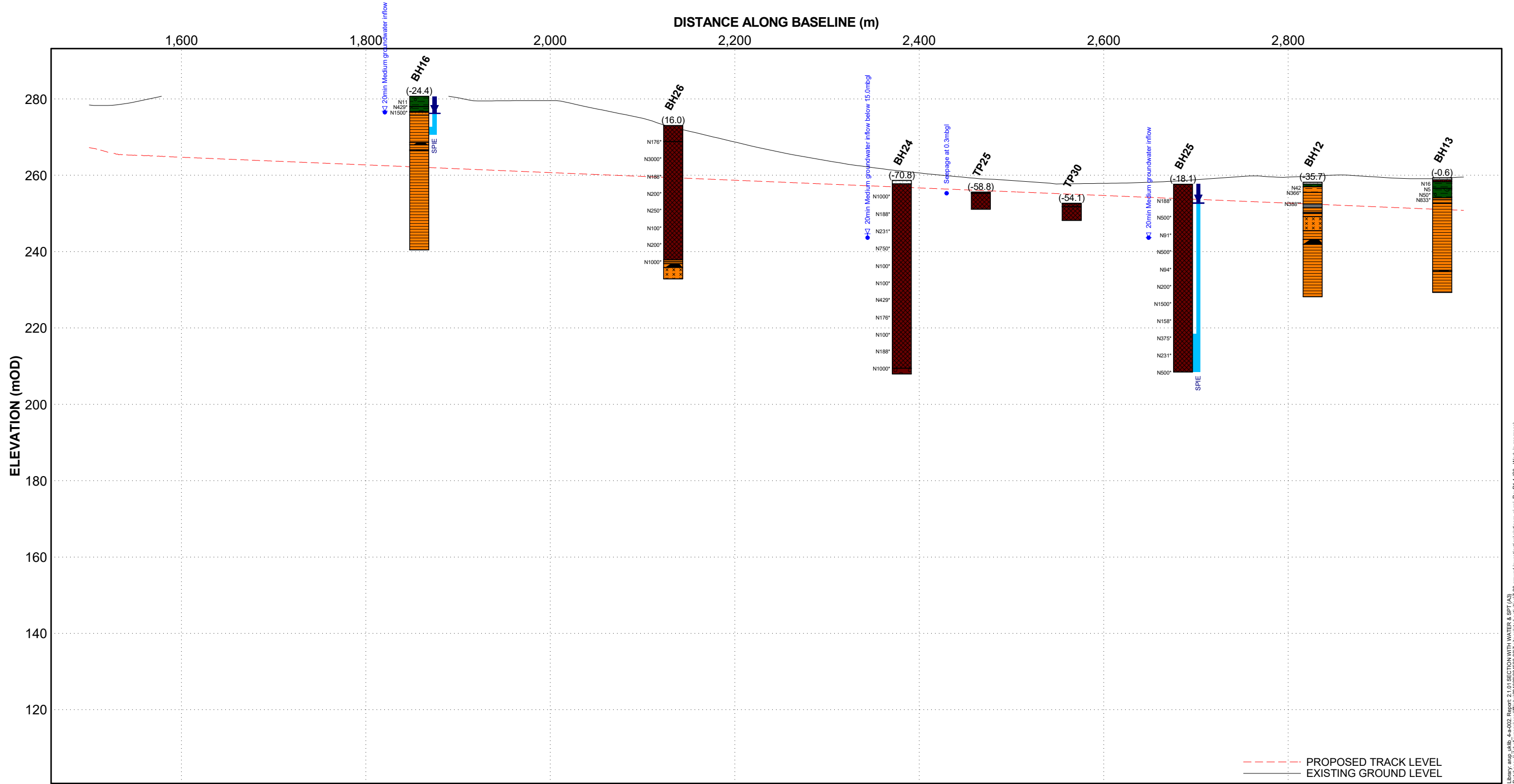
MATERIALS

Gravelly SILT	Bouldery CLAY
Fill (MADE GROUND)	SANDSTONE
PEAT	CONGLOMERATE
Gravelly CLAY	TOPSOIL
CLAY	Sandy gravelly CLAY
MUDSTONE	
SILTSTONE	
COAL	

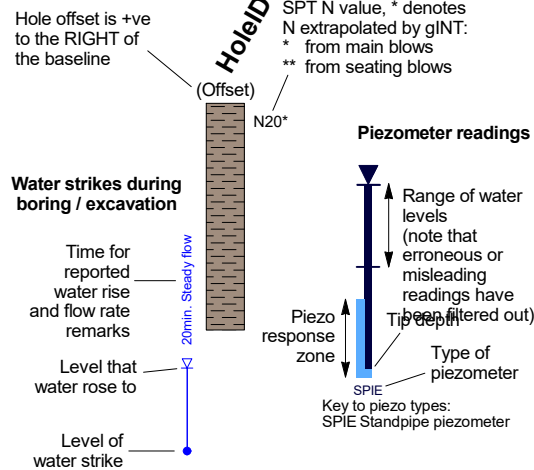
**GLOBAL CENTRE OF RAIL
EXCELLENCE
GEOLOGICAL CROSS SECTION
INNER LOOP**

ASUP: gINT v10.01.07
Made by gINT v10.01.07 on 16-Mar-22

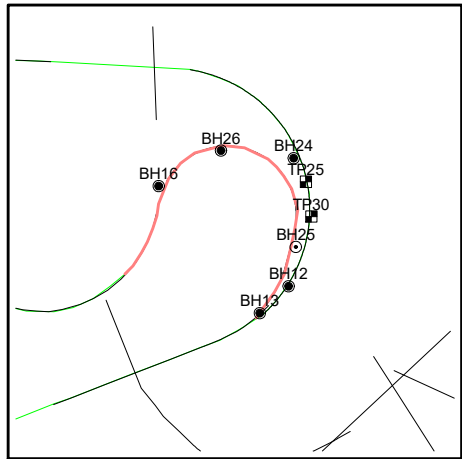
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Database: g:\data\report\aug_jahb_4-a-002\23-01 SECTION WITH WATER & SPT (A3) (ISO - Work in progress)



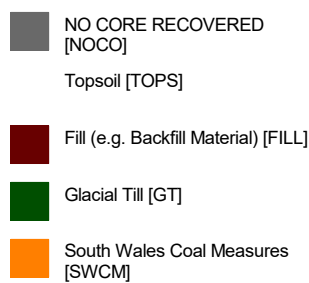
LEGEND



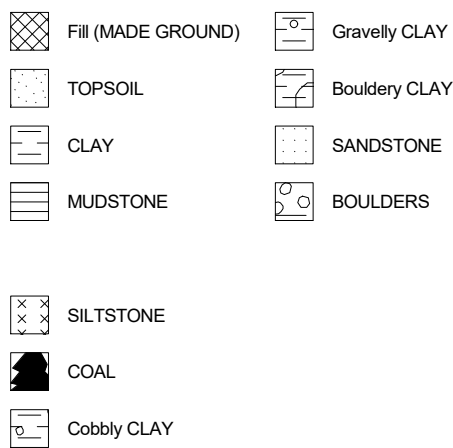
PLAN



COLOUR LEGEND



MATERIALS



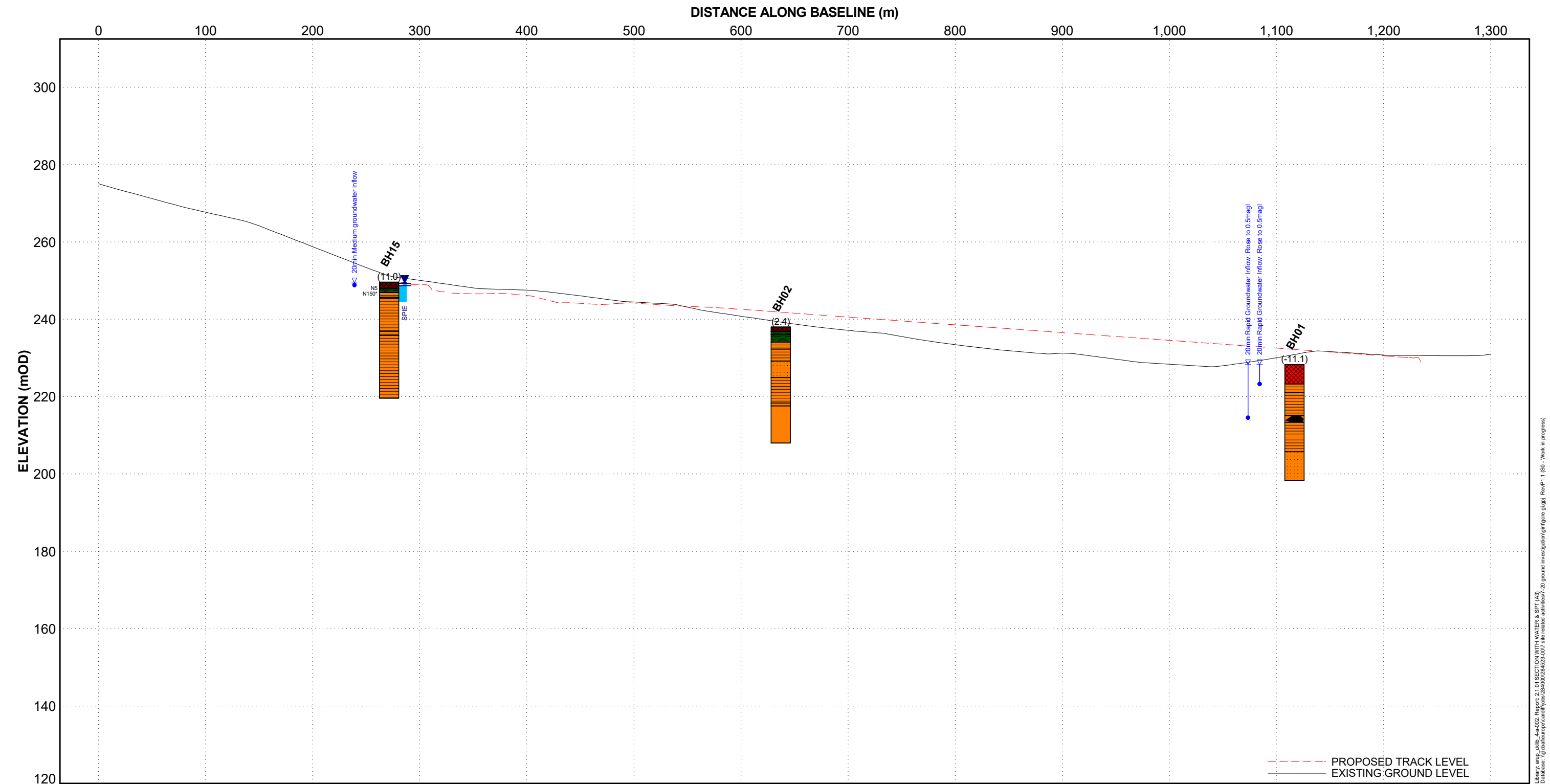
SCALE 1:1000V 1:4139H @ A3-L

**GLOBAL CENTRE OF RAIL
EXCELLENCE
GEOLOGICAL CROSS SECTION
INNER LOOP**

284523-03

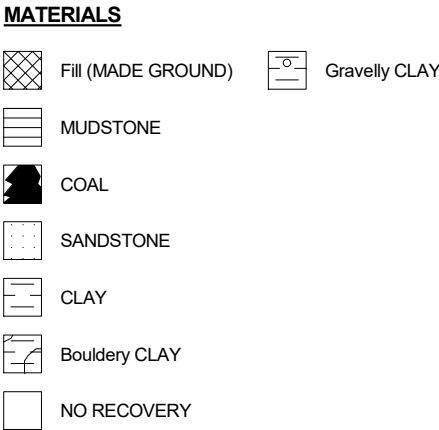
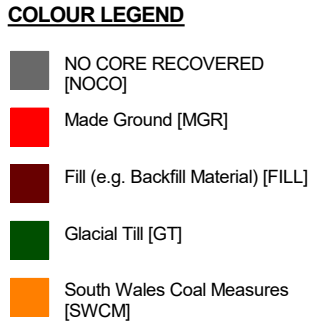
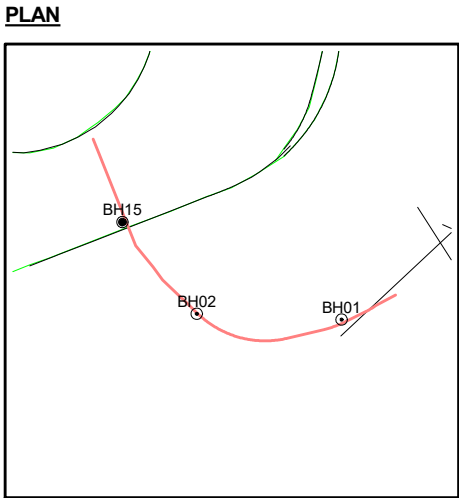
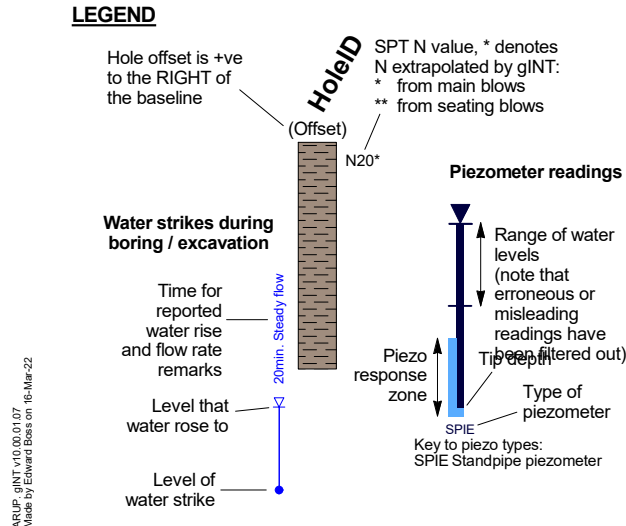
FIGURE

A6



Library: aug_2016_4-4-002_Report_23.171_SECTION WITH WATER & SPT (A3)
Database: g:\data\report\aug_2016_4-4-002_Report_23.171_SECTION WITH WATER & SPT (A3) Rev P1 (ISO - Work in progress)

SCALE 1:1000V 1:3611H @ A3-L



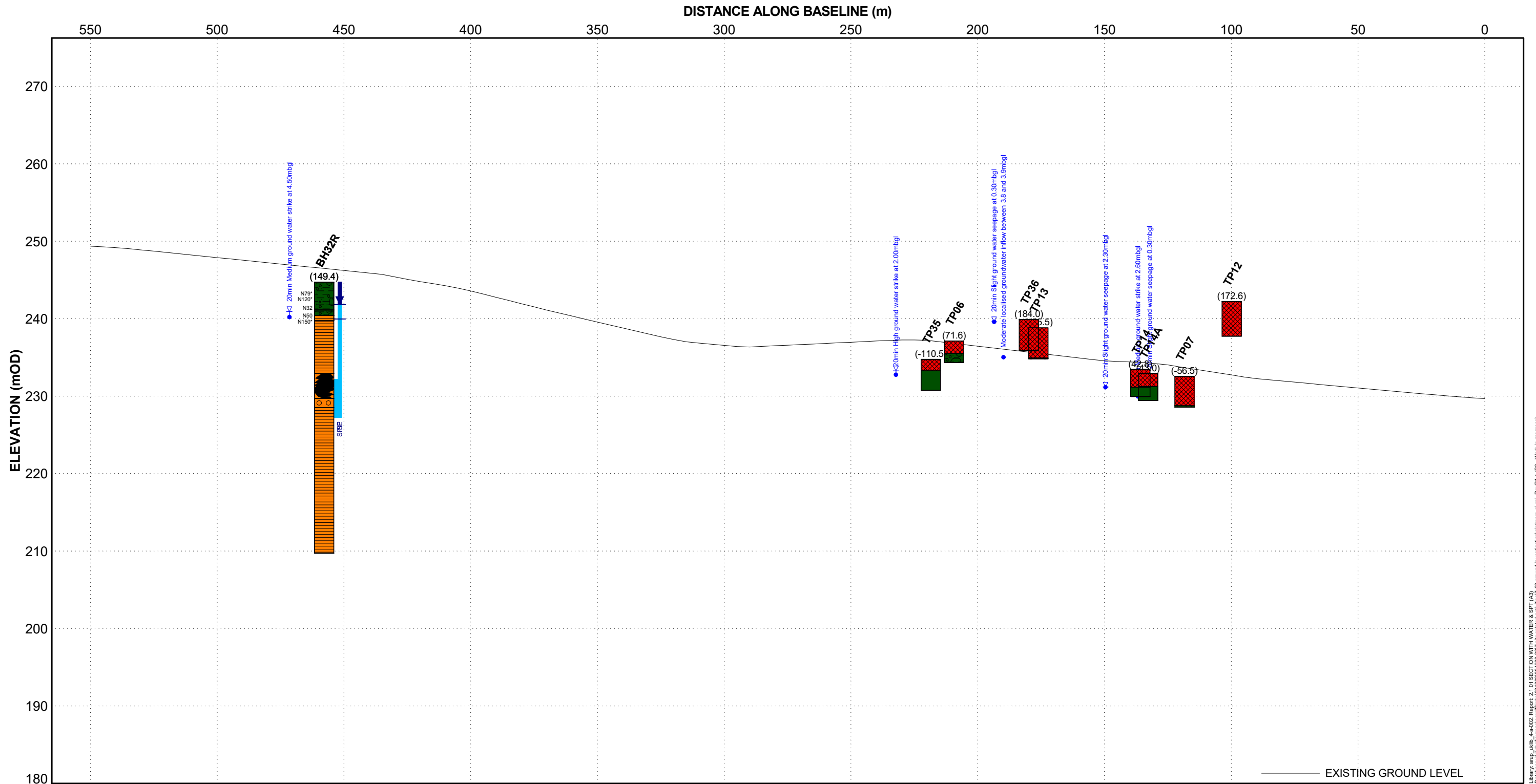
**GLOBAL CENTRE OF RAIL
EXCELLENCE
GEOLOGICAL CROSS SECTION
NH TO WASHERY**

284523-03

FIGURE

A7

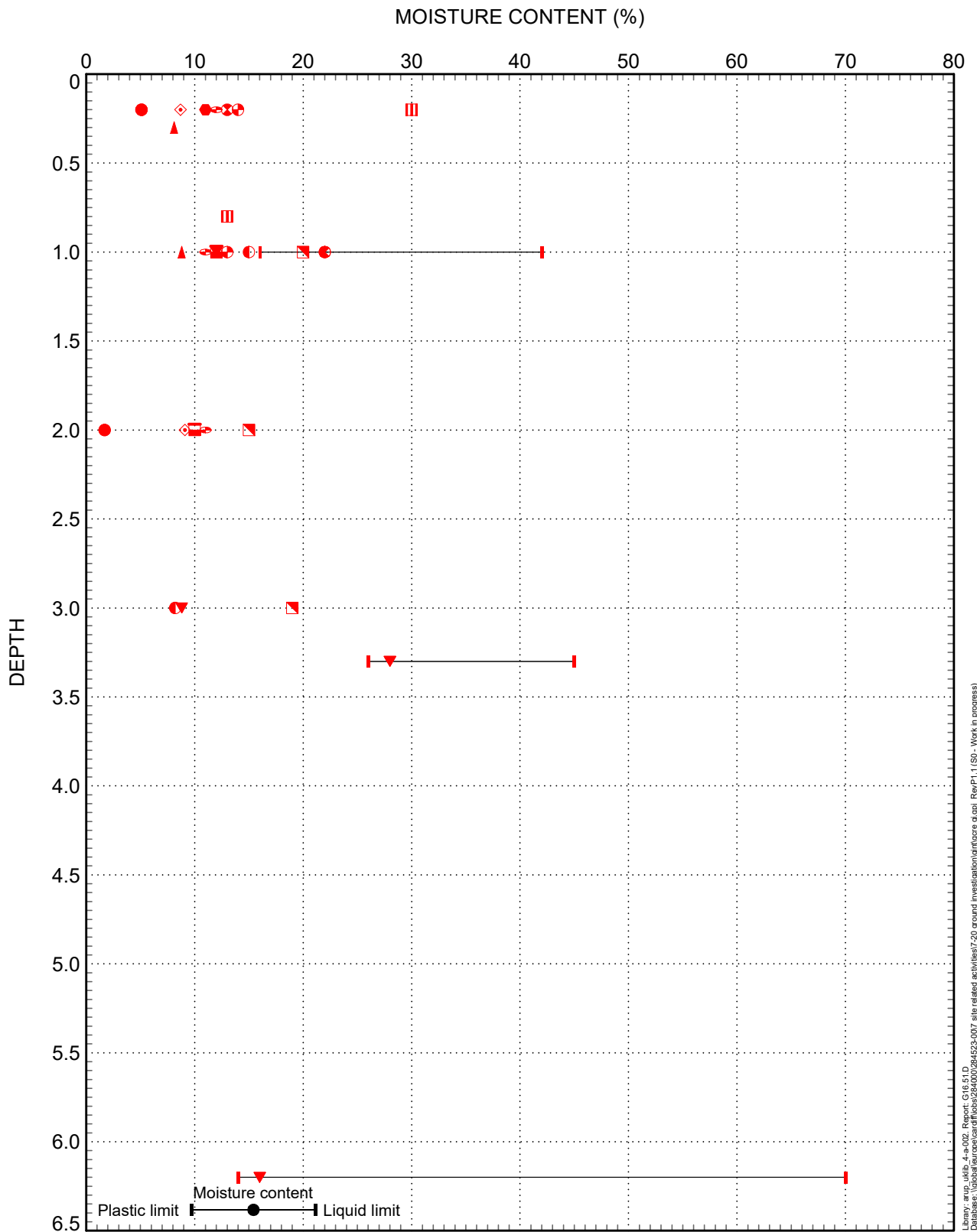
ASUP: gINT v10.01.07
Made by gINT v10.01.07 on 16-Mar-22



ASUP: gINT v10.01.07
Made by gINT v10.01.07 on 16-Mar-22

Library: aug_2022_44-002_Report_23.171_SECTION WITH WATER & SPT (A3)
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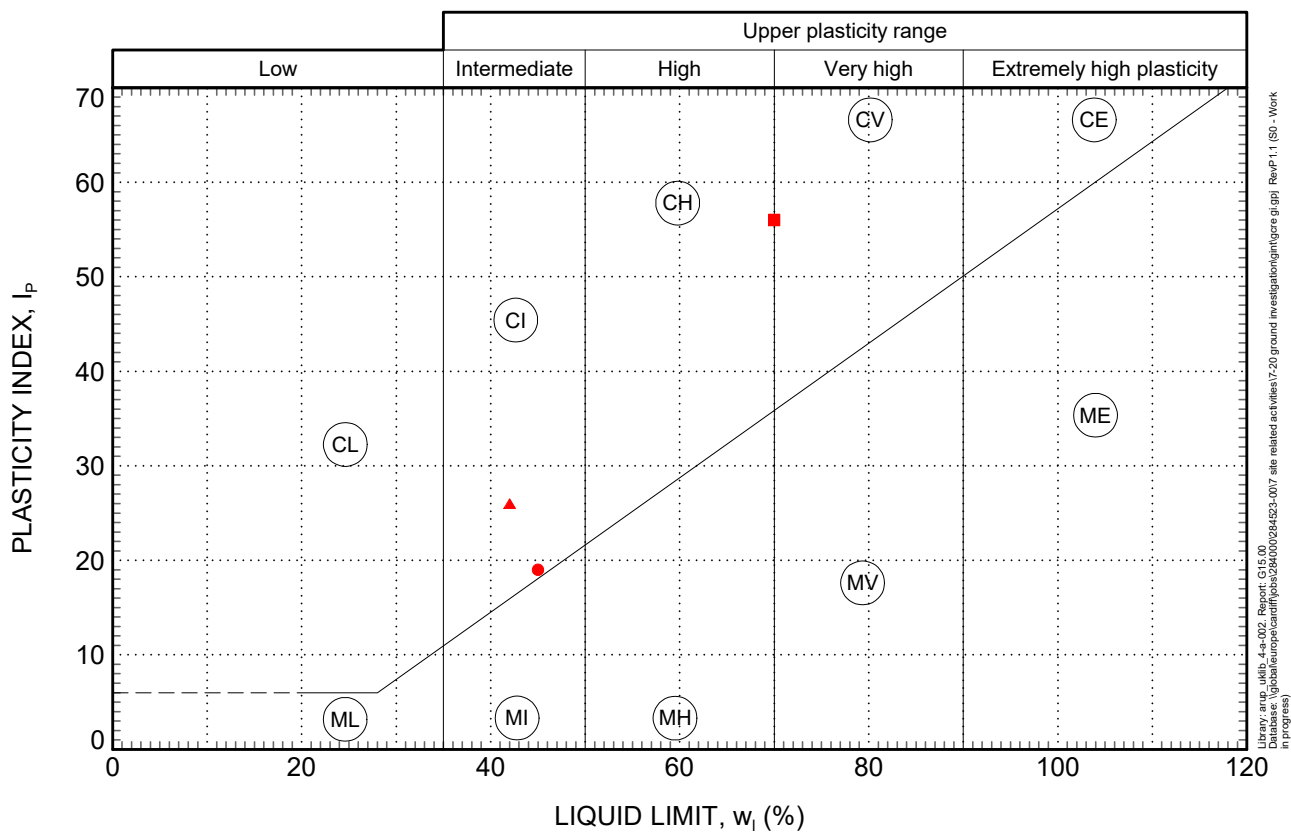
Appendix B - Geotechnical Plots



GLOBAL CENTRE OF RAIL EXCELLENCE ATTERBERG LIMITS MADE GROUND

284523-03

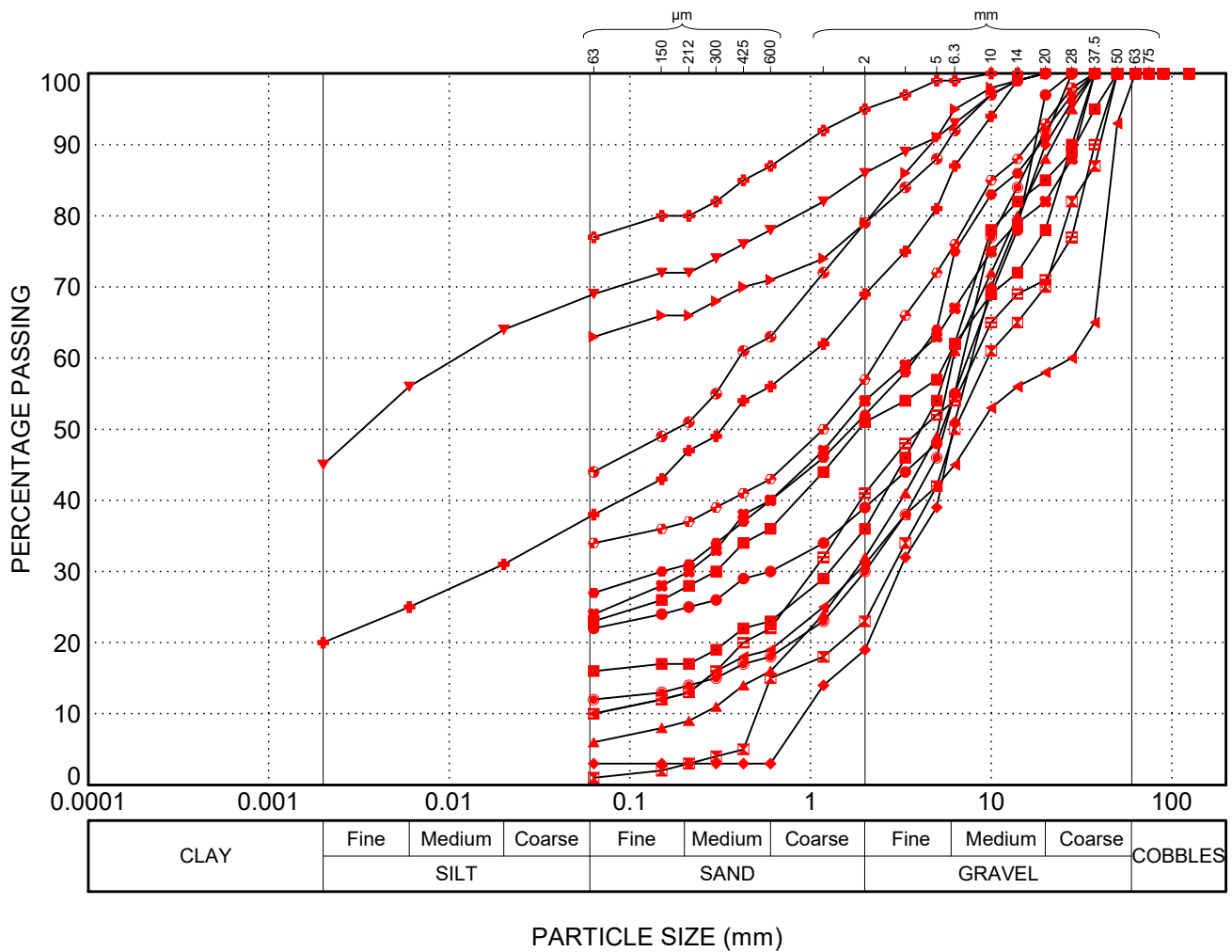
FIGURE **[B01]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
PLASTICITY CHART
MADE GROUND

284523-03

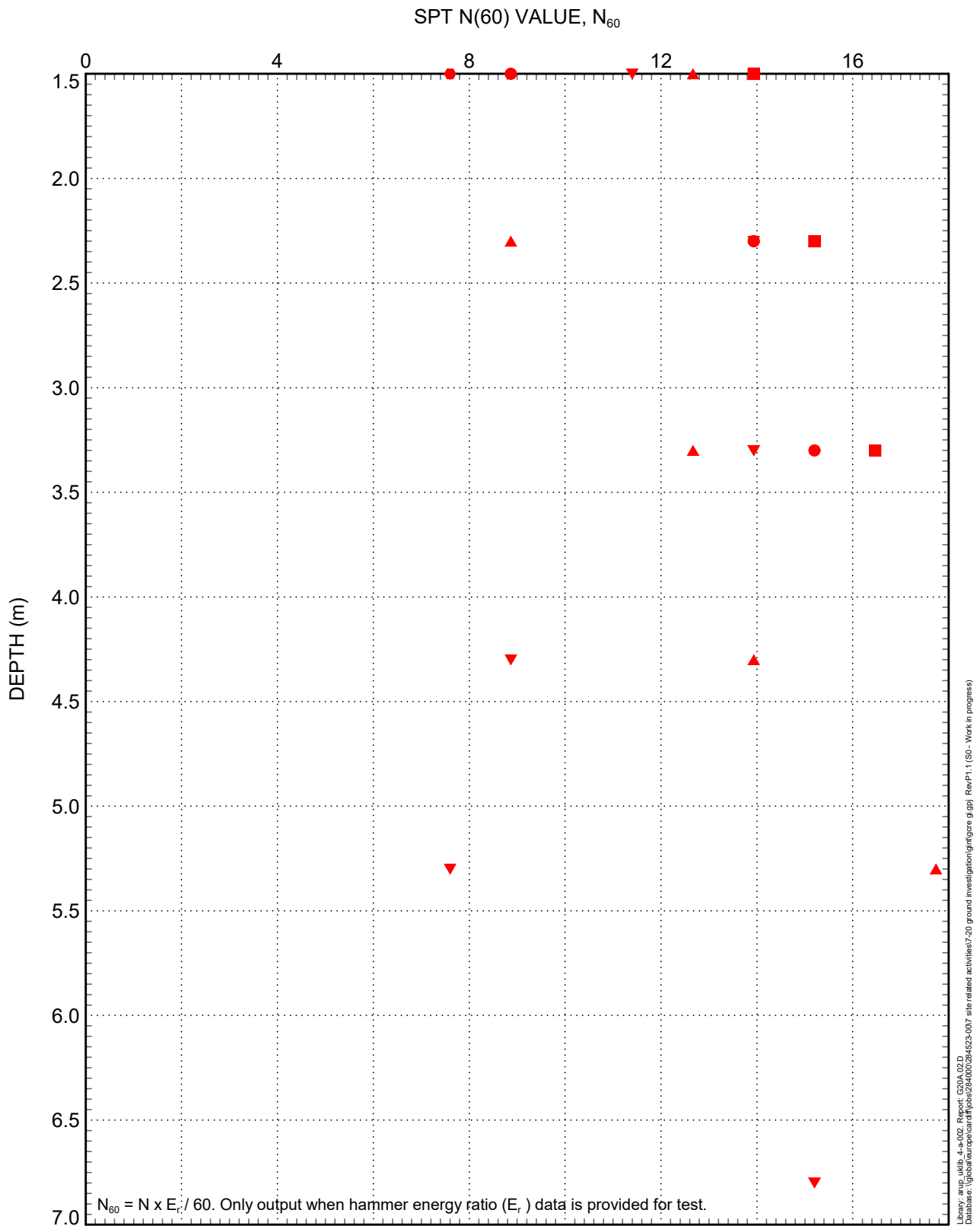
FIGURE [B02]



**GLOBAL CENTRE OF RAIL
EXCELLENCE
PARTICLE SIZE DISTRIBUTION
MADE GROUND**

284523-03

FIGURE **[B03]**

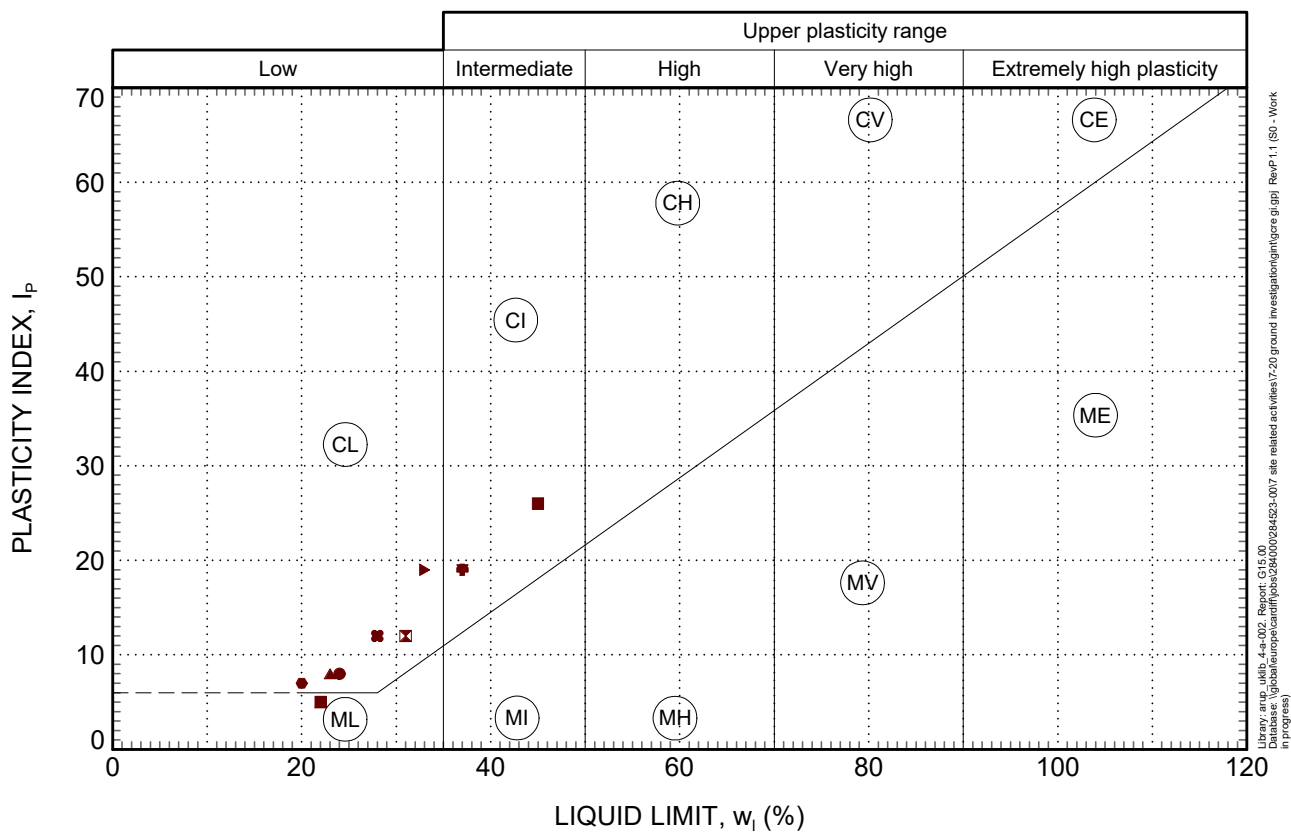


- Made Ground (MGR)
- BH29
- BH30
- ▲ BH31
- ◆ BH33
- ▼ BH34

**GLOBAL CENTRE OF RAIL
EXCELLENCE
STANDARD PENETRATION TESTS
MADE GROUND**

284523-03

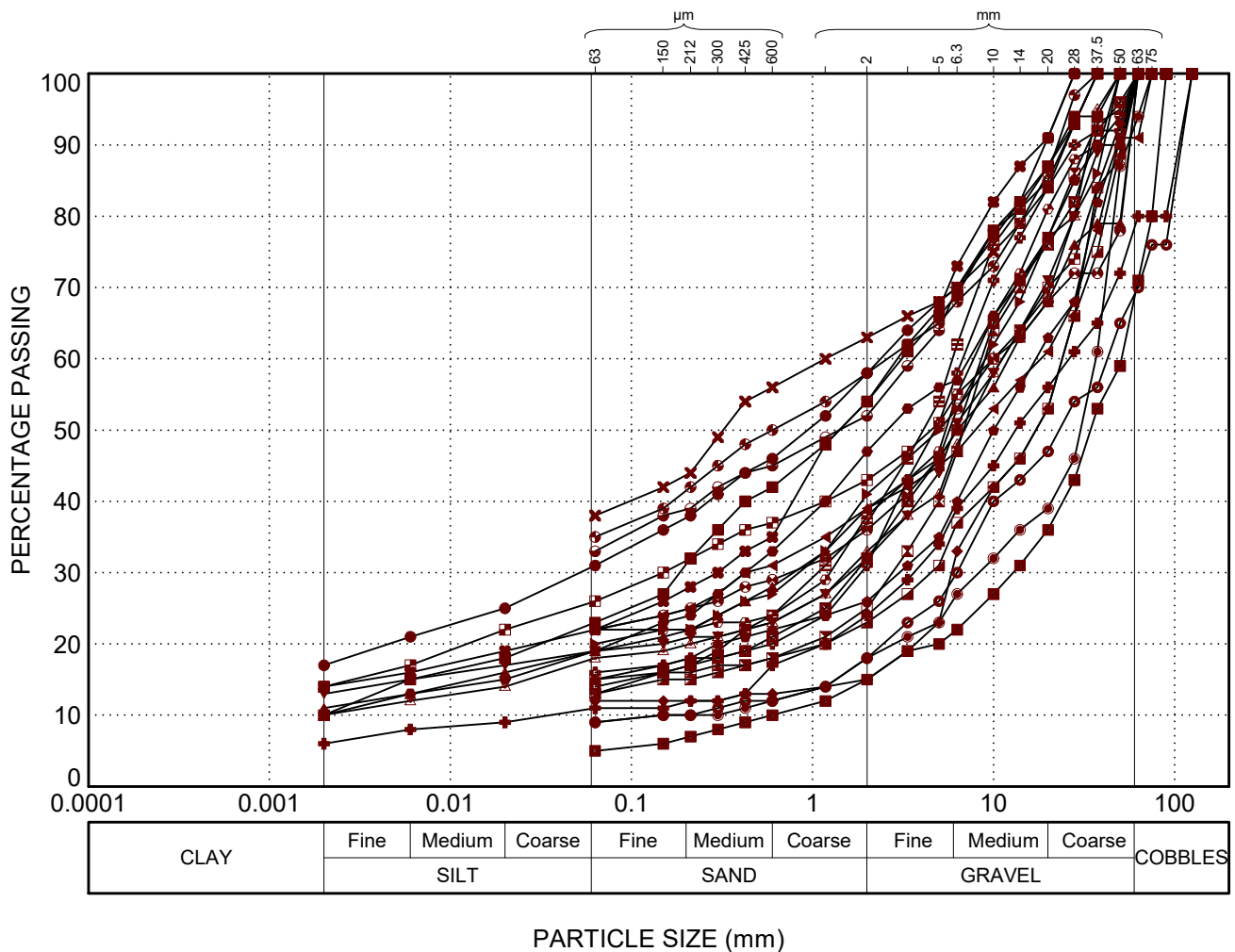
FIGURE **[B04]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
PLASTICITY CHART
FILL (E.G. BACKFILL MATERIAL)

284523-03

FIGURE **[B06]**

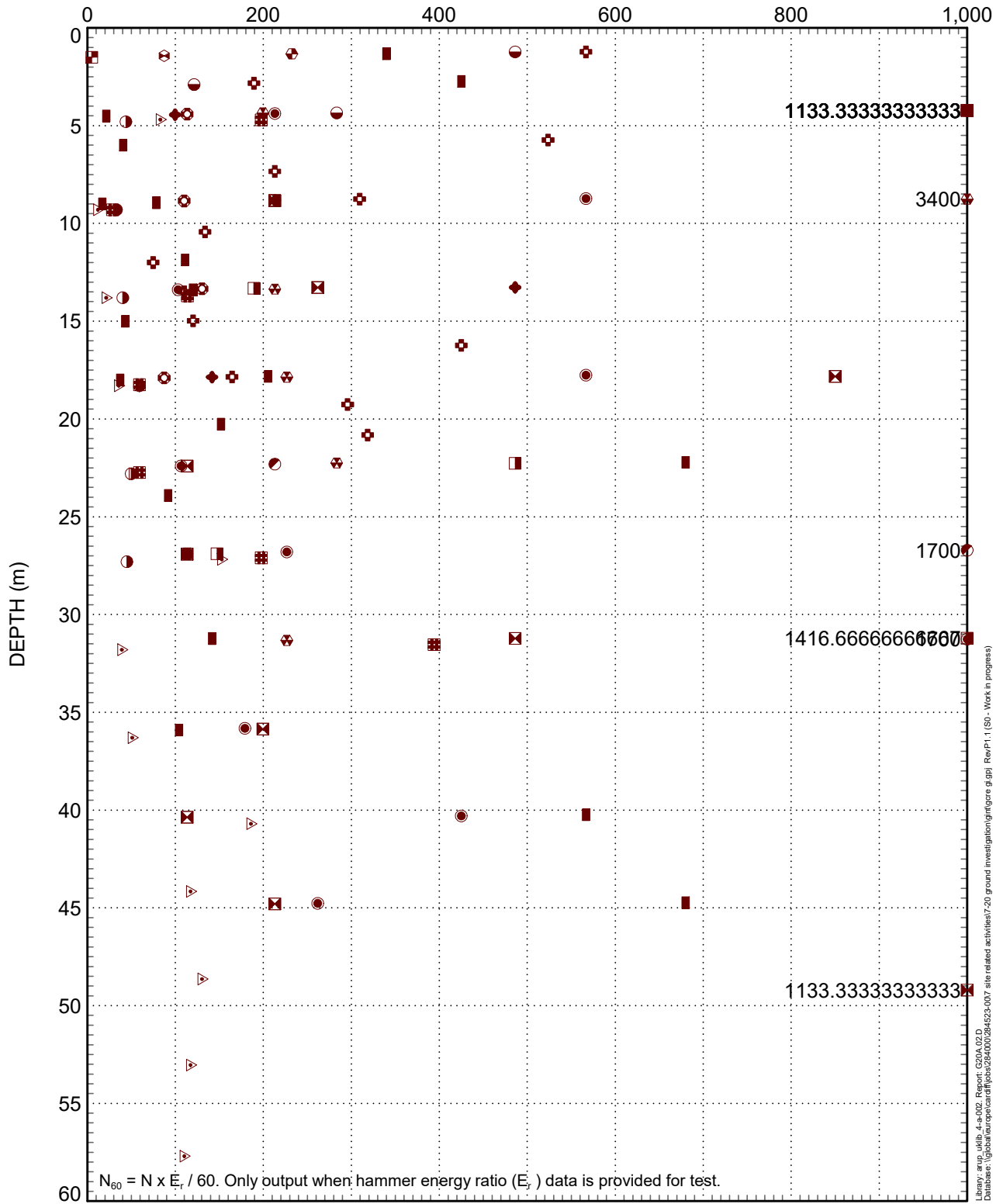


**GLOBAL CENTRE OF RAIL
EXCELLENCE
PARTICLE SIZE DISTRIBUTION
FILL (E.G. BACKFILL MATERIAL)**

284523-03

FIGURE **[B07]**

SPT N(60) VALUE, N_{60}

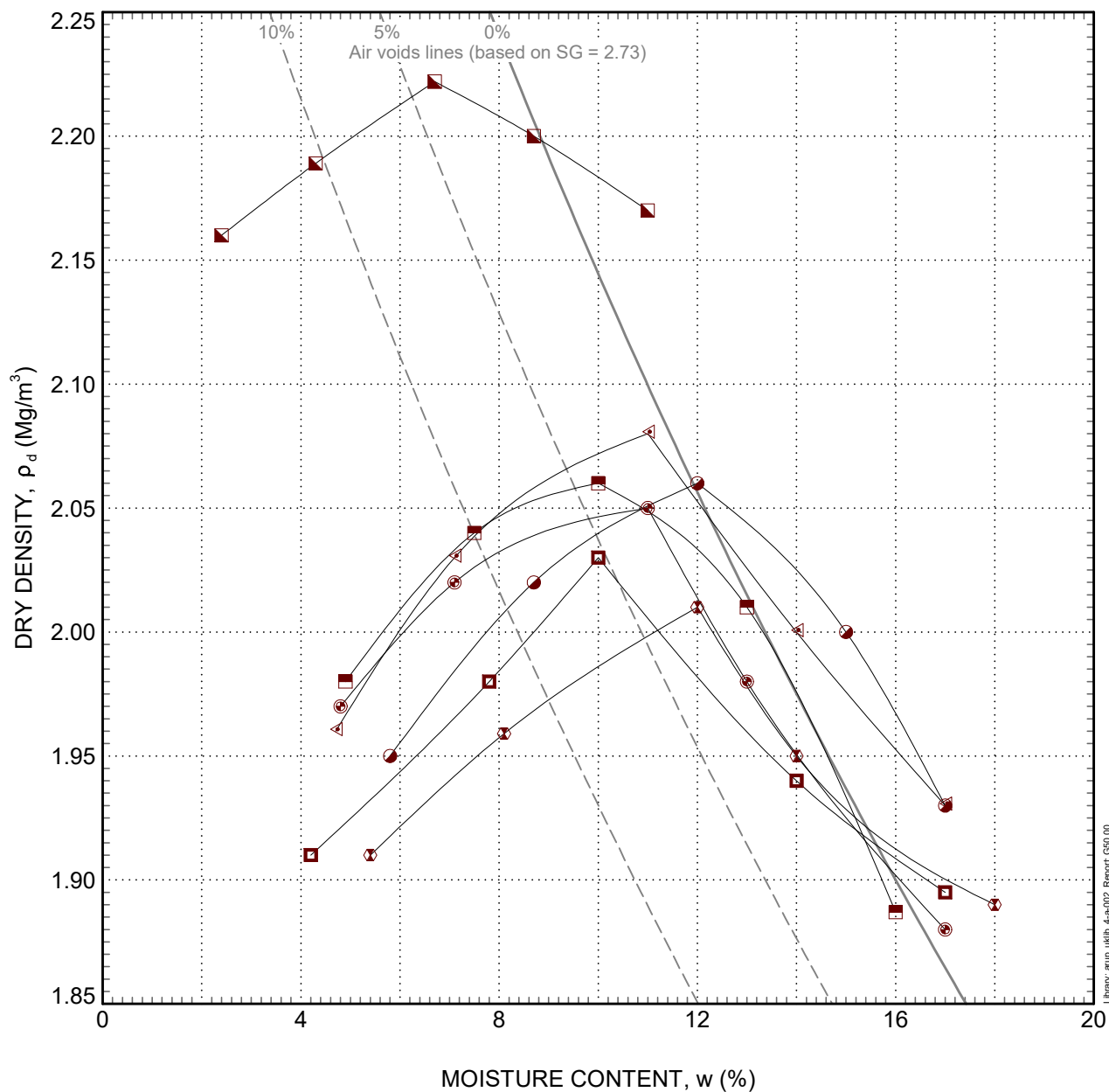


- Fill (e.g. Backfill Material) (FILL)
- BH25
- ⊕ BH03
- ⊗ BH04
- ⊖ BH11
- ⊠ BH15
- ⊡ BH17
- BH18
- ⊙ BH19
- ⊖ BH19A
- ⊠ BH20
- ⊡ BH21
- BH22
- ◆ BH23
- ⊠ BH24
- ⊡ BH26
- ▶ BH27
- BH28

**GLOBAL CENTRE OF RAIL
EXCELLENCE
STANDARD PENETRATION TESTS
FILL (E.G. BACKFILL MATERIAL)**

284523-03

FIGURE **[B08]**

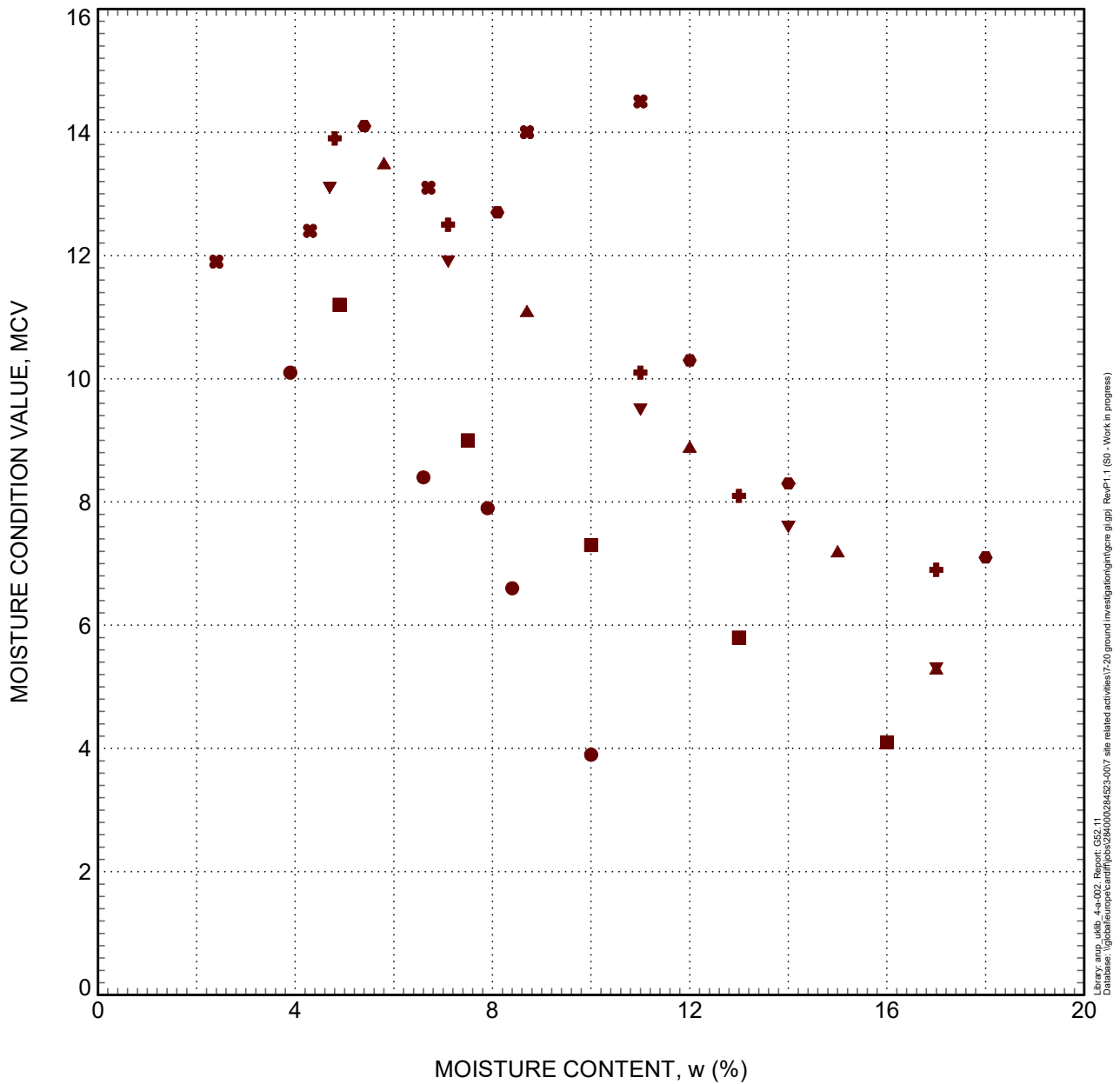


- Fill (e.g. Backfill Material) (FILL)
- TP10
- ▣ TP20
- TP21
- ▤ TP23
- ⊗ TP25
- △ TP26
- ⊙ TP34

**GLOBAL CENTRE OF RAIL
EXCELLENCE
COMPACTION TESTS
FILL (E.G. BACKFILL MATERIAL)**

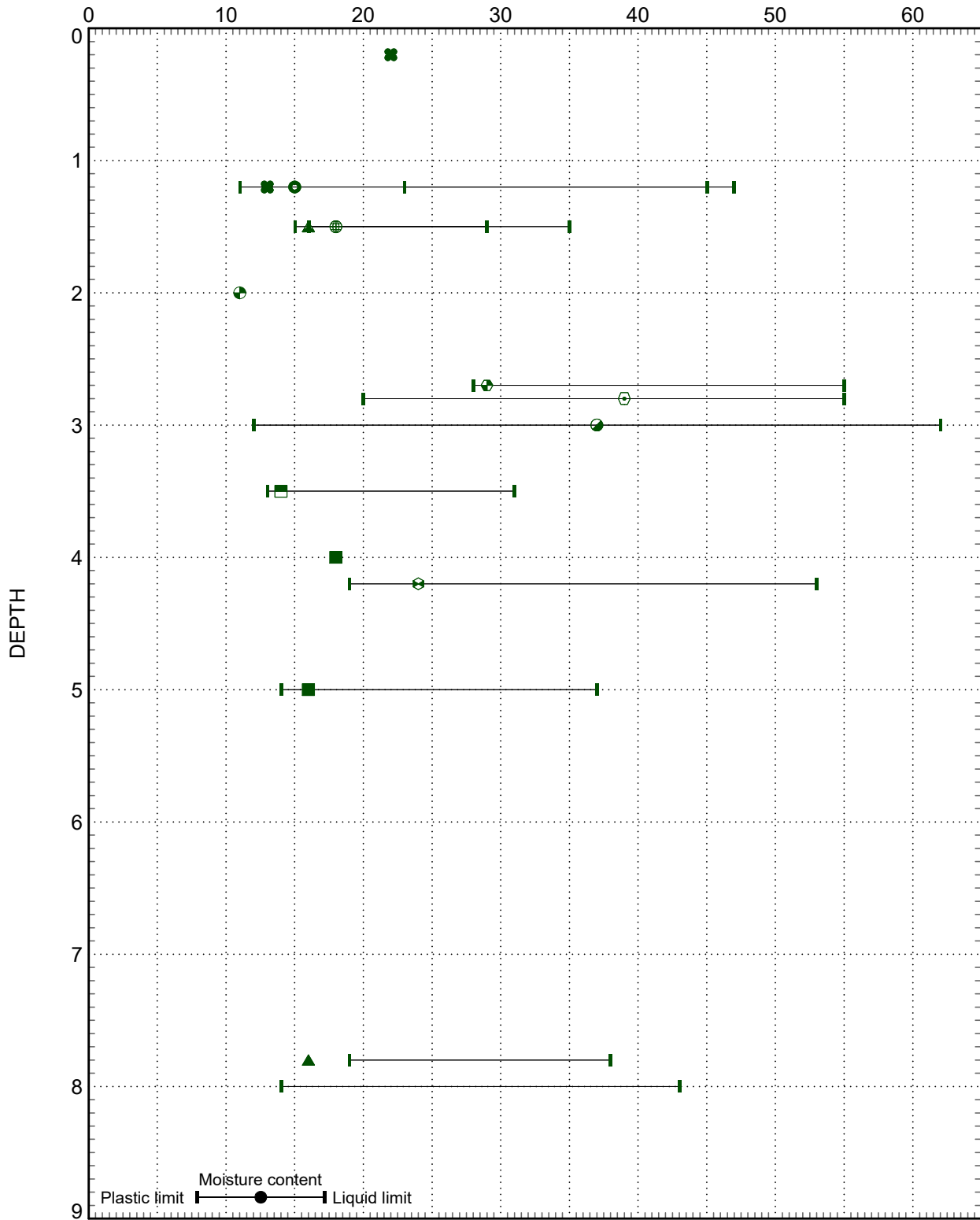
284523-03

FIGURE **[B09]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
MCV VS MOISTURE CONTENT
FILL (E.G. BACKFILL MATERIAL)

MOISTURE CONTENT (%)



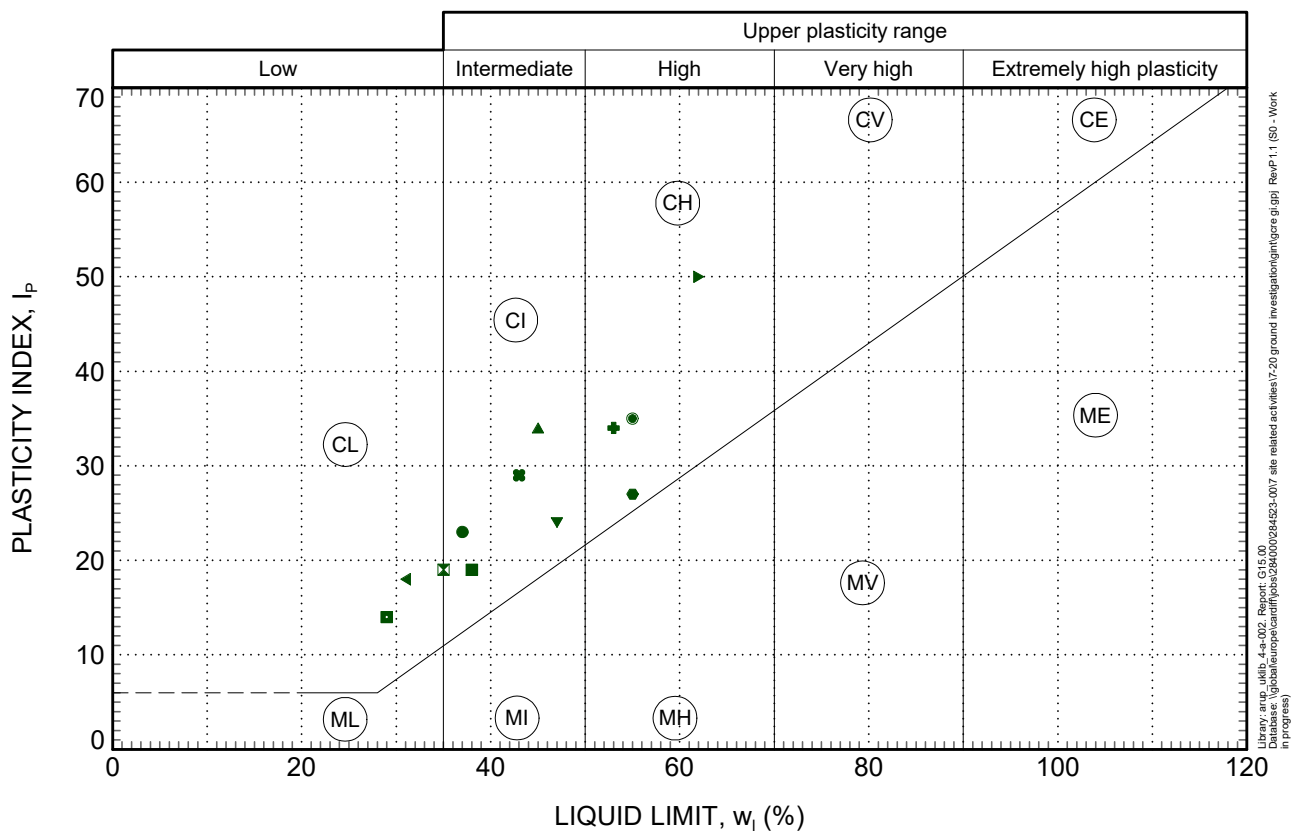
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Database: \\global\europa\card\pss\284523\007 site related activities\720 ground investigation\figures gl.jpg RevP1.1 (SD - Work in progress)

- Glacial Till (GT)
- BH30
- ▲ BH31
- ✱ BH32
- ▼ BH34
- ⊕ BH04
- ⊙ BH06
- ⊗ BH17
- ⊕ TP06
- ▲ TP19
- TP20
- ⊙ TP21
- ⊕ TP27
- ⊙ TP33

**GLOBAL CENTRE OF RAIL
EXCELLENCE
ATTERBERG LIMITS
GLACIAL TILL**

284523-03

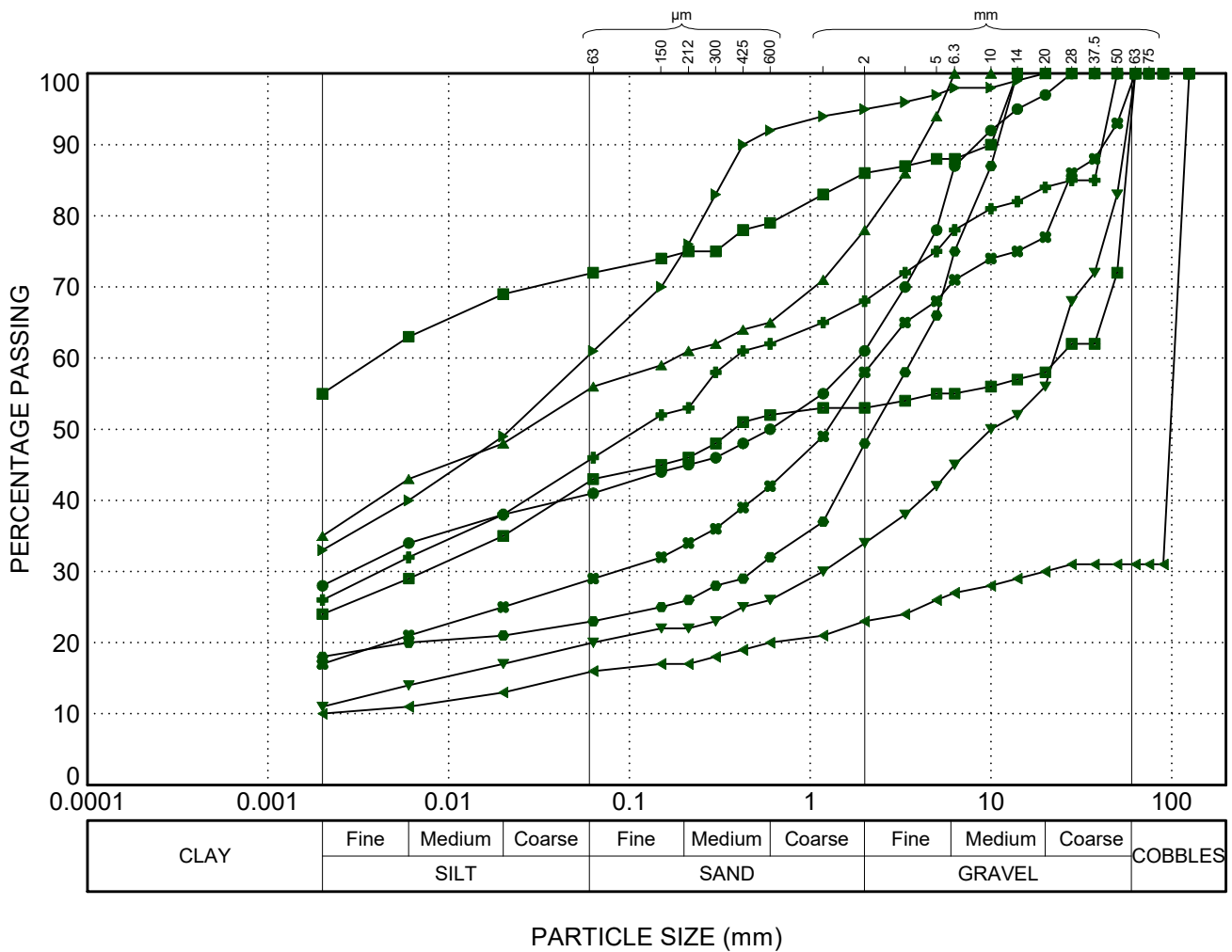
FIGURE **[B11]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
PLASTICITY CHART
GLACIAL TILL

284523-03

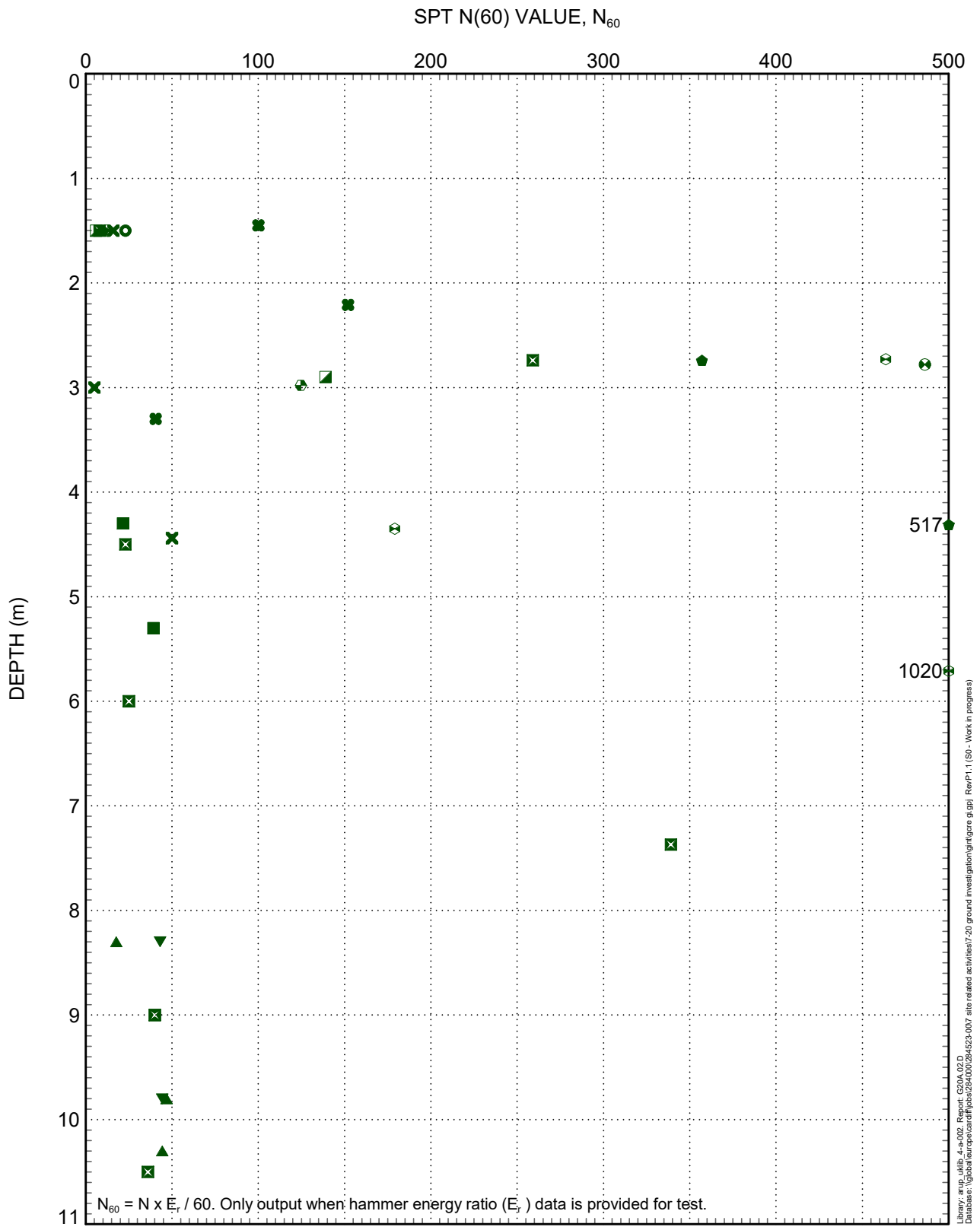
FIGURE [B12]



GLOBAL CENTRE OF RAIL
EXCELLENCE
PARTICLE SIZE DISTRIBUTION
GLACIAL TILL

284523-03

FIGURE **[B13]**

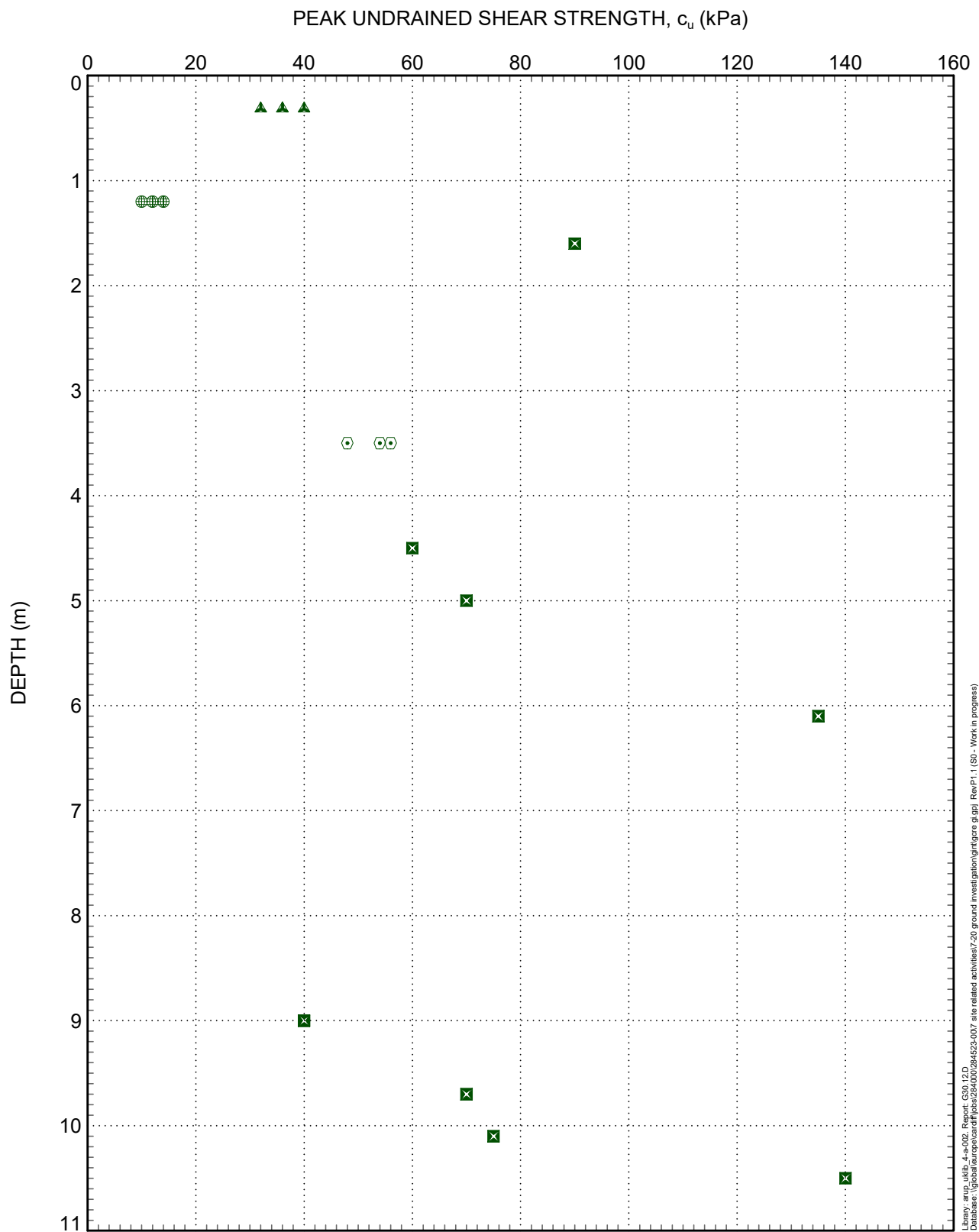


- Glacial Till (GT)
- BH30
- ▲ BH31
- ✱ BH32
- ▼ BH34
- ⊕ BH04
- ⊗ BH05
- BH06
- ▣ BH07
- ✱ BH13
- ◆ BH14
- ⊗ BH16
- ⊗ BH17

**GLOBAL CENTRE OF RAIL
EXCELLENCE
STANDARD PENETRATION TESTS
GLACIAL TILL**

284523-03

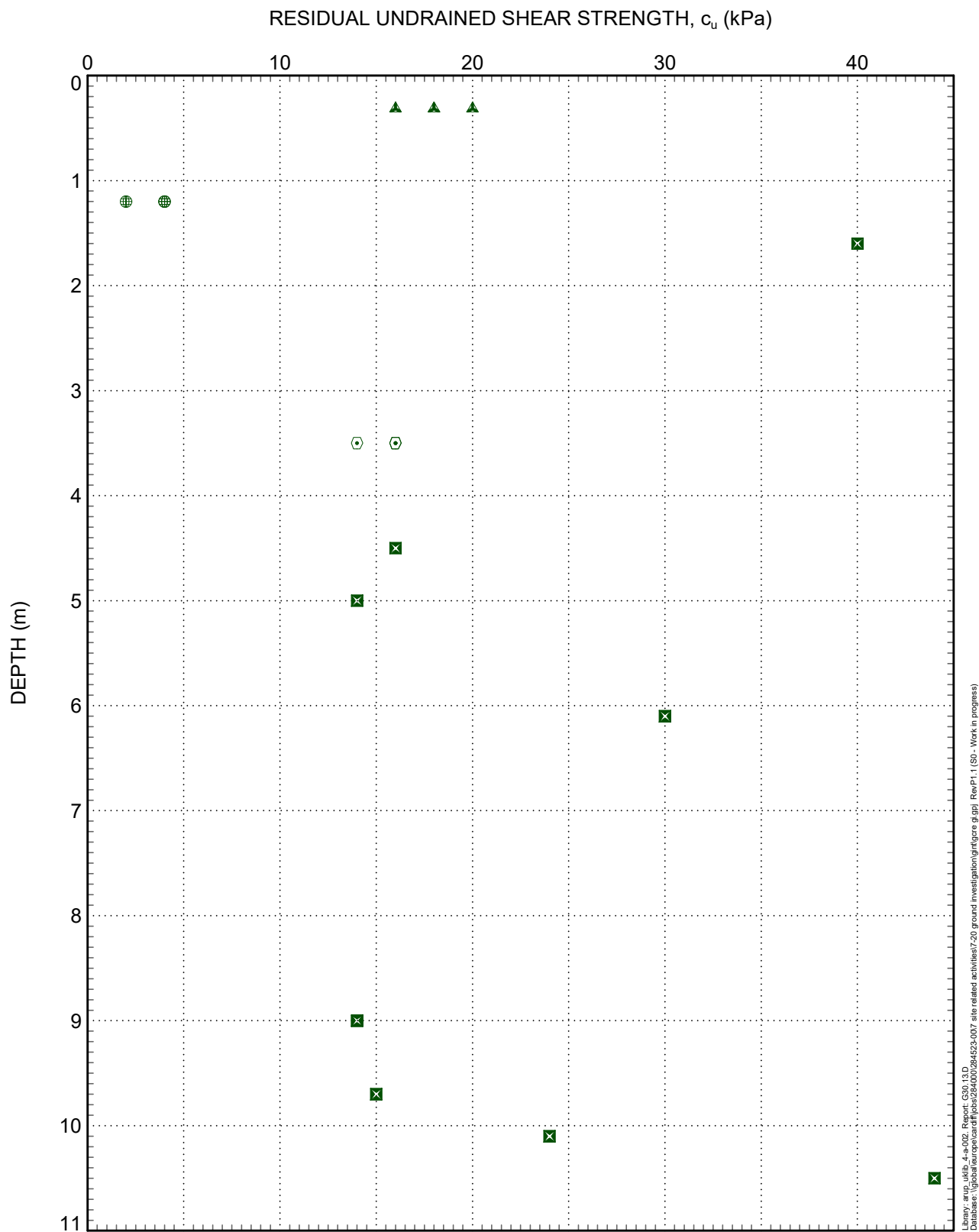
FIGURE **[B14]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
UNDRAINED SHEAR STRENGTH
FROM HAND VANE
GLACIAL TILL

284523-03

FIGURE **[B15]**

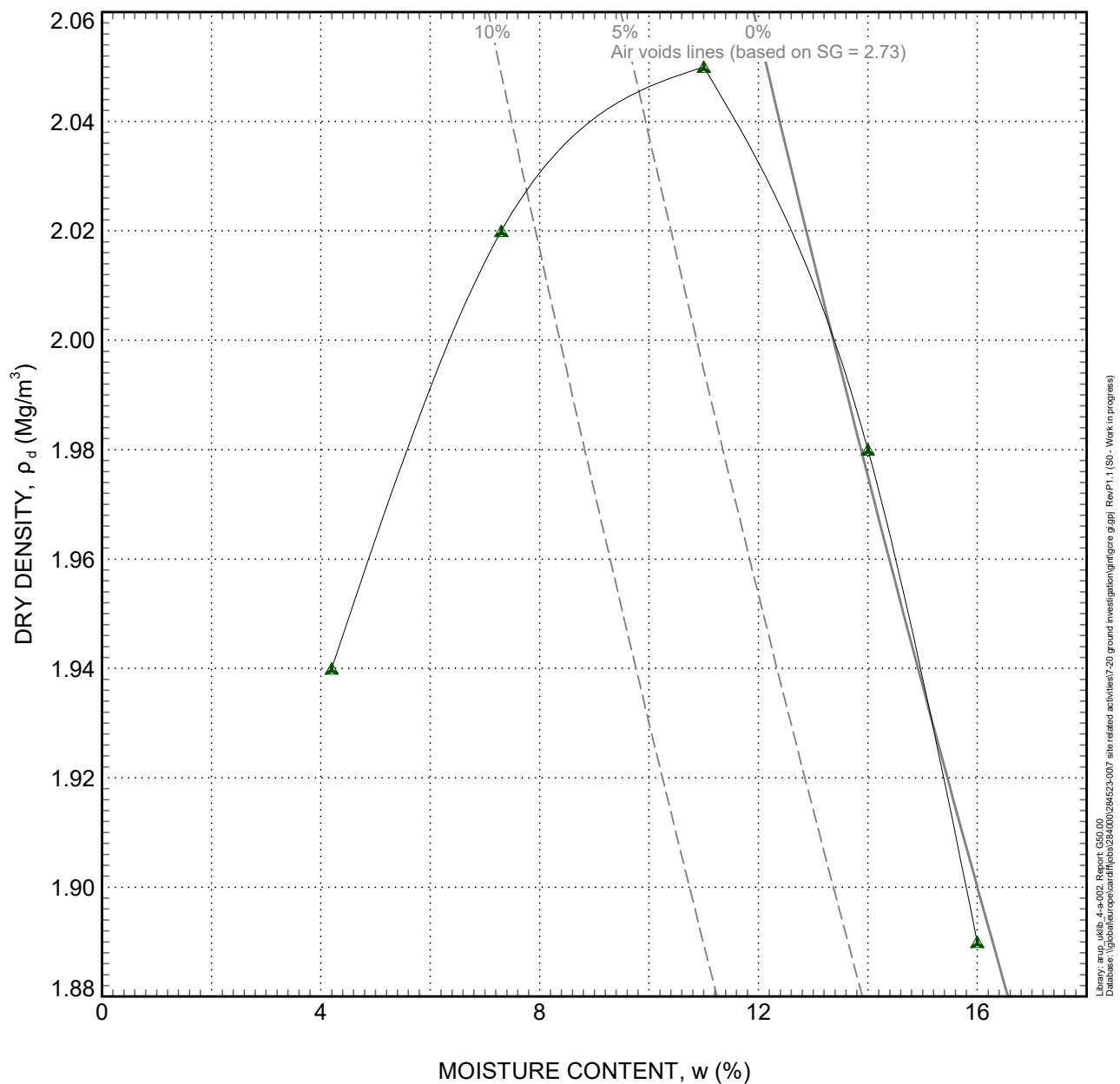


- Glacial Till (GT)
- ⊠ BH05
- ▲ TP19
- ⊗ TP27
- ⊙ TP33

**GLOBAL CENTRE OF RAIL
 EXCELLENCE
 UNDRAINED SHEAR STRENGTH
 FROM HAND VANE
 GLACIAL TILL**

284523-03

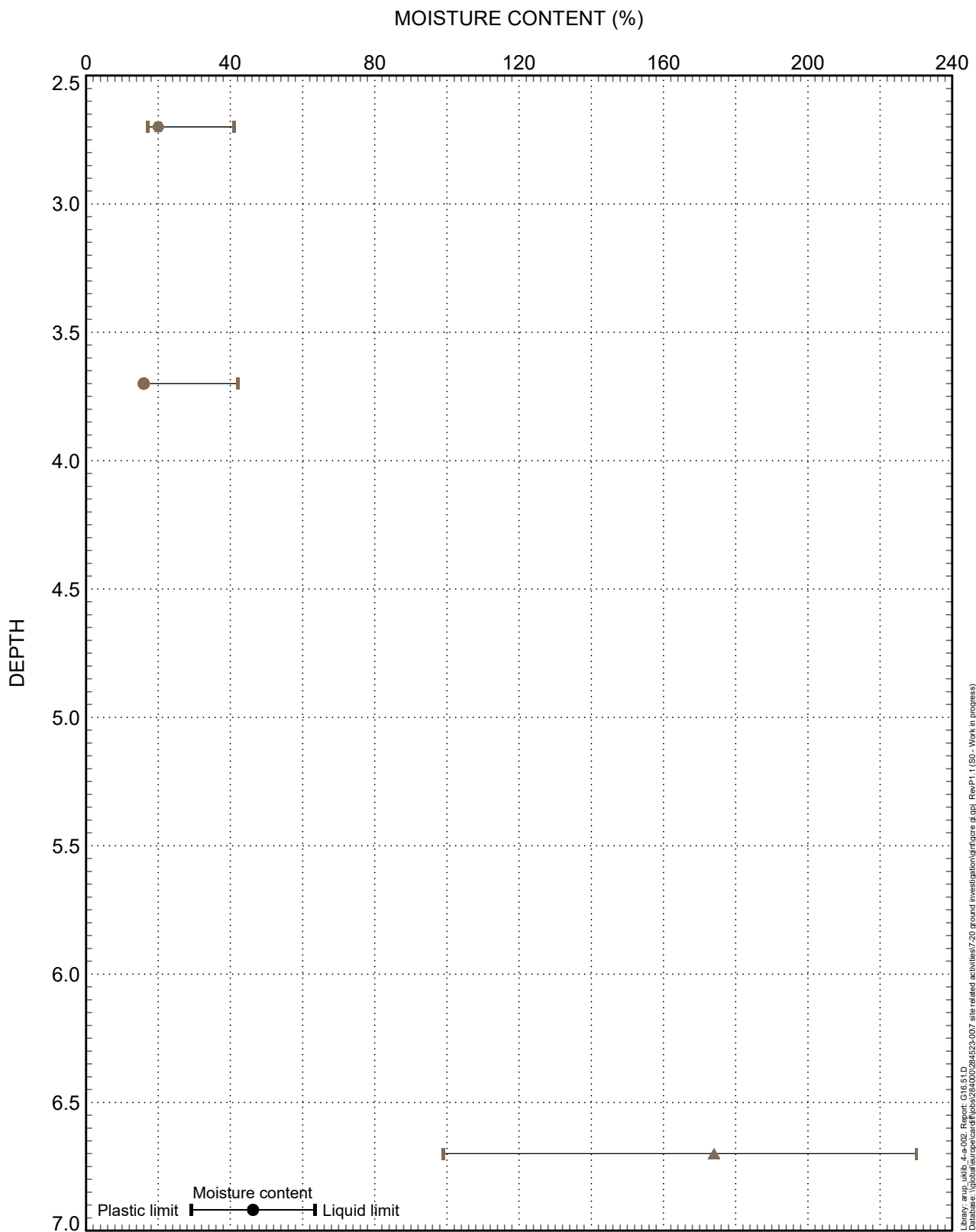
FIGURE **[B16]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
COMPACTION TESTS
GLACIAL TILL

284523-03

FIGURE **[B17]**

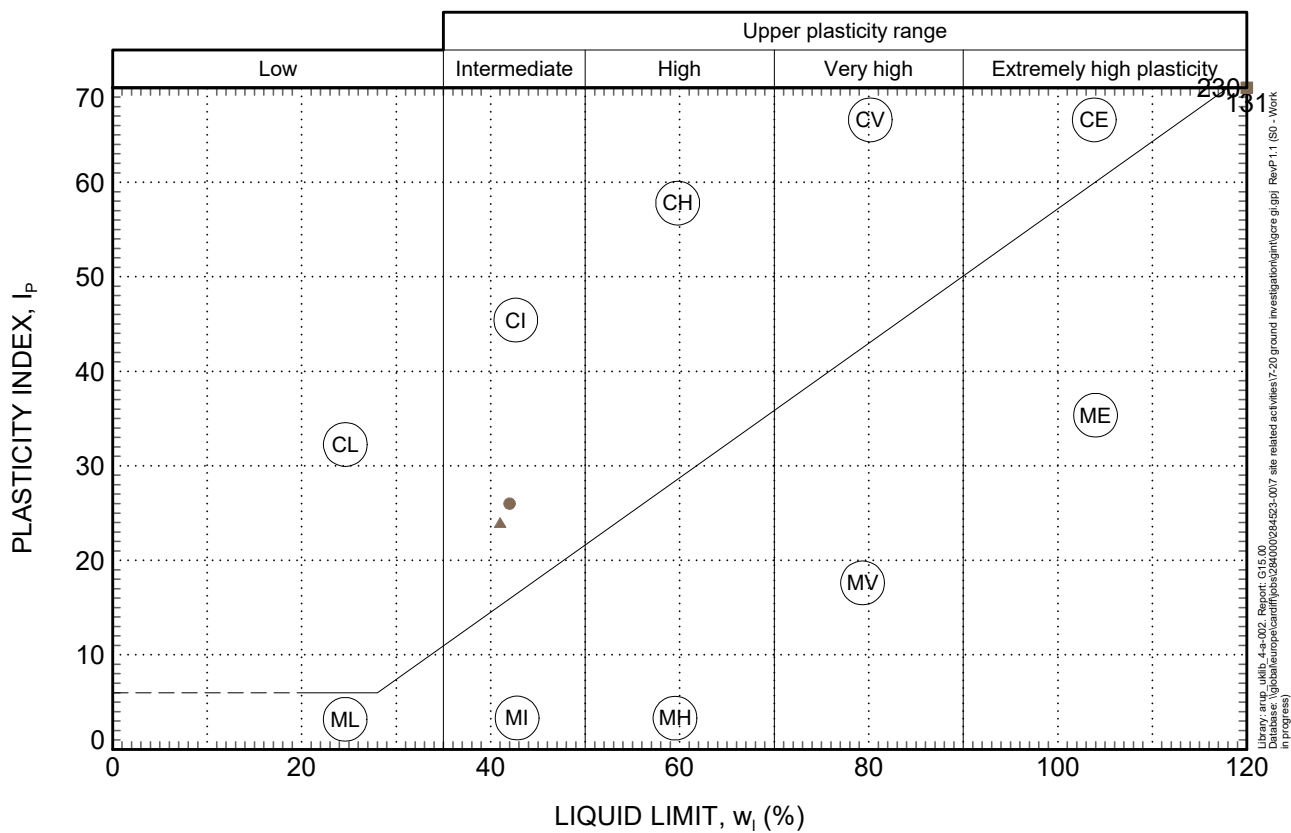


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Database: \global\europa\card\pss\284523\007 site related activities\720 ground investigation\figure g1.ppt RevP1.1 (SO - Work in progress)

GLOBAL CENTRE OF RAIL EXCELLENCE ATTERBERG LIMITS PEAT

284523-03

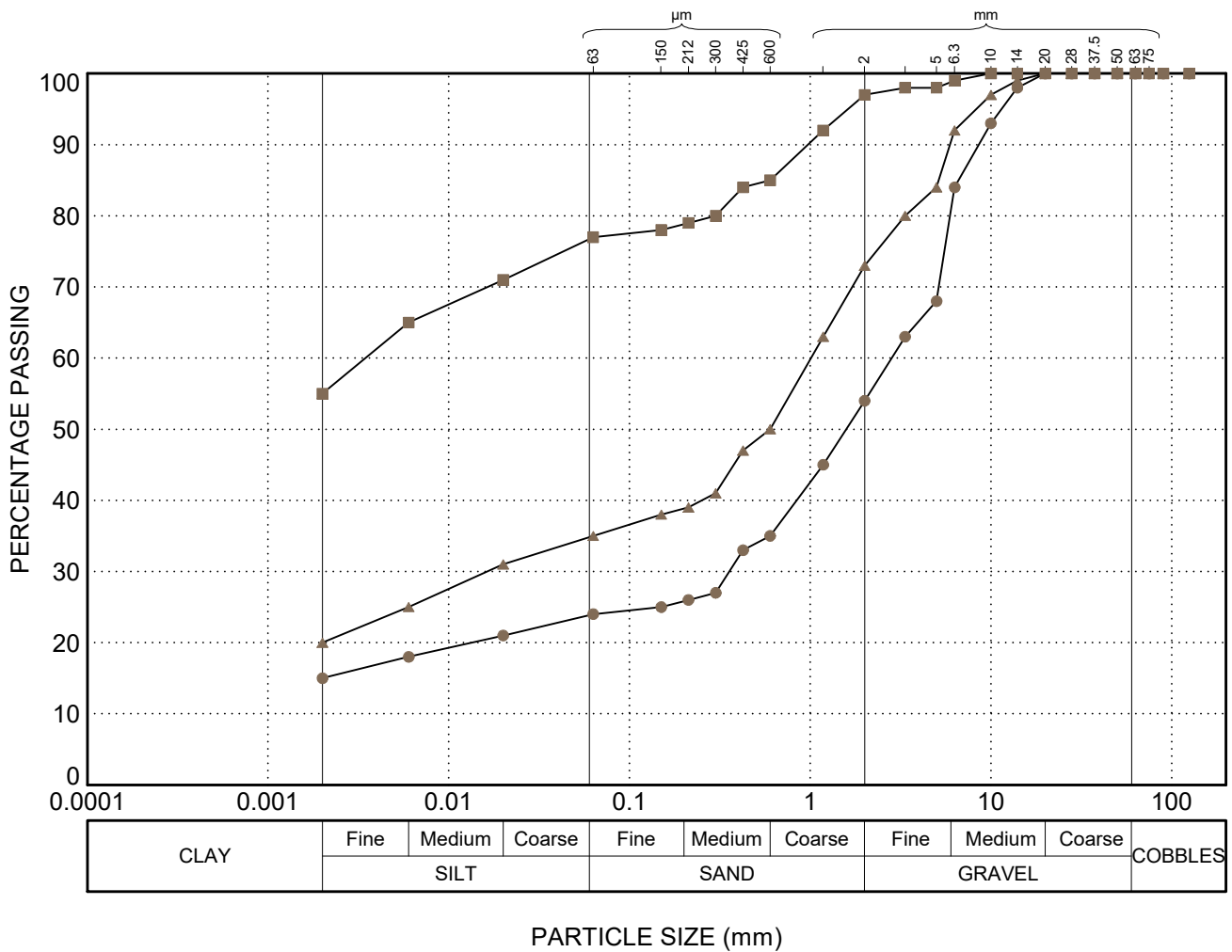
FIGURE **[B19]**



GLOBAL CENTRE OF RAIL
EXCELLENCE
PLASTICITY CHART
PEAT

284523-03

FIGURE [B20]

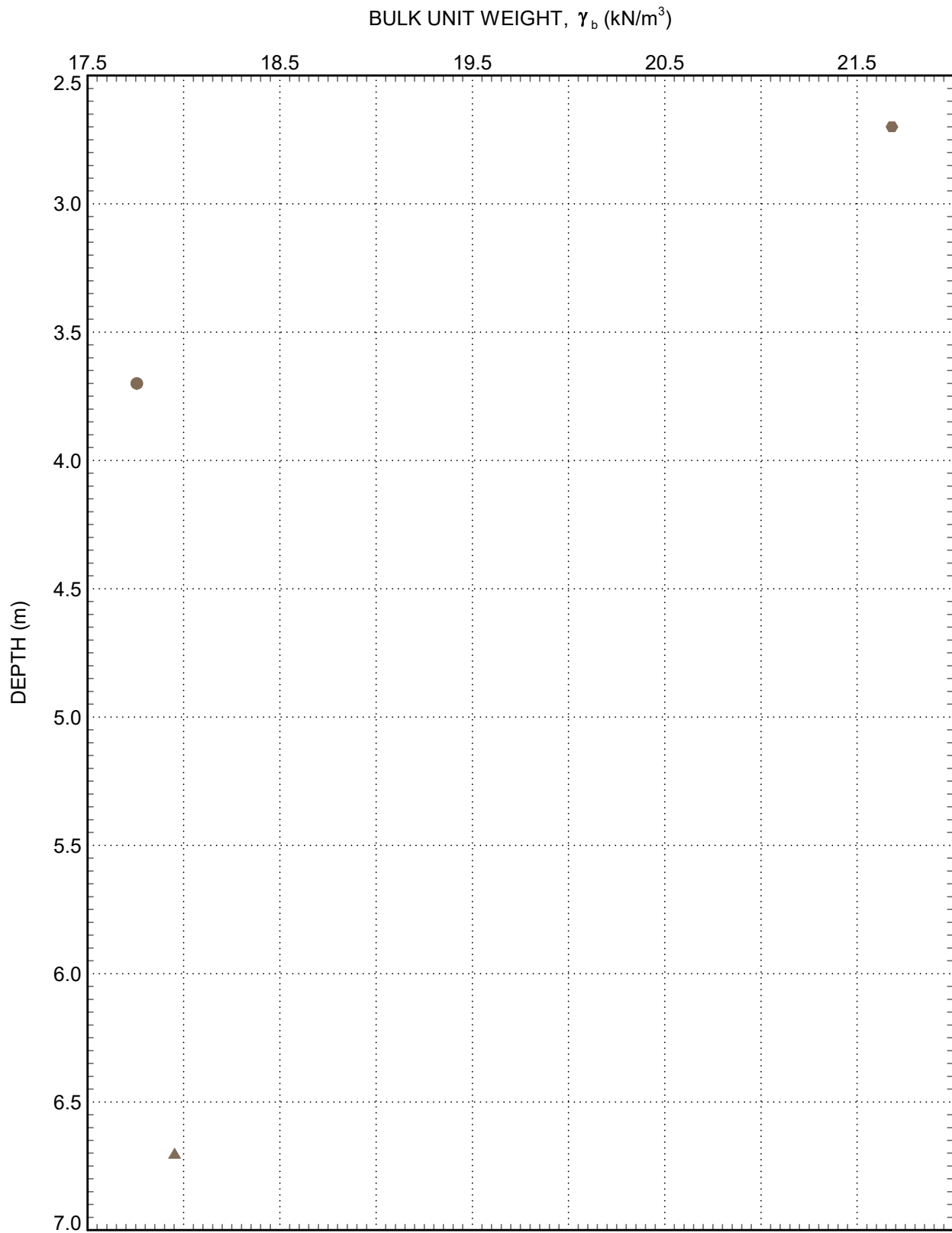


- Peat (PEAT)
- BH29, 4.00m, 14
- BH31, 6.80m, 22
- ▲ BH33, 2.00m, 8

GLOBAL CENTRE OF RAIL EXCELLENCE PARTICLE SIZE DISTRIBUTION PEAT

284523-03

FIGURE **[B21]**

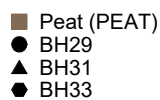


- Peat (PEAT)
- BH29
- ▲ BH31
- ◆ BH33

**GLOBAL CENTRE OF RAIL
EXCELLENCE
BULK UNIT WEIGHT
PEAT**

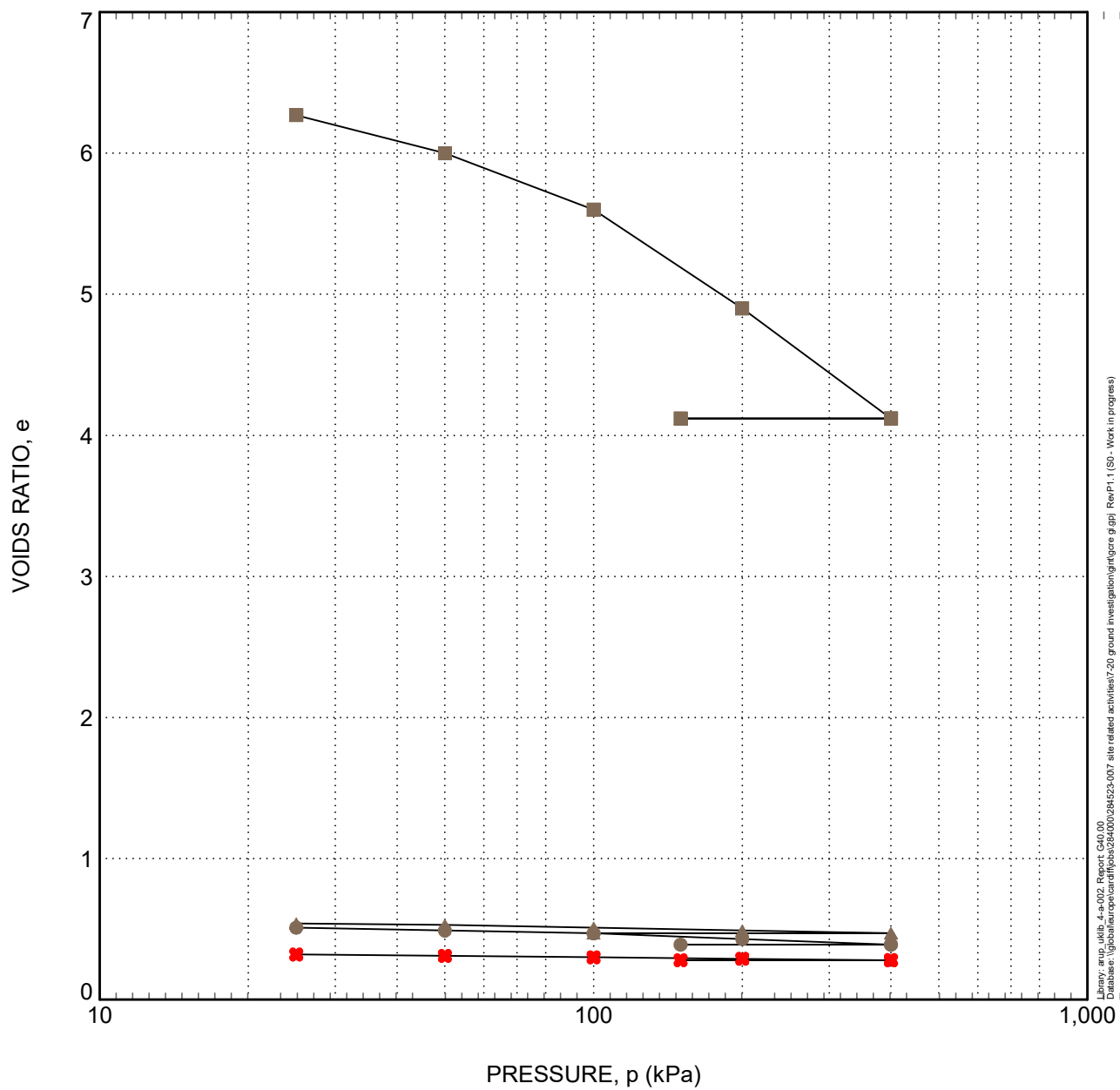
284523-03

FIGURE [B22]



GLOBAL CENTRE OF RAIL EXCELLENCE STANDARD PENETRATION TESTS PEAT

FIGURE [B23]

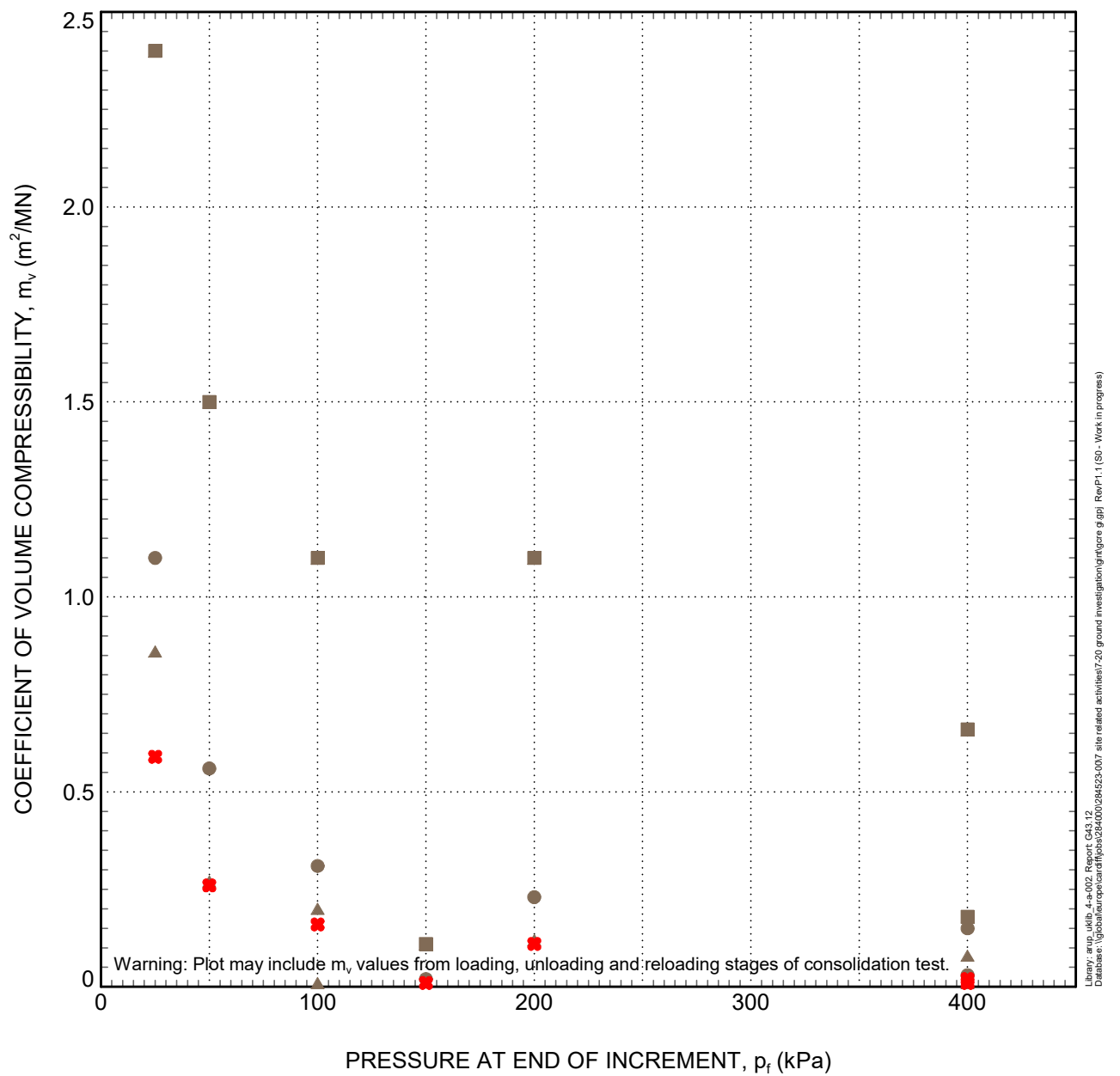


- Made Ground (MGR)
- Peat (PEAT)
- BH29, 3.70m, 1
- BH31, 6.70m, 1
- ▲ BH33, 2.70m, 1
- ✱ BH34, 6.20m, 1

GLOBAL CENTRE OF RAIL EXCELLENCE CONSOLIDATION TESTS

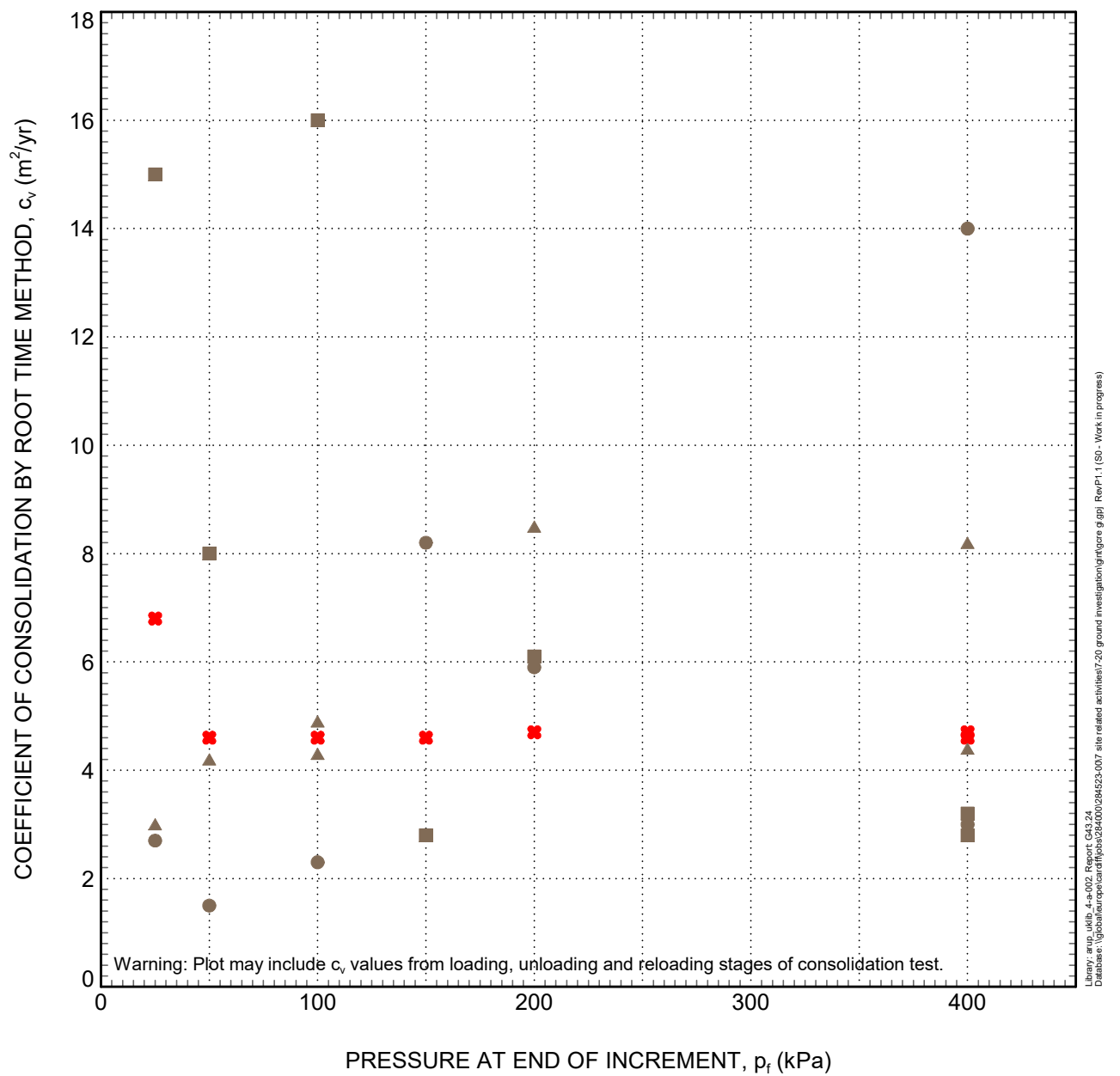
284523-03

FIGURE **[B24]**



- Made Ground (MGR)
- Peat (PEAT)
- BH29, 3.70m, 1
- BH31, 6.70m, 1
- ▲ BH33, 2.70m, 1
- ✱ BH34, 6.20m, 1

GLOBAL CENTRE OF RAIL
EXCELLENCE
VOLUME COMPRESSIBILITY



- Made Ground (MGR)
- Peat (PEAT)
- BH29, 3.70m, 1
- BH31, 6.70m, 1
- ▲ BH33, 2.70m, 1
- ✱ BH34, 6.20m, 1

GLOBAL CENTRE OF RAIL
EXCELLENCE
COEFFICIENT OF CONSOLIDATION

284523-03

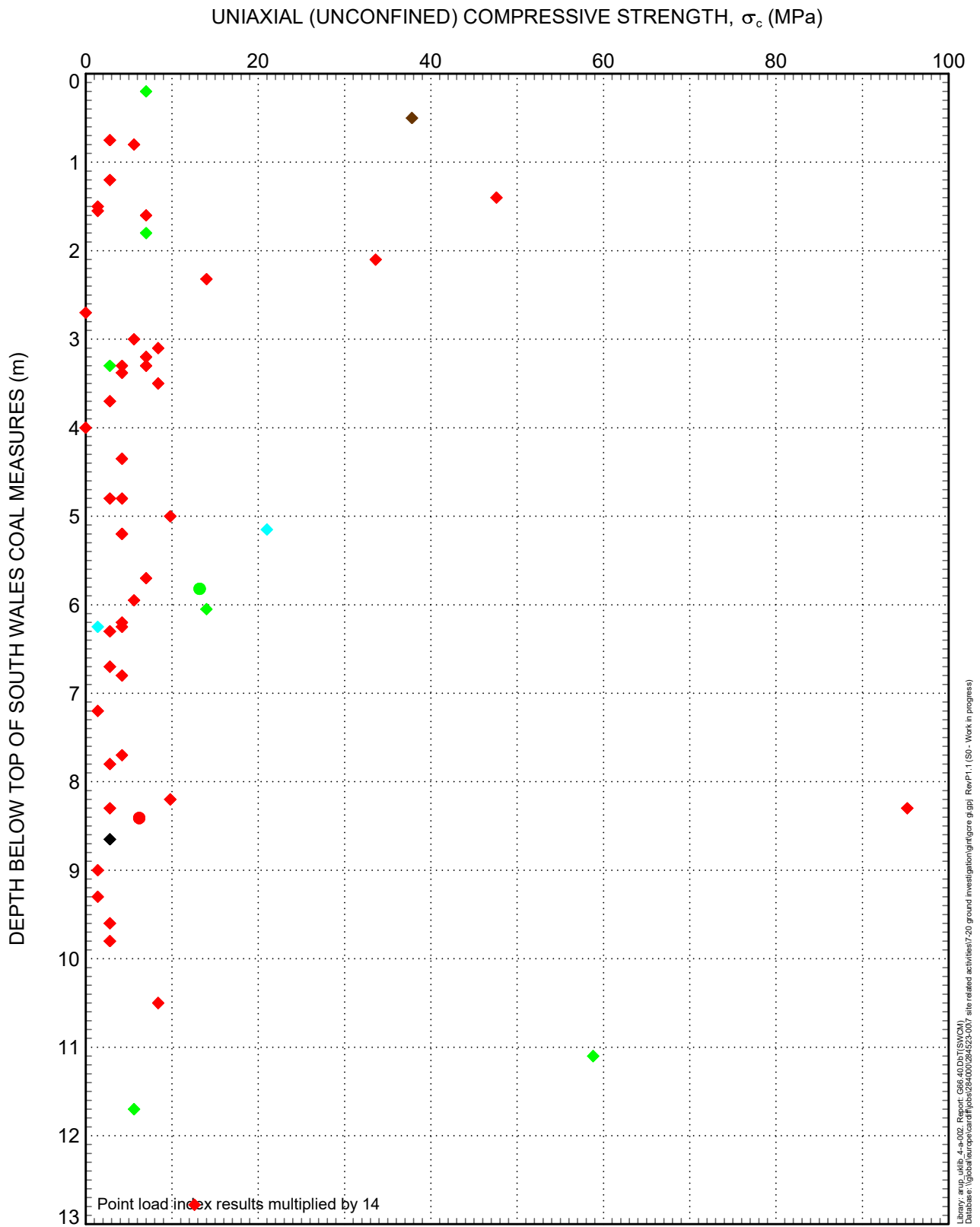
FIGURE **[B26]**



- | | |
|---|------|
|  | BH13 |
|  | BH14 |
|  | BH15 |
|  | BH16 |
|  | BH17 |
|  | BH22 |
|  | BH23 |
|  | BH26 |

284523-03

FIGURE [B27]

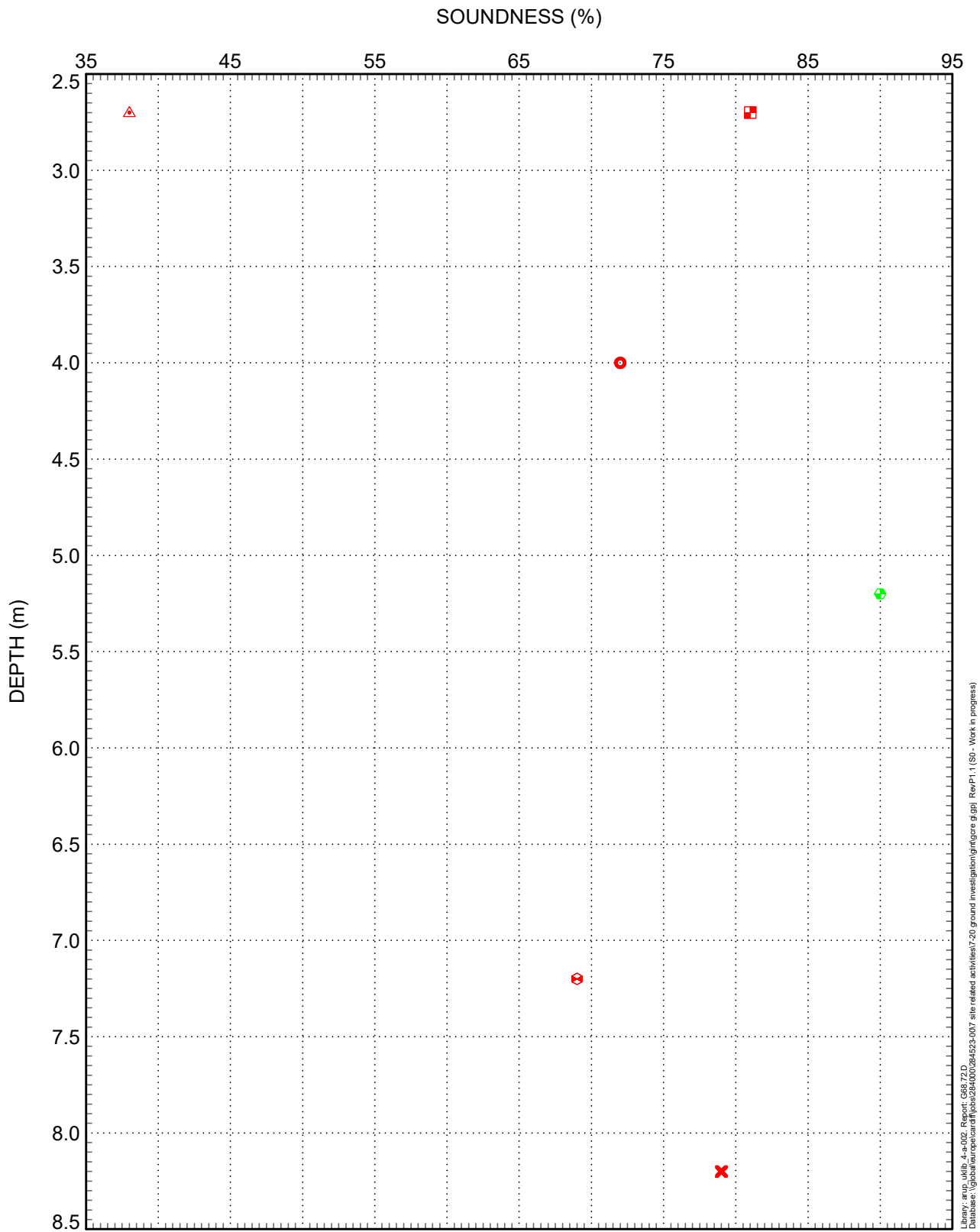


- Siltstone (SZT)
- Sandstone (SST)
- Mudstone (MST)
- Conglomerate (CONG)
- Coal (COAL)
- UCS test
- ◆ Point Load Index test

**GLOBAL CENTRE OF RAIL
 EXCELLENCE
 UNIAXIAL COMPRESSIVE
 STRENGTH
 SOUTH WALES COAL MEASURES**

284523-03

FIGURE **[B28]**



Users: gnt, jdlb, 4-4-202, Report: C68-72.D
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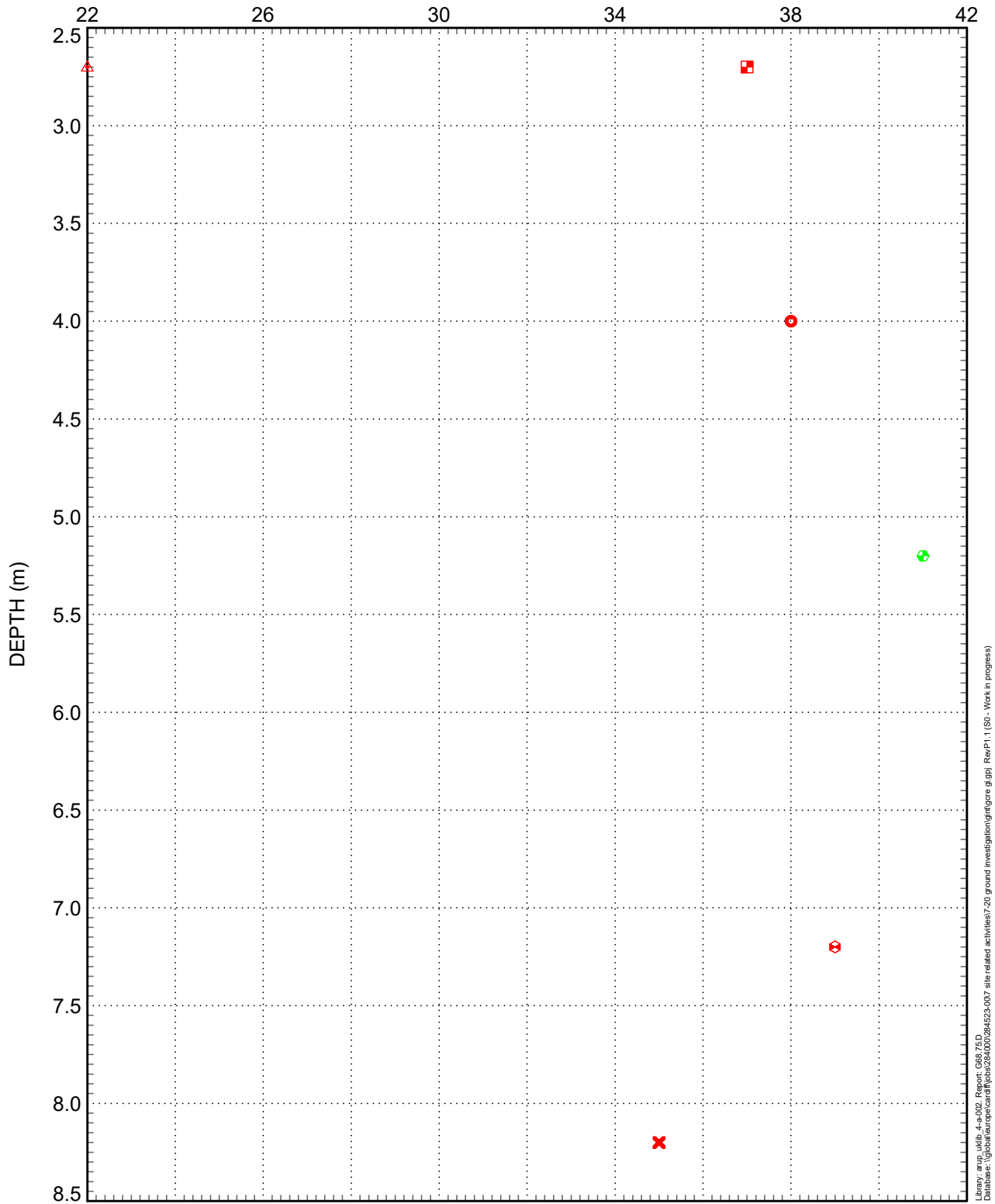
- Siltstone (SZT)
- Mudstone (MST)
- ⊕ BH04
- ⊙ BH06
- △ BH12
- ✕ BH13
- ⊞ BH15
- ⊗ BH17

**GLOBAL CENTRE OF RAIL
EXCELLENCE
SOUNDNESS
SOUTH WALES COAL MEASURES**

284523-03

FIGURE **[B29]**

LA ABRASION



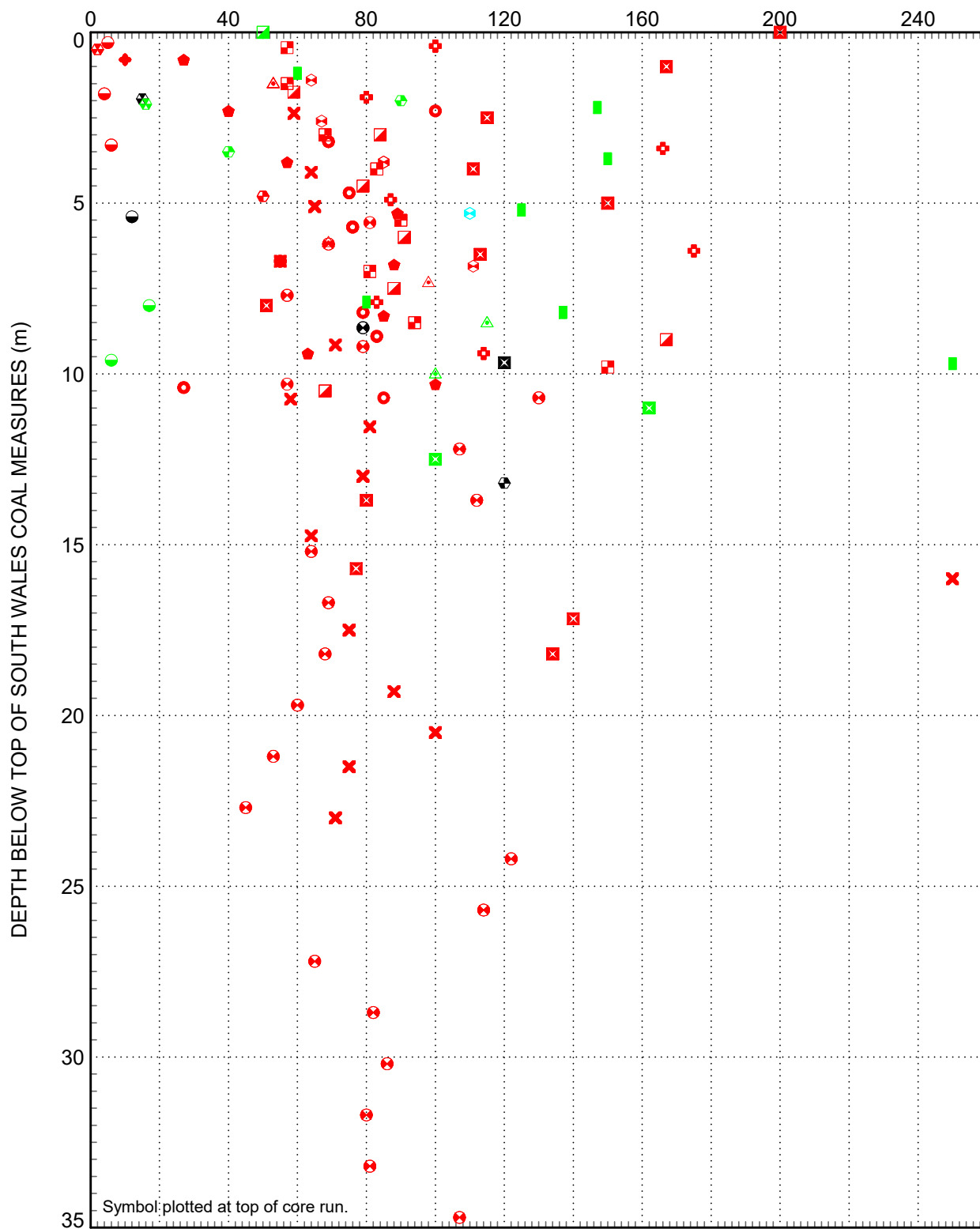
- Siltstone (SZT)
- Mudstone (MST)
- ⊕ BH04
- ⊙ BH06
- △ BH12
- ✕ BH13
- ⊠ BH15
- ⊕ BH17

**GLOBAL CENTRE OF RAIL
EXCELLENCE
LA ABRASION
SOUTH WALES COAL MEASURES**

284523-03

FIGURE **[B30]**

AVERAGE FRACTURE (MODAL) SPACING OVER CORE RUN (mm)



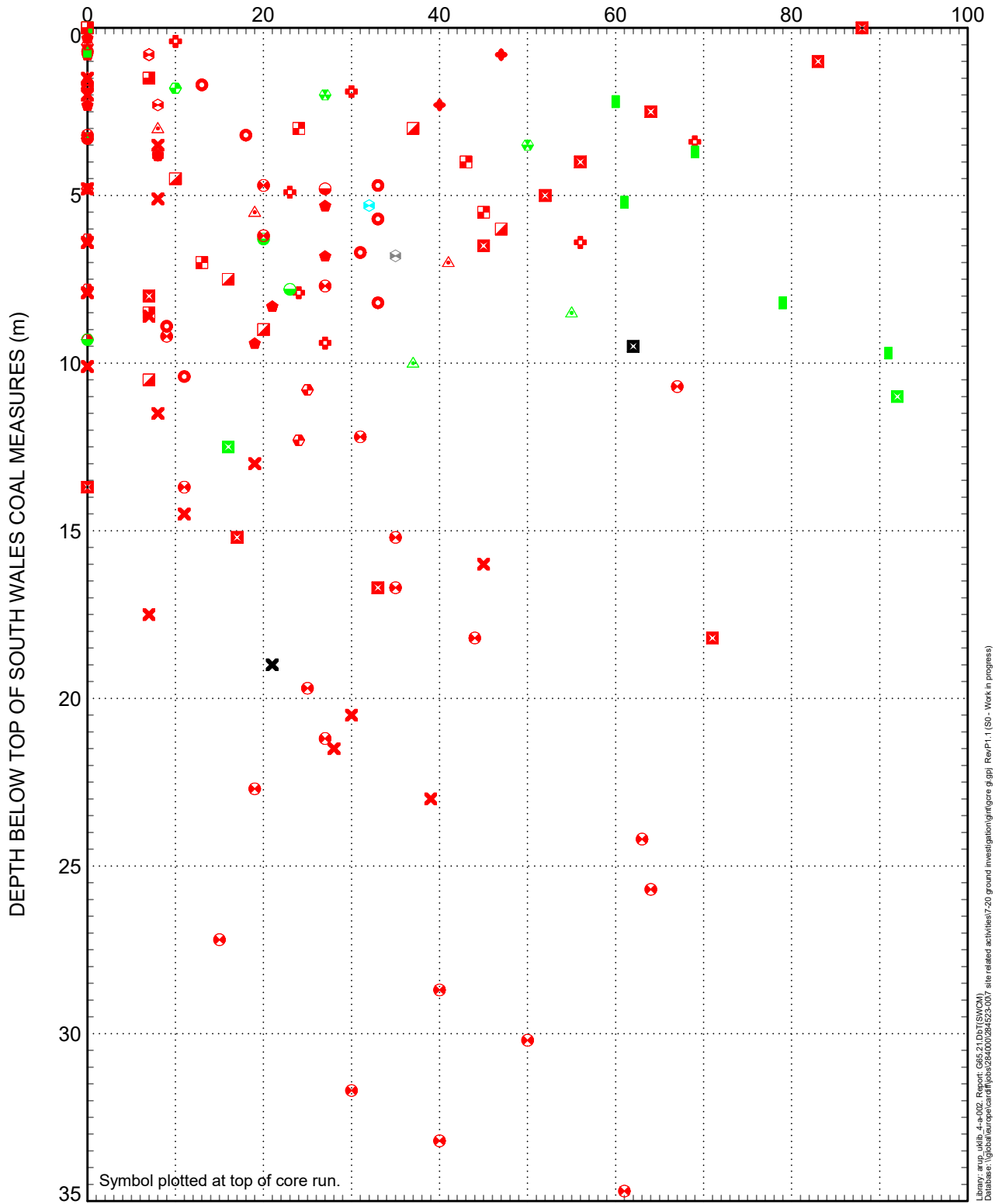
- Siltstone (SZT)
- Mudstone (MST)
- Conglomerate (CONG)
- Coal (COAL)
- BH03
- BH04
- BH05
- BH06
- BH07
- BH11
- BH12
- BH13
- BH14
- BH15
- BH16
- BH17
- BH18
- BH23
- BH26

**GLOBAL CENTRE OF RAIL
EXCELLENCE
FRACTURE SPACING
SOUTH WALES COAL MEASURES
MAIN SITE**

284523-03

FIGURE **[B31]**

ROCK QUALITY DESIGNATION, RQD (%)



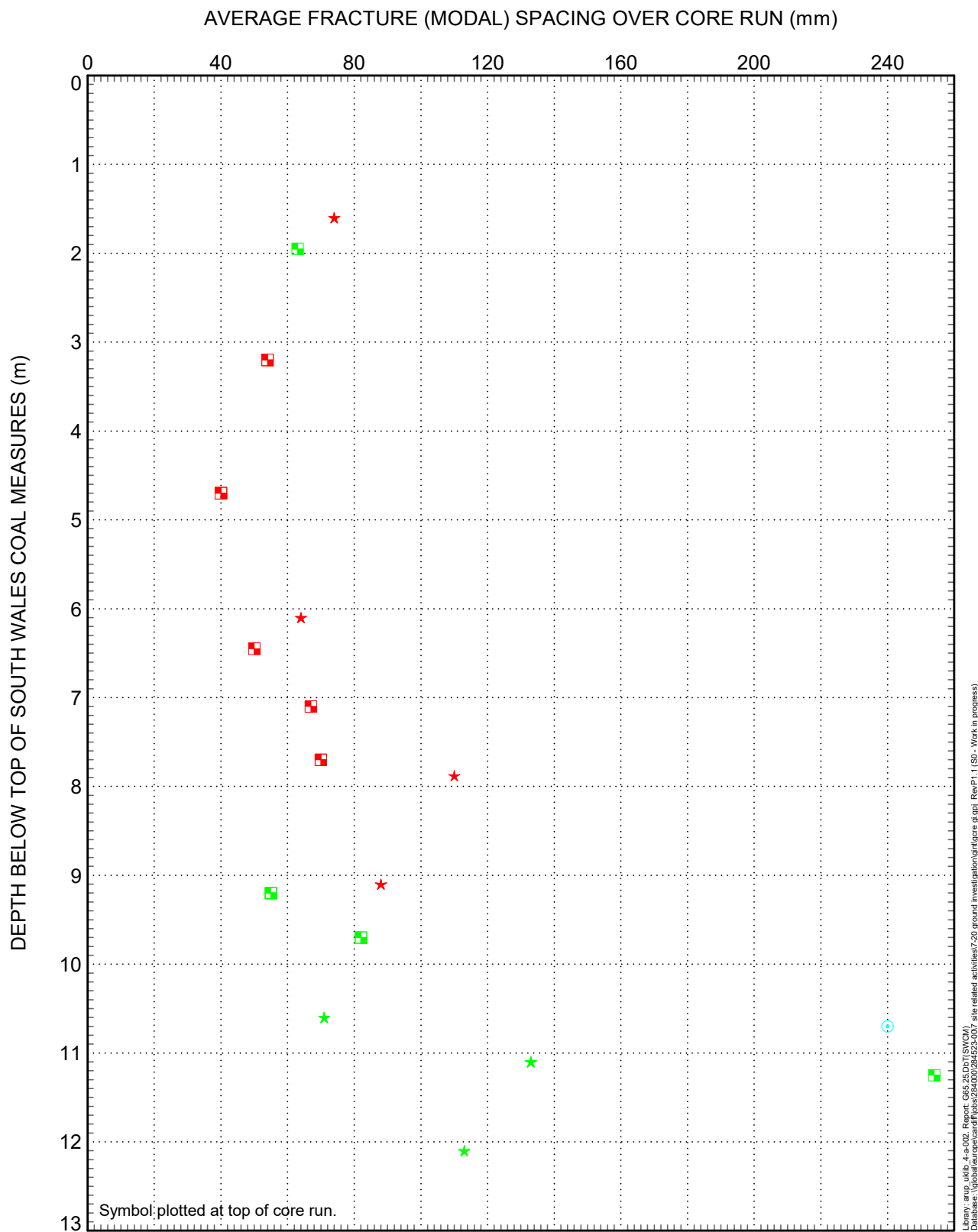
- Siltstone (SZT)
- Mudstone (MST)
- Conglomerate (CONG)
- Coal (COAL)
- Void (VOID)
- ⊕ BH03
- ⊕ BH04
- ⊕ BH05
- ⊕ BH06
- ⊕ BH07
- ⊕ BH11
- ⊕ BH12
- ⊕ BH13
- ⊕ BH14
- ⊕ BH15
- ⊕ BH16

- ⊕ BH17
- ⊕ BH18
- ⊕ BH23
- ⊕ BH26

**GLOBAL CENTRE OF RAIL
EXCELLENCE
ROCK QUALITY DESIGNATION
SOUTH WALES COAL MEASURES
MAIN SITE**

284523-03

FIGURE **[B32]**



- Siltstone (SZT)
- Mudstone (MST)
- Conglomerate (CONG)
- Coal (COAL)
- ★ BH30R
- ⊙ BH32R
- ⊠ BH33R

**GLOBAL CENTRE OF RAIL
EXCELLENCE
FRACTURE SPACING
SOUTH WALES COAL MEASURES
WASHERY**

284523-03

FIGURE **[B33]**

Appendix C – 1 Human Health Risk Assessment
summary table

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref
Sample Ref
Easting
Northing
Hole Elevation (mOD)
Sample Depth (mbgl)
Sample Date
Investigation
Geology

BH29	BH29	BH30	BH30	BH32	BH33	BH34	BH34	TP01	TP01	TP02	TP02	TP03	TP03	TP04
1	6	1	12	1	1	3	9	1	2	2	3	1	2	1
284719.48	284719.48	284925.69	284925.69	284967.95	284397.04	284419.61	284419.61	284246.92	284246.92	284410.81	284410.81	284554.78	284554.78	284819.63
210705.39	210705.39	210549.41	210549.41	210230.01	210700.88	210543.6	210543.6	210515.99	210515.99	210600.05	210600.05	210496.56	210496.56	210502.79
230.74	230.74	239.1	239.1	244.73	230.51	232.64	232.64	229.98	229.98	231.44	231.44	234.92	234.92	239.16
0.2	2	0.2	4	0.2	0.2	1	3	0.2	1	0.3	1	0.2	0.8	0.2
Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652
MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	GT-CLYGV	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation																						
Metal																															
Arsenic	40	C4SL/S4UL	mg/kg	26 of 27	0	<1	33		0	6.4	1.5	2.6	27	23	7.8	11	17	12	17	14	17	15	15	14							
Cadmium	85	AGAC/S4UL	mg/kg	23 of 27	0	<0.1	0.77		0	0.16	<0.1	<0.1	0.32	0.77	0.16	0.14	0.15	0.26	0.46	0.11	0.34	0.46	0.41	<0.1							
Chromium	907	AGAC (Cr III)	mg/kg	27 of 27	0	1.3	120		0	9.6	3.7	1.3	11	10	16	11	2.8	18	13	11	5.5	37	11	4.4							
Chromium (Hexavalent)	6	AGAC/S4UL	mg/kg	0 of 6	0	<0.5	<0.5		0	<0.5						<0.5		<0.5		<0.5											
Copper	7130	AGAC	mg/kg	27 of 27	0	7.8	260		0	35	27	17	7.8	27	39	47	63	69	260	38	62	52	67	51							
Lead	310	C4SL	mg/kg	27 of 27	0	8	69		0	19	10	8	16	26	23	30	46	26	69	23	47	40	27	42							
Mercury	56	AGAC (inorganic)	mg/kg	20 of 27	0	<0.1	0.64		0	<0.1	0.14	<0.1	<0.1	<0.1	0.15	0.14	0.39	<0.1	0.15	0.1	0.13	0.12	0.1	0.17							
Nickel	181	AGAC	mg/kg	27 of 27	0	5.2	140		0	24	5.8	6.4	5.2	28	42	44	25	34	26	18	21	37	27	22							
Selenium	430	AGAC/S4UL	mg/kg	27 of 27	0	0.27	4.2		0	0.49	0.44	0.27	0.87	0.78	0.86	0.84	2.9	0.61	1.1	1.7	0.74	0.67	2.8	2.8							
Zinc	40400	AGAC	mg/kg	27 of 27	0	15	270		0	63	19	52	21	120	250	270	59	110	240	41	150	120	120	44							
Inorganic																															
pH			-	No GAC	-	5.6	9		0	8.9	7.3	8.7	6.9	8.1	7.9	8.1	8.4	8.2	9	8.5	8.5	8.3	8.6	8.4							
Cyanide (Total)	24	AGAC (free, acute)	mg/kg	2 of 27	0	<0.5	2.9		0	<0.5	<0.5	<0.5	<0.5	<0.5	2.9	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5							
Total Phenols			mg/kg	No GAC	-	<0.1	<0.1		0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							
Boron (Hot Water Soluble)	10775	AGAC	mg/kg	6 of 27	0	<0.4	0.55		0	<0.4	<0.4	<0.4	0.55	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.46							
Total Organic Carbon			%	No GAC	-	1.2	82		0	16	46	82	11	6.9	5.7	7.2	27	22	43	39	44	37	2.8	24							
Asbestos																															
ACM Type			-	No GAC	-				0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
Asbestos Identification			-	No GAC	-				0	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected							
TPH																															
Aliphatic TPH >C10-C12	132	AGAC	mg/kg	2 of 20	1	<1	510	47.50	1	<1	<1	13	<1	510	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aliphatic TPH >C12-C16	1061	AGAC	mg/kg	2 of 20	0	<1	550	23.70	1	<1	<1	4.6	<1	550	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aliphatic TPH >C16-C21	11925	AGAC (Ali >C16-35)	mg/kg	1 of 19	0	<1	6.6	8.480	0	<1	<1	<1	<1	6.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aliphatic TPH >C21-C35	11925	AGAC (Ali >C16-35)	mg/kg	2 of 20	0	<1	3700	8.480	1	<1	<1	22	<1	<1	<1	<1	<1	<1	<1	3700	<1	<1	<1	<1							
Aliphatic TPH >C35-C44	11926	AGAC (Ali >C16-35)	mg/kg	0 of 20	0	<1	<1	8.480	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aliphatic TPH >C5-C6	42	AGAC/S4UL	mg/kg	0 of 20	0	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aliphatic TPH >C6-C8	104	AGAC	mg/kg	0 of 20	0	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aliphatic TPH >C8-C10	27	AGAC/S4UL	mg/kg	2 of 20	1	<1	170		0	<1	<1	7.4	<1	170	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C10-C12	252	AGAC/S4UL	mg/kg	1 of 20	0	<1	120		0	<1	<1	<1	<1	120	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C12-C16	1800	AGAC/S4UL	mg/kg	1 of 20	0	<1	170	169.0	1	<1	<1	<1	<1	170	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C16-C21	1400	AGAC	mg/kg	0 of 20	0	<1	<1	53.70	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C21-C35	1930	AGAC	mg/kg	3 of 20	1	<1	2300		0	<1	<1	220	<1	<1	<1	<1	1100	<1	2300	<1	<1	<1	<1	<1							
Aromatic TPH >C35-C44	1930	AGAC	mg/kg	0 of 20	0	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C5-C7			mg/kg	No GAC	-	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C7-C8	880	AGAC (toluene)	mg/kg	0 of 20	0	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Aromatic TPH >C8-C10	47	AGAC/S4UL	mg/kg	1 of 20	0	<1	11		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
TPH >C10-C25			mg/kg	No GAC	-	<1	50		0	<1	<1	<1	<1	<1	11	<1	<1	<1	<1	<1	<1	<1	<1	<1							
TPH >C25-C40			mg/kg	No GAC	-	<1	49		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
TPH >C6-C10			mg/kg	No GAC	-	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							
Total TPH >C6-C40			mg/kg	No GAC	-	<10	98		0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10							
Total Aliphatic Hydrocarbons			mg/kg	No GAC	-	<5	3700		0	<5	<5	47	<10	<5	<5	1200	<5	<5	<5	<5	3700	<5	<5	<5							
Total Aromatic Hydrocarbons			mg/kg	No GAC	-	<5	2300		0	<5	<5	220	<10	<5	<5	300	<5	1100	<5	2300	<5	<5	<5	<5							
Total Petroleum Hydrocarbons			mg/kg	No GAC	-	<10	6000		0	<10	<10	270	<10	<10	<10	1500	<10	1100	<10	<10	6000	<10	<10	<10							
PAH																															
Acenaphthene	2995	AGAC	mg/kg	7 of 27	0	<0.1	1.5	57.0	0	<0.1	<0.1	<0.1	1.2	<0.1	0.74	1.5	<0.1	0.22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							
Dibenz(a,h)Anthracene	0.31	AGAC/S4UL	mg/kg	11 of 27	5	<0.1	4.8		0	<0.1	<0.1	<0.1	0.79	0.24	2.1	4.8	<0.1	0.35	0.24	<0.1	0.14	0.11	<0.1	<0.1							
Fluoranthene	1526	AGAC	mg/kg	21 of 27	0	<0.1	31		0	1	0.21	<0.1	11	0.86	12	31	0.21	4.3	4	1	2.5	0.71	<0.1	<0.1							
Fluorene	2795	AGAC	mg/kg	7 of 27	0	<0.1	1.9	30.90	0	<0.1	<0.1	<0.1	1.3	<0.1	0.95	1.9	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							
Indeno(1,2,3-c,d)Pyrene	45	AGAC/S4UL	mg/kg	12 of 27	0	<0.1	17		0	<0.1	<0.1	<0.1	5.1	0.48	4.9	17	<0.1	1.4	1.2	<0.1	0.46	0.29	<0.1	<0.1							
Phenanthrene	1292	AGAC	mg/kg	15 of 27	0	<0.1	8.9	36.0	0	0.97	<0.1	<0.1	8.3	0.45	4.3	8.9	<0.1	2.4	2.8	1.4	2.6	0.69	<0.1	<0.1							
Pyrene	3661	AGAC	mg/kg	20 of 27	0	<0.1	23		0	0.83	0.22	<0.1	9	0.56	9.4	23	0.2	4.1	3.3	0.83	2	0.5	<0.1	<0.1							
Naphthalene	2.3	AGAC	mg/kg	7 of 27	1	<0.1	8.1		0	<0.1	<0.1	<0.1	0.72	<0.1	2	0.61	<0.1	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							
Total (Of 17) PAH's			mg/kg	No GAC	-	<2	220		0	2.1	<2	<2	70	5.7	88	220	<2	27	22	5.4	12	5.3	<2	<2							
Acenaphthylene	2893	AGAC	mg/kg	6 of 27	0	<0.1	0.36	86.0	0	<0.1	<0.1	<0.1	0.23	<0.1	0.28	0.36	<0.1	0.22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							
Anthracene	30604	AGACAC																													

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref
Sample Ref
Easting
Northing
Hole Elevation (mOD)
Sample Depth (mbgl)
Sample Date
Investigation
Geology

BH29	BH29	BH30	BH30	BH32	BH33	BH34	BH34	TP01	TP01	TP02	TP02	TP03	TP03	TP04
1	6	1	12	1	1	3	9	1	2	2	3	1	2	1
284719.48	284719.48	284925.69	284925.69	284967.95	284397.04	284419.61	284419.61	284246.92	284246.92	284410.81	284410.81	284554.78	284554.78	284819.63
210705.39	210705.39	210549.41	210549.41	210230.01	210700.88	210543.6	210543.6	210515.99	210515.99	210600.05	210600.05	210496.56	210496.56	210502.79
230.74	230.74	239.1	239.1	244.73	230.51	232.64	232.64	229.98	229.98	231.44	231.44	234.92	234.92	239.16
0.2	2	0.2	4	0.2	0.2	1	3	0.2	1	0.3	1	0.2	0.8	0.2
Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652
MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	GT-CLYGV	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL

Contaminant Name			GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation																				
Metal																															
Arsenic	635	AGAC	mg/kg	26 of 27	0	<1	33		0	6.4	1.5	2.6	27	23	7.8	11	17	12	17	14	15	15	14								
Cadmium	190	AGAC/S4UL	mg/kg	23 of 27	0	<0.1	0.77		0	0.16	<0.1	<0.1	0.32	0.77	0.16	0.14	0.15	0.26	0.46	0.11	0.34	0.46	0.41								
Chromium	8570	AGAC (Cr III)	mg/kg	27 of 27	0	1.3	120		0	9.6	3.7	1.3	11	10	16	11	2.8	18	13	11	5.5	37	11								
Chromium (Hexavalent)	33	AGAC/S4UL	mg/kg	0 of 6	0	<0.5	<0.5		0	<0.5						<0.5		<0.5													
Copper	68300	AGAC	mg/kg	27 of 27	0	7.8	260		0	35	27	17	7.8	27	39	47	63	69	260	38	62	52	67								
Lead	2300	C4SL	mg/kg	27 of 27	0	8	69		0	19	10	8	16	26	23	30	46	26	69	23	47	40	27								
Mercury	1100	AGAC (inorganic)	mg/kg	20 of 27	0	<0.1	0.64		0	<0.1	0.14	<0.1	<0.1	<0.1	0.15	0.14	0.39	<0.1	0.15	0.1	0.13	0.12	0.17								
Nickel	983	AGAC	mg/kg	27 of 27	0	5.2	140		0	24	5.8	6.4	5.2	28	42	44	25	34	26	18	21	37	22								
Selenium	12261	AGAC	mg/kg	27 of 27	0	0.27	4.2		0	0.49	0.44	0.27	0.87	0.78	0.86	0.84	2.9	0.61	1.1	1	1.7	0.74	2.8								
Zinc	730000	AGAC/S4UL	mg/kg	27 of 27	0	15	270		0	63	19	52	21	120	250	270	59	110	240	41	150	120	44								
Inorganic																															
pH			-	No GAC	-	5.6	9		0	8.9	7.3	8.7	6.9	8.1	7.9	8.1	8.4	8.2	9	8.5	8.5	8.3	8.6								
Cyanide (Total)	168	AGAC (free, acute)	mg/kg	2 of 27	0	<0.5	2.9		0	<0.5	<0.5	<0.5	<0.5	<0.5	2.9	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5								
Total Phenols			mg/kg	No GAC	-	<0.1	<0.1		0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1								
Boron (Hot Water Soluble)	236000	AGAC	mg/kg	6 of 27	0	<0.4	0.55		0	<0.4	<0.4	<0.4	0.55	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.46								
Total Organic Carbon			%	No GAC	-	1.2	82		0	16	46	82	11	6.9	5.7	7.2	27	22	43	39	44	37	24								
Asbestos																															
ACM Type			-	No GAC	-				0	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Asbestos Identification			-	No GAC	-				0	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected								
TPH																															
Aliphatic TPH >C10-C12	6960	AGAC	mg/kg	2 of 20	0	<1	510	47.50	1	<1	<1	13	<1	<1	<1	510	<1	<1	<1	<1	<1	<1	<1								
Aliphatic TPH >C12-C16	58800	AGAC	mg/kg	2 of 20	0	<1	550	23.70	1	<1	<1	4.6	<1	<1	<1	550	<1	<1	<1	<1	<1	<1	<1								
Aliphatic TPH >C16-C21	648000	AGAC (All >C16-35)	mg/kg	1 of 19	0	<1	6.6	8.480	0	<1	<1	<1	<1	<1	<1	6.6	<1	<1	<1	<1	<1	<1	<1								
Aliphatic TPH >C21-C35	648000	AGAC (All >C16-35)	mg/kg	2 of 20	0	<1	3700	8.480	1	<1	<1	22	<1	<1	<1	<1	<1	<1	<1	<1	3700	<1									
Aliphatic TPH >C35-C44	648000	AGAC (All >C16-35)	mg/kg	0 of 20	0	<1	<1	8.480	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aliphatic TPH >C5-C6	3190	AGAC	mg/kg	0 of 20	0	<1	<1	304.0	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aliphatic TPH >C6-C8	7780	AGAC	mg/kg	0 of 20	0	<1	<1	144.0	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aliphatic TPH >C8-C10	2000	AGAC/S4UL	mg/kg	2 of 20	0	<1	170	77.70	1	<1	<1	7.4	<1	<1	<1	170	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C10-C12	16200	AGAC	mg/kg	1 of 20	0	<1	120	364.0	0	<1	<1	<1	<1	<1	<1	120	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C12-C16	36200	AGAC	mg/kg	1 of 20	0	<1	170	169.0	1	<1	<1	<1	<1	<1	<1	170	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C16-C21	26600	AGAC	mg/kg	0 of 20	0	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C21-C35	28400	AGAC	mg/kg	3 of 20	0	<1	2300		0	<1	<1	220	<1	<1	<1	<1	1100	<1	<1	2300	<1										
Aromatic TPH >C35-C44	28400	AGAC	mg/kg	0 of 20	0	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C5-C7			mg/kg	No GAC	-	<1	<1		0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C7-C8	56294	AGAC (toluene)	mg/kg	0 of 20	0	<1	<1	869.0	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1									
Aromatic TPH >C8-C10	3460	AGAC	mg/kg	1 of 20	0	<1	11	613.0	0	<1	<1	<1	<1	<1	<1	11	<1	<1	<1	<1	<1	<1									
TPH >C10-C25			mg/kg	No GAC	-	<1	50		0				<1	<1																	
TPH >C25-C40			mg/kg	No GAC	-	<1	49		0				<1	<1																	
TPH >C6-C10			mg/kg	No GAC	-	<1	<1		0				<1	<1																	
Total TPH >C6-C40			mg/kg	No GAC	-	<10	98		0				<10	<10																	
Total Aliphatic Hydrocarbons			mg/kg	No GAC	-	<5	3700		0	<5	<5	47			<5	1200	<5	<5	<5	3700	<5	<5									
Total Aromatic Hydrocarbons			mg/kg	No GAC	-	<5	2300		0	<5	<5	220			<5	300	<5	1100	<5	<5	2300	<5									
Total Petroleum Hydrocarbons			mg/kg	No GAC	-	<10	6000		0	<10	<10	270			<10	1500	<10	1100	<10	<10	6000	<10									
PAH																															
Acenaphthene	83700	AGAC	mg/kg	7 of 27	0	<0.1	1.5	57.0	0	<0.1	<0.1	<0.1	1.2	<0.1	0.74	1.5	<0.1	0.22	<0.1	<0.1	<0.1	<0.1									
Dibenz(a,h)Anthracene	3.5	AGAC/S4UL	mg/kg	11 of 27	1	<0.1	4.8		0	<0.1	<0.1	<0.1	0.79	0.24	2.1	4.8	<0.1	0.35	0.24	<0.1	0.14	0.11									
Fluoranthene	22600	AGAC	mg/kg	21 of 27	0	<0.1	31		0	1	0.21	<0.1	11	0.86	12	31	0.21	4.3	4	1	2.5	0.71									
Fluorene	63000	AGAC/S4UL	mg/kg	7 of 27	0	<0.1	1.9	30.90	0	<0.1	<0.1	<0.1	1.3	<0.1	0.95	1.9	<0.1	0.3	<0.1	<0.1	<0.1	<0.1									
Indeno(1,2,3-c,d)Pyrene	501	AGAC	mg/kg	12 of 27	0	<0.1	17		0	<0.1	<0.1	<0.1	5.1	0.48	4.9	17	<0.1	1.4	1.2	<0.1	0.46	0.29									
Phenanthrene	21900	AGAC	mg/kg	15 of 27	0	<0.1	8.9		0	0.97	<0.1	<0.1	8.3	0.45	4.3	8.9	<0.1	2.4	2.8	1.4	2.6	0.69									
Pyrene	54200	AGAC	mg/kg	20 of 27	0	<0.1	23		0	0.83	0.22	<0.1	9	0.56	9.4	23	0.2	4.1	3.3	0.83	2	0.5									
Naphthalene	193	AGAC	mg/kg	7 of 27	0	<0.1	8.1	76.40	0	<0.1	<0.1	<0.1	0.72	<0.1	2	0.61	<0.1	1.2	<0.1	<0.1	<0.1	<0.1									
Total (Of 17) PAH's			mg/kg	No GAC	-	<2	220		0	2.1	<2	<2	70	5.7	88	220	<2	27	22	5.4	12	5.3									
Acenaphthylene	83200	AGAC	mg/kg	6 of 27	0	<0.1	0.36	86.10	0	<0.1	<0.1	<0.1	0.23	<0.1	0.28	0.36	<0.1	0.22	<0.1	<0.1	<0.1	<0.1									
Anthracene	523000	AGAC	mg/kg	14 of 27	0	<0.1	4.4		0	0.21	<0.1	<0.1	2.3	0.11	1.8	4.4	<0.1	0.46	0.64	0.25	0.48	<0.1									
Benzo[a]anthracene	167	AGAC	mg/kg	18 of 27	0	<0.1	25		0	0.37	<0.1	<0.1	4.8	0.45	9.2	25	0.14	2.3	1.7	0.37	1.1	0.48									
Benzo[a]pyrene	35.2	AGAC/S4UL	mg/kg	14 of 27	0	<0.1	21		0	0.3	<0.1	<0.1	6.6	0.52	7.4	21	<0.1	2	1.6	0.26	0.76	0.35									
Benzo[g,h,i]perylene	3930	AGAC	mg/kg	12 of 27	0	<0.1	13		0	<0.1	<0.1	<0.1	3.7	0.4	4.7	13	<0.1	1.3	1.2	<0.1	0.45	0.29									
Benzo[b]fluoranthene	44	AGAC/S4UL	mg/kg	14 of 27	0	<0.1	34		0	0.61	<0.1	<0.1	7.5	0.9	13	34	<0.1	2.9	2.5	0.57	1.4	0.84									
Benzo[k]fluoranthene	1170</																														

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	TP04	TP05	TP05	TP06	TP06	TP07	TP07	TP07	TP08	TP08	TP09	TP09
Sample Ref	3	2	4	1	3	2	4	5	1	3	2	4
Easting	284819.63	284970.62	284970.62	285168.4	285168.4	285325.24	285325.24	285325.24	284939.2	284939.2	285134.98	285134.98
Northing	210502.79	210390.89	210390.89	210396.23	210396.23	210402.83	210402.83	210402.83	210661.1	210661.1	210589.13	210589.13
Hole Elevation (mOD)	239.16	240.57	240.57	237.14	237.14	232.57	232.57	232.57	243.46	243.46	243.47	243.47
Sample Depth (mbgl)	2	1	3	0.2	2	1	3	4	0.2	2	1	3
Sample Date												
Investigation	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652
Geology	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	GT-CLYGV	MGR-FILL	MGR-FILL	GT-CLYGV	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation												
Metal																					
Arsenic	635	AGAC	mg/kg	26 of 27	0	<1	33		0	20	23	20	20	8.9	15	14	33	8.2	5.3	<1	15
Cadmium	190	AGAC/S4UL	mg/kg	23 of 27	0	<0.1	0.77		0	0.14	0.25	0.19	0.16	0.13	0.38	0.46	0.64	0.18	0.13	<0.1	0.23
Chromium	8570	AGAC (Cr III)	mg/kg	27 of 27	0	1.3	120		0	5.9	7.8	11	21	23	120	11	14	7.3	6.5	2.9	5.6
Chromium (Hexavalent)	33	AGAC/S4UL	mg/kg	0 of 6	0	<0.5	<0.5		0				<0.5							<0.5	
Copper	68300	AGAC	mg/kg	27 of 27	0	7.8	260		0	110	84	60	77	48	74	70	25	96	87	43	120
Lead	2300	C4SL	mg/kg	27 of 27	0	8	69		0	42	37	29	38	28	59	54	17	57	48	28	60
Mercury	1100	AGAC (inorganic)	mg/kg	20 of 27	0	<0.1	0.64		0	0.27	0.24	0.13	0.22	<0.1	0.64	0.22	<0.1	0.22	0.21	0.1	0.26
Nickel	983	AGAC	mg/kg	27 of 27	0	5.2	140		0	88	39	37	36	46	140	26	23	37	27	7.8	19
Selenium	12261	AGAC	mg/kg	27 of 27	0	0.27	4.2		0	4.2	1.7	1.6	2.2	0.52	1.6	1.7	0.29	2	1.9	1.6	2.7
Zinc	730000	AGAC/S4UL	mg/kg	27 of 27	0	15	270		0	92	130	110	89	130	130	140	84	96	73	15	96
Inorganic																					
pH			-	No GAC	-	5.6	9		0	8.3	8.4	8.1	8.1	5.6	7.4	7.8	7.3	8.4	8.4	8.6	8.5
Cyanide (Total)	168	AGAC (free, acute)	mg/kg	2 of 27	0	<0.5	2.9		0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phenols			mg/kg	No GAC	-	<0.1	<0.1		0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron (Hot Water Soluble)	236000	AGAC	mg/kg	6 of 27	0	<0.4	0.55		0	0.49	<0.4	<0.4	<0.4	<0.4	0.41	0.5	0.46	<0.4	<0.4	<0.4	<0.4
Total Organic Carbon			%	No GAC	-	1.2	82		0	15	34	28	23	1.2	36	37	1.6	16	13	58	41
Asbestos																					
ACM Type			-	No GAC	-				0	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Identification			-	No GAC	-				0	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
TPH																					
Aliphatic TPH >C10-C12	6960	AGAC	mg/kg	2 of 20	0	<1	510	47.50	1		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C12-C16	58800	AGAC	mg/kg	2 of 20	0	<1	550	23.70	1		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C16-C21	648000	AGAC (Ali >C16-35)	mg/kg	1 of 19	0	<1	6.6	8.480	0		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C21-C35	648000	AGAC (Ali >C16-35)	mg/kg	2 of 20	0	<1	3700	8.480	1		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C35-C44	648000	AGAC (Ali >C16-35)	mg/kg	0 of 20	0	<1	<1	8.480	0		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C5-C6	3190	AGAC	mg/kg	0 of 20	0	<1	<1	304.0	0		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C6-C8	7780	AGAC	mg/kg	0 of 20	0	<1	<1	144.0	0		<1		<1		<1		<1	<1	<1	<1	<1
Aliphatic TPH >C8-C10	2000	AGAC/S4UL	mg/kg	2 of 20	0	<1	170	77.70	1		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C10-C12	16200	AGAC	mg/kg	1 of 20	0	<1	120	364.0	0		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C12-C16	36200	AGAC	mg/kg	1 of 20	0	<1	170	169.0	1		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C16-C21	26600	AGAC	mg/kg	0 of 20	0	<1	<1		0		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C21-C35	28400	AGAC	mg/kg	3 of 20	0	<1	2300		0		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C35-C44	28400	AGAC	mg/kg	0 of 20	0	<1	<1		0		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C5-C7			mg/kg	No GAC	-	<1	<1		0		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C7-C8	56294	AGAC (toluene)	mg/kg	0 of 20	0	<1	<1	869.0	0		<1		<1		<1		<1	<1	<1	<1	<1
Aromatic TPH >C8-C10	3460	AGAC	mg/kg	1 of 20	0	<1	11	613.0	0		<1		<1		<1		<1	<1	<1	<1	<1
TPH >C10-C25			mg/kg	No GAC	-	<1	50		0	<1		<1		<1		<1	50				
TPH >C25-C40			mg/kg	No GAC	-	<1	49		0	<1		<1		<1		<1	49				
TPH >C6-C10			mg/kg	No GAC	-	<1	<1		0	<1		<1		<1		<1	<1				
Total TPH >C6-C40			mg/kg	No GAC	-	<10	98		0	<10		<10		<10		<10	98				
Total Aliphatic Hydrocarbons			mg/kg	No GAC	-	<5	3700		0		<5		<5		<5		<5	<5	<5	<5	<5
Total Aromatic Hydrocarbons			mg/kg	No GAC	-	<5	2300		0		<5		<5		<5		<5	<5	<5	<5	<5
Total Petroleum Hydrocarbons			mg/kg	No GAC	-	<10	6000		0		<10		<10		<10		<10	<10	<10	<10	<10
PAH																					
Acenaphthene	83700	AGAC	mg/kg	7 of 27	0	<0.1	1.5	57.0	0	<0.1	<0.1	<0.1	<0.1	0.18	<0.1	<0.1	0.18	<0.1	<0.1	1.1	<0.1
Dibenz(a,h)Anthracene	3.5	AGAC/S4UL	mg/kg	11 of 27	1	<0.1	4.8		0	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.28	<0.1	<0.1	0.21	<0.1
Fluoranthene	22600	AGAC	mg/kg	21 of 27	0	<0.1	31		0	<0.1	0.36	0.31	0.16	2.6	<0.1	1.5	1.9	<0.1	0.13	3.9	0.59
Fluorene	63000	AGAC/S4UL	mg/kg	7 of 27	0	<0.1	1.9	30.90	0	<0.1	<0.1	<0.1	<0.1	0.22	<0.1	<0.1	0.15	<0.1	<0.1	1.7	<0.1
Indeno(1,2,3-c,d)Pyrene	501	AGAC	mg/kg	12 of 27	0	<0.1	17		0	<0.1	<0.1	<0.1	<0.1	1.9	<0.1	0.34	0.78	<0.1	<0.1	0.24	<0.1
Phenanthrene	21900	AGAC	mg/kg	15 of 27	0	<0.1	8.9		0	<0.1	<0.1	<0.1	<0.1	1	<0.1	1.4	1.2	<0.1	<0.1	6.9	0.91
Pyrene	54200	AGAC	mg/kg	20 of 27	0	<0.1	23		0	<0.1	0.3	0.27	0.14	2.5	<0.1	1.2	2.3	<0.1	<0.1	2.9	0.55
Naphthalene	193	AGAC	mg/kg	7 of 27	0	<0.1	8.1	76.40	0	<0.1	<0.1	<0.1	<0.1	0.25	<0.1	<0.1	0.55	<0.1	<0.1	8.1	<0.1
Total (Of 17) PAH's			mg/kg	No GAC	-	<2	220		0	<2	<2	<2	<2	21	<2	8.2	15	<2	<2	33	2.8
Acenaphthylene	83200	AGAC	mg/kg	6 of 27	0	<0.1	0.36	86.10	0	<0.1	<0.1	<0.1	<0.1	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	0.22	<0.1
Anthracene	523000	AGAC	mg/kg	14 of 27	0	<0.1	4.4		0	<0.1	<0.1	<0.1	<0.1	0.39	<0.1	0.27	0.25	<0.1	<0.1	0.94	0.12
Benzo[a]anthracene	167	AGAC	mg/kg	18 of 27	0	<0.1	25		0	<0.1	0.16	0.14	<0.1	1.6	<0.1	0.67	1.3	<0.1	<0.1	1	0.22
Benzo[a]pyrene	35.2	AGAC/S4UL	mg/kg	14 of 27	0	<0.1	21		0	<0.1	<0.1	<0.1	<0.1	2.3	<0.1	0.53	1.4	<0.1	<0.1	0.45	<0.1
Benzo[g,h,i]perylene	3930	AGAC	mg/kg	12 of 27	0	<0.1	13		0	<0.1	<0.1	<0.1	<0.1	1.7	<0.1	0.33	0.78	<0.1	<0.1	0.46	<0.1
Benzo[b]fluoranthene	44	AGAC/S4UL	mg/kg	14 of 27	0	<0.1	34		0	<0.1	<0.1	<0.1	<0.1	2.7	<0.1	0.84	1.8	<0.1	<0.1	1.9	<0.1
Benzo[k]fluoranthene	1170	AGAC	mg/kg	14 of 27	0	<0.1	12		0	<0.1	<0.1	<0.1	<0.1	1	<0.1	0.32	0.57	<0.1	<0.1	0.31	<0.1
Chrysene	346	AGAC	mg/kg	18 of 27	0	<0.1	26		0	<0.1	0.23	0.2	<0.1	1.7	<0.1	0.77	1.6	<0.1	<0.1	2.2	0.37
BTEX																					
Benzene	27	AGAC/S4UL	mg/kg	3 of 20	0	<0.001	0.0021		0		<0.001		<0.001		<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	56294	AGAC	mg/kg	2 of 20	0	<0.001	0.0013	869.0	0		<0.001		<0.001		<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	5706	AGAC	mg/kg	0 of 20	0	<0.001	<0.001	518.0	0		<0.001		<0.001		<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
m & p-Xylene	5923	AGAC (p-xylene)	mg/kg	0 of 20	0	<0.001	<0.001	576.0	0		<0.001		<0.001								

Data

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Appendix C – 2 Controlled Waters Risk Assessment
summary table

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1

ARUP

Concentration exceeds GAC		100.00		ARUP					Hole Ref Sample Ref Easting Northing Hole Elevation (mOD) Sample Depth (mbgl) Sample Date Investigation Geology	BH29	BH30	BH32	BH33	BH34	TP01	TP02	TP06	TP09				
Limit of Detection value exceeds GAC		<0.1								1	1	1	1	3	2	3	1	2				
										284719.48	284925.69	284967.95	284397.04	284419.61	284246.92	284410.81	285168.4	285134.98				
										210705.39	210549.41	210230.01	210700.88	210543.6	210515.99	210600.05	210396.23	210589.13				
										230.74	239.1	244.73	230.51	232.64	229.98	231.44	237.14	243.47				
				0.2	0.2	0.2	0.2	1	1	1	0.2	1										
				Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652	Q0652				
				MG-FILL	MG-FILL	GT-CLYGV	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL	MGR-FILL				
Contaminant Name		GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	95th %ile													
Metal																						
Antimony		-	-	mg/l	No GAC	-	<0.0005	0.0029	0.0028	0.0025	0.0021	0.015	<0.0002	0.0007	<0.0005	<0.0005	<0.0005	0.0029				
Arsenic		0.05	EQS	mg/l	7 of 9	0	<0.0002	0.015	0.011	0.00067	0.015	<0.0002	0.0007	0.005	0.0002	<0.0002	0.0008	0.0008				
Cadmium		0.00015	EQS	mg/l	0 of 9	0	<0.00011	<0.00011	0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011				
Chromium		0.0047	EQS	mg/l	3 of 9	0	<0.0005	0.004	0.0034	0.0025	<0.0005	0.0011	0.004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005				
Copper		-	-	mg/l	No GAC	-	<0.0005	0.0091	0.00894	0.0087	0.001	0.0091	0.003	0.0013	0.0056	0.0012	<0.0005	0.0014				
Bioavailable Copper		0.001	EQS	mg/l	9 of 9	0	0.00000605	0.00022	0.00022	0.00021	0.00002	0.00022	0.00007	0.00003	0.00014	0.00003	0.00001	0.00003				
Lead		-	-	mg/l	No GAC	-	<0.0005	0.0056	0.00376	0.001	<0.0005	0.0056	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005				
Bioavailable Lead		0.0012	EQS	mg/l	9 of 9	0	0.00001	0.00028	0.00019	0.00005	0.00001	0.00028	0.00001	0.00001	0.00003	0.00001	0.00001	0.00001				
Mercury		-	-	mg/l	No GAC	-	<0.00005	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005				
Nickel		-	-	mg/l	No GAC	-	<0.0005	0.0022	0.002	0.0008	<0.0005	0.0017	0.0022	0.0007	<0.0005	<0.0005	<0.0005	<0.0005				
Bioavailable Nickel		0.004	EQS	mg/l	9 of 9	0	0.000039	0.00035	0.00032	0.00013	0.00004	0.00027	0.00035	0.00011	0.00004	0.00004	0.00004	0.00004				
Selenium		-	-	mg/l	No GAC	-	<0.0005	0.0031	0.00218	0.0005	0.00068	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	0.0031				
Zinc		-	-	mg/l	No GAC	-	<0.0025	0.013	0.0098	0.004	<0.0025	0.013	<0.0025	0.004	0.005	0.003	<0.003	0.003				
Bioavailable Zinc		0.0123	EQS	mg/l	9 of 9	0	0.000156	0.0016295	0.00123	0.00050	0.00016	0.00163	0.00016	0.00050	0.00063	0.00019	0.00019	0.00038				
Cyanide (Total)		0.001	EQS	mg/l	1 of 3	1	<0.05	0.14	0.131		<0.05	<0.05	0.14									
Chloride		250	EQS	mg/l	1 of 6	0	<1	2.1	1.825	2.1				<1	<1	<1	<1	<1				
Dissolved Organic Carbon		-	-	mg/l	No GAC	-	<2.5	5.3	5.250	4.2				2.6	5.1	5.3	<2.5	3.9				
Sulphate		400	EQS*	mg/l	6 of 6	0	3.3	18	17.750	17				9.5	18	8.6	3.3	14				
Phenol Index		0.0077	EQS	mg/l	1 of 6	1	<0.03	0.35	0.27	<0.03				<0.03	<0.03	0.35	<0.03	<0.03				
Total Phenols		0.0077	EQS	mg/l	0 of 3	0	<0.03	<0.03	0.03		<0.03	<0.03	<0.03	<0.03			<0.03	<0.03				
PAH																						
Acenaphthene		-	-	mg/l	No GAC	-	<0.00001	0.0013	0.00117		<0.00001	<0.00001	0.0013									
Dibenz(a,h)Anthracene		-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001		<0.00001	<0.00001	<0.00001									
Fluoranthene		0.000006	EQS	mg/l	1 of 3	1	<0.00001	0.0054	0.00486		<0.00001	<0.00001	0.0054	0.0054								
Fluorene		-	-	mg/l	No GAC	-	<0.00001	0.00093	0.00084		<0.00001	<0.00001	0.00093									
Indeno(1,2,3-c,d)Pyrene		-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001		<0.00001	<0.00001	<0.00001									
Phenanthrene		-	-	mg/l	No GAC	-	<0.00001	0.0051	0.00459		<0.00001	<0.00001	0.0051									
Pyrene		-	-	mg/l	No GAC	-	<0.00001	0.0046	0.00414		<0.00001	<0.00001	0.0046									
Naphthalene		0.002	EQS	mg/l	1 of 3	0	<0.00001	0.00067	0.0006		<0.00001	<0.00001	0.00067									
Total Of 16 PAH's		-	-	mg/l	No GAC	-	<0.0002	0.028	0.02522		<0.0002	<0.0002	0.028									
Acenaphthylene		-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001		<0.00001	<0.00001	<0.00001									
Anthracene		0.0001	EQS	mg/l	1 of 3	1	<0.00001	0.0014	0.00126		<0.00001	<0.00001	0.0014									
Benzo[a]anthracene		-	-	mg/l	No GAC	-	<0.00001	0.0024	0.00216		<0.00001	<0.00001	<0.00001	0.0024								
Benzo[a]pyrene		1.7x10^-7	EQS	mg/l	No GAC	-	<0.00001	0.0018	0.00162		<0.00001	<0.00001	0.0018									
Benzo[g,h,i]perylene		-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001		<0.00001	<0.00001	<0.00001									
Benzo[b]fluoranthene		-	-	mg/l	No GAC	-	<0.00001	0.0022	0.00198		<0.00001	<0.00001	0.0022									
Benzo[k]fluoranthene		-	-	mg/l	No GAC	-	<0.00001	0.0011	0.00099		<0.00001	<0.00001	0.0011									
Chrysene		-	-	mg/l	No GAC	-	<0.00001	0.0014	0.00126		<0.00001	<0.00001	0.0014									
Other																						
Barium		-	-	mg/l	No GAC	-	<0.0005	0.094	0.07925	0.006				0.035	0.018	0.017	<0.0005	0.094				
Fluoride		1	EQS*	mg/l	6 of 6	0	0.078	0.29	0.27	0.18				0.08	0.29	0.21	0.078	0.19				
Molybdenum		-	-	mg/l	No GAC	-	<0.0002	0.0062	0.00533	0.0013				0.0027	0.0011	0.0006	<0.0002	0.0062				
Total Dissolved Solids		-	-	mg/l	No GAC	-	13	710	582.50	98				37	710	46	13	200				

Metal Bioavailability Assessment Tool (M-BAT)

Back	INPUT DATA										RESULTS (Copper)					RESULTS (Zinc)					RESULTS (Mn)					RESULTS (Ni)									
Calculate																																			
Clear Data																																			
ID	Location	Waterbody	Date	Measured Cu Concentration (dissolved) (µg l ⁻¹)	Measured Zn Concentration (dissolved) (µg l ⁻¹)	Measured Mn Concentration (dissolved) (µg l ⁻¹)	Measured Ni Concentration (dissolved) (µg l ⁻¹)	pH	DOC	Ca	Site-specific PNEC Dissolved Copper (µg l ⁻¹)	BioF	Bioavailable Copper Concentration (µg l ⁻¹)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Zinc (µg l ⁻¹)	BioF	Bioavailable Zinc Concentration (µg l ⁻¹)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Manganese (µg l ⁻¹)	BioF	Bioavailable Manganese Concentration (µg l ⁻¹)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Nickel (µg l ⁻¹)	BioF	Bioavailable Nickel Concentration (µg l ⁻¹)	Risk Characterisation Ratio									
1	BH29			8.7	4		0.8	7.8	62	43	41.29	0.02	0.21	0.21	86.95	0.13	0.50	0.05	177.30	0.69			25.14	0.16	0.13	0.05									
2	BH30			1	1.25		0.25	7.8	62	43	41.29	0.02	0.02	0.02	86.95	0.13	0.16	0.01	177.30	0.69			25.14	0.16	0.04	0.01									
3	BH32			9.1	13		1.7	7.8	62	43	41.29	0.02	0.22	0.22	86.95	0.13	1.63	0.15	177.30	0.69			25.14	0.16	0.27	0.07									
4	BH33			3	1.25		2.2	7.8	62	43	41.29	0.02	0.07	0.07	86.95	0.13	0.16	0.01	177.30	0.69			25.14	0.16	0.35	0.09									
5	BH34			1.3	4		0.7	7.8	62	43	41.29	0.02	0.03	0.03	86.95	0.13	0.50	0.05	177.30	0.69			25.14	0.16	0.11	0.03									
6	TP01			5.0	5		0.25	7.8	62	43	41.29	0.02	0.14	0.14	86.95	0.13	0.63	0.06	177.30	0.69			25.14	0.16	0.04	0.01									
7	TP02			1.2	1.5		0.25	7.8	62	43	41.29	0.02	0.03	0.03	86.95	0.13	0.19	0.02	177.30	0.69			25.14	0.16	0.04	0.01									
8	TP06			0.25	1.5		0.25	7.8	62	43	41.29	0.02	0.01	0.01	86.95	0.13	0.19	0.02	177.30	0.69			25.14	0.16	0.04	0.01									
9	TP09			1.4	3		0.25	7.8	62	43	41.29	0.02	0.03	0.03	86.95	0.13	0.38	0.03	177.30	0.69			25.14	0.16	0.04	0.01									

Pb Screening Tool 1.0

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Calculate

Clear Data

INPUT DATA						RESULTS (Pb)			
ID	Location	Waterbody	Date	Measured Pb Concentration (dissolved) ($\mu\text{g l}^{-1}$)	DOC	Site Specific PNEC Dissolved Pb ($\mu\text{g l}^{-1}$)	BioF	Available Pb ($\mu\text{g l}^{-1}$)	Risk Characterisation Ratio
1	BH29			1.00	62.00	24.00	0.05	0.05	0.04
2	BH30			0.25	62.00	24.00	0.05	0.01	0.01
3	BH32			5.60	62.00	24.00	0.05	0.28	0.23
4	BH33			0.25	62.00	24.00	0.05	0.01	0.01
5	BH34			0.25	62.00	24.00	0.05	0.01	0.01
6	TP01			0.50	62.00	24.00	0.05	0.03	0.02
7	TP02			0.25	62.00	24.00	0.05	0.01	0.01
8	TP06			0.25	62.00	24.00	0.05	0.01	0.01
9	TP09			0.25	62.00	24.00	0.05	0.01	0.01

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Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1

ARUP

Hole Ref	BH30	BH31	BH32	BH33	BH34
Sample Ref	1363315	1363316	1363317	1363318	1363319
Easting	284925.69	284880.77	284967.95	284937.04	284419.61
Northing	210549.41	210454.81	210230.01	210700.88	210543.6
Hole Elevation (mOD)	239.1	238.6	244.73	230.51	232.64
Sample Depth (mbgl)	3.03	4.62	4.28	0.12	4.76
Piezometer top (mbgl)	3	16	12.5	15	11
Piezometer base (mbgl)	4	21	17.5	20	13
Sample Date	06/04/22	06/04/22	06/04/22	06/04/22	06/04/22
GW monitoring/sampling round	3	3	3	3	3
Investigation	Q0652	Q0652	Q0652	Q0652	Q0652
Aquifer	MG - FILL	MDST (SWMCM)	COAL / CONGL (SWMCM)	MDST (SWMCM)	MDST (SWMCM)
Location	Washery Site	Washery Site	Washery Site	Washery Site	Washery Site

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	95th %ile
Metal								
Arsenic	0.05	EQS	mg/l	15 of 21	0	<0.0002	0.0022	0.0019
Cadmium	0.00015	EQS	mg/l	0 of 21	0	<0.00011	<0.00011	0.00011
Chromium	0.0047	EQS	mg/l	12 of 21	5	<0.0005	0.014	0.0096
Copper	-	-	mg/l	No GAC	-	<0.0005	0.0086	0.0062
Bioavailable Copper	0.001	EQS	mg/l	21 of 21	0	0.00000605	0.0002082	0.00015
Lead	-	-	mg/l	No GAC	-	<0.0005	<0.0005	0.0005
Bioavailable Lead	0.0012	EQS	mg/l	21 of 21	0	0.00001	0.00001	0.00001
Mercury	-	-	mg/l	No GAC	-	<0.00005	<0.00005	0.00005
Nickel	-	-	mg/l	No GAC	-	0.0006	0.023	0.017
Bioavailable Nickel	0.004	EQS	mg/l	21 of 21	0	0.0000006	0.000023	0.00002
Selenium	-	-	mg/l	No GAC	-	<0.0005	0.0014	0.0012
Zinc	-	-	mg/l	No GAC	-	0.0053	0.054	0.048
Bioavailable Zinc	0.0123	EQS	mg/l	21 of 21	0	0.000664	0.006769	0.00602
Inorganic								
pH	-	-	pH units	No GAC	-	6.8	8.4	8.40
Cyanide (Total)	0.001	EQS	mg/l	1 of 21	1	0.05	0.05	0.05
Chloride	250	EQS	mg/l	21 of 21	0	10	250	240.0
Calcium	-	-	mg/l	No GAC	-	10	120	110.0
Dissolved Organic Carbon	-	-	mg/l	No GAC	-	2	120	100.0
Sulphate	400	EQS*	mg/l	21 of 21	0	1.5	330	310.0
Hardness, Total as CaCO3	-	-	mg/l	No GAC	-	100	450	440.0
Phenol								
Total Phenols	0.0077	EQS	mg/l	0 of 21	0	<0.030	<0.030	0.03
PAH								
Acenaphthene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Benz[a,h]Anthracene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	<0.00001
Fluoranthene	0.000006	EQS	mg/l	0 of 21	0	<0.00001	<0.00001	0.00001
Fluorene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Indeno(1,2,3-c,d)Pyrene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Phenanthrene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Pyrene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Naphthalene	0.002	EQS	mg/l	0 of 21	0	<0.00001	<0.00001	0.00001
Acenaphthylene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Anthracene	0.0001	EQS	mg/l	0 of 21	0	<0.00001	<0.00001	0.00001
Benzo[a]anthracene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Benzo[a]pyrene	1.7x10^-7	EQS	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Benzo[g,h,i]perylene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Benzo[b]fluoranthene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Benzo[k]fluoranthene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Chrysene	-	-	mg/l	No GAC	-	<0.00001	<0.00001	0.00001
Total Of 16 PAH's	-	-	mg/l	No GAC	-	<0.0002	<0.0002	0.0002
TPH								
Aliphatics >C5-6	15	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aliphatics >C6-8	15	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aliphatics >C8-10	0.3	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aliphatics >C10-12	0.3	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aliphatics >C12-16	0.3	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aliphatics >C16-21	-	-	mg/l	No GAC	-	<0.0001	<0.0001	0.0001
Aliphatics >C21-35	-	-	mg/l	No GAC	-	<0.0001	<0.0001	0.0001
Aliphatics >C35-44	-	-	mg/l	No GAC	-	<0.0001	<0.0001	0.0001
Total Aliphatic Hydrocarbons	-	-	mg/l	No GAC	-	<0.005	<0.005	0.005
Aromatics >C5-7	0.01	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aromatics >C7-8	0.7	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aromatics >C8-10	0.3	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aromatics >C10-12	0.09	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aromatics >C12-16	0.09	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aromatics >C16-21	-	-	mg/l	No GAC	-	<0.0001	<0.0001	0.0001
Aromatics >C21-35	0.09	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Aromatics >C35-44	0.09	WHO	mg/l	0 of 21	0	<0.0001	<0.0001	0.0001
Total Aromatic Hydrocarbons	-	-	mg/l	No GAC	-	<0.005	<0.005	0.005
Total Petroleum Hydrocarbons	-	-	mg/l	No GAC	-	<0.01	<0.01	0.01
BTEX								
Benzene	-	-	mg/l	No GAC	-	<0.001	<0.001	0.001
Toluene	0.074	EQS	mg/l	3 of 21	0	<0.001	0.012	0.0015
Ethylbenzene	-	-	mg/l	No GAC	-	<0.001	0.0093	0.001
m,p xylenes	-	-	mg/l	No GAC	-	<0.001	0.059	0.0022
o-Xylene	-	-	mg/l	No GAC	-	<0.001	0.032	0.0013

Metal Bioavailability Assessment Tool (M-BAT)

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Calculate

Clear Data

INPUT DATA											RESULTS (Copper)				RESULTS (Zinc)				RESULTS (Mn)				RESULTS (Ni)			
ID	Location	Waterbody	Date	Measured Cu Concentration (dissolved) (µg l ⁻¹)	Measured Zn Concentration (dissolved) (µg l ⁻¹)	Measured Mn Concentration (dissolved) (µg l ⁻¹)	Measured Ni Concentration (dissolved) (µg l ⁻¹)	pH	DOC	Ca	Site-specific PNEC Dissolved Copper (µg l ⁻¹)	BioF	Bioavailable Copper Concentration (µg l ⁻¹)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Zinc (µg l ⁻¹)	BioF	Bioavailable Zinc Concentration (µg l ⁻¹)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Manganese (µg l ⁻¹)	BioF	Bioavailable Manganese Concentration (µg l ⁻¹)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Nickel (µg l ⁻¹)	BioF	Bioavailable Nickel Concentration (µg l ⁻¹)	Risk Characterisation Ratio
1	BH15		31/01/22	1.6	46		17	7.8	62	43	41.29	0.02	0.04	0.04	86.95	0.13	6.02	0.55	177.10	0.69			25.14	0.16	2.71	0.68
2	BH16		31/01/22	8.6	5.6		17	7.8	62	43	41.29	0.02	0.21	0.21	86.95	0.13	1.29	0.11	177.10	0.69			25.14	0.16	0.22	0.02
3	BH25		31/01/22	2.1	54		23	7.8	62	43	41.29	0.02	0.05	0.05	86.95	0.13	6.77	0.62	177.10	0.69			25.14	0.16	3.66	0.92
4	BH29		31/01/22	0.98	16		12	7.8	62	43	41.29	0.02	0.02	0.02	86.95	0.13	2.01	0.18	177.10	0.69			25.14	0.16	0.19	0.05
5	BH30		31/01/22	2.2	17		24	7.8	62	43	41.29	0.02	0.05	0.05	86.95	0.13	2.13	0.20	177.10	0.69			25.14	0.16	0.38	0.10
6	BH31		31/01/22	2.4	11		44	7.8	62	43	41.29	0.02	0.06	0.06	86.95	0.13	1.36	0.13	177.10	0.69			25.14	0.16	0.70	0.18
7	BH32		31/01/22	3.3	33		2.8	7.8	62	43	41.29	0.02	0.08	0.08	86.95	0.13	4.14	0.38	177.10	0.69			25.14	0.16	0.45	0.11
8	BH33		31/01/22	1.2	21		2	7.8	62	43	41.29	0.02	0.03	0.03	86.95	0.13	2.63	0.24	177.10	0.69			25.14	0.16	0.32	0.08
9	BH34		31/01/22	0.58	12		3.3	7.8	62	43	41.29	0.02	0.01	0.01	86.95	0.13	1.50	0.14	177.10	0.69			25.14	0.16	0.51	0.13
10	BH29		14/03/22	0.25	8.9		0.8	7.8	62	43	41.29	0.02	0.01	0.01	86.95	0.13	1.24	0.11	177.10	0.69			25.14	0.16	0.10	0.02
11	BH30		14/03/22	1.1	5.3		4.7	7.8	62	43	41.29	0.02	0.03	0.03	86.95	0.13	0.66	0.06	177.10	0.69			25.14	0.16	0.75	0.19
12	BH31		14/03/22	0.69	34		3.3	7.8	62	43	41.29	0.02	0.02	0.02	86.95	0.13	4.26	0.39	177.10	0.69			25.14	0.16	0.53	0.13
13	BH32		14/03/22	0.25	8.3		1.2	7.8	62	43	41.29	0.02	0.01	0.01	86.95	0.13	1.04	0.10	177.10	0.69			25.14	0.16	0.19	0.05
14	BH33		14/03/22	0.25	12		1.6	7.8	62	43	41.29	0.02	0.01	0.01	86.95	0.13	1.50	0.14	177.10	0.69			25.14	0.16	0.29	0.06
15	BH34		14/03/22	0.55	17		1.8	7.8	62	43	41.29	0.02	0.01	0.01	86.95	0.13	2.13	0.20	177.10	0.69			25.14	0.16	0.29	0.07
16	BH29		06/04/22	1.9	13		3.5	7.8	62	43	41.29	0.02	0.05	0.05	86.95	0.13	1.63	0.15	177.10	0.69			25.14	0.16	0.56	0.14
17	BH30		06/04/22	2.6	31		8.7	7.8	62	43	41.29	0.02	0.06	0.06	86.95	0.13	3.89	0.36	177.10	0.69			25.14	0.16	1.38	0.35
18	BH31		06/04/22	1.9	13		3.3	7.8	62	43	41.29	0.02	0.05	0.05	86.95	0.13	1.63	0.15	177.10	0.69			25.14	0.16	0.58	0.15
19	BH32		06/04/22	2.7	7.2		4.2	7.8	62	43	41.29	0.02	0.07	0.07	86.95	0.13	0.90	0.08	177.10	0.69			25.14	0.16	0.67	0.17
20	BH33		06/04/22	6.2	20		4.4	7.8	62	43	41.29	0.02	0.15	0.15	86.95	0.13	3.64	0.33	177.10	0.69			25.14	0.16	0.70	0.18
21	BH34		06/04/22	3.1	12		4.8	7.8	62	43	41.29	0.02	0.08	0.08	86.95	0.13	1.50	0.14	177.10	0.69			25.14	0.16	0.76	0.19

Pb Screening Tool 1.0

Back

Calculate

Clear Data

INPUT DATA						RESULTS (Pb)			
ID	Location	Waterbody	Date	Measured Pb Concentration (dissolved) ($\mu\text{g l}^{-1}$)	DOC	Site Specific PNEC Dissolved Pb ($\mu\text{g l}^{-1}$)	BioF	Available Pb ($\mu\text{g l}^{-1}$)	Risk Characterisation Ratio
1	BH15		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
2	BH16		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
3	BH25		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
4	BH29		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
5	BH30		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
6	BH31		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
7	BH32		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
8	BH33		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
9	BH34		31/01/22	0.25	62.00	24.00	0.05	0.01	0.01
10	BH29		14/03/22	0.25	62.00	24.00	0.05	0.01	0.01
11	BH30		14/03/22	0.25	62.00	24.00	0.05	0.01	0.01
12	BH31		14/03/22	0.25	62.00	24.00	0.05	0.01	0.01
13	BH32		14/03/22	0.25	62.00	24.00	0.05	0.01	0.01
14	BH33		14/03/22	0.25	62.00	24.00	0.05	0.01	0.01
15	BH34		14/03/22	0.25	62.00	24.00	0.05	0.01	0.01
16	BH29		06/04/22	0.25	62.00	24.00	0.05	0.01	0.01
17	BH30		06/04/22	0.25	62.00	24.00	0.05	0.01	0.01
18	BH31		06/04/22	0.25	62.00	24.00	0.05	0.01	0.01
19	BH32		06/04/22	0.25	62.00	24.00	0.05	0.01	0.01
20	BH33		06/04/22	0.25	62.00	24.00	0.05	0.01	0.01
21	BH34		06/04/22	0.25	62.00	24.00	0.05	0.01	0.01

Appendix C – 3 Ground Gas Assessment summary table

MAX Methane (% / vol)	MAX Carbon Dioxide (% / vol)	MAX Gas Flow (t/yr)	CH4 GSV	CO2 GSV	CS Methane	CS Carbon Dioxide
0.80	5.40	0.40	0.00	0.02	1	1

 Flooded well
 Partially flooded well
 -0.1296 Negative flow recorded

Appendix C - 4 HazWasteOnline Waste Classification

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



7JV0T-5GLCS-GGTUY

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

GCRE

Description/Comments

Project

Site

Classified by

Name: **Nick Kontochristos**
 Date: **16 Mar 2022 18:59 GMT**
 Telephone:

Company: **Ove Arup**
4 Pierhead Street Capital Waterside Cardiff
CF10 4QP United Kingdom

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course
 Hazardous Waste Classification

Date
 18 Jun 2019

Next 3 year Refresher due by Jun 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH29	0.2	Non Hazardous		3
2	BH29[2]	2	Non Hazardous		5
3	BH30	0.2	Non Hazardous		8
4	BH30[2]	4	Non Hazardous		11
5	BH32	0.2	Non Hazardous		13
6	BH33	0.2	Non Hazardous		15
7	BH34	1	Hazardous	HP 7, HP 11	17
8	BH34[2]	3	Non Hazardous		20
9	TP01	0.2	Hazardous	HP 7, HP 11	23
10	TP01[2]	1	Non Hazardous		26
11	TP02	0.3	Non Hazardous		28
12	TP02[2]	1	Hazardous	HP 7, HP 11	31
13	TP03	0.2	Non Hazardous		34
14	TP03[2]	0.8	Non Hazardous		36
15	TP04	0.2	Non Hazardous		38
16	TP04[2]	2	Non Hazardous		40
17	TP05	1	Non Hazardous		42
18	TP05[2]	3	Non Hazardous		44
19	TP06	0.2	Non Hazardous		46
20	TP06[2]	2	Non Hazardous		48
21	TP07	1	Non Hazardous		50
22	TP07[2]	3	Non Hazardous		52
23	TP07[3]	4	Non Hazardous		54
24	TP08	0.2	Non Hazardous		57
25	TP08[2]	2	Non Hazardous		59
26	TP09	1	Non Hazardous		61
27	TP09[2]	3	Non Hazardous		63

Related documents

#	Name	Description
1	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Nick Kontochristos

Created date: 16 Mar 2022 18:59 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	65
Appendix B: Rationale for selection of metal species	66
Appendix C: Version	67

Classification of sample: BH29


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
BH29	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.1%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.1% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				6.4	mg/kg	1.32	8.45	mg/kg	0.000845 %		
	033-003-00-0	215-481-4	1327-53-3									
2	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	cadmium { cadmium oxide }				0.16	mg/kg	1.142	0.183	mg/kg	0.0000183 %		
	048-002-00-0	215-146-2	1306-19-0									
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.6	mg/kg	1.462	14.031	mg/kg	0.0014 %		
		215-160-9	1308-38-9									
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
6	copper { dicopper oxide; copper (I) oxide }				35	mg/kg	1.126	39.406	mg/kg	0.00394 %		
	029-002-00-X	215-270-7	1317-39-1									
7	lead { lead chromate }			1	19	mg/kg	1.56	29.636	mg/kg	0.0019 %		
	082-004-00-2	231-846-0	7758-97-6									
8	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
9	nickel { nickel chromate }				24	mg/kg	2.976	71.43	mg/kg	0.00714 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { nickel selenate }				0.49	mg/kg	2.554	1.251	mg/kg	0.000125 %		
	028-031-00-5	239-125-2	15060-62-5									
11	zinc { zinc chromate }				63	mg/kg	2.774	174.771	mg/kg	0.0175 %		
	024-007-00-3	236-878-9	13530-65-9									
12	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
13	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
14	toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
15	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
17	cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
18	 pH PH				8.9 pH		8.9 pH	8.9 pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	 acenaphthylene 205-917-1	208-96-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	 acenaphthene 201-469-6	83-32-9			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	 fluorene 201-695-5	86-73-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	 phenanthrene 201-581-5	85-01-8			0.97 mg/kg		0.97 mg/kg	0.000097 %			
24	 anthracene 204-371-1	120-12-7			0.21 mg/kg		0.21 mg/kg	0.000021 %			
25	 fluoranthene 205-912-4	206-44-0			1 mg/kg		1 mg/kg	0.0001 %			
26	 pyrene 204-927-3	129-00-0			0.83 mg/kg		0.83 mg/kg	0.000083 %			
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.37 mg/kg		0.37 mg/kg	0.000037 %			
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.56 mg/kg		0.56 mg/kg	0.000056 %			
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.61 mg/kg		0.61 mg/kg	0.000061 %			
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.18 mg/kg		0.18 mg/kg	0.000018 %			
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.3 mg/kg		0.3 mg/kg	0.00003 %			
32	 indeno[123-cd]pyrene 205-893-2	193-39-5			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
34	 benzo[ghi]perylene 205-883-8	191-24-2			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
36	 polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
Total:									0.0348 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH29[2]


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
BH29[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.7%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 1.7% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				1.5	mg/kg	1.32	1.98	mg/kg	0.000198 %		
	033-003-00-0	215-481-4	1327-53-3									
2	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				3.7	mg/kg	1.462	5.408	mg/kg	0.000541 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				27	mg/kg	1.126	30.399	mg/kg	0.00304 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	10	mg/kg	1.56	15.598	mg/kg	0.001 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				0.14	mg/kg	1.353	0.189	mg/kg	0.0000189 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				5.8	mg/kg	2.976	17.262	mg/kg	0.00173 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { nickel selenate }				0.44	mg/kg	2.554	1.124	mg/kg	0.000112 %		
	028-031-00-5	239-125-2	15060-62-5									
10	zinc { zinc chromate }				19	mg/kg	2.774	52.709	mg/kg	0.00527 %		
	024-007-00-3	236-878-9	13530-65-9									
11	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	benzene				0.0013	mg/kg		0.0013	mg/kg	0.00000013 %		
	601-020-00-8	200-753-7	71-43-2									
13	toluene				0.001	mg/kg		0.001	mg/kg	0.0000001 %		
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5											
17	pH				7.3	pH		7.3	pH	7.3 pH		
18	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
19	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8									
20	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
21	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7									
22	phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8									
23	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7									
24	fluoranthene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		205-912-4	206-44-0									
25	pyrene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		204-927-3	129-00-0									
26	benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
27	chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
28	benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
29	benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
30	benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
31	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5									
32	dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
33	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2									
34	phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0133 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash

point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 1.3e-07%)

toluene: (conc.: 1.0e-07%)

Classification of sample: BH30



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
BH30	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	
Moisture content:	
12%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				2.6 mg/kg	1.32	3.433 mg/kg	0.000343 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				1.3 mg/kg	1.462	1.9 mg/kg	0.00019 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				17 mg/kg	1.126	19.14 mg/kg	0.00191 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	8 mg/kg	1.56	12.479 mg/kg	0.0008 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				6.4 mg/kg	2.976	19.048 mg/kg	0.0019 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { selenium selenate }				0.27 mg/kg	2.554	0.69 mg/kg	0.000069 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				52 mg/kg	2.774	144.256 mg/kg	0.0144 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		270 mg/kg		270 mg/kg	0.027 %			
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				8.7 pH		8.7 pH	8.7 pH		
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
24	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
25	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
26	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
35	polychlorobiphenyls; PCB				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.0471 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.027%)

Classification of sample: BH30[2]


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
BH30[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
4 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
18%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 18% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				27 mg/kg	1.32	35.649 mg/kg	0.00356 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				0.55 mg/kg	3.22	1.771 mg/kg	0.000177 %		
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.32 mg/kg	1.142	0.366 mg/kg	0.0000366 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				7.8 mg/kg	1.126	8.782 mg/kg	0.000878 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	16 mg/kg	1.56	24.957 mg/kg	0.0016 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				5.2 mg/kg	2.976	15.477 mg/kg	0.00155 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				0.87 mg/kg	2.554	2.222 mg/kg	0.000222 %		
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc chromate }				21 mg/kg	2.774	58.257 mg/kg	0.00583 %		
	024-007-00-3	236-878-9	13530-65-9							
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
13	pH				6.9 pH		6.9 pH	6.9 pH		
			PH							
14	naphthalene				0.72 mg/kg		0.72 mg/kg	0.000072 %		
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				0.23 mg/kg		0.23 mg/kg	0.000023 %		
		205-917-1	208-96-8							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	acenaphthene	201-469-6	83-32-9		1.2 mg/kg		1.2 mg/kg	0.00012 %			
17	fluorene	201-695-5	86-73-7		1.3 mg/kg		1.3 mg/kg	0.00013 %			
18	phenanthrene	201-581-5	85-01-8		8.3 mg/kg		8.3 mg/kg	0.00083 %			
19	anthracene	204-371-1	120-12-7		2.3 mg/kg		2.3 mg/kg	0.00023 %			
20	fluoranthene	205-912-4	206-44-0		11 mg/kg		11 mg/kg	0.0011 %			
21	pyrene	204-927-3	129-00-0		9 mg/kg		9 mg/kg	0.0009 %			
22	benzo[a]anthracene	601-033-00-9	200-280-6		4.8 mg/kg		4.8 mg/kg	0.00048 %			
23	chrysene	601-048-00-0	205-923-4		4.3 mg/kg		4.3 mg/kg	0.00043 %			
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		7.5 mg/kg		7.5 mg/kg	0.00075 %			
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		2.8 mg/kg		2.8 mg/kg	0.00028 %			
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		6.6 mg/kg		6.6 mg/kg	0.00066 %			
27	indeno[123-cd]pyrene	205-893-2	193-39-5		5.1 mg/kg		5.1 mg/kg	0.00051 %			
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.79 mg/kg		0.79 mg/kg	0.000079 %			
29	benzo[ghi]perylene	205-883-8	191-24-2		3.7 mg/kg		3.7 mg/kg	0.00037 %			
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.0235 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH32


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
BH32	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
22%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				23 mg/kg	1.32	30.367 mg/kg	0.00304 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.77 mg/kg	1.142	0.88 mg/kg	0.000088 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				27 mg/kg	1.126	30.399 mg/kg	0.00304 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	26 mg/kg	1.56	40.555 mg/kg	0.0026 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				28 mg/kg	2.976	83.335 mg/kg	0.00833 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				0.78 mg/kg	2.554	1.992 mg/kg	0.000199 %		
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc chromate }				120 mg/kg	2.774	332.898 mg/kg	0.0333 %		
	024-007-00-3	236-878-9	13530-65-9							
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
13	pH				8.1 pH		8.1 pH	8.1 pH		
			PH							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
17	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	phenanthrene	201-581-5	85-01-8		0.45 mg/kg		0.45 mg/kg	0.000045 %			
19	anthracene	204-371-1	120-12-7		0.11 mg/kg		0.11 mg/kg	0.000011 %			
20	fluoranthene	205-912-4	206-44-0		0.86 mg/kg		0.86 mg/kg	0.000086 %			
21	pyrene	204-927-3	129-00-0		0.56 mg/kg		0.56 mg/kg	0.000056 %			
22	benzo[a]anthracene	601-033-00-9	200-280-6		0.45 mg/kg		0.45 mg/kg	0.000045 %			
23	chrysene	601-048-00-0	205-923-4		0.47 mg/kg		0.47 mg/kg	0.000047 %			
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.9 mg/kg		0.9 mg/kg	0.00009 %			
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.29 mg/kg		0.29 mg/kg	0.000029 %			
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.52 mg/kg		0.52 mg/kg	0.000052 %			
27	indeno[123-cd]pyrene	205-893-2	193-39-5		0.48 mg/kg		0.48 mg/kg	0.000048 %			
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.24 mg/kg		0.24 mg/kg	0.000024 %			
29	benzo[ghi]perylene	205-883-8	191-24-2		0.4 mg/kg		0.4 mg/kg	0.00004 %			
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.0539 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH33


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
BH33	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11%	
(no correction)	

Hazard properties

None identified

Determinands

 Moisture content: **11% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				7.8	mg/kg	1.32	10.299	mg/kg	0.00103 %		
	033-003-00-0	215-481-4	1327-53-3									
2	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	cadmium { cadmium oxide }				0.16	mg/kg	1.142	0.183	mg/kg	0.0000183 %		
	048-002-00-0	215-146-2	1306-19-0									
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	23	mg/kg	1.56	35.876	mg/kg	0.0023 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				0.15	mg/kg	1.353	0.203	mg/kg	0.0000203 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				42	mg/kg	2.976	125.003	mg/kg	0.0125 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { nickel selenate }				0.86	mg/kg	2.554	2.196	mg/kg	0.00022 %		
	028-031-00-5	239-125-2	15060-62-5									
10	zinc { zinc chromate }				250	mg/kg	2.774	693.537	mg/kg	0.0694 %		
	024-007-00-3	236-878-9	13530-65-9									
11	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				2.9	mg/kg	1.884	5.464	mg/kg	0.000546 %		
	006-007-00-5											
17	pH				7.9	pH		7.9	pH	7.9 pH		
			PH									
18	naphthalene				2	mg/kg		2	mg/kg	0.0002 %		
	601-052-00-2	202-049-5	91-20-3									
19	acenaphthylene				0.28	mg/kg		0.28	mg/kg	0.000028 %		
		205-917-1	208-96-8									
20	acenaphthene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		201-469-6	83-32-9									
21	fluorene				0.95	mg/kg		0.95	mg/kg	0.000095 %		
		201-695-5	86-73-7									
22	phenanthrene				4.3	mg/kg		4.3	mg/kg	0.00043 %		
		201-581-5	85-01-8									
23	anthracene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
		204-371-1	120-12-7									
24	fluoranthene				12	mg/kg		12	mg/kg	0.0012 %		
		205-912-4	206-44-0									
25	pyrene				9.4	mg/kg		9.4	mg/kg	0.00094 %		
		204-927-3	129-00-0									
26	benzo[a]anthracene				9.2	mg/kg		9.2	mg/kg	0.00092 %		
	601-033-00-9	200-280-6	56-55-3									
27	chrysene				11	mg/kg		11	mg/kg	0.0011 %		
	601-048-00-0	205-923-4	218-01-9									
28	benzo[b]fluoranthene				13	mg/kg		13	mg/kg	0.0013 %		
	601-034-00-4	205-911-9	205-99-2									
29	benzo[k]fluoranthene				4.3	mg/kg		4.3	mg/kg	0.00043 %		
	601-036-00-5	205-916-6	207-08-9									
30	benzo[a]pyrene; benzo[def]chrysene				7.4	mg/kg		7.4	mg/kg	0.00074 %		
	601-032-00-3	200-028-5	50-32-8									
31	indeno[123-cd]pyrene				4.9	mg/kg		4.9	mg/kg	0.00049 %		
		205-893-2	193-39-5									
32	dibenz[a,h]anthracene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
	601-041-00-2	200-181-8	53-70-3									
33	benzo[ghi]perylene				4.7	mg/kg		4.7	mg/kg	0.00047 %		
		205-883-8	191-24-2									
34	phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
35	polychlorobiphenyls; PCB				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3									
Total:										0.103 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH34

 **Hazardous Waste**
 Classified as **17 05 03 ***
 in the List of Waste

Sample details

Sample name:	LoW Code:
BH34	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
12%	
(no correction)	

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.15%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.15%)

Determinands

Moisture content: **12%** No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.14 mg/kg	1.142	0.16 mg/kg	0.000016 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
6	copper { dicopper oxide; copper (I) oxide }				47 mg/kg	1.126	52.917 mg/kg	0.00529 %		
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	30 mg/kg	1.56	46.794 mg/kg	0.003 %		
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				0.14 mg/kg	1.353	0.189 mg/kg	0.0000189 %		
	080-010-00-X	231-299-8	7487-94-7							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
9	nickel { nickel chromate }				44	mg/kg	2.976	130.956	mg/kg	0.0131 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { nickel selenate }				0.84	mg/kg	2.554	2.145	mg/kg	0.000215 %		
	028-031-00-5	239-125-2	15060-62-5									
11	zinc { zinc chromate }				270	mg/kg	2.774	749.02	mg/kg	0.0749 %		
	024-007-00-3	236-878-9	13530-65-9									
12	TPH (C6 to C40) petroleum group				1500	mg/kg		1500	mg/kg	0.15 %		
			TPH									
13	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
14	toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
15	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
16	xylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5											
18	pH				8.1	pH		8.1	pH	8.1 pH		
			PH									
19	naphthalene				0.61	mg/kg		0.61	mg/kg	0.000061 %		
	601-052-00-2	202-049-5	91-20-3									
20	acenaphthylene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
		205-917-1	208-96-8									
21	acenaphthene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
		201-469-6	83-32-9									
22	fluorene				1.9	mg/kg		1.9	mg/kg	0.00019 %		
		201-695-5	86-73-7									
23	phenanthrene				8.9	mg/kg		8.9	mg/kg	0.00089 %		
		201-581-5	85-01-8									
24	anthracene				4.4	mg/kg		4.4	mg/kg	0.00044 %		
		204-371-1	120-12-7									
25	fluoranthene				31	mg/kg		31	mg/kg	0.0031 %		
		205-912-4	206-44-0									
26	pyrene				23	mg/kg		23	mg/kg	0.0023 %		
		204-927-3	129-00-0									
27	benzo[a]anthracene				25	mg/kg		25	mg/kg	0.0025 %		
	601-033-00-9	200-280-6	56-55-3									
28	chrysene				26	mg/kg		26	mg/kg	0.0026 %		
	601-048-00-0	205-923-4	218-01-9									
29	benzo[b]fluoranthene				34	mg/kg		34	mg/kg	0.0034 %		
	601-034-00-4	205-911-9	205-99-2									
30	benzo[k]fluoranthene				12	mg/kg		12	mg/kg	0.0012 %		
	601-036-00-5	205-916-6	207-08-9									
31	benzo[a]pyrene; benzo[def]chrysene				21	mg/kg		21	mg/kg	0.0021 %		
	601-032-00-3	200-028-5	50-32-8									
32	indeno[123-cd]pyrene				17	mg/kg		17	mg/kg	0.0017 %		
		205-893-2	193-39-5									
33	dibenz[a,h]anthracene				4.8	mg/kg		4.8	mg/kg	0.00048 %		
	601-041-00-2	200-181-8	53-70-3									
34	benzo[ghi]perylene				13	mg/kg		13	mg/kg	0.0013 %		
		205-883-8	191-24-2									
35	phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
36	polychlorobiphenyls; PCB					<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3								
Total:									0.272 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.15%)

Classification of sample: BH34[2]



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
BH34[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3 m	
Moisture content:	
8.8%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.8% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				17 mg/kg	1.32	22.446 mg/kg	0.00224 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.15 mg/kg	1.142	0.171 mg/kg	0.0000171 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				2.8 mg/kg	1.462	4.092 mg/kg	0.000409 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				63 mg/kg	1.126	70.931 mg/kg	0.00709 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	46 mg/kg	1.56	71.751 mg/kg	0.0046 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.39 mg/kg	1.353	0.528 mg/kg	0.0000528 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				25 mg/kg	2.976	74.407 mg/kg	0.00744 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				2.9 mg/kg	2.554	7.406 mg/kg	0.000741 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				59 mg/kg	2.774	163.675 mg/kg	0.0164 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				0.0021 mg/kg		0.0021 mg/kg	0.00000021 %			
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1.1 mg/kg	1.884	2.072 mg/kg	0.000207 %			
	006-007-00-5										
17	pH				8.4 pH		8.4 pH	8.4 pH			
			PH								
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
24	fluoranthene				0.21 mg/kg		0.21 mg/kg	0.000021 %			
		205-912-4	206-44-0								
25	pyrene				0.2 mg/kg		0.2 mg/kg	0.00002 %			
		204-927-3	129-00-0								
26	benzo[a]anthracene				0.14 mg/kg		0.14 mg/kg	0.000014 %			
	601-033-00-9	200-280-6	56-55-3								
27	chrysene				0.21 mg/kg		0.21 mg/kg	0.000021 %			
	601-048-00-0	205-923-4	218-01-9								
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
Total:									0.0405 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash

point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

benzene: (conc.: 2.1e-07%)

Classification of sample: TP01

 **Hazardous Waste**
 Classified as **17 05 03 ***
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.2 m	
Moisture content:	
13%	
(no correction)	

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.11%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.11%)

Determinands

Moisture content: **13% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.26 mg/kg	1.142	0.297 mg/kg	0.0000297 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18 mg/kg	1.462	26.308 mg/kg	0.00263 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				69 mg/kg	1.126	77.686 mg/kg	0.00777 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	26 mg/kg	1.56	40.555 mg/kg	0.0026 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				34 mg/kg	2.976	101.193 mg/kg	0.0101 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				0.61 mg/kg	2.554	1.558 mg/kg	0.000156 %		
	028-031-00-5	239-125-2	15060-62-5							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
10	zinc { zinc chromate }				110 mg/kg	2.774	305.156 mg/kg	0.0305 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group				1100 mg/kg		1100 mg/kg	0.11 %			
			TPH								
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
17	pH				8.2 pH		8.2 pH	8.2 pH			
			PH								
18	naphthalene				1.2 mg/kg		1.2 mg/kg	0.00012 %			
	601-052-00-2	202-049-5	91-20-3								
19	acenaphthylene				0.22 mg/kg		0.22 mg/kg	0.000022 %			
		205-917-1	208-96-8								
20	acenaphthene				0.22 mg/kg		0.22 mg/kg	0.000022 %			
		201-469-6	83-32-9								
21	fluorene				0.3 mg/kg		0.3 mg/kg	0.00003 %			
		201-695-5	86-73-7								
22	phenanthrene				2.4 mg/kg		2.4 mg/kg	0.00024 %			
		201-581-5	85-01-8								
23	anthracene				0.46 mg/kg		0.46 mg/kg	0.000046 %			
		204-371-1	120-12-7								
24	fluoranthene				4.3 mg/kg		4.3 mg/kg	0.00043 %			
		205-912-4	206-44-0								
25	pyrene				4.1 mg/kg		4.1 mg/kg	0.00041 %			
		204-927-3	129-00-0								
26	benzo[a]anthracene				2.3 mg/kg		2.3 mg/kg	0.00023 %			
	601-033-00-9	200-280-6	56-55-3								
27	chrysene				2.5 mg/kg		2.5 mg/kg	0.00025 %			
	601-048-00-0	205-923-4	218-01-9								
28	benzo[b]fluoranthene				2.9 mg/kg		2.9 mg/kg	0.00029 %			
	601-034-00-4	205-911-9	205-99-2								
29	benzo[k]fluoranthene				1.1 mg/kg		1.1 mg/kg	0.00011 %			
	601-036-00-5	205-916-6	207-08-9								
30	benzo[a]pyrene; benzo[def]chrysene				2 mg/kg		2 mg/kg	0.0002 %			
	601-032-00-3	200-028-5	50-32-8								
31	indeno[123-cd]pyrene				1.4 mg/kg		1.4 mg/kg	0.00014 %			
		205-893-2	193-39-5								
32	dibenz[a,h]anthracene				0.35 mg/kg		0.35 mg/kg	0.000035 %			
	601-041-00-2	200-181-8	53-70-3								
33	benzo[ghi]perylene				1.3 mg/kg		1.3 mg/kg	0.00013 %			
		205-883-8	191-24-2								
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
35	polychlorobiphenyls; PCB				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
Total:									0.168 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.11%)

Classification of sample: TP01[2]

**Non Hazardous Waste**Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP01[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
22%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				17 mg/kg	1.32	22.446 mg/kg	0.00224 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.46 mg/kg	1.142	0.525 mg/kg	0.0000525 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13 mg/kg	1.462	19 mg/kg	0.0019 %			
		215-160-9	1308-38-9								
5	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %			<LOD
	024-017-00-8										
6	copper { dicopper oxide; copper (I) oxide }				260 mg/kg	1.126	292.731 mg/kg	0.0293 %			
	029-002-00-X	215-270-7	1317-39-1								
7	lead { lead chromate }			1	69 mg/kg	1.56	107.627 mg/kg	0.0069 %			
	082-004-00-2	231-846-0	7758-97-6								
8	mercury { mercury dichloride }				0.15 mg/kg	1.353	0.203 mg/kg	0.0000203 %			
	080-010-00-X	231-299-8	7487-94-7								
9	nickel { nickel chromate }				26 mg/kg	2.976	77.383 mg/kg	0.00774 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { nickel selenate }				1.1 mg/kg	2.554	2.809 mg/kg	0.000281 %			
	028-031-00-5	239-125-2	15060-62-5								
11	zinc { zinc chromate }				240 mg/kg	2.774	665.795 mg/kg	0.0666 %			
	024-007-00-3	236-878-9	13530-65-9								
12	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
13	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
17	 cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
18	 pH PH				9 pH		9 pH	9pH		
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	 acenaphthylene 205-917-1	208-96-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	 acenaphthene 201-469-6	83-32-9			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	 fluorene 201-695-5	86-73-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	 phenanthrene 201-581-5	85-01-8			2.8 mg/kg		2.8 mg/kg	0.00028 %		
24	 anthracene 204-371-1	120-12-7			0.64 mg/kg		0.64 mg/kg	0.000064 %		
25	 fluoranthene 205-912-4	206-44-0			4 mg/kg		4 mg/kg	0.0004 %		
26	 pyrene 204-927-3	129-00-0			3.3 mg/kg		3.3 mg/kg	0.00033 %		
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		1.7 mg/kg		1.7 mg/kg	0.00017 %		
28	chrysene 601-048-00-0	205-923-4	218-01-9		2 mg/kg		2 mg/kg	0.0002 %		
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		2.5 mg/kg		2.5 mg/kg	0.00025 %		
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.82 mg/kg		0.82 mg/kg	0.000082 %		
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		1.6 mg/kg		1.6 mg/kg	0.00016 %		
32	 indeno[123-cd]pyrene 205-893-2	193-39-5			1.2 mg/kg		1.2 mg/kg	0.00012 %		
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.24 mg/kg		0.24 mg/kg	0.000024 %		
34	 benzo[ghi]perylene 205-883-8	191-24-2			1.2 mg/kg		1.2 mg/kg	0.00012 %		
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	 polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.119 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP02



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP02	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.3 m	
Moisture content:	
8.1%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.1% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.11 mg/kg	1.142	0.126 mg/kg	0.0000126 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				38 mg/kg	1.126	42.784 mg/kg	0.00428 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	23 mg/kg	1.56	35.876 mg/kg	0.0023 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.1 mg/kg	1.353	0.135 mg/kg	0.0000135 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				18 mg/kg	2.976	53.573 mg/kg	0.00536 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				1 mg/kg	2.554	2.554 mg/kg	0.000255 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				41 mg/kg	2.774	113.74 mg/kg	0.0114 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				0.0014 mg/kg		0.0014 mg/kg	0.00000014 %			
	601-020-00-8	200-753-7	71-43-2								
13	toluene				0.0013 mg/kg		0.0013 mg/kg	0.00000013 %			
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				8.5 pH		8.5 pH	8.5 pH		
			PH							
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				1.4 mg/kg		1.4 mg/kg	0.00014 %		
		201-581-5	85-01-8							
23	anthracene				0.25 mg/kg		0.25 mg/kg	0.000025 %		
		204-371-1	120-12-7							
24	fluoranthene				1 mg/kg		1 mg/kg	0.0001 %		
		205-912-4	206-44-0							
25	pyrene				0.83 mg/kg		0.83 mg/kg	0.000083 %		
		204-927-3	129-00-0							
26	benzo[a]anthracene				0.37 mg/kg		0.37 mg/kg	0.000037 %		
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				0.55 mg/kg		0.55 mg/kg	0.000055 %		
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				0.57 mg/kg		0.57 mg/kg	0.000057 %		
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				0.26 mg/kg		0.26 mg/kg	0.000026 %		
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0289 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash

point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 1.4e-07%)

toluene: (conc.: 1.3e-07%)

Classification of sample: TP02[2]

 **Hazardous Waste**
 Classified as **17 05 03 ***
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP02[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
8.8%	
(no correction)	

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.6%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.6%)

Determinands

Moisture content: **8.8% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.34 mg/kg	1.142	0.388 mg/kg	0.0000388 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				5.5 mg/kg	1.462	8.039 mg/kg	0.000804 %		
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
6	copper { dicopper oxide; copper (I) oxide }				62 mg/kg	1.126	69.805 mg/kg	0.00698 %		
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	47 mg/kg	1.56	73.311 mg/kg	0.0047 %		
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				0.13 mg/kg	1.353	0.176 mg/kg	0.0000176 %		
	080-010-00-X	231-299-8	7487-94-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
9	nickel { nickel chromate }				18 mg/kg	2.976	53.573	mg/kg	0.00536 %		
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { nickel selenate }				1.7 mg/kg	2.554	4.342	mg/kg	0.000434 %		
	028-031-00-5	239-125-2	15060-62-5								
11	zinc { zinc chromate }				150 mg/kg	2.774	416.122	mg/kg	0.0416 %		
	024-007-00-3	236-878-9	13530-65-9								
12	TPH (C6 to C40) petroleum group				6000 mg/kg		6000	mg/kg	0.6 %		
			TPH								
13	benzene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4								
16	xylene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
17	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5										
18	pH				8.5 pH		8.5	pH	8.5 pH		
			PH								
19	naphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8								
21	acenaphthene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9								
22	fluorene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7								
23	phenanthrene				2.6 mg/kg		2.6	mg/kg	0.00026 %		
		201-581-5	85-01-8								
24	anthracene				0.48 mg/kg		0.48	mg/kg	0.000048 %		
		204-371-1	120-12-7								
25	fluoranthene				2.5 mg/kg		2.5	mg/kg	0.00025 %		
		205-912-4	206-44-0								
26	pyrene				2 mg/kg		2	mg/kg	0.0002 %		
		204-927-3	129-00-0								
27	benzo[a]anthracene				1.1 mg/kg		1.1	mg/kg	0.00011 %		
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				1.3 mg/kg		1.3	mg/kg	0.00013 %		
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				1.4 mg/kg		1.4	mg/kg	0.00014 %		
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				0.41 mg/kg		0.41	mg/kg	0.000041 %		
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				0.76 mg/kg		0.76	mg/kg	0.000076 %		
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				0.46 mg/kg		0.46	mg/kg	0.000046 %		
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				0.14 mg/kg		0.14	mg/kg	0.000014 %		
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				0.45 mg/kg		0.45	mg/kg	0.000045 %		
		205-883-8	191-24-2								
35	phenol				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2								

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
36	polychlorobiphenyls; PCB					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3								
Total:									0.664 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.6%)

Classification of sample: TP03



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP03	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	
Moisture content:	
30%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 30% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				15 mg/kg	1.32	19.805 mg/kg	0.00198 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.46 mg/kg	1.142	0.525 mg/kg	0.0000525 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				37 mg/kg	1.462	54.078 mg/kg	0.00541 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				52 mg/kg	1.126	58.546 mg/kg	0.00585 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	40 mg/kg	1.56	62.393 mg/kg	0.004 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.12 mg/kg	1.353	0.162 mg/kg	0.0000162 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				21 mg/kg	2.976	62.502 mg/kg	0.00625 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { selenium selenate }				0.74 mg/kg	2.554	1.89 mg/kg	0.000189 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				120 mg/kg	2.774	332.898 mg/kg	0.0333 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				8.3 pH		8.3 pH	8.3 pH		
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				0.69 mg/kg		0.69 mg/kg	0.000069 %		
		201-581-5	85-01-8							
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
24	fluoranthene				0.71 mg/kg		0.71 mg/kg	0.000071 %		
		205-912-4	206-44-0							
25	pyrene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
		204-927-3	129-00-0							
26	benzo[a]anthracene				0.48 mg/kg		0.48 mg/kg	0.000048 %		
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				0.79 mg/kg		0.79 mg/kg	0.000079 %		
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				0.84 mg/kg		0.84 mg/kg	0.000084 %		
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				0.22 mg/kg		0.22 mg/kg	0.000022 %		
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				0.35 mg/kg		0.35 mg/kg	0.000035 %		
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				0.29 mg/kg		0.29 mg/kg	0.000029 %		
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				0.11 mg/kg		0.11 mg/kg	0.000011 %		
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				0.29 mg/kg		0.29 mg/kg	0.000029 %		
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
35	polychlorobiphenyls; PCB				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.0589 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP03[2]



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP03[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.8 m	
Moisture content:	
13%	
(no correction)	

Hazard properties

None identified

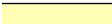
Determinands

Moisture content: 13% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				15 mg/kg	1.32	19.805 mg/kg	0.00198 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.41 mg/kg	1.142	0.468 mg/kg	0.0000468 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				67 mg/kg	1.126	75.435 mg/kg	0.00754 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	27 mg/kg	1.56	42.115 mg/kg	0.0027 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.1 mg/kg	1.353	0.135 mg/kg	0.0000135 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				37 mg/kg	2.976	110.122 mg/kg	0.011 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { selenium selenate }				0.67 mg/kg	2.554	1.711 mg/kg	0.000171 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				120 mg/kg	2.774	332.898 mg/kg	0.0333 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				8.6 pH		8.6 pH	8.6 pH		
			PH							
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
24	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
25	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
26	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0598 %		

Key

-  User supplied data
-  Determinand values ignored for classification, see column 'Conc. Not Used' for reason
-  Determinand defined or amended by HazWasteOnline (see Appendix A)
-  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP04

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP04	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	
Moisture content:	
12%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.46 mg/kg	3.22	1.481 mg/kg	0.000148 %			
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				4.4 mg/kg	1.462	6.431 mg/kg	0.000643 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				51 mg/kg	1.126	57.42 mg/kg	0.00574 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	42 mg/kg	1.56	65.512 mg/kg	0.0042 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.17 mg/kg	1.353	0.23 mg/kg	0.000023 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				22 mg/kg	2.976	65.478 mg/kg	0.00655 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				2.8 mg/kg	2.554	7.151 mg/kg	0.000715 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				44 mg/kg	2.774	122.062 mg/kg	0.0122 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				8.4 pH		8.4 pH	8.4 pH		
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
24	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
25	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
26	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
35	polychlorobiphenyls; PCB				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.0333 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP04[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP04[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
2 m	
Moisture content:	
11%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	26.407 mg/kg	0.00264 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.49 mg/kg	3.22	1.578 mg/kg	0.000158 %			
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.14 mg/kg	1.142	0.16 mg/kg	0.000016 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				5.9 mg/kg	1.462	8.623 mg/kg	0.000862 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				110 mg/kg	1.126	123.848 mg/kg	0.0124 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	42 mg/kg	1.56	65.512 mg/kg	0.0042 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.27 mg/kg	1.353	0.365 mg/kg	0.0000365 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				88 mg/kg	2.976	261.911 mg/kg	0.0262 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				4.2 mg/kg	2.554	10.726 mg/kg	0.00107 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				92 mg/kg	2.774	255.221 mg/kg	0.0255 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
13	pH		PH		8.3 pH		8.3 pH	8.3 pH			
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0743 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP05



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP05	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
12%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				23 mg/kg	1.32	30.367 mg/kg	0.00304 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.25 mg/kg	1.142	0.286 mg/kg	0.0000286 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				7.8 mg/kg	1.462	11.4 mg/kg	0.00114 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				84 mg/kg	1.126	94.575 mg/kg	0.00946 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	37 mg/kg	1.56	57.713 mg/kg	0.0037 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.24 mg/kg	1.353	0.325 mg/kg	0.0000325 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				39 mg/kg	2.976	116.074 mg/kg	0.0116 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				1.7 mg/kg	2.554	4.342 mg/kg	0.000434 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				130 mg/kg	2.774	360.639 mg/kg	0.0361 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				8.4 pH		8.4 pH	8.4 pH		
			PH							
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
24	fluoranthene				0.36 mg/kg		0.36 mg/kg	0.000036 %		
		205-912-4	206-44-0							
25	pyrene				0.3 mg/kg		0.3 mg/kg	0.00003 %		
		204-927-3	129-00-0							
26	benzo[a]anthracene				0.16 mg/kg		0.16 mg/kg	0.000016 %		
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				0.23 mg/kg		0.23 mg/kg	0.000023 %		
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.067 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP05[2]

**Non Hazardous Waste**Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP05[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3 m	
Moisture content:	
11%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: **11% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	26.407 mg/kg	0.00264 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.19 mg/kg	1.142	0.217 mg/kg	0.0000217 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				60 mg/kg	1.126	67.553 mg/kg	0.00676 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	29 mg/kg	1.56	45.235 mg/kg	0.0029 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.13 mg/kg	1.353	0.176 mg/kg	0.0000176 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				37 mg/kg	2.976	110.122 mg/kg	0.011 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				1.6 mg/kg	2.554	4.086 mg/kg	0.000409 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				110 mg/kg	2.774	305.156 mg/kg	0.0305 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
13	pH		PH		8.1 pH		8.1 pH	8.1 pH			
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
17	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
18	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
19	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	fluoranthene	205-912-4	206-44-0		0.31 mg/kg		0.31 mg/kg	0.000031 %			
21	pyrene	204-927-3	129-00-0		0.27 mg/kg		0.27 mg/kg	0.000027 %			
22	benzo[a]anthracene	601-033-00-9	200-280-6		0.14 mg/kg		0.14 mg/kg	0.000014 %			
23	chrysene	601-048-00-0	205-923-4		0.2 mg/kg		0.2 mg/kg	0.00002 %			
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
27	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
29	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
Total:									0.0573 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP06

**Non Hazardous Waste**Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP06	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	
Moisture content:	
14%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 14% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	26.407 mg/kg	0.00264 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.16 mg/kg	1.142	0.183 mg/kg	0.0000183 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21 mg/kg	1.462	30.693 mg/kg	0.00307 %			
		215-160-9	1308-38-9								
5	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %			<LOD
	024-017-00-8										
6	copper { dicopper oxide; copper (I) oxide }				77 mg/kg	1.126	86.693 mg/kg	0.00867 %			
	029-002-00-X	215-270-7	1317-39-1								
7	lead { lead chromate }			1	38 mg/kg	1.56	59.273 mg/kg	0.0038 %			
	082-004-00-2	231-846-0	7758-97-6								
8	mercury { mercury dichloride }				0.22 mg/kg	1.353	0.298 mg/kg	0.0000298 %			
	080-010-00-X	231-299-8	7487-94-7								
9	nickel { nickel chromate }				36 mg/kg	2.976	107.146 mg/kg	0.0107 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { nickel selenate }				2.2 mg/kg	2.554	5.618 mg/kg	0.000562 %			
	028-031-00-5	239-125-2	15060-62-5								
11	zinc { zinc chromate }				89 mg/kg	2.774	246.899 mg/kg	0.0247 %			
	024-007-00-3	236-878-9	13530-65-9								
12	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
13	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
17	 cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
18	 pH PH				8.1 pH		8.1 pH	8.1 pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	 acenaphthylene 205-917-1	208-96-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
21	 acenaphthene 201-469-6	83-32-9			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	 fluorene 201-695-5	86-73-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	 phenanthrene 201-581-5	85-01-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	 anthracene 204-371-1	120-12-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	 fluoranthene 205-912-4	206-44-0			0.16 mg/kg		0.16 mg/kg	0.000016 %			
26	 pyrene 204-927-3	129-00-0			0.14 mg/kg		0.14 mg/kg	0.000014 %			
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
28	chrysene 601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
32	 indeno[123-cd]pyrene 205-893-2	193-39-5			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
34	 benzo[ghi]perylene 205-883-8	191-24-2			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
36	 polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
Total:									0.0557 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP06[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP06[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
2 m	
Moisture content:	
11%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				8.9	mg/kg	1.32	11.751	mg/kg	0.00118 %		
	033-003-00-0	215-481-4	1327-53-3									
2	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	cadmium { cadmium oxide }				0.13	mg/kg	1.142	0.149	mg/kg	0.0000149 %		
	048-002-00-0	215-146-2	1306-19-0									
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23	mg/kg	1.462	33.616	mg/kg	0.00336 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				48	mg/kg	1.126	54.043	mg/kg	0.0054 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	28	mg/kg	1.56	43.675	mg/kg	0.0028 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				46	mg/kg	2.976	136.908	mg/kg	0.0137 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { nickel selenate }				0.52	mg/kg	2.554	1.328	mg/kg	0.000133 %		
	028-031-00-5	239-125-2	15060-62-5									
10	zinc { zinc chromate }				130	mg/kg	2.774	360.639	mg/kg	0.0361 %		
	024-007-00-3	236-878-9	13530-65-9									
11	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5											
13	pH				5.6	pH		5.6	pH	5.6 pH		
			PH									
14	naphthalene				0.25	mg/kg		0.25	mg/kg	0.000025 %		
	601-052-00-2	202-049-5	91-20-3									
15	acenaphthylene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
		205-917-1	208-96-8									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	• acenaphthene	201-469-6	83-32-9		0.18 mg/kg		0.18 mg/kg	0.000018 %		
17	• fluorene	201-695-5	86-73-7		0.22 mg/kg		0.22 mg/kg	0.000022 %		
18	• phenanthrene	201-581-5	85-01-8		1 mg/kg		1 mg/kg	0.0001 %		
19	• anthracene	204-371-1	120-12-7		0.39 mg/kg		0.39 mg/kg	0.000039 %		
20	• fluoranthene	205-912-4	206-44-0		2.6 mg/kg		2.6 mg/kg	0.00026 %		
21	• pyrene	204-927-3	129-00-0		2.5 mg/kg		2.5 mg/kg	0.00025 %		
22	benzo[a]anthracene	601-033-00-9	200-280-6		1.6 mg/kg		1.6 mg/kg	0.00016 %		
23	chrysene	601-048-00-0	205-923-4		1.7 mg/kg		1.7 mg/kg	0.00017 %		
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		2.7 mg/kg		2.7 mg/kg	0.00027 %		
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		1 mg/kg		1 mg/kg	0.0001 %		
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		2.3 mg/kg		2.3 mg/kg	0.00023 %		
27	• indeno[123-cd]pyrene	205-893-2	193-39-5		1.9 mg/kg		1.9 mg/kg	0.00019 %		
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.4 mg/kg		0.4 mg/kg	0.00004 %		
29	• benzo[ghi]perylene	205-883-8	191-24-2		1.7 mg/kg		1.7 mg/kg	0.00017 %		
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0659 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP07

**Non Hazardous Waste**Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP07	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
20%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 20% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				15 mg/kg	1.32	19.805 mg/kg	0.00198 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.41 mg/kg	3.22	1.32 mg/kg	0.000132 %			
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.38 mg/kg	1.142	0.434 mg/kg	0.0000434 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				120 mg/kg	1.462	175.387 mg/kg	0.0175 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				74 mg/kg	1.126	83.316 mg/kg	0.00833 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	59 mg/kg	1.56	92.029 mg/kg	0.0059 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.64 mg/kg	1.353	0.866 mg/kg	0.0000866 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				140 mg/kg	2.976	416.677 mg/kg	0.0417 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				1.6 mg/kg	2.554	4.086 mg/kg	0.000409 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				130 mg/kg	2.774	360.639 mg/kg	0.0361 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
17	pH				7.4 pH		7.4 pH	7.4 pH		
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
24	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
25	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
26	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
35	polychlorobiphenyls; PCB				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.113 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP07[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP07[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3 m	
Moisture content:	
19%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 19% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %			
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.46 mg/kg	1.142	0.525 mg/kg	0.0000525 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				70 mg/kg	1.126	78.812 mg/kg	0.00788 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	54 mg/kg	1.56	84.23 mg/kg	0.0054 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.22 mg/kg	1.353	0.298 mg/kg	0.0000298 %			
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				26 mg/kg	2.976	77.383 mg/kg	0.00774 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				1.7 mg/kg	2.554	4.342 mg/kg	0.000434 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				140 mg/kg	2.774	388.381 mg/kg	0.0388 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
13	pH		PH		7.8 pH		7.8 pH	7.8 pH			
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	phenanthrene	201-581-5	85-01-8		1.4 mg/kg		1.4 mg/kg	0.00014 %		
19	anthracene	204-371-1	120-12-7		0.27 mg/kg		0.27 mg/kg	0.000027 %		
20	fluoranthene	205-912-4	206-44-0		1.5 mg/kg		1.5 mg/kg	0.00015 %		
21	pyrene	204-927-3	129-00-0		1.2 mg/kg		1.2 mg/kg	0.00012 %		
22	benzo[a]anthracene	601-033-00-9	200-280-6		0.67 mg/kg		0.67 mg/kg	0.000067 %		
23	chrysene	601-048-00-0	205-923-4		0.77 mg/kg		0.77 mg/kg	0.000077 %		
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.84 mg/kg		0.84 mg/kg	0.000084 %		
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.32 mg/kg		0.32 mg/kg	0.000032 %		
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.53 mg/kg		0.53 mg/kg	0.000053 %		
27	indeno[123-cd]pyrene	205-893-2	193-39-5		0.34 mg/kg		0.34 mg/kg	0.000034 %		
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	benzo[ghi]perylene	205-883-8	191-24-2		0.33 mg/kg		0.33 mg/kg	0.000033 %		
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.066 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP07[3]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP07[3]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
4 m	
Moisture content:	
19%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 19% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				33 mg/kg	1.32	43.571 mg/kg	0.00436 %			
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide; boric oxide }				0.46 mg/kg	3.22	1.481 mg/kg	0.000148 %			
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				0.64 mg/kg	1.142	0.731 mg/kg	0.0000731 %			
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	20.462 mg/kg	0.00205 %			
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				25 mg/kg	1.126	28.147 mg/kg	0.00281 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	17 mg/kg	1.56	26.517 mg/kg	0.0017 %			
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				23 mg/kg	2.976	68.454 mg/kg	0.00685 %			
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				0.29 mg/kg	2.554	0.741 mg/kg	0.0000741 %			
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				84 mg/kg	2.774	233.028 mg/kg	0.0233 %			
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		98 mg/kg		98 mg/kg	0.0098 %			
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
13	pH		PH		7.3 pH		7.3 pH	7.3 pH			
14	naphthalene				0.55 mg/kg		0.55 mg/kg	0.000055 %			
	601-052-00-2	202-049-5	91-20-3								
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	acenaphthene	201-469-6	83-32-9		0.18 mg/kg		0.18 mg/kg	0.000018 %		
17	fluorene	201-695-5	86-73-7		0.15 mg/kg		0.15 mg/kg	0.000015 %		
18	phenanthrene	201-581-5	85-01-8		1.2 mg/kg		1.2 mg/kg	0.00012 %		
19	anthracene	204-371-1	120-12-7		0.25 mg/kg		0.25 mg/kg	0.000025 %		
20	fluoranthene	205-912-4	206-44-0		1.9 mg/kg		1.9 mg/kg	0.00019 %		
21	pyrene	204-927-3	129-00-0		2.3 mg/kg		2.3 mg/kg	0.00023 %		
22	benzo[a]anthracene	601-033-00-9	200-280-6		1.3 mg/kg		1.3 mg/kg	0.00013 %		
23	chrysene	601-048-00-0	205-923-4		1.6 mg/kg		1.6 mg/kg	0.00016 %		
24	benzo[b]fluoranthene	601-034-00-4	205-911-9		1.8 mg/kg		1.8 mg/kg	0.00018 %		
25	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.57 mg/kg		0.57 mg/kg	0.000057 %		
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		1.4 mg/kg		1.4 mg/kg	0.00014 %		
27	indeno[123-cd]pyrene	205-893-2	193-39-5		0.78 mg/kg		0.78 mg/kg	0.000078 %		
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.28 mg/kg		0.28 mg/kg	0.000028 %		
29	benzo[ghi]perylene	205-883-8	191-24-2		0.78 mg/kg		0.78 mg/kg	0.000078 %		
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0528 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Hazard Property HP 3(i) Flammable on account of TPH and/or benzene/toluene. 'Flammable liquid waste' defined as liquid waste having a flash point below 60°C, or waste gas oil, diesel and light heating oils having a flash point >55°C and ≤75°C). The flammability risk of the materials can only be confirmed by means of flash point testing, which was not undertaken as part of the ground investigation. However, the hazardous property HP3(i) relates to liquid waste and the materials sampled were solid. In addition, the exploratory holes indicate that no free product or liquid hydrocarbon contamination was encountered during the ground investigation. In order to assess the Hazard HP3, the 'decision tree' presented in the WM3 guidance for 'Waste soil' in relation to Hazard HP 3 was followed. The assessment process indicated that the Hazard Property HP 3(i) in the samples listed above can be discounted. The samples are therefore not considered to be 'truly hazardous' by virtue of HP 3(i) and a non-hazardous class is considered most appropriate.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0098%)

Classification of sample: TP08


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP08	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	
Moisture content:	
8.7%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.7% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				8.2	mg/kg	1.32	10.827	mg/kg	0.00108 %		
	033-003-00-0	215-481-4	1327-53-3									
2	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	cadmium { cadmium oxide }				0.18	mg/kg	1.142	0.206	mg/kg	0.0000206 %		
	048-002-00-0	215-146-2	1306-19-0									
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				7.3	mg/kg	1.462	10.669	mg/kg	0.00107 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				96	mg/kg	1.126	108.085	mg/kg	0.0108 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	57	mg/kg	1.56	88.909	mg/kg	0.0057 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				0.22	mg/kg	1.353	0.298	mg/kg	0.0000298 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				37	mg/kg	2.976	110.122	mg/kg	0.011 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { nickel selenate }				2	mg/kg	2.554	5.108	mg/kg	0.000511 %		
	028-031-00-5	239-125-2	15060-62-5									
10	zinc { zinc chromate }				96	mg/kg	2.774	266.318	mg/kg	0.0266 %		
	024-007-00-3	236-878-9	13530-65-9									
11	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
17	pH				8.4 pH		8.4 pH	8.4 pH			
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
24	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
25	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
26	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
27	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
Total:									0.0583 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP08[2]


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP08[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.1%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.1% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				5.3 mg/kg	1.32	6.998 mg/kg	0.0007 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.13 mg/kg	1.142	0.149 mg/kg	0.0000149 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				6.5 mg/kg	1.462	9.5 mg/kg	0.00095 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				87 mg/kg	1.126	97.952 mg/kg	0.0098 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	48 mg/kg	1.56	74.871 mg/kg	0.0048 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.21 mg/kg	1.353	0.284 mg/kg	0.0000284 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				27 mg/kg	2.976	80.359 mg/kg	0.00804 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				1.9 mg/kg	2.554	4.852 mg/kg	0.000485 %		
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc chromate }				73 mg/kg	2.774	202.513 mg/kg	0.0203 %		
	024-007-00-3	236-878-9	13530-65-9							
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
17	pH				8.4 pH		8.4 pH	8.4 pH			
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
22	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
23	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
24	fluoranthene				0.13 mg/kg		0.13 mg/kg	0.000013 %			
		205-912-4	206-44-0								
25	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
26	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
27	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
Total:									0.0465 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP09


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP09	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
22%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 22% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				2.9 mg/kg	1.462	4.239 mg/kg	0.000424 %		
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
6	copper { dicopper oxide; copper (I) oxide }				43 mg/kg	1.126	48.413 mg/kg	0.00484 %		
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	28 mg/kg	1.56	43.675 mg/kg	0.0028 %		
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				0.1 mg/kg	1.353	0.135 mg/kg	0.0000135 %		
	080-010-00-X	231-299-8	7487-94-7							
9	nickel { nickel chromate }				7.8 mg/kg	2.976	23.215 mg/kg	0.00232 %		
	028-035-00-7	238-766-5	14721-18-7							
10	selenium { nickel selenate }				1.6 mg/kg	2.554	4.086 mg/kg	0.000409 %		
	028-031-00-5	239-125-2	15060-62-5							
11	zinc { zinc chromate }				15 mg/kg	2.774	41.612 mg/kg	0.00416 %		
	024-007-00-3	236-878-9	13530-65-9							
12	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
13	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
14	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
15	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
17	cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
18	 pH PH				8.6 pH		8.6 pH	8.6 pH		
19	naphthalene 601-052-00-2	202-049-5	91-20-3		8.1 mg/kg		8.1 mg/kg	0.00081 %		
20	 acenaphthylene 205-917-1	208-96-8			0.22 mg/kg		0.22 mg/kg	0.000022 %		
21	 acenaphthene 201-469-6	83-32-9			1.1 mg/kg		1.1 mg/kg	0.00011 %		
22	 fluorene 201-695-5	86-73-7			1.7 mg/kg		1.7 mg/kg	0.00017 %		
23	 phenanthrene 201-581-5	85-01-8			6.9 mg/kg		6.9 mg/kg	0.00069 %		
24	 anthracene 204-371-1	120-12-7			0.94 mg/kg		0.94 mg/kg	0.000094 %		
25	 fluoranthene 205-912-4	206-44-0			3.9 mg/kg		3.9 mg/kg	0.00039 %		
26	 pyrene 204-927-3	129-00-0			2.9 mg/kg		2.9 mg/kg	0.00029 %		
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		1 mg/kg		1 mg/kg	0.0001 %		
28	chrysene 601-048-00-0	205-923-4	218-01-9		2.2 mg/kg		2.2 mg/kg	0.00022 %		
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		1.9 mg/kg		1.9 mg/kg	0.00019 %		
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.31 mg/kg		0.31 mg/kg	0.000031 %		
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.45 mg/kg		0.45 mg/kg	0.000045 %		
32	 indeno[123-cd]pyrene 205-893-2	193-39-5			0.24 mg/kg		0.24 mg/kg	0.000024 %		
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.21 mg/kg		0.21 mg/kg	0.000021 %		
34	 benzo[ghi]perylene 205-883-8	191-24-2			0.46 mg/kg		0.46 mg/kg	0.000046 %		
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	 polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0197 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP09[2]


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
TP09[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
3 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.2%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.2% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				15 mg/kg	1.32	19.805 mg/kg	0.00198 %		
	033-003-00-0	215-481-4	1327-53-3							
2	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	cadmium { cadmium oxide }				0.23 mg/kg	1.142	0.263 mg/kg	0.0000263 %		
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				5.6 mg/kg	1.462	8.185 mg/kg	0.000818 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				120 mg/kg	1.126	135.107 mg/kg	0.0135 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	60 mg/kg	1.56	93.589 mg/kg	0.006 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.26 mg/kg	1.353	0.352 mg/kg	0.0000352 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				19 mg/kg	2.976	56.549 mg/kg	0.00565 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { nickel selenate }				2.7 mg/kg	2.554	6.895 mg/kg	0.00069 %		
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc chromate }				96 mg/kg	2.774	266.318 mg/kg	0.0266 %		
	024-007-00-3	236-878-9	13530-65-9							
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
12	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
13	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
14	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
15	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
17	pH				8.5 pH		8.5 pH	8.5 pH			
18	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
19	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
22	phenanthrene				0.91 mg/kg		0.91 mg/kg	0.000091 %			
		201-581-5	85-01-8								
23	anthracene				0.12 mg/kg		0.12 mg/kg	0.000012 %			
		204-371-1	120-12-7								
24	fluoranthene				0.59 mg/kg		0.59 mg/kg	0.000059 %			
		205-912-4	206-44-0								
25	pyrene				0.55 mg/kg		0.55 mg/kg	0.000055 %			
		204-927-3	129-00-0								
26	benzo[a]anthracene				0.22 mg/kg		0.22 mg/kg	0.000022 %			
	601-033-00-9	200-280-6	56-55-3								
27	chrysene				0.37 mg/kg		0.37 mg/kg	0.000037 %			
	601-048-00-0	205-923-4	218-01-9								
28	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
29	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
30	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
31	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
32	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
33	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
34	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
Total:									0.057 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, STOT RE 2; H373, Muta. 1B; H340, Carc. 1B; H350, Repr. 2; H361d, Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 2; H351, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
 Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
 Data source date: 21 Aug 2015
 Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
 Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
 Data source date: 21 Aug 2015
 Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
 Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
 Data source date: 06 Aug 2015
 Hazard Statements: Carc. 2; H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
 Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
 Data source date: 23 Jul 2015
 Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
 Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
 Additional Hazard Statement(s): Carc. 1A; H350
 Reason for additional Hazards Statement(s):
 20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

 Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

 Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

 Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

 Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

 HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2022.25.4995.9469 (25 Jan 2022)

HazWasteOnline Database: 2022.25.4995.9469 (25 Jan 2022)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)
Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

Appendix C – 5 Groundwater monitoring graphs

Groundwater monitoring
Made ground

Installation ID

▼

All

▼

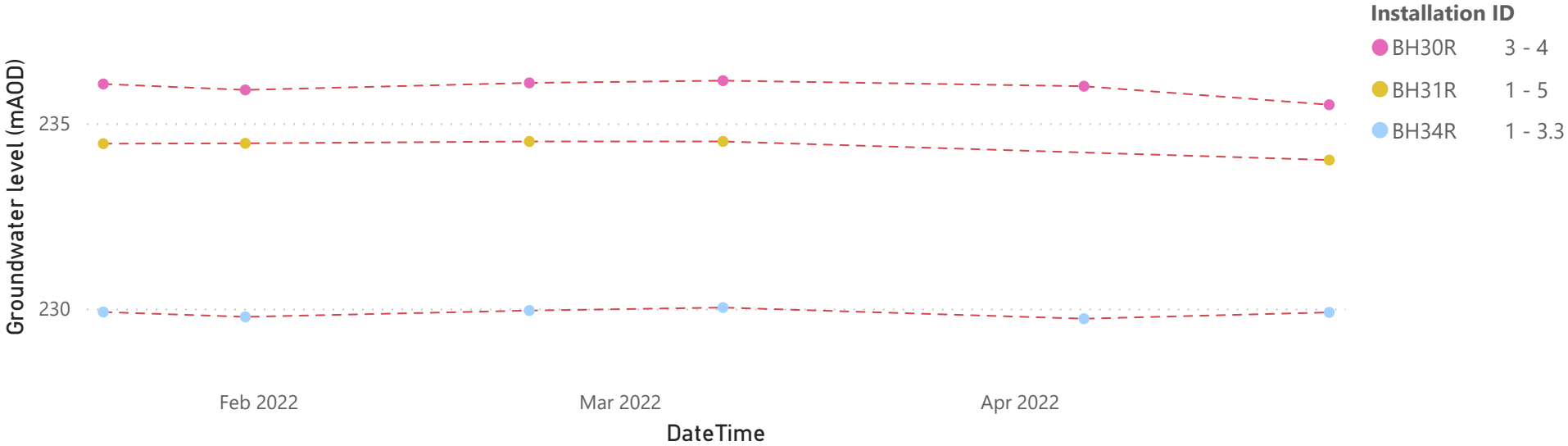
20/01/2022

25/04/2022

Installation Stratigraphy

MG

Groundwater monitoring results



Monitored borehole locations

PointID BH30R BH31R BH34R



Groundwater monitoring
Made ground

Installation ID ▼

All ▼

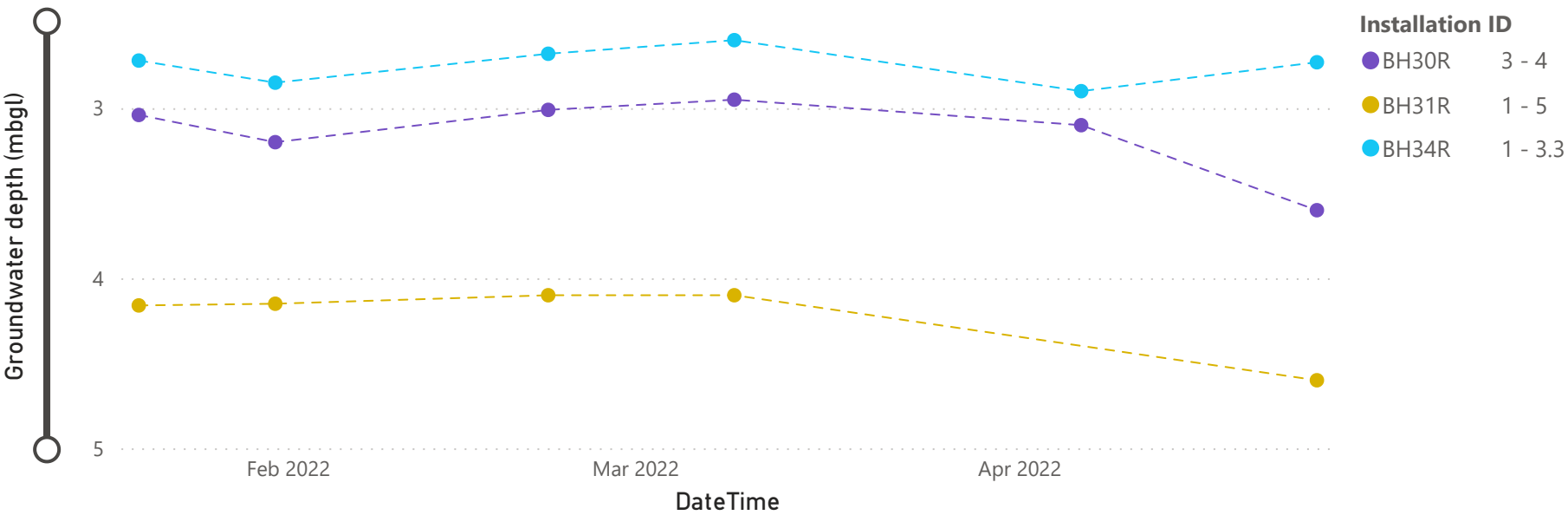
20/01/2022 25/04/2022

Installation Stratigraphy

MG

Clear all filters

Groundwater monitoring results



Borehole locations

PointID ● BH30R ● BH31R ● BH34R



Groundwater monitoring
Backfill

Installation ID

All

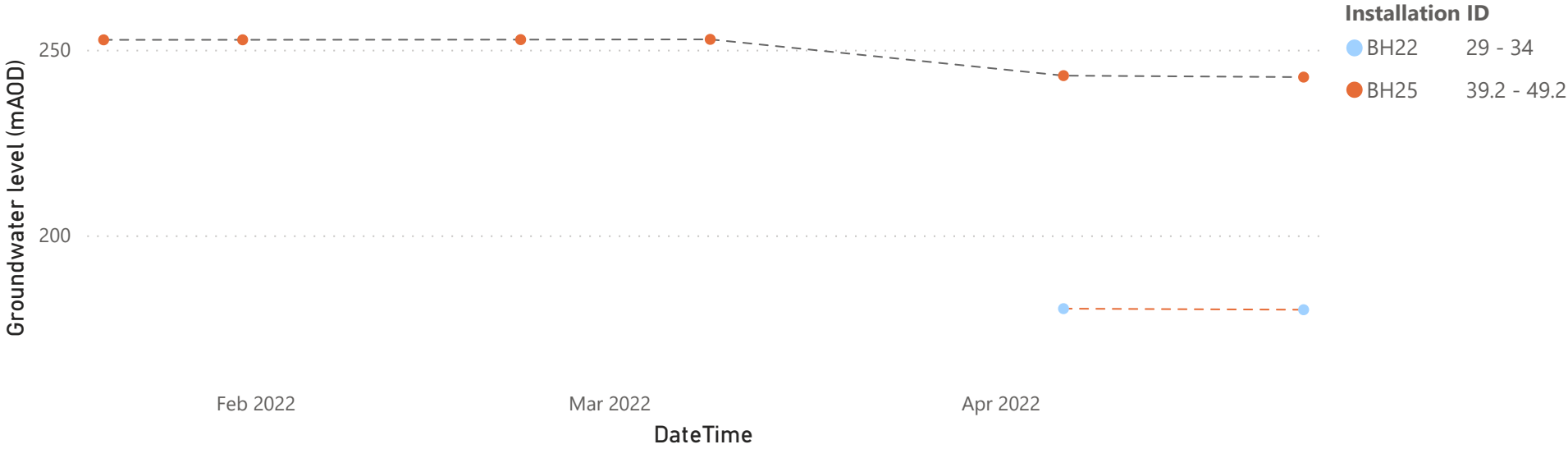
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Installation Stratigraphy

Backfill

Clear all filters

Groundwater monitoring results



Monitored borehole locations

PointID ● BH19A ● BH22 ● BH25 ● BH28



Groundwater monitoring Backfill

Installation ID

All

20/01/2022

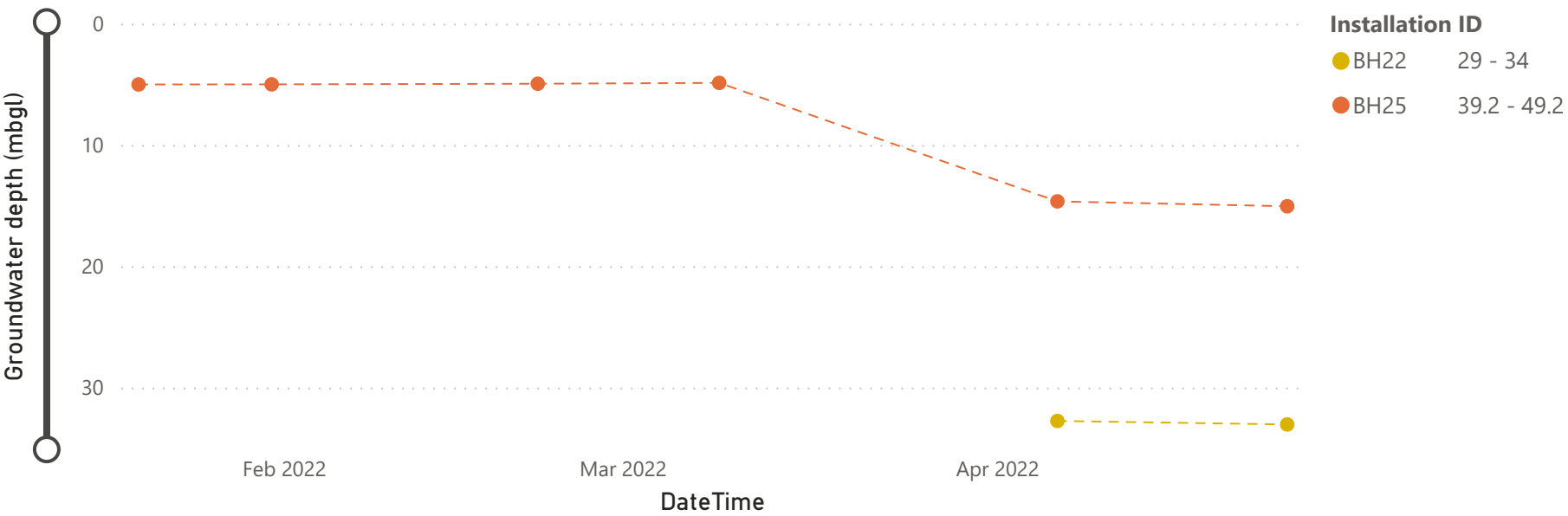
25/04/2022

Installation Stratigraphy

Backfill

Clear all filters

Groundwater monitoring results



Borehole locations

PointID ● BH19A ● BH22 ● BH25 ● BH28



Groundwater monitoring
BH15

Installation ID

▼

All

▼

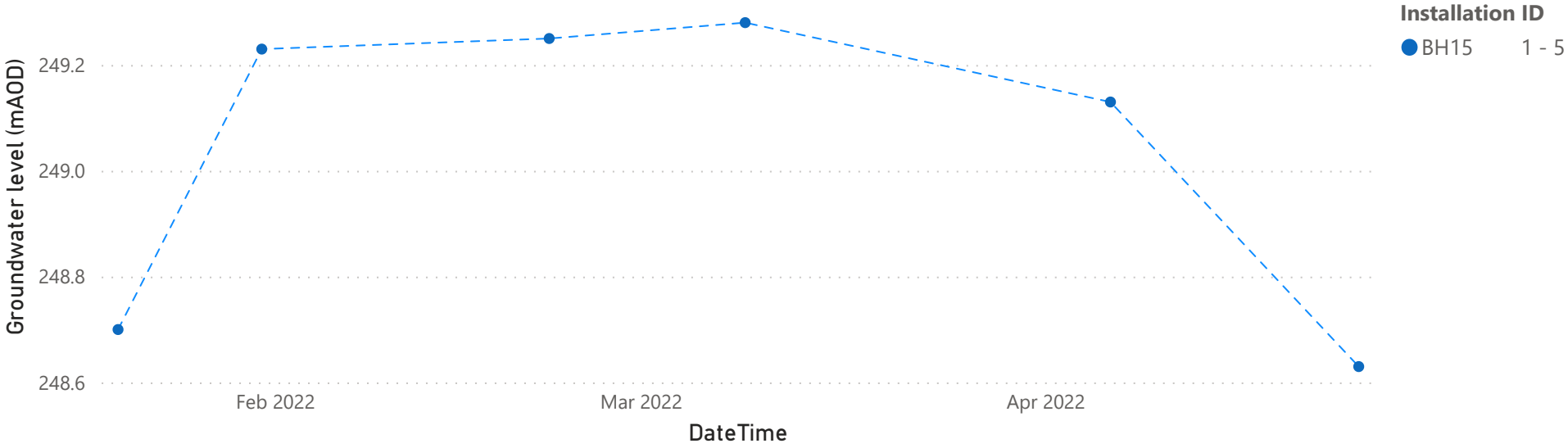
20/01/2022

25/04/2022

Installation Stratigraphy

Fill/GT/SWCM

Groundwater monitoring results



Monitored borehole locations

PointID ● BH15

Clear all filters



Groundwater monitoring
BH15

Installation ID ▼

All ▼

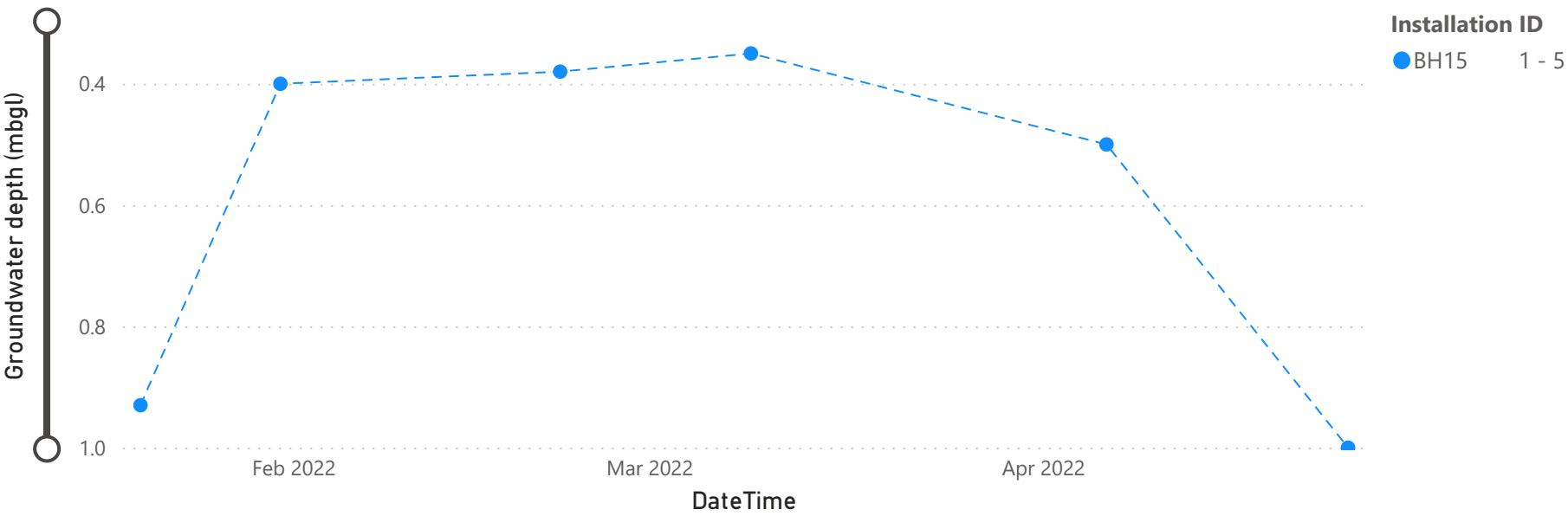
20/01/2022 25/04/2022

Installation Stratigraphy

Fill/GT/SWCM

Clear all filters

Groundwater monitoring results



Borehole locations

PointID ● BH15



Groundwater monitoring South Wales Coal Measures

Installation ID ▼

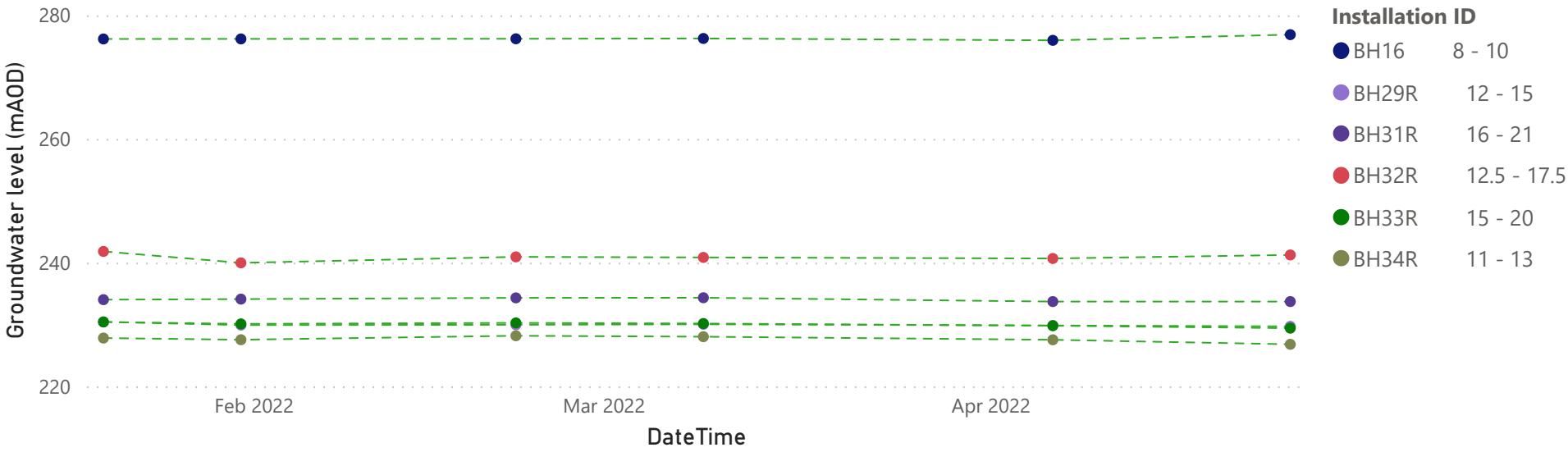
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20/01/2022 25/04/2022

Installation Stratigraphy

SWCM

Groundwater monitoring results



Monitored borehole locations

PointID ● BH07 ● BH16 ● BH29R ● BH31R ● BH32R ● BH33R ● BH34R

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Groundwater monitoring
South Wales Coal Measures

Installation ID

All

20/01/2022

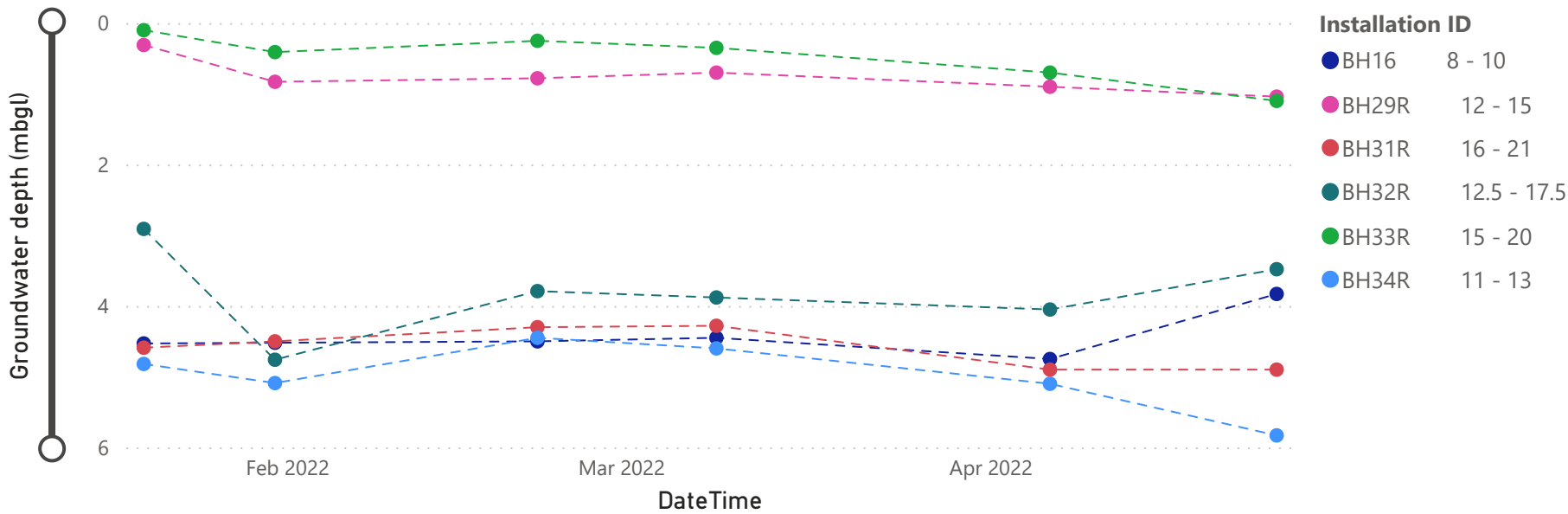
25/04/2022

Installation Stratigraphy

SWCM

Clear all filters

Groundwater monitoring results



Borehole locations

PointID ● BH07 ● BH16 ● BH29R ● BH31R ● BH32R ● BH33R ● BH34R



Appendix D - Settlement Plots

Figure D 1 Abercrave/Gwaunton settlement monitoring results presented against depth of fill

Figure D 2 Onllwyn settlement monitoring results presented against depth of fill

Figure D 3 Nant Helen settlement monitoring results presented against depth of fill

Figure D 4 Nant Helen Extension settlement monitoring results presented against depth of fill

Figure D 5 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A3)

Figure D 6 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A4)

Figure D 7 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A5)

Figure D 8 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A6)

Figure D 9 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A7)

Figure D 10 Creep settlement rate and total creep settlement at Onllwyn (O3)

Figure D 11 Creep settlement rate and total creep settlement at Onllwyn (O4)

Figure D 12 Creep settlement rate and total creep settlement at Onllwyn (O5)

Figure D 13 Creep settlement rate and total creep settlement at Onllwyn (O6)

Figure D 14 Creep settlement rate and total creep settlement at Onllwyn (O7)

Figure D 15 Creep settlement rate and total creep settlement at Nant Helen (NH4)

Figure D 16 Creep settlement rate and total creep settlement at Nant Helen (NH5)

Figure D 17 Creep settlement rate and total creep settlement at Nant Helen (NH6)

Figure D 18 Creep settlement rate and total creep settlement at Nant Helen (NH7)

Figure D 19 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE3)

Figure D 20 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE4)

Figure D 21 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE5)

Figure D 22 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE6)

Figure D 23 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE7)

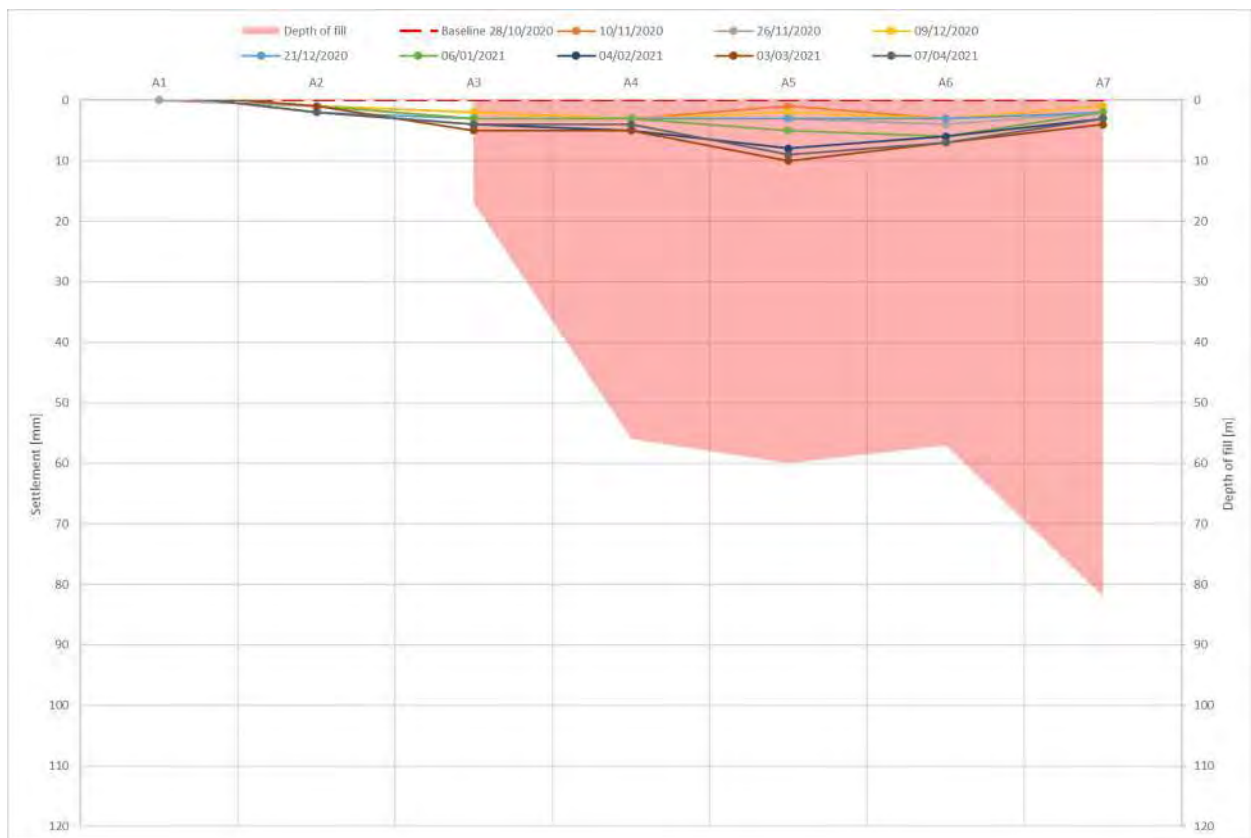


Figure D 1 Abercrave/Gwaunton settlement monitoring results presented against depth of fill

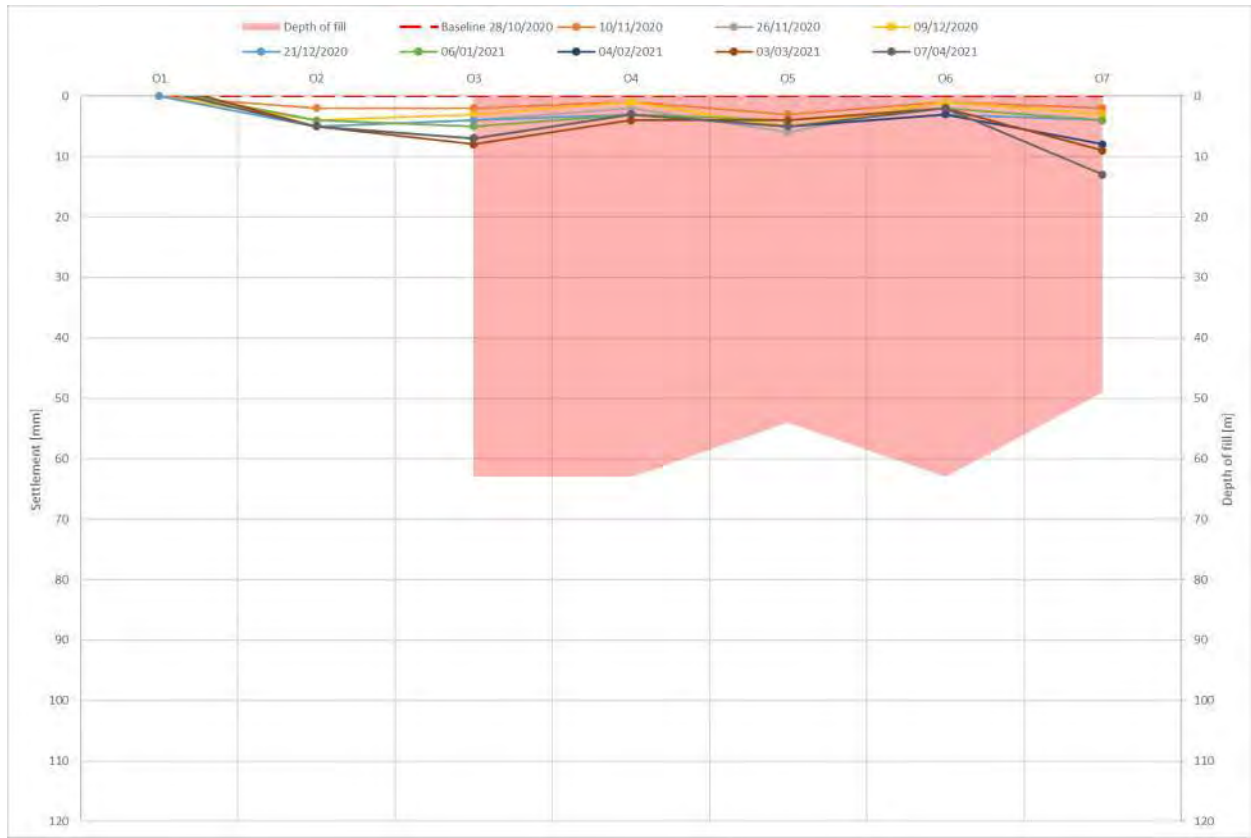


Figure D 2 Onllwyn settlement monitoring results presented against depth of fill



Figure D 3 Nant Helen settlement monitoring results presented against depth of fill



Figure D 4 Nant Helen Extension settlement monitoring results presented against depth of fill

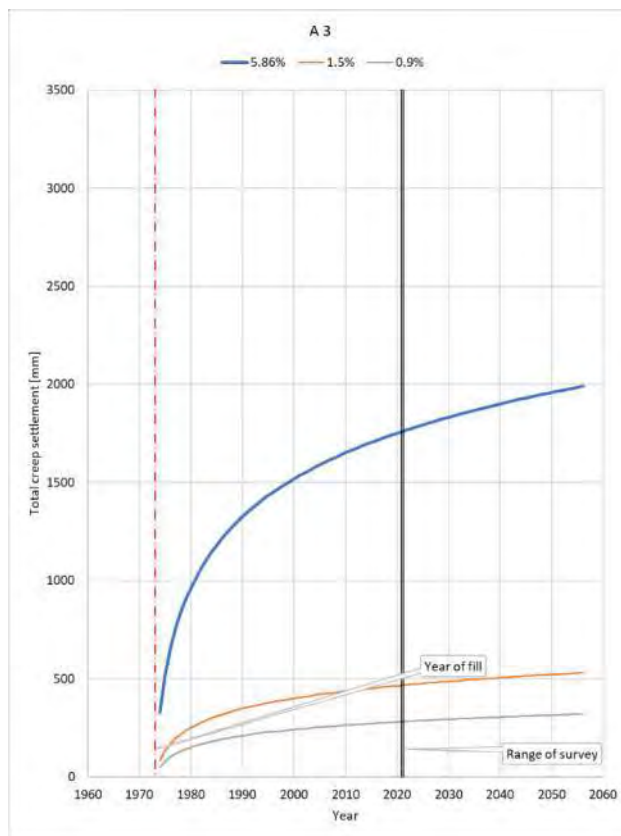
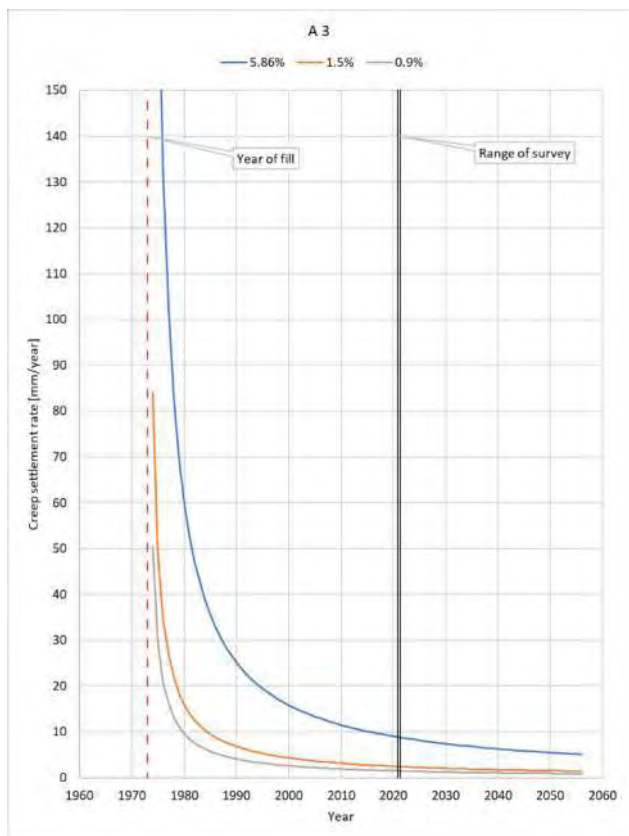


Figure D 5 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A3)

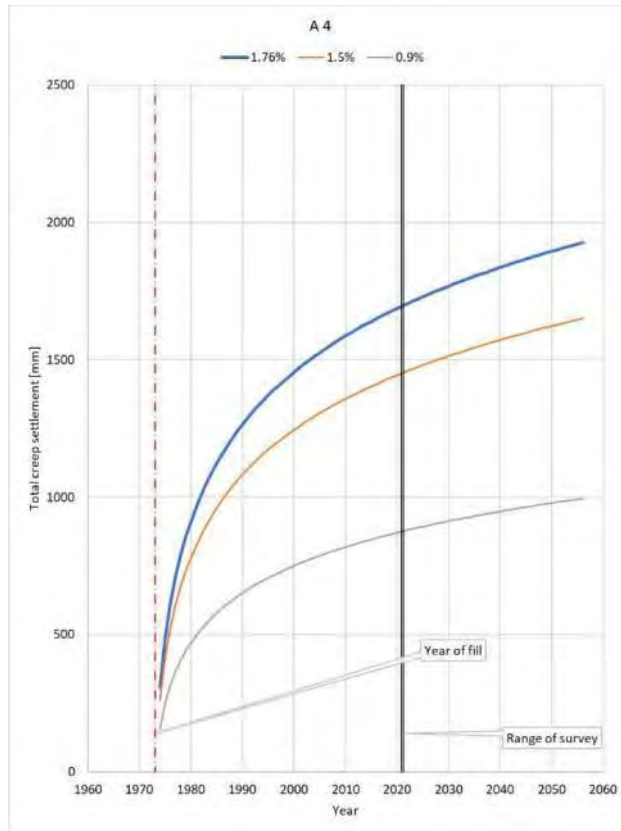
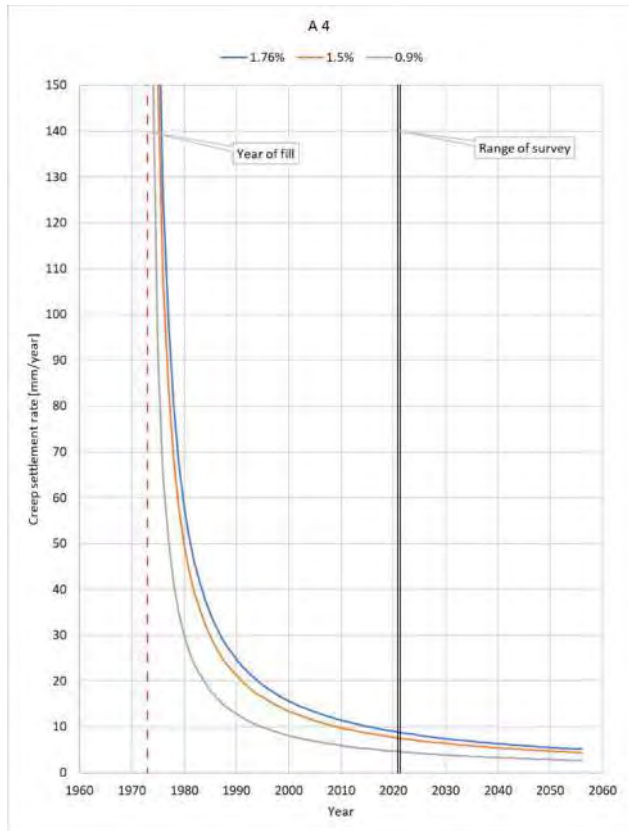


Figure D 6 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A4)

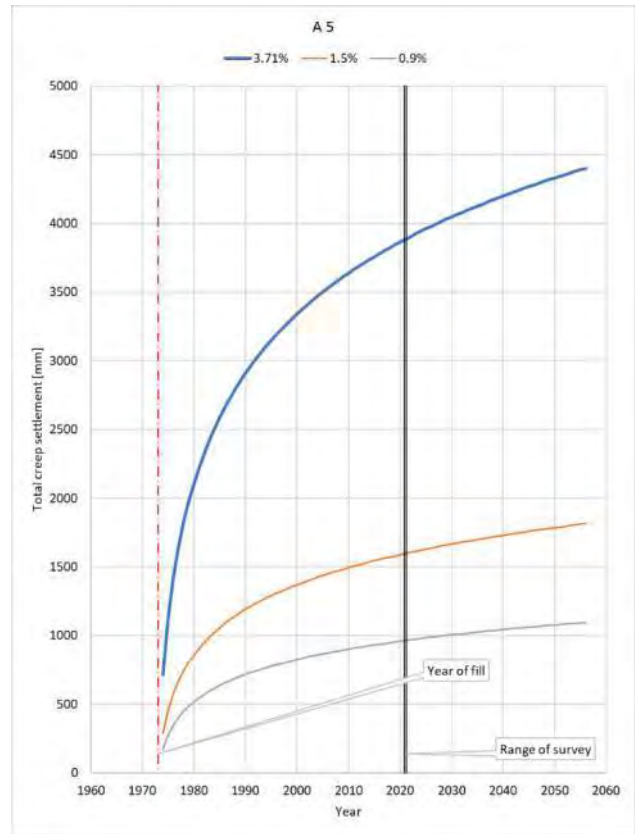
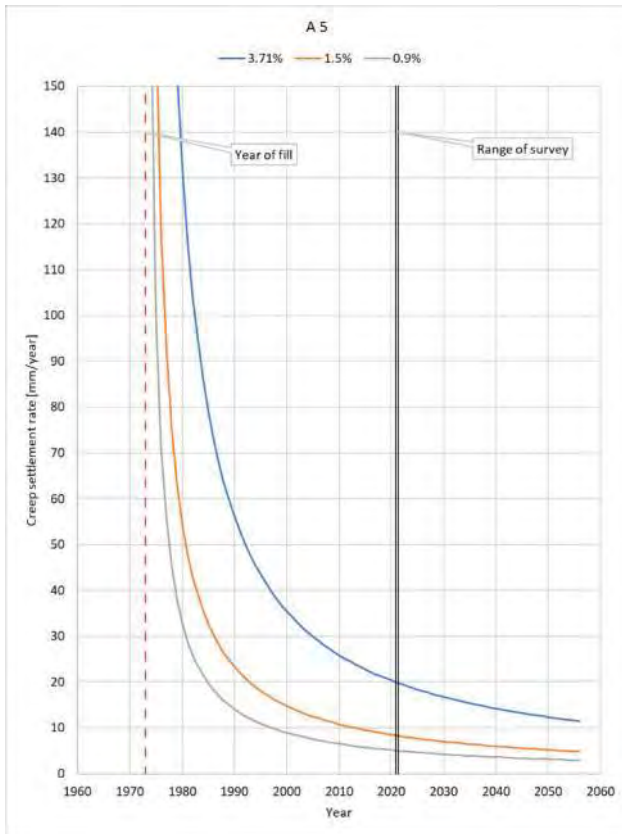


Figure D 7 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A5)

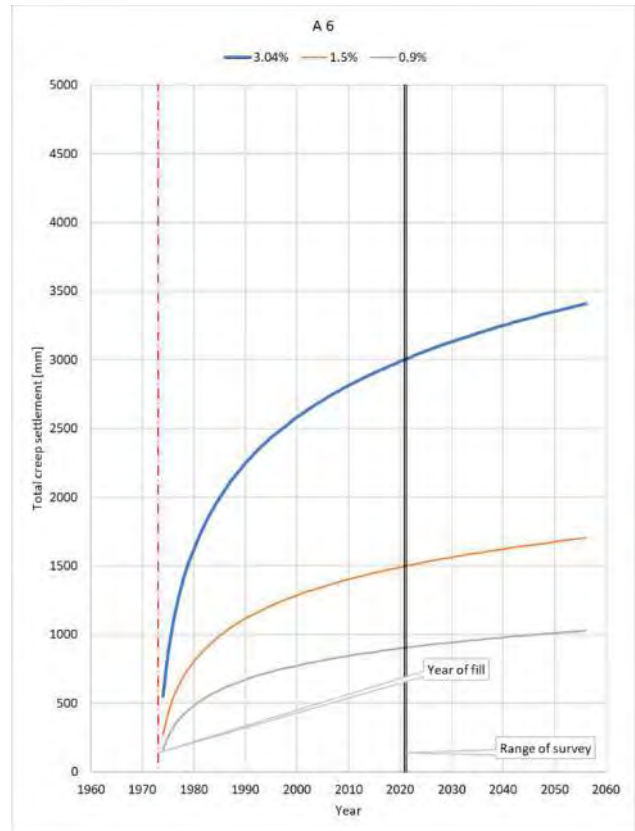
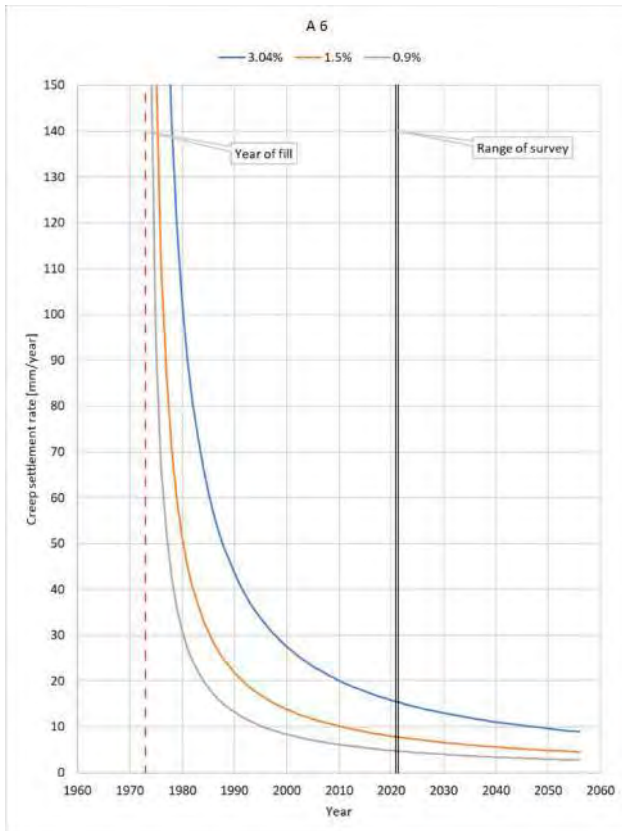


Figure D 8 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A6)

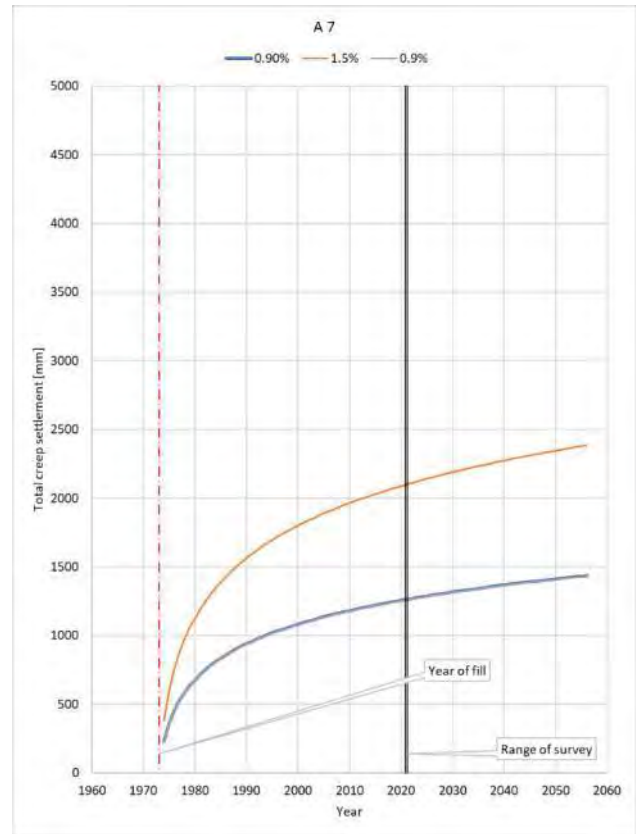
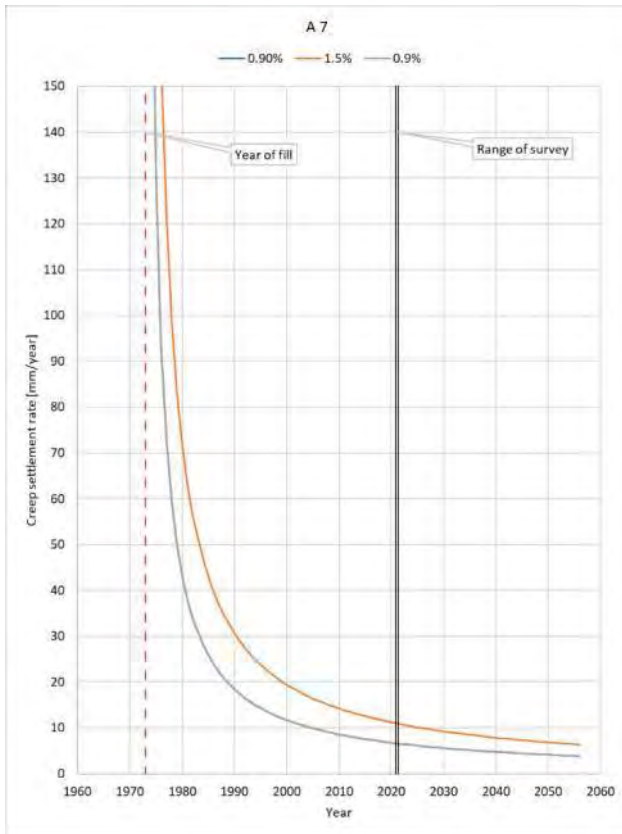


Figure D 9 Creep settlement rate and total creep settlement at Abercrave/Gwaunton (A7)

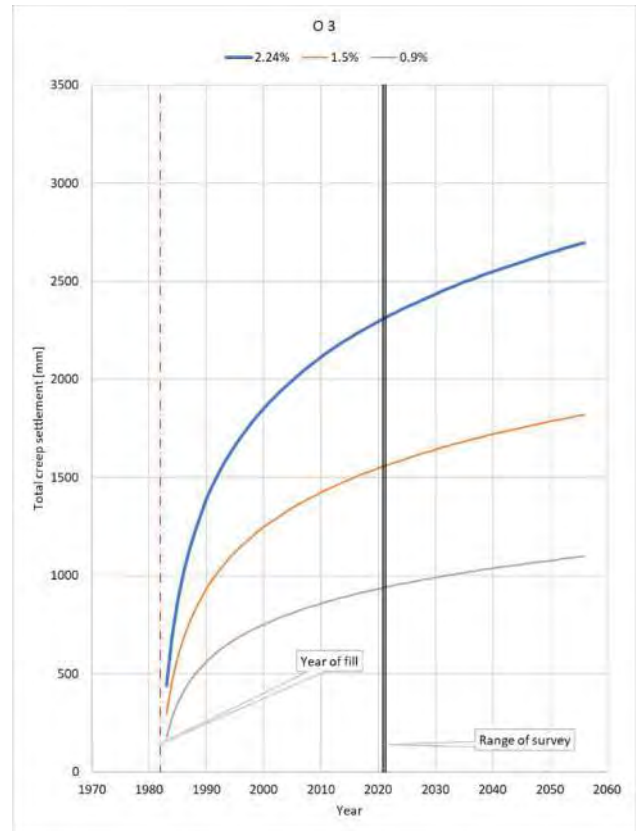
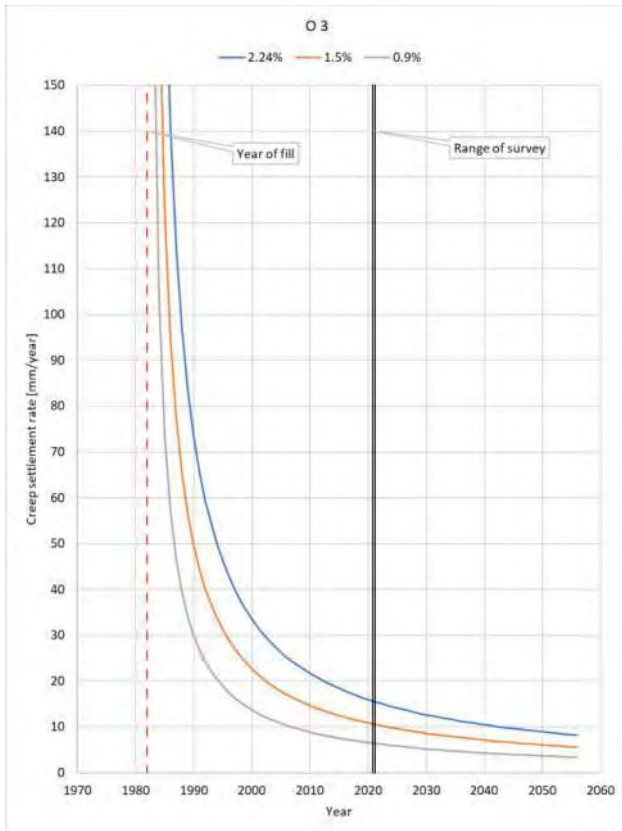


Figure D 10 Creep settlement rate and total creep settlement at Onllwyn (O3)

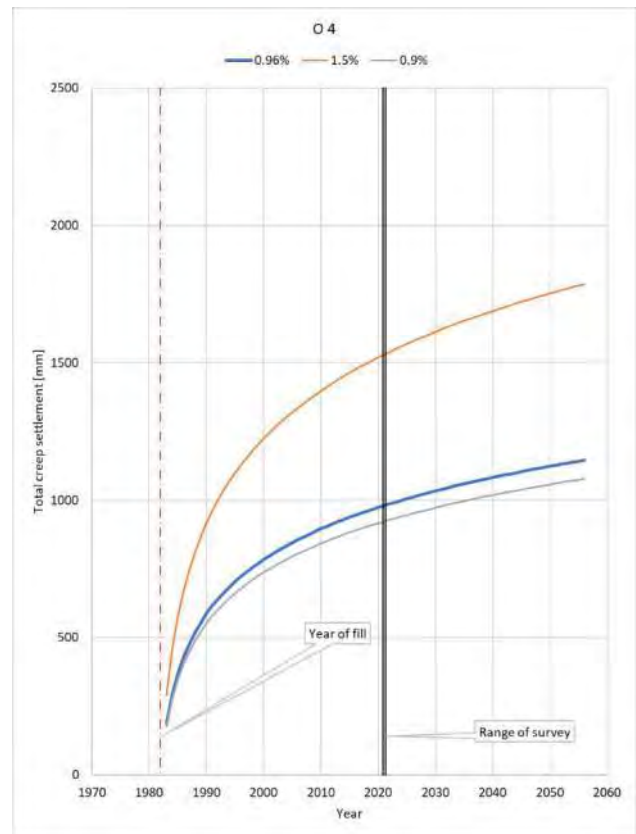
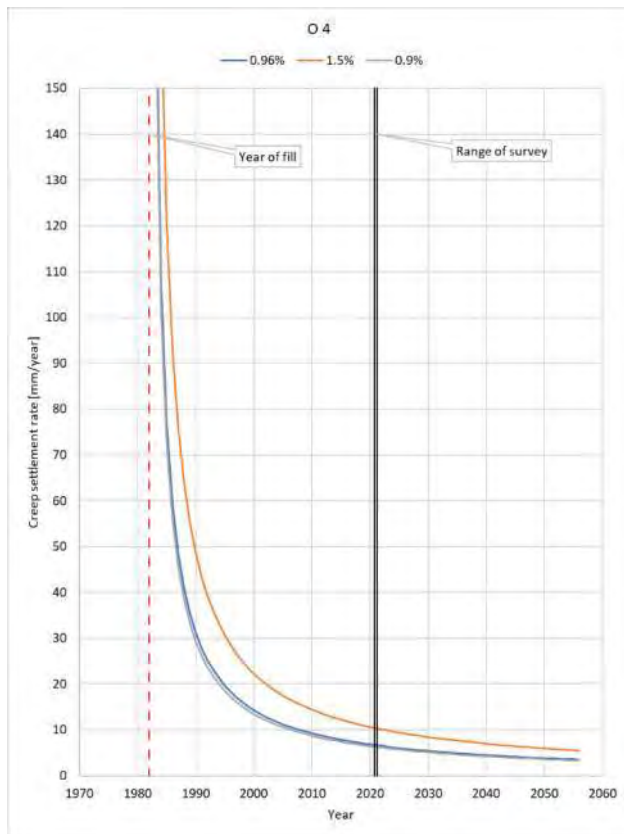


Figure D 11 Creep settlement rate and total creep settlement at Onllwyn (O4)

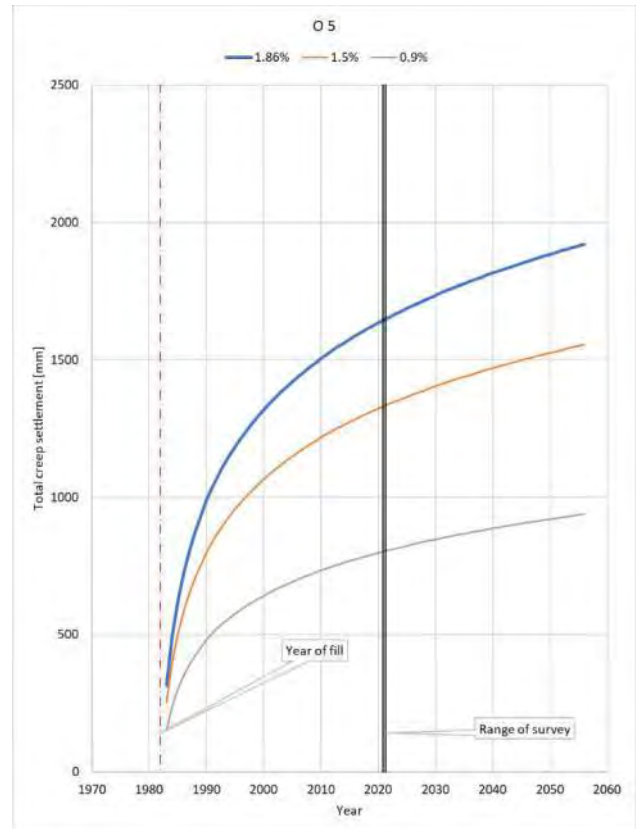
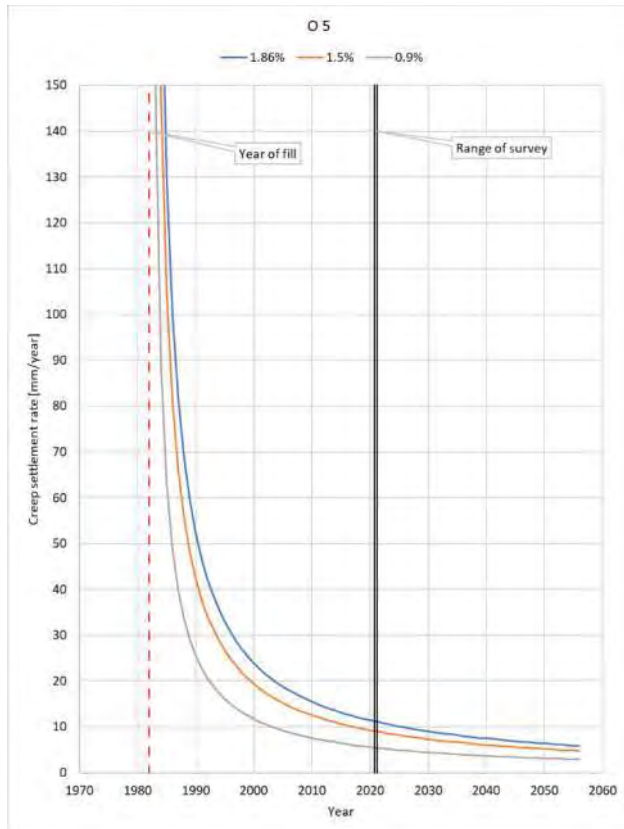


Figure D 12 Creep settlement rate and total creep settlement at Onllwyn (O5)

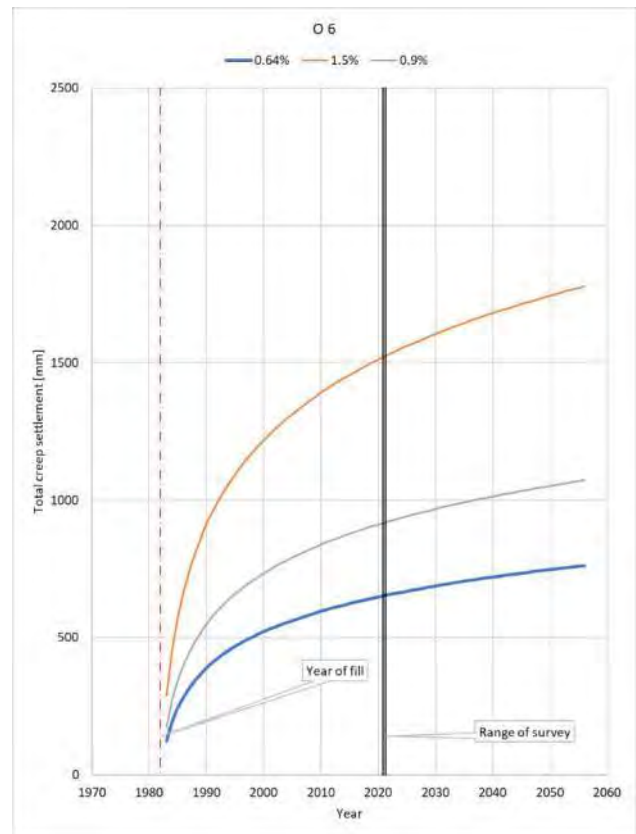
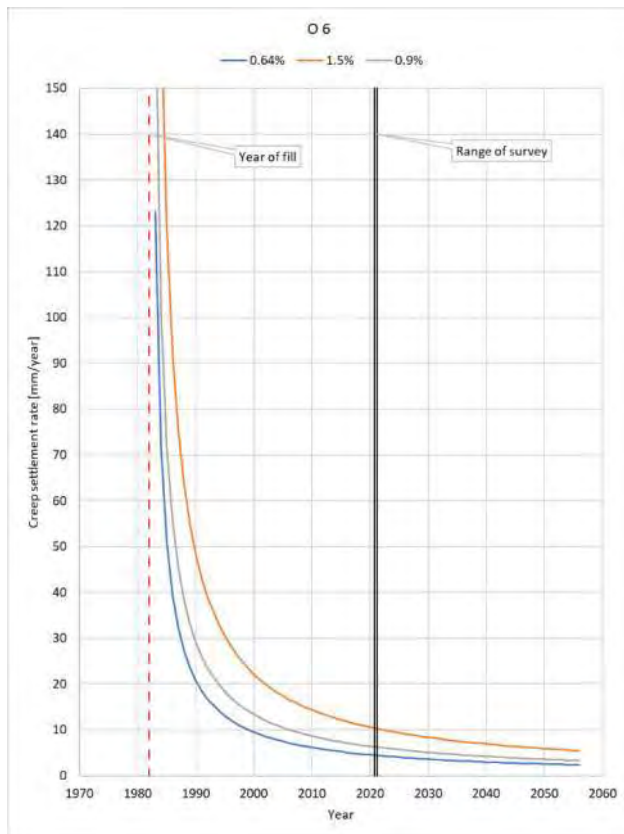


Figure D 13 Creep settlement rate and total creep settlement at Onllwyn (O6)

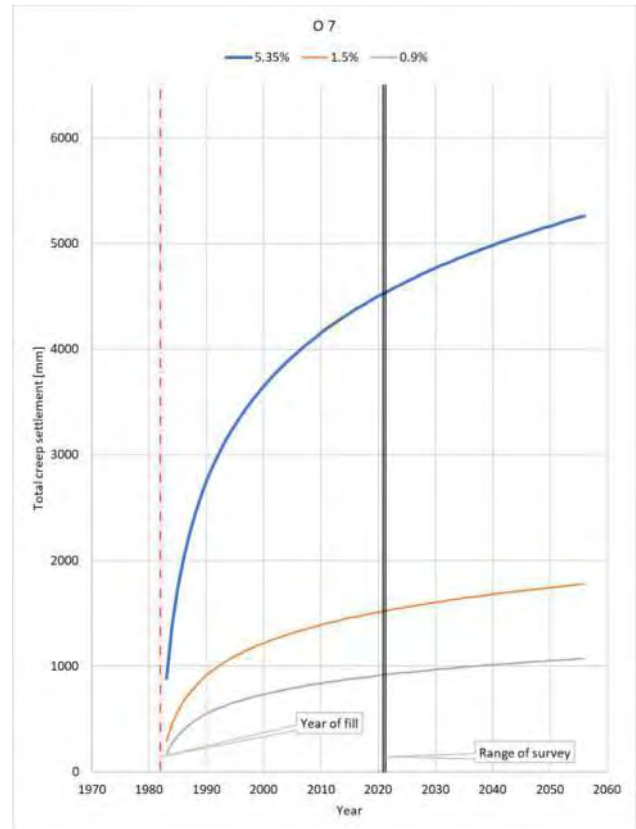
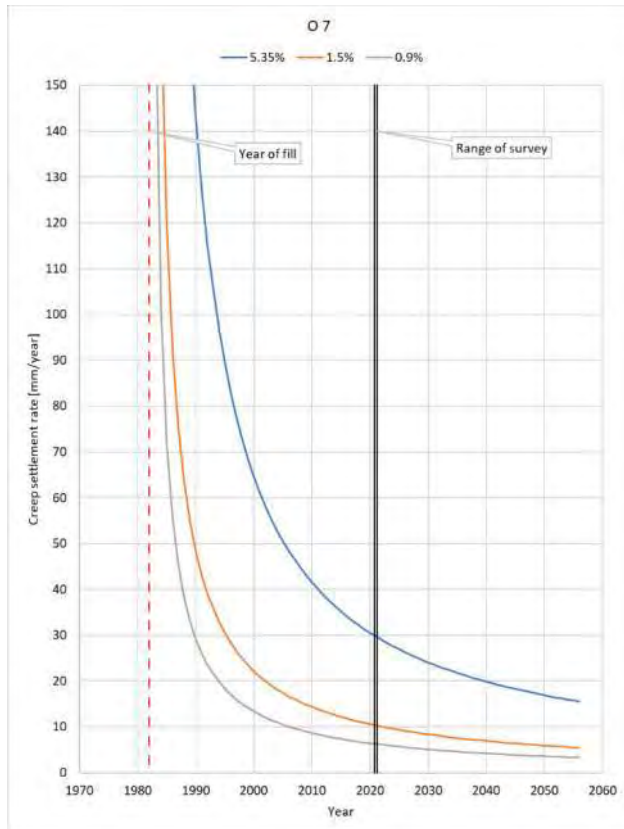


Figure D 14 Creep settlement rate and total creep settlement at Onllwyn (O7)

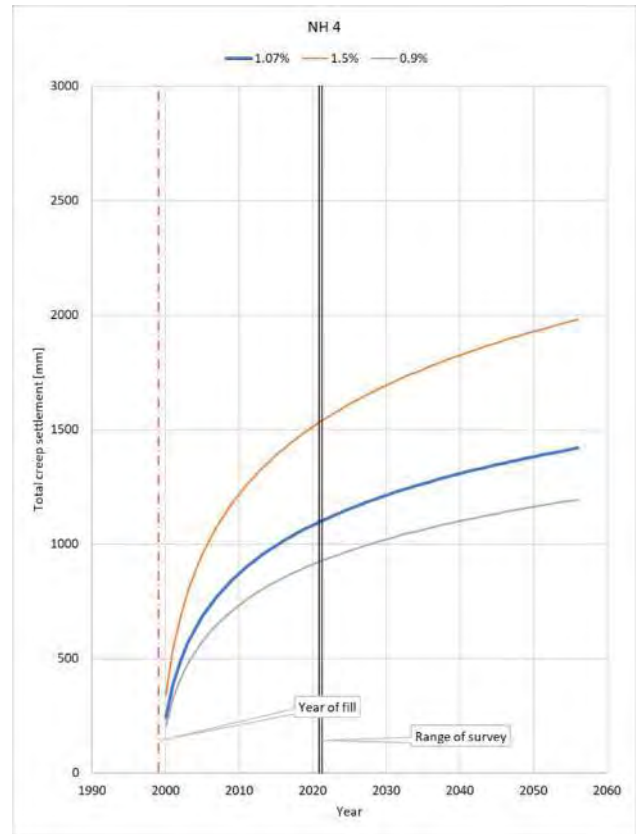
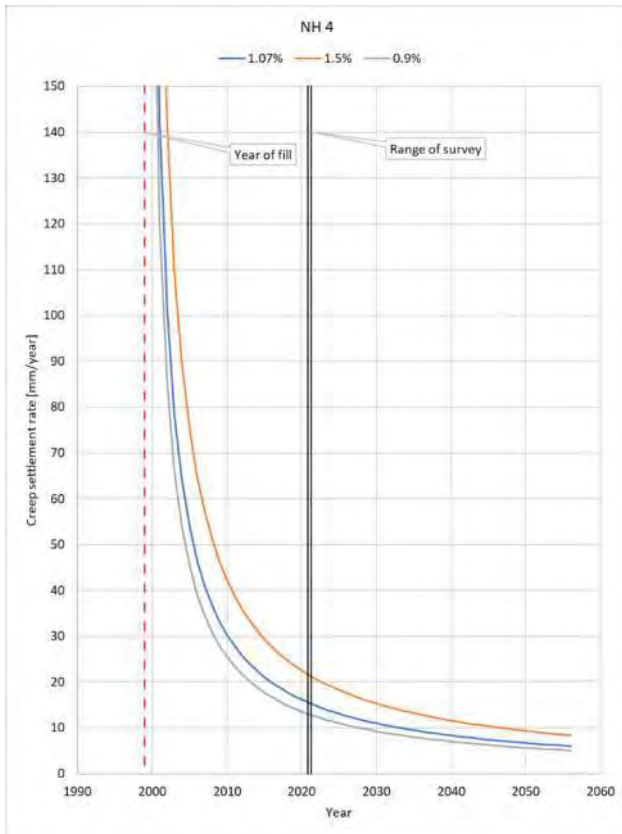


Figure D 15 Creep settlement rate and total creep settlement at Nant Helen (NH4)

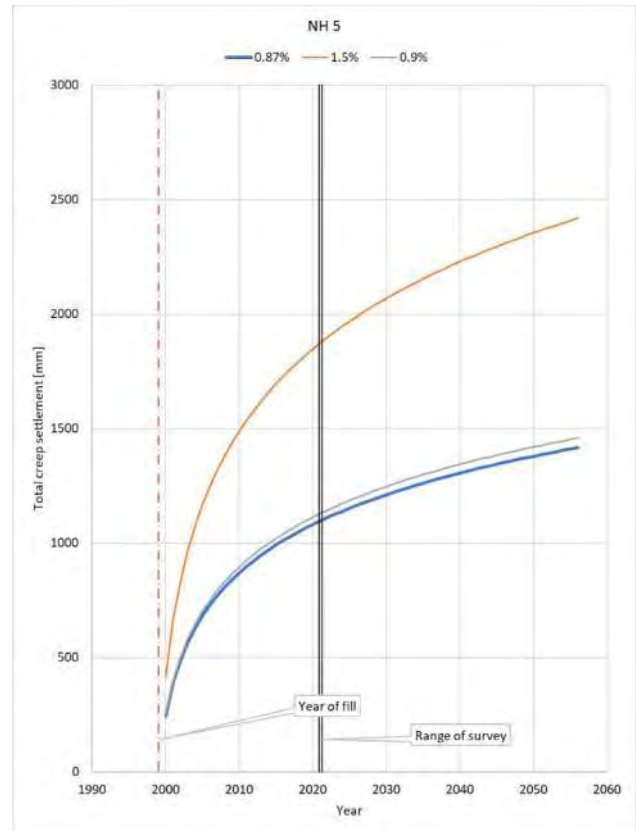
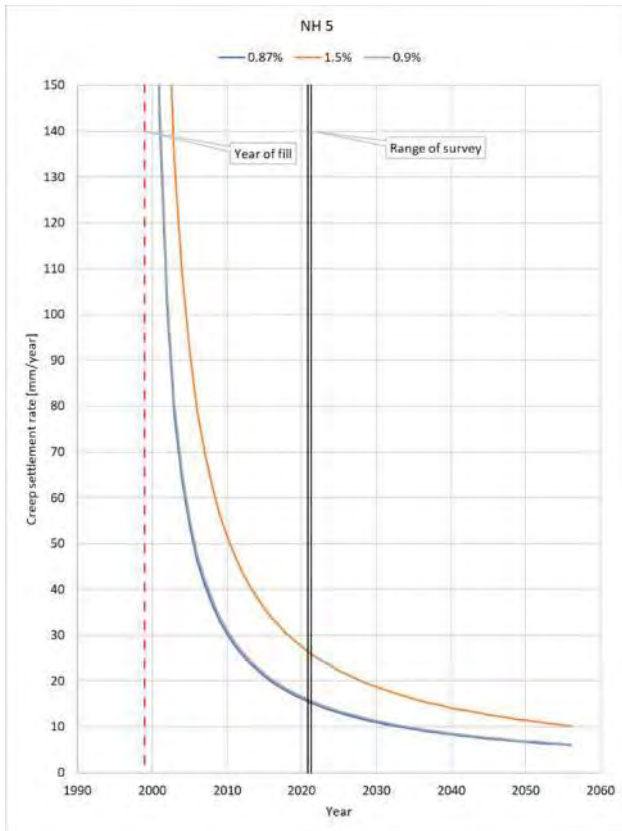


Figure D 16 Creep settlement rate and total creep settlement at Nant Helen (NH5)

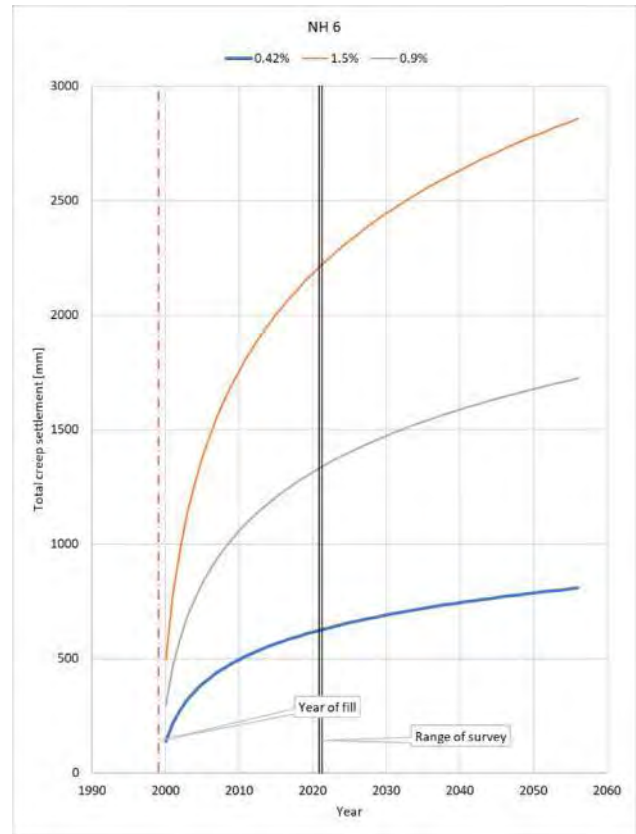
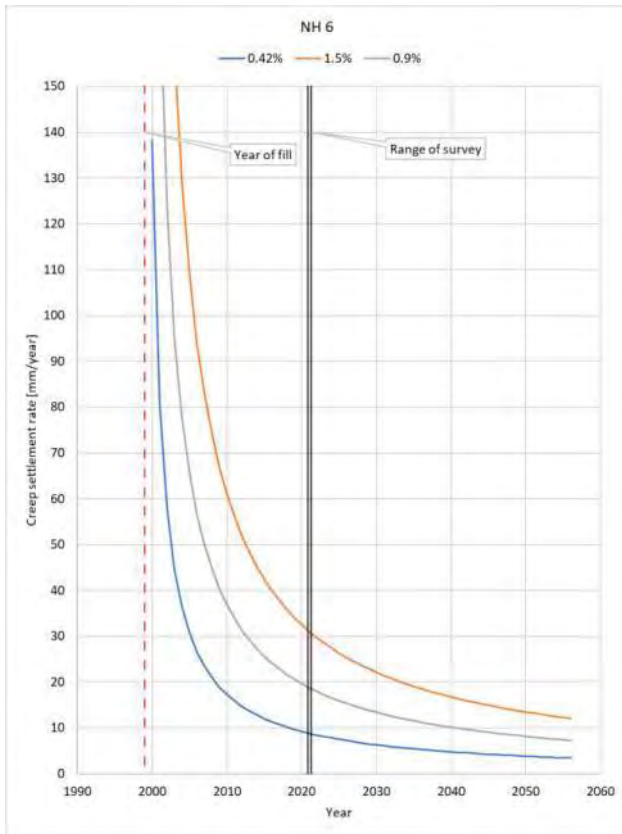


Figure D 17 Creep settlement rate and total creep settlement at Nant Helen (NH6)

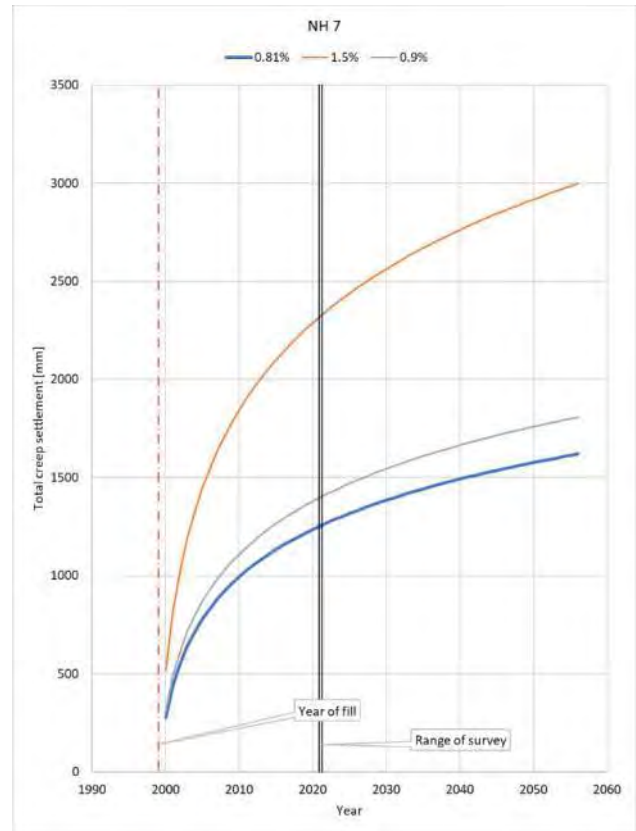
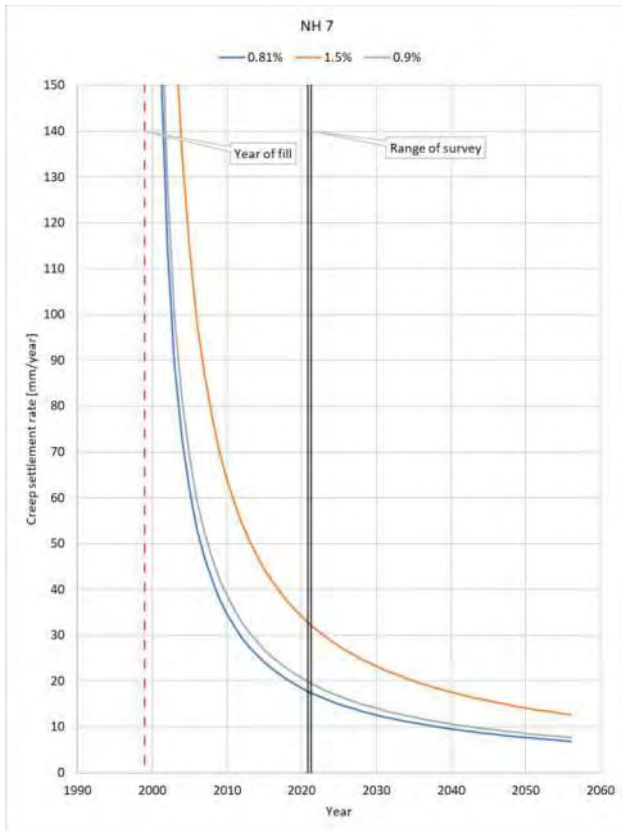


Figure D 18 Creep settlement rate and total creep settlement at Nant Helen (NH7)

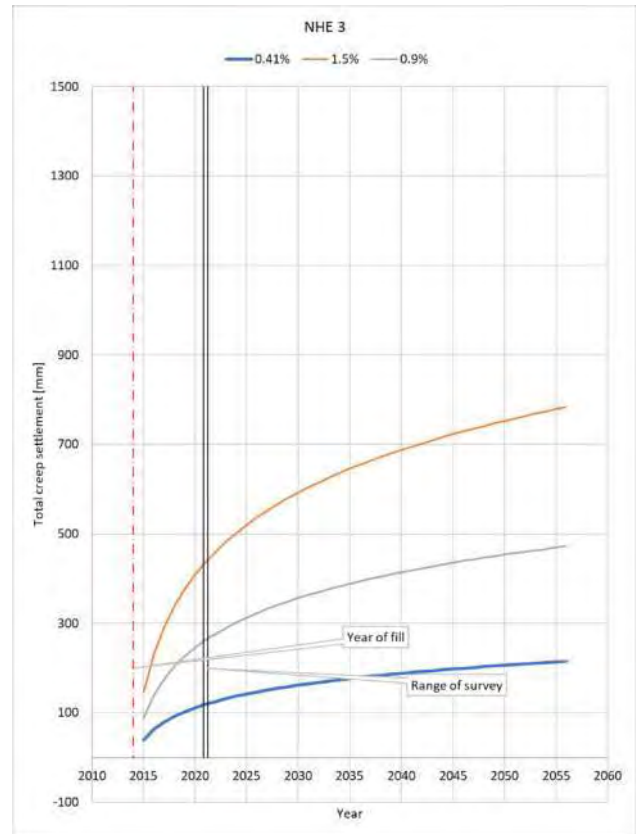
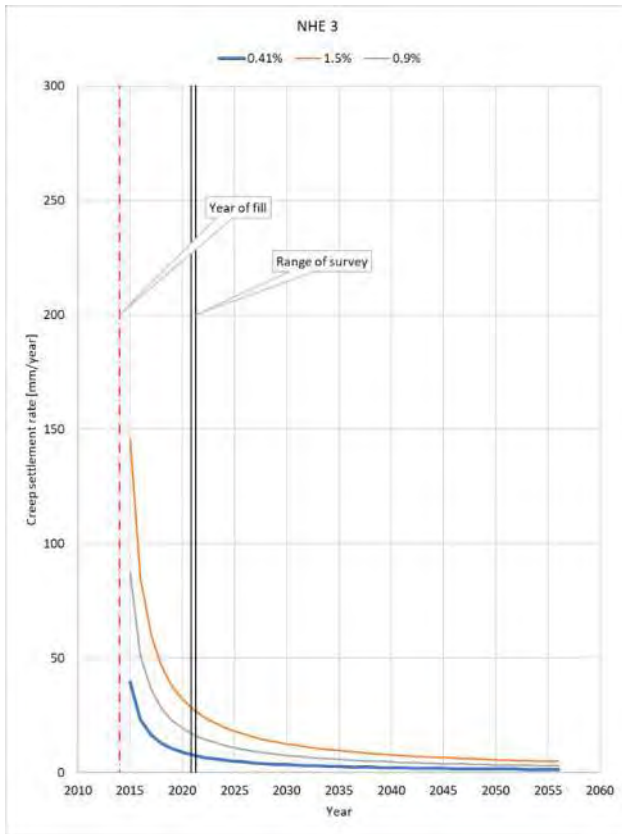


Figure D 19 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE3)

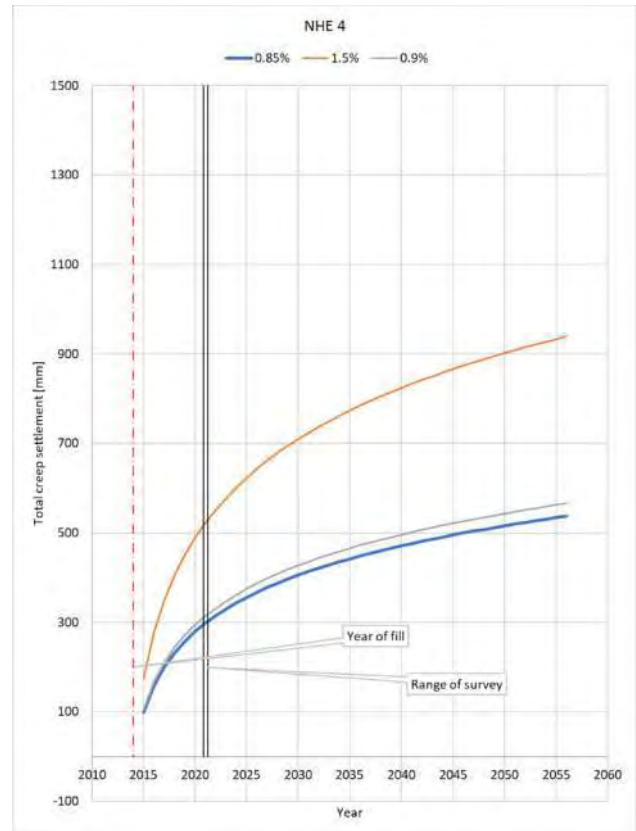
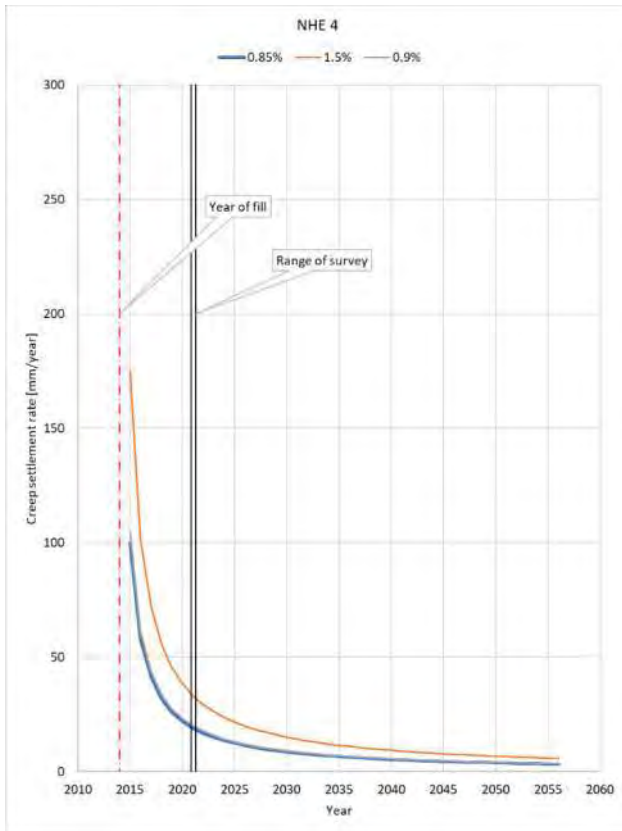


Figure D 20 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE4)

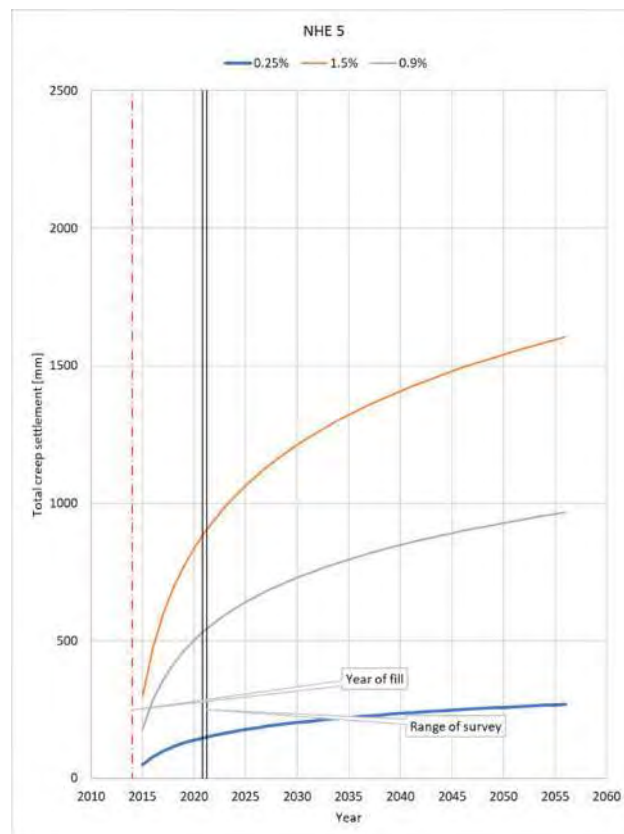
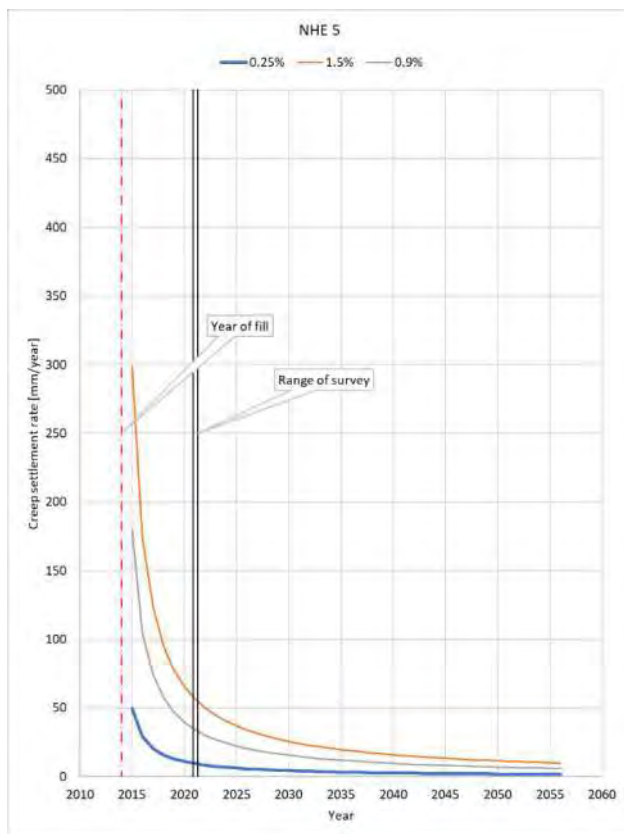


Figure D 21 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE5)

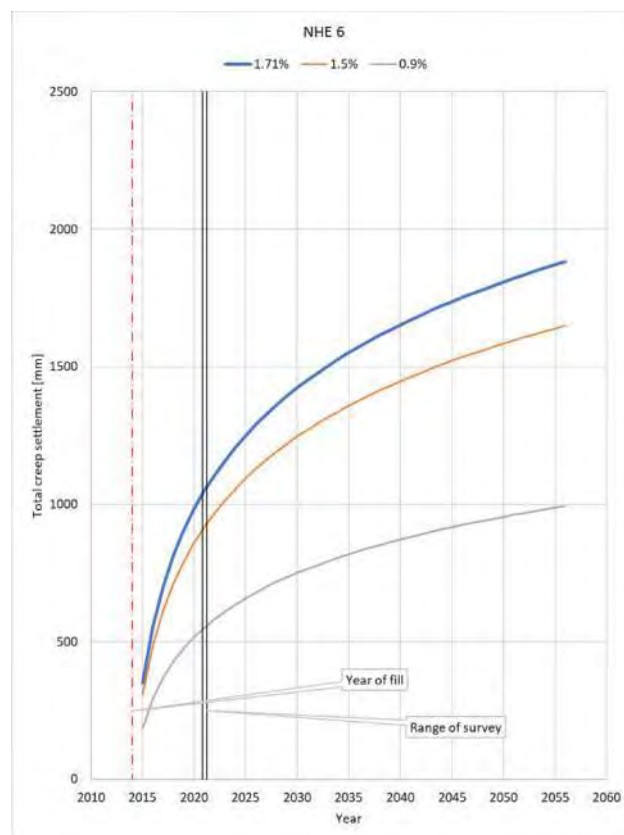
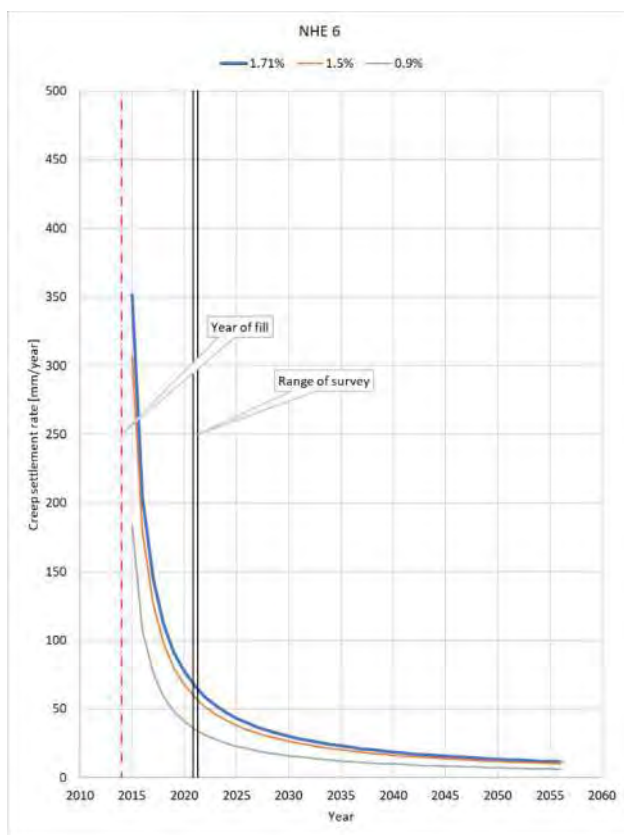


Figure D 22 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE6)

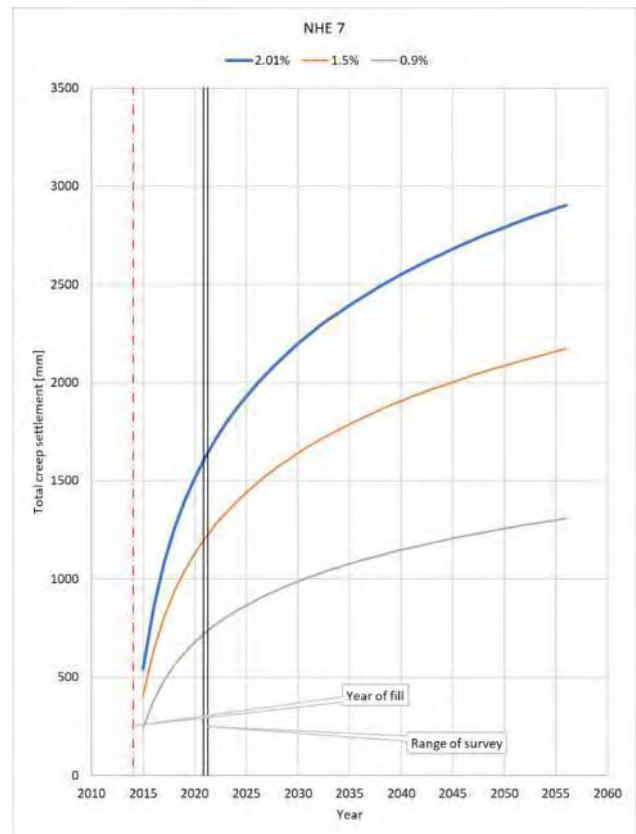
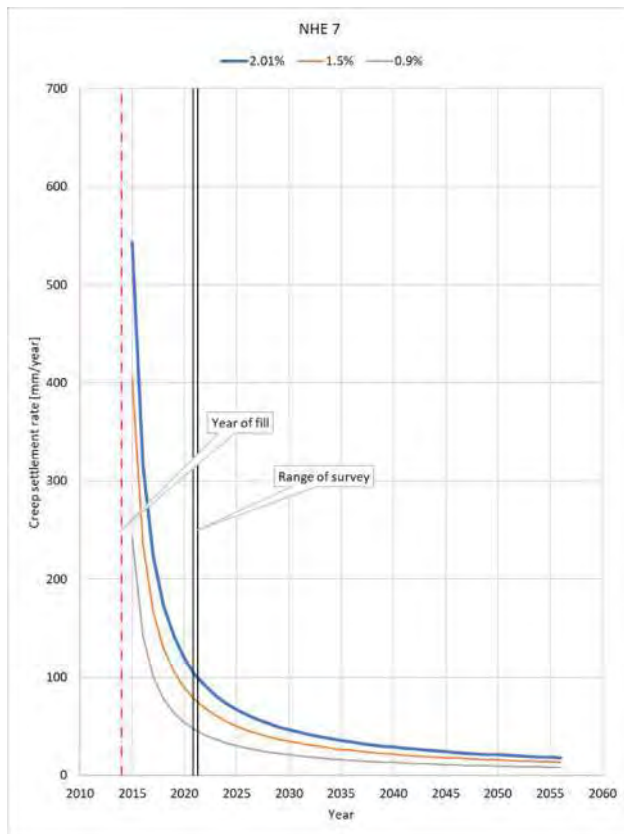


Figure D 23 Creep settlement rate and total creep settlement at Nant Helen Extension (NHE7)

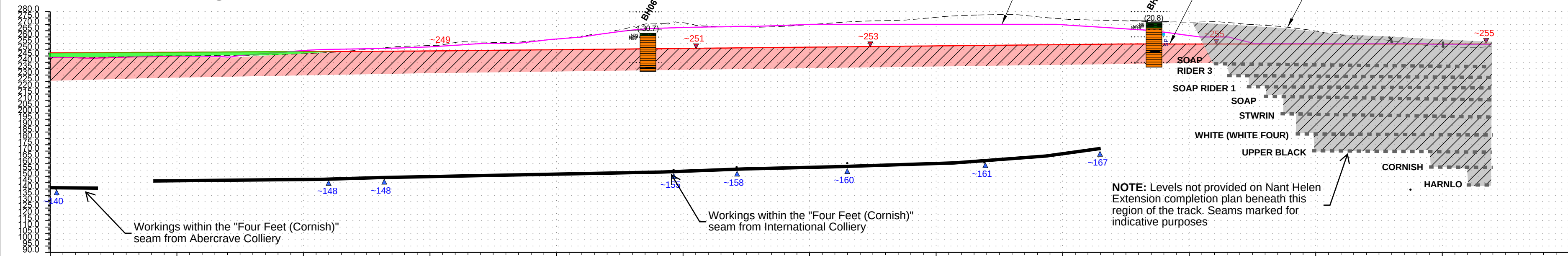
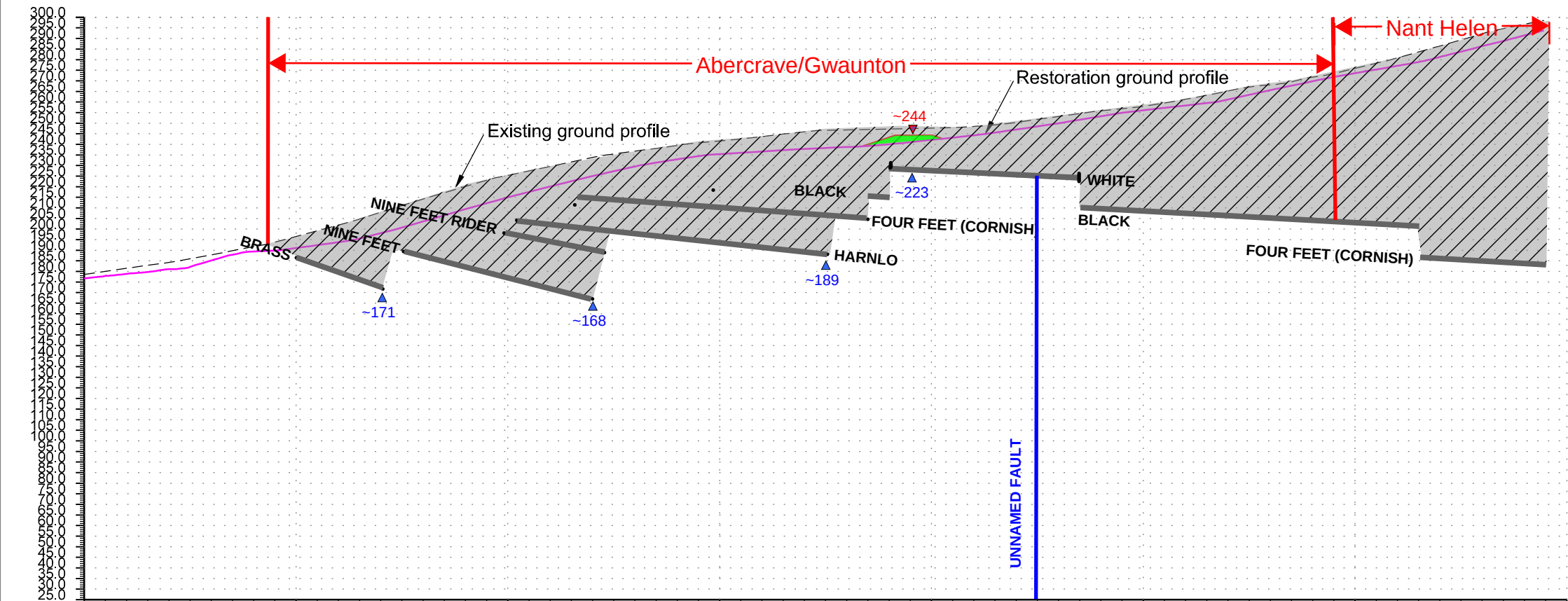
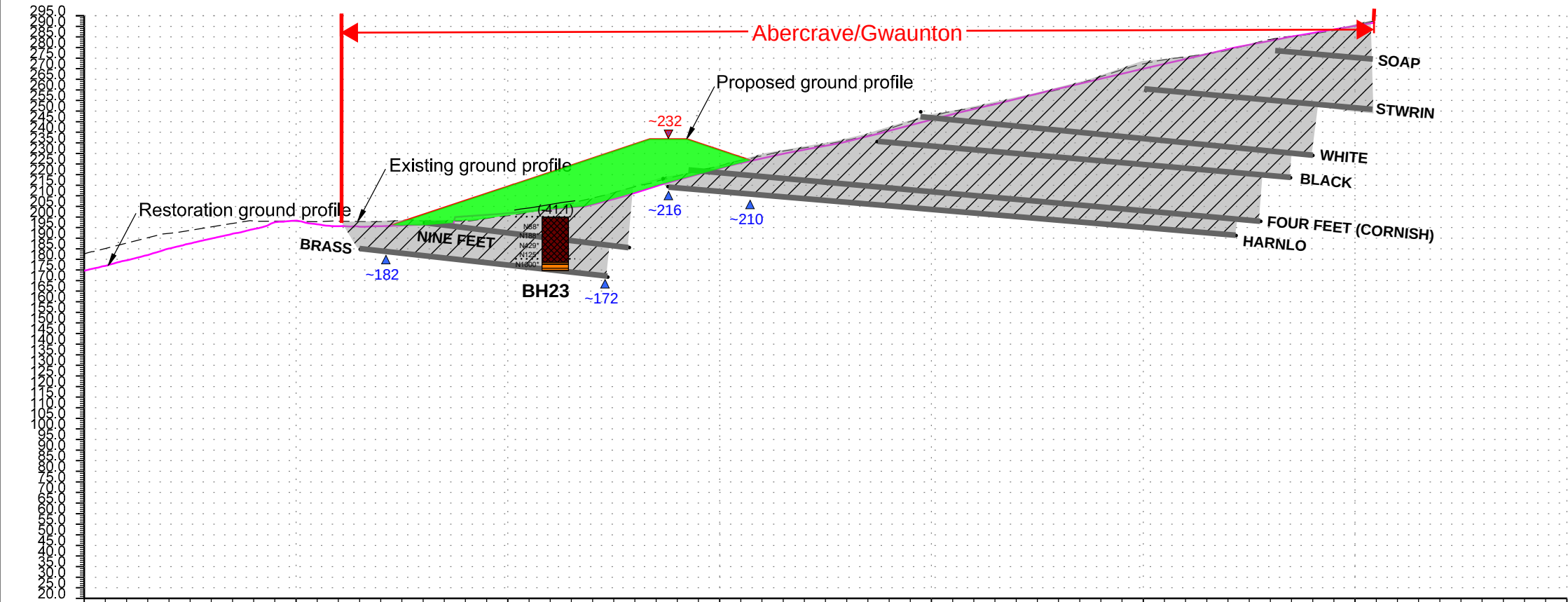
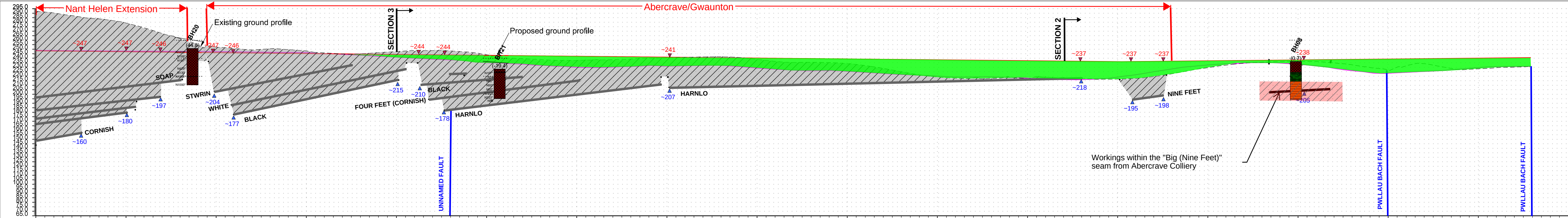
Appendix E - Mining Sections, Plans and the Detailed Mine Risk Study

Figure E 1 Mining Cross Sections – Sections 1-4

Figure E 2 Mining Cross Sections – Sections 5-9

Figure E 3 Mining Cross Sections – Sections 10 & 11 and Washery Sections

Detailed Mine Workings Study



- Legend**
- Existing ground profile
 - Restoration ground profile
 - Proposed ground profile
 - Underground workings
 - Seams worked within opencast sites
 - Faults
 - Embankments
 - 20m below rockhead zone
 - Interpreted areas of fill based on worked seams
 - Working levels

P01	23-03-2022	JC	TW	DR
Rev	Date	By	Chkd	Appd

ARUP

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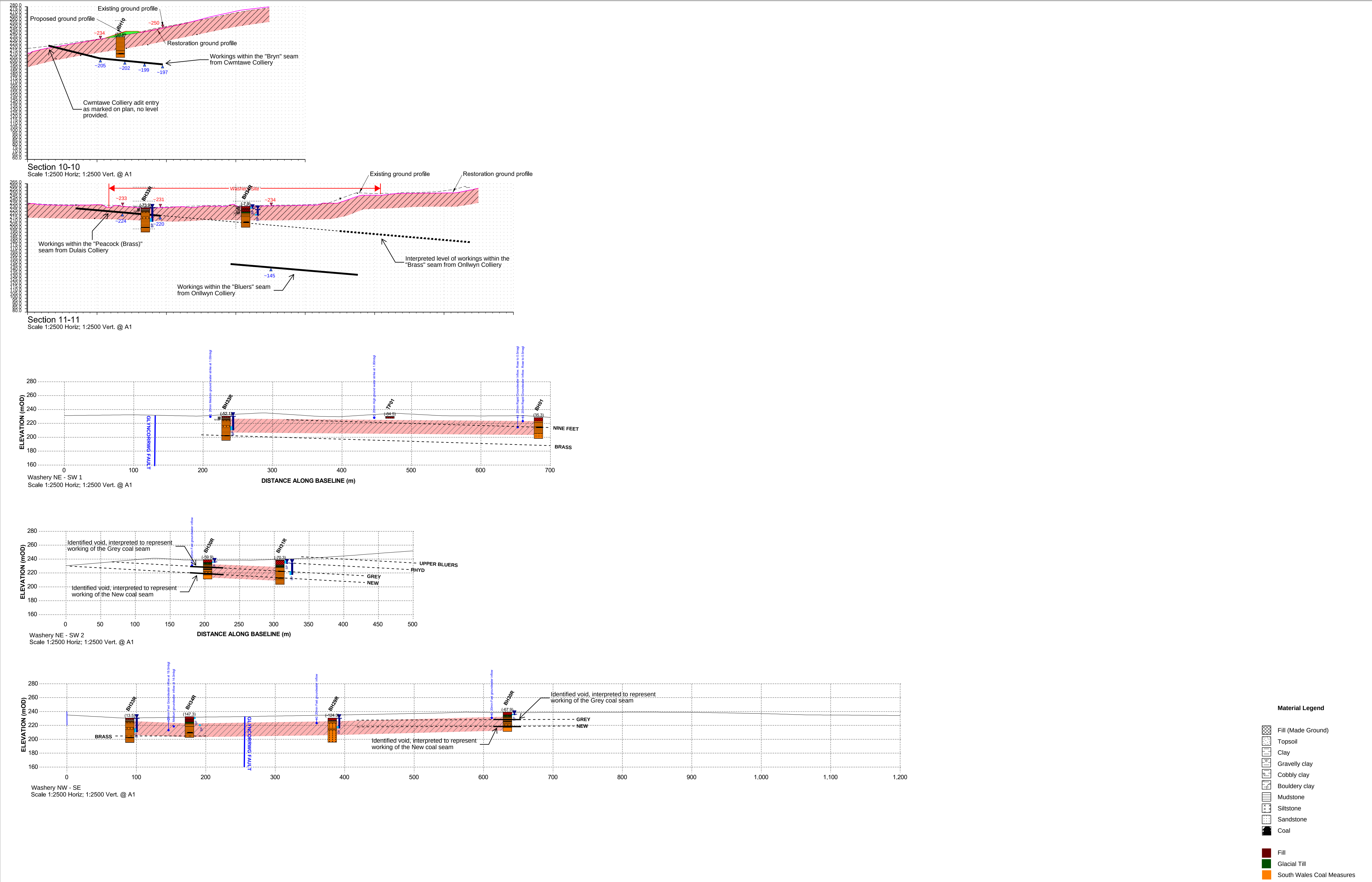
Client
GCRE Ltd

Project Title
Global Centre of Rail Excellence

Drawing Title
Mining Cross Sections
Sections 1 - 4

Scale at A1
1:2,500
Role
Geotechnical
Sustainability
For Information
Arup Job No
284523
Name
Figure E1
Rev
P01

Scale at A1	
1:2,500	
Role	
Geotechnical	
Suitability	
For Information	
Anup Job No	Rev
284523	P01
Name	
Figure E2	



Legend

Existing ground profile

Restoration ground profile

Proposed ground profile

Underground workings

Seams worked within opencast sites

Faults

Embankments

20m below rockhead zone

Interpreted areas of fill based on worked seams

Working levels

▲
-195

Rev

Date

By

Chkd

Appd

P01	23-03-2022	JC	TW	DR
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ARUP

4 Pierhead Street
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United Kingdom

Client

GCRE Ltd

Project Title

Global Centre of Rail Excellence

Drawing Title

Mining Cross Sections
Sections 10 & 11

Washery Sections
NE-SW 1 - 2 & NW-SE

Scale at A1

1:2,500

Role

Geotechnical

Suitability

For Information

Arup Job No

284523

Name

Figure E3

Rev

P01

File Note

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Job number

264904

cc Mike Edmonds, Rob Thompson

File reference

4-70

Prepared by Jak Canham

Date

10 June 2020

Subject Detailed Mine Workings Study

1 Introduction

The Welsh Government is promoting the development of a rail testing facility on an area of land near Onllwyn in South Wales. The aspiration is for the development of a nationally significant rolling stock and infrastructure testing facility.

The site is situated within the South Wales Coalfield. The Middle and Lower Coal Measures, found beneath the site, have historically been mined for coal initially from surface crop workings and “bellpits”, and later from subsurface workings accessed from shafts and adits.

Furthermore, significant opencast workings have taken place from circa 1940 to the present day. The majority of these opencast sites have since been backfilled with the exception being the current Nant Helen Extension opencast site. As the opencast activity comes to an end, the Welsh Government are looking to repurpose the land as briefly outlined above.

The “*Land at Nant Helen and Onllwyn Coal Washery – Geotechnical and Geoenvironmental Desk Study*” [1] provided a review of the coal mining activity within the site and highlighted the key ground risks associated with the sites mining history, which included the potential for “crown-hole” subsidence as a result of sub-surface working collapse and differential settlements of the fill material within the backfilled opencast sites.

The desk study identified a number of “risk zones” along the proposed track alignment where the risk of crown-hole related subsidence was considered greatest; these zones were determined through review of data held at the time which suggested that shallow mine workings were present and also included areas where sufficient evidence was not held to be confident that workings were not present near to surface.

However, the desk study was based on a limited dataset, predominantly sourced from records provided by Celtic Energy (CE), and it was recommended that a comprehensive set of mine abandonment plans be sourced from The Coal Authority in order to gain a greater appreciation for where shallow mine workings are likely to be present beneath the proposed track route.

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This note acts as an addendum to the mining section of the desk study and presents a detailed review of the available mine abandonment plans for the site, a more detailed assessment of the subsidence risks across the site and presents available information on the extent and depth of opencast backfill. The “risk zones” previously identified have been investigated further based on review of the abandonment plan dataset; it is proposed that pertinent areas where the risk of subsidence is considered significant are then investigated further through targeted intrusive ground investigation.

2 Methodology and Assumptions

As stated within the desk study, mine working voids are considered to be of particular risk if they conform to the ‘10t rule of thumb’ (noted within CIRIA C758D [2]). If a void is located within a depth of ‘10t’ from rockhead, where “t” corresponds to the height of an unsupported mining void/roadway (assumed to be 2m), there is a risk of surface subsidence on account of void collapse and associated vertical migration of the void; referred to as “crown-holing”. Therefore, if mining related voids are anticipated to be within 20m of rockhead, the risk is considered to be sufficiently high to require some form of mitigation or treatment.

The plans acquired from CA have been reviewed to identify workings which are potentially within 20m of rockhead in each of the “risk zones” which were defined in the desk study. The plans have been geo-referenced in order to determine where workings lie beneath the proposed track and associated earthworks. Working levels shown on the plans have then been interpreted alongside the topographical data held on the site in order to estimate the depth to workings from surface and the corresponding thickness of overlying rock cover.

The areas of the proposed track route where recorded workings have been identified potentially within 20m of rockhead are marked on the figures with red hashing. However, due to the uncertainty of superficial cover depth across the site, workings which have been identified marginally deeper than 20m below rockhead (+5-10m) have also been marked with red hashing; this is particularly relevant to Risk Zone B which covers the northern portion of the outer loop.

Where a range of levels and depths have been provided, this is based on numerous workings levels noted on the plans beneath the proposed track route; conversely, where a singular level and corresponding depth have been provided, this is based on there only being a singular working level at a given portion of the track. Occasionally levels have been interpreted where two working levels are provided within close proximity in order to ascertain a potential level of working; these levels have been noted accordingly and are marked with an asterisk on the relevant sections and within the text of this note.

It should be noted that, the ‘10t rule of thumb’ considers depth below rockhead rather than ground surface. As there is a current lack of data regarding the depth of superficial material in each of the risk zones, for the purposes of this study rockhead level has been taken as either surface level or, in areas of proposed cut, the track formation level; whichever is lowest relative to ordnance datum.

Where rockhead has been taken as surface level for the purpose of this study, it should be noted that if superficial material of considerable depth is encountered in future investigations, workings initially thought to be outside the 20m depth of rockhead may in fact lie within 20m of rockhead and therefore pose a risk to the overlying development. The risk zoning can be refined on this basis following intrusive ground investigations.

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The review of the abandonment plan dataset has allowed for ‘known’ areas of working to be mapped relative to the proposed track route. It should be noted that areas of unrecorded working may also be present beneath the track; this is particularly relevant in the areas where the observed/inferred outcrops (mapped by the BGS) of various seams are present within direct vicinity of the proposed track route and the wider site (i.e. Washery).

In these areas, in order to capture the potential for unrecorded workings, the angles of dip stated on the relevant mine abandonment plans have been interpreted to map an aerial extent at surface where a given seam may be present within 20m of rockhead. Where abandonment plans showing angle of dip are unavailable, for example in the Washery portion of the site, dip angles have been interpreted from published geological mapping. This approach is only relevant to “Risk Zone B” and “Risk Zone D” as detailed in the relevant sections that follow.

3 Underground Workings

A total of 42No. plans were purchased from The Coal Authority (CA) [3]. Of the 42No. plans, 33No. were ‘abandonment plans’ showing the extents of underground workings in various seams and 9No. were ‘completion plans’ showing the worked areas of each seam within the Abercrave/Gwaunton and Onllwyn opencast sites.

Table 1 below provides a summary of the interpreted coal seam sequencing, grouped by formation, beneath the site. The typical seam section depths are stated and evidence of working from particular colliers is also summarised.

Table 1. Interpreted coal seam sequencing

Seam	Other names	Typical seam section	Evidence of underground working
South Wales Middle Coal Measures			
Soap	Soap Riders (1-4)	-	-
Stwrin	Lower Stwrin	-	-
White	White Four Feet	0.9m	Worked from the Abercrave and International collieries
Black	-	-	Worked from the Abercrave and International collieries
Four Feet	Cornish	0.76m	Worked from the Abercrave and International collieries
Harnlo	-	-	-
Nine Feet	Big	2.7 – 3.0m	Worked from the Abercrave and International collieries
Brass	Peacock	0.9 – 1.4m	Worked from the Dulais and Onllwyn collieries
South Wales Lower Coal Measures			
Bluers	Blewers, Upper Bluers, Lower Bluers	0.6 – 0.85m	Worked from the Dulais, Duffryn and Onllwyn collieries
Rhyd	Five Feet, Little Brass	0.75m	Worked from the Cwmtawe, Duffryn and Dulais collieries
Grey	Gellideg	0.66m	Worked from the Cwmtawe and Dulais collieries
Middle	Gellideg	0.63m	Worked from the Cwmtawe and Abercrave collieries

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Seam	Other names	Typical seam section	Evidence of underground working
New	Lower	0.69m	Worked from the Dulais colliery
Bryn	Gnapiog	0.5m	Worked from the Cwmtawe and Dulais collieries

A full list of the plans reviewed is detailed in Appendix A.

The review of each risk zone has allowed for areas that have ‘known underground workings’ within 20m of rockhead that coincide with the track route to be defined; these areas are depicted by areas of red hashing on the relevant figures. In addition, based on observed and inferred seam outcrops, the areas where ‘unrecorded underground workings’ could be present within 20m of rockhead have also been mapped beneath the track earthworks; to differentiate between the two, areas where ‘unrecorded underground workings’ may be present are depicted on the figures by areas of grey hashing.

The findings of the review relevant to each pre-defined risk zone are presented in the following sub-sections of this report. Refer to Figure 1 for in order to determine which part of the wider site each previously defined risk zone covers.

3.1 Risk Zone A

Refer to Figure 2 and the relevant sections noted in Table 2.

“Risk Zone A” covered the south-eastern portion of the outer track loop, the central portion of the inner track loop and the section of track which is proposed to link the outer and inner loops to the existing rail network. The area was considered to be at risk of subsidence on account of the identified workings within the “Peacock” (a.k.a. “Brass”) and “Nine Feet” seams which were believed to have been worked from the Dulais Colliery. Furthermore, the earliest available aerial imagery presented visual evidence which is potentially indicative of “bell-pitting” extraction methods being used to extract coal from shallow seams in the area.

Following review of the CA abandonment plans, the full extent of the recorded workings within the “Peacock” seam have been mapped and working levels (base of mining related void) have been extracted where possible to identify the depth to working beneath the proposed track. Refer to

Table 2 overleaf for a summary of the anticipated workings beneath the track within Risk Zone A.

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Table 2. Summary of anticipated workings beneath Risk Zone A

ID	Seam	Colliery	Working levels (mAOD)	Surface level (mAOD)	Proposed track level (mAOD)	Anticipated depth of workings below rockhead (m)	Relevant Section
Inner track loop							
A	Peacock (a.k.a. Brass)	Dulais Colliery West Slant	~264 – ~244	~276	~263	0 – 20	5 and 7
Outer track loop and access track							
A	Peacock (a.k.a. Brass)	Dulais Colliery West Slant	~232 – ~225	~261 – 259	~250	15 – 25	6 and 7
B	Peacock (a.k.a. Brass)	Dulais Colliery East Slant	~237	~260	~250	10 - 15	6, 7, 8 and 9
C	Four Feet (a.k.a. Cornish)	Abercrave Colliery	~170	~260	~251	75+	6

Both the inner and outer loops of the proposed track route are underlain by workings within the “Peacock” from the Dulais Colliery as shown on the relevant sections. The Dulais Colliery was located along the alignment of the Chapel Fault (believed to downthrow ~15m to the east, refer to the desk study for details) and worked the Peacock seam from the West Slant (A) and the East Slant (B).

Section 5 illustrates that the workings within the Peacock seam from the Dulais Colliery West Slant are anticipated to be within 20m of the inner loop track level. The workings rise from west to east and based on the working levels, and the proposed track level, portions of the working are anticipated to be exposed when forming the cutting; hence the “0m” depth stated in Table 2.

Section 6 illustrates that the outer loop is also underlain by workings within the “Peacock” seam that are likely to be within 20m of the proposed surface level. The workings from the West Slant

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(A) again rise from west to east and the eastern half of the workings are anticipated to be within 20m of the proposed outer loop track level. To the east of the Chapel Fault, the workings from the East Slant (B) are also anticipated to be at shallow depth. Section 6 also shows how workings within the Four Feet seam from the Abercrave Colliery (C) are anticipated to be at ~80m below the proposed track level and therefore are not anticipated to pose a risk to surface developments.

In addition, Section 6 shows that the mouth of the “North Level” (also denoted as the Cwm Mawr Level) adit entry is located immediately to the south of the outer track loop; interpolation of the surface level at this location and the pavement level within the workings to the north of the track (~242 mAOD) suggest that there is the potential to encounter a void associated with the adit <5m below the existing surface level. As the track is proposed to be within cut at this location, it is likely that the void, if present, will be at least partially exposed with the formation of the cuttings in this area.

Section 7 is cut through the proposed section of track which will link the test track loops to the existing network. This section shows how the workings within the “Peacock” seam from the Dulais Colliery West Slant are likely to be within 20 m of rockhead along the majority of the access track and therefore pose a risk to the overlying development. The working levels drop from ~260 mAOD to ~215* mAOD (* interpreted level) which tends to follow the drop in ground surface level along the section. As the track crosses over the Chapel Fault workings within the “Peacock” seam from the Dulais Colliery East Slant are shown to be initially ~40m below the proposed track level and ~37m below current surface level. Due to the dip of the underlying strata the workings are shown to rise up to ~206m AOD; Section 7 shows that these workings are not anticipated to be within 20 m of rockhead, however, the East Slant adit mine entry is shown to be located approximately 10m to the north of the track alignment (refer to Figure 2). Therefore, there is the potential for mining related voids to be present within 20 m of rockhead beneath the track which is proposed to be supported on an embankment in this location.

As a result of the workings identified above, the areas of the proposed track route where shallow underground workings potentially within 20m of rockhead have been identified as shown on Figure 2. The area of the track that remains at risk has not reduced significantly in size and it is recommended that intrusive investigation is undertaken in this area, as per the “*Ground Investigation Protocol Note*” [4] , in order to give greater confidence in the above findings regarding shallow mine workings within the Peacock (Brass) seam.

3.2 Risk Zone B

Refer to Figure 3 and the relevant sections noted in Table 3.

“Risk Zone B” covered the northern portion of the track between the identified extents of the Abercrave/Gwaunton and Onllwyn opencast sites. When the risk zone was defined, no abandonment plans were held in the area however multiple shaft and adit mine entries had been identified from review of the Nant Helen opencast completion plan provided by CE. Furthermore, outcrops of the “Bryn”, “Lower”, “Middle” and “Upper Blues” seams were shown to be present in the area.

Table 3 overleaf provides a summary of the identified workings that are closest to surface beneath the proposed outer track loop within Risk Zone B.

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Table 3. Summary of anticipated workings beneath Risk Zone B

ID	Seam	Colliery	Working levels (mAOD)	Surface level (mAOD)	Proposed track level (mAOD)	Anticipated depth of workings below rockhead (m)	Relevant Section
D	Gnapog (a.k.a. Bryn)	Cwmtawe Colliery	~205 – ~197	~234 – ~250	~245	25 – 50	10
E	Big (a.k.a. Nine Feet)	Abercrave Colliery	~205	~235	~238	25+	1
F	Bluers	Duffryn Colliery	<i>Although workings are not shown to be directly beneath the proposed track route in this location, an adit mine entry (“Duffryn Level”) is shown to be located beneath the extent of the supporting embankment; refer to Figure 2.</i>				n/a

Based on review of the available plans, two distinct sections of the outer track loop within Risk Zone B are shown to be underlain by workings potentially at shallow depth. Section 10 illustrates that workings within the Gnapog (a.k.a. Bryn) seam (D) from the Cwmtawe Colliery are anticipated to underlie the track. As shown on Section 10 and highlighted in Table 3, these workings dip from north to south and as the ground surface rises from north to south the anticipated depth of working increases accordingly. Although the working levels shown suggest that the workings are deeper than 20m of rockhead it should be noted that rockhead has been taken as surface level in this location; if superficial deposits/fill material of considerable depth is encountered in this location in future investigations it is possible that these workings will be within 20m of rockhead and will have the potential to pose risks to the overlying track embankment.

Section 1 shows that the outer track loop is anticipated to be underlain by workings within the Big (a.k.a. Nine Feet) seam (E) from the Abercrave Colliery. As highlighted in Table 3, these workings are anticipated to be at depths of greater than 20m below the rockhead level, but once again rock head has been taken as surface level in this location due to the lack of ground investigation in the area.

It is recommended that these areas be targeted with ground investigation to confirm the depth of superficial/fill material and the depth of these workings to refine assessment of risks to the overlying embankment.

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Table 3 also refers to workings within the Bluers seam (F) from the Duffryn Colliery. As stated within the table, these workings do not directly underlie the proposed track route; however, an adit mine entry to the workings is shown to be located beneath the extent of the proposed embankment which suggests that there could be associated underground voids at shallow depth (<5m) in this location.

In order to cover potentially unrecorded workings, the interpreted extent at surface where seams may be located within 20m of rockhead (taken as surface level in this location) have been mapped. The observed and inferred outcrops of the Bryn, Lower and Middle seams (see Figure 3) are shown to be located to the north and south of the proposed track. Taking the angle of dip stated on the abandonment plan of the workings within the Gnapog seam from the Cwmtawe colliery (D) of “3 inches per yard”, and angle of dip of 5° has been interpreted for the seams in this area. Using this angle of dip, there is the potential for unrecorded workings to be present within 20m of rockhead beneath the track from these seams (see Figure 3).

Furthermore, taking the dip angle of the workings within the Bluers seam from the Duffryn Colliery (F), which is also stated to be “3 inches per yard” (~5°), there is the potential that unrecorded workings within the Bluers seam may be present within 20m of rockhead beneath the cutting off the inner loop of the track (see Figure 3).

The findings presented above have identified two areas that are underlain by known workings within the Gnapog and Big seams respectively. In addition, based on the mapped seam outcropping in the area, there is the potential for “unrecorded workings to be present within 20m of rockhead beneath much of the proposed earthworks in the outer loop and the northernmost portion of the inner loop earthworks. It is recommended that ground investigation in this area is particularly targeted to the two confirm the known areas of working and to investigate those areas which have the potential to harbour unrecorded underground workings.

Although the areas of known working are both currently anticipated to be outside of 20m of rockhead, in this region rockhead was taken as surface level due to the lack of data to confirm the depth of superficial material in this area. It is recommended that the depth of superficial material overlying rockhead is investigated as the workings (currently anticipated to be >20m below rockhead) may in fact be within 20m of rockhead due to the presence of superficial cover overlying bedrock.

3.3 Risk Zone C

Refer to Figure 4 and the relevant sections noted in

Table 23.

“Risk Zone C” covered the southwestern portion of the outer track loop between the Nant Helen and Nant Helen Extension opencast sites. This area was considered to be a risk zone on account of the lack of comprehensive data coverage in the area. Workings were identified beneath this portion of the track from CE records within the “Nine Feet” and “Brass” seams although these were at considerable depth far below 20m of rockhead. However, review of freely available online information stated that the collieries in the area (Abercrave, International and Seven Sisters) worked the overlying “Four Feet”, “Black” and “White” seams. This portion of the track was considered as risk zone as the presence and depth of workings within the aforementioned seams was unknown.

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From review of the abandonment plans, workings within the “Four Feet” and “White” seams are anticipated to be present in the area of the southwestern portion of the outer loop. These workings are associated with the Abercrave and International Collieries which were previously located along the Brecon and Neath railway line which ran across the north of the site.

Table 4. Summary of anticipated workings beneath Risk Zone C

ID	Seam	Colliery	Working levels (mAOD)	Surface level (mAOD)	Proposed track level (mAOD)	Anticipated depth of workings below rockhead (m)	Relevant Section
G	Four Feet (a.k.a. Cornish)	International Colliery	~167 – ~148	~249 – ~275	~249 – ~255	80 – 105	4
C	Four Feet (a.k.a. Cornish)	Abercrave Colliery	~140	~253	~255	110+	4
H	White (a.k.a. White Four Feet)	Abercrave Colliery	<i>The White seam overlies the Four Feet seam and review of abandonment plans show that the seam was worked from the Abercrave Colliery. However, the indicated workings identified within the White seam do not directly underlie the southwestern portion of the outer track loop, see Figure 4.</i>				5

As shown on Section 4, the outer loop of the track is anticipated to be underlain by workings within the Four Feet (a.k.a. Cornish) seam from the International and Abercrave Collieries. However, as highlighted in Table 4, these workings are anticipated to be at a great depth, 80m to ~115m, and are not considered to pose any significant risk to the proposed development.

The White seam overlies the Four Feet seam and abandonment plans reviewed show that the White (H) seam was worked from the Abercrave Colliery. However, these workings do not directly underlie the proposed track route with the southernmost extent lying beneath the overburden storage area, see Figure 3.

Although the workings do not underlie the proposed track route in Risk Zone C, the workings are shown to underlie a portion of the inner loop which was not previously defined as a risk zone, see Section 5. This region of the inner loop partially cuts through the overburden storage area before cutting through the backfilled Nant Helen opencast site. As shown on Section 5, the working levels within the White seam in this region range between ~174 mAOD and ~183 mAOD. Considering that the track level is proposed to be at ~255 mAOD in this location, the workings are anticipated to be far below 20m of rockhead at an anticipated minimum of 70m below the proposed track level; as a result these workings are not considered to pose a risk to the surface development in this location.

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The findings above suggest that Risk Zone C can be discounted as all identified workings are at a sufficient depth to not be considered a risk to the surface development. However, it would be considered prudent to investigate the ground in the area to prove that workings are not located within 20m of the proposed track level and give greater confidence in the findings presented above.

3.4 Risk Zone D

Refer to Figure 5 and the relevant sections noted in Table 5.

“Risk Zone D” covered the Onllwyn Coal Washery portion of the site and was considered to be a risk zone as numerous mine entries (see insert on Figure 5) were identified to be present within the area from review of freely available CA data and due to the “inferred” presence of the “New”, “Grey”, “Rhyd” and “Upper Bluers” seam outcrops.

Review of the CA abandonment plans identified that the Peacock (a.k.a. Brass) and Bluers seams were worked beneath the Washery site. Table 5 below presents a summary of the findings.

Table 5. Summary of anticipated workings beneath Risk Zone D

ID	Seam	Colliery	Working levels (mAOD)	Surface level (mAOD)	Proposed track level (mAOD)	Anticipated depth of workings below rockhead (m)	Relevant Section
B	Peacock (a.k.a. Brass)	Dulais Colliery East Slant	~227 – ~205	~235 – ~231	n/a	5 – 25	7 and 11
J	Bluers	Onllwyn Colliery	~145	~234	n/a	85+	11
K	Brass	Onllwyn Colliery	<i>The Brass seam overlies the Bluers seam and is shown to have been worked from the Onllwyn Colliery. The interpreted level suggests that the workings within the Brass seam from the Onllwyn Colliery are at sufficient depth as to not pose a risk to the overlying developments in the Washery site, refer to commentary below.</i>				11

Sections 7 and 11 show that workings within the Peacock (a.k.a. Brass) seam from the Dulais Colliery East Slant cross into the footprint of the Washery site. Based on review of working levels in the seam, mining related voids could be as shallow as 7m below surface level in this location and are therefore likely to be comfortably within 20m of rockhead.

The Bluers seam, worked from the Onllwyn Colliery, is also shown to have been worked beneath the Washery site. However, interpretation of working levels and the existing ground surface suggest

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that these workings are some ~90m below the surface and therefore not anticipated to pose a risk of subsidence as a result of void collapse and associated crown-hole migration.

No working levels are shown on the Onllwyn Colliery abandonment plan of the Brass seam in the areas where the workings that cross into the Washery site. However, as shown on Section 11, the approximate level of these workings has been interpreted from the dip in workings identified within the Peacock (a.k.a. Brass) seam from the Dulais Colliery East Slant. As stated in Table 5 above, the interpreted level suggests that the workings within the Brass seam from the Onllwyn Colliery are at sufficient depth as to not pose risk to the developments within the Washery site.

In addition to the known areas of underground working, 4No. inferred coal seam outcrops of the New, Grey, Rhyd and Upper Bluers are shown to be present within the Washery site to the east of the Glyncorrwg Fault. No abandonment plans have been received detailing working to the east of the Glyncorrwg Fault within the Washery site. From review of CA data, covered under an Open Government Licence, numerous adit and shaft mine entries are shown to be present in the locale of the inferred outcrops (see insert on Figure 5).

An assumed angle of dip of 6° has been interpreted through review of the BGS 1:50,000 geological mapping (Sheet 231) [5] for the strata beneath the Washery portion of the site. As a result, an area stretching ~200m in the direction of dip (SW) has been marked for each seam in order to highlight the areas of the Washery site where unrecorded underground workings may be within 20m of rockhead (refer to Figure 5).

The findings presented above suggest that Risk Zone D can be reduced from covering the whole Washery site to the areas of known underground working within the Peacock (Brass) seam (B) and the areas where potentially unrecorded underground workings, associated with the New, Grey, Rhyd and Upper Bluers seams, may be present.

Further ground investigation should target these area of the site to gain further confidence in the presence and depth of the workings in this zone. However, in order to efficiently target investigation in the Washery Portion of the site, it is recommended that these areas are investigated once the project proposals in the Washery site have been developed further.

4 Mine Entries

Mine entry locations have also been reviewed as part of the study. A number of mine entry locations had been previously determined through review of the Nant Helen opencast completion plan which was provided by CE during the preparation of the desk study. Where mine entries, both shafts and adits, have been identified from review of the abandonment plans that had not been previously noted during the desk study, their locations have been marked on the corresponding plans.

Entries identified that coincide with the current extent of proposed earthworks are detailed below. The pertinent entries have been grouped based on the associated colliery and underground working. Refer to Table 6 for a summary of the identified entries and refer to the relevant figures noted. Where provided on the abandonment plans, the anticipated shaft depths have been interpreted and are also presented in Table 6.

Table 6. Mine entry summary table

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Entry name	Interpreted location		Risk Zone	Shaft depth noted on abandonment plans
	Easting	Northing		
Dulais Colliery West Slant				
“North Level” or “Cwm Mawr Level”	283373	210740	A (Figure 2)	n/a
“New Drift”	283684	210410		n/a
“Air pit”	283414	210784		12ft (~4m)
Dulais Colliery East Slant				
“East Slant”	283846	210410	A (Figure 2)	n/a
“Level to Big Vein”	283904	210436		n/a
“Pumping Pit to Peacock Vein”	283838	210402		54ft (~17m)
Duffryn Colliery				
“Duffryn Level”	282957	211907	B (Figure 3)	n/a

As shown on Figure 2, a total of 4No. adits and 2No. shafts associated with the Dulais Colliery West and East Slants have been identified to potentially lie beneath the proposed earthworks for both the inner track loop, outer track loop and the access track. The interpreted locations of each are presented in Table 5 above and each is marked on Figure 2.

The only other portion of the track where a mine entry has been identified to be present beneath the proposed earthworks is beneath the northern embankment. Although the workings within the Bluers seam from the Duffryn Colliery do not directly underlie the proposed earthworks, the main adit entry, the “Duffryn Level”, is shown to be located beneath the main earthworks. The interpreted location is detailed in Table 5 above and the adit entry is marked on Figure 3.

It is recommended that areas around interpreted locations identified in Table 6 above should be investigated further in order to positively identify the entries that are currently anticipated to be present beneath the proposed earthworks and to allow any mitigation or treatment measures which may be required to be developed.

5 Opencast Sites

Alongside the abandonment plans received from the CA, a total of 9No. completion plans were also received. Two of these completion plans covered the Onllwyn opencast site for which records were already held after being provided by CE. The remaining 7No. plans covered the Abercrave/Gwaunton opencast site for which no records were previously held. Refer to Figure 6 and the relevant sections throughout.

The “pavement levels” (base of seam) within each of the worked seams of the Abercrave/Gwaunton opencast site have been reviewed to provide an indication of the varying depth of fill across the north-western portion of the outer track loop. Section 1 provides a long section passing through the opencast site showing how the depth of fill within the site varies from being absent to a maximum depth of ~70m. In addition, Sections 2 and 3 provide a visual representation of the “stepped” nature

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of the opencast activity in the area which in turn results in greater variability of the depth of fill beneath different portions of the track embankment.

Sections 5, 8 and 9 also show the anticipated depth of backfill beneath the proposed track route within the Nant Helen and Onllwyn opencast sites respectively. These sections build on the information already presented within the desk study and have been included for completeness.

The Nant Helen Extension “work in progress” completion plans have also been received from CE. However, the pavement levels presented within the data is currently incomplete and does not allow for an accurate assessment of backfill depth across the track alignment to be made at this time. Section 1 shows a partial long section through the Nant Helen Extension site where pavement levels where available. Section 4 shows the indicative extents of the seams worked although no pavement levels were available in this region, so levels are indicative, and angles of dip cannot be assessed.

It is proposed that the potential ongoing creep settlements in each opencast region will be assessed based on a combination of direct settlement monitoring, which is included as part of the scope of topographical survey work for the site, and empirically derived estimates based on published historical creep movements of opencast backfill and the depths and ages of fill estimated through review of the completion plans. Further details of this are included with the Desk Study Report [1].

6 Conclusions and Next Steps

As highlighted throughout the note, review of the comprehensive dataset purchased from the CA has allowed for the previously defined risk zones to be further refined to smaller aerial extents where the risk of shallow mine working presence is considered to be significant.

Going forward, the findings of this study will allow for the ground investigation outlined in the “*Ground Investigation Protocol Note*” [4] to be more accurately targeted at the areas of greatest risk. The ground investigation should allow for a greater degree of confidence regarding the presence and depth of the identified shallow underground workings before any potential remediation measures/treatment, if required, can be proposed. Ground investigation should also be undertaken in the areas now deemed to be of lower risk; this is to validate the conclusions of this study and confirm that workings are not present within 20m of rockhead (in areas of embankment) and within 20m of track level (in areas of cutting).

Where abandoned mine workings are encountered within 20m of rockhead beneath the proposed rail embankments and cuttings, it is anticipated that mine working treatment e.g. drilling and grouting will be required to mitigate the risk of ground movements that would impact on the performance of the track and other proposed infrastructure.

Where shallow underground workings are currently anticipated to be exposed during the formation of cutting earthworks (predominantly where the inner loop coincides with workings within the Peacock (Brass) seam), the exposed voids will likely require shoring up with dentition; the likely drainage flows through workings will also have to be considered in these locations.

Where workings are exposed in the excavation sub-formations, excavation and replacement of the disturbed ground will be required.

A number of mine entries, including both shafts and adits/drifts, have been identified within the footprint of the proposed earthworks. It is recommended that the interpreted locations of each are

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investigated as part of the proposed site investigation. This could be achieved through either non-intrusive methods (i.e. geophysical survey) or intrusive methods such as trial pitting/stripping of superficial material. However, it is recommended that the exact method of investigation is confirmed during the scoping of ground investigation taking into account the health and safety risks associated with uncovering voids of potential significant depth.

References

- [1] Ove Arup & Partners, "Land at Nant Helen and Onllwyn Coal Washery Geotechnical and Geoenvironmental Desk Study," Cardiff, 2019.
- [2] D. N. Parry and C. P. Chiverrell, "Abandoned mine workings manual - C758D," CIRIA, London, 2019.
- [3] The Coal Authority, *Mining Enquiry - SITE NEAR ABERCRAVE*, Ref: 71005670625001, 2020.
- [4] Ove Arup & Partners, "Global Centre of Rail Excellence - Ground Investigation Protocol," Cardiff, 2020.
- [5] British Geological Survey, *Geological Survey of Great Britain 1:50,000 Series Sheet 231 Merthyr Tydfil*, 1979.

DOCUMENT CHECKING (not mandatory for File Note)

	Prepared by	Checked by	Approved by
Name	Jak Canham	Tim Wilkinson	Dan Raynor
Signature			

Appendix A

Abandonment Plans Received

File ID	Colliery	Date on plan	Seams worked
6638_99 9999	Duffryn Anthracite Colliery	1916	Bluers, Rhyd
6784_99 9999_1 OF 2	Dulais Anthracite Colliery	1918	Bluers
8825_99 9999	Dulais Anthracite Colliery	1926	Nine Feet
9796_99 9999	Dulais Anthracite Colliery	1927	Peacock (Brass)
10378_99 9999	Cwmtawe Anthracite Colliery	1929	Gnappog (Bryn)
11122_99 9999_1 OF 4	Cwmtawe Anthracite Colliery	1933	Grey
11122_99 9999_3 OF 4	Cwmtawe Anthracite Colliery	1933	Rhyd
11122_99 9999_4 OF 4	Cwmtawe Anthracite Colliery	1933	Middle
11207_99 9999_1 OF 4	Dulais Anthracite Colliery	1934	Rhyd, Grey, Ganppog (Bryn)
11207_99 9999_3 OF 4	Dulais Anthracite Colliery	1934	New
11207_99 9999_4 OF 4	Dulais Anthracite Colliery	1934	Peacock (Brass)
12563_99 9999	Ynyscedwyn Colliery	1939	Peacock (Brass)
12641_99 9999	International Colliery	1939	Four Feet
13040_99 9999	International Colliery	1941	Big (Nine Feet)
13041_99 9999	Abercrave Colliery	1941	Big (Nine Feet)
SW61_99 9999	Onllwyn No.1 Colliery	1949	Big (Nine Feet)
SW133_99 9999	Onllwyn No.1 Colliery	1951	Brass
SW150_99 9999	Onllwyn No.1 Colliery	1953	Bluers
SW198_99 9999	Abercrave and International Colliery	1954	Peacock (Brass)
SW203_99 9999_2 OF 2	Abercrave Colliery	1953	Four Feet
SW204_99 9999_2 OF 2	Abercrave Colliery	1953	Two Feet (Soap/Stwrin)
SW341_22 8110	Abercrave Colliery	1957	Little Brass (Rhyd)
SW2233_99 9999	Tyn y Pant Colliery	1901	Brass/Bluers
SWA1077_22 8010	Abercrave Colliery	1963	White (Four Feet)
SWA1077_22 8011	Abercrave Colliery	1953	White (Four Feet)

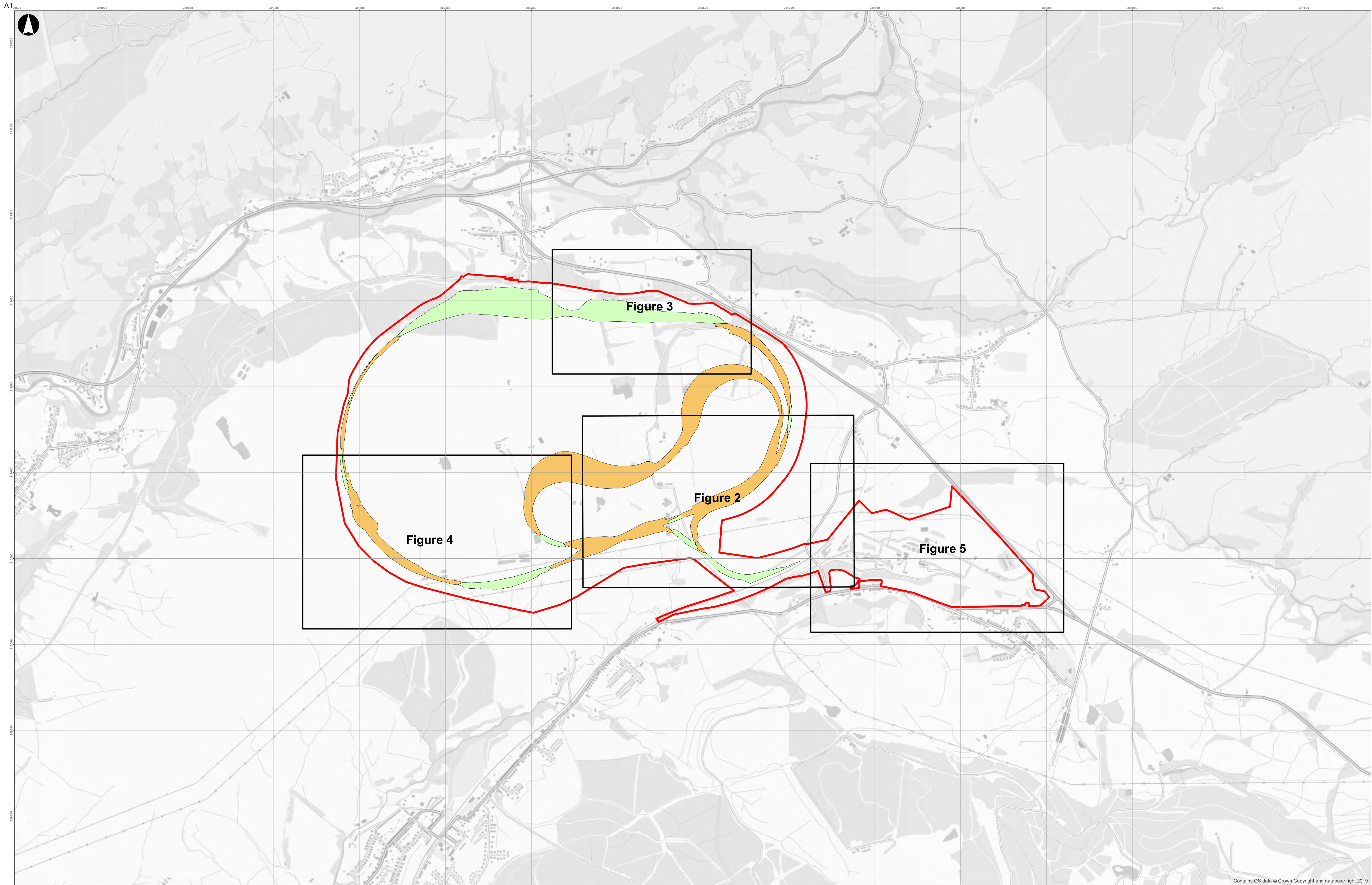
Appendix A

File ID	Colliery	Date on plan	Seams worked
SWA1077_22 8210	Abercrave Colliery	1953	White (Four Feet)
SWA1077_22 8211	Abercrave Colliery	1953	White (Four Feet)
SWA1078_22 8010	Ynyscedwyn Colliery	1953	Black (Eighteen Feet)
SWA4053_22 8011	Ynyscedwyn Colliery	1953	Black (Eighteen Feet)
SWA4053_22 8211	Abercrave and International Colliery	1953	Black (Eighteen Feet)
SWR750_99 9999	Onllwyn No.1 Colliery	1964	Four Feet/Cornish
SWR754_99 9999	Abercrave Colliery	1967	Middle

Appendix A

Completion Plans Received

File ID	Opencast Name	Commencement of Coaling	Completion of Coaling	Seams worked
SW164_99 9999	Onllwyn	1947	1949	Nine Feet, Brass
SWR2547_99 9999_1 OF 7	Abercrave Gwaunton	1964	1973	Soap, Stwrin, White Four, Upper Black, Lower Four Feet, Harnlo, Nine Feet Rider, Nine Feet, Brass
"_2 OF 7	"	"	"	Soap
"_3 OF 7	"	"	"	Stwrin
"_4 OF 7	"	"	"	White Four
"_5 OF 7	"	"	"	Upper Black
"_6 OF 7	"	"	"	Lower Four Feet, Harnlo
"_7 OF 7	"	"	"	Nine Feet Rider, Nine Feet, Brass
SWR2909_99 9999_1 OF 2	Onllwyn	1973	1982	Upper Peacock, Peacock 2, Lower Peacock, Bluers, Rhyd, Grey, New
SWR2909_99 9999_2 OF 2	Onllwyn	"	"	"



Legend

- Site Boundary
- Embankment
- Cutting

Coordinate System: British National Grid

P01	07-05-2020	JC	TW	DR
Rev	Date	By	Chkd	Appd

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Client
Welsh Government

Project Title
Global Centre of Rail Excellence

Drawing Title
Site Location Plan

Scale at A1
1:10,000

Role
Geotechnical

Suitability
For Information

Arup Job No
264904

Name
Figure 1

Rev
P01