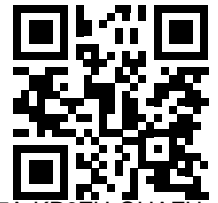


Waste Classification Report



H7B7A-KP6ZH-QHAFH

Job name

HWOL workup of WM3 v1.1 Example 3 Waste soils

Description/Comments

Waste is a sub soil from a metal plating facility. The data, worst case substances and reasoning were taken from Example 3 in WM3. Site was used for a variety of industrial processes including chemical metal plating. Waste is a solid with no free draining liquid phase. Only one sample presented in WM3 example.

Project

WM3 v1.1 Technical Guidance

Site

Metal Plating Site

Waste Stream Template

EA Example 3. Waste Soil

Classified by

Name:

Ian Bishop

Date:

30 Jul 2018 09:30 GMT

Telephone:

Company:

One Touch Data Ltd.

Report

Created by: Ian Bishop

Created date: 30 Jul 2018 09:30 GMT

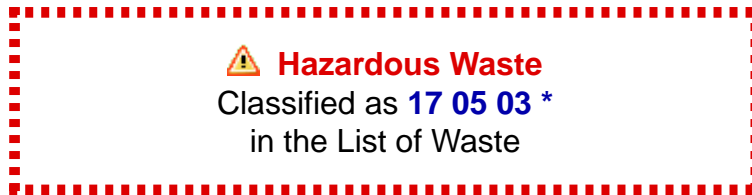
Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	Sample 1	0.1 mbgl	Hazardous	HP 14	2

Appendices

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Appendix A: Classifier defined and non CLP determinands	4
Appendix B: Rationale for selection of metal species	5
Appendix C: Version	5

Classification of sample: Sample 1



Sample details

Sample Name:	LoW Code:
Sample 1	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:
0.1 mbgl m	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

lead compounds with the exception of those specified elsewhere in this Annex: (Note 1 conc.: 0.162%)
zinc oxide: (compound conc.: 0.18%)

Aquatic Chronic 2; H411 "Toxic to aquatic life with long lasting effects."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.25%)


Determinands

Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	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 }				320	mg/kg	1.884	602.88	mg/kg	0.0603 %		
	006-007-00-5											
2	arsenic { arsenic trioxide }				530	mg/kg	1.32	699.772	mg/kg	0.07 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }			1	782	mg/kg		782	mg/kg	0.0782 %		
	048-001-00-5											
4	copper { dicopper oxide; copper (I) oxide }				400	mg/kg	1.126	450.355	mg/kg	0.045 %		
	029-002-00-X	215-270-7	1317-39-1									
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	1620	mg/kg		1620	mg/kg	0.162 %		
	082-001-00-6											
6	nickel { nickel(II) carbonate }				297	mg/kg	2.022	600.657	mg/kg	0.0601 %		
	028-010-00-0	222-068-2 [1] 240-408-8 [2] 265-748-4 [3] 235-715-9 [4]	3333-67-3 [1] 16337-84-1 [2] 65405-96-1 [3] 12607-70-4 [4]									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
7	zinc { zinc oxide }				1446 mg/kg	1.245	1799.856 mg/kg	0.18 %		
	030-013-00-7	215-222-5	1314-13-2							
8	TPH (C6 to C40) petroleum group				12500 mg/kg		12500 mg/kg	1.25 %		
9	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
10	benzo[a]pyrene; benzo[def]chrysene				0.23 mg/kg		0.23 mg/kg	0.000023 %		
	601-032-00-3	200-028-5	50-32-8							
11	pH				8.7 pH		8.7 pH	8.7 pH		
12	asbestos				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
13	antimony { antimony trioxide }				<0.1 mg/kg	1.197	<0.12 mg/kg	<0.000012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
14	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		<LOD
	024-017-00-8									
15	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							
16	molybdenum { molybdenum(VI) oxide }				<0.1 mg/kg	1.5	<0.15 mg/kg	<0.000015 %		<LOD
	042-001-00-9	215-204-7	1313-27-5							
17	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.1 mg/kg	2.554	<0.255 mg/kg	<0.0000255 %		<LOD
	034-002-00-8									
18	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								1.906 %		

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
- 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 HP 3 Flammable (first and fourth indents) can be discounted as this is a solid waste without a free draining liquid phase. Advice from the laboratory indicated that testing for flammability was not appropriate due to the low level of TPH. The test would produce a negative result. The waste does not display these hazardous properties"

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.25%)

Appendix A: Classifier defined and non CLP determinands

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

CLP index number: 006-007-00-5

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

Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)

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

Reason for additional Hazards Statement(s)/Risk Phrase(s):

14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

CLP index number: 048-001-00-5

Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

Additional Hazard Statement(s): Carc. 1A H350

Reason for additional Hazards Statement(s)/Risk Phrase(s):

29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6

Description/Comments: Least-worst case: Lead REACH Consortium considers some lead compounds Carcinogenic category 2B

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

Additional Hazard Statement(s): Carc. 2 H351

Reason for additional Hazards Statement(s)/Risk Phrase(s):

03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: Larsen et al., 2014; Survey of lead and lead compounds, Environmental Project No. 1539, The Danish Environmental Protection Agency

TPH (C6 to C40) petroleum group

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

confirm TPH has NOT arisen from diesel or petrol

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

pH

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

CLP 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.

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

Additional Hazard Statement(s): Carc. 1A H350

Reason for additional Hazards Statement(s)/Risk Phrase(s):

29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

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 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]

arsenic {arsenic trioxide}

Arsenic trioxide is used in metal plating. Reasonable case species based on hazard statements/molecular weight and most common (stable) oxide of arsenic.

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

EA suspect cadmium carbonate - used in electroplating

copper {dicopper oxide; copper (I) oxide}

Reasonable case species based on hazard statements/molecular weight; insoluble in water. Related industrial uses include copper plating and oxidation of copper metal.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

EA assumed lead sulphate - Lead REACH considers lead sulphate Carc 2. H351 so this hazard statement was added to this CLP entry

nickel {nickel(II) carbonate}

EA selected species. Nickel carbonate is used to control pH during nickel plating

zinc {zinc oxide}

EA selected as worst case species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings

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

Worst case CLP species based on hazard statements/molecular weight

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in the soil.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018

HazWasteOnline Classification Engine Version: 2018.206.3592.7366 (25 Jul 2018)

HazWasteOnline Database: 2018.206.3592.7366 (25 Jul 2018)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
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 Wastes 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
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010