

PT Regression Equations

December 18, 2019
Version 1.0

Table of Contents

1.0	Introduction	1
2.0	Determination of Regression Equations	1
3.0	Fixed Limits	1
4.0	Regression Equations	2
C01A	Major Ions in Water	2
C01B	Simple Nutrients in Water	2
C02A	Metals (Full Range) in Water	2
C02B	Metals (High Range) in Water	2
C02C	Metals (Total) in Water	3
C03	Complex Nutrients in Water	3
C04A	Solids in Water	3
C04B	BOD in Water	3
C04C	Turbidity in Water	3
C04D	COD in Water	3
C05A	Microbiology in Water	4
C06A	OC Pesticides in Water	4
C06B	PCBs in Water	4
C07	Polycyclic Aromatic Hydrocarbons in Water	4
C08	PCBs in Oil	4
C09	Metals on Filters	4
C11/C12/C13	Toxicology	5
C14	Cyanide in Water	5
C15	pH in Water	5
C16	VOCs in Water	5
C17	Metals in Soil	5
C18	Polycyclic Aromatic Hydrocarbons in Soil	6
C19	Mercury in Water	6

C22 Organophosphorus Pesticides in Water	6
C24 Aryloxy Acid Pesticides in Water	7
C25 Chlorophenols in Water	7
C27 Glyphosate in Water	7
C29 Aldicarb in Water	7
C31A Petroleum Hydrocarbons in Soil	7
C31B Petroleum Hydrocarbons in Soil	7
C32 Chlorine in Water	7
C33 Phenolics in Water	7
C34 Oil and Grease in Water	7
C35 PCBs in Soil	7
C36 VOCs in Soil	7
C37 Colour in Water	8
C38 VOCs by TCLP	8
C39 Inorganics by TCLP	8
C40A Petroleum Hydrocarbons in Water	9
C41 Hexavalent Chromium in Water	9
C42 Sulphide in Water	9
C43 Solids in Soil	9
C44 Nutrients in Soil	9
C45 Anions in Soil	9
C46 Acidity in Water	9
Acidity	9
C47 Haloacetic Acids in Water	9
C70 Potency in Cannabis	9
C71 Pesticides in Cannabis	9
C72 Metals in Hemp	10
C73 Residual Solvents in Hemp Seed Oil	10

C74 Hexavalent Chromium in Soil.....	11
C75 Particle Size in Soil	11
C76 Oil and Grease in Soil	11
C77 Pesticides in Soil	11
C78 Water Activity/% Moisture in Hemp	11

1.0 Introduction

The PTC evaluation procedure involves the use of historic data to establish regression equations of sample concentration against inter-laboratory standard deviation. As well, one of the checks performed with every study is to compare the inter-laboratory standard deviation in a study against warning limits established from the past data. This document provides details on how these regression equations are developed.

2.0 Determination of Regression Equations

A regression equation is established between sample concentration and inter-laboratory standard deviation for each analyte in the PT program with the exception of C20 (asbestos), C05B (microbiology) and C15 (pH). The steps involved in determining the regression equation for an analyte are as follows:

- compile the consensus means and inter-lab standard deviations used from all historic studies;
- remove data that is below the currently published concentration range;
- plot consensus mean against inter-lab standard deviation and remove any data pairs that are inconsistent with the data set as a whole;
- calculate the slope and intercept of consensus mean against inter-lab standard deviation;
- If the intercept is negative, force the line through zero to prevent unreasonably low standard deviations at lower concentrations.

The following table contains the slope and intercept currently being used for all applicable analytes, using data from studies between 1991 and January 2012, inclusive.

3.0 Fixed Limits

Fixed limits are indicated as + ##% and were derived after consultation with technical experts, regulators, accreditation bodies and other PT schemes.

4.0 Regression Equations

	Analyte	Conc. Range	Slope	Intercept
C01A Major Ions in Water				
	Alkalinity to pH 4.5	20 - 250 mg/L		± 15%
	Chloride	5 - 500 mg/L		± 15%
	Conductivity at 25°C	20 - 2000 µS/cm		± 10%
	Calcium	2 - 200 mg/L		± 15%
	Magnesium	2 - 50 mg/L		± 15%
	Fluoride	0.2 - 4.0 mg/L		± 15%
	Hardness as CaCO ₃	10 - 800 mg/L		± 15%
	Inorganic Carbon	2 - 50 mg/L		± 20%
	Nitrate	0.20 - 20.0 mg/L		± 15%
	Nitrate plus Nitrite	0.20 - 20.0 mg/L		± 15%
	Potassium	1 - 40 mg/L		± 15%
	Reactive Silica	0.5 - 30 mg/L		± 20%
	Sodium	2 - 150 mg/L		± 15%
	Sulphate	5 - 200 mg/L		± 15%
C01B Simple Nutrients in Water				
	Ammonia	0.5 - 20.0 mg/L		± 20%
	Organic Carbon	2.0 - 20.0 mg/L	0.0385	0.226
	Phosphate	0.1 - 3.0 mg/L		± 15%
	Bromide	1.0 - 10.0 mg/L		± 15%
	Nitrite	0.1 - 1.0 mg/L)		± 15%
C02A Metals (Full Range) in Water				
	Aluminum	0.001 - 1.60 mg/L		± 15%
	Antimony	1.0 - 100 µg/L		± 20 %
	Arsenic	1.0 - 100 µg/L		± 20 %
	Barium	0.001 - 1.60 mg/L		± 15%
	Beryllium	0.001 - 0.10 mg/L		± 15%
	Boron	0.001 - 1.60 mg/L		± 15%
	Cadmium	0.001 - 0.10 mg/L		± 15%
	Chromium	0.001 - 1.60 mg/L		± 15%
	Cobalt	0.001 - 1.60 mg/L		± 15%
	Copper	0.001 - 1.60 mg/L		± 15%
	Iron	0.001 - 1.60 mg/L		± 15%
	Lead	0.001 - 1.60 mg/L		± 15%
	Manganese	0.001 - 1.60 mg/L		± 15%
	Molybdenum	0.001 - 1.60 mg/L		± 15%
	Nickel	0.001 - 1.60 mg/L		± 15%
	Selenium	1.0 - 100 µg/L		± 20 %
	Silver	0.001 - 0.100 mg/L		± 15%
	Strontium	0.001 - 1.60 mg/L		± 15%
	Thallium	0.001 - 0.100 mg/L		± 20 %
	Tin	0.001 - 0.100 mg/L		± 20 %
	Titanium	0.001 - 1.60 mg/L		± 15%
	Uranium	0.001 - 0.1 mg/L		± 15%
	Vanadium	0.001 - 1.60 mg/L		± 15%
	Zinc	0.001 - 1.60 mg/L		± 15%
C02B Metals (High Range) in Water				
	Aluminum	0.001 - 1.60 mg/L		± 15%
	Barium	0.001 - 1.60 mg/L		± 15%
	Boron	0.001 - 1.60 mg/L		± 15%

Analyte	Conc. Range	Slope	Intercept
Chromium	0.001 - 1.60 mg/L		± 15%
Cobalt	0.001 - 1.60 mg/L		± 15%
Copper	0.001 - 1.60 mg/L		± 15%
Iron	0.001 - 1.60 mg/L		± 15%
Lead	0.001 - 1.60 mg/L		± 15%
Manganese	0.001 - 1.60 mg/L		± 15%
Molybdenum	0.001 - 1.60 mg/L		± 15%
Nickel	0.001 - 1.60 mg/L		± 15%
Strontium	0.001 - 1.60 mg/L		± 15%
Thallium	0.001 - 0.100 mg/L		± 20 %
Titanium	0.001 - 1.60 mg/L		± 15%
Vanadium	0.001 - 1.60 mg/L		± 15%
Zinc	0.001 - 1.60 mg/L		± 15%
Aluminum	0.001 - 1.60 mg/L		± 15%
C02C Metals (Total) in Water			
Aluminum	0.001 - 1.60 mg/L		± 15%
Antimony	1.0 - 100 µg/L		± 20 %
Arsenic	1.0 - 100 µg/L		± 20 %
Barium	0.001 - 1.60 mg/L		± 15%
Beryllium	0.001 - 0.10 mg/L		± 15%
Boron	0.001 - 1.60 mg/L		± 15%
Cadmium	0.001 - 0.10 mg/L		± 15%
Chromium	0.001 - 1.60 mg/L		± 15%
Cobalt	0.001 - 1.60 mg/L		± 15%
Copper	0.001 - 1.60 mg/L		± 15%
Iron	0.001 - 1.60 mg/L		± 15%
Lead	0.001 - 1.60 mg/L		± 15%
Manganese	0.001 - 1.60 mg/L		± 15%
Molybdenum	0.001 - 1.60 mg/L		± 15%
Nickel	0.001 - 1.60 mg/L		± 15%
Selenium	1.0 - 100 µg/L		± 20 %
Silver	0.001 - 0.100 mg/L		± 15%
Strontium	0.001 - 1.60 mg/L		± 15%
Thallium	0.001 - 0.100 mg/L		± 20 %
Tin	0.001 - 0.100 mg/L		± 20 %
Titanium	0.001 - 1.60 mg/L		± 15%
Uranium	0.001 - 0.1 mg/L		± 15%
Vanadium	0.001 - 1.60 mg/L		± 15%
Zinc	0.001 - 1.60 mg/L		± 15%
C03 Complex Nutrients in Water			
Total Kjeldahl Nitrogen	2.0 - 20 mg/L		± 25%
Total Phosphorus	0.10 - 4.0 mg/L		± 20%
C04A Solids in Water			
Total Suspended Solids	10 - 200 mg/L		± 20%
Total Dissolved Solids	10 - 1000 mg/L	0	22.5
Volatile Suspended Solids	5 - 150 mg/L		± 25%
C04B BOD in Water			
BOD	25 - 200 mg/L		± 35%
CBOD	25 - 200 mg/L		± 35%
C04C Turbidity in Water			
Turbidity	0.5 - 50 NTU	0.0887	0
C04D COD in Water			
COD	30 - 500 mg/L	0.0308	3.15

Analyte	Conc. Range	Slope	Intercept
C05A Microbiology in Water			
<i>Escherichia coli</i> (<i>E. coli</i>)	20 – 100 CFU/100 mL	0.16	1.45
Faecal (Thermotolerant) Coliforms	20 – 100 CFU/100 mL	0.252	0.219
Heterotrophic Plate Count	200 – 1000 CFU/mL	0.14	7.62
Total Coliforms	20 – 100 CFU/100 mL	0.144	2.24
C06A OC Pesticides in Water			
alpha-BHC	0.05 – 3.0 µg/L	0.246	0.0056
Endosulfan I	0.05 – 3.0 µg/L	0.2416	0.0155
Endosulfan II	0.05 – 3.0 µg/L	0.2028	0.0457
Endrin	0.05 – 3.0 µg/L	0.216	0.0354
Heptachlor Epoxide	0.05 – 3.0 µg/L	0.164	0.0471
Lindane (gamma-BHC)	0.05 – 3.0 µg/L	0.234	0
Mirex	0.05 – 3.0 µg/L	0.2447	0.0294
o,p' – DDT	0.05 – 3.0 µg/L	0.2043	0.031
p,p' – DDT	0.05 – 3.0 µg/L	0.243	0.0216
p,p' Methoxychlor	0.05 – 3.0 µg/L	0.2084	0.0499
Aldrin	0.05 – 3.0 µg/L	0.2222	0.0286
Dieldrin	0.05 – 3.0 µg/L	0.203	0.0151
Heptachlor	0.05 – 3.0 µg/L	0.329	0
a – Chlordane	0.05 – 3.0 µg/L	0.1899	0
g – Chlordane	0.05 – 3.0 µg/L	0.1713	0.0022
C06B PCBs in Water			
Total PCB	1.0 – 20.0 µg/L	0.2863	0.0336
Aroclor 1242	1.0 – 20.0 µg/L	0.2863	0.0336
Aroclor 1248	1.0 – 20.0 µg/L	0.2863	0.0336
Aroclor 1254	1.0 – 20.0 µg/L	0.2863	0.0336
Aroclor 1260	1.0 – 20.0 µg/L	0.2863	0.0336
C07 Polycyclic Aromatic Hydrocarbons in Water			
Acenaphthene	0.4 – 12 µg/L	0.1445	0.0613
Acenaphthylene	0.4 – 12 µg/L	0.167	0.0323
Anthracene	0.4 – 12 µg/L	0.179	0.0714
Benzo(a)anthracene	0.4 – 12 µg/L	0.218	0.0402
Benzo(a)pyrene	0.4 – 12 µg/L	0.2336	0.069
Benzo(b)fluoranthene	0.4 – 12 µg/L	0.237	0.0382
Benzo(b+j)fluoranthene	0.4 – 12 µg/L	Consensus	
Benzo(g,h,i)perylene	0.4 – 12 µg/L	0.247	0.065
Benzo(k)fluoranthene	0.4 – 12 µg/L	0.239	0.0204
Chrysene	0.4 – 12 µg/L	0.1974	0.0417
Dibenzo(a,h)anthracene	0.4 – 12 µg/L	0.238	0.1203
Fluoranthene	0.4 – 12 µg/L	0.164	0.051
Fluorene	0.4 – 12 µg/L	0.158	0.0472
Indeno(1,2,3-cd)pyrene	0.4 – 12 µg/L	0.257	0.0523
Naphthalene	0.4 – 12 µg/L	0.177	0.0326
Phenanthrene	0.4 – 12 µg/L	0.1757	0.0368
Pyrene	0.4 – 12 µg/L	0.159	0.0655
C08 PCBs in Oil			
Aroclor 1242	5.0 – 150.0 µg/g	0.177	0.653
Aroclor 1248	5.0 – 150.0 µg/g	0.177	0.653
Aroclor 1254	5.0 – 150.0 µg/g	0.177	0.653
Aroclor 1260	5.0 – 150.0 µg/g	0.177	0.653
Total PCB	5.0 – 150.0 µg/g	0.177	0.653
C09 Metals on Filters			
Cadmium	4.0 – 30 µg/HVF	0.0777	0.425

Analyte	Conc. Range	Slope	Intercept
Copper	4.0 – 60 µg/HVF	0.101	0.21
Lead	4.0 – 80 µg/HVF	0.108	0.137
Zinc	4.0 – 60 µg/HVF	0.153	0.138
C11/C12/C13 Toxicology			
Trout 96 Hour LC50	2 – 10 mL/L	0.117	0.04
Daphnia 48 Hour LC50	2 – 40 mL/L	0.141	0
Microtox™ 15 Minute IC50	4 – 10 mL/L	0.2	0
C14 Cyanide in Water			
Cyanide – Strong Acid Dissociable	0.2 – 5.0 mg/L		± 30%
C15 pH in Water			
pH	3 – 10 pH units	0	0.1
C16 VOCs in Water			
1,1,1-Trichloroethane	2.0 – 200 µg/L		± 30%
1,1,2,2-Tetrachloroethane	2.0 – 200 µg/L		± 35%
1,1,2-Trichloroethane	2.0 – 200 µg/L		± 30%
1,1-Dichloroethane	2.0 – 200 µg/L		± 30%
1,1-Dichloroethylene	2.0 – 200 µg/L		± 40%
1,2-Dichlorobenzene	2.0 – 200 µg/L		± 30%
1,2-Ddichloroethane	2.0 – 200 µg/L		± 30%
1,2-Dichloropropane	2.0 – 200 µg/L		± 30%
1,3-Dichlorobenzene	2.0 – 200 µg/L		± 30%
1,4-Dichlorobenzene	2.0 – 200 µg/L		± 30%
Acetone (2-Propanone)	2.0 – 200 µg/L	0.233	2.05
Benzene	2.0 – 200 µg/L		± 30%
Bromodichloromethane	2.0 – 200 µg/L		± 30%
Bromoform	2.0 – 200 µg/L		± 30%
Carbon Tetrachloride	2.0 – 200 µg/L		± 30%
Chlorobenzene	2.0 – 200 µg/L		± 30%
Chlorodibromomethane	2.0 – 200 µg/L		± 30%
Chloroform	2.0 – 200 µg/L		± 30%
cis-1,2-Dichloroethylene	2.0 – 200 µg/L		± 30%
cis-1,3-Dichloropropene	2.0 – 200 µg/L		± 30%
Dichloromethane	2.0 – 200 µg/L		± 35%
Ethylbenzene	2.0 – 200 µg/L		± 30%
Ethylene Dibromide	2.0 – 200 µg/L		± 30%
m/p-xylene	2.0 – 200 µg/L		± 30%
Methyl Ethyl Ketone	2.0 – 200 µg/L		± 45%
Methyl t-butyl ether (MTBE)	2.0 – 200 µg/L		± 40%
Methyl isobutyl Ketone (MIBK)	2.0 – 200 µg/L		± 30%
o-xylene	2.0 – 200 µg/L		± 30%
Styrene	2.0 – 200 µg/L		± 30%
Tetrachloroethylene	2.0 – 200 µg/L		± 30%
Toluene	2.0 – 200 µg/L		± 30%
trans-1,2-Dichloroethylene	2.0 – 200 µg/L		± 30%
trans-1,3-Dichloropropene	2.0 – 200 µg/L		± 30%
Trichloroethylene	2.0 – 200 µg/L		± 35%
Trichlorofluoromethane	2.0 – 200 µg/L		± 40%
Vinyl Chloride	2.0 – 200 µg/L		± 45%
C17 Metals in Soil			
Aluminum	1000 – 100000 µg/g	0.131	400
Antimony	0.4 – 4.0 µg/g	0.573	0
Arsenic	5.0 – 35 µg/g	0.111	0.62
Barium	50 – 500 µg/g	0.0692	2.09

Analyte	Conc. Range	Slope	Intercept
Beryllium	1.0 – 3.0 µg/g	0.132	0.045
Boron	20 – 200 µg/g	0.438	0
Cadmium	0.2 – 6.0 µg/g	0.0866	0.153
Chromium	50 – 150 µg/g	0.0761	1.53
Cobalt	10 – 20 µg/g	0.0978	0
Copper	30 – 600 µg/g	0.0836	0
Iron	1000 – 50000 µg/g	0.0913	0
Manganese	100 – 2000 µg/g	0.0733	0
Mercury	50 – 2000 ng/g	0.255	0
Nickel	25 – 1000 µg/g	0.103	0
Lead	5 – 400 µg/g	0.0746	1.68
Strontium	100 – 500 µg/g	0.0871	0.459
Tin	10 – 100 µg/g	0.24	0.613
Titanium	500 – 5000 µg/g	0.253	14.2
Uranium	1 – 5 µg/g	0.0872	0.0649
Vanadium	25 – 200 µg/g	0.141	0.155
Zinc	40 – 1600 µg/g	0.08	0.283
C18 Polycyclic Aromatic Hydrocarbons in Soil			
Acenaphthene	0.2 – 50 µg/g	0.209	0.0161
Acenaphthylene	0.2 – 50 µg/g	0.445	0
Anthracene	0.2 – 50 µg/g	0.321	0
Benzo(a)anthracene	0.2 – 50 µg/g	0.241	0
Benzo(a)pyrene	0.2 – 50 µg/g	0.232	0.0058
Benzo(b)fluoranthene	0.2 – 50 µg/g	0.28	0.0836
Benzo(b+j)fluoranthene	0.2 – 50 µg/g	Consensus	
Benzo(g,h,i)perylene	0.2 – 50 µg/g	0.243	0.039
Benzo(k)fluoranthene	0.2 – 50 µg/g	0.372	0
Chrysene	0.2 – 50 µg/g	0.221	0.056
Dibenzo(a,h)anthracene	0.2 – 50 µg/g	0.303	0.0102
Fluoranthene	0.2 – 50 µg/g	0.206	0.0165
Fluorene	0.2 – 50 µg/g	0.25	0.112
Indeno(1,2,3-cd)pyrene	0.2 – 50 µg/g	0.223	0.107
Naphthalene	0.2 – 50 µg/g	0.373	0
Phenanthrene	0.2 – 50 µg/g	0.209	0
Pyrene	0.2 – 50 µg/g	0.2	0.0423
C19 Mercury in Water			
Mercury	0.1 – 2 µg/L	± 30%	
C22 Organophosphorus Pesticides in Water			
Atrazine	2 – 5 µg/L	0.204	0
Azinphos-methyl	10 – 40 µg/L	0.250	0.356
Bendiocarb	1 – 40 µg/L	0.223	0.598
Carbaryl	0.2 – 90 µg/L	0.301	0.073
Carbofuran	0.2 – 90 µg/L	0.309	0
Chlorpyrifos (ethyl)	2 – 10 µg/L	0.188	0.147
Cyanazine	2 – 10 µg/L	0.275	0.164
Diazinon	0.5 – 20 µg/L	0.254	0
Dimethoate	2 – 20 µg/L	0.302	0.227
Diuron	20 – 50 µg/L	0.238	0.583
Malathion	2 – 10 µg/L	0.197	0.26
Metolachlor	2 – 10 µg/L	0.179	0.191
Metribuzin	2 – 10 µg/L	0.216	0.263
Parathion (ethyl)	0.5 – 20 µg/L	0.2347	0.0776
Phorate	0.5 – 5 µg/L	0.274	0

Analyte	Conc. Range	Slope	Intercept
Simazine	1 - 10 µg/L	0.25	0.0079
Terbufos	0.5 - 5 µg/L	0.279	0.0389
Trifluralin	1 - 10 µg/L	0.26	0.0121
C24 Aryloxy Acid Pesticides in Water			
2,4-Dichlorophenoxyacetic Acid	0.1 - 10 µg/L	0.264	0.0979
2,4,5-Trichlorophenoxyacetic Acid	0.1 - 10 µg/L	0.244	0.0761
Bromoxynil	1 - 5 µg/L	0.23	0.0704
Dicamba	1 - 10 µg/L	0.29	0.0108
Diclofop-methyl (as free acid)	0.5 - 5 µg/L	0.363	0
Dinoseb	1 - 10 µg/L	0.339	0.0979
Picloram	0.1 - 10 µg/L	0.482	0.0957
C25 Chlorophenols in Water			
2,4,6-Trichlorophenol	2 - 20 µg/L	0.24	0
2,3,4,6-Tetrachlorophenol	2 - 20 µg/L	0.207	0.387
2,4-Dichlorophenol	2 - 20 µg/L	0.237	0.278
Pentachlorophenol	2 - 20 µg/L	0.206	0.406
C27 Glyphosate in Water			
Glyphosate	25 - 80 µg/L	0.138	1.85
C29 Aldicarb in Water			
Aldicarb	1 - 9 µg/L	0.174	0.326
C31A Petroleum Hydrocarbons in Soil			
F1: (C6-C10)	30 - 3500 mg/kg	0.213	38.9
Benzene	10 - 200 mg/kg		± 35%
Ethylbenzene	10 - 200 mg/kg		± 35%
m/p- Xylene	100 - 500 mg/kg		± 40%
o-Xylene	100 - 500 mg/kg		± 35%
Toluene	10 - 200 mg/kg		± 35%
VH (C6-C10)	30 - 3500 mg/kg	0.213	38.9
C31B Petroleum Hydrocarbons in Soil			
F2: C10-C16	150 - 6500 mg/kg	0.220	40.3
F3: C16-C34	250 - 12500 mg/kg	0.227	26
F4: C34-C50	1000 - 12500 mg/kg	0.3	35
F4: Gravimetric	1000 - 12500 mg/kg	0.187	570
C32 Chlorine in Water			
Free Chlorine	0.5 - 3.0 mg/L	0.0661	0.00248
Total Chlorine	0.5 - 3.0 mg/L	0.0576	0.0193
C33 Phenolics in Water			
Total Phenolics	0.005 - 0.5 mg/L	0.0678	0.0035
C34 Oil and Grease in Water			
Total Oil and Grease	10 - 500 mg/L	0.185	7.15
Mineral (non-polar) Oil and Grease	10 - 500 mg/L	0.185	7.15
C35 PCBs in Soil			
Aroclor 1242	2 - 150 µg/g	0.339	0
Aroclor 1248	2 - 150 µg/g	0.339	0
Aroclor 1254	2 - 150 µg/g	0.339	0
Aroclor 1260	2 - 150 µg/g	0.339	0
Total PCB	2 - 150 µg/g	0.339	0
C36 VOCs in Soil			
1,1,1-Trichloroethane	5 - 200 µg/g		± 45%
1,1,2,2-Tetrachloroethane	5 - 200 µg/g		± 35%
1,1,2-Trichloroethane	5 - 200 µg/g		± 35%
1,1-Dichloroethane	5 - 200 µg/g		± 40%
1,1-Dichloroethylene	5 - 200 µg/g		± 40%

Analyte	Conc. Range	Slope	Intercept
1,2-Dichlorobenzene	5 - 200 µg/g		± 35%
1,2-Dichloroethane	5 - 200 µg/g		± 35%
1,2-Dichloropropane	5 - 200 µg/g		± 35%
1,3-Dichlorobenzene	5 - 200 µg/g		± 35%
1,4-Dichlorobenzene	5 - 200 µg/g		± 35%
Acetone (2-Propanone)	5 - 200 µg/g	0.204	1.21
Benzene	5 - 200 µg/g		± 35%
Bromodichloromethane	5 - 200 µg/g		± 35%
Bromoform	5 - 200 µg/g		± 35%
Carbon Tetrachloride	5 - 200 µg/g		± 35%
Chlorobenzene	5 - 200 µg/g		± 35%
Chlorodibromomethane	5 - 200 µg/g		± 35%
Chloroform	5 - 200 µg/g		± 35%
cis-1,2-Dichloroethylene	5 - 200 µg/g		± 35%
cis-1,3-Dichloropropene	5 - 200 µg/g		± 35%
Dichloromethane	5 - 200 µg/g		± 40%
Ethylbenzene	5 - 200 µg/g		± 35%
Ethylene Dibromide	5 - 200 µg/g		± 35%
m/p-xylene	5 - 200 µg/g		± 40%
Methyl Ethyl Ketone	5 - 200 µg/g		± 55%
Methyl t-butyl ether (MTBE)	5 - 200 µg/g		± 40%
Methyl isobutyl Ketone (MIBK)	5 - 200 µg/g		± 45%
o-xylene	5 - 200 µg/g		± 35%
Styrene	5 - 200 µg/g		± 35%
Tetrachloroethylene	5 - 200 µg/g		± 45%
Toluene	5 - 200 µg/g		± 35%
trans-1,2-Dichloroethylene	5 - 200 µg/g		± 35%
trans-1,3-Dichloropropene	5 - 200 µg/g		± 35%
Trichloroethylene	5 - 200 µg/g		± 40%
Trichlorofluoromethane	5 - 200 µg/g		± 50%
C37 Colour in Water			
True Colour	0 - 50 CU	0.081	0.933
C38 VOCs by TCLP			
1,2-Dichlorobenzene	0.025 - 5 mg/L		Consensus
1,2-Dichloroethane	0.025 - 5 mg/L		Consensus
1,4-Dichlorobenzene	0.025 - 5 mg/L		Consensus
Benzene	0.025 - 5 mg/L		Consensus
Carbon tetrachloride	0.025 - 5 mg/L		Consensus
Chlorobenzene	0.025 - 5 mg/L		Consensus
Chloroform	0.025 - 5 mg/L		Consensus
Dichloromethane	0.025 - 5 mg/L		Consensus
Methyl Ethyl Ketone	1.0 - 5 mg/L		Consensus
Tetrachloroethylene	0.025 - 5 mg/L		Consensus
Trichloroethylene	0.025 - 5 mg/L		Consensus
C39 Inorganics by TCLP			
Silver	0.0010 - 0.050 mg/L		Consensus
Arsenic	0.10 - 5.0 mg/L		Consensus
Boron	0.50 - 10.0 mg/L		Consensus
Barium	0.10 - 2.0 mg/L		Consensus
Cadmium	0.0010 - 0.050 mg/L		Consensus
Chromium	0.010 - 0.50 mg/L		Consensus
Lead	0.010 - 0.50 mg/L		Consensus
Selenium	0.050 - 1.0 mg/L		Consensus

Analyte	Conc. Range	Slope	Intercept
Uranium	0.050 – 1.0 mg/L		Consensus
Mercury	0.0001 – 0.050 mg/L		Consensus
Fluoride	10 – 100 mg/L		Consensus
Nitrate-N	2 – 50 mg/L		Consensus
Nitrate and Nitrite as N	2.8 – 70 mg/L		Consensus
Cyanide (Weak Acid Dissociable)	0.1 – 5 mg/L		Consensus
C40A Petroleum Hydrocarbons in Water			
Benzene	1 – 100 µg/L		± 30%
Ethylbenzene	1 – 100 µg/L		± 30%
F1: C6-C10	20 – 1000 µg/L	0.162	119
m/p-Xylene	1 – 100 µg/L		± 30%
o-Xylene	1 – 100 µg/L		± 30%
Toluene	1 – 100 µg/L		± 30%
VH (C6-C10)* (NEW)	20 – 1000 µg/L		Consensus
C41 Hexavalent Chromium in Water			
Hexavalent Chromium	50 – 500 µg/L		± 20%
C42 Sulphide in Water			
Sulphide	1 – 10 mg/L	0.121	0.282
C43 Solids in Soil			
Fixed Solids	80 – 100%		Consensus
Percent Moisture	1 – 30%		Consensus
Total Solids	70 – 100%		Consensus
Volatile Solids	1 – 20%		Consensus
C44 Nutrients in Soil			
Ammonia - N	300 – 3000 µg/g		Consensus
Kjeldahl Nitrogen	400 – 4000 µg/g		Consensus
Phosphorus	300 – 3000 µg/g		Consensus
Organic Carbon	1000 – 15000 µg/g		Consensus
C45 Anions in Soil			
Bromide	10 – 100 µg/g		Consensus
Chloride	200 – 1000 µg/g		Consensus
Fluoride	25 – 500 µg/g		Consensus
Nitrate-N	25 – 500 µg/g		Consensus
Phosphate-P	25 – 500 µg/g		Consensus
Sulphate	25 – 2000 µg/g		Consensus
% Saturation			Consensus
C46 Acidity in Water			
Acidity	50 – 2000 mg/L	0.05	0
C47 Haloacetic Acids in Water			
Bromochloroacetic acid	5 – 50 µg /L	0.2	0
Dibromoacetic acid	5 – 50 µg /L	0.2	0
Dichloroacetic acid	5 – 50 µg /L	0.2	0
Monobromoacetic acid	5 – 50 µg /L	0.2	0
Monochloroacetic acid	5 – 50 µg /L	0.2	0
Trichloroacetic acid	5 – 50 µg /L	0.2	0
C70 Potency in Cannabis			
Tetrahydrocannabinol (THC)	0.1 – 25%		Consensus
Tetrahydrocannabinolic Acid (THCA)	0.1 – 25%		Consensus
Cannabidiol (CBD)	0.1 – 25%		Consensus
Cannabidiolic Acid (CBDA)	0.1 – 25%		Consensus
C71 Pesticides in Cannabis			
Acephate	0.1 – 1 µg/g		Consensus
Aldicarb	5.0 – 20 µg/g		Consensus

Analyte	Conc. Range	Slope	Intercept
Azoxystrobin	0.1 - 1 µg/g		Consensus
Bifenazate	0.1 - 1 µg/g		Consensus
Boscalid	0.1 - 1 µg/g		Consensus
Carbaryl	0.25 - 5 µg/g		Consensus
Carbofuran	0.1 - 1 µg/g		Consensus
Diazinon	0.1 - 1 µg/g		Consensus
Dichlorvos (DDVP)	0.5 - 10 µg/g		Consensus
Dimethoate	0.1 - 1 µg/g		Consensus
Ethoprophos	0.1 - 1 µg/g		Consensus
Etoxazole	0.1 - 1 µg/g		Consensus
Fipronil	0.3 - 1.2 µg/g		Consensus
Fludioxonil	0.1 - 1 µg/g		Consensus
Imidacloprid	0.1 - 1 µg/g		Consensus
Malathion	0.1 - 1 µg/g		Consensus
Metalaxyl	0.1 - 1 µg/g		Consensus
Methiocarb	0.1 - 1 µg/g		Consensus
Methomyl	0.25 - 1 µg/g		Consensus
Myclobutanil	0.1 - 1 µg/g		Consensus
Oxamyl	15 - 60 µg/g		Consensus
Paclobutrazol	0.1 - 1 µg/g		Consensus
Propoxur (Baygon)	0.1 - 1 µg/g		Consensus
Spiromesifen	15 - 60 µg/g		Consensus
Spirotetramat	0.1 - 1 µg/g		Consensus
Thiamethoxam	0.1 - 1 µg/g		Consensus
Trifloxystrobin	0.1 - 1 µg/g		Consensus
C72 Metals in Hemp			
Arsenic	0.1 - 10 µg/g		Consensus
Cadmium	0.1 - 50 µg/g		Consensus
Chromium	0.1 - 10 µg/g		Consensus
Lead	0.1 - 10 µg/g		Consensus
Mercury	0.05 - 2 µg/g		Consensus
C73 Residual Solvents in Hemp Seed Oil			
1-Butanol (n-Butanol)	500 - 7000 µg/g		Consensus
1-Pentanol	500 - 7000 µg/g		Consensus
1-Propanol (Propanol)	500 - 7000 µg/g		Consensus
2-Butanol	500 - 7000 µg/g		Consensus
2-Butanone (Methyl ethyl ketone, MEK)	500 - 7000 µg/g		Consensus
2-Propanol (Isopropyl alcohol)	500 - 7000 µg/g		Consensus
3-Methyl-1-butanol	500 - 7000 µg/g		Consensus
Acetone (2-Propanone)	500 - 7000 µg/g		Consensus
Anisole	500 - 7000 µg/g		Consensus
Butane	500 - 7000 µg/g		Consensus
Butyl acetate	500 - 7000 µg/g		Consensus
Dimethyl sulfoxide	500 - 7000 µg/g		Consensus
Ethanol	500 - 7000 µg/g		Consensus
Ethyl acetate	500 - 7000 µg/g		Consensus
Ethyl ether	500 - 7000 µg/g		Consensus
Heptane	500 - 7000 µg/g		Consensus
Isobutanol (2-Methyl-1-propanol)	500 - 7000 µg/g		Consensus
Isobutyl acetate	500 - 7000 µg/g		Consensus
Isopropyl acetate	500 - 7000 µg/g		Consensus
Methyl acetate	500 - 7000 µg/g		Consensus
Pentane	500 - 7000 µg/g		Consensus

Analyte	Conc. Range	Slope	Intercept
Propane	500 - 7000 µg/g		Consensus
Propyl acetate	500 - 7000 µg/g		Consensus
Triethylamine	500 - 7000 µg/g		Consensus
C74 Hexavalent Chromium in Soil			
Hexavalent Chromium	40 - 300 µg/g	0.1547	8.546
C75 Particle Size in Soil			
Percent Sand			Consensus
Percent Silt			Consensus
Percent Clay			Consensus
C76 Oil and Grease in Soil			
Total Oil and Grease	300 - 3000 µg/g	0.1567	88.04
C77 Pesticides in Soil			
p,p'-DDT	50 - 500 µg/kg	0.2243	2.65
Aldrin	50 - 500 µg/kg	0.2024	1.8529
Alpha-BHC	50 - 500 µg/kg	0.2004	3.1776
Alpha-Chlordane	50 - 500 µg/kg	0.1876	0.6823
Beta-BHC	50 - 500 µg/kg	0.1788	9.406
Dieldrin	50 - 500 µg/kg	0.1672	4.0365
Endosulfan I	50 - 500 µg/kg	0.1824	5.0749
Endosulfan II	50 - 500 µg/kg	0.2026	3.2251
Endrin	50 - 500 µg/kg	0.1435	7.1706
Lindane	50 - 500 µg/kg	0.1955	6.0037
Gamma-Chlordane	50 - 500 µg/kg	0.1666	2.0584
Heptachlor	50 - 500 µg/kg	0.1911	2.5619
Heptachlor Epoxide	50 - 500 µg/kg	0.1786	2.4451
Methoxychlor	50 - 500 µg/kg	0.2696	6.089
C78 Water Activity/% Moisture in Hemp			
Percent Moisture	1 - 60 %		Consensus
Water Activity	0.1 - 10 aw		Consensus