

TERRA TEK LIMITED
GUIDE TO SAMPLE HANDLING



Version 1.06

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Guidance on Sample Containers & Storage Conditions - SOIL SAMPLES

500ml Plastic Tub



Suitable for: **Inorganic Parameters**, usually sufficient for most routine testing suites. If additional leachates are likely to be required, it is recommended that two tubs are supplied. This container is not suitable when organic compounds are to be determined. Sealed plastic bags may be used as an alternative.

Storage Temperature: Ambient (max 25°C)

1000ml Amber Glass Jar



Suitable for: **Organic Parameters**, such as Total TPH, PAHs or SVOCs. This container is not suitable for volatile organic compounds.

Storage Temperature: 5°C ± 3°C (coolbox)

120ml Glass Vial



Suitable for: **Volatile Organic Parameters**, such as VOCs, BTEX and TPH C5-C12. It is recommended that a minimum of two jars are supplied to allow the laboratory to retest the sample if required. The jar should be filled completely with a minimum of headspace, and should be kept cold at all times.

Storage Temperature: 5°C ± 3°C (coolbox)

Guidance on Sample Containers & Storage Conditions - WATER SAMPLES

1000ml Plastic Bottle



Suitable for: **Most inorganic parameters**, the bottle should be filled with minimum headspace. If the sample contains more than a third settleable solids, it is recommended that a further bottle is filled. Water samples should be kept cold at all times, protected from sunlight and forwarded for testing as soon as practicable. This container is not suitable for volatile organic compounds.

Storage Temperature: $5^{\circ}\text{C} \pm 3^{\circ}\text{C}$ (coolbox)

1000ml Amber Glass Bottle



Suitable for: **Most parameters**, the bottle should be filled with minimum headspace. If the sample contains more than a third settleable solids, it is recommended that a further bottle is filled. Water samples should be kept cold at all times, protected from sunlight and forwarded for testing as soon as practicable. This container is not suitable for volatile organic compounds.

Storage Temperature: $5^{\circ}\text{C} \pm 3^{\circ}\text{C}$ (coolbox)

40ml Glass Vial



Suitable for: **Volatile Organic Parameters**, such as VOCs, BTEX and TPH C5-C12. It is recommended that a minimum of two vials are supplied to allow the laboratory to retest the sample if required. The vial should be filled completely with a minimum of headspace, and should be kept cold at all times. The PTFE layer (shiny side) of the septa should be facing the contents of the vial.

Storage Temperature: $5^{\circ}\text{C} \pm 3^{\circ}\text{C}$ (coolbox)

Guidance on Sample Quantities & Containers

The following tables should be used only as a guide to the average quantity of material required for a particular test. The actual quantity of material required will be greater if the moisture or inert material (ie gravel) content is high, or the quantity of settleable solids in water samples is elevated.

Clients must be aware that required Limits of Detection may not be achieved if there is insufficient sample available to adequately perform the test.

We always recommend taking more sample than is required to allow the laboratory to retest samples where necessary, or to perform additional tests which may be scheduled at a later date. We will advise the client as soon as practicable if there is insufficient sample to perform all requested tests.

Soil Suites

Suite	Minimum Mass	Plastic Tub	Glass Jar (1000ml)	Glass Vial (120ml)	Comments
		T	J	J	
Soil Suite 1 (Mini)	500g	1		(1)	(1) if available
Soil Suite 2 (Midi)	500g	1			
Soil Suite 3 (Maxi)	500g	1			
Soil Suite 3 (Maxi + TPH)	500g	1		(1)	(1) if available
BRE Special Digest 1	500g	1			
TRL Suite	500g	1			
Topsoil Suite	1kg	1			
WAC "Inert Waste"	1kg		1	2	Keep jars cold
WAC "Stable non-reactive"	1kg	2			
WAC "Hazardous"	1kg	2			
WAC Leachate only	1kg	2			
NRA Leaching Protocol	1kg	1	1		
TPHCWG (C5-C40)	50g		1	2	Keep jars cold
TPHCWG (C8-C40)	50g		1		

Water Suites

Suite	Minimum Volume	1000ml Plastic Bottle	1000ml Glass Bottle	Glass Vial	Comments
		W ^P	W ^G	V	
Water Suite 1 (Mini)	2 litres	1	1		
Water Suite 2 (Midi)	3 litres	1	2		
Water Suite 3 (Maxi)	3 litres	1	2		
Water Suite 3 (Maxi + TPH)	3 litres	1	2		
BRE Special Digest 1	500ml	1			
TPHCWG (C5-C40)	1000ml + 40ml		1	2	Keep vials cold
TPHCWG (C8-C40)	1000ml		1		

Individual Parameters

Parameter (Soil)	Minimum Test Mass*	Plastic Tub	Glass Jar (1000ml)	Glass Vial (120ml)	Comments
		T	J	J	
Acid Neutralising Capacity	100g	✓	✓		
Ammoniacal Nitrogen	50g	✓	✓		
Asbestos	100g	✓	✓	✓	See notes on asbestos suspected materials
Asbestos Screen	100g	✓	✓	✓	See notes on asbestos suspected materials
Boron (hot water soluble)	20g	✓	✓		
BTEX/MTBE	50g	x	x	✓	Keep jars cold
Calorific Value	20g	✓	✓		
Chloride, acid soluble	2g	✓	✓		
Chloride, water soluble	50g	✓	✓		
Chromium, hexavalent	20g	✓	✓		
Cyanide, all types	10g	✓	✓		
Diesel Range Organics	50g	x	✓	✓	
Ferric Iron	50g	✓	✓		
Fluoride, water soluble	50g	✓	✓		
Gasoline Range Organics	50g	x	x	✓	Keep jars cold
Herbicides	50g	✓	✓		
Loss on Ignition	5g	✓	✓		
Magnesium, water soluble	50g	✓	✓		
Metals, acid extractable	3g	✓	✓		
Metals, available	10g	✓	✓		
Mineral Oils	50g	x	✓	✓	
Mineral Range Organics	50g	x	✓	✓	
Nitrate	50g	✓	✓		
Nitrite	50g	✓	✓		
Organic Matter (BS1377)	10g	✓	✓		
Organotins	50g	✓	✓		
PAHs	10g	✓	✓		
PCBs	50g	✓	✓		
Pesticides	20g	✓	✓		
pH	20g	✓	✓		
Phenols	10g	✓	✓		
Solvent Extractable Matter	20g	✓	✓		
Sulphate, acid soluble	5g	✓	✓		
Sulphate, water soluble	50g	✓	✓		
Sulphide	20g	✓	✓		
Sulphur, elemental (free)	20g	✓	✓		
Sulphur, total	20g	✓	✓		
Surfactants, anionic	50g	✓	✓		
SVOCS	50g	x	✓	✓	
Thiocyanate	50g	✓	✓		
Total Organic carbon	20g	✓	✓		
TPH (C5-C40)	50g	x	✓	✓	
TPH (C8-C40)	50g	x	✓	✓	
TPH Banding (Texas C6-C40)	50g	x	✓	✓	
TPHCWG Ali/Aro (C5-C40)	50g	x	✓	✓	
TPHCWG Ali/Aro (C8-C40)	50g	x	✓	✓	
VOCs	50g	x	x	✓	

* For most inorganics this is the mass after drying and removal of inert material, so more material is likely to be required. For most organics this is the mass of the unprepared sample

Parameter (Water)	Minimum Test Volume	Plastic Bottle	Glass Bottle	Glass Vial	Comments
		W ^P	W ^G	V	
Aggressive Carbon dioxide	100ml	x	x	x	Special containers required – contact lab
Alkalinity, total as CaCO ₃	100ml	✓	✓		
Ammoniacal Nitrogen	10ml	✓	✓		
Biochemical Oxygen Demand (BOD)	250ml	✓	✓		
Boron	10ml	✓	x	x	Glass should not be used
BTEX/MTBE	40ml	x	x	✓	Keep vials cold
Chemical Oxygen Demand (COD)	2ml	✓	✓		
Chloride	20ml	✓	✓		
Chlorine	50ml	✓	✓		
Chromium, hexavalent	50ml	✓	✓		
Conductivity	50ml	✓	✓		
Cyanide, all types	100ml	✓	✓		
Dissolved Organic Carbon	40ml	x	✓	✓	Keep vials cold
Dissolved Oxygen	40ml	x	x	✓	Keep vials cold
Dissolved Solids	100ml	✓	✓		
Ferric Iron (Fe III)	50ml	✓	✓		
Ferrous Iron (Fe II)	50ml	✓	✓		
Fluoride	20ml	✓	x	x	Glass should not be used
Gasoline Range Organics	40ml	x	x	✓	Keep vials cold
Hardness	50ml	✓	✓		
Herbicides	50ml	x	✓		
Metals, dissolved	300ml	✓			
Mineral Oils	1000ml	x	✓		
Mineral Range Organics	1000ml	x	✓		
Nitrate	100ml	✓	✓		
Nitrite	100ml	✓	✓		
Organoleads	40ml	x	x	✓	Keep vials cold
Organotins	1000ml	✓	✓		
PAHs (Suite 1 & 2)	500ml	x	✓		
PCBs	200ml		✓		
Pesticides	500ml		✓		
pH	10ml	✓	✓		
Phenol	500ml	✓	✓		
Solvent Extractable Matter	1000ml	x	✓		
Sulphate	100ml	✓	✓		
Sulphide	100ml	✓	✓		
Sulphur, free	50ml	✓	✓		
Surfactants (MBAS), anionic	100ml	✓	✓		
Suspended Solids	100ml	✓	✓		
SVOCs	500ml	x	✓		
Thiocyanate	50ml	✓	✓		
Total Oxidised Nitrogen	100ml	x	✓	✓	Keep vials cold
TPH (C5-C40)	1000ml + 40ml	x	✓	✓	Keep vials cold
TPH (C8-C40)	1000ml	x	✓		
TPH Banding (Texas)	1000ml	x	✓		
TPHCWG Ali/Aro (C5-C40)	1000ml + 40ml	x	✓	✓	Keep vials cold
TPHCWG Ali/Aro (C8-C40)	1000ml	x	✓		
VOCs	40ml	x	x	✓	Keep vials cold
Phosphate	40ml	✓	✓		