METHOD STATEMENT

Determinand:
Determination of extractable phosphorus

Matrix:
Sample Type: soil samples

Principle of Method:
Phosphorus is extracted from the soil at 20±5°C with a sodium bicarbonate solution at pH 8.5. Phosphate in the extract reacts with acid ammonium molybdate to form a phosphomolybdate, which is reduced with ascorbic acid. The concentration of the blue complex produced is measured spectrophotometrically at 880 nm.

Sampling and Sample Preparation:
Samples are normally taken in soil pots with ground soils being stored at room temperature and wet soils being refrigerated at 3 ± 2°C
Samples are stable for 7 days (BS ISO 18512: 2007) from sampling.
Soil samples are air-dried and ground according to method WSC15 prior to analysis.

Interferences
Interferences from organic matter, leading to turbid extracts, or by highly coloured extracts are overcome by the procedures used

Performance of Method:

Range of Application:
1 - 140 mg/kg
The normal reporting limit is 5 mg/kg when a weight of soil is taken.
% MAFF P Normal reporting limit: 0.0005%

Limit of Detection and Calibration bias:
4.0673mg/ll
% MAFF P Method LOD: 0.00040673%

Recoveries of Compounds and Uncertainty of measurement:

	Low Std	*High Std*	*CRM*	*Sand*	*Clay*	*Loam*
µg P	*40.521*	*117.077*	*81.713*	*39.936*	*9.983*	*11.767*
SD µg P	*4.28*	*3.91*	*7.11*	*5.21*	*8.40*	*9.07*
% Recovery	*101.30*	*97.56*	*90.79*	--------	--------	--------

References:
The Analysis of Agricultural Materials, Reference Book 427, 3rd edition. Ministry of Agriculture, Fisheries and Food. HMSO. ISBN 0 11 242762 6. Method 59.
Fertiliser Recommendations, Reference Book 209. Ministry of Agriculture, Fisheries and Food. HMSO. ISBN 0 11 242813 4. Appendix 1.
WSC15 Preparation of Soil Prior to Analysis
WSC17 - Analysis of Soil Density Used to Correct MAFF Results to mg/l