Appendix 11.

Lancrop Laboratories

Analysis Results (SOIL)

Customer DEMETER

Distributor DEMETER TECHNOLOGY
5 ST ANDREWS CLOSE
ISLEHAM
CAMBS
CB7 5TB

Sample Ref COUNTY COUNCIL SUBSOIL 1

Sample No G021447/01 SNTS Pit 6.

Crop NON STATED

Date Received 13/09/2022 (Date Issued: 03/10/2022)

Soil Characteristics	Result	Low	Normal	High
pH	8.2			
Org. Matter - DUMAS (%)	1.0			
C.E.C. (meq/100g)	9.4			
Soil Respiration (mg/kg)	35			
C:N Ratio	15.3			
Texture Class	CLLO			
Org. Carbon Stock (t/ha)	11.3			

Major Nutrients	Result	0	1	2-	2+	3	4+
Phosphorus (ppm)	10						
Potassium (ppm)	69						
Magnesium (ppm)	28						

Secondary and Micro Nutrients	Result	Deficient	Maintenance	High
Calcium (ppm)	2259			
Sulphur (ppm)	4			
Sodium (ppm)	12			
Boron (ppm)	0.35			
Copper (ppm)	1.4			
Iron (ppm)	81			
Manganese (ppm)	56			
Molybdenum (ppm)	0.04			
Zinc (ppm)	1.6			

Released by Chris Lindley.....Laboratory Manager on behalf of Lancrop Laboratories

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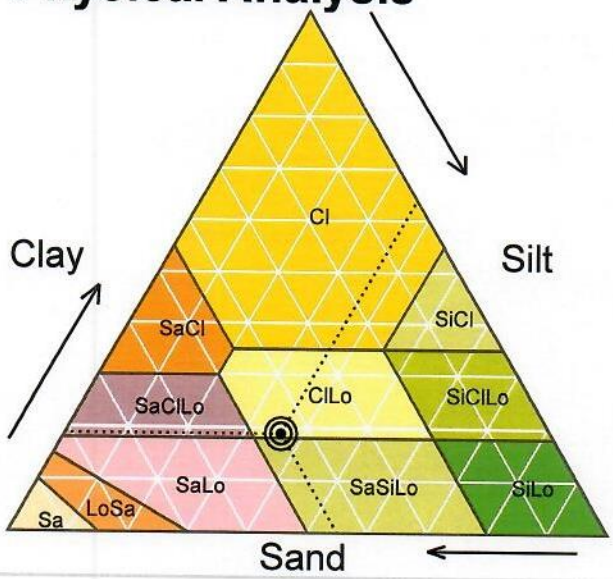
PAAG Professional Agricultural Analysis Group

Lancrop Laboratories

Analysis Results (SOIL)

Customer	DEMETER	**Distributor**	DEMETER TECHNOLOGY
Sample Ref	COUNTY COUNCIL SUBSOIL 1	**Date Received**	13/09/2022 (Date Issued: 03/10/2022)
Sample No	G021447/01 SNTS Pit 6.		
Crop	NON STATED		

Physical Analysis



Analysis	Result (%)
Sand	45.09
Silt	36.02
Clay	18.89
Soil Type	ClLo Clay Loam

Property	Assessment
Available Water	Medium to High
Drainage Rate	Medium to Slow
Inherent Fertility	Medium to High
Potential C.E.C.	Medium to High
Leaching Risk	Moderate to Low
Warming Rate	Medium

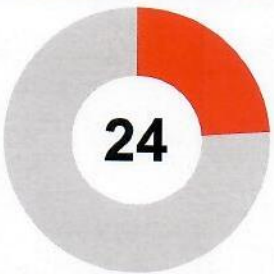
Biological Analysis

SOLVITA®

Analysis	Result	Ideal
Solvita Burst CO2-C (ppm)	35	>70
Organic Carbon (%)	0.6	
Total Nitrogen (%)	0.038	
C:N Ratio	15.3	10-12

Calculated Parameters	Result
Microbial Biomass (mg/kg)	800
Solvita Potentially Mineralizable Nitrogen (kg N/ha)	15
Soil Assessment Score	24/100

Soil Assessment Score



Microbial Biomass and Potentially Mineralizable N are calculated from the Solvita CO2-C Burst. The Potentially Mineralizable N assumes ideal conditions. Soil Assessment Score is calculated from biological, chemical and physical results.

pH impact on soil biology

Increasing Acidity
Fungi thrive
Bacterial activity declines
Nutrient cycling drops

Neutral
Desirable fungal and bacterial activity
Good earthworm activity
Nutrient cycling thrives

Increasing Alkalinity
Fungal activiy declines
Bacteria thrive
Nutrient cycling drops

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Lancrop Laboratories

Analysis Results (SOIL)

Customer DEMETER
Sample Ref COUNTY COUNCIL SUBSOIL 1
Sample No G021447/01 SNTS Pit 6.
Crop NON STATED

Distributor DEMETER TECHNOLOGY
Date Received 13/09/2022 (Date Issued: 03/10/2022)

Analysis	Result	Guideline	Comments
pH	8.2	6.5	High. An alkaline environment will reduce the availability of certain nutrients - particularly P, K, B, Co, Cu, Fe, Mn and Zn. An elevated pH will also impact on beneficial soil fungal populations and activity.
Org. Matter - DUMAS (%)	1.0	3.0	Low. Soils with medium to high levels of organic matter would generally be expected to have a good potential fertility and good structure, moisture retention and water infiltration. Investigate soil conditons to establish if soil management practices can improve levels of organic matter.
C.E.C. (meq/100g)	9.4	15.0	Cation Exchange Capacity indicates a low nutrient holding ability - soil applied nutrients will be readily leached. Where possible foliar applied nutrients should be recommended.
Soil Respiration (mg/kg)	35	70	Slightly low aerobic microbial activity and mineralisation potential. Further investigation of soil conditons is recommended to establish if soil management practices can improve biological fertility.
C:N Ratio	15.3	10.0	High. A low C:N ratio in the soil encourages microbial activity and the amount and rate of nutrients made available to the plants through mineralisation. A ratio of 12 - 25 indicates the potential for a slow rate of decompostion of organic residue and a high retention of applied organic materials.
Texture Class	CLLO		
Org. Carbon Stock (t/ha)	11.3	34.0	The calculated level of organic carbon (active + humus) within one hectare when soil bulk density is either assumed (1.3g/cm3) or has been overwritten with a disturbed soil measured value (if SCA Extra has been requested) and soil depth is 15cm. Please see footnotes for calculation if you wish to adapt. Multiply the OC stock value by the field area (hectares) to indicate level of carbon stored within the field.
Phosphorus (ppm)	10	26	**(Index 1.0)**
Potassium (ppm)	69	241	**(Index 1.1)**
Magnesium (ppm)	28	100	**(Index 1.1)**
Calcium (ppm)	2259	1600	
Sulphur (ppm)	4	10	
Sodium (ppm)	12	90	
Boron (ppm)	0.35	2.10	

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Analysis Results (SOIL)

Customer	DEMETER	**Distributor**	DEMETER TECHNOLOGY
Sample Ref	COUNTY COUNCIL SUBSOIL 1	**Date Received**	13/09/2022 (Date Issued: 03/10/2022)
Sample No	G021447/01 SNTS Pit 6.		
Crop	NON STATED		

Analysis	Result	Guideline	Comments
Copper (ppm)	1.4	2.1	
Iron (ppm)	81	50	
Manganese (ppm)	56	110	
Molybdenum (ppm)	0.04	0.20	
Zinc (ppm)	1.6	4.1	

Additional Comments

Carbon Stock (t/ha) has been calculated with assumed bulk density of 1.3 g/cm3) and sampling depth of 15 cm.
To recalculate the Carbon Stock using other depths and bulk densities please use this calculation:
Carbon (%) x Sampling Depth (cm) x Bulk Density (g/cm3) = Carbon Stock (t/ha)
E.g. 4.0% x 15cm x 1.3 g/cm3 = 78 t/ha carbon stock.
Where applicable soil applied P,K and pH recommendations are taken from AHDB Nutrient Management Guide (RB209)

Any indicated Lime Requirement assumes a medium textured soil.
Additional technical bulletins are available at www.lancrop.com.

Please Note

Whilst every care is taken to ensure that the Results from Analysis are as accurate as possible, it is important to note that the analysis relates to the sample received by the laboratory, and is representative only of that sample. No warranty is given by the laboratory that the Results from Analysis relates to any part of a field or growing area not covered by the sample received. It is important to ensure that any soil, leaf, silage or fruitlet sample sent for analysis is representative of the area requiring analysis and that samples are obtained in accordance with established sampling techniques. A leaflet containing instructions on how to take soil, leaf, herbage, silage and fruit samples for analysis is available from the laboratory on request. Uncertainty measurements of results are available on request

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Analysis Results (SOIL)

Customer DEMETER

Distributor DEMETER TECHNOLOGY
5 ST ANDREWS CLOSE
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CB7 5TB

Sample Ref COUNTY COUNCIL TOPSOIL 1

Sample No G021447/02 SNTS Pit6.

Crop NON STATED

Date Received 13/09/2022 (Date Issued: 03/10/2022)

Soil Characteristics	Result	Low	Normal	High
pH	8.1			
Org. Matter - DUMAS (%)	2.0			
C.E.C. (meq/100g)	11.6			
Soil Respiration (mg/kg)	51			
C:N Ratio	11.2			
Texture Class	CLLO			
Org. Carbon Stock (t/ha)	22.7			

Major Nutrients	Result	0	1	2-	2+	3	4+
Phosphorus (ppm)	27						
Potassium (ppm)	210						
Magnesium (ppm)	36						

Secondary and Micro Nutrients	Result	Deficient	Maintenance	High
Calcium (ppm)	2697			
Sulphur (ppm)	8			
Sodium (ppm)	12			
Boron (ppm)	1.22			
Copper (ppm)	3.4			
Iron (ppm)	35			
Manganese (ppm)	62			
Molybdenum (ppm)	0.03			
Zinc (ppm)	3.7			

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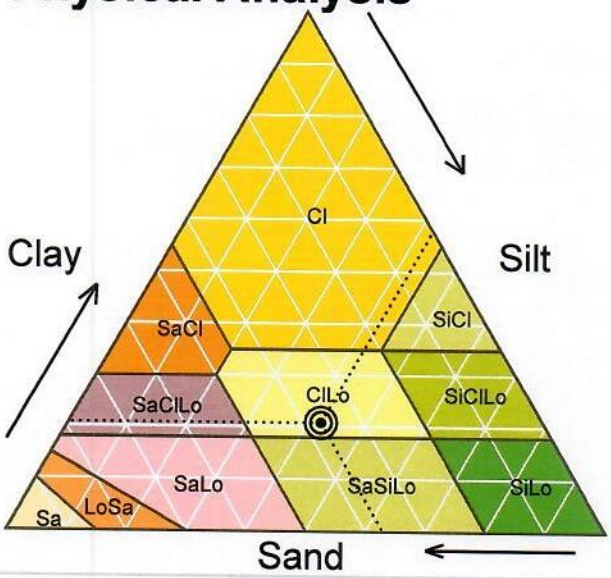
Analysis Results (SOIL)

Customer	DEMETER	**Distributor**	DEMETER TECHNOLOGY
Sample Ref	COUNTY COUNCIL TOPSOIL 1	**Date Received**	13/09/2022 (Date Issued: 03/10/2022)
Sample No	G021447/02 SNTS P.+6.		
Crop	NON STATED		

Physical Analysis



Analysis	Result (%)
Sand	37.10
Silt	42.10
Clay	20.80
Soil Type	ClLo
	Clay Loam

Property	Assessment
Available Water	Medium to High
Drainage Rate	Medium to Slow
Inherent Fertility	Medium to High
Potential C.E.C.	Medium to High
Leaching Risk	Moderate to Low
Warming Rate	Medium

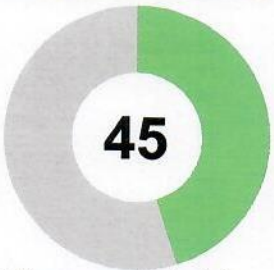
Biological Analysis

SOLVITA®

Analysis	Result	Ideal
Solvita Burst CO2-C (ppm)	51	>70
Organic Carbon (%)	1.2	
Total Nitrogen (%)	0.104	
C:N Ratio	11.2	10-12

Calculated Parameters	Result
Microbial Biomass (mg/kg)	1152
Solvita Potentially Mineralizable Nitrogen (kg N/ha)	31
Soil Assessment Score	45/100

Soil Assessment Score



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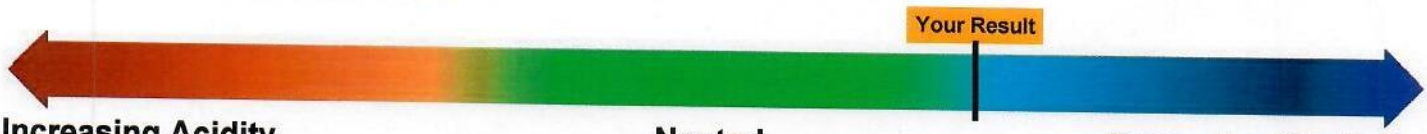
pH impact on soil biology



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Sample Ref COUNTY COUNCIL TOPSOIL 1
Sample No G021447/02 SNTS Pit 6.
Crop NON STATED

Distributor DEMETER TECHNOLOGY
Date Received 13/09/2022 (Date Issued: 03/10/2022)

Analysis	Result	Guideline	Comments
pH	8.1	6.5	High. An alkaline environment will reduce the availability of certain nutrients - particularly P, K, B, Co, Cu, Fe, Mn and Zn. An elevated pH will also impact on beneficial soil fungal populations and activity.
Org. Matter - DUMAS (%)	2.0	3.0	Slightly low. Soils with medium to high levels of organic matter would generally be expected to have a good potential fertility and good structure, moisture retention and water infiltration. Investigate soil conditons to establish if soil management practices can improve levels of organic matter.
C.E.C. (meq/100g)	11.6	15.0	Cation Exchange Capacity indicates a slightly low nutrient holding ability - soil applied nutrients could be readily leached. Where possible foliar applied nutrients should be recommended.
Soil Respiration (mg/kg)	51	70	Slightly low aerobic microbial activity and mineralisation potential. Further investigation of soil conditons is recommended to establish if soil management practices can improve biological fertility.
C:N Ratio	11.2	10.0	Normal. A low C:N ratio in the soil encourages microbial activity and the amount and rate of nutrients made available to the plants through mineralisation. A ratio of 10 - 12 indicates the potential for a good rate of decompostion of organic residue and retention of applied organic materials.
Texture Class	CLLO		
Org. Carbon Stock (t/ha)	22.7	34.0	The calculated level of organic carbon (active + humus) within one hectare when soil bulk density is either assumed (1.3g/cm3) or has been overwritten with a disturbed soil measured value (if SCA Extra has been requested) and soil depth is 15cm. Please see footnotes for calculation if you wish to adapt. Multiply the OC stock value by the field area (hectares) to indicate level of carbon stored within the field.
Phosphorus (ppm)	27	26	**(Index 3.1)**
Potassium (ppm)	210	241	**(Index 2.7)**
Magnesium (ppm)	36	100	**(Index 1.4)**
Calcium (ppm)	2697	1600	
Sulphur (ppm)	8	10	
Sodium (ppm)	12	90	
Boron (ppm)	1.22	2.10	

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Sample No	G021447/02 SNTS Pit 6.		
Crop	NON STATED		

Analysis	Result	Guideline	Comments
Copper (ppm)	3.4	2.1	
Iron (ppm)	35	50	
Manganese (ppm)	62	110	
Molybdenum (ppm)	0.03	0.20	
Zinc (ppm)	3.7	4.1	

Additional Comments

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