



Contact : ANALYSIS SERVICES DIRECT  
 NRM LABORATORIES  
 COOPERS BRIDGE  
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 Tel. : 01344 886338

**R600**

Please quote the above code for all enquiries

Client : TOM O KANE  
 SWN Y DON  
 PHILIPS FIELD  
 PARKMILL  
 SWANSEA  
 SA3 2EP

Sample Matrix : Agricultural Soil

Laboratory Reference

Card Number 70467/18

Date Received 18-Jan-18  
 Date Reported 23-Jan-18

## SOIL ANALYSIS REPORT

Laboratory Sample Reference	Field Details			Index			mg/l (Available)		
	No.	Name or O.S. Reference with Cropping Details	Soil pH	P	K	Mg	P	K	Mg
502304/18	1	<b>SOUTH WEST FIELD</b> <i>No cropping details given</i>	<b>7.1</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>30.6</b>	<b>87</b>	<b>79</b>
502305/18	2	<b>NORTH EAST FIELD</b> <i>No cropping details given</i>	<b>6.6</b>	<b>2</b>	<b>2-</b>	<b>2</b>	<b>23.0</b>	<b>147</b>	<b>71</b>

If general fertiliser and lime recommendations have been requested, these are given on the following sheets.

The analytical methods used are as described in DEFRA Reference Book 427

The index values are determined from the DEFRA Fertiliser Recommendations RB209 9th Edition.

Released by Liam Lynch On behalf of NRM Ltd Date 23/01/18

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## MICRO NUTRIENT REPORT

DATE **23rd January 2018**

SAMPLES FROM **TOM O KANE, SWN Y DON,  
PHILIPS FIELD, PARKMILL**

ANALYSIS SERVICES DIRECT  
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Reference: <b>70467/502304/18</b>	Field Name: <b>SOUTH WEST FIELD</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l		12.2						
Boron (Hot Water Soluble) mg/l		1.4						
Sodium (Ammonium Nitrate Extractable) mg/l		27.0	1					
Zinc (EDTA Extractable) mg/l		12.9	2					
Calcium (Ammonium Nitrate Extractable) mg/l		2080.0	3					
Iron (DPTA Extractable) mg/l		99.5	4					
Organic matter (LOI) %		6.6	5	OM level	data not available for this crop			
Sulphate (Phosphate Buffer Extractable) mg/l		20.6	6					
Manganese (DPTA Extractable) mg/l		62.9	7					
Estimated Cation Exchange Capacity meq/100g		14.9	8					

Reference: <b>70467/502305/18</b>	Field Name: <b>NORTH EAST FIELD</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l		8.4						
Boron (Hot Water Soluble) mg/l		1.1						
Sodium (Ammonium Nitrate Extractable) mg/l		18.5	1					
Zinc (EDTA Extractable) mg/l		6.4	2					
Calcium (Ammonium Nitrate Extractable) mg/l		1415.0						
Iron (DPTA Extractable) mg/l		113.0	4					
Organic matter (LOI) %		6.1	5	OM level	data not available for this crop			
Sulphate (Phosphate Buffer Extractable) mg/l		19.8	6					
Manganese (DPTA Extractable) mg/l		36.0	7					
Estimated Cation Exchange Capacity meq/100g		12.0	9					

### Notes (\*)

- (1) Sodium is a non essential plant nutrient. It is seldom, if ever, deficient except for Sugar Beet and Spinach. No crops show recognisable symptoms of sodium deficiency. This soil is low in potassium and any crop of Sugar Beet, Fodder Beet, Red Beet, Mangels, Turnips or Celery will require extra potassium and will respond to the addition of sodium fertiliser. Sodium has a positive influence on the mineral nutrition of plants, especially those growing on low potassium soil. Response may be seen in Barley, Wheat, Oats, Peas, Cabbage, Kale and Spinach. Sodium can be applied as agricultural salt at 150kg/ha. Kainit may be used at 1t/ha and this will usually supply adequate amounts of sodium and potassium. Sodium levels in mineral soils are usually below 20mg/l available sodium. Sodium is easily leached from nearly all soil types and it is difficult to build up sodium levels over a period of years. The most responsive crops (beets) are usually grown in three or four year rotations and therefore need sodium fertiliser every time they are grown.
- (2) High available zinc levels in soil can occur naturally or may be as a result of sludge, slurry or manure applications year on year. The soil should be tested for the total zinc level (and any other potentially toxic heavy metals) to check that levels have not become excessive due to organic manure applications.
- (3) High levels of calcium in the soil usually reflect high soil pH. Avoid any applications of liming material.
- (4) Very high levels of iron are common in soil, as it is one of the most abundant elements in soils and rocks. High levels are not generally associated with excess iron availability to the plant but may have implications in the availability of other elements to the growing crop, such as manganese, zinc and copper.
- (5) NRM considers Organic soils to contain between 10-20% organic material with Peaty soils containing over 20% . The optimum ranges for Organic Matter which have been set are dependent on the soil type and the cropping but these must be viewed as guidance values only.
- (6) Plants absorb sulphur as the sulphate ion. Sulphates are not retained in the soil, to any great extent, they are soluble and tend to move with the soil water and are readily leached by high rainfall or irrigation. This is particularly true for low capacity (sandy) soils. Sulphur behaves very much like nitrogen, the largest pool of sulphur is contained within the organic matter. The sulphate sulphur becomes available to the plant via bacterial breakdown of the organic matter, atmospheric sulphur and other forms of reduced sulphur. Intensification of agriculture, improved crop varieties, the use of sulphur free fertilisers and

*Report continued.....*



## MICRO NUTRIENT REPORT

DATE **23rd January 2018**  
SAMPLES FROM **TOM O KANE, SWN Y DON,  
PHILIPS FIELD, PARKMILL**

ANALYSIS SERVICES DIRECT  
NRM LABORATORIES  
COOPERS BRIDGE  
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### Notes (Continued)

control of atmospheric pollution have aggravated the sulphur deficiency problem. In many UK soils, the distribution of sulphate sulphur may not be consistent throughout the soil profile. A profile test down to 90cm should be considered before using the soil test levels alone to calculate fertiliser sulphur requirements. If the soil has relatively high sulphur levels at lower depths, the amounts can be reduced. The best method of building soil sulphur reserves is by adding organic materials and maintaining an adequate organic matter content. Where satisfactory organic sulphur reserves cannot be maintained, certain fertilisers or amendments have to be used to supply the crop with its sulphur requirement.

- (7) High nitrogen and phosphorus applications to soil may result in increased manganese availability. This can also be caused by acidic soil conditions (low pH).
- (8) CEC level is Medium (12-25). Pumice soils often in the range 13-18; lower fertility mineral soils in the range 15-25.
- (9) CEC level is Low (0-12). Soil maybe very low in organic matter. Typical of sandy soils.



DATE 23rd January 2018  
SAMPLES FROM TOM O KANE, SWN Y DON,  
PHILIPS FIELD, PARKMILL

SAMPLED BY

Report reference 70467/18

ANALYSIS SERVICES DIRECT  
NRM LABORATORIES  
COOPERS BRIDGE  
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BERKS  
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### Fertiliser Recommendations

The phosphate and potash recommendations shown below, are those required to replace the offtake and maintain target soil indices. The larger recommended applications for soils below target index will allow the soil to build up to this target index over a number of years. Not applying fertiliser to soils which are above target index will allow the soil to run down over a number of years to the target index.

The recommendation should be increased or decreased where yields are substantially more or less than that specified. The amount to apply can be calculated using the expected yield and values for the offtake of phosphate and potash per tonne of yield given in the RB209 9th edition.

All recommendations are given for the mid-point of each Index.

Where a soil analysis value (as given by the laboratory) is close to the range of an adjacent Index, the recommendation may be reduced or increased slightly taking account of the recommendation given for the adjacent Index. Small adjustments of less than 10 kg/ha are generally not justified.

Don't forget to deduct nutrients applied as organic manures.

For Nitrogen recommendations please refer to the RB209 9th edition or seek advice from an FACTS qualified adviser.

Target Indices:

Arable, Forage, Grassland and Potato Crops: P Index 2, K Index 2-

Vegetables and Bulbs: P Index 3, K Index 2-

Fruit Vines and Hops: P Index 2, K Index 2, Mg Index 2

(Note: Cider apples respond to K Index 3, Mg Index 3)

Field Name / Ref / Soil Type	Last Crop / Next Crop	P2O5	K2O	MgO	Lime (Arable)	(Grass)	
<b>SOUTH WEST FIELD</b>	<b>Not Given / Not Given</b>	Units/Acre			T/Ac	<b>0</b>	<b>0</b>
<b>502304 /</b>		Kg/Ha			Te/Ha	<b>0</b>	<b>0</b>

Field Name / Ref / Soil Type	Last Crop / Next Crop	P2O5	K2O	MgO	Lime (Arable)	(Grass)	
<b>NORTH EAST FIELD</b>	<b>Not Given / Not Given</b>	Units/Acre			T/Ac	<b>0</b>	<b>0</b>
<b>502305 /</b>		Kg/Ha			Te/Ha	<b>0</b>	<b>0</b>

Fertiliser recommendations are based on **(Ninth Edition - 2017)**. If a nutrient is deficient and no recommendation is given, either no recommendation is given in RB209 or we have insufficient data to give a recommendation. Apply Lime to the nearest half Ton / Tonne.

NRM is a UKAS accredited laboratory to ISO/IEC 17025:2005

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 Tel. : 01273 911494

**T363**

Please quote the above code for all enquiries

Client :

Sample Matrix : Agricultural Soil

Laboratory Reference

Card Number 71760/18

Date Received 19-Feb-18

Date Reported 01-Mar-18

## SOIL ANALYSIS REPORT

Laboratory Sample Reference	Field Details		Soil pH	Index			mg/l (Available)		
	No.	Name or O.S. Reference with Cropping Details		P	K	Mg	P	K	Mg
508297/18	1	<b>PIT PARK A</b> <i>No cropping details given</i>	<b>5.7</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>13.4</b>	<b>61</b>	<b>84</b>
508298/18	2	<b>HIGHER CROFT B</b> <i>No cropping details given</i>	<b>6.5</b>	<b>2</b>	<b>2-</b>	<b>2</b>	<b>17.2</b>	<b>164</b>	<b>79</b>
508299/18	3	<b>HIGHER CROFT C</b> <i>No cropping details given</i>	<b>7.2</b>	<b>3</b>	<b>2+</b>	<b>2</b>	<b>28.2</b>	<b>221</b>	<b>67</b>
508300/18	4	<b>D</b> <i>No cropping details given</i>	<b>6.6</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>23.6</b>	<b>72</b>	<b>74</b>

If general fertiliser and lime recommendations have been requested, these are given on the following sheets.

The analytical methods used are as described in DEFRA Reference Book 427

The index values are determined from the DEFRA Fertiliser Recommendations RB209 9th Edition.

Released by Liam Lynch On behalf of NRM Ltd Date 01/03/18

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# MICRO NUTRIENT REPORT

DATE **1st March 2018**

SAMPLES FROM

OLI RODKER  
 ECOLOGICAL LAND CO-OP  
 UNIT B04  
 BRIGHTON ECO CENTRE  
 SURREY STREET  
 BRIGHTON BN1 3PB  
 Tel: 01273 911494

Reference: <b>71760/508297/18</b>	Field Name: <b>PIT PARK A</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l		6.2						
Boron (Hot Water Soluble) mg/l		0.5	1					
Sodium (Ammonium Nitrate Extractable) mg/l		22.7	2					
Zinc (EDTA Extractable) mg/l		5.1						
Calcium (Ammonium Nitrate Extractable) mg/l		1015.0	3					
Iron (DPTA Extractable) mg/l		247.8	4					
Organic matter (LOI) %		4.5	5	OM level data not available for this crop				
Sulphate (Phosphate Buffer Extractable) mg/l		13.8	6					
Manganese (DPTA Extractable) mg/l		43.7	7					
Sand (2.00 - 0.063mm) %		48						
Silt (0.063 - 0.002mm) %		30						
Clay (< 0.002mm) %		22						
Textural Classification		Clay Loam						
Estimated Cation Exchange Capacity meq/100g		14.4	8					

Reference: <b>71760/508298/18</b>	Field Name: <b>HIGHER CROFT B</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l		7.6						
Boron (Hot Water Soluble) mg/l		1.0						
Sodium (Ammonium Nitrate Extractable) mg/l		17.9	2					
Zinc (EDTA Extractable) mg/l		5.6						
Calcium (Ammonium Nitrate Extractable) mg/l		1447.9						
Iron (DPTA Extractable) mg/l		124.8	4					
Organic matter (LOI) %		6.0	5	OM level data not available for this crop				
Sulphate (Phosphate Buffer Extractable) mg/l		15.6	6					
Manganese (DPTA Extractable) mg/l		30.7	7					
Sand (2.00 - 0.063mm) %		19						
Silt (0.063 - 0.002mm) %		49						
Clay (< 0.002mm) %		32						
Textural Classification		Silty Clay Loam						
Estimated Cation Exchange Capacity meq/100g		12.8	8					

Reference: <b>71760/508299/18</b>	Field Name: <b>HIGHER CROFT C</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l		8.3						
Boron (Hot Water Soluble) mg/l		1.1						
Sodium (Ammonium Nitrate Extractable) mg/l		15.2	2					
Zinc (EDTA Extractable) mg/l		7.0	9					
Calcium (Ammonium Nitrate Extractable) mg/l		1868.9						
Iron (DPTA Extractable) mg/l		64.1	4					
Organic matter (LOI) %		5.3	5	OM level data not available for this crop				
Sulphate (Phosphate Buffer Extractable) mg/l		13.0	6					
Manganese (DPTA Extractable) mg/l		21.7	7					
Sand (2.00 - 0.063mm) %		20						

Report continued.....



# MICRO NUTRIENT REPORT

DATE **1st March 2018**

OLI RODKER  
 ECOLOGICAL LAND CO-OP  
 UNIT B04  
 BRIGHTON ECO CENTRE  
 SURREY STREET  
 BRIGHTON BN1 3PB  
 Tel: 01273 911494

SAMPLES FROM

Reference: <b>71760/508299/18</b>	Field Name: <b>HIGHER CROFT C</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Silt (0.063 - 0.002mm) %		49						
Clay (< 0.002mm) %		31						
Textural Classification		Silty Clay Loam						
Estimated Cation Exchange Capacity meq/100g		13.8	8					

Reference: <b>71760/508300/18</b>	Field Name: <b>D</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l		9.2						
Boron (Hot Water Soluble) mg/l		1.0						
Sodium (Ammonium Nitrate Extractable) mg/l		21.9	2					
Zinc (EDTA Extractable) mg/l		8.2	9					
Calcium (Ammonium Nitrate Extractable) mg/l		1909.8						
Iron (DPTA Extractable) mg/l		110.8	4					
Organic matter (LOI) %		5.9	5	OM level data not available for this crop				
Sulphate (Phosphate Buffer Extractable) mg/l		14.8	6					
Manganese (DPTA Extractable) mg/l		32.4	7					
Sand (2.00 - 0.063mm) %		27						
Silt (0.063 - 0.002mm) %		36						
Clay (< 0.002mm) %		37						
Textural Classification		Clay						
Estimated Cation Exchange Capacity meq/100g		15.1	8					

**Notes (\*)**

- (1) Boron will become less available on heavily limed soils, especially those with fine textures. Boron can also leach from sandy acid soils that are low in organic matter.
- (2) Sodium is a non essential plant nutrient. It is seldom, if ever, deficient except for Sugar Beet and Spinach. No crops show recognisable symptoms of sodium deficiency. This soil is low in potassium and any crop of Sugar Beet, Fodder Beet, Red Beet, Mangels, Turnips or Celery will require extra potassium and will respond to the addition of sodium fertiliser. Sodium has a positive influence on the mineral nutrition of plants, especially those growing on low potassium soil. Response may be seen in Barley, Wheat, Oats, Peas, Cabbage, Kale and Spinach. Sodium can be applied as agricultural salt at 150kg/ha. Kainit may be used at 1t/ha and this will usually supply adequate amounts of sodium and potassium. Sodium levels in mineral soils are usually below 20mg/l available sodium. Sodium is easily leached from nearly all soil types and it is difficult to build up sodium levels over a period of years. The most responsive crops (beets) are usually grown in three or four year rotations and therefore need sodium fertiliser every time they are grown.
- (3) Calcium plays an important role in soil fertility and its status is reflected in the pH of the soil. Plants thrive best when the predominant base in the soil is calcium. If other bases, such as magnesium, potassium or sodium are present in amounts equal to or greater than calcium, nutritional disturbances can occur. Correction is by application of a calcium based liming material.
- (4) Very high levels of iron are common in soil, as it is one of the most abundant elements in soils and rocks. High levels are not generally associated with excess iron availability to the plant but may have implications in the availability of other elements to the growing crop, such as manganese, zinc and copper.
- (5) NRM considers Organic soils to contain between 10-20% organic material with Peaty soils containing over 20% . The optimum ranges for Organic Matter which have been set are dependent on the soil type and the cropping but these must be viewed as guidance values only.
- (6) Plants absorb sulphur as the sulphate ion. Sulphates are not retained in the soil, to any great extent, they are soluble and tend to move with the soil water and are readily leached by high rainfall or irrigation. This is particularly true for low capacity (sandy) soils. Sulphur behaves very much like nitrogen, the largest pool of sulphur is contained within the organic matter. The sulphate sulphur becomes available to the plant via bacterial breakdown of the organic matter, atmospheric sulphur and other forms of reduced sulphur. Intensification of agriculture, improved crop varieties, the use of sulphur free fertilisers and

*Report continued.....*



## MICRO NUTRIENT REPORT

DATE **1st March 2018**

SAMPLES FROM

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ECOLOGICAL LAND CO-OP  
UNIT B04  
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SURREY STREET  
BRIGHTON BN1 3PB  
Tel: 01273 911494

### Notes (Continued)

control of atmospheric pollution have aggravated the sulphur deficiency problem. In many UK soils, the distribution of sulphate sulphur may not be consistent throughout the soil profile. A profile test down to 90cm should be considered before using the soil test levels alone to calculate fertiliser sulphur requirements. If the soil has relatively high sulphur levels at lower depths, the amounts can be reduced. The best method of building soil sulphur reserves is by adding organic materials and maintaining an adequate organic matter content. Where satisfactory organic sulphur reserves cannot be maintained, certain fertilisers or amendments have to be used to supply the crop with its sulphur requirement.

- (7) High nitrogen and phosphorus applications to soil may result in increased manganese availability. This can also be caused by acidic soil conditions (low pH).
- (8) CEC level is Medium (12-25). Pumice soils often in the range 13-18; lower fertility mineral soils in the range 15-25.
- (9) High available zinc levels in soil can occur naturally or may be as a result of sludge, slurry or manure applications year on year. The soil should be tested for the total zinc level (and any other potentially toxic heavy metals) to check that levels have not become excessive due to organic manure applications.





DATE 1st March 2018  
 SAMPLES FROM

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 UNIT B04  
 BRIGHTON ECO CENTRE  
 SURREY STREET  
 BRIGHTON BN1 3PB  
 Tel: 01273 911494  
 Fax:

SAMPLED BY

Report reference 71760/18

### Fertiliser Recommendations

The phosphate and potash recommendations shown below, are those required to replace the offtake and maintain target soil indices. The larger recommended applications for soils below target index will allow the soil to build up to this target index over a number of years. Not applying fertiliser to soils which are above target index will allow the soil to run down over a number of years to the target index.

The recommendation should be increased or decreased where yields are substantially more or less than that specified. The amount to apply can be calculated using the expected yield and values for the offtake of phosphate and potash per tonne of yield given in the RB209 9th edition.

All recommendations are given for the mid-point of each Index.

Where a soil analysis value (as given by the laboratory) is close to the range of an adjacent Index, the recommendation may be reduced or increased slightly taking account of the recommendation given for the adjacent Index. Small adjustments of less than 10 kg/ha are generally not justified.

Don't forget to deduct nutrients applied as organic manures.

For Nitrogen recommendations please refer to the RB209 9th edition or seek advice from an FACTS qualified adviser.

Target Indices:

Arable, Forage, Grassland and Potato Crops: P Index 2, K Index 2-

Vegetables and Bulbs: P Index 3, K Index 2-

Fruit Vines and Hops: P Index 2, K Index 2, Mg Index 2

(Note: Cider apples respond to K Index 3, Mg Index 3)

Field Name / Ref / Soil Type	Last Crop / Next Crop	P2O5	K2O	MgO	Lime (Arable) (Grass)		
<b>PIT PARK A</b>	<b>Not Given / Not Given</b>				T/Ac	2.8	1.1
<b>508297 / Medium</b>		Units/Acre			Te/Ha	7.0	2.6
		Kg/Ha					
<b>HIGHER CROFT B</b>	<b>Not Given / Not Given</b>				T/Ac	0	0
<b>508298 / Medium</b>		Units/Acre			Te/Ha	0	0
		Kg/Ha					
<b>HIGHER CROFT C</b>	<b>Not Given / Not Given</b>				T/Ac	0	0
<b>508299 / Medium</b>		Units/Acre			Te/Ha	0	0
		Kg/Ha					
<b>D</b>	<b>Not Given / Not Given</b>				T/Ac	0	0
<b>508300 / Heavy</b>		Units/Acre			Te/Ha	0	0
		Kg/Ha					

Fertiliser recommendations are based on (Ninth Edition - 2017). If a nutrient is deficient and no recommendation is given, either no recommendation is given in RB209 or we have insufficient data to give a recommendation. Apply Lime to the nearest half Ton / Tonne.

NRM is a UKAS accredited laboratory to ISO/IEC 17025:2005



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**T363**

Please quote the above code for all enquiries

Client : SA2 7LQ

Sample Matrix : Agricultural Soil

Laboratory Reference

Card Number 72520/18

Date Received 13-Mar-18  
 Date Reported 16-Mar-18

## SOIL ANALYSIS REPORT

Laboratory Sample Reference	Field Details			Index			mg/l (Available)		
	No.	Name or O.S. Reference with Cropping Details	Soil pH	P	K	Mg	P	K	Mg
511672/18	1	<b>PIT PARK</b> <i>Other Crop into Other Crop</i>	<b>6.1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>14.0</b>	<b>64</b>	<b>82</b>
511673/18	2	<b>SOUTH EAST FIELD</b> <i>Other Crop into Other Crop</i>	<b>6.7</b>	<b>3</b>	<b>2-</b>	<b>2</b>	<b>26.8</b>	<b>175</b>	<b>83</b>

If general fertiliser and lime recommendations have been requested, these are given on the following sheets.

The analytical methods used are as described in DEFRA Reference Book 427

The index values are determined from the DEFRA Fertiliser Recommendations RB209 9th Edition.

Released by Liam Lynch On behalf of NRM Ltd Date 16/03/18

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# MICRO NUTRIENT REPORT

DATE **16th March 2018**

SAMPLES FROM **SA2 7LQ**

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 UNIT B04  
 BRIGHTON ECO CENTRE  
 SURREY STREET  
 BRIGHTON BN1 3PB  
 Tel: 01273 911494

Reference: <b>72520/511672/18</b> Field Name: <b>PIT PARK</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l	6.3						
Boron (Hot Water Soluble) mg/l	0.9						
Sodium (Ammonium Nitrate Extractable) mg/l	24.6	1					
Zinc (EDTA Extractable) mg/l	4.5						
Calcium (Ammonium Nitrate Extractable) mg/l	1068.4	2					
Iron (DPTA Extractable) mg/l	218.1	3					
Organic matter (LOI) %	7.1	4	OM level data not available for this crop				
Sulphate (Phosphate Buffer Extractable) mg/l	17.0	5					
Manganese (DPTA Extractable) mg/l	43.1	6					
Estimated Cation Exchange Capacity meq/100g	13.4	7					

Reference: <b>72520/511673/18</b> Field Name: <b>SOUTH EAST FIELD</b>	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Copper (EDTA Extractable) mg/l	9.9						
Boron (Hot Water Soluble) mg/l	1.4						
Sodium (Ammonium Nitrate Extractable) mg/l	18.2	1					
Zinc (EDTA Extractable) mg/l	14.7	8					
Calcium (Ammonium Nitrate Extractable) mg/l	1480.0						
Iron (DPTA Extractable) mg/l	68.9	3					
Organic matter (LOI) %	6.4	4	OM level data not available for this crop				
Sulphate (Phosphate Buffer Extractable) mg/l	16.1	5					
Manganese (DPTA Extractable) mg/l	48.3	6					
Estimated Cation Exchange Capacity meq/100g	12.3	9					

## Notes (\*)

- (1) Sodium is a non essential plant nutrient. It is seldom, if ever, deficient except for Sugar Beet and Spinach. No crops show recognisable symptoms of sodium deficiency. This soil is low in potassium and any crop of Sugar Beet, Fodder Beet, Red Beet, Mangels, Turnips or Celery will require extra potassium and will respond to the addition of sodium fertiliser. Sodium has a positive influence on the mineral nutrition of plants, especially those growing on low potassium soil. Response may be seen in Barley, Wheat, Oats, Peas, Cabbage, Kale and Spinach. Sodium can be applied as agricultural salt at 150kg/ha. Kainit may be used at 1t/ha and this will usually supply adequate amounts of sodium and potassium. Sodium levels in mineral soils are usually below 20mg/l available sodium. Sodium is easily leached from nearly all soil types and it is difficult to build up sodium levels over a period of years. The most responsive crops (beets) are usually grown in three or four year rotations and therefore need sodium fertiliser every time they are grown.
- (2) Calcium plays an important role in soil fertility and its status is reflected in the pH of the soil. Plants thrive best when the predominant base in the soil is calcium. If other bases, such as magnesium, potassium or sodium are present in amounts equal to or greater than calcium, nutritional disturbances can occur. Correction is by application of a calcium based liming material.
- (3) Very high levels of iron are common in soil, as it is one of the most abundant elements in soils and rocks. High levels are not generally associated with excess iron availability to the plant but may have implications in the availability of other elements to the growing crop, such as manganese, zinc and copper.
- (4) NRM considers Organic soils to contain between 10-20% organic material with Peaty soils containing over 20% . The optimum ranges for Organic Matter which have been set are dependent on the soil type and the cropping but these must be viewed as guidance values only.
- (5) Plants absorb sulphur as the sulphate ion. Sulphates are not retained in the soil, to any great extent, they are soluble and tend to move with the soil water and are readily leached by high rainfall or irrigation. This is particularly true for low capacity (sandy) soils. Sulphur behaves very much like nitrogen, the largest pool of sulphur is contained within the organic matter. The sulphate sulphur becomes available to the plant via bacterial breakdown of the organic matter, atmospheric sulphur and other forms of reduced sulphur. Intensification of agriculture, improved crop varieties, the use of sulphur free fertilisers and

*Report continued.....*

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## MICRO NUTRIENT REPORT

DATE **16th March 2018**

SAMPLES FROM **SA2 7LQ**

OLI RODKER  
ECOLOGICAL LAND CO-OP  
UNIT B04  
BRIGHTON ECO CENTRE  
SURREY STREET  
BRIGHTON BN1 3PB  
Tel: 01273 911494

### Notes (Continued)

control of atmospheric pollution have aggravated the sulphur deficiency problem. In many UK soils, the distribution of sulphate sulphur may not be consistent throughout the soil profile. A profile test down to 90cm should be considered before using the soil test levels alone to calculate fertiliser sulphur requirements. If the soil has relatively high sulphur levels at lower depths, the amounts can be reduced. The best method of building soil sulphur reserves is by adding organic materials and maintaining an adequate organic matter content. Where satisfactory organic sulphur reserves cannot be maintained, certain fertilisers or amendments have to be used to supply the crop with its sulphur requirement.

- (6) High nitrogen and phosphorus applications to soil may result in increased manganese availability. This can also be caused by acidic soil conditions (low pH).
- (7) CEC level is Medium (12-25). Pumice soils often in the range 13-18; lower fertility mineral soils in the range 15-25.
- (8) High available zinc levels in soil can occur naturally or may be as a result of sludge, slurry or manure applications year on year. The soil should be tested for the total zinc level (and any other potentially toxic heavy metals) to check that levels have not become excessive due to organic manure applications.
- (9) CEC level is Low (0-12). Soil maybe very low in organic matter. Typical of sandy soils.



DATE 16th March 2018  
 SAMPLES FROM SA2 7LQ

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 UNIT B04  
 BRIGHTON ECO CENTRE  
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 Tel: 01273 911494  
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SAMPLED BY

Report reference 72520/18

### Fertiliser Recommendations

The phosphate and potash recommendations shown below, are those required to replace the offtake and maintain target soil indices. The larger recommended applications for soils below target index will allow the soil to build up to this target index over a number of years. Not applying fertiliser to soils which are above target index will allow the soil to run down over a number of years to the target index.

The recommendation should be increased or decreased where yields are substantially more or less than that specified. The amount to apply can be calculated using the expected yield and values for the offtake of phosphate and potash per tonne of yield given in the RB209 9th edition.

All recommendations are given for the mid-point of each Index.

Where a soil analysis value (as given by the laboratory) is close to the range of an adjacent Index, the recommendation may be reduced or increased slightly taking account of the recommendation given for the adjacent Index. Small adjustments of less than 10 kg/ha are generally not justified.

Don't forget to deduct nutrients applied as organic manures.

For Nitrogen recommendations please refer to the RB209 9th edition or seek advice from an FACTS qualified adviser.

Target Indices:

Arable, Forage, Grassland and Potato Crops: P Index 2, K Index 2-

Vegetables and Bulbs: P Index 3, K Index 2-

Fruit Vines and Hops: P Index 2, K Index 2, Mg Index 2

(Note: Cider apples respond to K Index 3, Mg Index 3)

For Vegetables and Bulbs:

Some vegetable crops are susceptible to magnesium deficiency and may show yield responses to magnesium fertiliser on soils at Mg Index 0 and 1. Magnesium recommendations for all field vegetable crops are for 150kg MgO/ha at Index 0 and 100kg MgO/ha at Index 1.

There is evidence that Brassica crops respond to Sulphur. Where sulphur deficiency has been recognised or is expected in vegetable Brassicas, apply 50-75 kg/ha SO<sub>3</sub>. For other vegetable crops there have been no UK trials, but because of the decline in atmospheric sulphur emissions a yield response is possible. Where sulphur deficiency has been recognised or is expected in other vegetable crops, apply 25 kg/ha SO<sub>3</sub>. Sulphur should be applied as a sulphate-containing fertiliser at or soon after planting. Crops are most at risk of sulphur deficiency where they are grown on light sandy soils, soils with a low organic matter content, and in high rainfall areas.

<i>Field Name / Ref / Soil Type</i>	<i>Last Crop / Next Crop</i>		<i>P2O5</i>	<i>K2O</i>	<i>MgO</i>		<i>Lime</i>
<b>PIT PARK</b>	<b>Other Crop / Other Crop</b>						<b>1.7</b>
<b>511672 /</b>		<i>Units/Acre</i>				<i>T/Ac</i>	
		<i>Kg/Ha</i>				<i>Te/Ha</i>	<b>4.2</b>
<i>Field Name / Ref / Soil Type</i>	<i>Last Crop / Next Crop</i>		<i>P2O5</i>	<i>K2O</i>	<i>MgO</i>		<i>Lime</i>
<b>SOUTH EAST FIELD</b>	<b>Other Crop / Other Crop</b>						<b>0</b>
<b>511673 /</b>		<i>Units/Acre</i>				<i>T/Ac</i>	
		<i>Kg/Ha</i>				<i>Te/Ha</i>	<b>0</b>

Fertiliser recommendations are based on (Ninth Edition - 2017). If a nutrient is deficient and no recommendation is given, either no recommendation is given in RB209 or we have insufficient data to give a recommendation. Apply Lime to the nearest half Ton / Tonne.

NRM is a UKAS accredited laboratory to ISO/IEC 17025:2005



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**T363**

Please quote the above code for all enquiries

Client :

Sample Matrix : Agricultural Soil

Laboratory Reference

Card Number 75560/19

Date Received 19-Jul-19  
 Date Reported 23-Jul-19

## SOIL ANALYSIS REPORT

Laboratory Sample Reference	Field Details			Soil pH	Index			mg/l (Available)		
	No.	Name or O.S. Reference with Cropping Details			P	K	Mg	P	K	Mg
525041/19	1	<b>A</b> <i>No cropping details given</i>		6.6	3	1	2	29.6	68	93
525042/19	2	<b>B</b> <i>No cropping details given</i>		6.6	3	3	2	30.8	317	84
525043/19	3	<b>C</b> <i>No cropping details given</i>		6.1	2	2+	2	20.6	188	97

*If general fertiliser and lime recommendations have been requested, these are given on the following sheets.  
 The analytical methods used are as described in DEFRA Reference Book 427  
 The index values are determined from the DEFRA Fertiliser Recommendations RB209 9th Edition.*

Released by Gina Graham On behalf of NRM Ltd Date 23/07/19

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# MICRO NUTRIENT REPORT

DATE 23rd July 2019

SAMPLES FROM

OLI RODKER  
 ECOLOGICAL LAND CO-OP  
 UNIT B04  
 BRIGHTON ECO CENTRE  
 SURREY STREET  
 BRIGHTON BN1 3PB  
 Tel: 01273 911494

Reference: 75560/525041/19	Field Name: A	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Organic matter (LOI) %		6.1	1	OM level	data not available for this crop			

Reference: 75560/525042/19	Field Name: B	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Organic matter (LOI) %		5.8	1	OM level	data not available for this crop			

Reference: 75560/525043/19	Field Name: C	Result	(*)	Deficient	Marginal	Target	Marginal	Excessive
Organic matter (LOI) %		6.5	1	OM level	data not available for this crop			

## Notes (\*)

- (1) NRM considers Organic soils to contain between 10-20% organic material with Peaty soils containing over 20% . The optimum ranges for Organic Matter which have been set are dependent on the soil type and the cropping but these must be viewed as guidance values only.



DATE 23rd July 2019  
 SAMPLES FROM

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 Tel: 01273 911494  
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SAMPLED BY

Report reference 75560/19

### Fertiliser Recommendations

The phosphate and potash recommendations shown below, are those required to replace the offtake and maintain target soil indices. The larger recommended applications for soils below target index will allow the soil to build up to this target index over a number of years. Not applying fertiliser to soils which are above target index will allow the soil to run down over a number of years to the target index.

The recommendation should be increased or decreased where yields are substantially more or less than that specified. The amount to apply can be calculated using the expected yield and values for the offtake of phosphate and potash per tonne of yield given in the RB209 9th edition.

All recommendations are given for the mid-point of each Index.

Where a soil analysis value (as given by the laboratory) is close to the range of an adjacent Index, the recommendation may be reduced or increased slightly taking account of the recommendation given for the adjacent Index. Small adjustments of less than 10 kg/ha are generally not justified.

Don't forget to deduct nutrients applied as organic manures.

For Nitrogen recommendations please refer to the RB209 9th edition or seek advice from an FACTS qualified adviser.

Target Indices:

Arable, Forage, Grassland and Potato Crops: P Index 2, K Index 2-

Vegetables and Bulbs: P Index 3, K Index 2+

Fruit Vines and Hops: P Index 2, K Index 2, Mg Index 2

(Note: Cider apples respond to K Index 3, Mg Index 3)

A lime recommendation is usually for a 20cm depth of cultivated soil or a 15cm depth of grassland soil. Where soil is acid below 20 cm and soils are ploughed for arable crops, a proportionately larger quantity of lime should be applied. However, if more than 10 t/ha is needed, half should be deeply cultivated into the soil and ploughed down, with the remainder applied to the surface and worked in.

For established grassland or other situations where there is no, or only minimal soil cultivation, no more than 7.5 t/ha of lime should be applied in one application.

In these situations, applications of lime change the pH below the surface very slowly. Consequently, the underlying soil should not be allowed to become too acidic because this will affect the root growth and thus limit nutrient and water uptake, which will adversely affect yield.

Fertiliser recommendations are based on DEFRA RB209 (Ninth Edition - 2017). If a nutrient is deficient and no recommendation is given, either no recommendation is given in RB209 or we have insufficient data to give a recommendation. Apply Lime to the nearest Ton / Tonne.

NRM is a UKAS accredited laboratory to ISO/IEC 17025:2005

<i>Field Name / Ref / Soil Type</i>	<i>Last Crop / Next Crop</i>	<i>P2O5</i>	<i>K2O</i>	<i>MgO</i>	<i>Lime (Arable) (Grass)</i>	
<b>A</b>	<b>Not Given / Not Given</b>	<i>Units/Acre</i>			<i>T/Ac</i>	<b>0</b>
<b>525041 /</b>		<i>Kg/Ha</i>			<i>Te/Ha</i>	<b>0</b>

<i>Field Name / Ref / Soil Type</i>	<i>Last Crop / Next Crop</i>	<i>P2O5</i>	<i>K2O</i>	<i>MgO</i>	<i>Lime (Arable) (Grass)</i>	
<b>B</b>	<b>Not Given / Not Given</b>	<i>Units/Acre</i>			<i>T/Ac</i>	<b>0</b>
<b>525042 /</b>		<i>Kg/Ha</i>			<i>Te/Ha</i>	<b>0</b>

<i>Field Name / Ref / Soil Type</i>	<i>Last Crop / Next Crop</i>	<i>P2O5</i>	<i>K2O</i>	<i>MgO</i>	<i>Lime (Arable) (Grass)</i>	
<b>C</b>	<b>Not Given / Not Given</b>	<i>Units/Acre</i>			<i>T/Ac</i>	<b>1.7</b>
<b>525043 /</b>		<i>Kg/Ha</i>			<i>Te/Ha</i>	<b>4.2</b>

Fertiliser recommendations are based on (Ninth Edition - 2017). If a nutrient is deficient and no recommendation is given, either no recommendation is given in RB209 or we have insufficient data to give a recommendation. Apply Lime to the nearest half Ton / Tonne.

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