Supporting Documents for Walterston Farm

Ground Water Transitional Licence Application

Business Trading Name – WH Dixon & Sons

Business Address – Walterston Farm, Hayscastle, Haverfordwest, Pembrokeshire, SA62 5HT

Category - Technical Supporting Information

Date – 19 November 2019

Content:

Information

Brief history of farm eg type livestock only or mixed with arable crops

Walterston Farm is modern dairy unit located on the outskirts of Hayscastle Pembrokeshire. The principal contacts are Mr Henry Dixon, Mrs Margaret Dixon, David and Robert Dixon Sons. The family moved to Walterston farm from Yorkshire in 1986.

Walterston farm is a mixed farm unit and consists of owned land. The farmed land area covers 190hectares (469acres).

The land bank is down to grass leys, silage cropping and fodder beet grown with concentrates fed to the cows to supplement the feed ration. The dairy herd is on a pasture system during the summer months. Under this type of system milk production is predominately from grass with Friesian cows producing an annual average 6000- 9000lts per cow and would be classed as a high performing herd.

Average stocking at the farms amounts to 200 dairy cattle, the cows are kept on cubicles/straw-based systems. The younger stock between 3-13months 160animals and 13-24moths 150animals are kept at Walterston Farm. Heifers generally calve at 24months when they joining the milking herd. On average cow numbers are held at 200LSU with barren cows being replaced by 20 first time calvers.

The farm also runs a beef unit with calves from a day old to finished animals at 18 to 24months reared through the farm system.

Water Supply

The farm groundwater source supplies drinking and wash water for the dairy herd via drinking troughs, plate cooler and milking parlour.
The water transfers through the farm mains and is regulated via a pressure vessel cut off switch system and float valves from the drinking troughs and milking parlour wash, animal drinking pattern and milking times are on a need's basis.
The water that is used for the parlour system wash and bulk tank cleaning is sourced via the public mains supply from DWR Cymru Welsh Water.

The farm lies within a groundwater abstraction exempt area Wales.

A growing number of livestock farmers are seeking to source water from alternative sources such as boreholes, springs, rivers, lakes or rainwater harvesting as costs of mains water increases.

Stock farm water is one of the most important natural resources, whether considering direct water consumption being stock drinking, washing and cleaning. Approximately a third to a half of all potable water abstractions are used for drinking with the remaining being used for cleaning parlours, yards and milk cooling.

From the 1 April 2005, an amendment was made to the Water Act 2003 that deregulated abstractions of **less** than $20m^3$/day the law now permits you to abstract up to a maximum of $20m^3$/day (equal to 20,000 litres per day) without the need for a licence. This is subject to conditions:

(1) You have a legal right to the source of supply if it is on your land.

(2) The abstraction is not part of a series of abstractions from the same source totalling a quantity greater than $20m^3$/day.

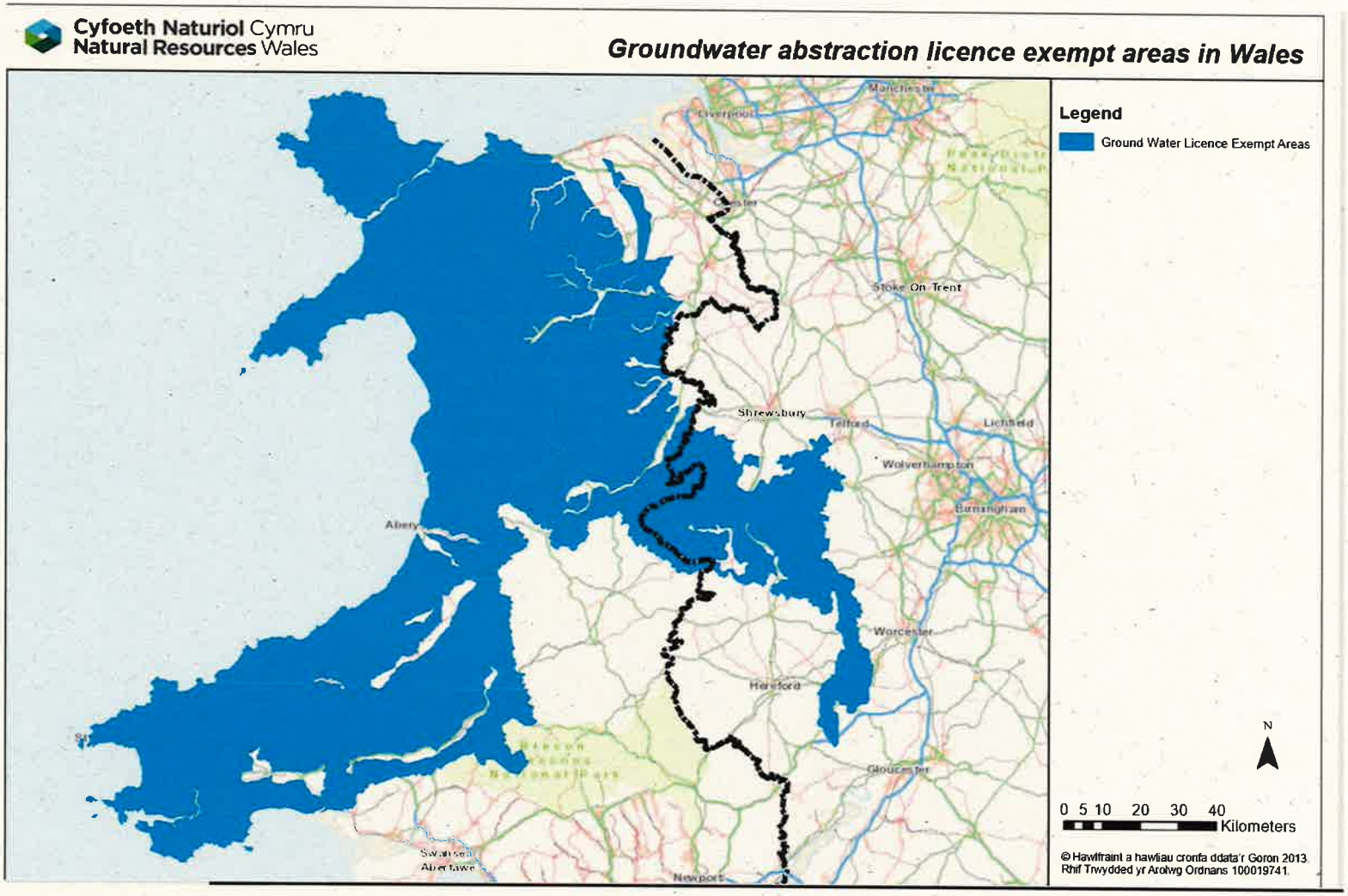
Natural Resources Wales have introduced an application window where a transitional licence application is required to be submitted during this period 1 January 2018 until 31 December 2019. Following this, there is up to a 3-year determination period. The application fee is currently £135. Transitional licence applications are required to be submitted during the application window 1 January 2018 until 31 December 2019 if you abstract more than the exempt limit.

After the 31 December 2019 if more than $20m^3$/day a full licence application will have to be submitted to continue using the groundwater abstraction.

If a farm has several boreholes which one of them may be a domestic supply which all abstract from the same source of supply, i.e. the same groundwater source that in total abstract more than $20m^3$/day will require a licence.

Areas within Wales that are outside the Groundwater exempt area should all have an abstraction licence if they abstracted more than the exempt limit.

Map showing Exempt Groundwater Area Wales



Doc1 Letter of Authorisation

Becky@kebek.co.uk
07901339662

19 November 2019

Mr H Dixon
Walterston Farm
Haycastle
Haverfordwest
Pembrokeshire
SA62 5HT

Letter of Authorisation: Kebek Ltd

This is to certify that I, Henry Dixon authorise our representatives of Kebek Ltd, to act on our behalf with regard to the application for the Transitional Licence for existing groundwater abstraction at Walterston Farm.

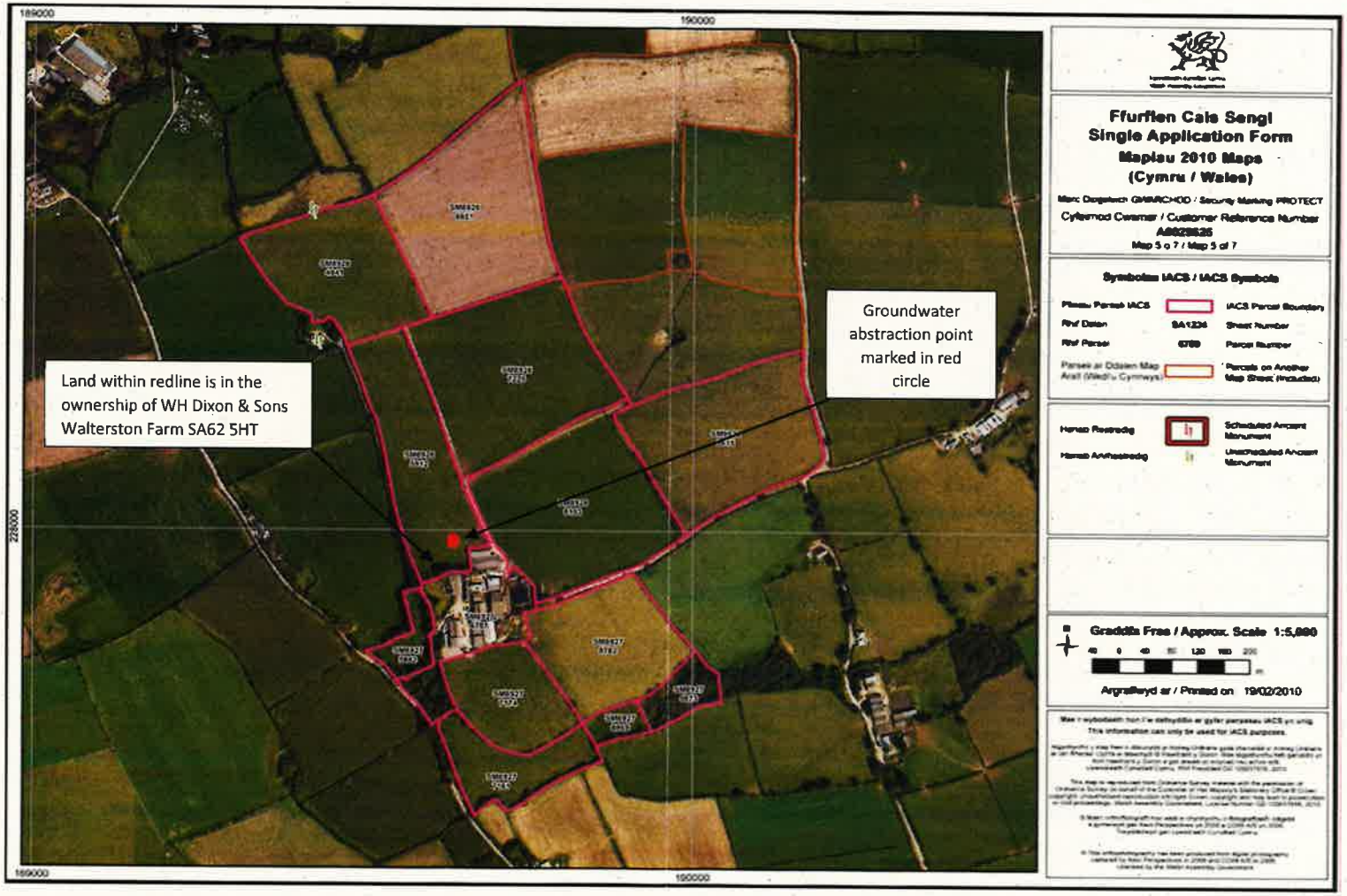
Name: Kebek Ltd
Company representative: Rebecca Jones and Keith Owen
Date: 19th November 2019
Contact details:
Becky@kebek.co.uk 07901339662
Keith@kebek.co.uk 07522780346

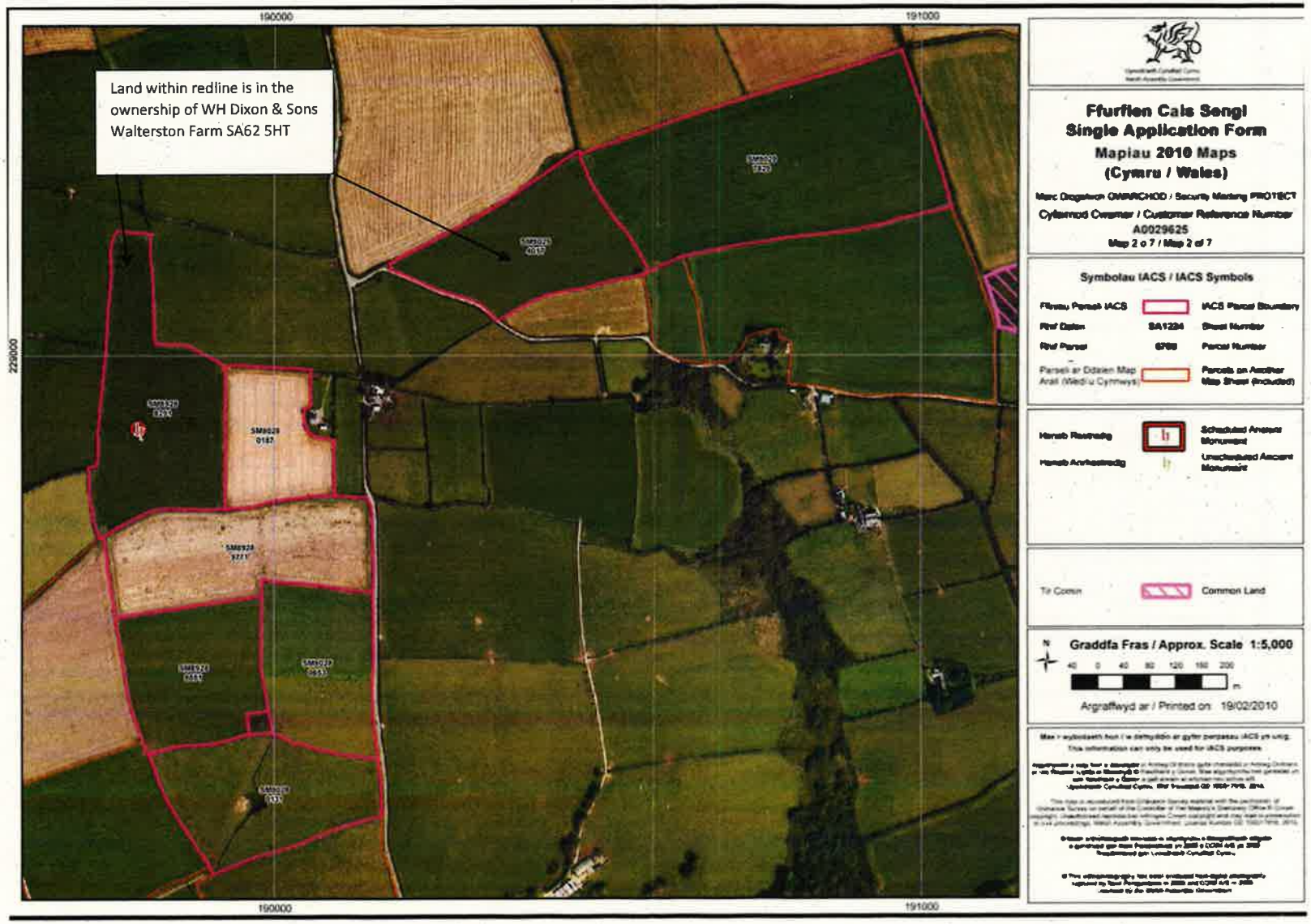
Yours sincerely

Henry Dixon
Partner

Walterston Farm

Doc 2 – Entitlement to Land SFP Maps




190000
191000
229000
Land within redline is in the ownership of WH Dixon & Sons Walterston Farm SA62 5HT
SM8028 0187
SM8028 9271
190000
191000
Ffurflen Cais Sengl
Single Application Form
Mapiau 2010 Maps
(Cymru / Wales)
Cyfeirnod Cwsmer / Customer Reference Number
A0029625
Map 2 o 7 / Map 2 of 7
Symbolau IACS / IACS Symbols
Ffiniau Parsel IACS
IACS Parcel Boundary
Rhif Dalen
SA1234
Sheet Number
Rhif Parsel
6789
Parcel Number
Parseli ar Ddalen Map Arall (Mewn Cymhwys)
Parcels on Another Map Sheet (Included)
Henaf Restredig
Scheduled Ancient Monument
Henaf Anrestredig
Unscheduled Ancient Monument
Tir Comin
Common Land
N
Graddfa Fras / Approx. Scale 1:5,000
40 0 40 80 120 160 200
m
Argraffwyd ar / Printed on 19/02/2010

Doc3 Farm Location Map

Document 4 Walterston Farm: Groundwater Borehole and Pressure Vessel location

Doc5 Photographic Evidence Borehole Chamber/ Pressure Vessel

GW Abstraction point Walterston Farm

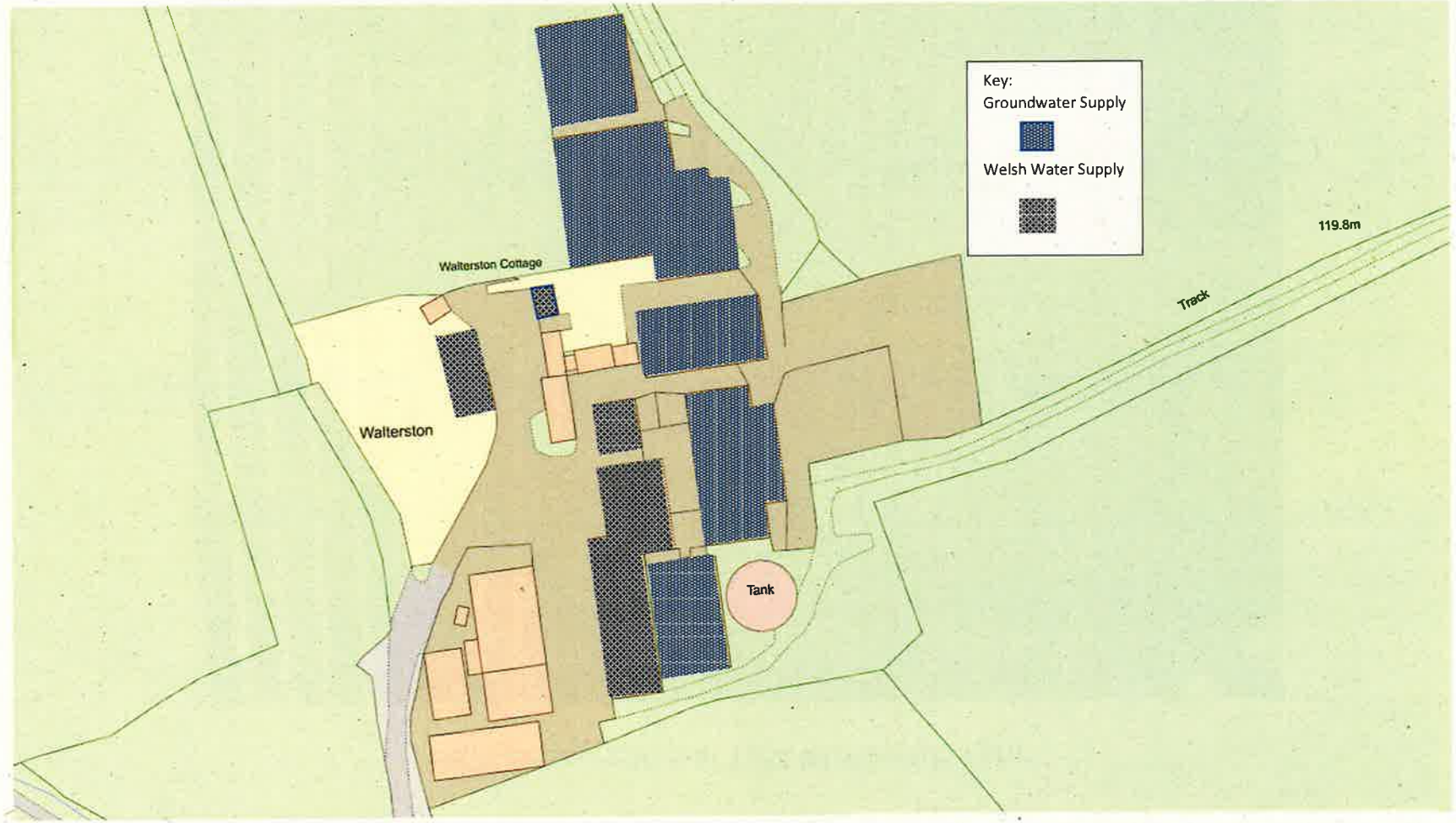
Doc5 Photographic Evidence Borehole Pump

GW Abstraction Pump Details Walterston Farm

Doc5 Photographic Evidence

GW Pressure Vessel Tank Walterston Farm

Document6 Walterston Farm: Borehole Distribution Plan

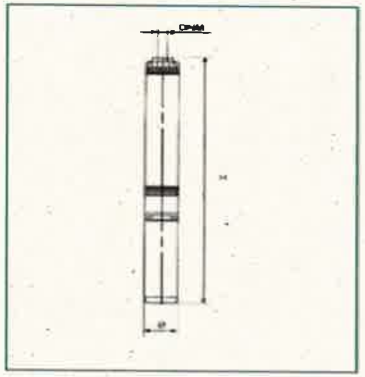


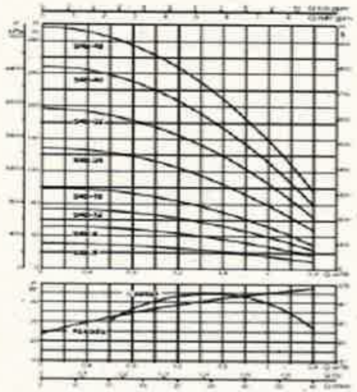
Doc7 Groundwater Pump Specifications DAB S4B -16

The performance curves are based on the kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

S4B

Liquid temperature range: from 0°C to +40°C





MODEL	D (mm)	HEIGHT H M single phase	HEIGHT H T three phase	DNM	PACKING DIMENSIONS (mm) L/A	L/B	H (M/T)	VOLUME (M/T) m³	WEIGHT GROSS (kg) M single phase	T three phase
S4B-5 M	97	518		1"¼G.I	110	110	770	0,010	11,1	-
S4B-8 M / S4B-8 T	97	605	586	1"¼G.I	110	110	770	0,010	12,5	11,5
S4B-12 M / S4B-12 T	97	723	695	1"¼G.I	110	110	770	0,010	14,4	13,1
S4B-16 M / S4B-16 T	97	841	813	1"¼G.I	110	110	1000/910	0,013/0,010	16,3	15,1
S4B-24 M / S4B-24 T	97	1078	1021	1"¼G.I	130	130	1240	0,018	20,7	17,5
S4B-32 M / S4B-32 T	97	1287	1230	1"¼G.I	130	130	1500/1330	0,023/0,019	22,5	20,7
S4B-40 M / S4B-40 T	97	1525	1471	1"¼G.I	130	130	1670/1500	0,028/0,023	27,6	22,9
S4B-48 M / S4B-48 T	97	1756	1661	1"¼G.I	130	130	1920	0,028	28,7	24,7

MODEL	ELECTRICAL DATA VOLTAGE 50 Hz	COS φ	P2 NOMINAL kW	HP	In A	CAPACITOR µF	Vc	HYDRAULIC DATA (n = 2850 1/min) Q m³/h	0	0,6	0,9	1,2	1,5	1,8	2,1	2,4
								l/min	0	10	15	20	25	30	35	40
S4B-5 M	1x220-230 V~	0,79-0,73	0,25	0,33	2,8-3,2	12,5	400	H (m)	31	30	28,6	26	22,6	19	14,8	10
S4B-8 M	1x220-230 V~	0,80-0,78	0,37	0,5	3,5-4	16	400		48,6	47,8	45,8	41,5	36,2	30,6	23,7	16
S4B-8 T	3x400 V~	0,7	0,37	0,5	1,1	-	-		48,6	47,8	45,8	41,5	36,2	30,6	23,7	16
S4B-12 M	1x220-230 V~	0,90-0,84	0,55	0,75	4,5-4,8	20	400		74,4	71,8	68,6	62,3	54,4	46,8	35,5	24
S4B-12 T	3x400 V~	0,75	0,55	0,75	1,6	-	-		74,4	71,8	68,6	62,3	54,4	46,8	35,5	24
S4B-16 M	1x220-230 V~	0,90-0,88	0,75	1	5,7-6,1	30	400		99,2	96,7	91,5	83	72,5	61	47,4	32
S4B-16 T	3x400 V~	0,75	0,75	1	2,1	-	-		99,2	96,7	91,5	83	72,5	61	47,4	32
S4B-24 M	1x220-230 V~	0,89-0,82	1,1	1,5	8,7-9,6	40	400		148,8	145,5	137,3	124,6	108,7	91,7	71	48
S4B-24 T	3x400 V~	0,76	1,1	1,5	3	-	-		148,8	145,5	137,3	124,6	108,7	91,7	71	48
S4B-32 M	1x220-230 V~	0,96-0,92	1,5	2	10,7-11,2	50	400		198,4	191,4	183	166	144,9	122,2	94,7	64
S4B-32 T	3x400 V~	0,76	1,5	2	4	-	-		198,4	191,4	183	166	144,9	122,2	94,7	64
S4B-40 M	1x220-230 V~	0,98-0,97	2,2	3	14,7-14,8	70	400		248	239,2	228,8	207,6	181,2	152,8	118,4	80
S4B-40 T	3x400 V~	0,75	2,2	3	5,9	-	-		248	239,2	228,8	207,6	181,2	152,8	118,4	80
S4B-48 M	1x220-230 V~	0,98-0,97	2,2	3	14,7-14,8	70	400		297,6	287,1	274,6	249,2	217,4	183,4	142,1	96
S4B-48 T	3x400 V~	0,75	2,2	3	5,9	-	-		297,6	287,1	274,6	249,2	217,4	183,4	142,1	96

* The data on the protections are on page 27

Doc8 Livestock numbers and water volume used 2011-2017

2011 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	200	20000	600000	7200000	2850	0.8	41022.3	11.4	7578.94737	2.1
cow with calf	50		0	0	0						
heifers 24 month	50	136	6800	204000	2448000						
<12 month	36	142	5112	153360	1840320						
<3 months	4	66	264	7920	95040						
Bull	100	3	300	9000	108000						
total livestock water use			32476	974280	11691360						
parlour washings	30	200	6000	180000	2160000						

2012 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	200	20000	600000	7200000	2850	0.8	40901.0526	11.4	7578.94737	2.1
cow with calf	50		0	0	0						
heifers 24 month	50	132	6600	198000	2376000						
<12 month	36	145	5220	156600	1879200						
<3 months	4	65	260	7800	93600						
Bull	100	3	300	9000	108000						
total livestock water use			32380	971400	11656800						
parlour washings	30	200	6000	180000	2160000						

2013 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	210	21000	630000	7560000	2850	0.8	43811.1579	12.0	7957.89474	2.2
cow with calf	50		0	0	0						
heifers 24 month	50	144	7200	216000	2592000						
<12 month	36	152	5472	164160	1969920						
<3 months	4	79	316	9480	113760						
Bull	100	3	300	9000	108000						
total livestock water use			34288	1028640	12343680						
parlour washings	30	210	6300	189000	2268000						

2014 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	210	21000	630000	7560000	2850	0.8	43811.1579	12.0	7957.89474	2.2
cow with calf	50		0	0	0						
heifers 24 month	50	144	7200	216000	2592000						
<12 month	36	152	5472	164160	1969920						
<3 months	4	79	316	9480	113760						
Bull	100	3	300	9000	108000						
total livestock water use			34288	1028640	12343680						
parlour washings	30	210	6300	189000	2268000						

2015 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	220	22000	660000	7920000	2850	0.8	44498.5263	12.4	8336.84211	2.3
cow with calf	50		0	0	0						
heifers 24 month	50	140	7000	210000	2520000						
<12 month	36	156	5616	168480	2021760						
<3 months	4	78	312	9360	112320						
Bull	100	3	300	9000	108000						
total livestock water use			35228	1056840	12682080						
parlour washings	30	220	6600	198000	2376000						

2016 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	220	22000	660000	7920000	2850	0.8	45125.0526	12.5	8336.84211	2.3
cow with calf	50		0	0	0						
heifers 24 month	50	158	7900	237000	2844000						
<12 month	36	145	5220	156600	1879200						
<3 months	4	76	304	9120	109440						
Bull	100	3	300	9000	108000						
total livestock water use			35724	1071720	12860640						
parlour washings	30	220	6600	198000	2376000						

2017 water consumptio	livestock no	daily consum	monthly con	annual const	flow rate litre per hour	flow rate litres per second	pump time for drinking water (seconds)	pump time for drinking water (hours)	pump time for parlour washings (seconds)	pump time for parlour washings (hours)
dairy cows in milk	100	220	22000	660000	7920000	2850	0.8	45125.0526	12.5	8336.84211	2.3
cow with calf	50		0	0	0						
heifers 24 month	50	158	7900	237000	2844000						
<12 month	36	145	5220	156600	1879200						
<3 months	4	76	304	9120	109440						
Bull	100	3	300	9000	108000						
total livestock water use			35724	1071720	12860640						
parlour washings	30	220	6600	198000	2376000						

Doc 8 Livestock Numbers from Farm Records extracted from BCMS

Walterston Farm SA62 5HT County Parish Holding Number 55/456/0002

Herd Size by Year

Stock

Livestock	2011	2014	2017	UK Herd No UK745455
Milking Cows				
Dairy cows >2 years	200	210	220	
Dairy Cows 1-2 year	25	20	20	
Dairy Cows < 1 Year	25	20	20	
Female Beef				
Calved beef				
Female beef >2 year	48	56	64	
Female beef 1-2 year	75	82	90	
Female beef <1 year	48	57	49	
Service Bulls				
Service bull > 1 year	3	3	3	
Service bull < 1 year	0			
Other				
Calves to sell	0	0	0	
Other young Stock				
Steer				
Steer < 1 year	75	58	90	
Steer > 1 year	48	82	49	
Total number of animals = 547		= 588	= 605	

Signed Margaret Jones (PARTNER)