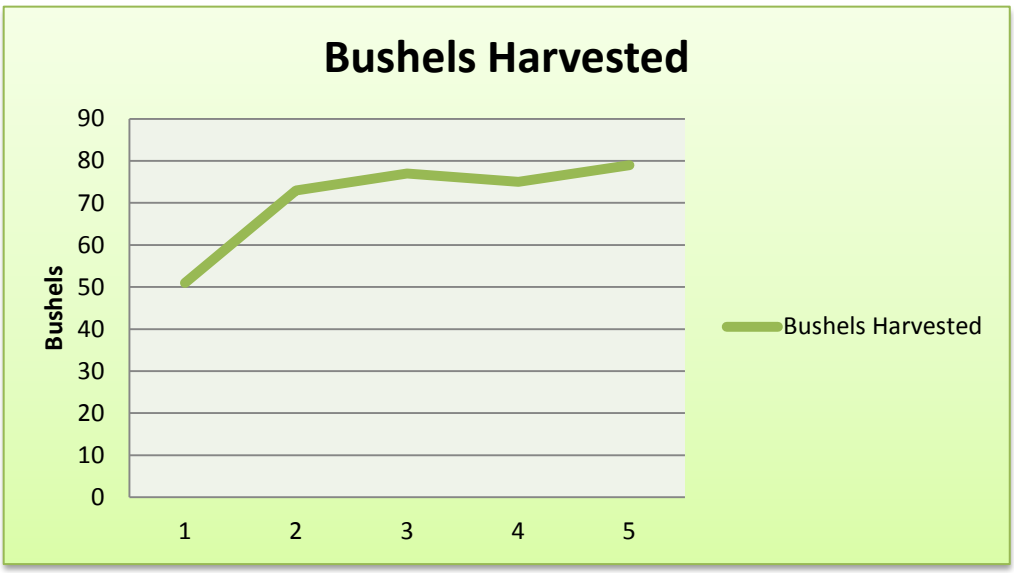
Water Hyacinth Project

Quantity Harvested Results



Harvest number -	1	2	3	4	5
Bushels Harvested	51	73	77	75	79
				total bushels	355

Water Hyacinth Nutritional Comparison

	Sample #											GRASS		GRASS		OTHER SAMPLES			
	1	2	3	4	5	6	7	8	9	10	AVG	FRESH	%dif	HAY	%dif	ROOTS	%dif	P. FEATH	%dif
Moisture %	91.3	91.7	91.3	91.1	89	91.1	89.3	91.6	90.2	91.5	90.81	51.93	174.9%	7.98	1138.7%	91.3	99.5%	83.6	108.6%
% Crude Protein	6.2	5.3	11.6	9.2	6.7	6.1	6.2	7.9	8	9.1	7.63	15.16	50.3%	10.88	70.2%	7.7	99.1%	9.7	78.7%
Soluble Protein % CP	33	38	36	32	7	39	33	34	27	29	30.80	35.30	87.3%	23.21	132.7%	29	106.2%	28	110.0%
Acid detergent Fiber	25.6	26.6	24	25.1	21.3	24.1	30.7	23.2	30.4	24.1	25.51	36.04	70.8%	39.02	65.4%	37.8	67.5%	25.5	100.0%
Neutral Detergent Fiber	53.8	51.4	52.2	49.1	48.5	52.1	55.2	49	51.9	50.1	51.33	60.53	84.8%	62.89	81.6%	64.9	79.1%	31.8	161.4%
% NFC	30.5	33.1	28.2	32.5	34.7	32	29.3	33.5	30.9	31.7	31.64	17.84	177.4%	19.92	158.8%	19.9	159.0%	48	65.9%
% TDN	58	58	59	59	59	58	57	59	58	59	58.40	60.85	96.0%	57.53	101.5%	55	106.2%	64	91.3%
NEL, Mcal/lb	0.56	0.57	0.57	0.59	0.59	0.57	0.55	0.59	0.57	0.58	0.57	0.53	108.1%	0.50	115.0%	0.47	122.1%	0.69	83.2%
NEM , Mcal/lb	0.53	0.54	0.54	0.55	0.56	0.54	0.52	0.55	0.54	0.55	0.54	0.57	95.3%	0.51	105.9%	0.47	115.3%	0.65	83.4%
NEG, Mcal/lb	0.27	0.28	0.28	0.3	0.3	0.28	0.27	0.3	0.28	0.29	0.29	0.31	91.9%	0.26	110.5%	0.22	129.5%	0.39	73.1%
Relative Feed Value	119	123	125	131	139	125	109	135	117	130	125.30	99.13	126.4%	88.35	141.8%	85	147.4%	202	62.0%
% Calcium	1.34	1.17	1.57	1.22	1.42	1.42	1.05	1.22	1.05	1.56	1.30	0.55	238.0%	0.51	254.3%	0.57	228.4%	1.64	79.4%
% Phosphorus	0.42	0.42	0.45	0.46	0.3	0.27	0.19	0.3	0.34	0.4	0.36	0.30	120.3%	0.24	147.9%	0.37	95.9%	0.26	136.5%
% Magnesium	0.82	0.95	0.5	0.82	0.5	0.6	0.41	0.51	0.42	0.46	0.60	0.24	254.9%	0.21	292.2%	0.58	103.3%	0.28	213.9%
% Potassium	3.81	2.95	4.44	2.9	2.95	2.88	2.25	3.06	3.56	4.53	3.33	2.02	165.2%	1.87	177.9%	1.48	225.2%	2	166.7%
% Sodium	0.226	0.545	0.068	0.362	0.323	0.439	0.384	0.446	0.301	0.085	0.32	0.10	321.1%	0.06	538.8%	0.976	32.6%	0.228	139.4%
PPM Iron	1300	4170	291	3650	767	2430	3570	1850	12800	735	3156.30	344.43	916.4%	188.58	1673.7%	25800	12.2%	2890	109.2%
PPM Zinc	69	104	32	93	80	137	87	118	99	45	86.40	30.40	284.2%	34.61	249.6%	268	32.2%	73	118.4%
PPM Copper	17	12	8	12	7	8	9	9	11	7	10.00	9.27	107.8%	9.19	108.8%	29	34.5%	8	125.0%
PPM Manganese	298	381	268	312	253	352	180	215	555	316	313.00	91.24	343.1%	13.17	2376.6%	492	63.6%	310	101.0%
PPM Molybdenum	1	1.1	0.8	0.8	0.1	0.5	0.4	0.2	0.1	0.5	0.55	1.06	51.8%	1.05	52.2%	1.9	28.9%	0.2	275.0%
% Sulfur	0.24	0.34	0.16	0.33	0.27	0.35	0.31	0.39	0.35	0.17	0.29	0.22	129.9%	0.17	167.2%	0.69	42.2%	0.4	72.8%
Horse DE, Mcal/lb	1.03	1.09	1.07	1.11	1.13	1.09	1.04	1.12	1.07	1.1	1.09	1.03	105.5%	0.91	119.4%	0.91	119.2%	1.29	84.1%
	Our samples											DairyOne 2000-2012 averages				Our Samples			

* %dif = our water hyacinth sample average divided by the comparison sample

** all rows except for Moisture % are in terms of dry matter only

Dairy One

FORAGE LABORATORY
730 Warren Road, Ithaca, NY 14850
Ph: 800.496.3344 Fax: 607.257.1350
http://www.dairyone.com

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	LAB USE
	10/11/12	10/17/12	.899

ADDITIONAL DESCRIPTIONS

LARRY WARD-
730 PETER HALL RD
POCOMOKE CITY, MD 21851

ENERGY TABLE - NRC 2001		
	Mcal/Lb	Mcal/Kg
DE, 1X	1.14	2.50
ME, 1X	0.94	2.08
NEL, 3X	0.53	1.16
NEM, 3X	0.55	1.20
NEG, 3X	0.29	0.64
TDN1X,%	58	

COMMENTS

EFFECTIVE 4/01/12, Prepaid postage mailer fees will increase to $4 for individual mailers and $10 for large mailers. Visit our website for info on our new UPS Service.
www.dairyone.com/forage/services

01

KIND DESCRIPTION	CODE	LAB SAMPLE
FR FORAGE, MISC.	260	18543390

DESCRIPTION 1
-

ANALYSIS RESULTS

COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS
% Moisture	91.3	
% Dry Matter	8.7	
% Crude Protein	.5	6.2
% Adjusted Crude Protein	.5	6.2
Soluble Protein % CP		33
% Acid Detergent Fiber	2.2	25.6
% Neutral Detergent Fiber	4.7	53.8
% NFC	2.6	30.5
% TDN	5	58
NEL, Mcal/Lb	.05	.56
NEM, Mcal/Lb	.05	.53
NEG, Mcal/Lb	.02	.27
Relative Feed Value		119
% Calcium	.12	1.34
% Phosphorus	.04	.42
% Magnesium	.07	.82
% Potassium	.33	3.81
% Sodium	.020	.226
PPM Iron	113	1,300
PPM Zinc	6	69
PPM Copper	1	17
PPM Manganese	26	298
PPM Molybdenum	< 0.1	1.0
% Sulfur	.02	.24
Horse DE, Mcal/Lb	.09	1.06

2T

Dairy One

FORAGE LABORATORY
730 Warren Road, Ithaca, NY 14850
Ph: 800.496.3344 Fax: 607.257.1350
http://www.dairyone.com

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	LAB USE
	10/11/12	10/24/12	.915

ADDITIONAL DESCRIPTIONS

LARRY WARD-
730 PETER HALL RD
POCOMOKE CITY, MD 21851

ENERGY TABLE - NRC 2001		
	Mcal/Lb	Mcal/Kg
DE, 1X	1.14	2.52
ME, 1X	0.95	2.09
NEL, 3X	0.53	1.17
NEM, 3X	0.55	1.21
NEG, 3X	0.29	0.65
TDN1X,%	58	

COMMENTS

EFFECTIVE 4/01/12, Prepaid postage mailer fees will increase to $4 for individual mailers and $10 for large mailers. Visit our website for info on our new UPS Service.
www.dairyone.com/forage/services

02

KIND DESCRIPTION	CODE	LAB SAMPLE
FR FORAGE, MISC.	260	18543400

DESCRIPTION 1

ANALYSIS RESULTS

COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS
% Moisture	91.7	
% Dry Matter	8.3	
% Crude Protein	.4	5.3
% Adjusted Crude Protein	.4	5.3
Soluble Protein % CP		38
% Acid Detergent Fiber	2.2	26.6
% Neutral Detergent Fiber	4.2	51.4
% NFC	2.7	33.1
% TDN	5	58
NEL, Mcal/Lb	.05	.57
NEM, Mcal/Lb	.04	.54
NEG, Mcal/Lb	.02	.28
Relative Feed Value		123
% Calcium	.10	1.17
% Phosphorus	.03	.42
% Magnesium	.08	.95
% Potassium	.24	2.95
% Sodium	.045	.545
PPM Iron	345	4,170
PPM Zinc	9	104
PPM Copper	< 1	12
PPM Manganese	31	381
PPM Molybdenum	< 0.1	1.1
% Sulfur	.03	.34
Horse DE, Mcal/Lb	.09	1.09

2T

Dairy One

FORAGE LABORATORY
730 Warren Road, Ithaca, NY 14850
Ph: 800.496.3344 Fax: 607.257.1350
http://www.dairyone.com

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	LAB USE
	10/11/12	10/24/12	.929

ADDITIONAL DESCRIPTIONS

LARRY WARD-
730 PETER HALL RD
POCOMOKE CITY, MD 21851

ENERGY TABLE - NRC 2001		
	Mcal/Lb	Mcal/Kg
DE, 1X	1.18	2.60
ME, 1X	0.99	2.18
NEL, 3X	0.55	1.22
NEM, 3X	0.58	1.28
NEG, 3X	0.32	0.71
TDN1X,%	59	

COMMENTS

EFFECTIVE 4/01/12, Prepaid postage mailer fees will increase to $4 for individual mailers and $10 for large mailers. Visit our website for info on our new UPS Service.
www.dairyone.com/forage/services

KIND DESCRIPTION	CODE	LAB SAMPLE
FR FORAGE, MISC.	260	18543410

DESCRIPTION 1

ANALYSIS RESULTS

COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS
% Moisture	91.3	
% Dry Matter	8.7	
% Crude Protein	1.0	11.6
% Adjusted Crude Protein	1.0	11.6
Soluble Protein % CP		36
% Acid Detergent Fiber	2.1	24.0
% Neutral Detergent Fiber	4.5	52.2
% NFC	2.5	28.2
% TDN	5	59
NEL, Mcal/Lb	.05	.57
NEM, Mcal/Lb	.05	.54
NEG, Mcal/Lb	.02	.28
Relative Feed Value		125
% Calcium	.14	1.57
% Phosphorus	.04	.45
% Magnesium	.04	.50
% Potassium	.39	4.44
% Sodium	.006	.068
PPM Iron	25	291
PPM Zinc	3	32
PPM Copper	< 1	8
PPM Manganese	23	268
PPM Molybdenum	< 0.1	.8
% Sulfur	.01	.16
Horse DE, Mcal/Lb	.09	1.07

03

2T

Dairy One

FORAGE LABORATORY
730 Warren Road, Ithaca, NY 14850
Ph: 800.496.3344 Fax: 607.257.1350
http://www.dairyone.com

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	LAB USE
	10/11/12	10/17/12	.903

ADDITIONAL DESCRIPTIONS

LARRY WARD-
730 PETER HALL RD
POCOMOKE CITY, MD 21851

ENERGY TABLE - NRC 2001		
	Mcal/Lb	Mcal/Kg
DE, 1X	1.18	2.60
ME, 1X	0.99	2.18
NEL, 3X	0.55	1.22
NEM, 3X	0.58	1.27
NEG, 3X	0.32	0.70
TDN1X,%	59	

COMMENTS

EFFECTIVE 4/01/12, Prepaid postage mailer fees will increase to $4 for individual mailers and $10 for large mailers. Visit our website for info on our new UPS Service.
www.dairyone.com/forage/services

04

KIND DESCRIPTION	CODE	LAB SAMPLE
FR FORAGE, MISC.	260	18543420

DESCRIPTION 1

ANALYSIS RESULTS

COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS
% Moisture	91.1	
% Dry Matter	8.9	
% Crude Protein	.8	9.2
% Adjusted Crude Protein	.8	9.2
Soluble Protein % CP		32
% Acid Detergent Fiber	2.2	25.1
% Neutral Detergent Fiber	4.4	49.1
% NFC	2.9	32.5
% TDN	5	59
NEL, Mcal/Lb	.05	.59
NEM, Mcal/Lb	.05	.55
NEG, Mcal/Lb	.03	.30
Relative Feed Value		131
% Calcium	.11	1.22
% Phosphorus	.04	.46
% Magnesium	.07	.82
% Potassium	.26	2.90
% Sodium	.032	.362
PPM Iron	325	3,650
PPM Zinc	8	93
PPM Copper	1	12
PPM Manganese	28	312
PPM Molybdenum	< 0.1	.8
% Sulfur	.03	.33
Horse DE, Mcal/Lb	.10	1.11

2T

Dairy One

FORAGE LABORATORY
730 Warren Road, Ithaca, NY 14850
Ph: 800.496.3344 Fax: 607.257.1350
http://www.dairyone.com

DATE SAMPLED	LAB RECEIVED	DATE PRINTED	LAB USE
	10/11/12	10/17/12	.908

ADDITIONAL DESCRIPTIONS

LARRY WARD-
730 PETER HALL RD
POCOMOKE CITY, MD 21851

ENERGY TABLE - NRC 2001		
	Mcal/Lb	Mcal/Kg
DE, 1X	1.09	2.40
ME, 1X	0.90	1.98
NEL, 3X	0.50	1.09
NEM, 3X	0.51	1.13
NEG, 3X	0.26	0.57
TDN1X,%	55	

COMMENTS

EFFECTIVE 4/01/12, Prepaid postage mailer fees will increase to $4 for individual mailers and $10 for large mailers. Visit our website for info on our new UPS Service.
www.dairyone.com/forage/services

Roots

KIND DESCRIPTION	CODE	LAB SAMPLE
FR FORAGE, MISC.	260	18543430

DESCRIPTION 1

ANALYSIS RESULTS

COMPONENTS	AS SAMPLED BASIS	DRY MATTER BASIS
% Moisture	91.3	
% Dry Matter	8.7	
% Crude Protein	.7	7.7
% Adjusted Crude Protein	.7	7.7
Soluble Protein % CP		29
% Acid Detergent Fiber	3.3	37.8
% Neutral Detergent Fiber	5.6	64.9
% NFC	1.7	19.9
% TDN	5	55
NEL, Mcal/Lb	.04	.47
NEM, Mcal/Lb	.04	.47
NEG, Mcal/Lb	.02	.22
Relative Feed Value		85
% Calcium	.05	.57
% Phosphorus	.03	.37
% Magnesium	.05	.58
% Potassium	.13	1.48
% Sodium	.085	.976
PPM Iron	2,240	25,800
PPM Zinc	23	268
PPM Copper	3	29
PPM Manganese	43	492
PPM Molybdenum	.2	1.9
% Sulfur	.06	.69
Horse DE, Mcal/Lb	.08	.91

2T

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/29/12		

SAMPLE
LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.17	2.57
ME, 1X	0.97	2.15
NEL, 3X	0.55	1.20
NEM, 3X	0.57	1.25
NEG, 3X	0.31	0.68
TDN1X, %	59	

COMMENTS:

1. EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES
2. THIS SAMPLE WAS TESTED TWICE FOR SOLUBLE PROTEIN TO CONFIRM THE VALUE LISTED.

05

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18610050

Analysis Results

Components	As Fed	DM
% Moisture	89.0	
% Dry Matter	11.0	
% Crude Protein	.7	6.7
% Adjusted Crude Protein	.7	6.7
Soluble Protein % CP		7
% Acid Detergent Fiber	2.3	21.3
% Neutral Detergent Fiber	5.3	48.5
% NFC	3.8	34.7
% TDN	6	59
NEL, Mcal/Lb	.06	.59
NEM, Mcal/Lb	.06	.56
NEG, Mcal/Lb	.03	.30
Relative Feed Value		139
% Calcium	.16	1.42
% Phosphorus	.03	.30
% Magnesium	.05	.50
% Potassium	.32	2.95
% Sodium	.035	.323
PPM Iron	84	767
PPM Zinc	9	80
PPM Copper	< 1	7
PPM Manganese	28	253
PPM Molybdenum	< 0.1	< 0.1
% Sulfur	.03	.27
Horse DE, Mcal/Lb	.12	1.13

Page 1

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/29/12		

LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.14	2.52
ME, 1X	0.95	2.10
NEL, 3X	0.53	1.17
NEM, 3X	0.55	1.22
NEG, 3X	0.29	0.65
TDN1X, %	58	

COMMENTS:
1. EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES
2. THIS SAMPLE WAS TESTED TWICE FOR CRUDE PROTEIN AND SOLUBLE PROTEIN TO CONFIRM THE VALUES LISTED.

06

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18607800

Analysis Results

Components	As Fed	DM
% Moisture	91.1	
% Dry Matter	8.9	
% Crude Protein	.5	6.1
% Adjusted Crude Protein	.5	6.1
Soluble Protein % CP		39
% Acid Detergent Fiber	2.2	24.1
% Neutral Detergent Fiber	4.7	52.1
% NFC	2.9	32.0
% TDN	5	58
NEL, Mcal/Lb	.05	.57
NEM, Mcal/Lb	.05	.54
NEG, Mcal/Lb	.03	.28
Relative Feed Value		125
% Calcium	.13	1.42
% Phosphorus	.02	.27
% Magnesium	.05	.60
% Potassium	.26	2.88
% Sodium	.039	.439
PPM Iron	218	2,430
PPM Zinc	12	137
PPM Copper	< 1	8
PPM Manganese	31	352
PPM Molybdenum	< 0.1	.5
% Sulfur	.03	.35
Horse DE, Mcal/Lb	.10	1.09

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/29/12		

LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.13	2.49
ME, 1X	0.94	2.06
NEL, 3X	0.52	1.15
NEM, 3X	0.54	1.19
NEG, 3X	0.28	0.63
TDN1X, %	57	

COMMENTS:
1.EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18610060

Analysis Results

Components	As Fed	DM
% Moisture	89.3	
% Dry Matter	10.7	
% Crude Protein	.7	6.2
% Adjusted Crude Protein	.7	6.2
Soluble Protein % CP		33
% Acid Detergent Fiber	3.3	30.7
% Neutral Detergent Fiber	5.9	55.2
% NFC	3.1	29.3
% TDN	6	57
NEL, Mcal/Lb	.06	.55
NEM, Mcal/Lb	.06	.52
NEG, Mcal/Lb	.03	.27
Relative Feed Value		109
% Calcium	.11	1.05
% Phosphorus	.02	.19
% Magnesium	.04	.41
% Potassium	.24	2.25
% Sodium	.041	.384
PPM Iron	383	3,570
PPM Zinc	9	87
PPM Copper	< 1	9
PPM Manganese	19	180
PPM Molybdenum	< 0.1	.4
% Sulfur	.03	.31
Horse DE, Mcal/Lb	.11	1.04

Page 1

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/26/12		

LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.17	2.58
ME, 1X	0.98	2.16
NEL, 3X	0.55	1.21
NEM, 3X	0.57	1.26
NEG, 3X	0.31	0.69
TDN1X, %	59	

COMMENTS:
1. EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES

08

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18607810

Analysis Results

Components	As Fed	DM
% Moisture	91.6	
% Dry Matter	8.4	
% Crude Protein	.7	7.9
% Adjusted Crude Protein	.7	7.9
Soluble Protein % CP		34
% Acid Detergent Fiber	2.0	23.2
% Neutral Detergent Fiber	4.1	49.0
% NFC	2.8	33.5
% TDN	5	59
NEL, Mcal/Lb	.05	.59
NEM, Mcal/Lb	.05	.55
NEG, Mcal/Lb	.03	.30
Relative Feed Value		135
% Calcium	.10	1.22
% Phosphorus	.03	.30
% Magnesium	.04	.51
% Potassium	.26	3.06
% Sodium	.037	.445
PPM Iron	156	1,850
PPM Zinc	10	118
PPM Copper	< 1	9
PPM Manganese	18	215
PPM Molybdenum	< 0.1	.2
% Sulfur	.03	.39
Horse DE, Mcal/Lb	.09	1.12

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/26/12		

SAMPLE
LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.16	2.55
ME, 1X	0.96	2.13
NEL, 3X	0.54	1.19
NEM, 3X	0.56	1.24
NEG, 3X	0.30	0.67
TDN1X, %	58	

COMMENTS:
1. EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18607780

Analysis Results

Components	As Fed	DM
% Moisture	90.2	
% Dry Matter	9.8	
% Crude Protein	.8	8.0
% Adjusted Crude Protein	.8	8.0
Soluble Protein % CP		27
% Acid Detergent Fiber	3.0	30.4
% Neutral Detergent Fiber	5.1	51.9
% NFC	3.0	30.9
% TDN	6	58
NEL, Mcal/Lb	.06	.57
NEM, Mcal/Lb	.05	.54
NEG, Mcal/Lb	.03	.28
Relative Feed Value		117
% Calcium	.10	1.05
% Phosphorus	.03	.34
% Magnesium	.04	.42
% Potassium	.35	3.56
% Sodium	.029	.301
PPM Iron	1,250	12,800
PPM Zinc	10	99
PPM Copper	1	11
PPM Manganese	54	555
PPM Molybdenum	< 0.1	< 0.1
% Sulfur	.03	.35
Horse DE, Mcal/Lb	.10	1.07

09

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/26/12		

LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.17	2.59
ME, 1X	0.98	2.16
NEL, 3X	0.55	1.21
NEM, 3X	0.57	1.26
NEG, 3X	0.32	0.70
TDN1X, %	59	

COMMENTS:
1. EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES

10

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18607790

Analysis Results

Components	As Fed	DM
% Moisture	91.5	
% Dry Matter	8.5	
% Crude Protein	.8	9.1
% Adjusted Crude Protein	.8	9.1
Soluble Protein % CP		29
% Acid Detergent Fiber	2.1	24.1
% Neutral Detergent Fiber	4.3	50.1
% NFC	2.7	31.7
% TDN	5	59
NEL, Mcal/Lb	.05	.58
NEM, Mcal/Lb	.05	.55
NEG, Mcal/Lb	.02	.29
Relative Feed Value		130
% Calcium	.13	1.56
% Phosphorus	.03	.40
% Magnesium	.04	.46
% Potassium	.39	4.53
% Sodium	.007	.085
PPM Iron	63	735
PPM Zinc	4	45
PPM Copper	< 1	7
PPM Manganese	27	316
PPM Molybdenum	< 0.1	.5
% Sulfur	.01	.17
Horse DE, Mcal/Lb	.09	1.10

Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	10/24/12	10/30/12		

LARRY WARD-
730 CEDAR HALL RD
POCOMOKE, MD 21851

ENERGY TABLE - NRC 2001

	Mcal/Lb	Mcal/Kg
DE, 1X	1.28	2.83
ME, 1X	1.09	2.40
NEL, 3X	0.62	1.37
NEM, 3X	0.66	1.44
NEG, 3X	0.39	0.86
TDN1X, %	64	

COMMENTS:
1. EFFECTIVE 4/01/12, PREPAID POSTAGE MAILER FEES WILL INCREASE TO $4 FOR INDIVIDUAL MAILERS AND $10 FOR LARGE MAILERS. VISIT OUR WEBSITE FOR INFO ON OUR NEW UPS SERVICE. WWW.DAIRYONE.COM/FORAGE/SERVICES

Parrot feather

Sample Description	Farm	Code	Sample
FR FORAGE, MISC.		260	18607820

Analysis Results

Components	As Fed	DM
% Moisture	83.6	
% Dry Matter	16.4	
% Crude Protein	1.6	9.7
% Adjusted Crude Protein	1.6	9.7
Soluble Protein % CP		28
% Acid Detergent Fiber	4.2	25.5
% Neutral Detergent Fiber	5.2	31.8
% NFC	7.9	48.0
% TDN	11	64
NEL, Mcal/Lb	.11	.69
NEM, Mcal/Lb	.11	.65
NEG, Mcal/Lb	.06	.39
Relative Feed Value		202
% Calcium	.27	1.64
% Phosphorus	.04	.26
% Magnesium	.05	.28
% Potassium	.33	2.00
% Sodium	.038	.228
PPM Iron	475	2,890
PPM Zinc	12	73
PPM Copper	1	8
PPM Manganese	51	310
PPM Molybdenum	< 0.1	.2
% Sulfur	.06	.40
Horse DE, Mcal/Lb	.21	1.29

Water

CHESAPEAKE LABS, INC.

113 High Street
Phone 410-546-1318 Salisbury, MD 21801 Fax 410-546-5028
thewaterlab@yahoo.com

To: Larry Ward
730 Cedar Hall Road
Pocomoke, MD 21851

Parameter	Sample Type	Results		D-A		D.L.	Method
BOD5, mg/l			In:		460128	1.0	SM 20 5210B (NELAC)
			Out:		460128		
TSS, mg/l					460128	1.0	SM 20 2540D (NELAC)
O & G, mg/l					460131	5.0	EPA 1664 A (NELAC)
TPH, mg/l					460131	5.0	EPA 1664 A (NELAC)
pH, SU							SM 4500 H+B
Nitrate (N), mg/l	Grab	<1.0		8/17/2012	460128	1	EPA 353.2 (NELAC)
TKN, mg/l	Grab	1.9		8/22/2012	460128	1	SM20 4500NH3C(NELAC)
N(NH3), mg/l					460128	0.1	SM20 4500NH3D(NELAC)
P, mg/l	Grab	0.85		8/17/2012	460128	0.1	HACH 8190(NELAC)
Fecal Coliform, MPN/100ml			in:		460131	2	SM18 9221 C/E(NELAC)
			out:		460131		
E. Coli, MPN/100ml			in:		460131	1	Colilert® (NELAC)
			out:		460131		
Total (N), mg/l	Grab	2.9		8/23/2012	CW		Calculation

Sample ID: S-Ward #1
Discharge Point: #1
Collection Date: 8/15/2012
Collection Time: 9:00 AM
Collector: L. Ward
Composite Date:

Pick Up Date:
Pick Up Time:
Collector:
Lab Arrival: 8/15/2012 9:30 AM
Temp. At Arrival (°C): 24

SAMPLE DATA

Custody		Type		Preservation				Container	
Relinquished By:	LW	Composite		None		HCl		Glass	
Received By:	CM	Grab	x	H_2SO_4	1.98	HNO_3		Plastic	x
		Other		Cool (4°C)	x			Other	
		Split*		Sample pH upon arrival:		6.13	S.U.		

Reporting Date: 8/23/2012
Reported By: Fred Grozinger, Lab Director

*Sample was split upon lab arrival due to preservation requirements.

Chesapeake Labs Inc. is a NELAC certified laboratory. Test results analyzed by NELAC methods as indicated above meet the requirements of the National Environmental Laboratory Accreditation Conference.

CHESAPEAKE LABS, INC.

Water

113 High Street
Phone 410-546-1318 Salisbury, MD 21801 Fax 410-546-5028
thewaterlab@yahoo.com

To: Larry Ward
730 Cedar Hall Road
Pocomoke, MD 21851

Parameter	Sample Type	Results		D-A		D.L.	Method
BOD5, mg/l			In:		460128	1.0	SM 20 5210B (NELAC)
			Out:		460128		
TSS, mg/l					460128	1.0	SM 20 2540D (NELAC)
O & G, mg/l					460131	5.0	EPA 1664 A (NELAC)
TPH, mg/l					460131	5.0	EPA 1664 A (NELAC)
pH, SU							SM 4500 H+B
Nitrate (N), mg/l	Grab	<1.0		8/17/2012	460128	1	EPA 353.2 (NELAC)
TKN, mg/l	Grab	4.7		8/22/2012	460128	1	SM20 4500NH3C(NELAC)
N(NH3), mg/l					460128	0.1	SM20 4500NH3D(NELAC)
P, mg/l	Grab	1.05		8/17/2012	460128	0.1	HACH 8190(NELAC)
Fecal Coliform, MPN/100ml			in:		460131	2	SM18 9221 C/E(NELAC)
			out:		460131		
E. Coli, MPN/100ml			in:		460131	1	Colilert® (NELAC)
			out:		460131		
Total (N), mg/l	Grab	5.7		8/23/2012	CW		Calculation

Sample ID: S-Ward #2
Discharge Point: #2
Collection Date: 8/15/2012
Collection Time: 9:00 AM
Collector: L. Ward
Composite Date:

Pick Up Date:
Pick Up Time:
Collector:
Lab Arrival: 8/15/2012 9:30 AM
Temp. At Arrival (°C): 24

SAMPLE DATA

Custody		Type		Preservation				Container	
Relinquished By:	LW	Composite		None		HCl		Glass	
Received By:	CM	Grab	x	H_2SO_4	1.92	HNO_3		Plastic	x
		Other		Cool (4°C)	x			Other	
		Split*		Sample pH upon arrival:			5.9	S.U.	

Reporting Date: 8/23/2012
Reported By: Fred Grozinger, Lab Director

*Sample was split upon lab arrival due to preservation requirements.

Chesapeake Labs Inc. is a NELAC certified laboratory. Test results analyzed by NELAC methods as indicated above meet the requirements of the National Environmental Laboratory Accreditation Conference.