

Certificate Number: 19-002077

Report Date: February 06, 2019

## Client:

## HOMELAND ENERGY SOLUTIONS

2779 IA HIGHWAY 24

LAWLER IA 52154

UNITED STATES

## Sample Information:

SGS Sample Identification: MW19-00923.001

Client Sample Identification: 012819 DDGS

Received: January 30, 2019

Sample/Product Type: Distillers dried grains with solubles

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Analysis	Result	Units	L.O.Q.	Method
Calcium	0.02	%	0.0028	AOAC 968.08 (ICP)
Copper	5.22	PPM	2.7889	AOAC 968.08 (ICP)
Iron	68.99	PPM	6.8889	AOAC 968.08 (ICP)
Potassium	1.19	%	0.0694	AOAC 968.08 (ICP)
Magnesium	0.31	%	0.0209	AOAC 968.08 (ICP)
Manganese	12.34	PPM	0.9778	AOAC 968.08 (ICP)
Sodium	0.02	%	0.014	AOAC 968.08 (ICP)
Phosphorus	0.98	%	0.0554	AOAC 968.08 (ICP)
Sulfur	0.56	%	0.021	AOAC 968.08 (ICP)
Zinc	55.07	PPM	5.5556	AOAC 968.08 (ICP)
Hunter L Color	51.87		N/A	ColorFlex User's Guide, Ver. 2.5

Analysis	As Received	On Dry Matter	Units	Method
Drymatter	88.16	--	%	NFTA 2.2.2.5
Moisture	11.84	--	%	NFTA 2.2.2.5
Crude Fiber	8.86	10.06	%	AOAC 962.09
Crude ash content	4.527	5.135	%	AOAC 942.05
NDF	27.05	30.69	%	ANKOM Technology Method 6
Crude Fat	6.45	7.32	%	AOAC 2003.06 (Petroleum Ether)
Crude Protein	29.63	33.61	%	AOAC 990.03
Acid detergent fiber	11.08	12.57	%	Calculation
Digestable Energy	1.58	1.79	Mcal/lb	Calculation
Metabolizable Energy	1.30	--	Mcal/lb	Calculation
Net Energy Gain	0.57	0.65	Mcal/lb	Calculation
Net Energy Lactation	0.78	0.88	Mcal/lb	Calculation
Net Energy Maintenance	0.86	0.97	Mcal/lb	Calculation
Total digestable nutrients	74.03	83.98	%	Calculation
Starch Content	2.689	3.051	g/100g	AOAC996.11

## Abbreviations:

L.O.Q.: Limit of Quantification

L.O.D.: Limit of Detection

N/A: Not Applicable

N.D.: Not Detected

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and/or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

The sample condition upon arrival was acceptable for testing unless otherwise noted.

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Jacob Swanson  
Analytical Chemistry Supervisor  
**Start/End Analysis:** 01/30/2019 - 02/06/2019

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