



Report of Analysis

BEL2634
 LINCOLN COUNTY REGIONAL DEVELOPMENT AUTHORITY
 PO Box 851
 Caliente, NV 89008

Company Contact: Mike Baughman

BEL ID Number: BEL160889-1
Product / Commodity: Woody Biomass
Sample Designation: Phase III - Pinyon Pine
Date Sampled: 6/10/2016

Sample Weight (kg): 12.76
Sample Received: 6/23/2016
Report Date: 7/1/2016
Report Code:
Purchase Order #:

Parameter	As-Received	Dry Basis	Analytical Method
Total Moisture (%)	41.62		CEN/EN 14774-1
Ash (%)	0.70	1.19	CEN/EN 14775
Volatiles (%)	47.99	82.20	CEN/EN 15148
Fixed Carbon (%)	9.68	16.60	By Difference
GCV (GJ/Tonne)	12.23	20.95	CEN/EN 14918
GCV (BTU/lb)	5257	9005	CEN/EN 14918
NCV cV (GJ/Tonne)	10.52	19.67	CEN/EN 14918
NCV cV (BTU/lb)	4524	8456	CEN/EN 14918
NCV cP (GJ/Tonne)	10.42	19.60	CEN/EN 14918
Carbon (%)	30.30	51.90	CEN/EN 15104
Hydrogen (%)	3.62	6.20	CEN/EN 15104
Nitrogen (%)	0.13	0.22	CEN/EN 15104
Sulfur (%)	0.01	0.01	CEN/EN 15104
Oxygen (%)	23.63	40.48	CEN/EN 15104
Chlorine (%)	< 0.005	0.005	CEN/EN 15289
Fluorine (mg/kg)	< 5.0	< 5.0	CEN/EN 15289

Parameter	Oxidizing	Reducing	Analytical Method
Shrinkage Starting Temperature - SST (°C)	1280	< 850	CEN/TS 15370-1
Deformation Temperature - DT (°C)	1490	1510	CEN/TS 15370-1
Hemispherical Temperature - HT (°C)	1490	1520	CEN/TS 15370-1
Flow Temperature - FT (°C)	1490	1520	CEN/TS 15370-1

Parameter	Dry Basis	Analytical Method
Aluminum (Al) mg/kg	14.8	CEN/EN 15297
Antimony (Sb) mg/kg	< 0.22	CEN/EN 15297
Arsenic (As) mg/kg	< 0.040	CEN/EN 15297
Barium (Ba) mg/kg	< 1.0	CEN/EN 15297
Cadmium (Cd) mg/kg	< 0.010	CEN/EN 15297

Prepared By: 
Christopher Cox - Laboratory Manager

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	Dry Basis	Analytical Method
Calcium (Ca) mg/kg	3763	CEN/EN 15297
Chromium (Cr) mg/kg	< 5.0	CEN/EN 15297
Cobalt (Co) mg/kg	< 0.10	CEN/EN 15297
Copper (Cu) mg/kg	< 2.3	CEN/EN 15297
Iron (Fe) mg/kg	77	CEN/EN 15297
Lead (Pb) mg/kg	0.14	CEN/EN 15297
Magnesium (Mg) mg/kg	470.5	CEN/EN 15297
Manganese (Mn) mg/kg	6.8	CEN/EN 15297
Mercury (Hg) mg/kg	< 0.020	CEN/EN 15297
Molybdenum (Mo) mg/kg	< 0.6	CEN/EN 15297
Nickel (Ni) mg/kg	< 3.0	CEN/EN 15297
Phosphorus (P) mg/kg	145	CEN/EN 15297
Potassium (K) mg/kg	1131	CEN/EN 15297
Selenium (Se) mg/kg	< 1.00	CEN/EN 15297
Silicon (Si) mg/kg	< 300.0	CEN/EN 15297
Sodium (Na) mg/kg	< 100.0	CEN/EN 15297
Tellurium (Te) mg/kg	< 1.0	CEN/EN 15297
Thallium (Tl) mg/kg	< 3.9	CEN/EN 15297
Tin (Sn) mg/kg	< 0.3	CEN/EN 15297
Titanium (Ti) mg/kg	2.7	CEN/EN 15297
Vanadium (V) mg/kg	< 1.0	CEN/EN 15297
Zinc (Zn) mg/kg	6.9	CEN/EN 15297

Parameter	Oxides in Ash Wt%	Analytical Method
Silicon Dioxide (SiO2)	10.66	CEN/EN 15290
Aluminum Oxide (Al2O3)	2.56	CEN/EN 15290
Iron Oxide (Fe2O3)	1.13	CEN/EN 15290
Calcium Oxide (CaO)	57.60	CEN/EN 15290
Magnesium Oxide (MgO)	8.07	CEN/EN 15290
Sodium Oxide (Na2O)	0.93	CEN/EN 15290

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	Oxides in Ash Wt%	Analytical Method
Potassium Oxide (K ₂ O)	10.76	CEN/EN 15290
Titanium Dioxide (TiO ₂)	0.11	CEN/EN 15290
Phosphorus Pentoxide (P ₂ O ₅)	3.97	CEN/EN 15290
Sulfur Trioxide (SO ₃)	3.92	CEN/EN 15290
Manganese Dioxide (MnO ₂)	0.17	CEN/EN 15290
Barium Oxide (BaO)	0.02	CEN/EN 15290
Zinc Oxide (ZnO)	0.11	CEN/EN 15290
Vanadium Pentoxide (V ₂ O ₅)	< 0.01	CEN/EN 15290
Strontium Oxide (SrO)	0.43	CEN/EN 15290

N3746.815; W11413.068

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