BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Smokey and the Bandit		
Brew Date:	2019 August 31	Collected (gal):	5.60
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2019 September 30	Kegged/Bottled (gal):	5.00

Estimated		Actual	
ABV (%):	5.2%	ABV (%):	4.5%
OG (SG):	1.049	OG (SG):	1.047
FG (SG):	1.010	FG (SG):	1.013
IBU:	29.7	IBU:	29.7
SRM:	30.5	SRM:	30.5
IBU/Gravity Ratio:	0.60	IBU/Gravity Ratio:	0.63

Grain	Pounds	Potential	SG Share	Color	% Bill
Rauch malt	6.75	1.037	0.032	4.0	62.07%
Munich Malt 10L	2.75	1.035	0.012	10.0	25.29%
Caramel/Crystal 90L	0.50	1.034	0.002	90.0	4.60%
Roasted barley	0.50	1.028	0.002	450.0	4.60%
Chocolate Malt	0.38	1.028	0.001	350.0	3.45%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Magnum (GR)	P	0.75	60	12.5%	29.7	100.00%

Design Notes

Using RO water; so at dough-in, add:
0.0 ml lactic acid (88%)
4.35 g CaSO4 (calcium sulfate/gypsum)
6.3 g CaCl2 (calcium chloride)
2.1 g MgSO4 (magnesium sulfate/epsom salt)
0.63 g Ca(OH)2 (calcium hydroxide/slaked lime)
5.9 g NaHCO3 (baking soda)
At boil, add:
2.7 g CaSO4 (calcium sulfate/gypsum)
4.0 g CaCl2 (calcium chloride)
1.3 g MgSO4 (magnesium sulfate/epsom salt)
0.4 g Ca(OH)2 (calcium hydroxide/slaked lime)
3.7 g NaHCO3 (baking soda)
Target is 5.5 mash pH, 150 ppm calcium, 10 ppm magnesium, 80 ppm sodium, 150 ppm chloride, 160 ppm sulfate

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	87
Total Grain Weight (lbs):	10.88
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	154
Strike Water (gal):	5.35
Strike Temperature (F):	168
Mash Ratio (qts/lb):	1.97
Grain Absorption (gal):	1.36
Mash Volume (gal):	6.22
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	3.85
First Runnings (gal):	4.10
First Runnings Gravity (Brix):	13.10
First Runnings Gravity (SG):	1.051
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	3.38
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	3.85
Second Runnings (gal):	3.65
Second Runnings Gravity (Brix):	6.70
Second Runnings Gravity (SG):	1.026
Estimated Preboil Volume (gal):	7.69
Estimated Preboil Gravity (Brix):	10.09
Preboil Volume (gal):	7.75
Preboil Gravity (Brix):	10.50
Preboil Gravity (SG):	1.041
Extraction Efficiency (%):	81%
Boil	
Boil Time (min):	60
Estimated Evaporation Loss (gal):	1.36
Hop Absorption (gal):	0.02
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.31
Actual Evaporation Loss (gal):	1.31
Original Gravity (Brix):	12.21
Batch Size Efficiency (%):	67%
Actual Efficiency (%):	68%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	62
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	3
Secondary Fermentation Temperature (F):	32
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	
Tertiary Fermentation Temperature (F):	
Final Gravity (SG):	1.013
Temperature of Reading (F):	46
Corrected SG:	1.013
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	157
12 oz. Bottles Required:	51
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.00
Priming Sugar (oz):	
DME (oz):	
Forced Carbonation (lbs):	

System Variables	
Brewhouse Efficiency (%):	70%
Volume in Hoses (gal):	0.22
Volume in Wort Chiller (gal):	0.19
Volume in HERMS Coil (gal):	0.25
Mash/Lauter Tun Deadspace (gal):	0.14
Strike to Sparge Volume Ratio (%):	50%
Trub Loss (gal):	0.16
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	7
Sparge Temperature Factor (F):	4
Estimated Evaporation Rate (gal/hr):	1.36
Leaf Hop Absorption Ratio (qts/oz):	0.40
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	0.001

BJCP Style Guidelines	
Style:	American Brown Ale
Code:	10C
OG:	1.045-1.060
FG:	1.010-1.016
IBU:	20.0-40.0
SRM:	18.0-35.0
ABV:	4.3-6.2%
CO2:	1.5-2.5

Yeast Strain	
Yeast Strain:	Danstar Nottingham (Dry Ale)
Type:	Dry Ale
Attenuation (%):	75-85%
Actual Attenuation (%):	73%
Fermentation Temp (F):	57-70F
Flocculation:	high

Required Amounts	
Cell Count (billions):	190
Vials (White Labs/Wyeast):	
Dry Yeast (g):	9.6

Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	
Date Yeast Produced:	
Yeast Viability (%):	
Yeast Growth Rate:	
Yeast Innoculation Rate (million/ml):	
Starter Volume Required (ml);	
DME Required (oz):	
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	

User Variables	

Batch Scaling				
Desired OG:	1.050	Total Weight (lbs):		11.08
Batch Size (gal):	5.50	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Rauch malt	6.65	1.037	4.0	60.00%
Munich Malt 10L	2.77	1.035	10.0	25.00%
Caramel/Crystal 90L	0.55	1.034	90.0	5.00%
Roasted barley	0.55	1.028	450.0	5.00%
Chocolate Malt	0.55	1.028	350.0	5.00%

Poundage		
Goal (lbs):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):		

Hydrometer Correction		
SG:	1.044	
Temperature (F):	79	
Corrected SG:	1.047	

Gravity Calculator			
Brix:	11.00	12.21	
Specific Gravity:	1.043	1.047	
Degrees Plato:	10.60	11.72	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

9/30: kegged; aroma and flavor are smokey (like the rauchbier); otherwise, clean.