BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name:	Back in Black IPA		
Brew Date:	2013 October 6	Collected (gal):	10.00
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2013 October 31	Kegged/Bottled (gal):	9.80
Estimated		**Actual**	
ABV (%):	6.6%	ABV (%):	6.7%
OG (SG):	1.068	OG (SG):	1.066
FG (SG):	1.018	FG (SG):	1.015
IBU:	73.4	IBU:	74.6
SRM:	31.7	SRM:	31.7
IBU/Gravity Ratio:	1.08	IBU/Gravity Ratio:	1.13

Grain	Pounds	Potential	SG Share	Color	% Bill
Golden Promise Malt	20.00	1.038	0.053	3.0	75.83%
Caramel/Crystal 90L	1.20	1.034	0.003	90.0	4.55%
Caramel/Crystal 75L	1.53	1.034	0.004	75.0	5.78%
Caramel/Crystal 60L	1.33	1.034	0.003	60.0	5.04%
Chocolate Malt	0.66	1.028	0.001	350.0	2.50%
German carafa	0.66	1.030	0.001	400.0	2.50%
Flaked oats	1.00	1.033	0.002	2.2	3.79%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Columbus	L	1.50	fwh	16.1%	37.0	8.33%
Cascade	L	1.00	20	8.8%	6.8	5.56%
Columbus	L	1.00	20	16.1%	12.5	5.56%
Amarillo	L	1.00	20	10.4%	8.1	5.56%
Cascade	L	1.00	5	8.8%	2.2	5.56%
Columbus	L	1.00	5	16.1%	4.1	5.56%
Amarillo	L	1.00	5	10.4%	2.7	5.56%
Cascade	L	2.00	0	8.8%	0.0	11.11%
Columbus	L	2.00	0	16.1%	0.0	11.11%
Amarillo	L	2.00	0	10.4%	0.0	11.11%
Cascade	P	1.50	dry	6.4%	0.0	8.33%
Columbus	P	1.50	dry	12.9%	0.0	8.33%
Amarillo	P	1.50	dry	6.9%	0.0	8.33%

Design Notes

Batch Variables and Calculations	
Batch Size (gal):	10.00
Grain Temperature (F):	78
Total Grain Weight (lbs):	26.38
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	156
Strike Water (gal):	10.47
Strike Temperature (F):	173
Mash Ratio (qts/lb):	1.59
Grain Absorption (gal):	3.30
Mash Volume (gal):	12.58
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	7.03
First Runnings (gal):	6.75
First Runnings Gravity (Brix):	18.50
First Runnings Gravity (SG):	1.072
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	6.56
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	7.03
Second Runnings (gal):	6.88
Second Runnings Gravity (Brix):	8.20
Second Runnings Gravity (SG):	1.032
Estimated Preboil Volume (gal):	14.06
Estimated Preboil Gravity (Brix):	13.30
Preboil Volume (gal):	13.63
Preboil Gravity (Brix):	13.40
Preboil Gravity (SG):	1.052
Extraction Efficiency (%):	73%
Boil	
Boil Time (min):	110
Estimated Evaporation Loss (gal):	2.38
Hop Absorption (gal):	0.68
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.07
Actual Evaporation Loss (gal):	1.96
Original Gravity (Brix):	17.00
Batch Size Efficiency (%):	68%
Actual Efficiency (%):	68%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	66
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	7
Secondary Fermentation Temperature (F):	70
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	3
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.017
Temperature of Reading (F):	40
Corrected SG:	1.015
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	218
12 oz. Bottles Required:	100
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	1.90
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):	1.30
Leaf Hop Absorption Ratio (qts/oz):	0.20
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	-0.001

BJCP Style Guidelines	
Style:	Cascadian Dark Ale
Code:	
OG:	1.060-1.075
FG:	1.008-1.016
IBU:	60.0-90.0
SRM:	30.0-40.0
ABV:	
CO2:	1.5-2.3

Yeast Strain	
Yeast Strain:	Danstar American West Coast (Dry Ale)
Type:	Dry Ale
Attenuation (%):	70-78%
Actual Attenuation (%):	77%
Fermentation Temp (F):	60-70F
Flocculation:	high

Required Amounts	
Cell Count (billions):	467
Vials (White Labs/Wyeast):	
Dry Yeast (g):	23.4

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:	1.068	Total Weight (lbs):		26.29
Batch Size (gal):	10.00	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Golden Promise Malt	21.03	1.038	3.0	80.00%
Caramel/Crystal 90L	1.31	1.034	90.0	5.00%
Caramel/Crystal 75L	1.31	1.034	75.0	5.00%
Caramel/Crystal 60L	1.31	1.034	60.0	5.00%
Chocolate Malt	0.66	1.028	350.0	2.50%
German carafa	0.66	1.030	400.0	2.50%

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:	1.065	
Temperature (F):	76	
Corrected SG:	1.066	

Gravity Calculator			
Brix:	16.50	17.00	
Specific Gravity:	1.064	1.066	
Degrees Plato:	15.58	16.02	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

10/6: mash started at 146F (issues with manifold) but went up to 156F after ~8 min.
Increased boil by 20 min.
15 min hops are now 20 min hops (after increasing boil and when they were actually added.
10/20: dry hopped.
10/31: kegged.
1st: gorgeous citrus aroma with a hint of roast; flavor is hops fading to roast and chocolate; nice bitterness that fades to more roast.
2nd: same as the first batch although maybe the aroma is not quite as pronounced.