BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Double Chocolate Stout (batch 2)		
Brew Date:	2017 January 8	Collected (gal):	5.50
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2017 January 28	Kegged/Bottled (gal):	4.25
Estimated		**Actual**	
ABV (%):	9.0%	ABV (%):	7.2%
OG (SG):	1.092	OG (SG):	1.078
FG (SG):	1.023	FG (SG):	1.023
IBU:	51.5	IBU:	63.3
SRM:	64.5	SRM:	68.5
IBU/Gravity Ratio:	0.56	IBU/Gravity Ratio:	0.81

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	0.56	1.036	0.002	2.0	2.45%
Vienna Malt	14.60	1.036	0.061	3.5	63.77%
Chocolate Malt	2.50	1.028	0.008	350.0	10.92%
Caramel/Crystal 120L	2.48	1.033	0.010	120.0	10.84%
Flaked oats	2.25	1.033	0.009	2.2	9.83%
Roasted barley	0.50	1.028	0.002	450.0	2.18%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Cascade	P	3.60	125	6.6%	51.5	76.19%
Cascade	P	1.13	0	6.6%	0.0	23.81%

Design Notes

Use whirlfloc at 30 min.
Use 1.5 to 2 oz per 5 gal of Nielsen Massey chocolate extract; add when kegging.
Try 1.75 oz?

Batch Variables and Calculations	
Batch Size (gal):	6.00
Grain Temperature (F):	56
Total Grain Weight (lbs):	22.89
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	150
Strike Water (gal):	7.94
Strike Temperature (F):	170
Mash Ratio (qts/lb):	1.39
Grain Absorption (gal):	2.86
Mash Volume (gal):	9.77
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	4.94
First Runnings (gal):	6.00
First Runnings Gravity (Brix):	13.70
First Runnings Gravity (SG):	1.053
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	4.46
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	4.93
Second Runnings (gal):	3.50
Second Runnings Gravity (Brix):	13.70
Second Runnings Gravity (SG):	1.053
Estimated Preboil Volume (gal):	9.87
Estimated Preboil Gravity (Brix):	13.70
Preboil Volume (gal):	9.50
Preboil Gravity (Brix):	12.40
Preboil Gravity (SG):	1.048
Extraction Efficiency (%):	58%
Boil	
Boil Time (min):	125
Estimated Evaporation Loss (gal):	2.92
Hop Absorption (gal):	0.12
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.47
Actual Evaporation Loss (gal):	3.07
Original Gravity (Brix):	20.17
Batch Size Efficiency (%):	60%
Actual Efficiency (%):	55%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	60
Gravity After Primary Fermentation (SG):	1.021
Temperature of Reading (F):	62
Corrected SG:	1.022
Secondary Fermentation (days):	
Secondary Fermentation Temperature (F):	
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	3
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.023
Temperature of Reading (F):	39
Corrected SG:	1.023
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	262
12 oz. Bottles Required:	44
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):	1.40
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:	Russian Imperial Stout
Code:	13F
OG:	1.075-1.115
FG:	1.018-1.030
IBU:	50.0-90.0
SRM:	30.0-40.0
ABV:	8.0-12.0+%
CO2:	1.5-2.3

Yeast Strain	
Yeast Strain:	Wyeast 1764 (Rogue Pacman Ale)
Type:	Rogue Pacman Ale
Attenuation (%):	72-78%
Actual Attenuation (%):	70%
Fermentation Temp (F):	60-72F
Flocculation:	medium-high

Required Amounts	
Cell Count (billions):	371
Vials (White Labs/Wyeast):	86.9
Dry Yeast (g):	18.6
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	1.5
Date Yeast Produced:	2016 August 15
Yeast Viability (%):	4%
Yeast Growth Rate:	57.96
Yeast Innoculation Rate (million/ml):	0.08
Starter Volume Required (ml):	80674
DME Required (oz):	262.19
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	-3965

User Variables	

Batch Scaling				
Desired OG:	1.090	Total Weight (lbs):		22.44
Batch Size (gal):	6.00	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pale Malt (2-Row) US	15.03	1.036	2.0	67.00%
Chocolate Malt	2.47	1.028	350.0	11.00%
Caramel/Crystal 120L	2.47	1.033	120.0	11.00%
Flaked oats	2.13	1.033	2.2	9.50%
Roasted barley	0.34	1.028	450.0	1.50%

Poundage		
Goal (lbs):	14.60	
Amount (lbs | oz.f_oz):	2	11.49
Amount (lbs | oz.f_oz):	2	11.21
Amount (lbs | oz.f_oz):	2	11.60
Amount (lbs | oz.f_oz):	2	11.49
Amount (lbs | oz.f_oz):	2	10.08
Amount (lbs | oz.f_oz):	1	1.67
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	0	0.00

Hydrometer Correction		
SG:	1.077	
Temperature (F):	61	
Corrected SG:	1.078	

Gravity Calculator			
Brix:	16.00	20.17	
Specific Gravity:	1.062	1.078	
Degrees Plato:	15.14	18.80	

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

1/7: tweaked recipe slightly since I ran out of 2-row; subbed it with Vienna; we'll see...
Plan is to pitch this on top of the last batch (brewed on 11/26/16); fermented for 22 days @60F; then crashed for 21 days @32F.
Last batch resulted in a stuck mash; so add more rice hulls this time.
Outdoor temp: 18F in the AM; 32F at start of brewing; hose water frozen; had to fill buckets inside!
Stuck mash again, even with 1.25# rice hulls; some chocolate malt seems to be powder.
Very slow recirculation; temp was 140F for ~15 min; increased to 150F in 15 min.
Still way too stuck; moved mash to boil kettle; no luck; hand filtered back to mash tun
At this point, mash has been going on ~90 min at low temps (138F); recirculated until 168F; then collected into boil kettle.
Sparge was just as bad; manually filtered and collected straight to boil kettle; didn't take 2nd runnings gravity.
Hopefully collecting isn't problematic!
Increased boil to 125 min do increase gravity and reach volume; 90 min hops now 125 min hops.
...we shall see...
1/22: 1.022 SG; aroma is roasty and toasty without really any hint of chocolate; almost neutral.
Flavor is similar to aroma; slightly bitter, but astringent; however, not bad.
At the moment, 7.4% ABV (not bad, but nothing compared to the first batch at 9.0% ABV).
Cold crash and keg in a few days.

1/28: kegged w/ 1.75 oz chocolate extract
Problems with auto siphon; stirred up a lot of the yeast; so collected only 4.25 gal.
Flavor and aroma are great though; nice chocolate, toast, roast, not really astringent.