BREWSHEET v3.4 (2014-12-14)

user input
calculated

Brew			
Name:	Audacious Rye		
Brew Date:	2017 October 14	Collected (gal):	10.20
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2018 January 17	Kegged/Bottled (gal):	4.50
Estimated		**Actual**	
ABV (%):	6.2%	ABV (%):	7.5%
OG (SG):	1.059	OG (SG):	1.065
FG (SG):	1.012	FG (SG):	1.008
IBU:	56.4	IBU:	57.9
SRM:	14.7	SRM:	15.5
IBU/Gravity Ratio:	0.96	IBU/Gravity Ratio:	0.90

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	10.62	1.036	0.024	2.0	40.44%
Rye malt	4.00	1.030	0.008	3.5	15.23%
Caramel/Crystal 80L	2.00	1.034	0.004	80.0	7.62%
Chocolate Malt	0.25	1.028	0.000	350.0	0.95%
Vienna Malt	5.00	1.036	0.011	3.5	19.04%
American wheat	2.86	1.038	0.007	2.0	10.88%
Red Wheat	1.53	1.039	0.004	1.5	5.84%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Bravo	P	2.00	fwh	16.2%	56.4	14.99%
Chinook	P	1.34	0	11.0%	0.0	10.04%
Chinook	P	1.00	0	11.9%	0.0	7.50%
Amarillo	P	1.00	0	4.4%	0.0	7.50%
Columbus	P	1.00	0	12.9%	0.0	7.50%
Citra	L	3.00	dry	12.9%	0.0	22.49%
Columbus	P	1.00	dry	12.9%	0.0	7.50%
Chinook	P	2.00	dry	11.9%	0.0	14.99%
Amarillo	P	1.00	dry	8.6%	0.0	7.50%

Design Notes

Mash @154F for 60 min; increase temp to 162F for 10 min; mashout at 172F.

Batch Variables and Calculations	
Batch Size (gal):	11.00
Grain Temperature (F):	81
Total Grain Weight (lbs):	26.26
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	154
Strike Water (gal):	11.03
Strike Temperature (F):	170
Mash Ratio (qts/lb):	1.68
Grain Absorption (gal):	3.28
Mash Volume (gal):	13.13
Mash-out Temperature (F):	172
Estimated First Runnings (gal):	7.61
First Runnings (gal):	7.23
First Runnings Gravity (Brix):	17.00
First Runnings Gravity (SG):	1.066
Sparge	
Desired Sparge Temperature (F):	172
Sparge Water (gal):	7.14
Sparge Water Temperature (F):	176
Estimated Second Runnings (gal):	7.61
Second Runnings (gal):	7.23
Second Runnings Gravity (Brix):	8.80
Second Runnings Gravity (SG):	1.034
Estimated Preboil Volume (gal):	15.22
Estimated Preboil Gravity (Brix):	12.90
Preboil Volume (gal):	14.46
Preboil Gravity (Brix):	12.70
Preboil Gravity (SG):	1.049
Extraction Efficiency (%):	77%
Boil	
Boil Time (min):	120
Estimated Evaporation Loss (gal):	3.03
Hop Absorption (gal):	0.15
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.55
Actual Evaporation Loss (gal):	3.10
Original Gravity (Brix):	16.63
Batch Size Efficiency (%):	77%
Actual Efficiency (%):	71%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	68
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	3
Secondary Fermentation Temperature (F):	68
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	3
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.008
Temperature of Reading (F):	39
Corrected SG:	1.008
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	209
12 oz. Bottles Required:	46
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.45
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):	1.51
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 Wheat or Rye Beer
Code:	6D
OG:	1.040-1.055
FG:	1.008-1.013
IBU:	15.0-30.0
SRM:	3.0-6.0
ABV:	4-5.5.0%
CO2:	2.3-2.6

Yeast Strain	
Yeast Strain:	Danstar Nottingham (Dry Ale)
Type:	Dry Ale
Attenuation (%):	75-85%
Actual Attenuation (%):	88%
Fermentation Temp (F):	57-70F
Flocculation:	high

Required Amounts	
Cell Count (billions):	450
Vials (White Labs/Wyeast):	
Dry Yeast (g):	22.6
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

Brewing Notes

10/14: Didn't have as much 2row as thought; original recipe was 23# 2row with no wheat or vienna.
Increased boil time to hit volume and gravity.
Half went to Erick.

1/17: kegged my half (4.5 gal); it sat for a long time and conditioned (3 months!).
Aroma is pungent citrus hop (glorious!); flavor is initially similar with a good malt backbone; perhaps slight pepper note from the rye; finish is smooth and not too bitter; this is a delicious beer!
Plan is to quickly carbonate for an event on 1/18.

Batch Scaling				
Desired OG:	1.064	Total Weight (lbs):		28.69
Batch Size (gal):	11.00	Total Bill:		100.00%
Brewhouse Efficiency (%):	70%			
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Pale Malt (2-Row) US	23.03	1.036	2.0	80.28%
Rye malt	3.64	1.030	3.5	12.68%
Caramel/Crystal 80L	1.82	1.034	80.0	6.34%
Chocolate Malt	0.20	1.028	350.0	0.70%

Poundage		
Goal (lbs):	18.00	
Amount (lbs | oz.f_oz):	2	4.08
Amount (lbs | oz.f_oz):	2	7.19
Amount (lbs | oz.f_oz):	0	14.67
Amount (lbs | oz.f_oz):	5	
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	7	6.06

Hydrometer Correction	
SG:	1.062
Temperature (F):	73
Corrected SG:	1.065

Gravity Calculator		
Brix:	14.00	16.63
Specific Gravity:	1.054	1.065
Degrees Plato:	13.34	15.70

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	