BREWSHEET v2.0 (2010-06-17)

Batch			
Brew Name:	Pale-Headed Step-Child		
Bottle Top Code:		Calories per Pint:	166
Estimated OG:	1.058	Actual OG:	1.050
Estimated FG:	1.014	Actual FG:	1.011
Estimated IBU:	34	Actual IBU:	40
Estimated SRM:	20	Actual SRM:	21
Brew Date:	12/05/10	Collected (gal):	5.00
Rack Date:	12/14/10	Racked (gal):	4.80
Bottle Date:	12/21/10	Bottled (gal):	4.30

BJCP Style Guidelines	
Style:	American Pale Ale
Code:	10A
OG:	1.045-1.060
FG:	1.010-1.015
IBU:	30.0-45.0
SRM:	5.0-14.0
ABV:	4.5-6.0%
CO2:	2.2-2.7

Inventory	
Bottles:	
Gallons:	
Date Checked:	

Efficiency	
Brewhouse:	29%
Batch Size:	25%
Into Boiler:	30%
Into Fermenter:	23%

Yeast Strain	
Yeast Strain:	White Labs WLP001 (California Ale)
Type:	California Ale
Attenuation (%):	73-80%
Actual Attenuation (%):	78%
Fermentation Temp (F):	68-73F
Flocculation:	medium

Yeast Amounts	
Cell Count (billions):	221
Vials (White Labs/Wyeast):	1.9
Dry Yeast (g):	11
Starter Volume (mL):	
DME Required (oz)	
Vials Required (w/ Starter):	

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	20.00	1.036	0.037	2.0	62.50%
Munich Malt 10L	5.00	1.035	0.009	10.0	15.63%
Rye malt	5.00	1.030	0.008	3.5	15.63%
Caramel/Crystal 60L	1.50	1.034	0.003	60.0	4.69%
Caramel/Crystal 75L	0.50	1.034	0.001	75.0	1.56%

Brewing			
Batch Size (gal):	5.50	Estimated First Runnings (gal):	14.55
Total Grain Weight (lbs):	32.00	Desired Sparge Temperature (F):	170
Grain Temperature (F):	71	Sparge Water (gal):	-5.99
Mash Ratio (qts/lb):	1.30	Sparge Water Temperature (F):	146
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	8.56
Total Water Needed (gal):	12.81	Boil Time (min):	90
Desired Mash Temperature (F):	147	Evaporation Rate (%):	18%
Strike Water (gal):	10.40	Estimated Evaporation Loss (gal):	2.31
Strike Temperature (F):	162	Trub Loss (gal):	0.75
Grain Absorption (gal):	4.00	Volume Left in Kettle (gal):	0.00
Mash-out Temperature (F):	142	Actual Evaporation Rate (%):	22%
Mash-out Water (gal):	8.40	Actual Evaporation Loss (gal):	2.75

ON BREW DAY
Heat 10.4 gallons of strike water to 162F
Add grain and mash at 147F for 60 minutes
Mash-out with 8.4 gallons at 210F, mix and hold for 10 minutes
Vorlauf and collect first runnings (approx. 14.55 gallons)
Add -5.99 gallons at 146F to lauter tun and sparge
Vorlauf and collect second runnings (approx. -5.99 gallons)
Boil for a total of 90 minutes with the following hop schedule:
0.5 oz. Warrior @60 minute(s)
0.25 oz. Summit @15 minute(s)
0.25 oz. Nelson Sauvin (NZ) @15 minute(s)
0.5 oz. Summit @0 minute(s)
0.5 oz. Nelson Sauvin (NZ) @0 minute(s)

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Warrior	15.8%	0.50	60	23.2	11.11%
Summit	16.3%	0.25	15	5.9	5.56%
Nelson Sauvin (NZ)	12.4%	0.25	15	4.5	5.56%
Summit	16.3%	0.50	0	0.0	11.11%
Nelson Sauvin (NZ)	12.4%	0.50	0	0.0	11.11%
Summit	16.3%	1.25	dry	0.0	27.78%
Nelson Sauvin (NZ)	12.4%	1.25	dry	0.0	27.78%

Gravity		Collections	
Potential OG:	1.202	First Runnings (gal):	0.50
OG:	1.050	SG of First Runnings:	1.084
OG Temperature (F):	62	SG Temperature (F):	60
Corrected OG:	1.050	Corrected SG:	1.084
SG at Racking:	1.013	Second Runnings (gal):	8.00
SG Temperature (F):	64	SG of Second Runnings:	1.036
Corrected SG:	1.014	SG Temperature (F):	60
FG:	1.010	Corrected SG:	1.036
FG Temperature (F):	70	Estimated Preboil SG:	1.039
Corrected FG:	1.011	Preboil Volume (gal):	8.50
Potential ABV (%):	7.6%	SG of Preboil Volume:	1.039
Actual ABV (%):	5.1%	SG Temperature (F):	60
IBU to Gravity Ratio:	0.78	Corrected SG:	1.039

Diacetyl Rest		Carbonation	
Target Fermentation Completion:	75%	CO2 Volume:	2.45
Target SG for Diacetyl Rest:	1.021	Bottling Temperature (F):	
		Priming Sugar (oz):	
Fermentation		DME (oz):	
CO2 Released During Fermentation (g):	732.32	Forced Carbonation (lbs):	

Notes	
Widmer profile: 32 IBU, alchemy/summit-nelson sauvin/summit-nelson sauvin	This beer became much better after 1 month in the keg; should have waited!
This will be a parti-gyle (second runnings) with the barleywine	Next time I think I'd add some crystal (even carapils) and steep for about 15 mins in sparge water.
Assume 28.5% extract efficiency in second runnings (56.5% in first runnings)	That might add body.
Barleywine collections: 8.20 gal @1.084 SG + 9.5 gal @1.036 SG	
Mixed 0.5 gal @1.084 SG + 8 gal @1.036 SG = 8.5 gal @ 1.039 SG	
Should yield 5.5 gal @1.060 OG	
Although wort collection occurred on 12/4, brewed this guy on 12/5	
Did not do a starter (no time), so pitched 1 vial of yeast...	
12/14: 1.014 SG; nice flavor and not too bitter; didn't detect astringency.	
12/21: nice citrus aroma and flavor!	

Extra Variables	
12 oz. Bottles Required:	44
Primary Fermentation Temp. (F):	66
Secondary Fermentation Temp (F):	72

Summary

Pale-Headed Step-Child

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Batch Size: 5.50 gal (8.56 gal preboil)
Estimated OG: 1.058 SG (actual: 1.050 SG)
Estimated FG: 1.014 SG (actual: 1.011 SG)
Estimated IBUs: 34 (Tinseth; actual: 40)
Estimated Color: 20 SRM (actual: 21 SRM)
Brewhouse Efficiency: 29% (actual: 25%)
Boil Time: 90 minutes
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Grains:

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20.00# Pale Malt (2-Row) US (62.50%)
5.00# Munich Malt 10L (15.63%)
5.00# Rye malt (15.63%)
1.50# Caramel/Crystal 60L (4.69%)
0.50# Caramel/Crystal 75L (1.56%)
```

Hops:

```
0.50 oz Warrior (15.8%) @60 min
0.25 oz Summit (16.3%) @15 min
0.25 oz Nelson Sauvin (NZ) (12.4%) @15 min
0.50 oz Summit (16.3%) @0 min
0.50 oz Nelson Sauvin (NZ) (12.4%) @0 min
1.25 oz Summit (16.3%) (dry hop)
1.25 oz Nelson Sauvin (NZ) (12.4%) (dry hop)
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Yeast:

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White Labs WLP001 (California Ale)
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Mash/Sparge Schedule:

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Single Infusion, 147F; Batch Sparge
Mash for 60 min at 147F w/ 10.40 gal of water at 162F
Mashout w/ 8.40 gal of water at 210F; hold for 10 min
Batch sparge w/ -5.99 gal of water at 146F; hold for 10 min
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Fermentation Schedule:

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Primary Fermentation: 9 days @66F
Secondary Fermentation: 7 days @72F
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