

## **TEST REPORT**

### **YIU STUDY CSD-0905**

**Prepared for:**

**RJ Reynolds Tobacco Co.  
401 N. Main Street  
Winston-Salem, NC 27102**

**July 29, 2009**

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## 1 STUDY OVERVIEW

The objective of this study was to determine the yield-in-use (YIU) for user selected brands through comparison with the same brands calibrated to a set number of machine-smoked regimes. The sample cigarettes are identified in Table 3.1.

The project was undertaken in two parts. Part A was smoking of the brands specified in Table 3.1 according to the regimes specified in Table 3.2. An equation was generated to correlate mainstream (MS) pad nicotine to tip-extracted nicotine, and a separate equation to correlate MS pad nicotine-free dry particulate matter (NFDPM or 'tar') to the UV absorbance of the tip extract (UVPM). In Part B, tips were collected from volunteer subjects by the study sponsor who then processed them and forwarded the vial tips to Arista Laboratories. Upon receipt, the tips were counted, measured for tip length, extracted and analyzed for nicotine and UVPM. Utilizing the calibration correlations constructed in Part A, the measured nicotine and UVPM were converted to an estimated yield (estimated MS nicotine and estimated MS 'tar'). All of the tip UVPM data was collected on a PDA detector, while the calibration work was collected on a tunable UV detector. This was necessitated by a failure of the UV detector after completion of the calibration smoking. Utilizing the PDA allowed completion of the project without undue delay. A correction factor was generated utilizing the QCs run on both detectors, and was applied to the final tip UVPM result.

The attached appendices contain the calibration curves for each brand and a table of results for the tips. In total, 1803 cigarette tips were received from 33 subjects. These cigarette tips were measured and extracted giving 360 samples. The extracts were split to give three vials: one for nicotine, one for UVPM and one retained sample.

## 2 TESTING FACILITY

Activities were conducted at Arista Laboratories, 1941 Reymet Road Richmond, VA. 23237.

## 3 TEST SAMPLES

### 3.1 Receipt, storage and conditioning of test samples

- Two hundred cigarettes of twenty calibration brands were received from the sponsor on May 21, 2009.
- The brand code designations are given in Table 3.1.
- Calibration samples were stored at ambient conditions until required for testing. Human smoked tips were stored in a freezer if analysis was not initiated the same day they were received.
- Human-smoked tips arrived June 9, 2009.

**Table 3.1: Brand Coding**

<b>Arista Code</b>	<b>Client Sample I.D.</b>	<b>Cigarettes Received</b>	<b>Customer Code</b>
E2262	Marlboro 100 HP FFLT	200	1910401
E2263	USA Gold 100 SP FFLT	200	1910402
E2264	Camel 85 HP FFLT	200	1910403
E2265	Salem Menthol 85 HP FFLT	200	1910404
E2266	Doral 100 HP FFLT	200	1910405
E2267	Tahoe 85 SP FFLT	200	1910406
E2268	Marlboro 85 HP FFLT	200	1910407
E2269	Winston 85 HP FFLT	200	1910408
E2270	Winston 85 SP FFLT	200	1910409
E2271	Pall Mall 85 HP FFLT	200	1910410
E2272	Monarch Menthol 85 SP FFLT	200	1910411
E2273	Doral 85 HP FFLT	200	1910412
E2274	Camel Menthol 85 HP	200	1910413
E2275	Pall Mall 100 HP FFLT	200	1910414
E2276	Newport 85 HP FFLT	200	1910415
E2277	Doral Menthol 85 HP FFLT	200	1910416
E2278	Tahoe 100 SP FFLT	200	1910417
E2279	Kool Milds 85 HP FFLT	200	1910418
E2280	Camel Wides 85 HP FFLT	200	1910419
E2281	Salem Slim Menthol SP FFLT	200	1910420

Samples were conditioned according to ISO guidelines prior to smoking and used without weight selection.

### 3.2 Smoking Plan

Smoking for generation of the correlation equations was done on a linear 20-port smoking machine under ISO airflow conditions and following the regimes outlined in Table 3.2. Five cigarettes were smoked per pad, with the exception of regimes 5 & 7 where the number was reduced to prevent the TPM loading on the Cambridge filter pad from exceeding 150mg. Three replicates at each regime were collected. Calibration smoking was completed on July 2, 2009.

**Table 3.2: Smoking Regimes**

Point (Regime)	Smoking Conditions					Pack "tar" Yield (mg/cig)	
	Volume (ml)	Duration (s)	Interval (s)	Flow (ml/s)	Smoked Length/puffs	1 - 3mg	4mg plus
0	-	-	-	-	-	✓	✓
1	40	2	60	20.0	4 puffs	✓	✓
2	40	2	30	20.0	Tipping + 3 mm	✓	✓
3	50	1.5	60	33.3	4 puffs	✓	-
4	50	1.5	60	33.3	Tipping + 3 mm	-	✓
5	50	1.5	30	33.3	Tipping + 3 mm	✓	✓
6	70	1.5	60	46.7	4 puffs	-	✓
7	70	1.5	30	46.7	Tipping + 3 mm	✓	✓
8	70	1.5	20	46.7	Tipping + 3 mm	✓	-

### 3.3 Sample Prep and Analysis

Analyses were conducted according to the SOPs specified in Table 3.3.

T-086 is the Arista procedure developed from the Coresta draft method for filter tip analysis. For the calibration smoking, filter retention of nicotine and tar was determined by using a sponsor supplied cutter to cut a 10 mm length of filter (measured from the mouth end of the cigarette) and extracting in methanol. The accurate length ( $\pm 0.1$  mm) of each filter segment was recorded using a digital caliper prior to extraction in order to correct concentrations of final tip nicotine results to 10.0 mm. Nicotine was analyzed by GC/FID and UVPM ('tar') was determined by measuring the absorbance of the tip extract at 310 nm (as quinoline equivalents). Quinoline calibration and QC checks were used to verify the linearity and reproducibility of the UV detector response.

**Table 3.3: Arista Methods**

Smoke Constituents	Arista Analytical Method
MS nicotine, water, tar	T-001, T-003
Tip nicotine and UVPM	T-086

### 3.4 Human-smoked Sample Tips

Sample tips were collected from volunteer subjects by the sponsor. Each respondent had multiple containers of tips collected in the field. The filter tips were accurately measured for length with a caliper, collected into samples according to the chart provided by the sponsor, extracted in methanol and analyzed for nicotine and UVPM as with the smoked samples.

#### 4 RESULTS

Calibration curves were developed for each brand, relating the pad nicotine and tar yields from the smoking to the same analytes in the tip analysis. The  $r^2$  values ranged from 0.875 to 0.991 (average  $r^2$  value 0.955).

The calibration curve data is provided in Appendix A. These curves were used to estimate the MS nicotine and tar yields in the separately supplied tips. The summary of all of the human-smoked samples is attached as Appendix B.

#### 5 QUALITY STATEMENT/SIGNATURES

The analytical results in the attached appendices were reviewed for consistency and evaluated for outliers where deemed necessary. All outliers were noted and repeats conducted if cause was determined. All tests were conducted in accordance with Arista Laboratories quality and technical procedures.

QA Approval:  Shawn Burton Digitally signed by Shawn Burton  
DN: cn=Shawn Burton, o=Arista Laboratories  
ou=Quality Assurance, email=shawn.burton@aristalabs.com, c=US  
Date: 2009.07.29 11:12:03 -0400 \_\_\_\_\_ Date \_\_\_\_\_  
Shawn Burton  
Quality Director

Management Approval:   DN: cn=Bradley K. Norwood, o=Arista Laboratories, Inc.,  
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Reason: I am approving this document  
Date: 2009.07.29 12:23:50 -04'00' \_\_\_\_\_ Date \_\_\_\_\_  
Bradley K. Norwood, PhD  
Laboratory Director

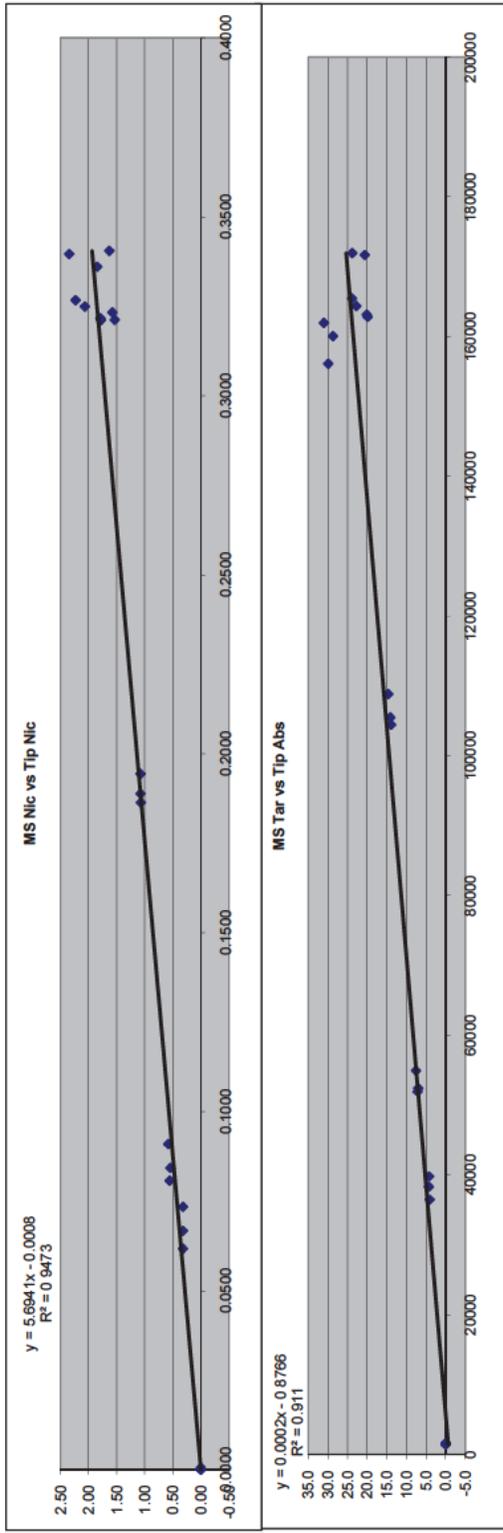
## **APPENDIX A**

### **CALIBRATION CURVES**

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Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2262	BORO 100 HP FFLT - 11	5.694	0.947	-0.877	0.911

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025117	E2262	Cal Lights	1910401	Regime 0				0.0000	0.0000	0.0006	1531.19
2009SN025118	E2262	Cal Lights	1910401	Regime 0				0.0000	0.0000	0.0000	1355.88
2009SN025119	E2262	Cal Lights	1910401	Regime 0				0.0000	0.0000	0.0000	1590.98
2009SN025117	E2262	Cal Lights	1910401	Regime 1	4.0	4.90	0.3211	0.3178	4.2610	0.0734	39785.81
2009SN025118	E2262	Cal Lights	1910401	Regime 1	4.0	4.84	0.4240	0.3210	4.0949	0.0667	36454.52
2009SN025119	E2262	Cal Lights	1910401	Regime 1	4.0	4.96	0.3415	0.3189	4.2995	0.0617	38302.55
2009SN025117	E2262	Cal Lights	1910401	Regime 2	15.0	25.44	3.1965	1.6309	20.6127	0.3405	171697.00
2009SN025118	E2262	Cal Lights	1910401	Regime 2	14.1	24.36	2.9568	1.5362	19.8670	0.3212	162848.89
2009SN025119	E2262	Cal Lights	1910401	Regime 2	15.0	24.42	2.7219	1.5762	20.1219	0.3233	163171.98
2009SN025117	E2262	Cal Lights	1910401	Regime 4	8.8	17.10	2.1100	1.0702	13.9198	0.1864	104444.07
2009SN025118	E2262	Cal Lights	1910401	Regime 4	8.8	17.98	2.2702	1.0764	14.6335	0.1944	108848.41
2009SN025119	E2262	Cal Lights	1910401	Regime 4	8.7	17.14	1.9555	1.0755	14.1090	0.1888	105484.17
2009SN025117	E2262	Cal Lights	1910401	Regime 5	13.4	30.47	4.8456	1.8456	23.7755	0.3361	171982.06
2009SN025118	E2262	Cal Lights	1910401	Regime 5	13.4	29.50	4.9308	1.7899	22.7792	0.3217	164389.51
2009SN025119	E2262	Cal Lights	1910401	Regime 5	13.2	31.43	5.8037	1.7803	23.8493	0.3211	165483.89
2009SN025117	E2262	Cal Lights	1910401	Regime 6	4.0	8.34	0.7988	0.5434	6.9978	0.0843	52402.09
2009SN025118	E2262	Cal Lights	1910401	Regime 6	4.0	8.52	0.7966	0.5566	7.1668	0.0807	51919.07
2009SN025119	E2262	Cal Lights	1910401	Regime 6	4.0	9.02	0.8652	0.5791	7.5757	0.0909	54922.37
2009SN028896	E2262	Cal Lights	1910401	Regime 7	11.9	41.80	9.6568	2.2325	29.9107	0.3267	156130.21
2009SN028897	E2262	Cal Lights	1910401	Regime 7	12.5	42.95	9.5942	2.3470	31.0089	0.3396	161981.18
2009SN028898	E2262	Cal Lights	1910401	Regime 7	11.5	39.90	9.1657	2.0650	28.6692	0.3250	160077.03

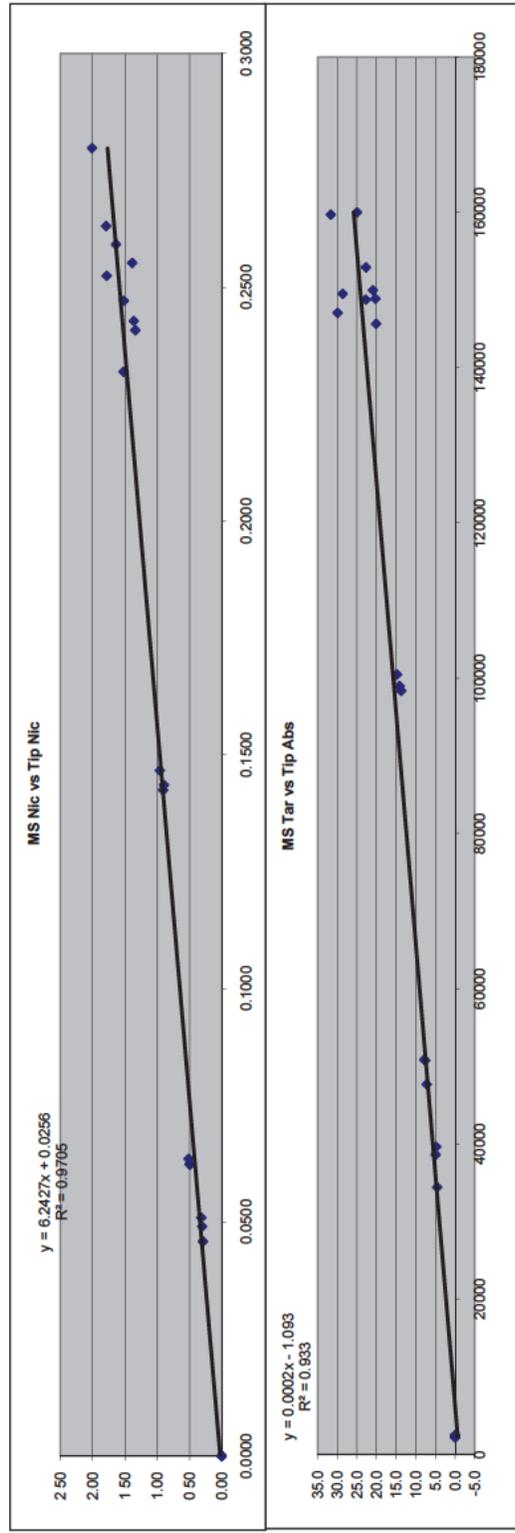


Calibration Curve Report for:  
 RJ Reynolds Tobacco Co.  
 401 N. Main Street  
 Winston-Salem, NC 27102  
 Q19104R2

Project Code: 19104  
 Project Start Date: 21-May-09  
 Authorized By: S Burton  
 Title: QA

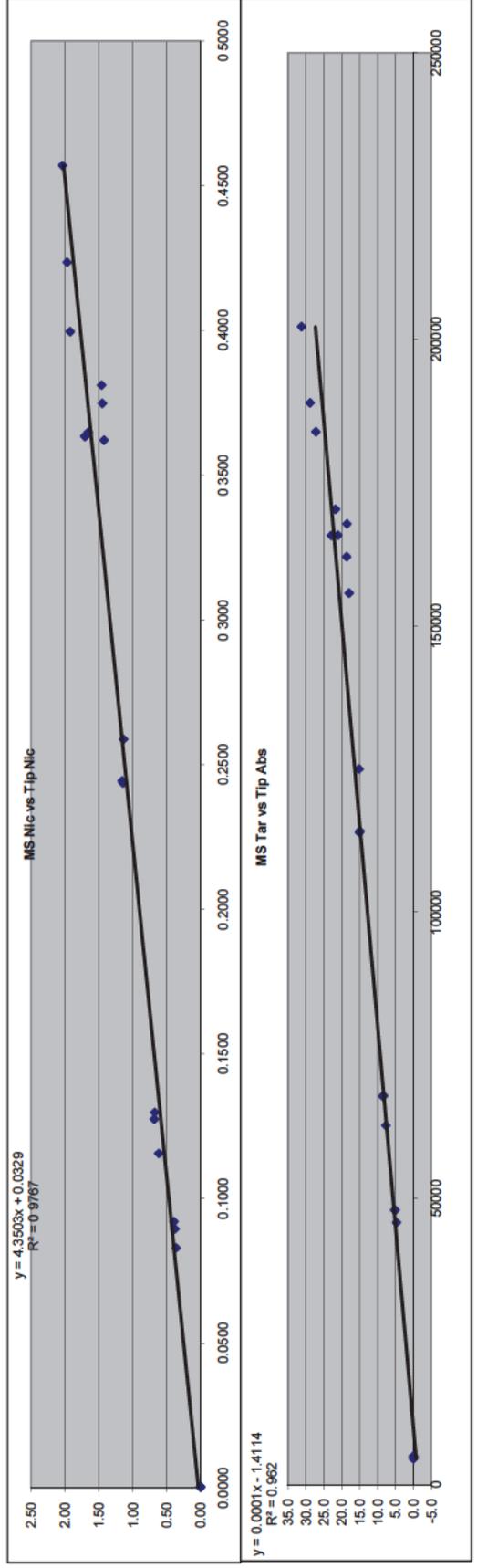
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
E2263	USA GOLD 100 SP FF	6.243	0.026	1.683E-04	-1.093
		Curve 1		Curve 2	
		r-squared		r-squared	
		0.970		0.933	

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025120	E2263	Cal Lights	1910402	Regime 0				0.0000	0.0000	0.0000	2235.17
2009SN025121	E2263	Cal Lights	1910402	Regime 0				0.0000	0.0000	0.0000	2504.94
2009SN025122	E2263	Cal Lights	1910402	Regime 0				0.0000	0.0000	0.0000	2226.55
2009SN025120	E2263	Cal Lights	1910402	Regime 1	4.0	5.66	0.3983	0.3173	4.9444	0.0510	38623.54
2009SN025121	E2263	Cal Lights	1910402	Regime 1	4.0	5.18	0.2944	0.2911	4.5945	0.0459	34440.04
2009SN025122	E2263	Cal Lights	1910402	Regime 1	4.0	5.52	0.3768	0.3049	4.8383	0.0491	39644.73
2009SN025120	E2263	Cal Lights	1910402	Regime 2	12.3	26.16	3.8483	1.3855	20.9262	0.2552	149989.33
2009SN025121	E2263	Cal Lights	1910402	Regime 2	11.9	24.74	3.2879	1.3371	20.1051	0.2409	145661.58
2009SN025122	E2263	Cal Lights	1910402	Regime 2	12.0	25.10	3.4535	1.3623	20.2842	0.2428	148891.89
2009SN025120	E2263	Cal Lights	1910402	Regime 4	7.6	16.60	1.9284	0.9082	13.7634	0.1425	98374.34
2009SN025121	E2263	Cal Lights	1910402	Regime 4	7.4	17.50	2.4367	0.8941	14.1691	0.1435	98980.91
2009SN025122	E2263	Cal Lights	1910402	Regime 4	7.4	18.06	2.2974	0.9605	14.8021	0.1467	100477.07
2009SN025120	E2263	Cal Lights	1910402	Regime 5	11.7	33.33	6.7147	1.6373	24.9813	0.2592	160029.40
2009SN025121	E2263	Cal Lights	1910402	Regime 5	11.3	30.67	6.4019	1.5184	22.7463	0.2320	148762.43
2009SN025122	E2263	Cal Lights	1910402	Regime 5	11.3	29.97	5.7606	1.5168	22.6892	0.2472	152937.11
2009SN025120	E2263	Cal Lights	1910402	Regime 6	4.0	8.46	0.7299	0.4903	7.2398	0.0623	47693.71
2009SN025121	E2263	Cal Lights	1910402	Regime 6	4.0	8.84	0.6845	0.5126	7.6428	0.0636	50789.01
2009SN025122	E2263	Cal Lights	1910402	Regime 6	4.0	9.04	0.7194	0.4970	7.8236	0.0625	50891.11
2009SN028899	E2263	Cal Lights	1910402	Regime 7	10.0	41.00	10.6008	1.7893	28.6099	0.2631	149527.75
2009SN028900	E2263	Cal Lights	1910402	Regime 7	10.3	42.75	11.0745	1.7813	29.8942	0.2525	147074.03
2009SN028901	E2263	Cal Lights	1910402	Regime 7	10.2	45.65	11.9766	2.0105	31.6629	0.2798	159725.71



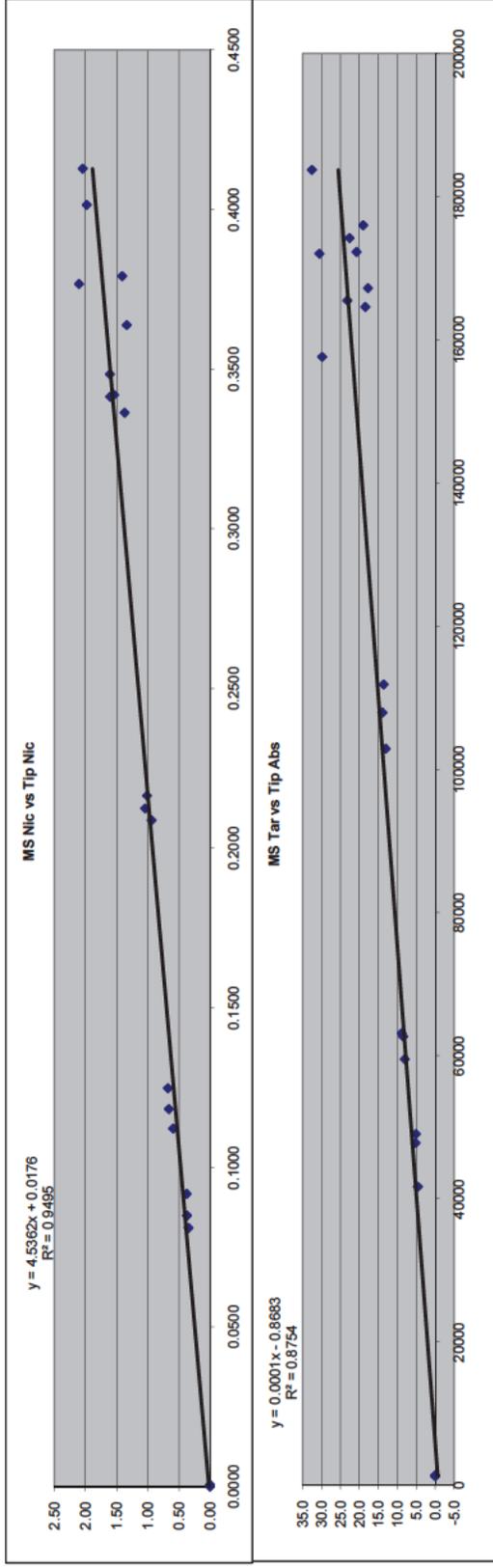
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
E2264	CAMEL 85 HP FFLT - 1910403	4.350	0.033	1.423E-04	-1.411
			r-squared		r-squared
			0.977		0.962

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nico line (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025123	E2264	Cal Lights	1910403	Regime 0				0.0000	0.0000	0.0003	4563.17
2009SN025124	E2264	Cal Lights	1910403	Regime 0				0.0000	0.0000	0.0004	5062.86
2009SN025125	E2264	Cal Lights	1910403	Regime 0				0.0000	0.0000	0.0002	4801.53
2009SN025123	E2264	Cal Lights	1910403	Regime 1	4.0	5.64	0.5092	0.3630	4.7678	0.0829	45820.51
2009SN025124	E2264	Cal Lights	1910403	Regime 1	4.0	6.06	0.4969	0.3944	5.1687	0.0920	47938.63
2009SN025125	E2264	Cal Lights	1910403	Regime 1	4.0	6.06	0.4976	0.3808	5.1816	0.0894	47965.84
2009SN025123	E2264	Cal Lights	1910403	Regime 2	12.9	23.38	3.9973	1.4250	17.9577	0.3621	155694.73
2009SN025124	E2264	Cal Lights	1910403	Regime 2	13.2	24.30	4.2194	1.4503	18.6303	0.3748	162028.55
2009SN025125	E2264	Cal Lights	1910403	Regime 2	12.4	24.34	4.3090	1.4611	18.5699	0.3811	167762.53
2009SN025123	E2264	Cal Lights	1910403	Regime 4	8.0	20.04	3.8139	1.1469	15.0792	0.2436	113904.53
2009SN025124	E2264	Cal Lights	1910403	Regime 4	7.7	20.66	4.3235	1.1379	15.1985	0.2587	124959.60
2009SN025125	E2264	Cal Lights	1910403	Regime 4	8.1	19.90	3.7666	1.1575	14.9759	0.2443	114165.95
2009SN025123	E2264	Cal Lights	1910403	Regime 5	11.5	31.27	7.7855	1.7084	21.7727	0.3634	170311.81
2009SN025124	E2264	Cal Lights	1910403	Regime 5	11.6	29.53	6.8049	1.6573	21.0711	0.3648	165785.80
2009SN025125	E2264	Cal Lights	1910403	Regime 5	12.1	31.90	7.2588	1.7002	22.9410	0.3635	165752.87
2009SN025123	E2264	Cal Lights	1910403	Regime 6	4.0	9.34	1.0256	0.6188	7.6956	0.1156	62736.72
2009SN025124	E2264	Cal Lights	1910403	Regime 6	4.0	10.38	1.2855	0.6768	8.4177	0.1297	67962.15
2009SN025125	E2264	Cal Lights	1910403	Regime 6	4.0	10.48	1.2562	0.6845	8.5393	0.1274	67837.96
2009SN025123	E2264	Cal Lights	1910403	Regime 7	10.7	42.45	13.3030	1.9237	27.2232	0.3995	183854.89
2009SN025124	E2264	Cal Lights	1910403	Regime 7	10.2	49.65	16.3488	2.0380	31.2632	0.4570	202208.27
2009SN025125	E2264	Cal Lights	1910403	Regime 7	10.4	44.65	13.8087	1.9692	28.8721	0.4235	188900.67



Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2265	EM MENTHOL 85 HP FFLT - 1910	4.536	0.949	1.439E-04	0.875

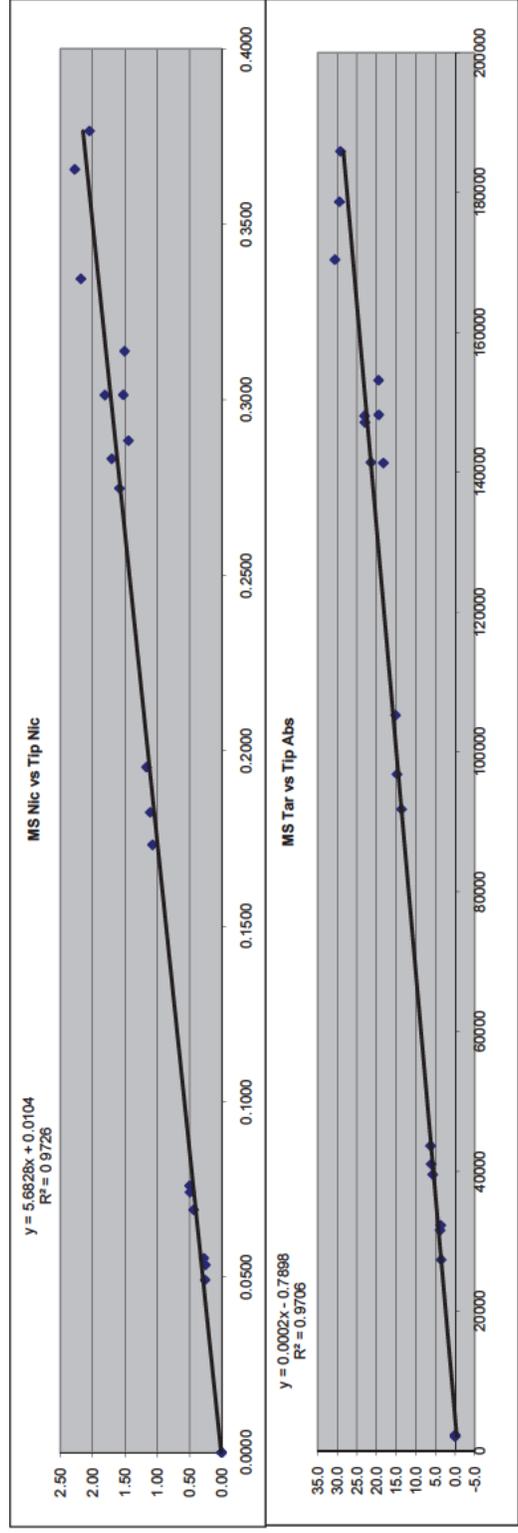
Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025126	E2265	Cal Lights	1910404	Regime 0				0.0000	0.0000	0.0000	1325.40
2009SN025127	E2265	Cal Lights	1910404	Regime 0				0.0000	0.0000	0.0002	1317.85
2009SN025128	E2265	Cal Lights	1910404	Regime 0				0.0000	0.0000	0.0006	1240.55
2009SN025126	E2265	Cal Lights	1910404	Regime 1	4.0	6.02	0.5203	0.3761	5.1236	0.0917	49035.28
2009SN025127	E2265	Cal Lights	1910404	Regime 1	4.0	6.08	0.5042	0.3710	5.2048	0.0849	47789.22
2009SN025128	E2265	Cal Lights	1910404	Regime 1	4.0	5.30	0.3542	0.3461	4.5996	0.0810	41679.72
2009SN025126	E2265	Cal Lights	1910404	Regime 2	11.5	22.98	3.8813	1.3381	17.7606	0.3638	167204.81
2009SN025127	E2265	Cal Lights	1910404	Regime 2	10.9	24.60	4.7543	1.3714	18.4743	0.3363	164574.51
2009SN025128	E2265	Cal Lights	1910404	Regime 2	11.8	25.32	4.8781	1.4099	19.0320	0.3791	175977.27
2009SN025126	E2265	Cal Lights	1910404	Regime 4	7.4	18.42	3.7614	1.0124	13.6461	0.2164	111850.55
2009SN025127	E2265	Cal Lights	1910404	Regime 4	7.4	18.68	3.6871	1.0424	13.9504	0.2124	107919.23
2009SN025128	E2265	Cal Lights	1910404	Regime 4	7.4	16.74	2.7389	0.9401	13.0610	0.2087	102862.36
2009SN025126	E2265	Cal Lights	1910404	Regime 5	11.0	32.53	7.7254	1.6027	23.2052	0.3413	165482.92
2009SN025127	E2265	Cal Lights	1910404	Regime 5	11.6	30.00	7.6993	1.5421	20.7585	0.3419	172250.14
2009SN025128	E2265	Cal Lights	1910404	Regime 5	11.3	33.30	9.0567	1.6084	22.6348	0.3484	174215.63
2009SN025126	E2265	Cal Lights	1910404	Regime 6	4.0	10.86	1.3082	0.6777	8.8741	0.1248	63114.17
2009SN025127	E2265	Cal Lights	1910404	Regime 6	4.0	10.36	1.2206	0.6616	8.4778	0.1163	62659.62
2009SN025128	E2265	Cal Lights	1910404	Regime 6	4.0	9.74	1.1160	0.5922	8.0318	0.1122	59484.36
2009SN028902	E2265	Cal Lights	1910404	Regime 7	10.0	46.15	14.1769	2.1042	29.8688	0.3767	157608.68
2009SN028903	E2265	Cal Lights	1910404	Regime 7	9.5	52.55	17.9211	2.0446	32.5843	0.4128	183734.60
2009SN028904	E2265	Cal Lights	1910404	Regime 7	9.5	48.05	15.4935	1.9809	30.5756	0.4014	172014.25



Calibration Curve Report for: **Project Code: 19104**  
**RJ Reynolds Tobacco Co.** Project Start Date: **21-May-09**  
**401 N. Main Street** Authorized By: **S Burton**  
**Winston-Salem, NC 27102** Title: **QA**  
**Q19104R2**

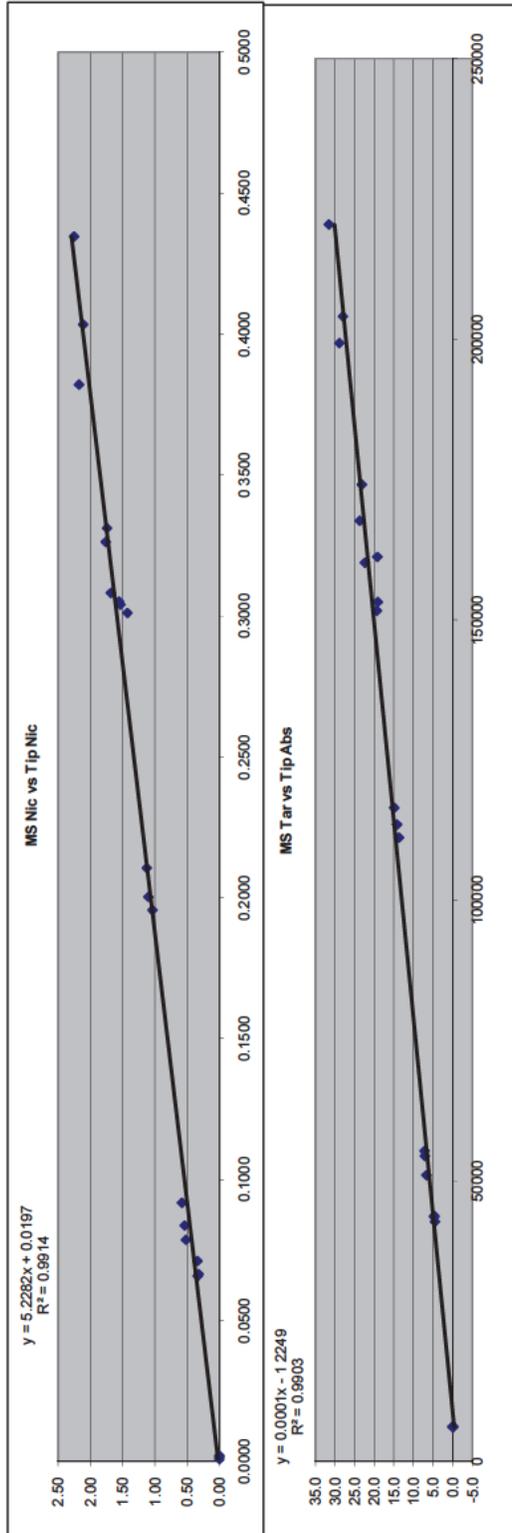
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
EZ266	AL 100 HP FFLT - 1910	5.683	0.010	1.571E-04	-0.790
		r-squared		r-squared	
		0.973		0.971	

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025129	EZ266	Cal Lights	1910405	Regime 0				0.0000	0.0000	0.0000	2164.98
2009SN025130	EZ266	Cal Lights	1910405	Regime 0				0.0000	0.0000	0.0000	2287.60
2009SN025131	EZ266	Cal Lights	1910405	Regime 0				0.0000	0.0000	0.0000	2033.58
2009SN025129	EZ266	Cal Lights	1910405	Regime 1	4.0	4.26	0.2928	0.2531	3.7141	0.0535	32273.00
2009SN025130	EZ266	Cal Lights	1910405	Regime 1	4.0	4.20	0.3682	0.2602	3.5716	0.0492	27335.65
2009SN025131	EZ266	Cal Lights	1910405	Regime 1	4.0	4.52	0.3722	0.2766	3.8712	0.0554	31660.98
2009SN025129	EZ266	Cal Lights	1910405	Regime 2	15.4	24.26	3.2891	1.5042	19.4868	0.3138	153128.61
2009SN025130	EZ266	Cal Lights	1910405	Regime 2	15.8	22.68	2.9888	1.4457	18.2455	0.2884	141305.88
2009SN025131	EZ266	Cal Lights	1910405	Regime 2	15.8	24.56	3.6028	1.5244	19.4328	0.3014	148173.09
2009SN025129	EZ266	Cal Lights	1910405	Regime 4	9.7	19.18	2.8656	1.1635	15.1510	0.1953	105212.66
2009SN025130	EZ266	Cal Lights	1910405	Regime 4	9.3	18.32	2.4419	1.1062	14.7718	0.1825	96772.42
2009SN025131	EZ266	Cal Lights	1910405	Regime 4	9.3	17.06	2.3180	1.0704	13.6716	0.1732	91772.61
2009SN025129	EZ266	Cal Lights	1910405	Regime 5	14.9	28.43	5.4193	1.5835	21.4305	0.2748	141373.25
2009SN025130	EZ266	Cal Lights	1910405	Regime 5	14.8	29.90	5.2564	1.7035	22.9401	0.2832	147095.51
2009SN025131	EZ266	Cal Lights	1910405	Regime 5	14.9	31.63	6.7778	1.8099	23.0456	0.3013	148014.39
2009SN025129	EZ266	Cal Lights	1910405	Regime 6	4.0	7.38	0.7851	0.4904	6.1045	0.0742	41009.06
2009SN025130	EZ266	Cal Lights	1910405	Regime 6	4.0	7.56	0.8149	0.4981	6.2470	0.0760	43630.54
2009SN025131	EZ266	Cal Lights	1910405	Regime 6	4.0	6.86	0.7118	0.4362	5.7120	0.0692	39525.73
2009SN025129	EZ266	Cal Lights	1910405	Regime 7	13.5	46.70	14.9948	2.2771	29.4281	0.3657	178631.71
2009SN025130	EZ266	Cal Lights	1910405	Regime 7	13.1	45.60	12.8279	2.1813	30.5908	0.3345	170358.31
2009SN025131	EZ266	Cal Lights	1910405	Regime 7	12.8	43.30	12.0743	2.0482	29.1775	0.3766	185860.77



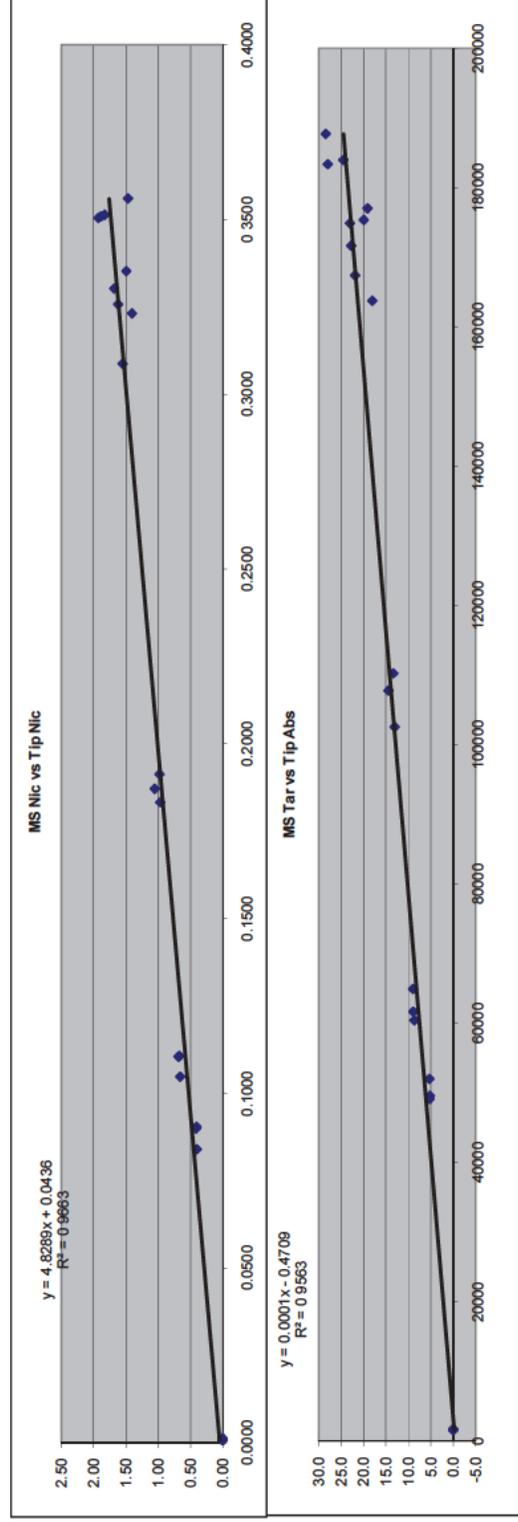
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2267	JOE 85 SP FFLT - 1910	5.228	0.991	1.423E-04	0.990

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mgr/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025132	E2267	Cal Lights	1910406	Regime 0				0.0000	0.0000	0.0020	6249.69
2009SN025133	E2267	Cal Lights	1910406	Regime 0				0.0000	0.0000	0.0015	6039.92
2009SN025134	E2267	Cal Lights	1910406	Regime 0				0.0000	0.0000	0.0007	6143.43
2009SN025132	E2267	Cal Lights	1910406	Regime 1	4.0	5.44	0.3603	0.3372	4.7425	0.0658	43537.13
2009SN025133	E2267	Cal Lights	1910406	Regime 1	4.0	5.44	0.3494	0.3414	4.7493	0.0711	43746.80
2009SN025134	E2267	Cal Lights	1910406	Regime 1	4.0	5.24	0.3805	0.3216	4.5980	0.0664	42700.33
2009SN028905	E2267	Cal Lights	1910406	Regime 2	13.7	23.36	2.7210	1.4273	19.2116	0.3010	161207.18
2009SN028906	E2267	Cal Lights	1910406	Regime 2	13.6	23.74	2.8525	1.5591	19.3284	0.3050	151620.48
2009SN028907	E2267	Cal Lights	1910406	Regime 2	13.1	23.24	2.6357	1.5375	19.0668	0.3040	153163.35
2009SN025132	E2267	Cal Lights	1910406	Regime 4	8.7	16.62	1.8442	1.0410	13.7347	0.1956	11186.00
2009SN025133	E2267	Cal Lights	1910406	Regime 4	8.7	17.80	2.4655	1.1029	14.2317	0.2003	113493.31
2009SN025134	E2267	Cal Lights	1910406	Regime 4	8.6	18.30	2.2800	1.1277	14.8923	0.2105	116481.24
2009SN028905	E2267	Cal Lights	1910406	Regime 5	13.7	28.43	4.3848	1.6834	22.3652	0.3082	160172.93
2009SN028906	E2267	Cal Lights	1910406	Regime 5	13.0	30.03	5.1293	1.7453	23.1588	0.3312	174103.62
2009SN028907	E2267	Cal Lights	1910406	Regime 5	12.7	30.97	5.4934	1.7642	23.7090	0.3262	167846.41
2009SN025132	E2267	Cal Lights	1910406	Regime 6	4.0	7.96	0.6974	0.5208	6.7418	0.0786	51004.75
2009SN025133	E2267	Cal Lights	1910406	Regime 6	4.0	8.40	0.7151	0.5404	7.1445	0.0837	54413.94
2009SN025134	E2267	Cal Lights	1910406	Regime 6	4.0	8.58	0.7729	0.5834	7.2237	0.0917	55300.89
2009SN025132	E2267	Cal Lights	1910406	Regime 7	11.5	41.35	11.2492	2.1142	27.9867	0.4033	204062.57
2009SN025133	E2267	Cal Lights	1910406	Regime 7	11.7	46.10	12.2856	2.2557	31.5587	0.4347	220480.34
2009SN025134	E2267	Cal Lights	1910406	Regime 7	12.1	42.95	11.9030	2.1777	28.8693	0.3821	199301.65



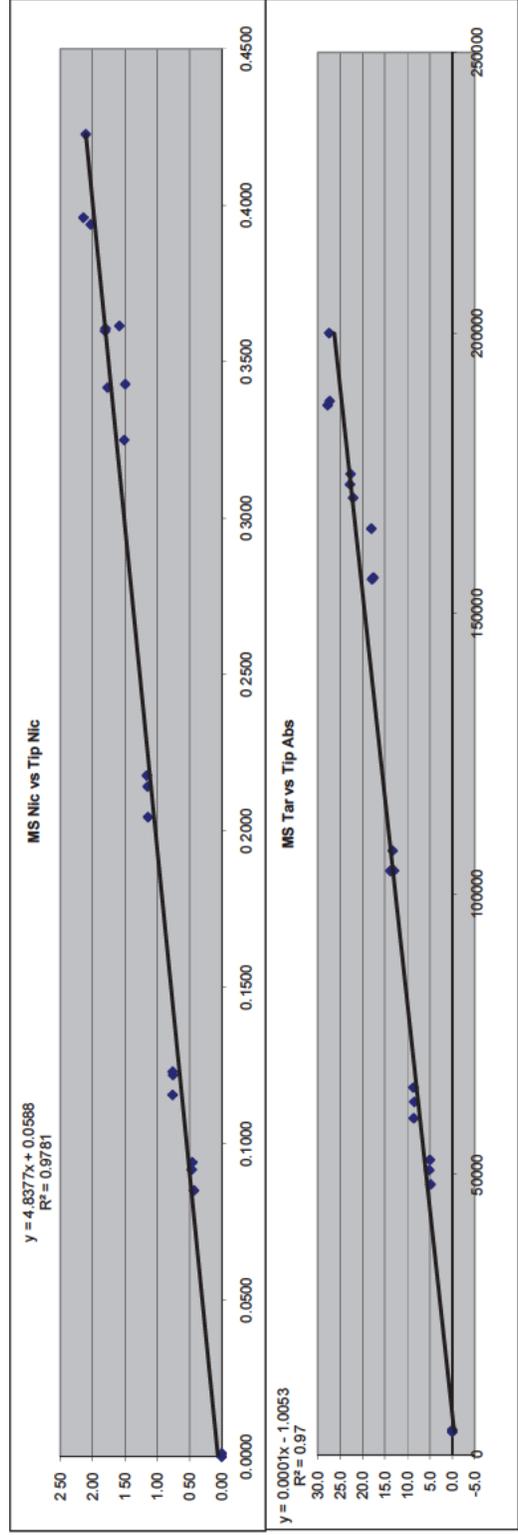
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
EZ268	MARLBORO 85 HP FF	4.829	0.966	1.329E-04	0.956

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic (mg/10mm)	Absorbance (Abs/10mm)
2009SN025135	E2268	Cal Lights	1910407	Regime 0				0.0000	0.0000	0.0014	1784.45
2009SN025136	E2268	Cal Lights	1910407	Regime 0				0.0000	0.0000	0.0007	1704.06
2009SN025137	E2268	Cal Lights	1910407	Regime 0				0.0000	0.0000	0.0008	1586.67
2009SN025135	E2268	Cal Lights	1910407	Regime 1	4.0	6.18	0.5403	0.4043	5.2355	0.0840	49598.42
2009SN025136	E2268	Cal Lights	1910407	Regime 1	4.0	6.14	0.4596	0.4068	5.2736	0.0904	49157.76
2009SN025137	E2268	Cal Lights	1910407	Regime 1	4.0	6.20	0.4645	0.4154	5.3201	0.0899	52043.01
2009SN025135	E2268	Cal Lights	1910407	Regime 2	11.9	25.46	4.0225	1.4957	19.9418	0.3352	175359.68
2009SN025136	E2268	Cal Lights	1910407	Regime 2	11.0	24.78	4.2201	1.4704	19.0895	0.3560	177040.36
2009SN025137	E2268	Cal Lights	1910407	Regime 2	10.9	22.96	3.5000	1.4067	18.0532	0.3231	163759.81
2009SN025135	E2268	Cal Lights	1910407	Regime 4	7.2	18.56	3.0381	1.0542	14.4677	0.1871	107803.17
2009SN025136	E2268	Cal Lights	1910407	Regime 4	7.0	16.72	2.6748	0.9685	13.0767	0.1833	102567.01
2009SN025137	E2268	Cal Lights	1910407	Regime 4	7.0	17.32	2.9619	0.9818	13.3763	0.1913	110267.71
2009SN025135	E2268	Cal Lights	1910407	Regime 5	10.5	29.93	6.4706	1.5546	21.9082	0.3087	167389.76
2009SN025136	E2268	Cal Lights	1910407	Regime 5	11.4	31.47	6.7699	1.6832	23.0136	0.3302	174869.34
2009SN025137	E2268	Cal Lights	1910407	Regime 5	10.8	30.73	6.3468	1.6238	22.7627	0.3257	171658.56
2009SN025135	E2268	Cal Lights	1910407	Regime 6	4.0	11.08	1.4754	0.6867	8.9178	0.1105	61693.43
2009SN025136	E2268	Cal Lights	1910407	Regime 6	4.0	10.96	1.3156	0.6718	8.9726	0.1107	64943.70
2009SN025137	E2268	Cal Lights	1910407	Regime 6	4.0	10.70	1.3510	0.6598	8.6893	0.1048	60454.73
2009SN025135	E2268	Cal Lights	1910407	Regime 7	9.6	43.45	13.1221	1.8666	28.4413	0.3509	187725.55
2009SN025136	E2268	Cal Lights	1910407	Regime 7	9.8	39.60	13.2685	1.8297	24.5018	0.3513	183983.45
2009SN025137	E2268	Cal Lights	1910407	Regime 7	9.8	44.40	14.4965	1.9298	27.9737	0.3504	183354.95



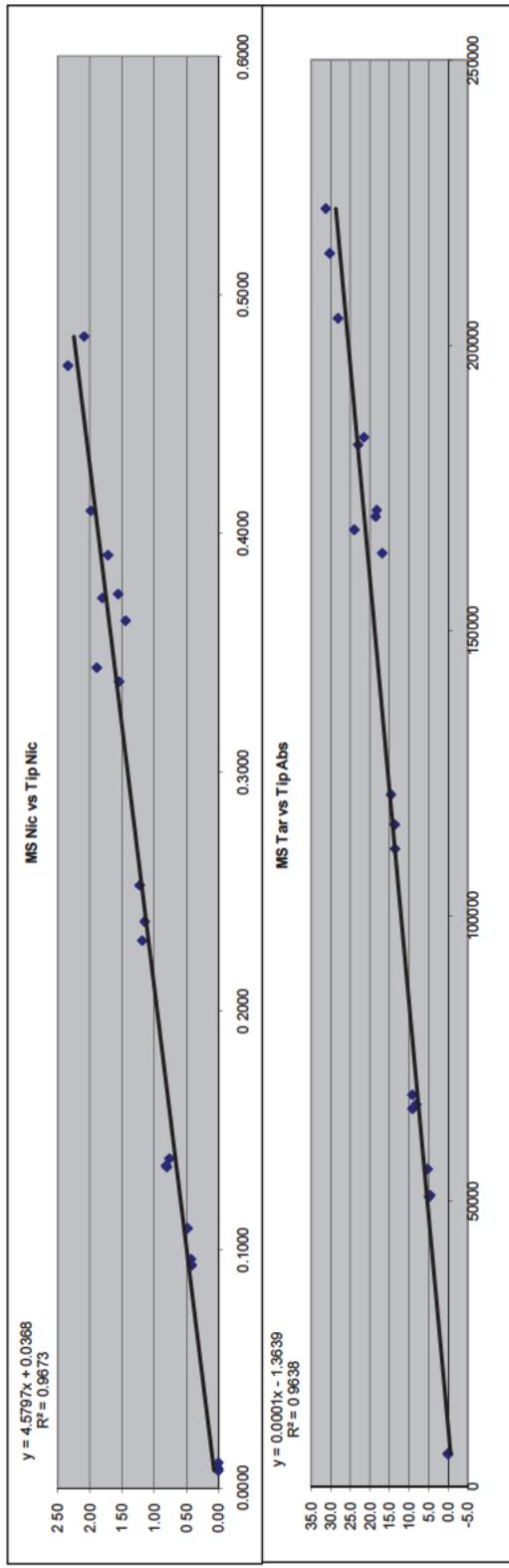
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
E2269	WINSTON 85 HP FFLT	4.838	0.059	1.364E-04	-1.005
		Curve 1		Curve 2	
		r-squared		r-squared	
		0.978		0.970	

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025138	E2269	Cal Lights	1910408	Regime 0				0.0000	0.0000	0.0010	4058.79
2009SN025139	E2269	Cal Lights	1910408	Regime 0				0.0000	0.0000	0.0000	4432.35
2009SN025140	E2269	Cal Lights	1910408	Regime 0				0.0000	0.0000	0.0000	4119.61
2009SN025138	E2269	Cal Lights	1910408	Regime 1	4.0	5.84	0.3607	0.4572	5.0222	0.0940	52565.50
2009SN025139	E2269	Cal Lights	1910408	Regime 1	4.0	5.52	0.2546	0.4298	4.8356	0.0850	48203.76
2009SN025140	E2269	Cal Lights	1910408	Regime 1	4.0	5.92	0.3237	0.4662	5.1301	0.0917	50746.43
2009SN025138	E2269	Cal Lights	1910408	Regime 2	11.3	22.32	2.9148	1.5122	17.8930	0.3249	156079.28
2009SN025139	E2269	Cal Lights	1910408	Regime 2	11.4	22.52	2.9093	1.5877	18.0229	0.3614	165092.28
2009SN025140	E2269	Cal Lights	1910408	Regime 2	11.4	21.86	2.7959	1.4953	17.5988	0.3428	156396.76
2009SN025138	E2269	Cal Lights	1910408	Regime 4	7.0	17.86	2.8940	1.1439	13.8221	0.2044	104104.74
2009SN025139	E2269	Cal Lights	1910408	Regime 4	7.0	17.68	3.2027	1.1636	13.3137	0.2177	107686.25
2009SN025140	E2269	Cal Lights	1910408	Regime 4	7.2	16.92	2.7708	1.1495	12.9997	0.2142	104129.37
2009SN025138	E2269	Cal Lights	1910408	Regime 5	10.6	30.37	6.4902	1.7699	22.1066	0.3417	170606.14
2009SN025139	E2269	Cal Lights	1910408	Regime 5	11.3	30.57	6.0828	1.8090	22.6749	0.3598	174860.08
2009SN025140	E2269	Cal Lights	1910408	Regime 5	11.3	30.83	6.2401	1.8034	22.7898	0.3606	172983.53
2009SN025138	E2269	Cal Lights	1910408	Regime 6	4.0	10.52	1.1094	0.7612	8.6494	0.1230	65465.07
2009SN025139	E2269	Cal Lights	1910408	Regime 6	4.0	10.44	1.0907	0.7617	8.5676	0.1156	59989.53
2009SN025140	E2269	Cal Lights	1910408	Regime 6	4.0	10.36	1.1337	0.7561	8.4702	0.1219	62928.18
2009SN025138	E2269	Cal Lights	1910408	Regime 7	9.2	43.50	14.1433	2.0323	27.3243	0.3938	187848.20
2009SN025139	E2269	Cal Lights	1910408	Regime 7	10.4	42.90	13.3538	2.1085	27.4377	0.4227	199960.14
2009SN025140	E2269	Cal Lights	1910408	Regime 7	9.9	42.40	12.4647	2.1460	27.7893	0.3960	187113.22



Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance		
		Slope 1	Int 1	Slope 2	Int 2	r-squared
E2270	WINSTON 85 SP FFLT - 191	4.580	0.037	1.342E-04	-1.364	0.964

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025141	E2270	Cal Lights	1910409	Regime 0				0.0000	0.0000	0.0080	5742.25
2009SN025142	E2270	Cal Lights	1910409	Regime 0				0.0000	0.0000	0.0072	5668.00
2009SN025143	E2270	Cal Lights	1910409	Regime 0				0.0000	0.0000	0.0106	5806.49
2009SN025141	E2270	Cal Lights	1910409	Regime 1	4.0	6.14	0.4067	0.4823	5.2510	0.1088	56640.59
2009SN025142	E2270	Cal Lights	1910409	Regime 1	4.0	5.32	0.3093	0.4183	4.5924	0.0934	51043.03
2009SN025143	E2270	Cal Lights	1910409	Regime 1	4.0	5.56	0.2660	0.4270	4.8670	0.0959	50768.15
2009SN025141	E2270	Cal Lights	1910409	Regime 2	11.2	22.76	2.7202	1.5466	18.4932	0.3379	169957.69
2009SN025142	E2270	Cal Lights	1910409	Regime 2	11.8	21.06	2.7930	1.4454	16.8216	0.3635	163555.99
2009SN025143	E2270	Cal Lights	1910409	Regime 2	11.8	22.42	2.6228	1.5593	18.2379	0.3747	171088.37
2009SN025141	E2270	Cal Lights	1910409	Regime 4	7.2	17.36	2.6319	1.1867	13.5414	0.2294	111755.53
2009SN025142	E2270	Cal Lights	1910409	Regime 4	7.4	19.20	3.3609	1.2258	14.6133	0.2526	121240.66
2009SN025143	E2270	Cal Lights	1910409	Regime 4	7.1	17.20	2.4083	1.1481	13.6436	0.2374	115996.42
2009SN025141	E2270	Cal Lights	1910409	Regime 5	10.7	29.17	5.9295	1.7198	21.5174	0.3910	183846.11
2009SN025142	E2270	Cal Lights	1910409	Regime 5	10.8	33.73	7.8625	1.8945	23.9763	0.3438	167654.43
2009SN025143	E2270	Cal Lights	1910409	Regime 5	10.8	31.83	7.0307	1.8064	22.9963	0.3730	182547.53
2009SN025141	E2270	Cal Lights	1910409	Regime 6	4.0	11.04	1.0973	0.8149	9.1278	0.1351	68650.32
2009SN025142	E2270	Cal Lights	1910409	Regime 6	4.0	11.08	1.1647	0.8029	9.1124	0.1345	66210.45
2009SN025143	E2270	Cal Lights	1910409	Regime 6	4.0	10.14	1.2091	0.7623	8.1686	0.1381	66975.38
2009SN025141	E2270	Cal Lights	1910409	Regime 7	10.0	45.30	12.9463	2.0894	30.2643	0.4826	216069.26
2009SN025142	E2270	Cal Lights	1910409	Regime 7	9.1	43.40	13.2673	1.9844	28.1483	0.4096	204705.03
2009SN025143	E2270	Cal Lights	1910409	Regime 7	10.2	49.00	15.3662	2.3435	31.2903	0.4703	223944.27

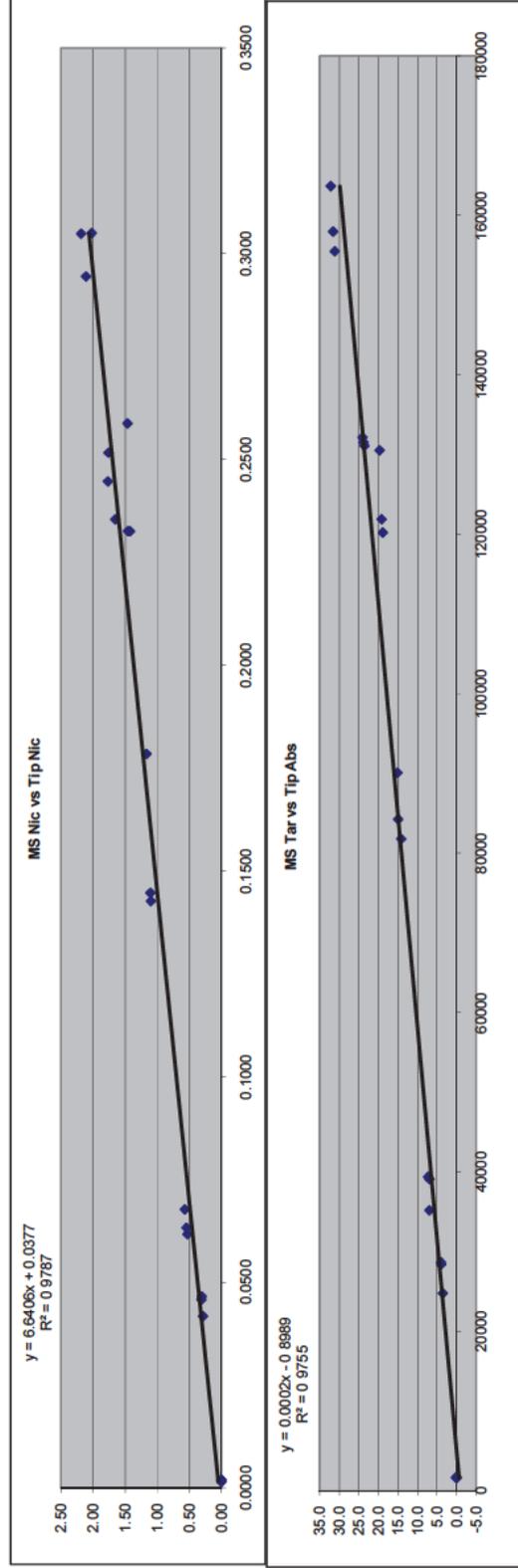


Calibration Curve Report for:  
 RJ Reynolds Tobacco Co.  
 401 N. Main Street  
 Winston-Salem, NC 27102  
 Q19104R2

Project Code: 19104  
 Project Start Date: 21-May-09  
 Authorized By: S Burton  
 Title: QA

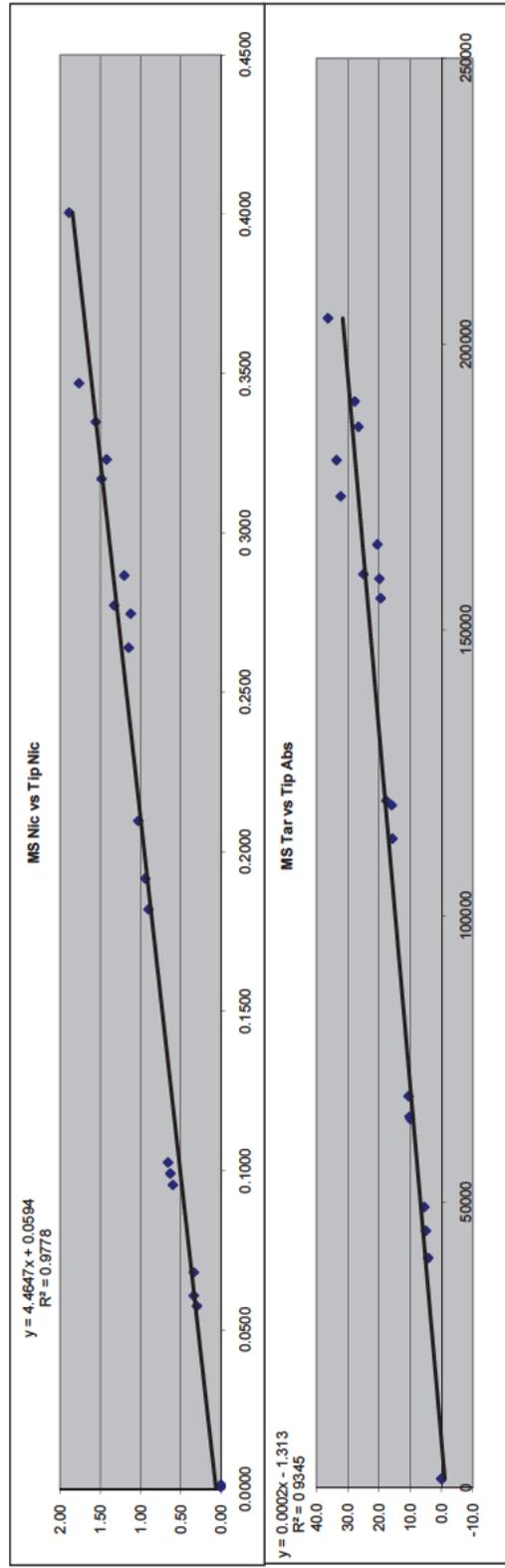
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
E2271	PALL MALL 85 HP FFLT - 18	6.641	0.038	1.879E-04	-0.899
					r-squared
					0.975

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025144	E2271	Cal Lights	1910410	Regime 0				0.0000	0.0000	0.0015	1759.50
2009SN025145	E2271	Cal Lights	1910410	Regime 0				0.0000	0.0000	0.0020	1661.50
2009SN025146	E2271	Cal Lights	1910410	Regime 0				0.0000	0.0000	0.0020	1602.24
2009SN025144	E2271	Cal Lights	1910410	Regime 1	4.0	4.70	0.4379	0.3069	3.9552	0.0466	28426.24
2009SN025145	E2271	Cal Lights	1910410	Regime 1	4.0	4.18	0.3728	0.2894	3.5178	0.0418	24777.70
2009SN025146	E2271	Cal Lights	1910410	Regime 1	4.0	4.72	0.4300	0.3132	3.9768	0.0458	28673.77
2009SN025144	E2271	Cal Lights	1910410	Regime 2	13.9	25.80	4.6633	1.4637	19.6731	0.2588	130506.03
2009SN025145	E2271	Cal Lights	1910410	Regime 2	14.2	25.54	4.9122	1.4542	19.1736	0.2326	121873.95
2009SN025146	E2271	Cal Lights	1910410	Regime 2	14.3	24.50	4.2206	1.4248	18.8546	0.2325	120187.95
2009SN025144	E2271	Cal Lights	1910410	Regime 4	9.2	20.10	3.8204	1.1680	15.1117	0.1785	90063.68
2009SN025145	E2271	Cal Lights	1910410	Regime 4	8.8	20.08	4.0292	1.1056	14.9452	0.1447	84237.15
2009SN025146	E2271	Cal Lights	1910410	Regime 4	8.2	18.80	3.5512	1.0994	14.1494	0.1427	81775.19
2009SN025144	E2271	Cal Lights	1910410	Regime 5	13.5	33.83	8.0117	1.7587	24.0629	0.2516	132140.97
2009SN025145	E2271	Cal Lights	1910410	Regime 5	13.5	32.67	7.3583	1.7674	23.5410	0.2447	131081.84
2009SN025146	E2271	Cal Lights	1910410	Regime 5	13.4	34.07	8.8331	1.6530	23.7806	0.2355	131509.12
2009SN025144	E2271	Cal Lights	1910410	Regime 6	4.0	8.42	0.9223	0.5471	6.9506	0.0633	35207.87
2009SN025145	E2271	Cal Lights	1910410	Regime 6	4.0	8.86	1.0065	0.5712	7.2822	0.0678	39390.77
2009SN025146	E2271	Cal Lights	1910410	Regime 6	4.0	8.36	0.9291	0.5317	6.8992	0.0617	39101.94
2009SN025144	E2271	Cal Lights	1910410	Regime 7	12.5	50.20	17.0450	2.0193	31.1357	0.3051	155473.27
2009SN025145	E2271	Cal Lights	1910410	Regime 7	12.0	50.95	16.5882	2.1857	32.1761	0.3049	163642.42
2009SN025146	E2271	Cal Lights	1910410	Regime 7	11.7	51.40	17.7484	2.1075	31.5441	0.2945	157937.57



Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2272	MONARCH MENTHOL 85	4.465	0.978	1.610E-04	0.935

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025147	E2272	Cal Lights	1910411	Regime 0				0.0000	0.0000	0.0006	1545.61
2009SN025148	E2272	Cal Lights	1910411	Regime 0				0.0000	0.0000	0.0012	1511.66
2009SN025149	E2272	Cal Lights	1910411	Regime 0				0.0000	0.0000	0.0014	1576.92
2009SN025147	E2272	Cal Lights	1910411	Regime 1	4.0	5.88	0.4938	0.3356	5.0506	0.0607	44934.75
2009SN025148	E2272	Cal Lights	1910411	Regime 1	4.0	4.94	0.3669	0.2979	4.2752	0.0574	40171.51
2009SN025149	E2272	Cal Lights	1910411	Regime 1	4.0	6.38	0.5027	0.3366	5.5406	0.0680	49078.35
2009SN025147	E2272	Cal Lights	1910411	Regime 2	10.3	26.48	5.8682	1.1456	19.4662	0.2640	155558.15
2009SN025148	E2272	Cal Lights	1910411	Regime 2	10.2	27.88	6.1287	1.2022	20.5491	0.2866	164966.35
2009SN025149	E2272	Cal Lights	1910411	Regime 2	10.4	27.68	6.6648	1.1217	19.8935	0.2746	158961.23
2009SN025147	E2272	Cal Lights	1910411	Regime 4	7.1	23.42	6.5241	0.9408	15.9551	0.1915	119383.98
2009SN025148	E2272	Cal Lights	1910411	Regime 4	7.0	25.82	7.0731	1.0267	17.7202	0.2097	120143.47
2009SN025149	E2272	Cal Lights	1910411	Regime 4	7.1	22.74	6.1102	0.9000	15.7299	0.1819	113534.64
2009SN025147	E2272	Cal Lights	1910411	Regime 5	9.8	41.40	13.3286	1.4846	26.5868	0.3169	185550.82
2009SN025148	E2272	Cal Lights	1910411	Regime 5	10.0	39.13	12.8599	1.3258	24.9477	0.2772	159769.16
2009SN025149	E2272	Cal Lights	1910411	Regime 5	9.8	42.67	13.4447	1.4225	27.7984	0.3230	189894.56
2009SN025147	E2272	Cal Lights	1910411	Regime 6	4.0	13.52	2.3226	0.6572	10.5401	0.1025	68456.21
2009SN025148	E2272	Cal Lights	1910411	Regime 6	4.0	12.54	1.9165	0.5971	10.0264	0.0954	64505.70
2009SN025149	E2272	Cal Lights	1910411	Regime 6	4.0	13.14	2.2455	0.6289	10.2656	0.0990	64876.77
2009SN028908	E2272	Cal Lights	1910411	Regime 7	7.5	49.40	15.5981	1.5564	32.2454	0.3348	173398.40
2009SN028909	E2272	Cal Lights	1910411	Regime 7	8.8	58.45	20.1890	1.8882	36.3728	0.4005	204576.53
2009SN028910	E2272	Cal Lights	1910411	Regime 7	8.0	53.75	18.3718	1.7641	33.6141	0.3469	179721.95

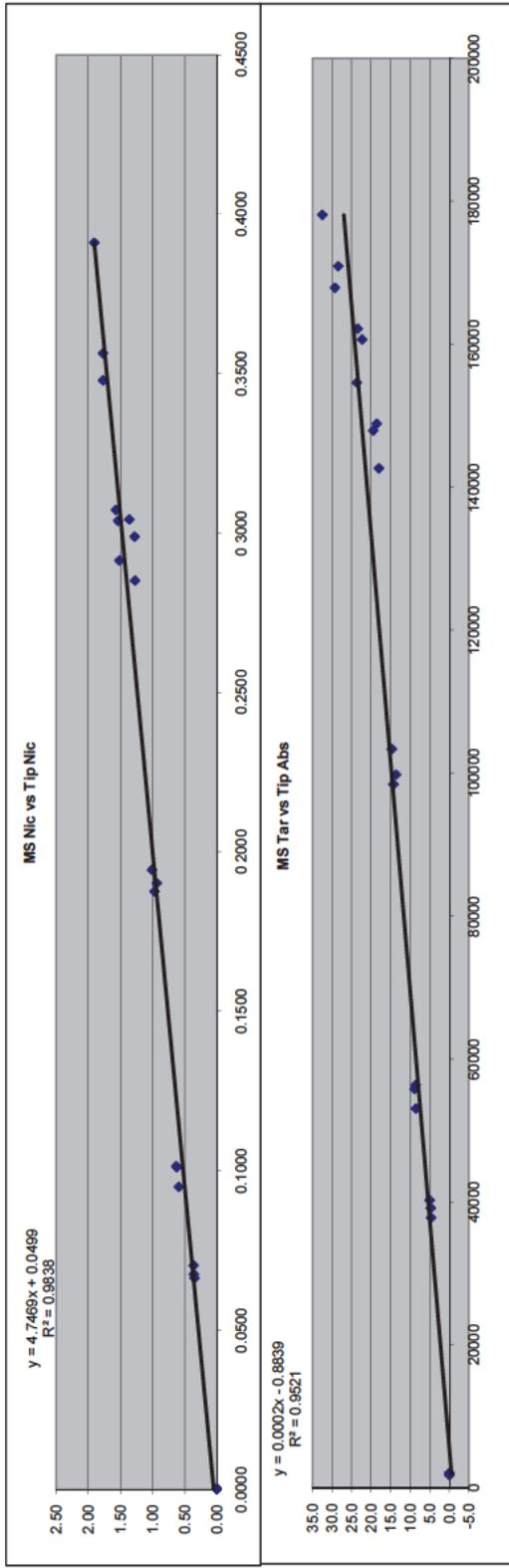


Calibration Curve Report for:  
 RJ Reynolds Tobacco Co.  
 401 N. Main Street  
 Winston-Salem, NC 27102  
 Q19104R2

Project Code: 19104  
 Project Start Date: 21-May-09  
 Authorized By: S Burton  
 Title: QA

Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2273	DORAL 85 HP FFLT - 19104	4.747	0.984	1.566E-04	0.952

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025150	E2273	Cal Lights	1910412	Regime 0				0.0000	0.0000	0.0003	1797.84
2009SN025151	E2273	Cal Lights	1910412	Regime 0				0.0000	0.0000	0.0002	2103.49
2009SN025152	E2273	Cal Lights	1910412	Regime 0				0.0000	0.0000	0.0000	2053.72
2009SN025150	E2273	Cal Lights	1910412	Regime 1	4.0	5.68	0.5838	0.3596	4.7365	0.0675	39166.60
2009SN025151	E2273	Cal Lights	1910412	Regime 1	4.0	5.54	0.5201	0.3477	4.6723	0.0663	37812.13
2009SN025152	E2273	Cal Lights	1910412	Regime 1	4.0	5.90	0.5120	0.3624	5.0256	0.0703	40275.67
2009SN025150	E2273	Cal Lights	1910412	Regime 2	11.5	23.60	4.3445	1.2755	17.9799	0.2851	142650.55
2009SN025151	E2273	Cal Lights	1910412	Regime 2	11.9	26.52	5.7221	1.3630	19.4348	0.3043	147924.16
2009SN025152	E2273	Cal Lights	1910412	Regime 2	11.7	25.08	5.2491	1.2827	18.5482	0.2988	148888.67
2009SN025150	E2273	Cal Lights	1910412	Regime 4	7.3	20.06	4.3640	1.0112	14.6848	0.1944	103359.95
2009SN025151	E2273	Cal Lights	1910412	Regime 4	7.6	20.06	4.8170	0.9713	14.2717	0.1876	98441.96
2009SN025152	E2273	Cal Lights	1910412	Regime 4	7.3	18.72	4.1518	0.9363	13.6319	0.1901	99799.48
2009SN025150	E2273	Cal Lights	1910412	Regime 5	10.9	35.30	10.1171	1.5383	23.6446	0.3038	154642.45
2009SN025151	E2273	Cal Lights	1910412	Regime 5	11.1	34.43	9.4609	1.5729	23.3995	0.3072	162173.59
2009SN025152	E2273	Cal Lights	1910412	Regime 5	11.5	32.50	8.7189	1.5165	22.2646	0.2914	160864.65
2009SN025150	E2273	Cal Lights	1910412	Regime 6	4.0	10.82	1.6203	0.6247	8.5750	0.1011	56377.43
2009SN025151	E2273	Cal Lights	1910412	Regime 6	4.0	11.22	1.7147	0.6322	8.8731	0.1014	55817.95
2009SN025152	E2273	Cal Lights	1910412	Regime 6	4.0	10.88	1.7816	0.5938	8.5046	0.0949	53088.35
2009SN025150	E2273	Cal Lights	1910412	Regime 7	9.3	45.90	15.7543	1.7730	28.3727	0.3564	170922.16
2009SN025151	E2273	Cal Lights	1910412	Regime 7	10.0	48.45	17.4480	1.7730	29.2289	0.3479	167905.73
2009SN025152	E2273	Cal Lights	1910412	Regime 7	10.4	53.85	19.4951	1.9102	32.4448	0.3911	178111.67



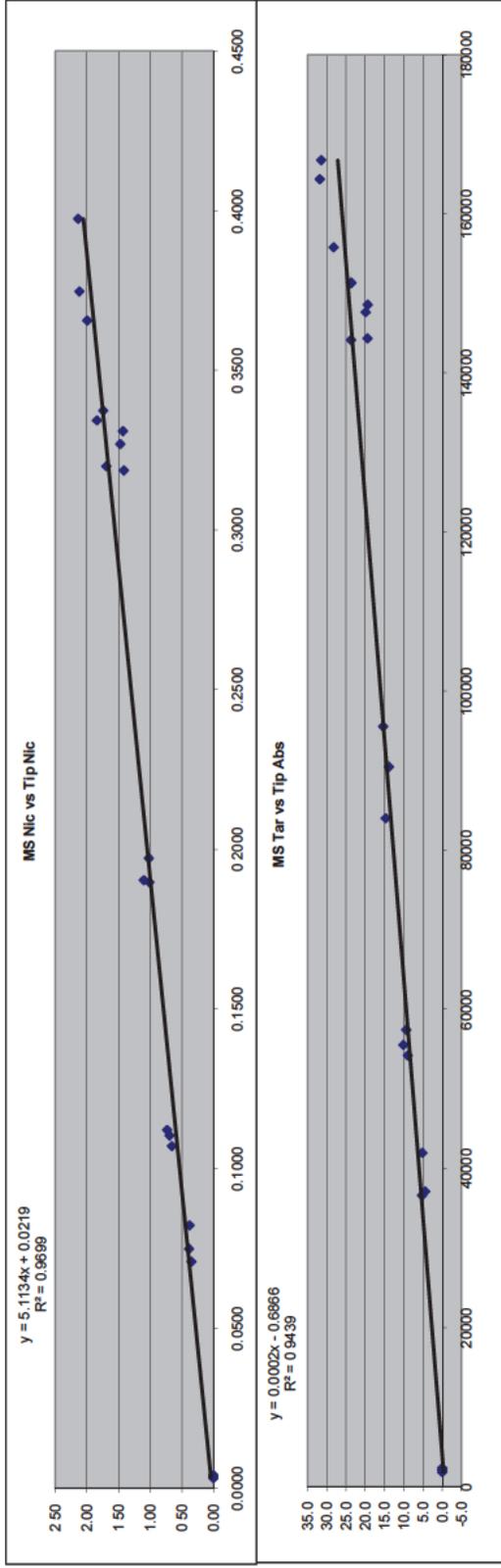
Arista Laboratories  
 1941 Reymet Rd  
 Richmond, VA 23237

Project Code: 19104  
 Project Start Date: 21-May-09  
 Authorized By: S Burton  
 Title: QA

Calibration Curve Report for:  
 RJ Reynolds Tobacco Co.  
 401 N. Main Street  
 Winston-Salem, NC 27102  
 Q19104R2

Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
E2274	CAMEL MENTHOL 85 HP - 191	5.113	0.022	1.670E-04	-0.687
		r-squared		r-squared	
		0.970		0.944	

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025153	E2274	Cal Lights	1910413	Regime 0				0.0000	0.0000	0.0041	1794.47
2009SN025154	E2274	Cal Lights	1910413	Regime 0				0.0000	0.0000	0.0031	2321.33
2009SN025155	E2274	Cal Lights	1910413	Regime 0				0.0000	0.0000	0.0037	2078.15
2009SN025153	E2274	Cal Lights	1910413	Regime 1	4.0	5.26	0.4667	0.3495	4.438	0.0709	37090.99
2009SN025154	E2274	Cal Lights	1910413	Regime 1	4.0	6.18	0.5294	0.3853	5.2653	0.0749	36598.76
2009SN025155	E2274	Cal Lights	1910413	Regime 1	4.0	6.12	0.5647	0.3777	5.1877	0.0822	41947.94
2009SN025153	E2274	Cal Lights	1910413	Regime 2	11.2	25.92	4.5913	1.4170	19.9116	0.3186	147639.45
2009SN025154	E2274	Cal Lights	1910413	Regime 2	11.1	25.26	4.3742	1.4749	19.4109	0.3269	144346.08
2009SN025155	E2274	Cal Lights	1910413	Regime 2	11.1	25.24	4.4476	1.4322	19.3603	0.3310	148577.72
2009SN025153	E2274	Cal Lights	1910413	Regime 4	7.1	18.96	4.0824	1.0214	13.8562	0.1972	90468.70
2009SN025154	E2274	Cal Lights	1910413	Regime 4	7.0	21.34	4.8884	1.1018	15.3498	0.1904	95562.61
2009SN025155	E2274	Cal Lights	1910413	Regime 4	7.0	19.36	3.6494	1.0148	14.6958	0.1897	84012.55
2009SN025153	E2274	Cal Lights	1910413	Regime 5	11.1	35.07	9.6033	1.8431	23.6203	0.3343	151368.12
2009SN025154	E2274	Cal Lights	1910413	Regime 5	11.1	34.17	8.7723	1.6947	23.6997	0.3200	144144.15
2009SN025155	E2274	Cal Lights	1910413	Regime 5	10.7	34.47	9.0048	1.7427	23.7192	0.3374	151302.92
2009SN025153	E2274	Cal Lights	1910413	Regime 6	4.0	11.76	1.7097	0.6950	9.3553	0.1104	57410.81
2009SN025154	E2274	Cal Lights	1910413	Regime 6	4.0	11.14	1.5155	0.6583	8.9662	0.1071	54183.35
2009SN025155	E2274	Cal Lights	1910413	Regime 6	4.0	12.76	1.9203	0.7335	10.1062	0.1121	55503.06
2009SN025153	E2274	Cal Lights	1910413	Regime 7	9.9	51.00	17.4350	2.1212	31.4438	0.3747	166750.66
2009SN025154	E2274	Cal Lights	1910413	Regime 7	9.8	52.10	18.1474	2.1409	31.8117	0.3975	164351.93
2009SN025155	E2274	Cal Lights	1910413	Regime 7	8.5	45.25	15.0544	1.9974	28.1981	0.3656	155788.36

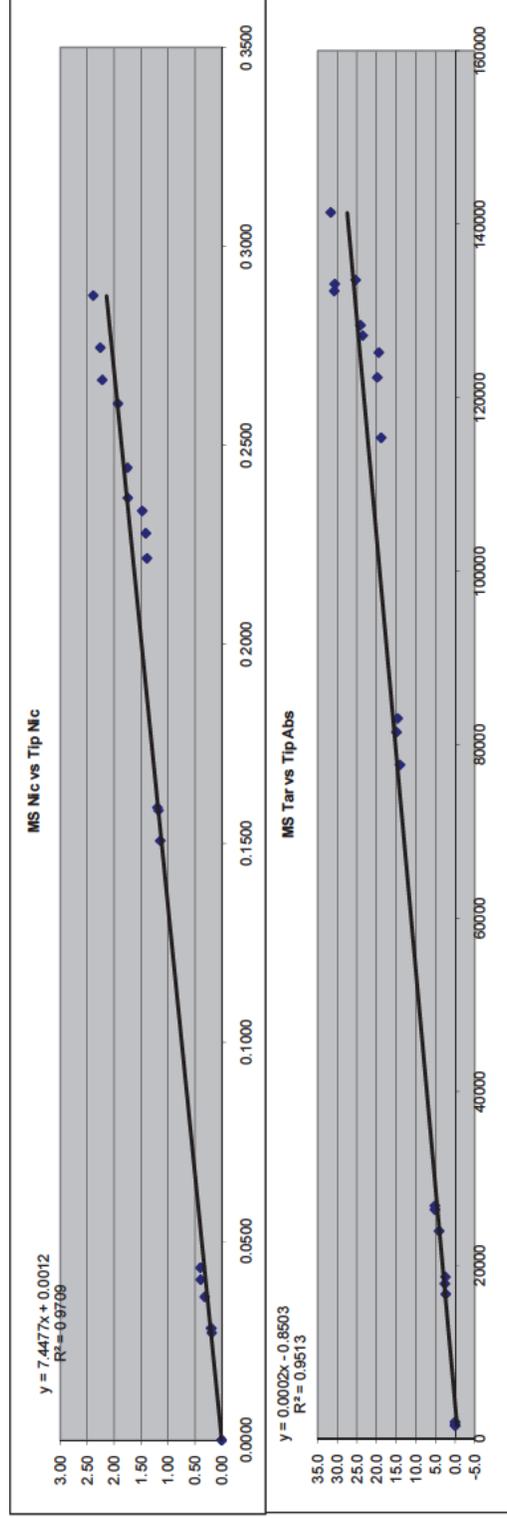


Calibration Curve Report for:  
 RJ Reynolds Tobacco Co.  
 401 N. Main Street  
 Winston-Salem, NC 27102  
 Q19104R2

Project Code: 19104  
 Project Start Date: 21-May-09  
 Authorized By: S Burton  
 Title: QA

Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2275	PALL MALL 100 HP F	7.448	0.971	2.000E-04	0.951

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025156	E2275	Cal Lights	1910414	Regime 0				0.0000	0.0000	0.0000	1467.86
2009SN025157	E2275	Cal Lights	1910414	Regime 0				0.0000	0.0000	0.0000	1616.44
2009SN025158	E2275	Cal Lights	1910414	Regime 0				0.0000	0.0000	0.0000	1918.19
2009SN025156	E2275	Cal Lights	1910414	Regime 1	4.0	2.96	0.3606	0.1872	2.4122	0.0270	16653.28
2009SN025157	E2275	Cal Lights	1910414	Regime 1	4.0	3.04	0.2494	0.1972	2.5934	0.0281	17848.44
2009SN025158	E2275	Cal Lights	1910414	Regime 1	4.0	2.86	0.1765	0.1981	2.4854	0.0282	18647.18
2009SN025156	E2275	Cal Lights	1910414	Regime 2	18.8	22.66	2.4655	1.3928	18.8017	0.2216	115391.46
2009SN025157	E2275	Cal Lights	1910414	Regime 2	18.5	23.60	2.7677	1.4144	19.4180	0.2279	125205.72
2009SN025158	E2275	Cal Lights	1910414	Regime 2	18.4	24.06	2.7915	1.4790	19.7895	0.2335	122337.72
2009SN025156	E2275	Cal Lights	1910414	Regime 4	10.9	18.78	2.6644	1.1980	14.9176	0.1590	81435.36
2009SN025157	E2275	Cal Lights	1910414	Regime 4	10.9	17.26	2.0636	1.1431	14.0534	0.1506	77680.78
2009SN025158	E2275	Cal Lights	1910414	Regime 4	11.1	18.20	2.3838	1.1779	14.6383	0.1582	83040.35
2009SN025156	E2275	Cal Lights	1910414	Regime 5	17.8	30.93	5.6804	1.7533	23.4997	0.2443	127157.33
2009SN025157	E2275	Cal Lights	1910414	Regime 5	16.5	33.07	7.2086	1.7474	24.1107	0.2367	128344.95
2009SN025158	E2275	Cal Lights	1910414	Regime 5	17.8	34.00	6.7754	1.9327	25.2919	0.2604	133569.65
2009SN025156	E2275	Cal Lights	1910414	Regime 6	4.0	6.12	0.5962	0.3955	5.1383	0.0434	26396.92
2009SN025157	E2275	Cal Lights	1910414	Regime 6	4.0	4.80	0.3848	0.3183	4.0969	0.0360	23925.31
2009SN025158	E2275	Cal Lights	1910414	Regime 6	4.0	6.12	0.5756	0.3912	5.1532	0.0403	26838.24
2009SN028911	E2275	Cal Lights	1910414	Regime 7	15.5	44.90	10.8762	2.3921	31.6317	0.2876	141388.96
2009SN028912	E2275	Cal Lights	1910414	Regime 7	14.8	43.75	10.9339	2.2214	30.5947	0.2664	133097.44
2009SN028913	E2275	Cal Lights	1910414	Regime 7	15.1	43.25	10.2452	2.2608	30.7440	0.2745	132291.76



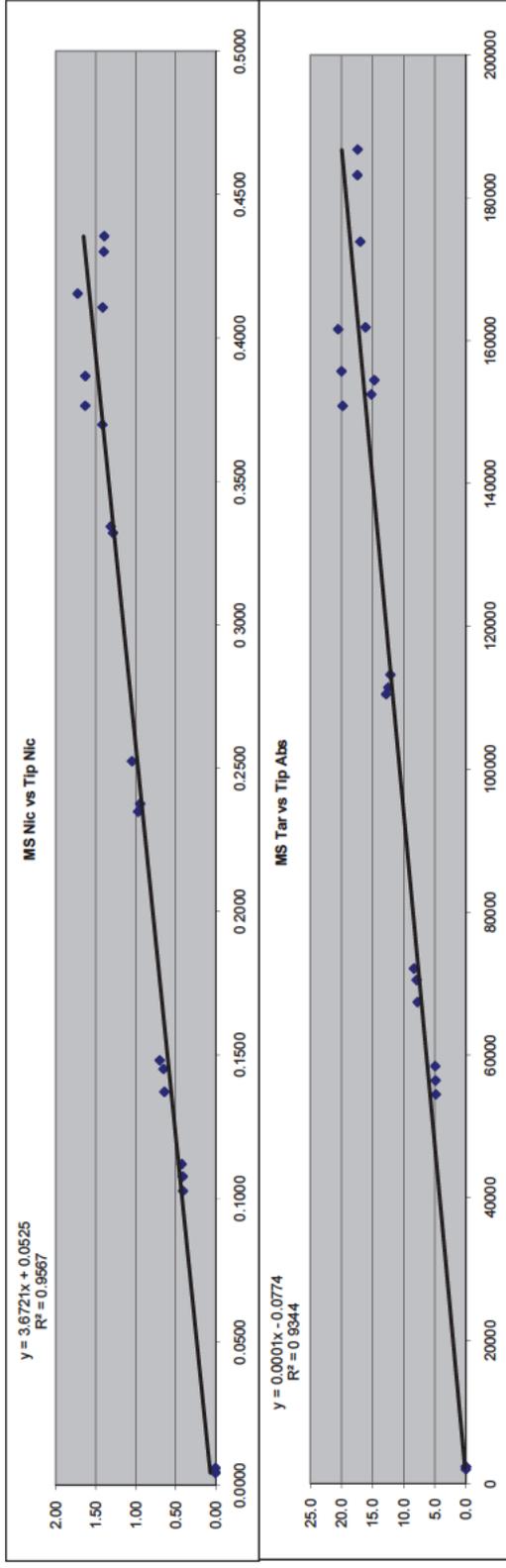
Arista Laboratories  
 1941 Reymet Rd  
 Richmond, VA 23237

Calibration Curve Report for:  
 RJ Reynolds Tobacco Co.  
 401 N. Main Street  
 Winston-Salem, NC 27102  
 Q19104R2

Project Code: 19104  
 Project Start Date: 21-May-09  
 Authorized By: S Burton  
 Title: QA

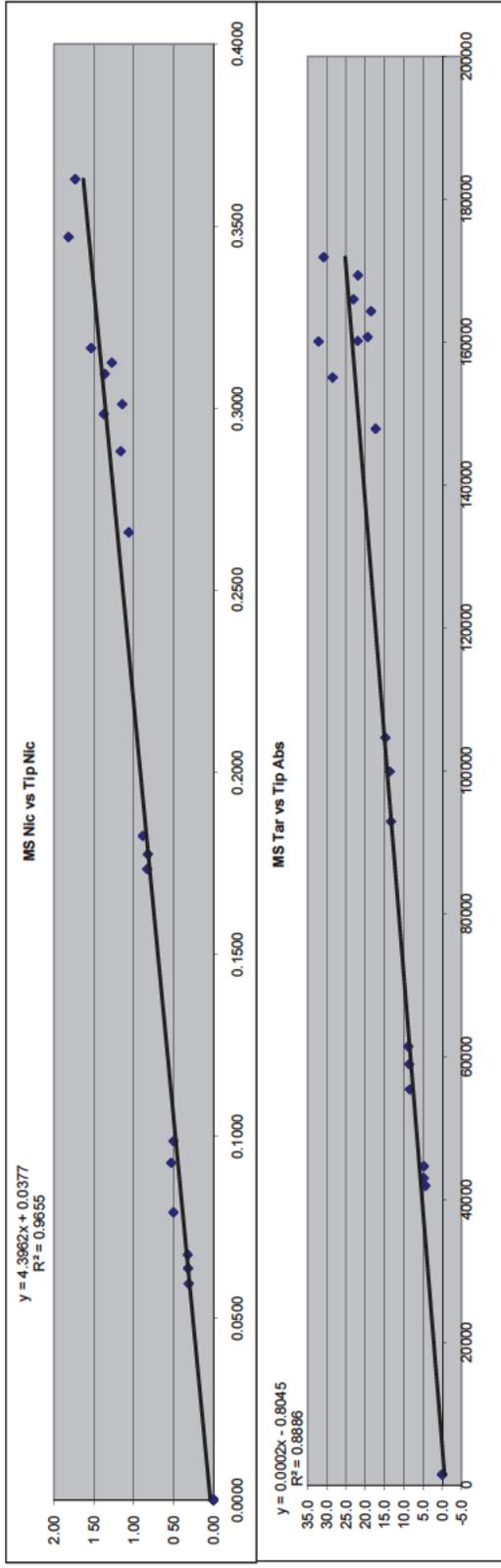
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	Int 1	Slope 2	Int 2
E2276	NEWPORT 85 HP FFLT - 191	3.672	0.052	1.073E-04	-0.077
		r-squared		r-squared	
		0.957		0.934	

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025159	E2276	Cal Lights	1910415	Regime 0				0.0000	0.0000	0.0045	2318.98
2009SN025160	E2276	Cal Lights	1910415	Regime 0				0.0000	0.0000	0.0042	2016.81
2009SN025161	E2276	Cal Lights	1910415	Regime 0				0.0000	0.0000	0.0060	2400.30
2009SN025159	E2276	Cal Lights	1910415	Regime 1	4.0	5.72	0.4780	0.4097	4.8323	0.1026	54483.35
2009SN025160	E2276	Cal Lights	1910415	Regime 1	4.0	5.84	0.5228	0.4101	4.9071	0.1077	56438.01
2009SN025161	E2276	Cal Lights	1910415	Regime 1	4.0	5.92	0.5354	0.4224	4.9622	0.1120	58440.11
2009SN025159	E2276	Cal Lights	1910415	Regime 2	10.7	22.48	3.5515	1.3987	17.4299	0.4301	186733.32
2009SN025160	E2276	Cal Lights	1910415	Regime 2	10.6	21.96	3.5529	1.4139	16.9933	0.4107	173824.01
2009SN025161	E2276	Cal Lights	1910415	Regime 2	10.4	22.58	3.7513	1.3935	17.4352	0.4356	183120.97
2009SN025159	E2276	Cal Lights	1910415	Regime 4	6.6	15.48	2.3603	0.9685	12.1512	0.2349	113214.18
2009SN025160	E2276	Cal Lights	1910415	Regime 4	6.9	16.24	2.8067	0.9452	12.4892	0.2376	111418.35
2009SN025161	E2276	Cal Lights	1910415	Regime 4	7.0	16.72	2.8339	1.0462	12.8399	0.2525	110479.15
2009SN028914	E2276	Cal Lights	1910415	Regime 5	9.5	26.97	5.3387	1.6304	19.9976	0.3868	155684.69
2009SN028915	E2276	Cal Lights	1910415	Regime 5	9.6	28.27	5.9702	1.7271	20.5694	0.4155	161565.50
2009SN028916	E2276	Cal Lights	1910415	Regime 5	10.0	26.47	5.0115	1.6309	19.8243	0.3764	150849.50
2009SN025159	E2276	Cal Lights	1910415	Regime 6	4.0	9.50	1.0795	0.6400	7.7805	0.1372	67401.01
2009SN025160	E2276	Cal Lights	1910415	Regime 6	4.0	9.70	1.1024	0.6517	7.9459	0.1451	70509.49
2009SN025161	E2276	Cal Lights	1910415	Regime 6	4.0	10.26	1.2155	0.6995	8.3450	0.1481	72100.57
2009SN025159	E2276	Cal Lights	1910415	Regime 7	11.9	20.25	2.6817	1.4170	16.1513	0.3698	161852.88
2009SN025160	E2276	Cal Lights	1910415	Regime 7	10.9	19.15	2.6516	1.2855	15.2129	0.3321	152465.10
2009SN025161	E2276	Cal Lights	1910415	Regime 7	10.9	18.60	2.5505	1.3118	14.7377	0.3343	154434.37



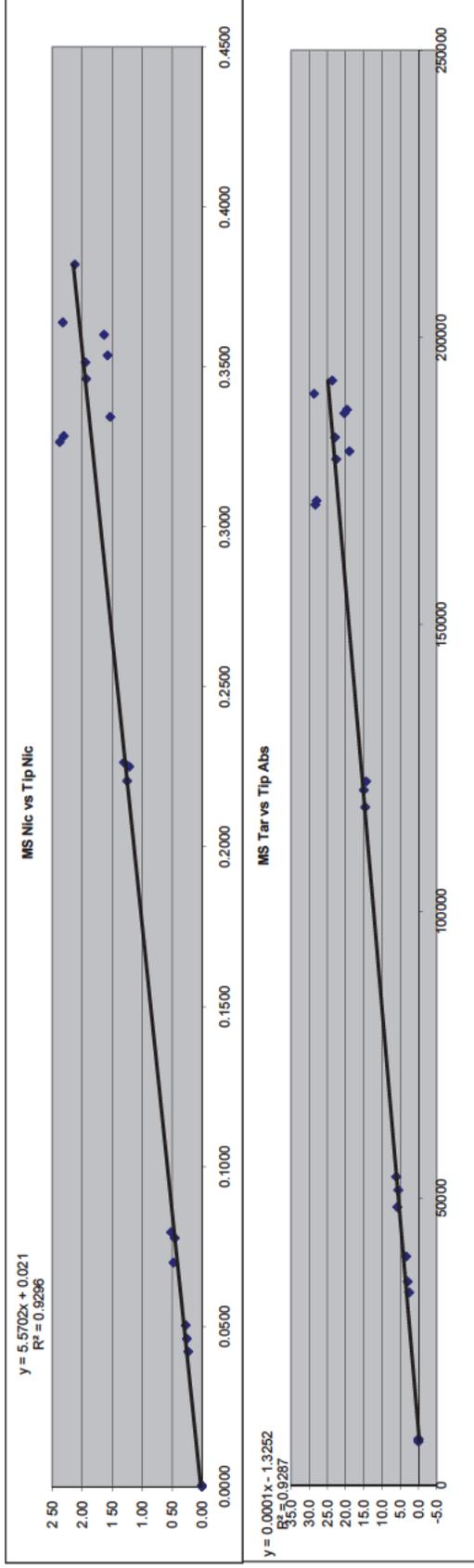
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2277	DORAL MENTHOL 85 HP FF	4.396	0.965	1.514E-04	0.889

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025162	E2277	Cal Lights	1910416	Regime 0				0.0000	0.0000	0.0000	1544.76
2009SN025163	E2277	Cal Lights	1910416	Regime 0				0.0000	0.0000	0.0003	1480.02
2009SN025164	E2277	Cal Lights	1910416	Regime 0				0.0000	0.0000	0.0000	1503.81
2009SN025162	E2277	Cal Lights	1910416	Regime 1	4.0	5.60	0.4967	0.3208	4.7825	0.0674	44645.28
2009SN025163	E2277	Cal Lights	1910416	Regime 1	4.0	5.28	0.5775	0.3097	4.3929	0.0595	41916.02
2009SN025164	E2277	Cal Lights	1910416	Regime 1	4.0	5.70	0.5336	0.3200	4.8464	0.0637	42974.66
2009SN025162	E2277	Cal Lights	1910416	Regime 2	11.6	24.76	5.0838	1.1437	18.5325	0.3011	164276.15
2009SN025163	E2277	Cal Lights	1910416	Regime 2	11.3	27.22	6.6803	1.1625	19.3772	0.2881	160684.83
2009SN025164	E2277	Cal Lights	1910416	Regime 2	11.3	23.14	4.7546	1.0607	17.3247	0.2659	147830.03
2009SN025162	E2277	Cal Lights	1910416	Regime 4	7.0	18.52	4.3641	0.8297	13.3262	0.1733	92883.90
2009SN025163	E2277	Cal Lights	1910416	Regime 4	7.3	20.56	4.9104	0.8864	14.7633	0.1825	104617.92
2009SN025164	E2277	Cal Lights	1910416	Regime 4	7.1	18.20	3.6903	0.8223	13.6875	0.1774	99881.72
2009SN025162	E2277	Cal Lights	1910416	Regime 5	10.6	32.73	9.5843	1.2737	21.8953	0.3124	169312.12
2009SN025163	E2277	Cal Lights	1910416	Regime 5	10.7	32.67	9.2957	1.3752	21.9958	0.2984	160143.83
2009SN025164	E2277	Cal Lights	1910416	Regime 5	10.9	34.47	10.0452	1.3621	23.0593	0.3094	165967.59
2009SN025162	E2277	Cal Lights	1910416	Regime 6	4.0	10.88	1.5310	0.5015	8.8475	0.0987	61418.41
2009SN025163	E2277	Cal Lights	1910416	Regime 6	4.0	10.30	1.3550	0.5006	8.4444	0.0791	55398.29
2009SN025164	E2277	Cal Lights	1910416	Regime 6	4.0	10.52	1.3942	0.5292	8.5966	0.0927	58919.07
2009SN028917	E2277	Cal Lights	1910416	Regime 7	9.5	50.00	17.4563	1.7325	30.8111	0.3629	171862.17
2009SN028918	E2277	Cal Lights	1910416	Regime 7	8.7	45.25	15.2085	1.5326	28.5088	0.3165	155017.93
2009SN028919	E2277	Cal Lights	1910416	Regime 7	10.5	50.80	16.6237	1.8178	32.1585	0.3470	160044.26



Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2278	TAHOE 100 SP FFLT - 1910417	5.570	0.930	1.359E-04	0.929

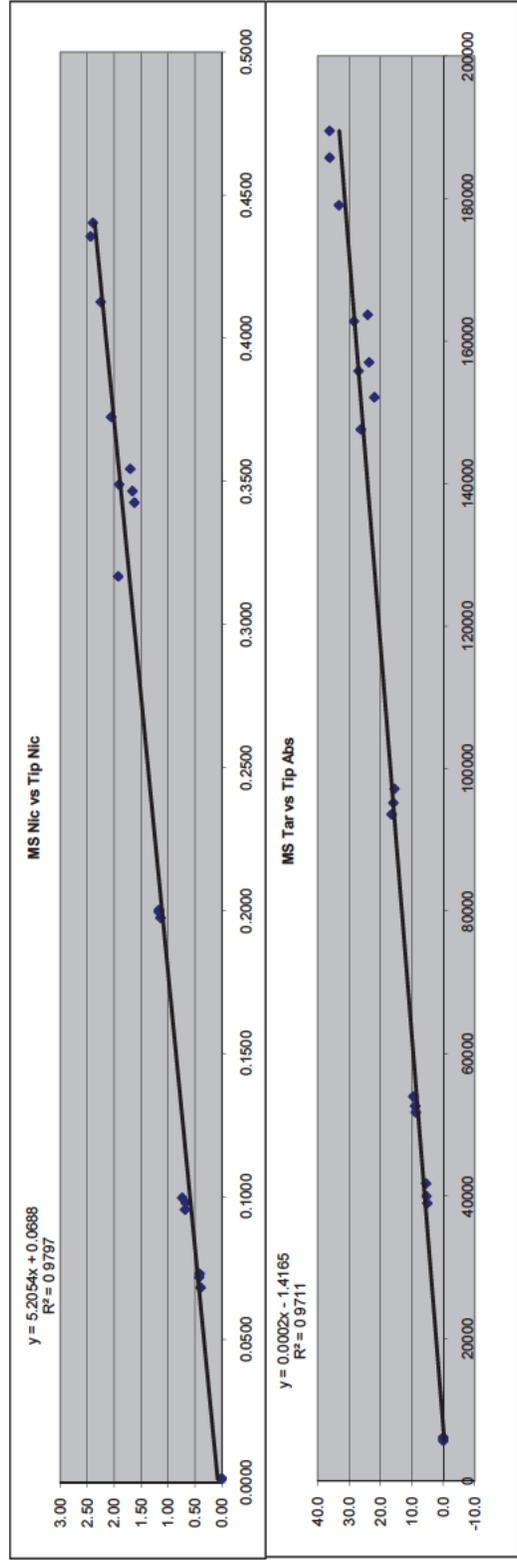
Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025165	E2278	Cal Lights	1910417	Regime 0				0.0000	0.0000	0.0000	7937.73
2009SN025166	E2278	Cal Lights	1910417	Regime 0				0.0000	0.0000	0.0004	8101.31
2009SN025167	E2278	Cal Lights	1910417	Regime 0				0.0000	0.0000	0.0004	7623.07
2009SN025165	E2278	Cal Lights	1910417	Regime 1	4.0	3.00	0.1900	0.2309	2.5791	0.0422	33640.96
2009SN025166	E2278	Cal Lights	1910417	Regime 1	4.0	3.48	0.2452	0.2526	2.9822	0.0463	35508.61
2009SN025167	E2278	Cal Lights	1910417	Regime 1	4.0	3.86	0.2266	0.2731	3.3602	0.0505	39889.96
2009SN025165	E2278	Cal Lights	1910417	Regime 2	18.5	22.02	1.5196	1.5337	18.9667	0.3343	180147.53
2009SN025166	E2278	Cal Lights	1910417	Regime 2	17.8	23.00	1.8113	1.5790	19.6097	0.3536	187400.41
2009SN025167	E2278	Cal Lights	1910417	Regime 2	17.4	23.90	1.9378	1.6370	20.3252	0.3600	186762.68
2009SN025165	E2278	Cal Lights	1910417	Regime 4	10.5	17.14	1.5492	1.2188	14.3720	0.2251	122660.39
2009SN025166	E2278	Cal Lights	1910417	Regime 4	11.0	18.18	1.8890	1.3041	14.9879	0.2264	121136.39
2009SN025167	E2278	Cal Lights	1910417	Regime 4	10.8	17.38	1.4930	1.2510	14.6360	0.2206	118138.41
2009SN025165	E2278	Cal Lights	1910417	Regime 5	16.6	28.20	3.3511	1.9483	22.9006	0.3514	182564.72
2009SN025166	E2278	Cal Lights	1910417	Regime 5	16.6	29.27	3.4735	2.1261	23.6671	0.3820	192495.12
2009SN025167	E2278	Cal Lights	1910417	Regime 5	17.6	27.63	3.1609	1.9357	22.5367	0.3462	178753.12
2009SN025165	E2278	Cal Lights	1910417	Regime 6	4.0	7.14	0.5117	0.5156	6.1127	0.0795	53756.24
2009SN025166	E2278	Cal Lights	1910417	Regime 6	4.0	6.44	0.4203	0.4558	5.5639	0.0777	51435.19
2009SN025167	E2278	Cal Lights	1910417	Regime 6	4.0	6.78	0.5034	0.4766	5.8000	0.0701	48492.13
2009SN028920	E2278	Cal Lights	1910417	Regime 7	15.3	36.75	6.0862	2.3788	28.2861	0.3265	170831.57
2009SN028921	E2278	Cal Lights	1910417	Regime 7	14.0	36.75	6.4927	2.3110	27.9464	0.3283	171538.12
2009SN028922	E2278	Cal Lights	1910417	Regime 7	14.0	38.10	7.1261	2.3255	28.6484	0.3638	190183.21



Calibration Curve Report for: **Project Code: 19104**  
 RJ Reynolds Tobacco Co. **Project Start Date: 21-May-09**  
 401 N. Main Street **Authorized By: S Burton**  
 Winston-Salem, NC 27102 **Title: QA**  
 Q19104R2

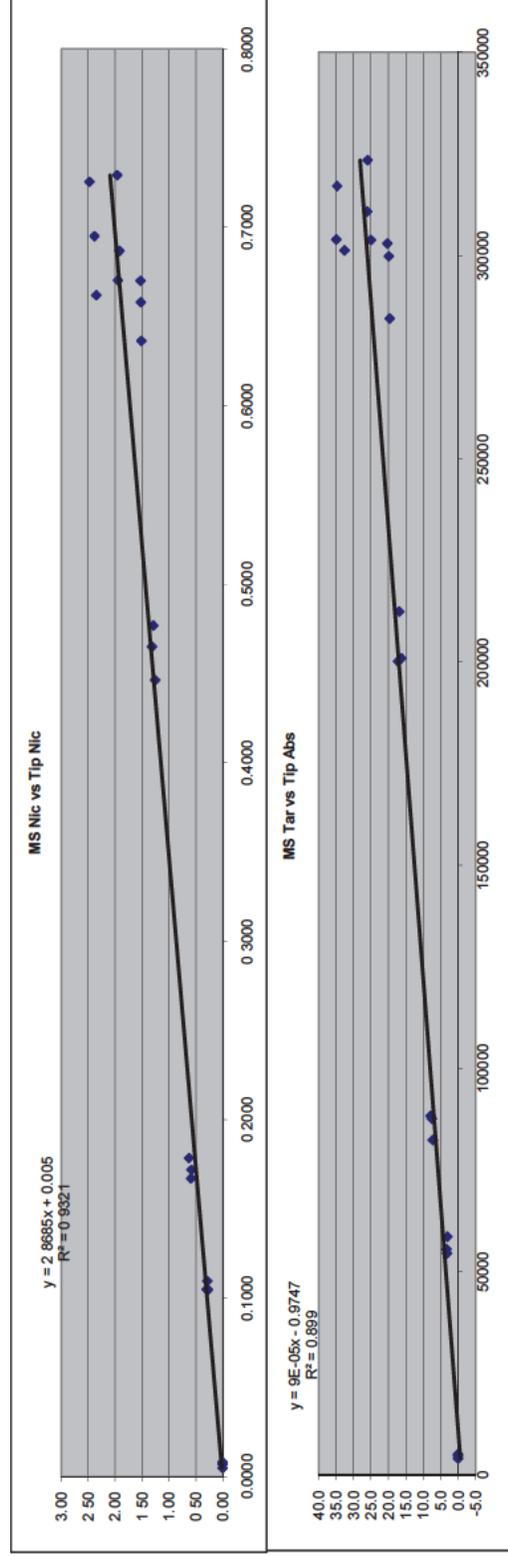
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
E2279	KOOL MILDS 85 HP FFLT	5.205	0.980	1.822E-04	0.971

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025168	E2279	Cal Lights	1910418	Regime 0				0.0000	0.0000	0.0013	5925.50
2009SN025169	E2279	Cal Lights	1910418	Regime 0				0.0000	0.0000	0.0016	6151.16
2009SN025170	E2279	Cal Lights	1910418	Regime 0				0.0000	0.0000	0.0015	5622.29
2009SN025168	E2279	Cal Lights	1910418	Regime 1	4.0	6.46	0.6778	0.4200	5.3622	0.0718	39966.26
2009SN025169	E2279	Cal Lights	1910418	Regime 1	4.0	6.62	0.6454	0.4139	5.5607	0.0731	41748.72
2009SN025170	E2279	Cal Lights	1910418	Regime 1	4.0	6.16	0.6427	0.3927	5.1247	0.0682	38979.03
2009SN025168	E2279	Cal Lights	1910418	Regime 2	12.4	32.02	6.6709	1.7017	23.6474	0.3544	157013.75
2009SN025169	E2279	Cal Lights	1910418	Regime 2	12.5	29.80	6.2239	1.6238	21.9523	0.3426	152107.39
2009SN025170	E2279	Cal Lights	1910418	Regime 2	12.6	32.70	6.9375	1.6613	24.1012	0.3466	163685.45
2009SN025168	E2279	Cal Lights	1910418	Regime 4	7.4	22.44	4.8563	1.1713	16.4125	0.2002	93586.10
2009SN025169	E2279	Cal Lights	1910418	Regime 4	7.5	22.48	4.6681	1.1389	15.9171	0.1975	95182.72
2009SN025170	E2279	Cal Lights	1910418	Regime 4	7.6	21.40	4.6681	1.1688	15.5631	0.1995	97148.99
2009SN025168	E2279	Cal Lights	1910418	Regime 5	11.8	40.27	11.3184	1.9116	27.0366	0.3489	155778.32
2009SN025169	E2279	Cal Lights	1910418	Regime 5	12.2	43.73	13.2091	2.0542	28.4700	0.3725	162769.22
2009SN025170	E2279	Cal Lights	1910418	Regime 5	11.4	38.40	10.2139	1.9246	26.2615	0.3168	147589.37
2009SN025168	E2279	Cal Lights	1910418	Regime 6	4.0	12.04	1.7848	0.7348	9.5204	0.0996	53974.35
2009SN025169	E2279	Cal Lights	1910418	Regime 6	4.0	11.16	1.5155	0.6815	8.9631	0.0955	52642.66
2009SN025170	E2279	Cal Lights	1910418	Regime 6	4.0	11.04	1.5776	0.6706	8.7918	0.0979	51740.24
2009SN025168	E2279	Cal Lights	1910418	Regime 7	11.4	58.05	19.4066	2.4385	36.2029	0.4356	185740.02
2009SN025169	E2279	Cal Lights	1910418	Regime 7	10.3	60.85	22.1877	2.3963	36.2660	0.4404	189514.10
2009SN025170	E2279	Cal Lights	1910418	Regime 7	10.7	55.20	19.6981	2.2517	33.2502	0.4128	179057.93



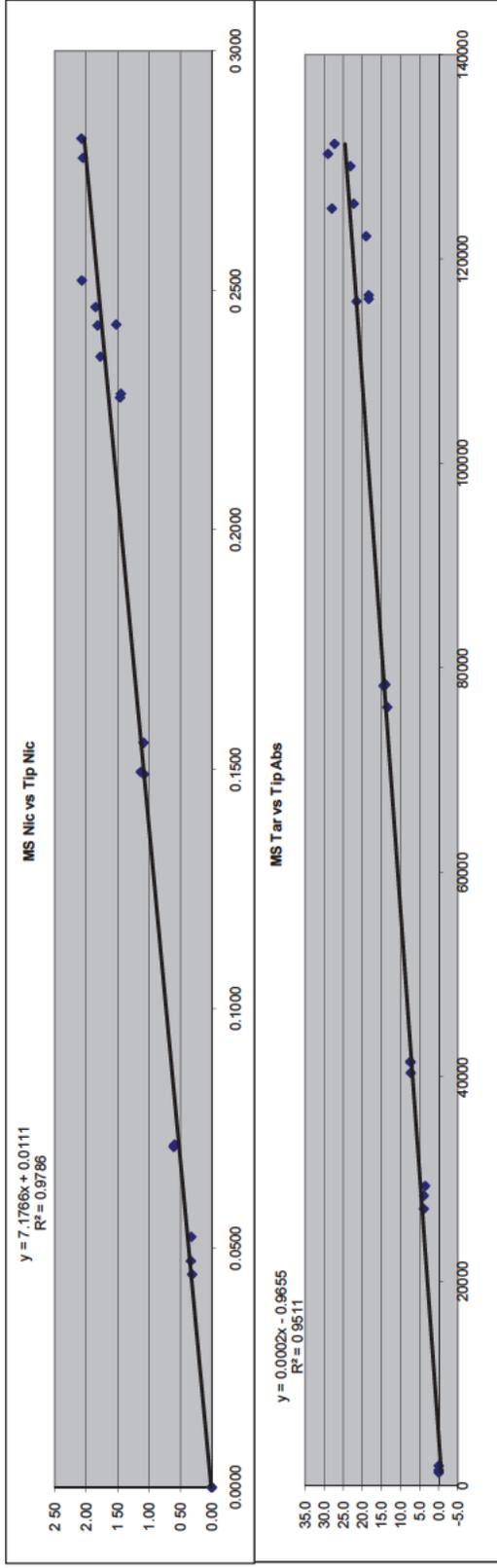
Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine		MS Tar vs Tip Absorbance	
		Slope 1	r-squared	Slope 2	r-squared
EZ280	CAMEL WIDES 85 HP FFL	2.869	0.932	-0.975	0.899

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025171	E2280	Cal Lights	1910419	Regime 0				0.0000	0.0000	0.0048	40555.61
2009SN025172	E2280	Cal Lights	1910419	Regime 0				0.0000	0.0000	0.0089	4700.04
2009SN025173	E2280	Cal Lights	1910419	Regime 0				0.0000	0.0000	0.0081	5166.36
2009SN025171	E2280	Cal Lights	1910419	Regime 1	4.0	3.72	0.3828	0.2724	3.0648	0.1047	58653.81
2009SN025172	E2280	Cal Lights	1910419	Regime 1	4.0	3.80	0.3256	0.2864	3.1880	0.1095	54579.31
2009SN025173	E2280	Cal Lights	1910419	Regime 1	4.0	4.04	0.4136	0.2961	3.3303	0.1049	55563.76
2009SN025171	E2280	Cal Lights	1910419	Regime 2	16.3	25.72	4.3235	1.5129	19.8836	0.6363	298855.72
2009SN025172	E2280	Cal Lights	1910419	Regime 2	15.6	26.54	4.6981	1.5300	20.3119	0.6700	303008.52
2009SN025173	E2280	Cal Lights	1910419	Regime 2	16.6	25.30	4.1362	1.5219	19.6419	0.6579	284541.83
2009SN025171	E2280	Cal Lights	1910419	Regime 4	9.5	21.22	3.6862	1.2576	16.2763	0.4463	200959.22
2009SN025172	E2280	Cal Lights	1910419	Regime 4	9.6	22.40	4.2280	1.2913	16.8907	0.4768	212445.11
2009SN025173	E2280	Cal Lights	1910419	Regime 4	9.8	22.62	4.0660	1.3143	17.2397	0.4650	200203.81
2009SN025171	E2280	Cal Lights	1910419	Regime 5	15.2	36.83	8.8269	1.9187	26.0877	0.6887	310878.81
2009SN025172	E2280	Cal Lights	1910419	Regime 5	15.7	36.77	8.8378	1.9641	25.9648	0.7292	323515.36
2009SN025173	E2280	Cal Lights	1910419	Regime 5	14.7	35.77	8.8124	1.9489	25.0054	0.6702	303870.72
2009SN025171	E2280	Cal Lights	1910419	Regime 6	4.0	8.74	0.8904	0.5905	7.2591	0.1671	82423.07
2009SN025172	E2280	Cal Lights	1910419	Regime 6	4.0	9.58	1.0735	0.6303	7.8762	0.1785	88371.49
2009SN025173	E2280	Cal Lights	1910419	Regime 6	4.0	9.04	0.9327	0.5823	7.5250	0.1719	87697.74
2009SN028923	E2280	Cal Lights	1910419	Regime 7	13.5	47.80	12.8301	2.3507	32.6192	0.6619	301303.34
2009SN028924	E2280	Cal Lights	1910419	Regime 7	13.3	52.45	15.2339	2.4800	34.7361	0.7254	317146.18
2009SN028925	E2280	Cal Lights	1910419	Regime 7	13.1	52.55	15.1603	2.3857	35.0040	0.6949	303956.81



Arista Brand Code	Brand name	MS Nicotine vs Tip Nicotine			MS Tar vs Tip Absorbance		
		Slope 1	Int 1	r-squared	Slope 2	Int 2	r-squared
E2281	SALEM SLIM MENTHOL S	7.177	0.011	0.979	1.945E-04	-0.986	0.951

Sample Log #	Arista ID	Style	SID Code	Regime	Puffs (/cig)	MS TPM	Water (mg/cig)	Nicotine (mg/cig)	Tar (mg/cig)	Tip Nic. (mg/10mm)	Absorbance (Abs/10mm)
2009SN025174	E2281	Cal Lights	1910420	Regime 0				0.0000	0.0000	0.0000	1526.37
2009SN025175	E2281	Cal Lights	1910420	Regime 0				0.0000	0.0000	0.0000	1962.85
2009SN025176	E2281	Cal Lights	1910420	Regime 0				0.0000	0.0000	0.0000	1286.92
2009SN025174	E2281	Cal Lights	1910420	Regime 1	4.0	4.24	0.3440	0.3249	3.5710	0.0523	29336.25
2009SN025175	E2281	Cal Lights	1910420	Regime 1	4.0	4.60	0.3608	0.3337	3.9055	0.0473	28380.27
2009SN025176	E2281	Cal Lights	1910420	Regime 1	4.0	4.58	0.3118	0.3145	3.9537	0.0445	27087.99
2009SN025174	E2281	Cal Lights	1910420	Regime 2	13.4	23.28	2.7238	1.5204	19.0358	0.2429	122226.33
2009SN025175	E2281	Cal Lights	1910420	Regime 2	12.6	22.50	2.6640	1.4600	18.3760	0.2276	116457.51
2009SN025176	E2281	Cal Lights	1910420	Regime 2	12.7	22.26	2.4614	1.4464	18.3522	0.2284	116090.03
2009SN025174	E2281	Cal Lights	1910420	Regime 4	8.2	16.72	2.1704	1.0841	13.4655	0.1555	76156.73
2009SN025175	E2281	Cal Lights	1910420	Regime 4	8.1	17.56	2.5183	1.0771	13.9646	0.1490	78368.73
2009SN025176	E2281	Cal Lights	1910420	Regime 4	8.6	18.12	2.5095	1.1295	14.4810	0.1495	78247.45
2009SN025174	E2281	Cal Lights	1910420	Regime 5	11.7	29.23	5.9166	1.7730	21.5438	0.2362	115851.60
2009SN025175	E2281	Cal Lights	1910420	Regime 5	13.1	30.47	5.4441	1.8478	23.1748	0.2465	129084.25
2009SN025176	E2281	Cal Lights	1910420	Regime 5	13.1	29.43	5.3379	1.8173	22.2781	0.2427	125411.18
2009SN025174	E2281	Cal Lights	1910420	Regime 6	4.0	8.92	0.8717	0.5935	7.4548	0.0716	41497.40
2009SN025175	E2281	Cal Lights	1910420	Regime 6	4.0	8.84	0.8957	0.6055	7.3388	0.0711	40387.15
2009SN025176	E2281	Cal Lights	1910420	Regime 6	4.0	8.90	0.9060	0.5881	7.4059	0.0716	41434.18
2009SN028926	E2281	Cal Lights	1910420	Regime 7	10.2	41.60	10.5333	2.0506	29.0161	0.2777	130285.18
2009SN028927	E2281	Cal Lights	1910420	Regime 7	11.0	39.95	9.9055	2.0685	27.9761	0.2521	124937.08
2009SN028928	E2281	Cal Lights	1910420	Regime 7	10.8	39.55	10.1662	2.0734	27.3104	0.2817	131274.57



## **APPENDIX B**

### **CLINICAL SAMPLE RESULTS**

#### **AS WEIGHTED AVERAGES**

The results in this test report relate only to the samples identified in this report. The information is confidential and is only to be used by the client identified in this report. Arista Laboratories accepts no liability in the use of this report or the results contained, herein. The original controlled report shall not be reproduced without written approval of Arista Laboratories, Inc.

For questions or concerns, please see the customer feedback form at <http://www.aristalabs.com>

### Weighted Averages by Subject/Brand

Client SID	Brand	Tips Received	Tips Analyzed	Weighted Avg Nicotine	Weighted Avg Tar
0905-01-1-H	Marlboro 100 HP FFLT	8	8	1.67	17.00
0905-01-2-H	Marlboro 100 HP FFLT	5	5	1.68	15.68
0905-01-3-H	Marlboro 100 HP FFLT	3	3	1.83	18.00
0905-01-4-H	Marlboro 100 HP FFLT	3	3	1.97	20.12
0905-02-1-H	USA Gold 100 SP FFLT	33	33	1.20	10.95
0905-02-2-H	USA Gold 100 SP FFLT	26	26	1.00	8.84
0905-02-3-H	USA Gold 100 SP FFLT	20	20	0.92	8.99
0905-02-4-H	USA Gold 100 SP FFLT	10	10	1.11	9.71
0905-03-1-H	Camel 85 HP FFLT	19	19	1.76	17.96
0905-03-2-H	Camel 85 HP FFLT	14	14	1.85	18.44
0905-03-3-H	Camel 85 HP FFLT	12	12	1.62	17.74
0905-03-4-H	Camel 85 HP FFLT	6	6	1.56	15.52
0905-04-1-H	Salem Menthol 85 HP FFLT	20	20	1.29	13.51
0905-04-2-H	Salem Menthol 85 HP FFLT	16	16	1.41	13.95
0905-04-3-H	Salem Menthol 85 HP FFLT	12	12	1.25	12.99
0905-04-4-H	Salem Menthol 85 HP FFLT	11	11	1.51	15.24
0905-05-1-H	Doral 100 HP FFLT	21	21	1.15	10.38
0905-05-2-H	Doral 100 HP FFLT	13	13	1.03	9.68
0905-05-3-H	Doral 100 HP FFLT	10	10	1.11	9.96
0905-05-4-H	Doral 100 HP FFLT	6	6	0.85	7.34
0905-06-1-H	Tahoe 85 SP FFLT	20	20	1.14	11.19
0905-06-2-H	Tahoe 85 SP FFLT	21	21	1.21	11.50
0905-06-3-H	Tahoe 85 SP FFLT	19	9	1.32	12.09
0905-06-4-H	Tahoe 85 SP FFLT	18	18	1.45	12.99
0905-07-1-H	Marlboro 85 HP FFLT	17	17	1.68	16.35
0905-07-2-H	Marlboro 85 HP FFLT	12	12	1.33	14.12
0905-07-3-H	Marlboro 85 HP FFLT	8	8	1.61	15.07
0905-07-4-H	Marlboro 85 HP FFLT	1	1	0.51	19.05
0905-08-1-H	Marlboro 85 HP FFLT	8	8	1.23	12.73
0905-08-2-H	Marlboro 85 HP FFLT	6	6	1.16	11.36
0905-08-3-H	Marlboro 85 HP FFLT	5	5	1.26	13.00
0905-08-4-H	Marlboro 85 HP FFLT	2	2	1.02	10.77
0905-09-1-H	Marlboro 85 HP FFLT	38	38	1.63	15.61
0905-09-2-H	Marlboro 85 HP FFLT	33	33	1.56	14.61
0905-09-3-H	Marlboro 85 HP FFLT	18	18	1.79	17.32
0905-09-4-H	Marlboro 85 HP FFLT	7	7	1.34	13.20
0905-11-1-H	Winston 85 HP FFLT	16	16	1.81	16.25
0905-11-2-H	Winston 85 HP FFLT	9	9	1.78	15.14
0905-11-3-H	Winston 85 HP FFLT	7	7	1.72	15.62
0905-11-4-H	Winston 85 HP FFLT	5	5	1.71	16.62

For questions or concerns, please see the customer feedback form at <http://www.aristalabs.com>

### Weighted Averages by Subject/Brand

Client SID	Brand	Tips Received	Tips Analyzed	Weighted Avg Nicotine	Weighted Avg Tar
0905-12-1-H	Winston 85 SP FFLT	20	20	1.35	11.23
0905-12-2-H	Winston 85 SP FFLT	16	16	1.16	9.80
0905-12-3-H	Winston 85 SP FFLT	12	12	1.41	12.26
0905-12-4-H	Winston 85 SP FFLT	6	6	1.17	10.06
0905-13-1-H	Pall Mall 85 HP FFLT	21	21	1.11	9.81
0905-13-2-H	Pall Mall 85 HP FFLT	18	18	1.13	10.32
0905-13-3-H	Pall Mall 85 HP FFLT	12	12	1.12	10.28
0905-13-4-H	Pall Mall 85 HP FFLT	8	8	1.11	11.20
0905-14-1-H	Monarch Menthol 85 SP FFLT	29	29	1.05	13.10
0905-14-2-H	Monarch Menthol 85 SP FFLT	22	22	0.91	11.58
0905-14-3-H	Monarch Menthol 85 SP FFLT	19	19	0.85	11.64
0905-14-4-H	Monarch Menthol 85 SP FFLT	17	17	0.93	11.68
0905-15-1-H	Doral 85 HP FFLT	29	29	1.18	14.39
0905-15-2-H	Doral 85 HP FFLT	25	25	1.08	12.09
0905-15-3-H	Doral 85 HP FFLT	16	16	1.43	16.49
0905-15-4-H	Doral 85 HP FFLT	11	11	1.07	12.31
0905-16-1-H	Camel Menthol 85 HP	9	9	0.39	4.49
0905-16-2-H	Camel Menthol 85 HP	3	3	0.51	4.62
0905-16-3-H	Camel Menthol 85 HP	3	3	0.42	3.81
0905-16-4-H	Camel Menthol 85 HP	3	3	0.31	3.05
0905-17-1-H	Salem Menthol 85 HP FFLT	8	8	1.38	14.29
0905-17-2-H	Salem Menthol 85 HP FFLT	7	7	1.52	15.47
0905-17-3-H	Salem Menthol 85 HP FFLT	6	6	1.25	13.03
0905-17-4-H	Salem Menthol 85 HP FFLT	6	6	1.28	12.34
0905-18-1-H	Pall Mall 100 HP FFLT	16	16	3.01	31.47
0905-18-2-H	Pall Mall 100 HP FFLT	11	11	2.23	23.57
0905-18-3-H	Pall Mall 100 HP FFLT	8	8	2.58	27.97
0905-18-4-H	Pall Mall 100 HP FFLT	6	6	2.96	30.84
0905-19-1-H	Doral 85 HP FFLT	18	18	1.06	11.49
0905-19-2-H	Doral 85 HP FFLT	11	11	1.17	13.08
0905-19-3-H	Doral 85 HP FFLT	12	12	1.20	13.67
0905-19-4-H	Doral 85 HP FFLT	6	6	1.30	14.97
0905-20-1-H	Winston 85 HP FFLT	30	30	1.45	13.20
0905-20-2-H	Winston 85 HP FFLT	22	22	1.36	11.96
0905-20-3-H	Winston 85 HP FFLT	17	17	1.34	12.98
0905-20-4-H	Winston 85 HP FFLT	11	11	1.36	12.41
0905-21-1-H	Camel 85 HP FFLT	22	22	0.85	7.50
0905-21-2-H	Camel 85 HP FFLT	13	13	0.87	7.34
0905-21-3-H	Camel 85 HP FFLT	9	9	0.82	7.84
0905-21-4-H	Camel 85 HP FFLT	5	5	0.84	6.92
0905-22-1-H	Winston 85 HP FFLT	19	19	2.11	21.60

For questions or concerns, please see the customer feedback form at <http://www.aristalabs.com>

### Weighted Averages by Subject/Brand

Client SID	Brand	Tips Received	Tips Analyzed	Weighted Avg Nicotine	Weighted Avg Tar
0905-22-2-H	Winston 85 HP FFLT	15	15	1.65	15.89
0905-22-3-H	Winston 85 HP FFLT	11	11	1.63	16.22
0905-22-4-H	Winston 85 HP FFLT	5	5	1.28	12.65
0905-23-1-H	Marlboro 85 HP FFLT	14	14	1.34	13.57
0905-23-2-H	Marlboro 85 HP FFLT	12	12	1.30	12.57
0905-23-3-H	Marlboro 85 HP FFLT	5	5	1.21	12.20
0905-23-4-H	Marlboro 85 HP FFLT	4	4	1.29	12.67
0905-25-1-H	Newport 85 HP FFLT	22	22	0.80	6.39
0905-25-2-H	Newport 85 HP FFLT	16	16	0.74	6.18
0905-25-3-H	Newport 85 HP FFLT	6	6	0.79	6.45
0905-25-4-H	Newport 85 HP FFLT	7	7	0.87	7.89
0905-26-1-H	Camel 85 HP FFLT	29	29	1.04	9.44
0905-26-2-H	Camel 85 HP FFLT	26	26	0.91	7.69
0905-26-3-H	Camel 85 HP FFLT	23	23	1.03	10.03
0905-26-4-H	Camel 85 HP FFLT	18	18	1.15	10.54
0905-27-1-H	Doral Menthol 85 HP FFLT	17	17	1.17	14.76
0905-27-2-H	Doral Menthol 85 HP FFLT	13	13	1.15	14.79
0905-27-3-H	Doral Menthol 85 HP FFLT	11	11	0.91	11.98
0905-27-4-H	Doral Menthol 85 HP FFLT	11	11	1.19	14.78
0905-28-1-H	Marlboro 100 HP FFLT	26	26	1.15	11.08
0905-28-2-H	Marlboro 100 HP FFLT	17	17	1.43	13.53
0905-28-3-H	Marlboro 100 HP FFLT	16	16	1.36	13.44
0905-28-4-H	Marlboro 100 HP FFLT	10	10	1.26	12.03
0905-29-1-H	Marlboro 85 HP FFLT	19	19	0.86	8.96
0905-29-2-H	Marlboro 85 HP FFLT	16	16	1.08	11.16
0905-29-3-H	Marlboro 85 HP FFLT	11	11	1.32	12.17
0905-29-4-H	Marlboro 85 HP FFLT	7	7	0.78	7.66
0905-30-1-H	Tahoe 100 SP FFLT	21	21	1.71	15.75
0905-30-2-H	Tahoe 100 SP FFLT	22	22	1.42	14.37
0905-30-3-H	Tahoe 100 SP FFLT	16	16	1.87	17.35
0905-30-4-H	Tahoe 100 SP FFLT	10	10	2.03	18.93
0905-31-1-H	Kool Milds 85 HP FFLT	8	8	1.44	14.30
0905-31-2-H	Kool Milds 85 HP FFLT	5	5	1.38	14.09
0905-31-3-H	Kool Milds 85 HP FFLT	4	4	1.51	15.61
0905-32-1-H	Camel Wides 85 HP FFLT	19	19	1.24	12.53
0905-32-2-H	Camel Wides 85 HP FFLT	14	14	1.15	11.31
0905-32-3-H	Camel Wides 85 HP FFLT	14	14	1.18	12.18
0905-32-4-H	Camel Wides 85 HP FFLT	11	11	1.12	12.58
0905-33-1-H	Doral 100 HP FFLT	20	20	1.84	16.74
0905-33-2-H	Doral 100 HP FFLT	23	23	1.71	14.27
0905-33-3-H	Doral 100 HP FFLT	16	16	1.39	12.47

Weighted Average Test Report for:  
RJ Reynolds Tobacco Co.  
P.O. Box 1487  
Winston-Salem, NC 27102  
Q19104R2

Project Code: 19104  
Project Start Date: 21-May-09  
Authorized By: S Burton  
Title: QA

For questions or concerns, please see the customer feedback form at <http://www.aristalabs.com>

### Weighted Averages by Subject/Brand

Client SID	Brand	Tips Received	Tips Analyzed	Weighted Avg Nicotine	Weighted Avg Tar
0905-33-4-H	Doral 100 HP FFLT	10	10	1.18	10.85
0905-34-1-H	Marlboro 85 HP FFLT	23	23	1.38	12.60
0905-34-2-H	Marlboro 85 HP FFLT	20	20	1.25	11.44
0905-34-3-H	Marlboro 85 HP FFLT	15	15	0.92	8.81
0905-34-4-H	Marlboro 85 HP FFLT	11	11	1.00	9.10
0905-36-1-H	Marlboro 85 HP FFLT	14	14	1.44	14.55
0905-36-2-H	Marlboro 85 HP FFLT	9	9	1.09	10.68
0905-36-3-H	Marlboro 85 HP FFLT	8	8	1.24	12.52
0905-36-4-H	Marlboro 85 HP FFLT	3	3	1.45	14.22

For subject 0905-06-3, sample receiving recorded 9 tips and it was discovered after analysis that total tips received were 19.



Sample Date	Sample LIMS ID	Client SID	Area Client ID	Brand Name	Nic Slope	Nic Intercept	UVPW Slope	UVPW Intercept	Tip Length 1 (mm)	Tip Length 2 (mm)	Tip Length 3 (mm)	Tip Length 4 (mm)	Tip Length 5 (mm)	Tip Length 6 (mm)	Count	Average Tip Length (mm)	Extraction Volume (mL)	Nicotine (mg/mL)	Nicotine Conc. (mg/10 mm Tip)	UV Absorbance	PDA Correction Factor	PDA Absorbance	PDA Corrected UV Absorbance	PDA Corrected UV Absorbance (10 mg/10 mm tip)	Estimated Nicotine (mg/10 mm tip)	Estimated Tar Yield (mg/10 mm tip)	# Tips Received	# Tips Analyzed
7/8/09 1:35 PM	2008S029724	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029725	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029726	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029727	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029728	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029729	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029730	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029731	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029732	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029733	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029734	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029735	1910407	0905-09-14	Marlboro 85 HP FFL	4.828914	0.04356645	0.000133	-0.47089	9.71	9.83	9.76	9.81	9.65	9.79	5	9.748	20	0.06668	0.34570	798539	0.7830	625321	126277	1.7612	16.5797	5	5	
7/8/09 1:36 PM	2008S029736	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029737	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029738	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029739	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029740	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029741	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029742	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:36 PM	2008S029743	1910408	0905-11-14	Winston 85 HP FFL	4.837889	0.05972929	0.000136	-1.002286	9.82	9.64	9.89	9.81	9.4	9.78	6	9.720	20	0.04440	0.35188	928767	0.7830	727248	164719	1.7451	16.0116	5	5	
7/8/09 1:40 PM	2008S029744	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029745	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029746	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029747	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029748	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029749	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029750	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029751	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029752	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029753	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:40 PM	2008S029754	1910409	0905-12-14	Winston 85 SP FFL	4.739855	0.03675613	0.000134	-1.363851	9.82	9.48	9.59	9.67	9.59	9.57	5	9.650	20	0.06175	0.25584	548886	0.7830	428196	88745	1.2389	10.5470	5	5	
7/8/09 1:41 PM	2008S029755	1910410	0905-13-14	Prill Mail 85 HP FFL	6.642651	0.03771192	0.000188	-0.898941	9.7	9.7	9.49	9.3	9.83	9.75	6	9.690	20	0.05139	0.17678	305490	0.7830	359490	61144	1.2117	10.5894	5	5	
7/8/09 1:41 PM	2008S029756	1910410	0905-13-14	Prill Mail 85 HP FFL	6.642651	0.03771192	0.000188	-0.898941	9.7	9.7	9.49	9.3	9.83	9.75	6	9.690	20	0.05139	0.17678	305490	0.7830	359490	61144	1.2117	10.5894	5	5	
7/8/09 1:41 PM	2008S029757	1910410	0905-13-14	Prill Mail 85 HP FFL	6.642651	0.03771192	0.000188	-0.898941	9.7	9.7	9.49	9.3	9.83	9.75	6	9.690	20	0.05139	0.17678	305490	0.7830	359490	61144	1.2117	10.5894	5	5	
7/8/09 1:41 PM	2008S029758	1910410	0905-13-14	Prill Mail 85 HP FFL	6.642651	0.03771192	0.000188	-0.898941	9.7	9.7	9.49	9.3	9.83	9.75	6	9.690	20	0.05139	0									

Sample Date	Sample LIMS ID	Client SID	Area Element ID	Brand Name	Nic Slope	Nic Intercept	UVPW Slope	UVPW Intercept	Tip Length 1 (mm)	Tip Length 2 (mm)	Tip Length 3 (mm)	Tip Length 4 (mm)	Tip Length 5 (mm)	Tip Length 6 (mm)	Count	Average Tip Length (mm)	Extraction Volume (mL)	Nicotine (mg/mL)	Nicotine Conc. (mg/10 ml Tip)	UV Absorbance	PDA Correction Factor	PDA Absorbance	PDA Corrected UV Absorbance	PDA Corrected UVPW	Estimated Nicotine (mg/10 tip)	Estimated Tar Yield (mg/10 tip)	# Tips Received	# Tips Analyzed
7/8/09 1:52 PM	2009SN02810	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02811	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02812	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02813	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02814	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02815	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02816	1910414	0905-18-HH	Pall Mall 100 HP FFLT	7.477669	0.00122	0.002020	-0.850311	9.66	9.76	9.65	9.84	9.44	9.44	5	9.670	20	0.00988	0.37591	1007488	0.6991	704338	146575	2.8008	28.2829	5	5	
7/8/09 1:52 PM	2009SN02817	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02818	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02819	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02820	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02821	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02822	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02823	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02824	1910414	0905-19-HH	Doral 85 HP FFLT	4.746851	0.0498737	0.000157	-0.888911	9.33	9.76	9.52	9.55	9.68	9.61	9.61	9.57	20	0.06104	0.21225	654906	0.6991	457847	79598	1.0574	11.5773	6	6	
7/8/09 1:52 PM	2009SN02825	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02826	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02827	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02828	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02829	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02830	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02831	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02832	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02833	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02834	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02835	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02836	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02837	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02838	1910408	0905-20-HH	Winston 85 HP FFLT	4.537689	0.0597929	0.000136	-1.002286	9.81	9.78	9.65	9.74	9.52	9.38	9.82	9.69	20	0.06496	0.25726	692008	0.6991	459446	10255	1.2955	14.9678	5	5	
7/8/09 1:52 PM	2009SN02839	1910408	0905-21-HH	Camel 85 HP FFLT	4.350334	0.0328684	0.000142	-1.141422	9.7	9.76	9.86	9.69	9.7	9.81	9.69	9.7	9.81	20	0.05648	0.19229	538234	0.6991	376281	6481	6.0894	7.7055	6	6
7/8/09 1:52 PM	2009SN02840	1910403	0905-21-HH	Camel 85 HP FFLT	4.350334	0.0328684	0.000142	-1.141422	9.7	9.76	9.86	9.69	9.7	9.81	9.69	9.7	9.81	20	0.05648	0.19229	538234	0.6991	376281	6481	6.0894	7.7055	6	6
7/8/09 1:52 PM	2009SN02841	1910403	0905-21-HH	Camel 85 HP FFLT	4.350334	0.0328684	0.000142	-1.141422	9.7	9.76	9.86	9.69	9.7	9.81	9.69	9.7	9.81	20	0.05648	0.19229	538234	0.6991	376281	6481	6.0894	7.7055	6	6
7/8/09 1:52 PM	2009SN02842	1910403	0905-21-HH	Camel 85 HP FFLT	4.350334	0.0328684	0.000142	-1.141422	9.7	9.76	9.86	9.69	9.7	9.81	9.69	9.7	9.81	20	0.05648	0.19229	538234	0.6991	376281	6481	6.0894	7.7055	6	6
7/8/09 1:52 PM	2009SN02843	1910403	0905-21-HH	Camel 85 HP FFLT	4.350334	0.0328684	0.000142	-1.141422	9.7	9.76	9.86	9.69	9.7	9.81	9.69	9.7	9.81	20	0.05648	0.19229	538234	0.6991	376281	6481	6.0894	7.7055	6	6
7/8/09 1:52 PM	2009SN02844	1910403	0905-21-HH	Camel 85 HP FFLT	4.350334	0.0328684	0.000142	-1.141422	9.7	9.76	9.86	9.69	9.7	9.81	9.69	9.7	9.81	20	0.05648	0.192								



Tip Analysis Report for:  
 R.J. Reynolds Tobacco Co.  
 P.O. Box 1487  
 Durham, NC 27102  
 018104R2

Project Code: 19104  
 Project Start Date: 21 May 09  
 Authorized By: S Dunton  
 Title: GA

Sample Date	Sample LIMS ID	Client SID	Arista Client ID	Brand Name	Nic Slope	Nic Intercept	UVPW Slope	UVPW Intercept	Tip Length 1 (mm)	Tip Length 2 (mm)	Tip Length 3 (mm)	Tip Length 4 (mm)	Tip Length 5 (mm)	Tip Length 6 (mm)	Count	Average Tip Length (mm)	Extraction Volume (mL)	Nicotine (ng/mL)	Nicotine Conc. (mg/10 mm Tip)	UV Absorbance	PDA Correction Factor	PDA Corrected UV Absorbance	PDA Corrected UV Absorbance (mg/10 mm Tip)	Estimated Nicotine (mg/10 mm Tip)	Estimated Tar Yield (mg/cig)	# Tips Received	# Tips Analyzed
7/8/09 2:26 PM	2008SN029984	1910407	0905-36-1-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.73	9.67	9.66	9.69	9.63	9.84	4	9.698	20	0.04325	0.22322	525684	0.6837	359429	92756	1.1215	118502	4	4
7/8/09 2:26 PM	2008SN029985	1910407	0905-36-1-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.87	9.75	9.75	9.63	9.84	9.22	5	9.768	20	0.06509	0.28655	744377	0.6837	508957	104209	1.3307	133806	5	5
7/8/09 2:26 PM	2008SN029986	1910407	0905-36-1-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.83	9.68	9.69	9.49	9.22	5	9.582	20	0.08721	0.38408	965584	0.6837	660887	137843	1.8017	178646	5	5	
7/8/09 2:26 PM	2008SN029987	1910407	0905-36-2-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.62	9.65	9.47	9.59	9.56	5	9.576	20	0.05301	0.22141	594440	0.6837	408439	86887	1.1128	108123	5	5	
7/8/09 2:27 PM	2008SN029988	1910407	0905-36-2-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.55	9.81	9.64	9.84	9.82	4	9.686	20	0.04294	0.22223	478480	0.6837	341212	88905	1.1682	112657	4	4	
7/8/09 2:27 PM	2008SN029989	1910407	0905-36-3-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.55	9.74	9.63	9.78	9.78	4	9.675	20	0.05319	0.27480	609962	0.6837	415001	107335	1.3710	137828	4	4	
7/8/09 2:27 PM	2008SN029991	1910407	0905-36-4-H	Marlboro 85 HP FFLT	4.528914	0.043568	0.000133	-0.470890	9.70	9.75	9.73	9.73	9.73	3	9.727	20	0.04257	0.29176	471843	0.6837	322616	110560	1.4625	142248	3	3	