

# APPENDIX 1: ROTOR BIN TABLES

Rsource 5610 cfm													
Bin hours	Tab	Twb	grlb	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain		
22	85.7	81	154	77	84.3	52711.56	269801.7	1156654.32	5935638.08	322513.29	7095292.38		
695	85.7	79	140.1	77	84.3	52711.56	215996.2	3863453.42	150117373	268707.78	186751907.1		
1803	83.6	77	130.3	76.6	81.8	42411.6	187738.7	76468114.8	338492788	230150.25	414960900.8		
1397	81.2	75	121.7	79.2	85.2	12117.6	141287.9	16928287.2	197379128	153405.45	214307413.7		
1017	78.7	73	113.7	75.7	77.6	18176.4	139739.5	18485398.8	142115061	157915.89	160600460.1		
871	76.7	71	105.5	75.3	75.4	8482.32	116514.1	7388100.72	101483772	124996.41	108871873.1		
720	75.2	69	96.9	75	73.2	1211.76	91740.33	872467.2	68053037.6	92952.09	66925504.8		
611	72.6	67	90.7	74.5	71.6	-11511.72	73934.19	-7033660.9	45173790.1	62422.47	38140129.17		
452	71.9	65	81.7	74.4	69.3	-15147	47999.16	-6846444	21695620.3	32852.16	14849178.32		
323	70.5	63	74.4	74.1	67.4	-21811.88	27098.3	-7045172.6	8752104.9	5284.62	1706932.28		
195	67.9	61	69.4										
191	66	59	63.6										
166	64.3	57	57.9										
101	62.9	55	52										
50	59.9	53	49										
81	58.2	51	44.2										
35	57.5	49	38.1	71.7	58.1	88034.98	77418	3011223.8	2709630	163452.98	5720853.6		
25	54.3	47	35.3	71	57.3	101182	85159.8	2529549	2128995	186341.78	4658544		
5	53.6	45	30.7	70.9	56.2	104817.2	98707.85	524086.2	493539.75	203525.19	1017625.95		
										143076138	1082530475	Total Gain	1225606613
										143076.138	1082530.47	kBtu	1225606.613

Rsource 4830 cfm													
Bin hours	Tab	Twb	grlb	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain		
22	85.7	81	154	77	84.3	45382.68	232289.2	998418.98	5110362.18	277671.87	6108781.14		
695	85.7	79	140.1	77	84.3	45382.68	185964.7	31540962.6	129245439	231347.34	160786401.3		
1803	83.6	77	130.3	76.6	81.8	36514.8	161638	65836184.4	291429619	198150.75	357266602.3		
1397	81.2	75	121.7	79.2	85.2	10432.8	121643.6	14574621.6	169936039	132076.35	184510661		
1017	78.7	73	113.7	75.7	77.6	15649.2	120310.5	15915236.4	122355748	136959.67	138270984.4		
871	76.7	71	105.5	75.3	75.4	7302.98	100314.3	6360878.16	87373729.2	107817.23	93734607.33		
720	75.2	69	96.9	75	73.2	1043.28	78984.99	751161.6	56869192.8	80028.27	57620354.4		
611	72.6	67	90.7	74.5	71.6	-9911.16	63654.57	-8055718.8	38892942.3	53743.41	32837223.51		
452	71.9	65	81.7	74.4	69.3	-13041	41325.48	-6894532	18679117	28284.48	12784684.96		
323	70.5	63	74.4	74.1	67.4	-18779.04	23328.9	-8085629.9	7535234.7	4549.88	1469804.78		
195	67.9	61	69.4										
191	66	59	63.6										
166	64.3	57	57.9										
101	62.9	55	52										
50	59.9	53	49										
81	58.2	51	44.2										
35	57.5	49	38.1	71.7	58.1	74072.88	66654	2592550.8	2332890	140726.88	4925440.8		
25	54.3	47	35.3	71	57.3	87113.88	73319.4	2177847	1832985	160433.28	4010832		
5	53.6	45	30.7	70.9	56.2	90243.72	84983.85	451218.6	424919.25	175227.57	876137.85		
										123183199	932018218	Total Gain	1055201416
										123183.199	932018.218	kBtu	1055201.416



SEMCO 4830 cfm													
BIN hours	Tdb	Twb	gr/lb	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain		
22	85.7	81	154	80.2	93.3	28890.2	202294.9	631184.4	4450487.56	230985.09	5081671.08		
666	85.7	79	140.1	80.2	89.8	28690.2	167634.8	19939889	118606193	196325.01	136445882		
1803	83.6	77	130.3	79.7	87.3	20343.96	143306.1	36680159.9	258350998	163650.06	295061058.2		
1397	81.2	75	121.7	79.1	85.2	10954.44	121643.6	15303352.7	169936039	132597.99	185239392		
1017	78.7	73	113.7	78.4	83.2	1564.92	101647.4	1591523.64	103375356	103212.27	104966878.6		
871	76.7	71	105.5	77.9	81.1	-6259.68	81317.86	-5452181.3	70827873.5	75058.2	66375692.2		
720	75.2	69	98.9	77.5	79	-11997.72	59656.33	-8638358.4	42951837.6	47667.61	34313479.2		
611	72.6	67	90.7	76.9	77.4	-22430.52	44324.91	-13705048	27082520	21894.39	13377472.29		
452	71.9	66	81.7										
323	70.6	63	74.4										
195	67.9	61	69.4										
191	66	59	63.6										
166	64.3	57	57.9										
101	62.9	56	52										
50	59.9	53	49										
81	56.2	51	44.2										
35	57.5	49	38.1	75.7	72.1	94938.48	113311.8	3322846.8	3965913	208250.28	7288759.8		
25	54.3	47	35.3	67.8	52.8	70421.4	68322.26	1760535	1458056.25	128743.65	3218591.25		
5	53.6	46	30.7	67.8	34.4	73029.6	12330.99	365148	61654.95	85360.59	426802.95		
										51798852	798996828	Total Gain	850795680.4
										51798.852	798996.828	kBtu	850795.6804

SEMCO 9520 cfm													
BIN hours	Tdb	Twb	gr/lb	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain		
22	85.7	81	154	80.2	93.3	57024	402076.8	1254528	8845689.8	459100.8	10100217.6		
666	85.7	79	140.1	80.2	89.8	57024	333187.2	39631680	231565104	390211.2	271196784		
1803	83.6	77	130.3	79.5	87.3	40436.2	284832	72904685.6	513552096	325267.2	586456761.6		
1397	81.2	75	121.7	79.2	85.2	21772.8	241776	30416801.6	337761072	263548.8	368177673.6		
1017	78.7	73	113.7	78.4	83.2	3110.4	202032	3163276.8	205466544	205142.4	208629820.8		
871	76.7	71	105.5	77.9	81.1	-12441.6	161625.6	-10836834	140775898	149184	129939264		
720	75.2	69	98.9	77.5	79	-23846.4	118669.6	-17169408	85370112	94723.2	68200704		
611	72.6	67	90.7	76.9	77.4	-44582.4	88099.2	-27239846	53828611.2	43516.8	26588764.8		
452	71.9	66	81.7										
323	70.6	63	74.4										
195	67.9	61	69.4										
191	66	59	63.6										
166	64.3	57	57.9										
101	62.9	56	52										
50	59.9	53	49										
81	56.2	51	44.2										
35	57.5	49	38.1	75.7	72.1	188697.6	225216	6604416	7882560	413913.6	14488976		
25	54.3	47	35.3	67.8	52.8	139968	115920	3499200	2898000	255888	6397200		
5	53.6	46	30.7	67.8	34.4	145152	24508.8	725760	122544	169680.8	848304		
										102954240	1588068230	Total Gain	1691022470
										102954.24	1588068.23	kBtu	1691022.47

		Saved kBtu								
SEMCO	CFM	Model	fpm	Ql	Qs	Total	%	Cost		
RHP 1	5610	TE-9	700	928078.9	82927.91	991006.8	0.360973	13,015		
RHP 2	4830	TE-9	600	798996.8	798996.8	1597994	0.678066	13,015		
RHP 3	9520	TE18	600	1588068	1588068	3176136	0.681747	22,086		
						Total	5765137	0.59215	48,116	

EcoDry 5610												
BIN hours	Tdb	twb	g/r/b	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain	
22	85.7	81	154	80.9	100.2	29082.24	208254.4	639809.28	4581597.2	237336.65	5221406.52	
695	85.7	79	140.1	79.9	95.9	35141.04	171093.8	24423023	118910177	206234.82	143333199.9	
1803	83.6	77	130.3	78	92.9	33929.28	144771.7	61174492	261023303	178700.94	322197794.8	
1397	81.2	75	121.7	78.2	90.2	18176.4	121933.4	25392431	170340890	140109.75	195733320.8	
1017	78.7	73	113.7	77.5	87.8	7270.56	100256.3	7394159.5	101960667	107526.87	109354826.8	
871	76.7	71	105.5	76.9	85.2	-1211.76	78579.27	-1055443	68442544	77367.51	67387101.21	
720	75.2	69	96.9	76.9	85.2	-10299.96	45289.53	-7415971.2	32608462	34989.57	25192490.4	
611	72.6	67	90.7	75.8	80.6	-19388.16	39096.09	-11846166	23887711	19707.93	12041545.23	
452	71.9	65	81.7	75.6	77.9	-22417.56	14709.42	-10132737	6648657.8	-7708.14	-3684079.28	
323	70.5	63	74.4	75.2	75.6	-28476.36	-4645.08	-9197854.3	-1500360.8	-33121.44	-10698225.12	
195	67.9	61	69.4									
191	66	59	63.6									
166	64.3	57	57.9									
101	62.9	55	52									
50	59.9	53	49									
81	58.2	51	44.2									
35	57.5	49	38.1									
25	54.3	47	35.3									
5	53.6	45	30.7									
Bypass												
				72.7	69.1	77552.64	77805.09	3877632	3890254.5	155357.73	7767886.5	
				72.1	66.3	84217.32	85546.89	6821602.9	6929298.1	169764.21	13750901.01	
				72.1	66.3	88458.48	109159.4	3096046.8	3820578.3	197617.86	6196625.1	
				71.2	65.8	102393.7	118062.5	2559843	2951561.3	220456.17	5511404.25	
				71.1	64.4	106029	130449.3	530145	652246.65	236478.33	1182391.65	
								96261003	805147587	Total	901408599.7	
								96261.003	805147.59	kBtu	901408.5997	

EcoDry 4830												
BIN hours	Tdb	twb	g/r/b	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain	
22	85.7	81	154	80.9	100.2	29038.72	179299.3	550851.84	3944583.7	204337.98	4495435.56	
695	85.7	79	140.1	80.1	95.9	29211.84	147306.3	20302229	102377211	176517.18	122679440.1	
1803	83.6	77	130.3	78	92.9	29211.84	124643	52668948	224731293	153854.82	277400240.5	
1397	81.2	75	121.7	78	90.2	16692.48	104980.1	23319395	146657130	121672.53	169976524.4	
1017	78.7	73	113.7	77.5	87.8	6259.68	86316.93	6366094.6	87784318	92576.61	94150412.37	
871	76.7	71	105.5	77.1	85.2	-2086.56	67653.81	-1817393.8	58925469	65567.25	57109074.75	
720	75.2	69	96.9	76.9	85.2	-8867.88	38992.59	-6384873.6	28074665	30124.71	21689791.2	
611	72.6	67	90.7	75.9	80.6	-17214.12	33660.27	-10517827	20566425	16446.15	10048597.65	
452	71.9	65	81.7	75.4	77.9	-18257.4	12664.26	-8252344.8	5724245.5	-5593.14	-2528099.28	
323	70.5	63	74.4	75.2	75.6	-24517.08	-3999.24	-7919016.8	-1291754.5	-28516.32	-9210771.36	
195	67.9	61	69.4									
191	66	59	63.6									
166	64.3	57	57.9									
101	62.9	55	52									
50	59.9	53	49									
81	58.2	51	44.2									
35	57.5	49	38.1									
25	54.3	47	35.3									
5	53.6	45	30.7									
Bypass												
				72.9	69.1	67813.2	66987.27	3390660	3349363.5	134800.47	6740023.5	
				72.3	66.9	73551.24	75652.29	5957650.4	6127835.5	149203.53	12085485.93	
				72.1	66.3	76159.44	94648.68	2665580.4	3312703.8	170808.12	5978284.2	
				71.2	65.8	88157.16	101647.4	2203929	2541183.8	189804.51	4745112.75	
				71.1	64.4	91287	112312	456435	561559.95	203598.99	1017994.95	
								82990316	693387231	Total	776377547.2	
								82990.316	693387.23	kBtu	776377.5472	

EcoDry 9520												
BIN hours	Tdb	twb	g/r/b	sa	saw	Qs	Ql	Annual Qs	Annual Ql	Btu/H gain	Annual Btu gain	
22	85.7	81	154	80.9	100.2	49351.68	356371.2	1085737	7840166.4	405722.88	8925903.36	
695	85.7	79	140.1	80.1	95.9	57576.96	292780.8	40015987	203482656	350357.76	243488643.2	
1803	83.6	77	130.3	77	93	67858.56	247075.2	122348984	445476586	314933.76	567825569.3	
1397	81.2	75	121.7	78.2	90.2	30844.8	208656	43090186	291492432	239500.8	334582617.6	
1017	78.7	73	113.7	77.7	87.6	10281.6	172886.4	10456387	175825469	183168	186281856	
871	76.7	71	105.5	76.3	85.2	4112.64	134467.2	3582109.4	117120931	138579.84	120703040.6	
720	75.2	69	96.9	76.7	85	-15422.4	78825.6	-11104128	56754432	63403.2	45650304	
611	72.6	67	90.7	75.4	81.6	-28788.48	60278.4	-17589761	36830102	31489.92	19240341.12	
452	71.9	65	81.7	75.9	77.7	-41126.4	26496	-18589133	11976192	-14630.4	-6612940.8	
323	70.5	63	74.4	75.5	75.6	-51408	-7948.8	-16604784	-2567462.4	-59356.8	-19172246.4	
195	67.9	61	69.4									
191	66	59	63.6									
166	64.3	57	57.9									
101	62.9	55	52									
50	59.9	53	49									
81	58.2	51	44.2									
35	57.5	49	38.1									
25	54.3	47	35.3									
5	53.6	45	30.7									
Bypass												
				72.7	69.1	131604.5	133142.4	6580224	6657120	264746.88	13237344	
				72	66.4	141886.1	147052.8	11492772	11911277	288938.88	23404049.28	
				71.7	66.3	145998.7	186796.8	5109955.2	6537888	332795.52	11647843.2	
				71.2	65.8	173759	202032	4343976	5050800	375791.04	9364776	
				71	64.5	178899.8	223891.2	894499.2	1119456	402791.04	2013955.2	
								185113011	1.376E+09	Total	1580621056	
								185113.01	1375508	kBtu	1580621.056	

Saved kBtu							
EcoFresh	CFM	Model	fpm	Ql	Qs	Total	%
RHP 1	5610	HRW1600-200	600	805147.6	96261	901408.6	0.328337
RHP 2	4830	HRW1400-200	700	693387.2	82990.32	776377.5	0.328463
RHP 3	9520	HRW1900-200	700	1375508	185113	1560621	0.334982

RHP 9520											
Bin hours	Tdb	Twb	griB	SA(T)	SA(W)	Qs	Qi	BtuH	Annual Btu gain	Total Sens. Load	Total Lat. Load
22	85.7	81	154	55	64	315645.1	591192	906837.12	19950416.64	6944192.64	13006224
699	85.7	79	140.1	55	64	315645.1	499895.68	815530.8	566793908	219373358.4	347420547.6
1803	83.6	77	130.3	55	64	294053.8	435511.44	729565.2	1315406056	530178929.3	785227126.3
1397	81.2	75	121.7	55	64	269377.9	379019.76	648397.68	905811559	376320954.2	529490604.7
1017	78.7	73	113.7	55	64	243673.9	326469.36	570143.28	579835715.8	247816376.6	332019339.1
871	76.7	71	105.5	55	64	223110.7	272605.2	495715.92	431768566.3	194329437.1	237439129.2
720	75.2	69	96.9	55	64	207688.3	215113.62	423801.84	305137324.8	149535590.4	155601734.4
611	72.6	67	90.7	55	64	180956.2	175386.56	356343.12	217725646.3	110564213.8	107161432.6
452	71.9	65	81.7	55	64	173759	116267.76	290026.8	131092113.6	78539086.08	52553027.52
323	70.5	63	74.4	55	64	159364.8	68315.52	227680.32	73540743.36	51474830.4	22065912.96
199	67.9	61	69.4	55	64	132632.6	35471.52	168104.16	32780311.2	25863364.8	6916946.4
191	66	59	63.6	55	64	113097.6	-2627.52	110470.08	21099785.28	21601641.6	-501856.32
166	64.3	57	57.9	72	52.5	79168.32	-35471.52	43696.8	7253668.8	13141941.12	-5888272.32
101	62.9	55	52	72	52.5	93562.56	3284.4	96846.96	9781542.96	9449818.56	331724.4
50	59.9	53	48	72	52.5	124407.4	22990.8	147388.16	7368908	6220368	1148540
81	58.2	51	44.2	72	52.5	141886.1	54521.04	196407.12	15908976.72	11492772.48	4416204.24
35	57.5	49	38.1	72	52.5	149083.2	94590.72	243673.92	8528587.2	5217912	310875.2
25	54.3	47	35.3	72	52.5	181984.3	112983.36	294967.68	7374192	4549608	2824584
5	53.6	45	30.7	72	52.5	189181.4	143199.84	332381.28	1661906.4	945907.2	715999.2
Totals:									4658820926	2063560303	2595260523
Kbtu									4658820.926		

	CFM	Qi (kbtu)	Qs (kbtu)	Total
RHP 1	5610	1529350	1218028	2746376
RHP 2	4830	1316713	1048053	2363866
RHP 3	6620	2586280	2063560	4658820
Total				9767822