

# Populations, Activity and Emissions of Diesel Nonroad Equipment in EPA Region 7

## PEMS Measurement Results Appendix AH

Assessment and Standards Division  
Office of Transportation and Air Quality  
U.S. Environmental Protection Agency

Prepared for EPA by  
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Test ID	Equip Description	Phase	Equipment Category	Equip Type	Mfr	Model	Model Year	Rated HP	HP Group	Tier
2208 - 1918	'83 Deere 410B (75 hp)	1	Backhoe Loader	Backhoe loader	John Deere	410B Turbo	1983	75	A: 50-99	N/A
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)	1	Loader	Track/Crawler Loader	Caterpillar	963C	2002	160	B: 100-174	Tier 1
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)	1	Other	Grader	Komatsu	GD655	2005	197	C: 175-299	Tier 2
0008 - 1644	'77 JCB 210S (64 hp)	1	Backhoe Loader	Backhoe loader	JC Bamford Excavators	210S Series 2	1977	64	A: 50-99	N/A
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)	1	Other	Horizontal Boring Machine	Vermeer	Navigator D16x20A	2006	64	A: 50-99	Tier 2
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	1	Loader	Track/Crawler Loader	Caterpillar	953C	2004	128	B: 100-174	Tier 2
3858 - 1482	'96 Cat D4CXL (87 hp)	2	Dozer	Crawler Dozer	Caterpillar	D4CXL	1996	87	A: 50-99	N/A
3858 - 1482-1	'96 Cat D4CXL (87 hp)	2	Dozer	Crawler Dozer	Caterpillar	D4CXL	1996	87	A: 50-99	N/A
3858 - 5754	'92 Case 480FLL (63 hp)	2	Loader	Wheel Loader	Case	480FLL	1992	63	A: 50-99	N/A
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	2	Dozer	Track dozer	Caterpillar	D6RXL	1997	175	B: 100-174	Tier 1
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	2	Loader	Articulated Loader	John Deere	544H	2003	130	B: 100-174	Tier 2
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	2	Excavator	Track Excavator	Caterpillar	325D	2006	300	D: 300-599	Tier 3
3597 - 095K	'97 Hyster C340C (83 hp)	2	Other	Roller Compactor	Hyster	C340C	1997	83	A: 50-99	N/A
3597 - 0726	'96 Cat 12H (140 hp)	2	Other	Grader	Caterpillar	12H	1996	140	B: 100-174	N/A
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	2	Other	Well Driller	Cummins / James W Bell Co	4B-3.9	1987	76	A: 50-99	N/A
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)	2	Other	Telescopic Lift Truck	Caterpillar	TH83	2002	101	B: 100-174	Tier 1
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	2	Other	Telescopic Lift Truck	Caterpillar	TH83	2002	101	B: 100-174	Tier 1
3597 - 4734	'97 Case 570LXT (68 hp)	2	Loader	Tractor Loader	Case	570 LXT	1997	68	A: 50-99	N/A
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	2	Dozer	Crawler Dozer	John Deere	550H	1999	84	A: 50-99	Tier 1
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	3	Dozer	Track Dozer	Caterpillar	953C	1999	170	B: 100-174	Tier 1
9960 - 6086	Komatsu WA180 (124 hp)	3	Loader	Articulated Loader	Komatsu	WA180	Unk	124	B: 100-174	N/A
0229 - 3781	'85 Case 1085B (120 hp)	3	Excavator	Excavator	Case	1085B	1985	120	B: 100-174	N/A
0229 - 0045	'95 Deere 410D (75 hp)	3	Backhoe Loader	Backhoe loader	John Deere	410D Turbo	1995	75	A: 50-99	N/A
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	3	Excavator	Excavator	Komatsu	PC300LC	2003	255	C: 175-299	Tier 2
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)	3	Excavator	Excavator	John Deere	450D	2006	349	D: 300-599	Tier 3
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)	3	Excavator	Excavator	John Deere	450D	2006	349	D: 300-599	Tier 3
8418 - 0097_1	'95 Cat 963CB (160 hp)	3	Dozer	Track Dozer	Caterpillar	963CB	1995	160	B: 100-174	N/A
8418 - 0097_2	'95 Cat 963CB (160 hp)	3	Dozer	Track Dozer	Caterpillar	963CB	1995	160	B: 100-174	N/A
8418 - 0377_1	'85 Cat 963 (150 hp)	3	Dozer	Track Dozer	Caterpillar	963	1985	150	B: 100-174	N/A
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)	3	Excavator	Excavator	Komatsu	PC300LC-6LC	1998	232	C: 175-299	Tier 1
8418 - 0377_2	'85 Cat 963 (150 hp)	3	Dozer	Track Dozer	Caterpillar	963	1985	150	B: 100-174	N/A
0349 - 1836	'88 Cat 953 (121 hp)	3	Dozer	Track Dozer	Caterpillar	953	1988	121	B: 100-174	N/A
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	3	Excavator	Excavator	Caterpillar	320B	1997	128	B: 100-174	Tier 1
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	3	Excavator	Excavator	Komatsu	PC400LC	2000	321	D: 300-599	Tier 1
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)	3	Dozer	Track Dozer	Caterpillar	963B	1998	220	C: 175-299	Tier 1
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	3	Dozer	Track Dozer	Caterpillar	963B	1998	220	C: 175-299	Tier 1
9272 - 0853	'93 Komatsu PC400LC (330 hp)	3	Excavator	Excavator	Komatsu	PC400LC	1993	330	D: 300-599	N/A
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	3	Backhoe Loader	Backhoe Loader	John Deere	310J	2007	84	A: 50-99	Tier 2
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	3	Backhoe Loader	Backhoe Loader	John Deere	310G	2006	84	A: 50-99	Tier 2

						Durations (minutes) (engine off and autozeros excluded)									
Test ID	Equip Description	Test Date	Gas	PM	RPM	Overall Test	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8	Filter 9
2208 - 1918	'83 Deere 410B (75 hp)	6/15/2007	Yes	No	No	206.33									
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)	6/21/2007	No	Yes	No	161.38		19.65		15.85	26.05				
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)	6/26/2007	No	No	No	7.17									
0008 - 1644	'77 JCB 210S (64 hp)	6/29/2007	Yes	No	No	N/A									
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)	7/2/2007	No	No	No	N/A									
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	7/24/2007	Yes	Yes	Yes	305.13	9.77	32.47	29.15	18.38	33.00	58.87			
3858 - 1482	'96 Cat D4CXL (87 hp)	9/18/2007	Yes	Yes	Yes	99.82	10.18	14.28	30.63						
3858 - 1482-1	'96 Cat D4CXL (87 hp)	9/20/2007	Yes	Yes	Yes	469.65	9.93	19.98	30.03	9.98	19.98	28.88			
3858 - 5754	'92 Case 480FLL (63 hp)	9/21/2007	Yes	Yes	Yes	275.42	10.07			9.85	18.62	29.88			
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	9/27/2007	Yes	Yes	Yes	86.42	10.33	19.88	28.85	10.22	11.22				
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	9/28/2007	Yes	Yes	Yes	263.42	10.25	20.12	30.48	10.13	50.05				
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	10/2/2007	Yes	Yes	No	327.07	9.72	20.00	29.83	9.90	20.23	29.73			
3597 - 095K	'97 Hyster C340C (83 hp)	10/4/2007	No	Yes	Yes	185.85	38.77	19.43	39.80						
3597 - 0726	'96 Cat 12H (140 hp)	10/9/2007	No	Yes	Yes	482.97		21.22	30.08	9.78	20.00	30.02			
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	10/11/2007	Yes	Yes	Yes	399.72	10.27	20.05	34.98	11.00	10.65	29.37			
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)	10/13/2007	Yes	No	No	56.98									
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	10/15/2007	Yes	Yes	Yes	188.47	9.03	19.48	31.33	10.78	21.20	29.67			
3597 - 4734	'97 Case 570LXT (68 hp)	10/24/2007	Yes	Yes	Yes	215.13	9.52	20.25	29.75	10.08	19.63	29.95			
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	10/27/2007	Yes	Yes	Yes	244.27	13.05	17.05	29.03	10.38		12.90	9.92	20.13	29.88
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	7/23/2008	Yes	Yes	Yes	136.13	10.03	20.03	30.03	10.03	20.03	30.03			
9960 - 6086	Komatsu WA180 (124 hp)	7/28, 8/5	Yes	Yes	Yes	424.37	10.02	20.02	30.03	20.40	30.52	10.03	20.03	30.02	
0229 - 3781	'85 Case 1085B (120 hp)	7/31/2008	Yes	Yes	Yes	60.52	9.58	20.02	30.03						
0229 - 0045	'95 Deere 410D (75 hp)	8/1/2008	Yes	Yes	Yes	68.08	10.03	20.02	30.03						
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	8/6/2008	Yes	Yes	Yes	482.65	9.83	20.02	30.05	10.02	20.03	30.02			
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)	8/12/2008	Yes	No	Yes	344.38									
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)	8/13/2008	Yes	No	No	82.33									
8418 - 0097_1	'95 Cat 963CB (160 hp)	8/18/2008	Yes	Yes	Yes	14.88	10.02								
8418 - 0097_2	'95 Cat 963CB (160 hp)	8/19/2008	Yes	Yes	Yes	111.32	10.03	20.03	30.03						
8418 - 0377_1	'85 Cat 963 (150 hp)	8/22/2008	Yes	Yes	Yes	8.70									
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)	8/25/2008	Yes	Yes	No	265.35	10.03								
8418 - 0377_2	'85 Cat 963 (150 hp)	8/26/2008	No	No	No	0.00									
0349 - 1836	'88 Cat 953 (121 hp)	9/23/2008	Yes	Yes	Yes	94.98	10.42	20.08	30.05						
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	9/24/2008	Yes	Yes	Yes	113.97	10.05	20.02	30.03						
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	9/30/2008	Yes	Yes	Yes	605.68	10.02	20.03	30.03	10.03	20.03	30.03			
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)	10/1/2008	Yes	Yes	Yes	17.03	10.03								
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	10/2/2008	Yes	Yes	Yes	186.43	10.02	20.03	30.03	9.95	20.03	22.03			
9272 - 0853	'93 Komatsu PC400LC (330 hp)	10/6/2008	Yes	Yes	Yes	268.55	10.02	20.33	30.02						
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	10/9/2008	Yes	Yes	Yes	365.42	10.03	20.03	30.02	9.87	20.03	29.98	10.03		
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	10/10/2008	Yes	Yes	Yes	167.55	17.28	20.05	32.63	18.92	20.32				

		Fuel Used (gallons)									
Test ID	Equip Description	Overall Test	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8	Filter 9
2208 - 1918	'83 Deere 410B (75 hp)	4.365									
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)	11.558		1.149		1.451	1.195				
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)	0.276									
0008 - 1644	'77 JCB 210S (64 hp)	N/A									
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)	N/A									
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	15.854	0.109	1.244	1.134	1.479	2.758	4.845			
3858 - 1482	'96 Cat D4CXL (87 hp)	3.366	0.104	0.266	0.739						
3858 - 1482-1	'96 Cat D4CXL (87 hp)	13.058	0.124	0.713	1.073	0.530	0.570	0.171			
3858 - 5754	'92 Case 480FLL (63 hp)	2.803	0.407			0.083	0.201	0.387			
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	5.767	0.317	0.519	1.991	0.612	1.574				
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	8.987	0.177	0.514	0.724	0.649	1.924				
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	26.589	0.295	1.211	2.134	1.661	2.066	2.832			
3597 - 095K	'97 Hyster C340C (83 hp)										
3597 - 0726	'96 Cat 12H (140 hp)			0.111	0.127	0.047	0.069	0.124			
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	8.690	0.302	0.573	0.743	0.285	0.237	0.472			
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)	1.146									
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	3.441	0.169	0.434	0.562	0.302	0.373	0.524			
3597 - 4734	'97 Case 570LXT (68 hp)	2.053	0.129	0.198	0.264	0.188	0.222	0.254			
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	8.726	0.445	0.195	1.337	0.097		0.764	0.298	0.558	1.680
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	9.327	0.274	1.203	1.914	1.056	1.966	2.475			
9960 - 6086	Komatsu WA180 (124 hp)	8.280	0.113	0.184	0.239	0.439	0.394	0.459	0.367	0.958	
0229 - 3781	'85 Case 1085B (120 hp)	0.794	0.091	0.160	0.536						
0229 - 0045	'95 Deere 410D (75 hp)	1.457	0.233	0.613	0.478						
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	33.323	1.732	2.621	3.651	0.632	0.243	0.375			
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)	36.937									
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)	0.641									
8418 - 0097_1	'95 Cat 963CB (160 hp)	0.694	0.476								
8418 - 0097_2	'95 Cat 963CB (160 hp)	10.093	0.913	2.035	2.646						
8418 - 0377_1	'85 Cat 963 (150 hp)	1.071	1.071								
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)	20.820	0.327								
8418 - 0377_2	'85 Cat 963 (150 hp)										
0349 - 1836	'88 Cat 953 (121 hp)	5.455	0.553	0.759	1.982						
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	9.030	0.958	1.410	2.625						
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	77.240	2.082	2.557	3.221	1.503	3.658	5.054			
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)	1.160	0.632								
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	14.929	0.187	0.834	2.457	1.238	2.754	3.100			
9272 - 0853	'93 Komatsu PC400LC (330 hp)	30.592	1.722	2.012	3.570						
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	8.362	0.108	0.222	0.758	0.204	0.790	0.858	0.467		
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	2.068	0.018	0.032	0.123	0.745	0.832				

		Data Flags									
Test ID	Equip Description	Overall Test	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8	Filter 9
2208 - 1918	'83 Deere 410B (75 hp)	Note 1	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)	Note 2	No Filter	Gas Autozero	No Filter	Gas Invalid	Gas Invalid	No Filter	No Filter	No Filter	No Filter
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)	No BSFC Eqn	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
0008 - 1644	'77 JCB 210S (64 hp)	Note 3	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)	No Data	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	Note 13		Gas Autozero	Gas Autozero			Gas Autozero	No Filter	No Filter	No Filter
3858 - 1482	'96 Cat D4CXL (87 hp)	Note 4		Gas Autozero		No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
3858 - 1482-1	'96 Cat D4CXL (87 hp)	Note 4						Gas Autozero	No Filter	No Filter	No Filter
3858 - 5754	'92 Case 480FLL (63 hp)	Note 5		Filter Invalid	Filter Invalid				No Filter	No Filter	No Filter
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)				Gas Autozero			No Filter	No Filter	No Filter	No Filter
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)				Gas Autozero		Gas Autozero	Dynamic Blank	No Filter	No Filter	No Filter
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)								No Filter	No Filter	No Filter
3597 - 095K	'97 Hyster C340C (83 hp)	Note 6			Gas Autozero	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
3597 - 0726	'96 Cat 12H (140 hp)	Note 7	Filter Invalid		Gas Autozero				No Filter	No Filter	No Filter
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	Note 8			Gas Autozero			Gas Autozero	No Filter	No Filter	No Filter
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)		Dynamic Blank	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)				Gas Autozero				No Filter	No Filter	No Filter
3597 - 4734	'97 Case 570LXT (68 hp)	Note 13			Gas Autozero			Gas Autozero	No Filter	No Filter	No Filter
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)				Gas Autozero		Dynamic Blank	Gas Autozero			Gas Autozero
8925 - 2466	99 Cat 953C (Tier 1) (170 hp)	Note 2			Filter Invalid				No Filter	No Filter	No Filter
9960 - 6086	Komatsu WA180 (124 hp)	Note 13									No Filter
0229 - 3781	'85 Case 1085B (120 hp)					No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
0229 - 0045	'95 Deere 410D (75 hp)	Note 13				No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)								No Filter	No Filter	No Filter
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)		No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)	Note 9	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
8418 - 0097_1	'95 Cat 963CB (160 hp)			Filter Invalid	Dynamic Blank	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
8418 - 0097_2	'95 Cat 963CB (160 hp)					No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
8418 - 0377_1	'85 Cat 963 (150 hp)		Filter Invalid	Dynamic Blank	Dynamic Blank	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)			Filter Invalid	Filter Invalid	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
8418 - 0377_2	'85 Cat 963 (150 hp)	No data	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
0349 - 1836	'88 Cat 953 (121 hp)	Note 10	Gas Invalid			No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	Note 13				No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)								No Filter	No Filter	No Filter
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)			Filter Invalid	Dynamic Blank	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)								No Filter	No Filter	No Filter
9272 - 0853	'93 Komatsu PC400LC (330 hp)	Note 11				Dynamic Blank	Dynamic Blank	Dynamic Blank	No Filter	No Filter	No Filter
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)									Filter Invalid	Filter Invalid
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	Note 12	Gas Invalid	Gas Invalid	Gas Invalid			Filter Invalid	No Filter	No Filter	No Filter

Test ID	Equip Description	Overall, Work Based Emissions				Overall, Fuel Based Emissions				Overall, Time Based Emissions			
		HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	Nox (g/kW-hr)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)
2208 - 1918	'83 Deere 410B (75 hp)					22.141	43.839	10.142	165.1	7.806	15.456	3.576	58.198
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)	0.593	1.293	0.688	8.07	8.699	18.960	10.078	118.2	10.384	22.631	12.030	141.136
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)					10.151	83.365	10.098	65.9	6.506	53.435	6.473	42.209
0008 - 1644	'77 JCB 210S (64 hp)												
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)												
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	0.420	3.434	1.450	8.98	2.967	24.235	10.231	63.4	2.569	20.987	8.860	54.869
3858 - 1482	'96 Cat D4CXL (87 hp)		3.857	0.752	13.68		52.203	10.181	185.1		29.342	5.723	104.069
3858 - 1482-1	'96 Cat D4CXL (87 hp)		3.925	0.736	13.26		54.138	10.154	183.0		25.088	4.705	84.790
3858 - 5754	'92 Case 480FLL (63 hp)					56.102	62.055	9.623	136.7	9.515	10.525	1.632	23.183
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	0.923	3.419	0.691	4.33	13.610	50.394	10.181	63.8	15.137	56.051	11.324	70.980
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	0.670	2.561	0.714	7.42	9.595	36.655	10.221	106.2	5.456	20.842	5.811	60.361
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	1.550	6.232	2.120	9.28	7.474	30.045	10.219	44.7	10.126	40.708	13.846	60.595
3597 - 095K	'97 Hyster C340C (83 hp)												
3597 - 0726	'96 Cat 12H (140 hp)												
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	2.297	3.678	0.709	12.46	32.264	51.661	9.952	175.0	11.691	18.719	3.606	63.415
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)	0.576	2.192	1.009	10.20	5.852	22.259	10.245	103.6	1.962	7.464	3.435	34.729
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	0.487	2.385	1.157	11.11	4.302	21.086	10.229	98.2	1.309	6.416	3.113	29.881
3597 - 4734	'97 Case 570LXT (68 hp)	2.561	6.242	0.725	13.72	35.491	86.495	10.041	190.1	5.645	13.756	1.597	30.240
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	0.520	1.539	0.726	6.71	7.339	21.708	10.235	94.6	4.370	12.925	6.094	56.333
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	0.717	3.294	0.738	8.470	9.798	44.982	10.074	115.670	10.955	50.295	11.264	129.332
9960 - 6086	Komatsu WA180 (124 hp)	3.046	3.528	0.725	17.660	41.719	48.321	9.932	241.867	13.566	15.714	3.230	78.652
0229 - 3781	'85 Case 1085B (120 hp)	4.132	5.757	0.682	17.443	59.833	83.368	9.878	252.600	13.085	18.232	2.160	55.243
0229 - 0045	'95 Deere 410D (75 hp)	1.174	2.441	0.712	11.292	16.626	34.575	10.080	159.959	5.929	12.331	3.595	57.048
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	0.653	2.212	0.811	5.097	8.167	27.687	10.147	63.790	9.398	31.860	11.676	73.403
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)	0.202	1.024	0.659	3.971	3.123	15.865	10.202	61.504	5.582	28.359	18.237	109.943
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)	2.287			43.659	36.148			690.026	4.688			89.495
8418 - 0097_1	'95 Cat 963CB (160 hp)	0.702	3.222	0.722	7.345	9.848	45.187	10.129	103.027	7.656	35.130	7.874	80.096
8418 - 0097_2	'95 Cat 963CB (160 hp)	0.782	2.865	0.705	6.826	11.231	41.139	10.118	98.014	16.972	62.167	15.291	148.115
8418 - 0377_1	'85 Cat 963 (150 hp)	1.517	4.436	0.739	7.653	20.602	60.225	10.039	103.908	42.267	123.562	20.597	213.185
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)	0.532	1.257	0.695	9.484	7.803	18.434	10.187	139.045	10.204	24.107	13.322	181.831
8418 - 0377_2	'85 Cat 963 (150 hp)												
0349 - 1836	'88 Cat 953 (121 hp)	0.445	3.428	0.745	8.960	6.057	46.626	10.138	121.849	5.797	44.626	9.703	116.623
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	0.738	1.328	0.736	7.596	10.217	18.396	10.200	105.217	13.492	24.293	13.470	138.950
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	0.352	1.275	0.686	5.401	5.266	19.054	10.248	80.685	11.192	40.498	21.782	171.489
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)	0.474	2.277	0.717	6.838	6.731	32.345	10.192	97.136	7.642	36.724	11.572	110.286
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	0.316	1.871	0.734	7.166	4.406	26.056	10.214	99.771	5.881	34.775	13.632	133.157
9272 - 0853	'93 Komatsu PC400LC (330 hp)	1.007	2.182	1.252	17.212	8.227	17.829	10.232	140.608	15.619	33.851	19.426	266.961
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	0.710	3.474	0.735	8.963	9.771	47.829	10.119	123.384	3.726	18.241	3.859	47.056
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	1.376	2.675	0.618	18.020	18.976	36.906	8.522	248.586	3.904	7.593	1.753	51.146

Test ID	Equip Description	Filter 1, Work Based Emissions					Filter 2, Work Based Emissions				
		HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)
2208 - 1918	'83 Deere 410B (75 hp)										
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)						0.712	1.100	0.657	12.071	0.483
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)										
0008 - 1644	'77 JCB 210S (64 hp)										
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)										
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	0.973	10.262	1.966	15.551	0.488	0.628	3.976	1.529	9.734	0.707
3858 - 1482	'96 Cat D4CXL (87 hp)		17.776	0.718	13.292	0.232		6.827	0.738	14.487	0.221
3858 - 1482-1	'96 Cat D4CXL (87 hp)		20.126	0.741	13.684	0.276		4.390	0.731	13.274	0.371
3858 - 5754	'92 Case 480FLL (63 hp)										
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	1.922	5.794	0.707	5.424	0.642	2.082	4.579	0.690	4.747	0.289
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	1.535	6.525	0.678	6.402	0.199	1.113	3.858	0.705	7.698	0.258
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	2.185	9.032	1.901	18.758	1.434	2.355	5.090	1.932	6.964	0.747
3597 - 095K	'97 Hyster C340C (83 hp)										
3597 - 0726	'96 Cat 12H (140 hp)										3.466
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	1.822	4.598	0.714	16.338	0.308	2.161	3.312	0.716	14.572	0.139
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)										
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	0.560	3.478	1.177	14.910	0.593	0.490	2.637	1.066	11.056	0.388
3597 - 4734	'97 Case 570LXT (68 hp)	2.059	8.444	0.718	14.057	0.157	2.543	7.400	0.721	14.302	0.066
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	1.147	1.965	0.724	6.885	0.283	1.304	3.834	0.723	9.349	0.093
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	0.726	5.249	0.687	6.930	0.242	0.559	4.464	0.726	6.529	0.368
9960 - 6086	Komatsu WA180 (124 hp)	4.233	7.500	0.726	10.256	0.143	5.270	6.636	0.724	9.645	0.174
0229 - 3781	'85 Case 1085B (120 hp)	4.413	11.112	0.650	9.904	0.345	5.665	8.473	0.650	11.219	0.179
0229 - 0045	'95 Deere 410D (75 hp)	0.993	2.516	0.713	11.017	0.300	1.142	2.134	0.714	11.008	0.072
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	0.758	1.003	0.804	4.793	0.381	0.664	1.628	0.809	4.575	0.126
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)										
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)										
8418 - 0097_1	'95 Cat 963CB (160 hp)	0.680	3.379	0.724	7.406	0.736					
8418 - 0097_2	'95 Cat 963CB (160 hp)	0.543	3.093	0.702	6.348	0.535	0.770	2.567	0.708	6.909	0.406
8418 - 0377_1	'85 Cat 963 (150 hp)										
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)										
8418 - 0377_2	'85 Cat 963 (150 hp)										
0349 - 1836	'88 Cat 953 (121 hp)	0.455	3.976	0.713	10.398	0.232	0.534	3.597	0.691	10.179	0.142
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	0.793	1.210	0.734	7.625	0.225	0.807	1.498	0.732	7.469	0.123
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	0.441	1.087	0.653	5.592	0.183	0.453	1.281	0.678	5.474	0.149
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)	0.605	2.481	0.710	6.757	0.334					
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	1.157	3.771	0.621	9.625	0.401	0.781	2.583	0.674	7.330	0.465
9272 - 0853	'93 Komatsu PC400LC (330 hp)	1.024	2.033	1.295	18.071	0.382	0.984	2.023	1.237	17.648	0.216
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	1.487	7.753	0.701	16.580	0.506	1.580	6.228	0.703	13.945	0.612
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	10.079	0.000	0.000	93.872	1.082	11.196	0.000	0.000	71.437	0.570

Test ID	Equip Description	Filter 3, Work Based Emissions					Filter 4, Work Based Emissions				
		HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)
2208 - 1918	'83 Deere 410B (75 hp)										
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)						0.537	1.617	0.697	6.037	0.051
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)										
0008 - 1644	'77 JCB 210S (64 hp)										
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)										
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	0.465	3.509	1.464	9.457	0.532	0.399	3.289	1.410	8.335	0.500
3858 - 1482	'96 Cat D4CXL (87 hp)		4.119	0.741	14.442	0.160					
3858 - 1482-1	'96 Cat D4CXL (87 hp)		3.706	0.723	13.920	0.182	2.597	2.440	0.754	12.859	0.156
3858 - 5754	'92 Case 480FLL (63 hp)										
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	0.931	3.316	0.680	4.159	0.435	0.736	2.914	0.711	4.283	0.472
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	1.019	3.808	0.704	7.127	0.219	0.378	1.662	0.727	7.379	0.222
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	1.574	6.729	1.933	8.795	0.260	1.161	4.635	1.939	7.167	0.242
3597 - 095K	'97 Hyster C340C (83 hp)										
3597 - 0726	'96 Cat 12H (140 hp)					2.282					1.169
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	2.158	3.010	0.689	12.571	0.120	2.220	4.774	0.744	10.462	0.112
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)										
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	0.536	2.658	1.157	11.298	0.576	0.896	7.404	3.896	30.938	2.256
3597 - 4734	'97 Case 570LXT (68 hp)	2.557	6.419	0.722	14.346	0.065	1.983	5.144	0.759	10.371	0.289
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	0.569	1.131	0.719	6.545	0.157	3.218	16.272	2.770	36.181	0.246
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	0.712	3.608	0.742	10.849		0.491	2.874	0.747	6.350	0.308
9960 - 6086	Komatsu WA180 (124 hp)	5.517	7.077	0.727	9.007	0.172	3.173	3.351	0.723	16.848	0.416
0229 - 3781	'85 Case 1085B (120 hp)	3.590	3.930	0.698	20.810	0.143					
0229 - 0045	'95 Deere 410D (75 hp)	1.321	2.733	0.707	11.310	0.144					
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	0.572	1.506	0.821	4.468	0.115	1.026	3.294	0.857	5.340	0.197
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)										
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)										
8418 - 0097_1	'95 Cat 963CB (160 hp)										
8418 - 0097_2	'95 Cat 963CB (160 hp)	0.830	2.859	0.705	6.883	0.364					
8418 - 0377_1	'85 Cat 963 (150 hp)										
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)										
8418 - 0377_2	'85 Cat 963 (150 hp)										
0349 - 1836	'88 Cat 953 (121 hp)	0.363	2.824	0.732	8.718	0.289					
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	0.689	1.289	0.736	7.668	0.021					
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	0.558	1.523	0.701	5.578	0.149	0.406	0.838	0.672	5.111	0.172
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)										
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	0.283	1.792	0.726	7.126	0.186	0.362	1.858	0.736	6.557	0.574
9272 - 0853	'93 Komatsu PC400LC (330 hp)	1.082	2.090	1.301	17.898	0.220					
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	0.849	3.141	0.736	8.781	0.276	0.813	3.872	0.725	9.386	0.261
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	6.823	0.000	0.000	73.442	1.186	0.364	4.302	0.730	7.740	0.412



Test ID	Equip Description	Filter 5, Work Based Emissions					Filter 6, Work Based Emissions				
		HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)
2208 - 1918	'83 Deere 410B (75 hp)										
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)	0.669	1.590	0.707	7.758	0.263					
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)										
0008 - 1644	'77 JCB 210S (64 hp)										
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)										
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	0.375	3.193	1.394	8.496	0.505	0.365	3.402	1.473	9.127	0.541
3858 - 1482	'96 Cat D4CXL (87 hp)										
3858 - 1482-1	'96 Cat D4CXL (87 hp)	2.106	3.571	0.743	13.881	0.130	6.318	14.842	0.685	17.859	0.125
3858 - 5754	'92 Case 480FLL (63 hp)										
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	0.521	2.068	0.683	4.532	0.378					
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	0.562	2.065	0.724	7.203	0.200					
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	1.226	5.432	1.960	7.852	0.250	1.338	6.109	1.965	7.905	0.283
3597 - 095K	'97 Hyster C340C (83 hp)										
3597 - 0726	'96 Cat 12H (140 hp)					1.396					2.126
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	2.495	4.508	0.714	11.227	0.264	2.325	3.922	0.687	12.111	0.013
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)										
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	0.404	1.263	0.973	9.227	0.517	0.411	1.447	0.990	8.879	0.461
3597 - 4734	'97 Case 570LXT (68 hp)	2.547	5.416	0.740	11.977	0.090	2.487	5.751	0.721	14.369	0.071
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)						0.239	0.846	0.713	7.072	0.106
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	0.572	2.644	0.747	6.714	0.290	0.692	2.997	0.735	6.507	0.296
9960 - 6086	Komatsu WA180 (124 hp)	3.621	3.726	0.735	14.824	0.181	3.084	3.034	0.694	20.550	0.339
0229 - 3781	'85 Case 1085B (120 hp)										
0229 - 0045	'95 Deere 410D (75 hp)										
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	1.346	6.354	0.766	10.500	0.090	1.479	6.879	0.764	10.315	0.038
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)										
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)										
8418 - 0097_1	'95 Cat 963CB (160 hp)										
8418 - 0097_2	'95 Cat 963CB (160 hp)										
8418 - 0377_1	'85 Cat 963 (150 hp)										
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)										
8418 - 0377_2	'85 Cat 963 (150 hp)										
0349 - 1836	'88 Cat 953 (121 hp)										
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)										
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	0.338	0.867	0.682	5.294	0.149	0.311	0.903	0.671	5.470	0.142
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)										
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	0.211	1.492	0.751	7.168	0.187	0.171	1.676	0.753	7.091	0.514
9272 - 0853	'93 Komatsu PC400LC (330 hp)										
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	0.556	2.384	0.747	7.613	0.175	0.586	2.890	0.739	8.352	0.122
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	0.423	2.509	0.734	7.451	0.222					

Test ID	Equip Description	Filter 7, Work Based Emissions					Filter 8, Work Based Emissions				
		HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)
2208 - 1918	'83 Deere 410B (75 hp)										
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)										
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)										
0008 - 1644	'77 JCB 210S (64 hp)										
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)										
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)										
3858 - 1482	'96 Cat D4CXL (87 hp)										
3858 - 1482-1	'96 Cat D4CXL (87 hp)										
3858 - 5754	'92 Case 480FLL (63 hp)										
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)										
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)										
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)										
3597 - 095K	'97 Hyster C340C (83 hp)										
3597 - 0726	'96 Cat 12H (140 hp)										
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)										
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)										
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)										
3597 - 4734	'97 Case 570LXT (68 hp)										
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	0.640	3.633	0.705	7.555	0.115	0.516	1.652	0.721	6.806	0.097
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)										
9960 - 6086	Komatsu WA180 (124 hp)	3.330	3.663	0.699	19.069	0.206	2.541	3.263	0.719	20.270	0.286
0229 - 3781	'85 Case 1085B (120 hp)										
0229 - 0045	'95 Deere 410D (75 hp)										
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)										
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)										
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)										
8418 - 0097_1	'95 Cat 963CB (160 hp)										
8418 - 0097_2	'95 Cat 963CB (160 hp)										
8418 - 0377_1	'85 Cat 963 (150 hp)										
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)										
8418 - 0377_2	'85 Cat 963 (150 hp)										
0349 - 1836	'88 Cat 953 (121 hp)										
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)										
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)										
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)										
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)										
9272 - 0853	'93 Komatsu PC400LC (330 hp)										
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	0.433	2.250	0.750	7.699	0.241					
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)										

Test ID	Equip Description	Filter 9, Work Based Emissions					Filter 1, Fuel Based Emissions					Filter 2, Fuel Based Emissions				
		HC (g/kW-hr)	CO (g/kW-hr)	CO2 (kg/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)
2208 - 1918	'83 Deere 410B (75 hp)															
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)											10.445	16.144	9.646	177.109	7.082
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)															
0008 - 1644	'77 JCB 210S (64 hp)															
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)															
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)						5.035	53.091	10.173	80.453	2.523	4.200	26.586	10.222	65.087	4.726
3858 - 1482	'96 Cat D4CXL (87 hp)							244.271	9.860	182.649	3.171		93.600	10.118	198.620	2.999
3858 - 1482-1	'96 Cat D4CXL (87 hp)							266.954	9.834	181.501	3.655		61.133	10.187	184.872	5.162
3858 - 5754	'92 Case 480FLL (63 hp)						18.224	41.276	10.153	158.890	3.884					
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)						27.371	82.505	10.066	77.233	9.121	30.419	66.917	10.081	69.376	4.223
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)						22.815	96.982	10.075	95.148	2.927	16.058	55.643	10.166	111.039	3.715
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)						11.681	48.290	10.165	100.291	7.668	12.438	26.880	10.204	36.777	3.944
3597 - 095K	'97 Hyster C340C (83 hp)										33.703					55.267
3597 - 0726	'96 Cat 12H (140 hp)															84.245
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)						25.803	65.114	10.116	231.390	4.355	30.574	46.865	10.127	206.206	1.969
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)															
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)						4.863	30.218	10.230	129.535	5.147	4.710	25.324	10.239	106.174	3.724
3597 - 4734	'97 Case 570LXT (68 hp)						28.737	117.823	10.026	196.154	2.194	35.375	102.935	10.027	198.949	0.914
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	0.423	1.198	0.726	5.321	0.099	16.172	27.697	10.203	97.054	3.993	18.303	53.829	10.146	131.276	1.302
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)						10.589	76.581	10.017	101.119	3.508	7.738	61.776	10.051	90.341	5.094
9960 - 6086	Komatsu WA180 (124 hp)						57.221	101.378	9.819	138.625	1.869	71.202	89.661	9.784	130.318	2.352
0229 - 3781	'85 Case 1085B (120 hp)						66.030	166.253	9.720	148.179	5.160	84.761	126.769	9.724	167.848	2.679
0229 - 0045	'95 Deere 410D (75 hp)						14.066	35.625	10.093	156.015	4.246	16.141	30.155	10.093	155.539	1.019
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)						9.569	12.665	10.150	60.525	4.805	8.325	20.423	10.149	57.380	1.578
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)															
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)															
8418 - 0097_1	'95 Cat 963CB (160 hp)						9.511	47.285	10.128	103.636	10.109					
8418 - 0097_2	'95 Cat 963CB (160 hp)						7.832	44.629	10.132	91.610	7.656	11.012	36.706	10.127	98.796	5.809
8418 - 0377_1	'85 Cat 963 (150 hp)															
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)															
8418 - 0377_2	'85 Cat 963 (150 hp)															
0349 - 1836	'88 Cat 953 (121 hp)						6.456	56.443	10.118	147.612	3.299	7.814	52.643	10.114	148.967	2.074
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)						10.986	16.747	10.167	105.580	3.112	11.209	20.810	10.169	103.752	1.710
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)						6.906	17.018	10.226	87.595	2.860	6.833	19.334	10.230	82.585	2.241
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)						8.672	35.543	10.178	96.808	4.783					
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)						18.803	61.280	10.093	156.399	6.510	11.775	38.948	10.165	110.505	7.016
9272 - 0853	'93 Komatsu PC400LC (330 hp)						8.083	16.044	10.218	142.580	3.011	8.128	16.712	10.221	145.820	1.788
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)						21.088	109.985	9.942	235.189	7.118	22.422	88.375	9.977	197.860	8.682
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)						134.070	0.000	0.000	1248.612	14.391	153.638	0.000	0.000	980.299	7.815

Test ID	Equip Description	Filter 3, Fuel Based Emissions					Filter 4, Fuel Based Emissions					Filter 5, Fuel Based Emissions				
		HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)
2208 - 1918	'83 Deere 410B (75 hp)															
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)						7.865	23.678	10.212	88.417	0.738	9.659	22.939	10.204	111.939	3.790
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)															
0008 - 1644	'77 JCB 210S (64 hp)															
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)															
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	3.252	24.530	10.230	66.104	3.716	2.896	23.851	10.224	60.450	3.629	2.751	23.441	10.231	62.362	3.710
3858 - 1482	'96 Cat D4CXL (87 hp)		56.594	10.175	198.412	2.199										
3858 - 1482-1	'96 Cat D4CXL (87 hp)		52.165	10.183	195.930	2.567	34.755	32.651	10.087	172.100	2.086	28.592	48.476	10.091	188.445	1.761
3858 - 5754	'92 Case 480FLL (63 hp)						107.580	68.452	9.314	198.542	15.439	77.084	69.927	9.589	209.647	10.006
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	13.881	49.456	10.147	62.033	6.488	10.596	41.950	10.240	61.667	6.799	7.833	31.092	10.269	68.149	5.677
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	14.696	54.926	10.153	102.809	3.153	5.345	23.493	10.270	104.307	3.142	7.958	29.266	10.259	102.065	2.839
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	8.311	35.540	10.211	46.455	1.371	6.134	24.480	10.242	37.852	1.280	6.404	28.377	10.240	41.017	1.305
3597 - 095K	'97 Hyster C340C (83 hp)					63.969										
3597 - 0726	'96 Cat 12H (140 hp)					47.611					24.577					26.363
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	30.492	42.538	9.738	177.634	1.692	30.143	64.809	10.101	142.028	1.517	35.248	63.697	10.086	158.633	3.729
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)															
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	4.744	23.518	10.235	99.981	4.958	2.357	19.475	10.247	81.370	5.927	4.250	13.298	10.242	97.112	5.445
3597 - 4734	'97 Case 570LXT (68 hp)	35.595	89.357	10.045	199.700	0.905	26.411	68.497	10.111	138.115	3.847	34.657	73.706	10.078	162.996	1.224
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	8.105	16.111	10.247	93.248	2.237	11.807	59.698	10.163	132.737	0.902					
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)						6.629	38.827	10.093	85.776	4.163	7.726	35.697	10.087	90.644	3.922
9960 - 6086	Komatsu WA180 (124 hp)	74.143	95.098	9.767	121.030	2.312	43.641	46.087	9.946	231.731	5.718	48.849	50.268	9.923	200.003	2.442
0229 - 3781	'85 Case 1085B (120 hp)	51.155	56.005	9.952	296.572	2.035										
0229 - 0045	'95 Deere 410D (75 hp)	18.792	38.868	10.058	160.853	2.041										
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	7.092	18.678	10.177	55.401	1.422	12.094	38.823	10.101	62.925	2.320	17.548	82.868	9.994	136.935	1.175
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)															
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)															
8418 - 0097_1	'95 Cat 963CB (160 hp)															
8418 - 0097_2	'95 Cat 963CB (160 hp)	11.893	40.988	10.113	98.663	5.224										
8418 - 0377_1	'85 Cat 963 (150 hp)															
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)															
8418 - 0377_2	'85 Cat 963 (150 hp)															
0349 - 1836	'88 Cat 953 (121 hp)	5.036	39.187	10.157	120.984	4.014										
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	9.557	17.882	10.202	106.356	0.297										
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	8.142	22.216	10.218	81.343	2.178	6.191	12.775	10.244	77.951	2.614	5.096	13.053	10.265	79.718	2.246
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)															
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	3.979	25.218	10.217	100.279	2.618	5.027	25.798	10.214	91.045	7.815	2.876	20.315	10.230	97.604	2.543
9272 - 0853	'93 Komatsu PC400LC (330 hp)	8.497	16.424	10.220	140.618	1.728										
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	11.647	43.065	10.089	120.402	3.785	11.323	53.896	10.092	130.661	3.629	7.545	32.367	10.136	103.360	2.375
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	92.436	0.000	0.000	994.952	16.068	5.060	59.801	10.148	107.596	5.700	5.870	34.781	10.181	103.297	3.071

Test ID	Equip Description	Filter 6, Fuel Based Emissions					Filter 7, Fuel Based Emissions					Filter 8, Fuel Based Emissions				
		HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)	HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)
2208 - 1918	'83 Deere 410B (75 hp)															
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)															
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)															
0008 - 1644	'77 JCB 210S (64 hp)															
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)															
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	2.537	23.644	10.238	63.443	3.760										
3858 - 1482	'96 Cat D4CXL (87 hp)															
3858 - 1482-1	'96 Cat D4CXL (87 hp)	88.342	207.528	9.580	249.722	1.745										
3858 - 5754	'92 Case 480FLL (63 hp)	51.817	87.150	9.656	204.802	8.426										
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)															
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)															
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	6.965	31.797	10.229	41.148	1.471										
3597 - 095K	'97 Hyster C340C (83 hp)															
3597 - 0726	'96 Cat 12H (140 hp)					43.234										
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	32.464	54.773	9.601	169.130	0.188										
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)															
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	4.252	14.966	10.245	91.859	4.772										
3597 - 4734	'97 Case 570LXT (68 hp)	34.740	80.343	10.069	200.747	0.991										
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	3.441	12.203	10.278	101.987	1.525	9.255	52.562	10.199	109.314	1.658	7.346	23.503	10.252	96.848	1.377
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	9.494	41.113	10.077	89.266	4.065										
9960 - 6086	Komatsu WA180 (124 hp)	44.124	43.411	9.925	293.978	4.845	47.159	51.876	9.900	270.049	2.924	35.160	45.146	9.942	280.465	3.951
0229 - 3781	'85 Case 1085B (120 hp)															
0229 - 0045	'95 Deere 410D (75 hp)															
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	19.302	89.800	9.970	134.653	0.501										
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)															
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)															
8418 - 0097_1	'95 Cat 963CB (160 hp)															
8418 - 0097_2	'95 Cat 963CB (160 hp)															
8418 - 0377_1	'85 Cat 963 (150 hp)															
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)															
8418 - 0377_2	'85 Cat 963 (150 hp)															
0349 - 1836	'88 Cat 953 (121 hp)															
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)															
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	4.758	13.819	10.265	83.678	2.179										
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)															
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	2.326	22.747	10.227	96.266	6.982										
9272 - 0853	'93 Komatsu PC400LC (330 hp)															
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	8.032	39.591	10.128	114.419	1.676	5.877	30.563	10.193	104.598	3.275					
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)															

Test ID	Equip Description	Filter 9, Fuel Based Emissions					Filter 1, Time Based Emissions					Filter 2, Time Based Emissions				
		HC (g/gal)	CO (g/gal)	CO2 (kg/gal)	NOx (g/gal)	PM (g/gal)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)
2208 - 1918	'83 Deere 410B (75 hp)															
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)											10.179	15.732	9.400	172.594	6.901
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)															
0008 - 1644	'77 JCB 210S (64 hp)															
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)															
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)						0.940	9.908	1.899	15.014	0.368	2.683	16.983	6.530	41.577	1.278
3858 - 1482	'96 Cat D4CXL (87 hp)							41.723	1.684	31.198	0.423		29.040	3.139	61.623	0.364
3858 - 1482-1	'96 Cat D4CXL (87 hp)							55.740	2.053	37.897	0.759		36.373	6.061	109.997	3.071
3858 - 5754	'92 Case 480FLL (63 hp)						12.285	27.825	6.845	107.111	2.593					
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)						14.001	42.202	5.149	39.506	2.986	13.240	29.126	4.388	30.196	1.838
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)						6.563	27.896	2.898	27.369	0.364	6.838	23.693	4.329	47.282	1.582
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)						5.919	24.469	5.151	50.819	3.745	12.553	27.130	10.299	37.119	3.980
3597 - 095K	'97 Hyster C340C (83 hp)										0.687					2.892
3597 - 0726	'96 Cat 12H (140 hp)															7.370
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)						12.654	31.932	4.961	113.474	1.985	14.551	22.304	4.820	98.139	0.937
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)															
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)						1.518	9.436	3.195	40.451	1.590	1.747	9.393	3.798	39.381	1.381
3597 - 4734	'97 Case 570LXT (68 hp)						6.477	26.556	2.260	44.212	0.470	5.761	16.763	1.633	32.399	0.149
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	5.977	16.935	10.267	75.203	1.401	9.201	15.758	5.805	55.219	2.000	3.490	10.264	1.935	25.032	0.248
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)						4.823	34.884	4.563	46.062	1.126	7.744	61.824	10.059	90.413	5.098
9960 - 6086	Komatsu WA180 (124 hp)						10.717	18.987	1.839	25.963	0.165	10.909	13.737	1.499	19.966	0.360
0229 - 3781	'85 Case 1085B (120 hp)						10.492	26.417	1.544	23.545	0.800	11.318	16.927	1.298	22.413	0.358
0229 - 0045	'95 Deere 410D (75 hp)						5.448	13.799	3.909	60.430	1.514	8.245	15.404	5.156	79.453	0.520
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)						28.085	37.170	29.790	177.638	9.123	18.166	44.565	22.145	125.206	3.442
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)															
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)															
8418 - 0097_1	'95 Cat 963CB (160 hp)						7.525	37.412	8.013	81.997	2.084					
8418 - 0097_2	'95 Cat 963CB (160 hp)						11.874	67.666	15.361	138.900	3.311	18.643	62.143	17.146	167.264	9.834
8418 - 0377_1	'85 Cat 963 (150 hp)															
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)															
8418 - 0377_2	'85 Cat 963 (150 hp)															
0349 - 1836	'88 Cat 953 (121 hp)						5.715	49.968	8.957	130.679	0.457	4.919	33.138	6.367	93.773	1.304
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)						17.447	26.597	16.146	167.673	4.815	13.157	24.426	11.936	121.781	2.007
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)						23.919	58.942	35.416	303.382	5.357	14.536	41.127	21.762	175.677	4.767
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)						9.108	37.332	10.691	101.680	4.824					
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)						5.837	19.022	3.133	48.549	1.855	8.173	27.035	7.056	76.705	4.870
9272 - 0853	'93 Komatsu PC400LC (330 hp)						23.156	45.965	29.272	408.473	7.810	13.404	27.558	16.854	240.460	2.565
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)						3.771	19.666	1.778	42.053	1.022	4.142	16.323	1.843	36.546	1.604
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)						2.374	0.000	0.000	22.110	0.255	4.071	0.000	0.000	25.977	0.207

Test ID	Equip Description	Filter 3, Time Based Emissions					Filter 4, Time Based Emissions					Filter 5, Time Based Emissions				
		HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)
2208 - 1918	'83 Deere 410B (75 hp)															
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)						12.004	36.138	15.586	134.942	0.104	7.386	17.541	7.803	85.597	2.381
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)															
0008 - 1644	'77 JCB 210S (64 hp)															
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)															
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	2.108	15.903	6.632	42.855	2.319	3.883	31.982	13.710	81.056	4.809	3.831	32.647	14.249	86.855	5.167
3858 - 1482	'96 Cat D4CXL (87 hp)		22.740	4.088	79.725	0.795										
3858 - 1482-1	'96 Cat D4CXL (87 hp)		31.066	6.064	116.682	1.529	30.757	28.895	8.927	152.307	1.846	13.598	23.054	4.799	89.621	0.837
3858 - 5754	'92 Case 480FLL (63 hp)						15.029	9.563	1.301	27.737	2.157	13.865	12.578	1.725	37.710	1.742
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)	15.963	56.874	11.669	71.337	7.180	10.586	41.910	10.230	61.609	6.548	18.318	72.710	24.015	159.372	9.988
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)	5.814	21.728	4.016	40.669	1.204	5.702	25.064	10.957	111.282	3.346	5.098	18.749	6.572	65.384	1.606
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	9.909	42.370	12.174	55.383	1.634	17.150	68.439	28.633	105.822	3.579	10.901	48.302	17.431	69.819	2.222
3597 - 095K	'97 Hyster C340C (83 hp)					3.200										
3597 - 0726	'96 Cat 12H (140 hp)					3.349					1.961					1.520
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	10.790	15.052	3.446	62.855	0.599	13.033	28.021	4.367	61.408	0.656	13.096	23.666	3.748	58.940	1.386
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)															
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	1.418	7.029	3.059	29.884	0.401	1.102	9.103	4.790	38.035	2.371	1.246	3.899	3.003	28.472	1.596
3597 - 4734	'97 Case 570LXT (68 hp)	5.261	13.208	1.485	29.517	0.130	8.201	21.269	3.140	42.886	1.195	6.542	13.913	1.902	30.769	0.231
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	6.222	12.369	7.867	71.588	1.549	1.835	9.276	1.579	20.625	0.140					
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)						11.623	68.077	17.697	150.396	6.551	12.634	58.376	16.496	148.232	6.413
9960 - 6086	Komatsu WA180 (124 hp)	9.840	12.621	1.296	16.063	0.307	15.662	16.540	3.569	83.166	2.052	10.518	10.824	2.137	43.064	0.526
0229 - 3781	'85 Case 1085B (120 hp)	15.216	16.659	2.960	88.215	0.605										
0229 - 0045	'95 Deere 410D (75 hp)	4.980	10.301	2.665	42.629	0.541										
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	14.360	37.821	20.608	112.184	2.878	12.708	40.794	10.614	66.119	2.434	3.553	16.780	2.024	27.729	0.238
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)															
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)															
8418 - 0097_1	'95 Cat 963CB (160 hp)															
8418 - 0097_2	'95 Cat 963CB (160 hp)	17.465	60.192	14.851	144.890	7.671										
8418 - 0377_1	'85 Cat 963 (150 hp)															
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)															
8418 - 0377_2	'85 Cat 963 (150 hp)															
0349 - 1836	'88 Cat 953 (121 hp)	5.534	43.063	11.161	132.951	4.408										
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)	13.924	26.054	14.864	154.959	0.432										
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	14.553	39.707	18.263	145.390	3.894	15.453	31.887	25.569	194.573	2.884	15.509	39.725	31.242	242.618	6.837
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)															
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	5.426	34.384	13.930	136.724	3.569	10.422	53.488	21.177	188.765	2.215	6.591	46.552	23.442	223.658	5.826
9272 - 0853	'93 Komatsu PC400LC (330 hp)	16.844	32.555	20.259	278.730	3.424										
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	4.903	18.128	4.247	50.684	1.593	3.900	18.564	3.476	45.004	1.233	4.962	21.285	6.666	67.973	1.562
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)	5.816	0.000	0.000	62.604	1.011	3.319	39.228	6.657	70.579	2.362	4.007	23.742	6.949	70.511	2.097

Test ID	Equip Description	Filter 6, Time Based Emissions					Filter 7, Time Based Emissions					Filter 8, Time Based Emissions				
		HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)	HC (mg/s)	CO (mg/s)	CO2 (g/s)	NOx (mg/s)	PM (mg/s)
2208 - 1918	'83 Deere 410B (75 hp)															
0685 - 2214	'02 Cat 963 (Tier 1) (160 hp)															
0685 - 1214	'05 Komatsu GD655 (Tier 2) (197 hp)															
0008 - 1644	'77 JCB 210S (64 hp)															
1688 - 1462	'06 Vermeer D16X20A (Tier 2) (64 hp)															
0619 - 0968	'04 Cat 953C (Tier 2) (128 hp)	3.480	32.436	14.045	87.036	5.061										
3858 - 1482	'96 Cat D4CXL (87 hp)															
3858 - 1482-1	'96 Cat D4CXL (87 hp)	8.738	20.526	0.948	24.700	0.168										
3858 - 5754	'92 Case 480FLL (63 hp)	11.193	18.825	2.086	44.238	1.820										
2523 - 0713	'97 Cat D6RXL (Tier 1) (175 hp)															
2523 - 6087	'03 Deere 544H (Tier 2) (130 hp)															
2523 - 0210	'06 Cat 325D (Tier 3) (300 hp)	11.057	50.476	16.239	65.321	2.332										
3597 - 095K	'97 Hyster C340C (83 hp)															
3597 - 0726	'96 Cat 12H (140 hp)					2.986										
2745 - 1190	'87 Cummins 4B-3.9 (76 hp)	8.695	14.670	2.571	45.299	0.050										
3858 - 4862-1	'02 Cat TH83 (Tier 1) (101 hp)															
3858 - 4862-2	'02 Cat TH83 (Tier 1) (101 hp)	1.251	4.402	3.013	27.018	1.404										
3597 - 4734	'97 Case 570LXT (68 hp)	4.906	11.347	1.422	28.352	0.136										
3597 - 9706	'99 Deere 550H (Tier 1) (84 hp)	3.398	12.051	10.151	100.724	0.651	4.629	26.291	5.101	54.677	0.818	3.391	10.849	4.732	44.704	0.636
8925 - 2466	'99 Cat 953C (Tier 1) (170 hp)	13.042	56.478	13.843	122.627	5.584										
9960 - 6086	Komatsu WA180 (124 hp)	33.628	33.084	7.564	224.047	3.692	14.416	15.858	3.026	82.549	0.894	18.696	24.006	5.287	149.136	2.101
0229 - 3781	'85 Case 1085B (120 hp)															
0229 - 0045	'95 Deere 410D (75 hp)															
9960 - 5674	'03 Komatsu PC300LC (Tier 2) (255 hp)	4.014	18.674	2.073	28.002	0.104										
8391 - 3333_1	'06 Deere 450D (Tier 3) (349 hp)															
8391 - 3333_2	'06 Deere 450D (Tier 3) (349 hp)															
8418 - 0097_1	'95 Cat 963CB (160 hp)															
8418 - 0097_2	'95 Cat 963CB (160 hp)															
8418 - 0377_1	'85 Cat 963 (150 hp)															
8418 - 0961	'98 Komatsu PC300LC (Tier 1) (232 hp)															
8418 - 0377_2	'85 Cat 963 (150 hp)															
0349 - 1836	'88 Cat 953 (121 hp)															
0349 - 2422	'97 Cat 320B (Tier 1) (128 hp)															
9272 - 3481	'00 Komatsu PC400LC (Tier 1) (321 hp)	13.345	38.758	28.790	234.686	6.112										
9272 - 2494_1	'98 Cat 963B (Tier 1) (220 hp)															
9272 - 2494_2	'98 Cat 963B (Tier 1) (220 hp)	5.453	53.332	23.978	225.702	16.370										
9272 - 0853	'93 Komatsu PC400LC (330 hp)															
0062 - 0748	'07 Deere 310J (Tier 2) (84 hp)	3.830	18.879	4.830	54.562	0.798	4.555	23.688	7.900	81.068	2.328					
0062 - 6092	'06 Deere 310G (Tier 2) (84 hp)															