Intermet (Archer Creek)
Virginia
Visibility Results for 2001-2003 CALPUFF Screening Runs
CALPOST, Method 6
Using annual average Haze Index (HI) values in processing
4 km CALMET

Table 1. Stack parameters and emissions

Stack ID #	Lambert Conformal Coordinates		Stack Height	Base Elevation	Diameter	Gas Exit Velocity	Stack Gas Exit Temp.	SO_2 Emissions	SO_4 Emissions	NO_x Emissions	PM_{10} Emissions	$PM_{2.5}$ Emissions	NH_3 Emissions
	LCC East	LCC North											
	km	km	m	m	m	m/s	K	g/s	g/s	g/s	g/s	g/s	g/s
21	1566.363	-131.995	10.52	167.64	0.61	0.00	505.37	0.8869	0.0123	0.1249	0.0430	0.0196	
22	1566.363	-131.995	15.29	167.64	1.27	23.90	305.37	0.0000	0.0000	0.0000	22.2818	20.8421	
23	1566.363	-131.995	23.47	167.64	1.07	0.00	295.37	0.0000	0.0000	0.0000	1.0071	0.4884	
24	1566.363	-131.995	23.47	167.64	1.07	0.00	298.15	0.0000	0.0000	0.0000	0.4482	0.2174	
25	1566.363	-131.995	18.50	167.64	2.18	15.74	298.15	0.0000	0.0000	0.0000	0.1840	0.1100	
28	1566.363	-131.995	18.50	167.64	2.18	15.74	298.15	0.0000	0.0000	0.0000	1.2247	0.7326	
G36	1566.363	-131.995	18.59	167.64	0.61	0.00	293.15	0.0000	0.0000	0.4936	0.0000	0.0000	
G1	1566.363	-131.995	22.10	167.64	1.09	0.00	293.15	0.7157	0.0100	0.1814	0.0199	0.0123	

Table 2. Particle Speciation

Stack ID #	particle speciation		Condensable				Filterable									
	filterable PM_{10}	condensable PM_{10}	organic condensable (OC)		inorganic condensable		COARSE		Soil				Elemental Carbon (EC)			
	%	%	0.625-1.0 µm (g/s)	0.5-0.625 µm (g/s)	0.625-1.0 µm (g/s)	0.5-0.625 µm (g/s)	6-10 µm (g/s)	2.5-6 µm (g/s)	1.25-2.5 µm (g/s)	1.0-1.25 µm (g/s)	0.625-1.0 µm (g/s)	0.5-0.625 µm (g/s)	1.25-2.5 µm (g/s)	1.0-1.25 µm (g/s)	0.625-1.0 µm (g/s)	0.5-0.625 µm (g/s)
21	75	25	0.0004	0.0001	0.0007	0.0002	0.0131	0.0103	0.0003	0.0000	0.0004	0.0001	0.0016	0.0000	0.0027	0.0008
22	75	25	0.2868	0.7929	0.8604	2.3788	0.0000	1.4397	2.8609	0.6069	3.3160	9.1679	0.0813	0.0172	0.1256	0.3473
23	75	25	0.0161	0.0084	0.0482	0.0252	0.2505	0.2681	0.0896	0.0047	0.1856	0.0972	0.0025	0.0001	0.0070	0.0037
24	75	25	0.0071	0.0037	0.0214	0.0112	0.1115	0.1193	0.0399	0.0021	0.0826	0.0433	0.0011	0.0001	0.0031	0.0016
25	100	0	0.0000	0.0000	0.0000	0.0000	0.0552	0.0187	0.0099	0.0028	0.0261	0.0673	0.0004	0.0001	0.0010	0.0025
28	100	0	0.0000	0.0000	0.0000	0.0000	0.3674	0.1247	0.0658	0.0184	0.1738	0.4478	0.0025	0.0007	0.0066	0.0170
G36			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
G1	75	25	0.0001	0.0000	0.0002	0.0001	0.0042	0.0033	0.0001	0.0000	0.0001	0.0000	0.0005	0.0000	0.0009	0.0003

Note: PM_{10} and $PM_{2.5}$ emissions (in g/s) provided by the state for stack IDs 21, 22, 23, 24, 25, 28 and G1 are: 0.0312 and0.0069, 22.3146 and 9.7176, 1.0080 and 0.4404, 0.4486 and 0.1960, 0.1840 and 0.0493, 1.2247 and 0.3281, 0.0101, and 0.0022, respectively. The adjustments were made in Table 1 (in blue) to match the PM speciation provided by the state in Table 2, such that: OC + IOC + Coarse + Soil + EC +H_2SO_4 = PM_{10} and Coarse = PM_{10} - $PM_{2.5}$

Table 3. Summary of Visibility Results

Class I Area	2001	2002	2003	Annual average background b_{ext}
	Maximum delta-deciview, (# days>0.5 dv, # days >1 dv)			(Mm^{-1})
Dolly Sods	0.045 (0 0)	0.043 (0 0)	0.030 (0 0)	21.13
James River Face	**0.571 (2 0)**	0.388 (0 0)	**0.656 (1 0)**	20.96
Linville Gorge	0.017 (0 0)	0.022 (0 0)	0.030 (0 0)	21.36
Otter Creek	0.033 (0 0)	0.036 (0 0)	0.052 (0 0)	21.14
Shenandoah	0.168 (0 0)	0.245 (0 0)	0.247 (0 0)	20.98

Table 4. Visibility Results – 8 highest values

	2001		2002		2003		
	Change in Deciview (dv)	Day	Change in Deciview (dv)	Day	Change in Deciview (dv)	Day	Rank
James River Face	0.571	Jul 22	0.388	Jun 8	0.656	Dec 4	1
	0.501	Jun 26	0.352	Dec 18	0.475	Oct 14	2
	0.451	Jul 28	0.320	Dec 17	0.364	Sep 22	3
	0.347	Jan 22	0.274	May 29	0.347	Oct 8	4
	0.339	Nov 27	0.261	Sep 30	0.314	Oct 13	5
	0.339	Sep 6	0.243	May 30	0.255	Mar 27	6
	0.330	Sep 9	0.239	Dec 19	0.229	May 4	7
	0.318	May 17	0.229	Jun 14	0.226	Mar 17	8