Table 1. Grand Total Average 2007-2009 for Labor Hours & Costs *

December 2008

Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	47,266	$2,530,508	$0	$4,909,057	$7,439,564
2. Site Installation	20,579	$1,224,120	$8,507,378	$21,760,965	$31,492,463
3. Sampling & Analys	675,171	$36,718,732	$5,776,739	$20,491,600	$62,987,070
4. Maintenance	265,854	$13,056,809	$4,574,549	$0	$17,631,358
5. Data Management	569,913	$26,403,592	$0	$0	$26,403,592
6. Quality Assurance	306,084	$15,825,789	$108,948	$488,103	$16,422,840
7. Supervision	194,622	$10,229,389	$0	$0	$10,229,389
Totals	2,079,490	$105,988,939	$18,967,614	$47,649,724	$172,606,277

* Burden estimates for Pb monitoring are based on years 2009 - 2011. All other pollutants are based on years 2007 - 2009.

Table 2. Summary All Items for 2007-2009 Monitoring Burden and Costs*

December 2008

Cost Element	Average 2007-2009 SO2 Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2007-2009 CO Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2007-2009 NO2 Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	832	$47,947			$47,947	794	$45,760			$45,760	746	$42,948			$42,948
2. Site Installation	1,493	$59,104		$709,981	$769,085	1,432	$56,626		$677,641	$734,267	1,285	$50,880		$748,079	$798,959
3. Sampling & Analysis	54,360	$2,460,026	$386,038		$2,846,063	51,960	$2,351,153	$368,953		$2,720,106	46,800	$2,116,147	$332,075		$2,448,222
4. Maintenance	30,804	$1,499,757	$482,547		$1,982,304	29,444	$1,433,382	$461,191		$1,894,573	33,540	$1,677,393	$415,094		$2,092,487
5. Data Management	17,667	$881,614			$881,614	16,887	$842,134			$842,134	19,500	$1,002,036			$1,002,036
6. Quality Assurance	35,395	$1,813,903			$1,813,903	33,831	$1,733,532			$1,733,532	53,107	$2,754,624			$2,754,624
7. Supervision	19,026	$1,021,552			$1,021,552	18,186	$976,342			$976,342	16,380	$878,753			$878,753
Totals	159,577	$7,783,903	$868,585	$709,981	$9,362,469	152,534	$7,438,929	$830,144	$677,641	$8,946,714	174,358	$8,522,781	$747,169	$748,079	$10,018,028

Cost Element	Average 2007-2009 O3 Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2007-2009 PM-10 Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2007-2009 PM-2.5 Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	733	$42,180			$42,180	789	$43,391			$43,391	456	$25,770			$25,770
2. Site Installation	4,356	$166,106		$1,566,077	$1,732,182	1,562	$72,467		$1,667,158	$1,739,625	7,384	$353,624		$4,779,574	$5,133,198
3. Sampling & Analysis	99,560	$4,505,977	$707,097		$5,213,074	150,543	$7,371,480	$324,256	$115,147	$7,810,884	167,523	$12,420,101	$401,138	$9,237,722	$22,058,961
4. Maintenance	56,417	$2,747,073	$883,872		$3,630,944	31,790	$1,395,411	$817,388		$2,212,799	50,584	$2,626,090	$576,841		$3,202,931
5. Data Management	32,357	$1,614,833			$1,614,833	69,818	$3,710,980			$3,710,980	167,532	$6,380,568			$6,380,568
6. Quality Assurance	64,428	$3,387,227			$3,387,227	23,286	$1,230,438		$4,606	$1,235,044	63,663	$3,186,657		$6,227	$3,192,884
7. Supervision	34,846	$1,871,156			$1,871,156	10,815	$625,352			$625,352	72,093	$3,659,614			$3,659,614
Totals	292,897	$14,934,553	$1,590,969	$1,566,077	$17,491,598	288,603	$14,449,519	$1,141,644	$1,786,911	$17,378,074	529,234	$28,652,423	$977,979	$14,023,523	$43,653,925

Cost Element	Average 2007-2009 PM-coarse Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2009-2011 Pb Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2007-2009 Ambient Air Network for Hazardous AP Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	100	$3,141			$3,141	814	$29,638			$29,638					
2. Site Installation	133	$6,524		$97,440	$103,964	640	$24,550		$94,509	$119,059					
3. Sampling & Analysis	8,999	$427,667	$4,637		$432,304	25,200	$1,205,752	$93,397	$501,229	$1,800,378				$8,859,355	$8,859,355
4. Maintenance	1,172	$58,483	$16,701		$75,184	4,480	$203,605	$93,397		$297,002					
5. Data Management	1,756	$90,367			$90,367	7,000	$315,370			$315,370					
6. Quality Assurance	1,120	$69,138		$2,436	$71,574	5,983	$262,386			$262,386					
7. Supervision	1,306	$74,199			$74,199	2,800	$163,133			$163,133					
Totals	14,585	$729,520	$21,338	$99,876	$850,733	46,817	$2,204,434	$186,794	$595,738	$2,986,966				$8,859,355	$8,859,355

Cost Element	Average 2007-2009 PAMS Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Average 2007-2009 General Network Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	499	$28,772			$28,772	41,504	$2,220,960		$4,909,057	$7,130,016
2. Site Installation	2,295	$434,240		$1,072,627	$1,506,867			$8,507,378	$10,347,879	$18,855,258
3. Sampling & Analysis	57,761	$2,842,573	$359,228	$1,778,146	$4,979,948	12,465	$1,017,856	$2,799,920		$3,817,776
4. Maintenance	27,624	$1,415,615	$827,519		$2,243,134					$0
5. Data Management	62,677	$3,352,483			$3,352,483	174,720	$8,213,209			$8,213,209
6. Quality Assurance	25,272	$1,387,884	$108,948		$1,496,832				$474,834	$474,834
7. Supervision	19,170	$959,287			$959,287					$0
Totals	195,297	$10,420,853	$1,295,696	$2,850,773	$14,567,323	228,689	$11,452,024	$11,307,298	$15,731,770	$38,491,093

* Burden estimates for Pb monitoring are based on years 2009 - 2011. All other pollutants are based on years 2007 - 2009.

Grand Total Average 2007-2009

Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	47,266	$2,530,508	$0	$4,909,057	$7,439,564
2. Site Installation	20,579	$1,224,120	$8,507,378	$21,760,965	$31,492,463
3. Sampling & Analysis	675,171	$36,718,732	$5,776,739	$20,491,600	$62,987,070
4. Maintenance	265,854	$13,056,809	$4,574,549	$0	$17,631,358
5. Data Management	569,913	$26,403,592	$0	$0	$26,403,592
6. Quality Assurance	306,084	$15,825,789	$108,948	$488,103	$16,422,840
7. Supervision	194,622	$10,229,389	$0	$0	$10,229,389
Totals	2,079,490	$105,988,939	$18,967,614	$47,649,724	$172,606,277

Table 3.0, Summary of SO2 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary SO2 Labor Hours	2007 Summary SO2 Labor Costs	2007 Summary SO2 Non-labor O & M	2007 Summary SO2 Equip/ Contract $	2008 Summary SO2 Labor Hours	2008 Summary SO2 Labor Costs	2008 Summary SO2 Non-labor O & M	2008 Summary SO2 Equip/ Contract $	2009 Summary SO2 Labor Hours	2009 Summary SO2 Labor Costs	2009 Summary SO2 Non-labor O & M	2009 Summary SO2 Equip/ Contract $	Average 2007-2009 SO2 Labor Hours	Average 2007-2009 SO2 Labor Costs	Average 2007-2009 SO2 Non-labor O & M	Average 2007-2009 SO2 Equip/ Contract $
1. Network Design																
Network design study (RO)	463	$26,340			463	$26,844			463	$27,388			463	$26,857		
Site selection (RO)	123	$6,754			123	$6,883			123	$7,023			123	$6,887		
Precursor SO2 monitors (RO)																
Network design study	154	$8,780			193	$11,185			236	$13,948			194	$11,304		
Site selection	41	$2,251			51	$2,868			63	$3,577			52	$2,899		
Element #1 totals	782	$44,125			831	$47,780			885	$51,936			832	$47,947		
2. Site Installation																
Analyzer				$626,880				$606,936				$580,448				$604,755
Spare analyzers				$31,344												$10,448
Procurement	480	$12,350			456	$11,957			427	$11,435			454	$11,914		
Equipment installation	960	$42,628			912	$41,272			855	$39,470			909	$41,123		
Precursor SO2 monitors																
Analyzer				$73,614				$93,778				$116,943				$94,778
Procurement	21	$1,059			26	$1,348			31	$1,682			26	$1,363		
Equipment installation	82	$3,654			103	$4,655			126	$5,804			104	$4,704		
Element #2 totals	1,543	$59,690		$731,838	1,497	$59,231		$700,714	1,439	$58,391		$697,391	1,493	$59,104		$709,981
3. Supplies and Site Visits																
Supplies			$351,053				$339,884				$325,051				$338,663	
Routine site visits	50,400	$2,237,084			47,880	$2,165,912			44,880	$2,071,387			47,720	$2,158,128		
Precursor SO2 monitors																
Supplies			$30,090				$46,851				$65,184				$47,375	
Routine site visits	4,320	$191,750			6,600	$298,559			9,000	$415,385			6,640	$301,898		
Element #3 totals	54,720	$2,428,834	$381,143		54,480	$2,464,471	$386,735		53,880	$2,486,772	$390,235		54,360	$2,460,026	$386,038	
4. Maintenance																
Spare parts/supplies			$438,816				$424,855				$406,314				$423,328	
Remedial repairs	5,040	$230,378			4,788	$223,049			4,488	$213,315			4,772	$222,247		
Routine maintenance	23,520	$1,133,462			22,344	$1,097,401			20,944	$1,049,508			22,269	$1,093,457		
Precursor SO2 monitors																
Spare parts/supplies			$37,613				$58,564				$81,480				$59,219	
Remedial repairs	432	$19,747			660	$30,746			900	$42,777			664	$31,090		
Routine maintenance	2,016	$97,154			3,080	$151,271			4,200	$210,463			3,099	$152,963		
Element #4 totals	31,008	$1,480,741	$476,429		30,872	$1,502,467	$483,419		30,532	$1,516,063	$487,794		30,804	$1,499,757	$482,547	
5 Data Management																
Data acquistion/processing	5,880	$279,087			5,586	$270,208			5,236	$258,415			5,567	$269,237		
Data reporting	3,780	$191,763			3,591	$185,662			3,366	$177,559			3,579	$184,994		
Data validation	5,040	$250,125			4,788	$242,167			4,488	$231,599			4,772	$241,297		
Data distribution	1,680	$80,742			1,596	$78,173			1,496	$74,762			1,591	$77,892		
Precursor SO2 monitors																
Data acquistion/processing	504	$23,922			770	$37,247			1,050	$51,821			775	$37,663		
Data reporting	324	$16,437			495	$25,592			675	$35,607			498	$25,879		
Data validation	432	$21,439			660	$33,381			900	$46,444			664	$33,755		
Data distribution	144	$6,921			220	$10,776			300	$14,992			221	$10,896		
Element # 5 totals	17,784	$870,435			17,706	$883,207			17,511	$891,199			17,667	$881,614		
6. Quality Assurance																
Audits	15,120	$821,902			14,364	$795,754			13,464	$761,025			14,316	$792,894		

Table 3.0, Summary of SO2 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary SO2 Labor Hours	2007 Summary SO2 Labor Costs	2007 Summary SO2 Non-labor O & M	2007 Summary SO2 Equip/ Contract $	2008 Summary SO2 Labor Hours	2008 Summary SO2 Labor Costs	2008 Summary SO2 Non-labor O & M	2008 Summary SO2 Equip/ Contract $	2009 Summary SO2 Labor Hours	2009 Summary SO2 Labor Costs	2009 Summary SO2 Non-labor O & M	2009 Summary SO2 Equip/ Contract $	Average 2007-2009 SO2 Labor Hours	Average 2007-2009 SO2 Labor Costs	Average 2007-2009 SO2 Non-labor O & M	Average 2007-2009 SO2 Equip/ Contract $
Routine calibrations	10,920	$466,023			10,374	$451,196			9,724	$431,505			10,339	$449,575		
Coordination/implementation	1,680	$92,151			1,596	$89,220			1,496	$85,326			1,591	$88,899		
Training	2,100	$104,877			1,995	$101,540			1,870	$97,109			1,988	$101,175		
Reporting	2,520	$137,788			2,394	$133,405			2,244	$127,582			2,386	$132,925		
QA plan review (annual) RO	54	$2,710			54	$2,762			54	$2,818			54	$2,763		
QA plan preparation (RO)	324	$18,415			324	$18,768			324	$19,148			324	$18,777		
Precursor SO2 monitors																
Audits	1,296	$70,449			1,980	$109,690			2,700	$152,612			1,992	$110,917		
Routine calibrations	936	$39,945			1,430	$62,195			1,950	$86,532			1,439	$62,891		
Coordination/implementation	144	$7,899			220	$12,298			300	$17,111			221	$12,436		
Training	180	$8,989			275	$13,997			375	$19,474			277	$14,153		
Reporting	216	$11,810			330	$18,389			450	$25,585			332	$18,595		
QA plan preparation	108	$6,138			135	$7,820			165	$9,752			136	$7,903		
Element #6 totals	35,598	$1,789,097			35,471	$1,817,034			35,116	$1,835,578			35,395	$1,813,903		
7. Supervision																
Planning/coordination	5,040	$297,517			4,788	$288,052			4,488	$275,481			4,772	$287,017		
Supervision/review	12,600	$631,456			11,970	$611,367			11,220	$584,685			11,930	$609,169		
Precursor SO2 monitors																
Planning/coordination	432	$25,501			660	$39,706			900	$55,243			664	$40,150		
Supervision/review	1,080	$54,125			1,650	$84,274			2,250	$117,250			1,660	$85,216		
Element #7 totals	19,152	$1,008,600			19,068	$1,023,398			18,858	$1,032,659			19,026	$1,021,552		
Summary Totals				$9,270,931				$9,368,458				$9,448,018				$9,362,469

Table 3.1, 2007 SO2 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary SO2			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	108	30	7	$1,707	463	$26,340										463	$26,340		
Site selection (RO)	108	8	7	$438	123	$6,754										123	$6,754		
Precursor SO2 monitors (RO)																			
Network design study	36	30	7	$1,707	154	$8,780										154	$8,780		
Site selection	36	8	7	$438	41	$2,251										41	$2,251		
Element #1 totals					782	$44,125										782	$44,125		
2. Site Installation																			
Analyzer	420		7	$10,448		$626,880													$626,880
Spare analyzers	21		7	$10,448		$31,344													$31,344
Procurement	420	8	7	$206	480	$12,350										480	$12,350		
Equipment installation	420	16	7	$710	960	$42,628										960	$42,628		
Precursor SO2 monitors																			
Analyzer	36		7	$14,314		$73,614													$73,614
Procurement	36	4	7	$206	21	$1,059										21	$1,059		
Equipment installation	36	16	7	$710	82	$3,654										82	$3,654		
Element #2 totals					1,543	$791,527										1,543	$59,690		$731,838
3. Supplies and Site Visits																			
Supplies													420					$351,053	
Routine site visits													420	50,400	$2,237,084	50,400	$2,237,084		
Precursor SO2 monitors																			
Supplies													36					$30,090	
Routine site visits													36	4,320	$191,750	4,320	$191,750		
Element #3 totals														54,720	$2,428,834	54,720	$2,428,834	$381,143	
4. Maintenance																			
Spare parts/supplies													420					$438,816	
Remedial repairs													420	5,040	$230,378	5,040	$230,378		
Routine maintenance													420	23,520	$1,133,462	23,520	$1,133,462		
Precursor SO2 monitors																			
Spare parts/supplies													36					$37,613	
Remedial repairs													36	432	$19,747	432	$19,747		
Routine maintenance													36	2,016	$97,154	2,016	$97,154		
Element #4 totals														31,008	$1,480,741	31,008	$1,480,741	$476,429	
5 Data Management																			
Data acquistion/processing													420	5,880	$279,087	5,880	$279,087		
Data reporting													420	3,780	$191,763	3,780	$191,763		
Data validation													420	5,040	$250,125	5,040	$250,125		
Data distribution													420	1,680	$80,742	1,680	$80,742		
Precursor SO2 monitors																			
Data acquistion/processing													36	504	$23,922	504	$23,922		
Data reporting													36	324	$16,437	324	$16,437		
Data validation													36	432	$21,439	432	$21,439		
Data distribution													36	144	$6,921	144	$6,921		
Element # 5 totals														17,784	$870,435	17,784	$870,435		
6. Quality Assurance																			
Audits													420	15,120	$821,902	15,120	$821,902		

Table 3.2, 2008 SO2 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary SO2			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Audits													399	14,364	$795,754	14,364	$795,754		
Routine calibrations													399	10,374	$451,196	10,374	$451,196		
Coordination/implementation													399	1,596	$89,220	1,596	$89,220		
Training													399	1,995	$101,540	1,995	$101,540		
Reporting													399	2,394	$133,405	2,394	$133,405		
QA plan review (annual) RO													108	54	$2,762	54	$2,762		
QA plan preparation (RO)	108	15	5	$869	324	$18,768										324	$18,768		
Precursor SO2 monitors																			
Audits													55	1,980	$109,690	1,980	$109,690		
Routine calibrations													55	1,430	$62,195	1,430	$62,195		
Coordination/implementation													55	220	$12,298	220	$12,298		
Training													55	275	$13,997	275	$13,997		
Reporting													55	330	$18,389	330	$18,389		
QA plan preparation	45	15	5	$869	135	$7,820										135	$7,820		
Element #6 totals					459	$26,588								35,012	$1,790,446	35,471	$1,817,034		
7. Supervision																			
Planning/coordination													399	4,788	$288,052	4,788	$288,052		
Supervision/review													399	11,970	$611,367	11,970	$611,367		
Precursor SO2 monitors																			
Planning/coordination													55	660	$39,706	660	$39,706		
Supervision/review													55	1,650	$84,274	1,650	$84,274		
Element #7 totals														19,068	$1,023,398	19,068	$1,023,398		
Summary Totals																			$9,368,458

Table 3.3, 2009 SO2 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs												
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	108	30	7	$1,775	463	$27,388										463	$27,388		
Site selection (RO)	108	8	7	$455	123	$7,023										123	$7,023		
Precursor SO2 monitors (RO)																			
Network design study	55	30	7	$1,775	236	$13,948										236	$13,948		
Site selection	55	8	7	$455	63	$3,577										63	$3,577		
Element #1 totals					885	$51,936										885	$51,936		
2. Site Installation																			
Analyzer	374		7	$10,864		$580,448													$580,448
Spare analyzers																			
Procurement	374	8	7	$214	427	$11,435										427	$11,435		
Equipment installation	374	16	7	$739	855	$39,470										855	$39,470		
Precursor SO2 monitors																			
Analyzer	55		7	$14,884		$116,943													$116,943
Procurement	55	4	7	$214	31	$1,682										31	$1,682		
Equipment installation	55	16	7	$739	126	$5,804										126	$5,804		
Element #2 totals					1,439	$755,783										1,439	$58,391		$697,391
3. Supplies and Site Visits																			
Supplies													374					$325,051	
Routine site visits													374	44,880	$2,071,387	44,880	$2,071,387		
Precursor SO2 monitors																			
Supplies													75					$65,184	
Routine site visits													75	9,000	$415,385	9,000	$415,385		
Element #3 totals														53,880	$2,486,772	53,880	$2,486,772	$390,235	
4. Maintenance																			
Spare parts/supplies													374					$406,314	
Remedial repairs													374	4,488	$213,315	4,488	$213,315		
Routine maintenance													374	20,944	$1,049,508	20,944	$1,049,508		
Precursor SO2 monitors																			
Spare parts/supplies													75					$81,480	
Remedial repairs													75	900	$42,777	900	$42,777		
Routine maintenance													75	4,200	$210,463	4,200	$210,463		
Element #4 totals														30,532	$1,516,063	30,532	$1,516,063	$487,794	
5 Data Management																			
Data acquistion/processing													374	5,236	$258,415	5,236	$258,415		
Data reporting													374	3,366	$177,559	3,366	$177,559		
Data validation													374	4,488	$231,599	4,488	$231,599		
Data distribution													374	1,496	$74,762	1,496	$74,762		
Precursor SO2 monitors																			
Data acquistion/processing													75	1,050	$51,821	1,050	$51,821		
Data reporting													75	675	$35,607	675	$35,607		
Data validation													75	900	$46,444	900	$46,444		
Data distribution													75	300	$14,992	300	$14,992		
Element # 5 totals														17,511	$891,199	17,511	$891,199		
6. Quality Assurance																			
Audits													374	13,464	$761,025	13,464	$761,025		
Routine calibrations													374	9,724	$431,505	9,724	$431,505		

Table 3.3, 2009 SO2 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs												
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Coordination/implementation													374	1,496	$85,326	1,496	$85,326		
Training													374	1,870	$97,109	1,870	$97,109		
Reporting													374	2,244	$127,582	2,244	$127,582		
QA plan review (annual) RO													108	54	$2,818	54	$2,818		
QA plan preparation (RO)	108	15	5	$887	324	$19,148										324	$19,148		
Precursor SO2 monitors																			
Audits													75	2,700	$152,612	2,700	$152,612		
Routine calibrations													75	1,950	$86,532	1,950	$86,532		
Coordination/implementation													75	300	$17,111	300	$17,111		
Training													75	375	$19,474	375	$19,474		
Reporting													75	450	$25,585	450	$25,585		
QA plan preparation	55	15	5	$887	165	$9,752										165	$9,752		
Element #6 totals					489	$28,900								34,627	$1,806,678	35,116	$1,835,578		
7. Supervision																			
Planning/coordination													374	4,488	$275,481	4,488	$275,481		
Supervision/review													374	11,220	$584,685	11,220	$584,685		
Precursor SO2 monitors																			
Planning/coordination													75	900	$55,243	900	$55,243		
Supervision/review													75	2,250	$117,250	2,250	$117,250		
Element #7 totals														18,858	$1,032,659	18,858	$1,032,659		
Summary totals																			$5,448,018

Table 4.0, Summary of CO 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary CO Labor Hours	2007 Summary CO Labor Costs	2007 Summary CO Non-labor O & M	2007 Summary CO Equip/ Contract $	2008 Summary CO Labor Hours	2008 Summary CO Labor Costs	2008 Summary CO Non-labor O & M	2008 Summary CO Equip/ Contract $	2009 Summary CO Labor Hours	2009 Summary CO Labor Costs	2009 Summary CO Non-labor O & M	2009 Summary CO Equip/ Contract $	Average 2007-2009 CO Labor Hours	Average 2007-2009 CO Labor Costs	Average 2007-2009 CO Non-labor O & M	Average 2007-2009 CO Equip/ Contract $
1. Network Design																
Network design study (RO)	433	$24,633			433	$25,104			433	$25,613			433	$25,117		
Site selection (RO)	115	$6,316			115	$6,437			115	$6,568			115	$6,441		
Precursor CO monitors (RO)																
Network design study	154	$8,780			193	$11,185			236	$13,948			194	$11,304		
Site selection	41	$2,251			51	$2,868			63	$3,577			52	$2,899		
Element #1 totals	744	$41,980			793	$45,594			847	$49,706			794	$45,760		
2. Site Installation																
Analyzer				$600,014				$581,077				$541,648				$574,246
Spare analyzers				$30,001												$10,000
Procurement	482	$12,411			437	$11,447			399	$10,670			439	$11,510		
Equipment installation	919	$40,801			873	$39,513			798	$36,832			863	$39,049		
Precursor CO monitors																
Analyzer				$72,539				$92,409				$115,236				$93,395
Procurement	21	$1,059			26	$1,348			31	$1,682			26	$1,363		
Equipment installation	82	$3,654			103	$4,655			126	$5,804			104	$4,704		
Element #2 totals	1,504	$57,925		$702,553	1,438	$56,964		$673,486	1,354	$54,989		$656,884	1,432	$56,626		$677,641
3. Supplies and Site Visits																
Supplies			$336,008				$325,403				$303,323				$321,578	
Routine site visits	48,240	$2,141,209			45,840	$2,073,630			41,880	$1,932,925			45,320	$2,049,255		
Precursor CO monitors																
Supplies			$30,090				$46,851				$65,184				$47,375	
Routine site visits	4,320	$191,750			6,600	$298,559			9,000	$415,385			6,640	$301,898		
Element #3 totals	52,560	$2,332,959	$366,098		52,440	$2,372,189	$372,254		50,880	$2,348,310	$368,507		51,960	$2,351,153	$368,953	
4. Maintenance																
Spare parts/supplies			$420,010				$406,754				$379,154				$401,972	
Remedial repairs	4,824	$220,505			4,584	$213,546			4,188	$199,056			4,532	$211,035		
Routine maintenance	22,512	$1,084,885			21,392	$1,050,645			19,544	$979,354			21,149	$1,038,294		
Precursor CO monitors																
Spare parts/supplies			$37,613				$58,564				$81,480				$59,219	
Remedial repairs	432	$19,747			660	$30,746			900	$42,777			664	$31,090		
Routine maintenance	2,016	$97,154			3,080	$151,271			4,200	$210,463			3,099	$152,963		
Element #4 totals	29,784	$1,422,290	$457,622		29,716	$1,446,207	$465,318		28,832	$1,431,649	$460,634		29,444	$1,433,382	$461,191	
5 Data Management																
Data acquistion/processing	5,628	$267,126			5,348	$258,695			4,886	$241,142			5,287	$255,654		
Data reporting	3,618	$183,544			3,438	$177,751			3,141	$165,690			3,399	$175,662		
Data validation	4,824	$239,405			4,584	$231,850			4,188	$216,118			4,532	$229,124		
Data distribution	1,608	$77,282			1,528	$74,843			1,396	$68,377			1,511	$73,501		
Precursor CO monitors																
Data acquistion/processing	504	$23,922			770	$37,247			1,050	$51,821			775	$37,663		
Data reporting	324	$16,437			495	$25,592			675	$35,607			498	$25,879		
Data validation	432	$21,439			660	$33,381			900	$46,444			664	$33,755		
Data distribution	144	$6,921			220	$10,776			300	$14,992			221	$10,896		
Element # 5 totals	17,082	$836,076			17,043	$850,135			16,536	$840,191			16,887	$842,134		
6. Quality Assurance																
Audits	14,472	$786,678			13,752	$761,849			12,564	$710,155			13,596	$752,894		

Table 4.0, Summary of CO 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary CO Labor Hours	2007 Summary CO Labor Costs	2007 Summary CO Non-labor O & M	2007 Summary CO Equip/ Contract $	2008 Summary CO Labor Hours	2008 Summary CO Labor Costs	2008 Summary CO Non-labor O & M	2008 Summary CO Equip/ Contract $	2009 Summary CO Labor Hours	2009 Summary CO Labor Costs	2009 Summary CO Non-labor O & M	2009 Summary CO Equip/ Contract $	Average 2007-2009 CO Labor Hours	Average 2007-2009 CO Labor Costs	Average 2007-2009 CO Non-labor O & M	Average 2007-2009 CO Equip/ Contract $
Routine calibrations	10,452	$446,050			9,932	$431,972			9,074	$402,661			9,819	$426,895		
Coordination/implementation	1,608	$88,202			1,528	$85,418			1,396	$79,622			1,511	$84,414		
Training	2,010	$100,382			1,910	$97,214			1,745	$90,618			1,888	$96,071		
Reporting	2,412	$131,883			2,292	$127,721			2,094	$119,054			2,266	$126,219		
QA plan review (annual) RO	51	$2,534			51	$2,583			51	$2,635			51	$2,584		
QA plan preparation (RO)	303	$17,222			303	$17,551			303	$17,907			303	$17,560		
Precursor CO monitors																
Audits	1,296	$70,449			1,980	$109,690			2,700	$152,612			1,992	$110,917		
Routine calibrations	936	$39,945			1,430	$62,195			1,950	$86,532			1,439	$62,891		
Coordination/implementation	144	$7,899			220	$12,298			300	$17,111			221	$12,436		
Training	180	$8,989			275	$13,997			375	$19,474			277	$14,153		
Reporting	216	$11,810			330	$18,389			450	$25,585			332	$18,595		
QA plan preparation	108	$6,138			135	$7,820			165	$9,752			136	$7,903		
Element #6 totals	34,188	$1,718,182			34,138	$1,748,698			33,167	$1,733,717			33,831	$1,733,532		
7. Supervision																
Planning/coordination	4,824	$284,767			4,584	$275,779			4,188	$257,066			4,532	$272,537		
Supervision/review	12,060	$604,394			11,460	$585,318			10,470	$545,602			11,330	$578,438		
Precursor CO monitors																
Planning/coordination	432	$25,501			660	$39,706			900	$55,243			664	$40,150		
Supervision/review	1,080	$54,125			1,650	$84,274			2,250	$117,250			1,660	$85,216		
Element #7 totals	18,396	$968,787			18,354	$985,077			17,808	$975,161			18,186	$976,342		
Summary Totals				$8,904,472				$9,015,923				$8,919,747				$8,946,714

Table 4.1, 2007 CO Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary Carbon Monoxide (CO)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	101	30	7	$1,707	433	$24,633										433	$24,633		
Site selection (RO)	101	8	7	$438	115	$6,316										115	$6,316		
Precursor CO monitors (RO)																			
Network design study	36	30	7	$1,707	154	$8,780										154	$8,780		
Site selection	36	8	7	$438	41	$2,251										41	$2,251		
Element #1 totals					744	$41,980										744	$41,980		
2. Site Installation																			
Analyzer	402		7	$10,448		$600,014													$600,014
Spare analyzers	20		7	$10,448		$30,001													$30,001
Procurement	422	8	7	$206	482	$12,411										482	$12,411		
Equipment installation	402	16	7	$710	919	$40,801										919	$40,801		
Precursor CO monitors																			
Analyzer	36		7	$14,105		$72,539													$72,539
Procurement	36	4	7	$206	21	$1,059										21	$1,059		
Equipment installation	36	16	7	$710	82	$3,654										82	$3,654		
Element #2 totals					1,504	$760,478										1,504	$57,925		$702,553
3. Supplies and Site Visits																			
Supplies													402					$336,008	
Routine site visits													402	48,240	$2,141,209	48,240	$2,141,209		
Precursor CO monitors																			
Supplies													36					$30,090	
Routine site visits													36	4,320	$191,750	4,320	$191,750		
Element #3 totals														52,560	$2,332,959	52,560	$2,332,959	$366,098	
4. Maintenance																			
Spare parts/supplies													402					$420,010	
Remedial repairs													402	4,824	$220,505	4,824	$220,505		
Routine maintenance													402	22,512	$1,084,885	22,512	$1,084,885		
Precursor CO monitors																			
Spare parts/supplies													36					$37,613	
Remedial repairs													36	432	$19,747	432	$19,747		
Routine maintenance													36	2,016	$97,154	2,016	$97,154		
Element #4 totals														29,784	$1,422,290	29,784	$1,422,290	$457,622	
5 Data Management																			
Data acquistion/processing													402	5,628	$267,126	5,628	$267,126		
Data reporting													402	3,618	$183,544	3,618	$183,544		
Data validation													402	4,824	$239,405	4,824	$239,405		
Data distribution													402	1,608	$77,282	1,608	$77,282		
Precursor CO monitors																			
Data acquistion/processing													36	504	$23,922	504	$23,922		
Data reporting													36	324	$16,437	324	$16,437		
Data validation													36	432	$21,439	432	$21,439		
Data distribution													36	144	$6,921	144	$6,921		
Element # 5 totals														17,082	$836,076	17,082	$836,076		
6. Quality Assurance																			
Audits													402	14,472	$786,678	14,472	$786,678		

Table 4.1, 2007 CO Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary Carbon Monoxide (CO)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Routine calibrations													402	10,452	$446,050	10,452	$446,050		
Coordination/implementation													402	1,608	$88,202	1,608	$88,202		
Training													402	2,010	$100,382	2,010	$100,382		
Reporting													402	2,412	$131,883	2,412	$131,883		
QA plan review (annual) RO													101	51	$2,534	51	$2,534		
QA plan preparation (RO)	101	15	5	$853	303	$17,222										303	$17,222		
Precursor CO monitors																			
Audits													36	1,296	$70,449	1,296	$70,449		
Routine calibrations													36	936	$39,945	936	$39,945		
Coordination/implementation													36	144	$7,899	144	$7,899		
Training													36	180	$8,989	180	$8,989		
Reporting													36	216	$11,810	216	$11,810		
QA plan preparation	36	15	5	$853	108	$6,138										108	$6,138		
Element #6 totals					411	$23,360								33,777	$1,694,822	34,188	$1,718,182		
7. Supervision																			
Planning/coordination													402	4,824	$284,767	4,824	$284,767		
Supervision/review													402	12,060	$604,394	12,060	$604,394		
Precursor CO monitors																			
Planning/coordination													36	432	$25,501	432	$25,501		
Supervision/review													36	1,080	$54,125	1,080	$54,125		
Element #7 totals														18,396	$968,787	18,396	$968,787		
[redacted]																			
Summary totals																			$8,904,472

Table 4.2, 2008 CO Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary Carbon Monoxide (CO)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	101	30	7	$1,740	433	$25,104										433	$25,104		
Site selection (RO)	101	8	7	$446	115	$6,437										115	$6,437		
Precursor CO monitors (RO)																			
Network design study	45	30	7	$1,740	193	$11,185										193	$11,185		
Site selection	45	8	7	$446	51	$2,868										51	$2,868		
Element #1 totals					793	$45,594										793	$45,594		
2. Site Installation																			
Analyzer	382		7	$10,648		$581,077													$581,077
Spare analyzers																			
Procurement	382	8	7	$210	437	$11,447										437	$11,447		
Equipment installation	382	16	7	$724	873	$39,513										873	$39,513		
Precursor CO monitors																			
Analyzer	45		7	$14,375		$92,409													$92,409
Procurement	45	4	7	$210	26	$1,348										26	$1,348		
Equipment installation	45	16	7	$724	103	$4,655										103	$4,655		
Element #2 totals					1,438	$730,450										1,438	$56,964		$673,486
3. Supplies and Site Visits																			
Supplies													382					$325,403	
Routine site visits													382	45,840	$2,073,630	45,840	$2,073,630		
Precursor CO monitors																			
Supplies													55					$46,851	
Routine site visits													55	6,600	$298,559	6,600	$298,559		
Element #3 totals														52,440	$2,372,189	52,440	$2,372,189	$372,254	
4. Maintenance																			
Spare parts/supplies													382					$406,754	
Remedial repairs													382	4,584	$213,546	4,584	$213,546		
Routine maintenance													382	21,392	$1,050,645	21,392	$1,050,645		
Precursor CO monitors																			
Spare parts/supplies													55					$58,564	
Remedial repairs													55	660	$30,746	660	$30,746		
Routine maintenance													55	3,080	$151,271	3,080	$151,271		
Element #4 totals														29,716	$1,446,207	29,716	$1,446,207	$465,318	
5 Data Management																			
Data acquistion/processing													382	5,348	$258,695	5,348	$258,695		
Data reporting													382	3,438	$177,751	3,438	$177,751		
Data validation													382	4,584	$231,850	4,584	$231,850		
Data distribution													382	1,528	$74,843	1,528	$74,843		
Precursor CO monitors																			
Data acquistion/processing													55	770	$37,247	770	$37,247		
Data reporting													55	495	$25,592	495	$25,592		
Data validation													55	660	$33,381	660	$33,381		
Data distribution													55	220	$10,776	220	$10,776		
Element # 5 totals														17,043	$850,135	17,043	$850,135		
6. Quality Assurance																			

Table 4.2, 2008 CO Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary Carbon Monoxide (CO)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Audits													382	13,752	$761,849	13,752	$761,849		
Routine calibrations													382	9,932	$431,972	9,932	$431,972		
Coordination/implementation													382	1,528	$85,418	1,528	$85,418		
Training													382	1,910	$97,214	1,910	$97,214		
Reporting													382	2,292	$127,721	2,292	$127,721		
QA plan review (annual) RO													101	51	$2,583	51	$2,583		
QA plan preparation (RO)	101	15	5	$869	303	$17,551										303	$17,551		
Precursor CO monitors																			
Audits													55	1,980	$109,690	1,980	$109,690		
Routine calibrations													55	1,430	$62,195	1,430	$62,195		
Coordination/implementation													55	220	$12,298	220	$12,298		
Training													55	275	$13,997	275	$13,997		
Reporting													55	330	$18,389	330	$18,389		
QA plan preparation	45	15	5	$869	135	$7,820										135	$7,820		
Element #6 totals					438	$25,371								33,700	$1,723,327	34,138	$1,748,698		
7. Supervision																			
Planning/coordination													382	4,584	$275,779	4,584	$275,779		
Supervision/review													382	11,460	$585,318	11,460	$585,318		
Precursor CO monitors																			
Planning/coordination													55	660	$39,706	660	$39,706		
Supervision/review													55	1,650	$84,274	1,650	$84,274		
Element #7 totals														18,354	$985,077	18,354	$985,077		
[redacted]																			
Summary totals																			$9,015,923

Table 4.3, 2009 C0 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary Carbon Monoxide (CO)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	101	30	7	$1,775	433	$25,613										433	$25,613		
Site selection (RO)	101	8	7	$455	115	$6,568										115	$6,568		
Precursor CO monitors (RO)																			
Network design study	55	30	7	$1,775	236	$13,948										236	$13,948		
Site selection	55	8	7	$455	63	$3,577										63	$3,577		
Element #1 totals					847	$49,706										847	$49,706		
2. Site Installation																			
Analyzer	349		7	$10,864		$541,648													$541,648
Spare analyzers																			
Procurement	349	8	7	$214	399	$10,670										399	$10,670		
Equipment installation	349	16	7	$739	798	$36,832										798	$36,832		
Precursor CO monitors																			
Analyzer	55		7	$14,666		$115,236													$115,236
Procurement	55	4	7	$214	31	$1,682										31	$1,682		
Equipment installation	55	16	7	$739	126	$5,804										126	$5,804		
Element #2 totals					1,354	$711,873										1,354	$54,989		$656,884
3. Supplies and Site Visits																			
Supplies													349					$303,323	
Routine site visits													349	41,880	$1,932,925	41,880	$1,932,925		
Precursor CO monitors																			
Supplies													75					$65,184	
Routine site visits													75	9,000	$415,385	9,000	$415,385		
Element #3 totals														50,880	$2,348,310	50,880	$2,348,310	$368,507	
4. Maintenance																			
Spare parts/supplies													349					$379,154	
Remedial repairs													349	4,188	$199,056	4,188	$199,056		
Routine maintenance													349	19,544	$979,354	19,544	$979,354		
Precursor CO monitors																			
Spare parts/supplies													75					$81,480	
Remedial repairs													75	900	$42,777	900	$42,777		
Routine maintenance													75	4,200	$210,463	4,200	$210,463		
Element #4 totals														28,832	$1,431,649	28,832	$1,431,649	$460,634	
5 Data Management																			
Data acquistion/processing													349	4,886	$241,142	4,886	$241,142		
Data reporting													349	3,141	$165,690	3,141	$165,690		
Data validation													349	4,188	$216,118	4,188	$216,118		
Data distribution													349	1,396	$68,377	1,396	$68,377		
Precursor CO monitors																			
Data acquistion/processing													75	1,050	$51,821	1,050	$51,821		
Data reporting													75	675	$35,607	675	$35,607		
Data validation													75	900	$46,444	900	$46,444		
Data distribution													75	300	$14,992	300	$14,992		
Element # 5 totals														16,536	$840,191	16,536	$840,191		
6. Quality Assurance																			
Audits													349	12,564	$710,155	12,564	$710,155		

Table 4.3, 2009 C0 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary Carbon Monoxide (CO)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Routine calibrations													349	9,074	$402,661	9,074	$402,661		
Coordination/implementation													349	1,396	$79,622	1,396	$79,622		
Training													349	1,745	$90,618	1,745	$90,618		
Reporting													349	2,094	$119,054	2,094	$119,054		
QA plan review (annual) RO													101	51	$2,635	51	$2,635		
QA plan preparation (RO)	101	15	5	$887	303	$17,907										303	$17,907		
Precursor CO monitors																			
Audits													75	2,700	$152,612	2,700	$152,612		
Routine calibrations													75	1,950	$86,532	1,950	$86,532		
Coordination/implementation													75	300	$17,111	300	$17,111		
Training													75	375	$19,474	375	$19,474		
Reporting													75	450	$25,585	450	$25,585		
QA plan preparation	55	15	5	$887	165	$9,752										165	$9,752		
Element #6 totals					468	$27,659								32,699	$1,706,058	33,167	$1,733,717		
7. Supervision																			
Planning/coordination													349	4,188	$257,066	4,188	$257,066		
Supervision/review													349	10,470	$545,602	10,470	$545,602		
Precursor CO monitors																			
Planning/coordination													75	900	$55,243	900	$55,243		
Supervision/review													75	2,250	$117,250	2,250	$117,250		
Element #7 totals														17,808	$975,161	17,808	$975,161		
Summary Totals																			$8,919,747

Table 5.0, Summary of NO2 and NOy 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary NO2-NOy				Summary NO2-NOy				Summary NO2-NOy				Average 2007-2009 NO2-NOy			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design study (RO)	394	$22,438			394	$22,867			394	$23,331			394	$22,878		
Site selection (RO)	105	$5,754			105	$5,864			105	$5,983			105	$5,867		
Precursor NOy monitors (RO)																
Network design study	154	$8,780			193	$11,185			236	$13,948			194	$11,304		
Site selection	41	$2,251			51	$2,868			63	$3,577			52	$2,899		
Element #1 totals	695	$39,222			744	$42,784			798	$46,838			746	$42,948		
2. Site Installation																
Analyzer				$651,373				$630,027				$504,804				$595,401
Spare analyzers				$32,569												$10,856
Procurement	448	$11,516			405	$10,608			318	$8,500			390	$10,208		
Equipment installation	853	$37,858			809	$36,617			635	$29,339			766	$34,605		
Precursor NOy monitors																
Analyzer				$110,152				$140,325				$174,988				$141,822
Procurement	21	$1,059			26	$1,348			31	$1,682			26	$1,363		
Equipment installation	82	$3,654			103	$4,655			126	$5,804			104	$4,704		
Element #2 totals	1,403	$54,086		$794,094	1,342	$53,228		$770,352	1,110	$45,325		$679,792	1,285	$50,880		$748,079
3. Supplies and Site Visits																
Supplies			$311,768				$301,551				$241,615				$284,978	
Routine site visits	44,760	$1,986,744			42,480	$1,921,636			33,360	$1,539,694			40,200	$1,816,025		
Precursor NOy monitors																
Supplies			$29,254				$46,851				$65,184				$47,097	
Routine site visits	4,200	$186,424			6,600	$298,559			9,000	$415,385			6,600	$300,123		
Element #3 totals	48,960	$2,173,167	$341,023		49,080	$2,220,195	$348,403		42,360	$1,955,079	$306,799		46,800	$2,116,147	$332,075	
4. Maintenance																
Spare parts/supplies			$389,710				$376,939				$302,019				$356,223	
Remedial repairs	5,968	$291,114			5,664	$281,574			4,448	$225,608			5,360	$266,099		
Routine maintenance	26,110	$1,283,706			24,780	$1,241,638			19,460	$994,851			23,450	$1,173,398		
Precursor NOy monitors																
Spare parts/supplies			$36,568				$58,564				$81,480				$58,871	
Remedial repairs	560	$27,316			880	$43,747			1,200	$60,866			880	$43,976		
Routine maintenance	2,450	$120,455			3,850	$192,910			5,250	$268,395			3,850	$193,920		
Element #4 totals	35,088	$1,722,591	$426,278		35,174	$1,759,868	$435,503		30,358	$1,549,720	$383,499		33,540	$1,677,393	$415,094	
5 Data Management																
Data acquistion/processing	7,460	$377,629			7,080	$365,254			5,560	$292,657			6,700	$345,180		
Data reporting	3,730	$192,907			3,540	$186,585			2,780	$149,500			3,350	$176,330		
Data validation	5,595	$278,253			5,310	$269,135			4,170	$215,642			5,025	$254,343		
Data distribution	1,865	$91,972			1,770	$88,958			1,390	$71,277			1,675	$84,069		
Precursor NOy monitors																
Data acquistion/processing	700	$35,434			1,100	$56,749			1,500	$78,954			1,100	$57,046		
Data reporting	350	$18,101			550	$28,989			750	$40,333			550	$29,141		
Data validation	525	$26,110			825	$41,815			1,125	$58,177			825	$42,034		
Data distribution	175	$8,630			275	$13,821			375	$19,229			275	$13,893		
Element # 5 totals	20,400	$1,029,036			20,450	$1,051,305			17,650	$925,767			19,500	$1,002,036		
6. Quality Assurance																
Audits	26,856	$1,469,208			25,488	$1,421,061			20,016	$1,138,612			24,120	$1,342,960		

Table 5.0, Summary of NO2 and NOy 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary NO2-NOy				Summary NO2-NOy				Summary NO2-NOy				Average 2007-2009 NO2-NOy			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Routine calibrations	17,904	$795,009			16,992	$768,956			13,344	$616,119			16,080	$726,695		
Coordination/implementation	1,492	$81,839			1,416	$79,157			1,112	$63,424			1,340	$74,807		
Training	1,865	$93,141			1,770	$90,088			1,390	$72,183			1,675	$85,137		
Reporting	2,238	$122,369			2,124	$118,359			1,668	$94,834			2,010	$111,854		
QA plan review (annual)	46	$2,308			46	$2,353			28	$1,435			40	$2,032		
QA plan preparation (RO)	276	$15,687			276	$15,987			276	$16,312			276	$15,995		
Precursor NOy monitors																
Audits	2,520	$137,861			3,960	$220,786			5,400	$307,180			3,960	$221,942		
Routine calibrations	1,680	$74,599			2,640	$119,471			3,600	$166,219			2,640	$120,096		
Coordination/implementation	140	$7,679			220	$12,298			300	$17,111			220	$12,363		
Training	175	$8,740			275	$13,997			375	$19,474			275	$14,070		
Reporting	210	$11,482			330	$18,389			450	$25,585			330	$18,485		
QA plan review (annual)	4	$176			6	$281			8	$391			6	$283		
QA plan preparation	108	$6,138			135	$7,820			165	$9,752			136	$7,903		
Element #6 totals	55,514	$2,826,237			55,678	$2,889,004			48,131	$2,548,630			53,107	$2,754,624		
7. Supervision																
Planning/coordination	4,476	$264,224			4,248	$255,565			3,336	$204,769			4,020	$241,519		
Supervision/review	11,190	$560,793			10,620	$542,416			8,340	$434,606			10,050	$512,605		
Precursor NOy monitors																
Planning/coordination	420	$24,793			660	$39,706			900	$55,243			660	$39,914		
Supervision/review	1,050	$52,621			1,650	$84,274			2,250	$117,250			1,650	$84,715		
Element #7 totals	17,136	$902,431			17,178	$921,960			14,826	$811,868			16,380	$878,753		
Summary Totals				$10,308,166				$10,492,603				$9,253,107				$10,018,028

Table 5.1, 2007 NO2 and NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary NO2-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	92	30	7	$1,707	394	$22,438										394	$22,438		
Site selection (RO)	92	8	7	$438	105	$5,754										105	$5,754		
Precursor NOy monitors (RO)																			
Network design study	36	30	7	$1,707	154	$8,780										154	$8,780		
Site selection	36	8	7	$438	41	$2,251										41	$2,251		
Element #1 totals					695	$39,222										695	$39,222		
2. Site Installation																			
Analyzer	373		7	$12,224		$651,373													$651,373
Spare analyzers	19		7	$12,224		$32,569													$32,569
Procurement	392	8	7	$206	448	$11,516										448	$11,516		
Equipment installation	373	16	7	$710	853	$37,858										853	$37,858		
Precursor NOy monitors																			
Analyzer	36		7	$21,418		$110,152													$110,152
Procurement	36	4	7	$206	21	$1,059										21	$1,059		
Equipment installation	36	16	7	$710	82	$3,654										82	$3,654		
Element #2 totals					1,403	$848,179										1,403	$54,086		$794,094
3. Supplies and Site Visits																			
Supplies													373					$311,768	
Routine site visits													373	44,760	$1,986,744	44,760	$1,986,744		
Precursor NOy monitors																			
Supplies													35					$29,254	
Routine site visits													35	4,200	$186,424	4,200	$186,424		
Element #3 totals														48,960	$2,173,167	48,960	$2,173,167	$341,023	
4. Maintenance																			
Spare parts/supplies													373					$389,710	
Remedial repairs													373	5,968	$291,114	5,968	$291,114		
Routine maintenance													373	26,110	$1,283,706	26,110	$1,283,706		
Precursor NOy monitors																			
Spare parts/supplies													35					$36,568	
Remedial repairs													35	560	$27,316	560	$27,316		
Routine maintenance													35	2,450	$120,455	2,450	$120,455		
Element #4 totals														35,088	$1,722,591	35,088	$1,722,591	$426,278	
5 Data Management																			
Data acquistion/processing													373	7,460	$377,629	7,460	$377,629		
Data reporting													373	3,730	$192,907	3,730	$192,907		
Data validation													373	5,595	$278,253	5,595	$278,253		
Data distribution													373	1,865	$91,972	1,865	$91,972		
Precursor NOy monitors																			
Data acquistion/processing													35	700	$35,434	700	$35,434		
Data reporting													35	350	$18,101	350	$18,101		
Data validation													35	525	$26,110	525	$26,110		
Data distribution													35	175	$8,630	175	$8,630		
Element # 5 totals														20,400	$1,029,036	20,400	$1,029,036		

Table 5.1, 2007 NO2 and NOy Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary NO2-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6. Quality Assurance																			
Audits													373	26,856	$1,469,208	26,856	$1,469,208		
Routine calibrations													373	17,904	$795,009	17,904	$795,009		
Coordination/implementation													373	1,492	$81,839	1,492	$81,839		
Training													373	1,865	$93,141	1,865	$93,141		
Reporting													373	2,238	$122,369	2,238	$122,369		
QA plan review (annual)													92	46	$2,308	46	$2,308		
QA plan preparation (RO)	92	15	5	$853	276	$15,687										276	$15,687		
Precursor NOy monitors																			
Audits													35	2,520	$137,861	2,520	$137,861		
Routine calibrations													35	1,680	$74,599	1,680	$74,599		
Coordination/implementation													35	140	$7,679	140	$7,679		
Training													35	175	$8,740	175	$8,740		
Reporting													35	210	$11,482	210	$11,482		
QA plan review (annual)													35	4	$176	4	$176		
QA plan preparation	36	15	5	$853	108	$6,138										108	$6,138		
Element #6 totals					384	$21,825								55,130	$2,804,412	55,514	$2,826,237		
7. Supervision																			
Planning/coordination													373	4,476	$264,224	4,476	$264,224		
Supervision/review													373	11,190	$560,793	11,190	$560,793		
Precursor NOy monitors																			
Planning/coordination													35	420	$24,793	420	$24,793		
Supervision/review													35	1,050	$52,621	1,050	$52,621		
Element #7 totals														17,136	$902,431	17,136	$902,431		
Summary totals																			$10,305,166

Table 5.2, 2008 NO2 and NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary NO2-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	92	30	7	$1,740	394	$22,867										394	$22,867		
Site selection (RO)	92	8	7	$446	105	$5,864										105	$5,864		
Precursor NOy monitors (RO)																			
Network design study	45	30	7	$1,740	193	$11,185										193	$11,185		
Site selection	45	8	7	$446	51	$2,868										51	$2,868		
Element #1 totals					744	$42,784										744	$42,784		
2. Site Installation																			
Analyzer	354		7	$12,458		$630,027													$630,027
Spare analyzers																			
Procurement	354	8	7	$210	405	$10,608										405	$10,608		
Equipment installation	354	16	7	$724	809	$36,617										809	$36,617		
Precursor NOy monitors																			
Analyzer	45		7	$21,828		$140,325													$140,325
Procurement	45	4	7	$210	26	$1,348										26	$1,348		
Equipment installation	45	16	7	$724	103	$4,655										103	$4,655		
Element #2 totals					1,342	$823,581										1,342	$53,228		$770,352
3. Supplies and Site Visits																			
Supplies													354					$301,551	
Routine site visits													354	42,480	$1,921,636	42,480	$1,921,636		
Precursor NOy monitors																			
Supplies													55					$46,851	
Routine site visits													55	6,600	$298,559	6,600	$298,559		
Element #3 totals														49,080	$2,220,195	49,080	$2,220,195	$348,403	
4. Maintenance																			
Spare parts/supplies													354					$376,939	
Remedial repairs													354	5,664	$281,574	5,664	$281,574		
Routine maintenance													354	24,780	$1,241,638	24,780	$1,241,638		
Precursor NOy monitors																			
Spare parts/supplies													55					$58,564	
Remedial repairs													55	880	$43,747	880	$43,747		
Routine maintenance													55	3,850	$192,910	3,850	$192,910		
Element #4 totals														35,174	$1,759,868	35,174	$1,759,868	$435,503	
5 Data Management																			
Data acquistion/processing													354	7,080	$365,254	7,080	$365,254		
Data reporting													354	3,540	$186,585	3,540	$186,585		
Data validation													354	5,310	$269,135	5,310	$269,135		
Data distribution													354	1,770	$88,958	1,770	$88,958		
Precursor NOy monitors																			
Data acquistion/processing													55	1,100	$56,749	1,100	$56,749		
Data reporting													55	550	$28,989	550	$28,989		
Data validation													55	825	$41,815	825	$41,815		
Data distribution													55	275	$13,821	275	$13,821		
Element # 5 totals														20,450	$1,051,305	20,450	$1,051,305		

Table 5.2, 2008 NO2 and NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary NO2-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6. Quality Assurance																			
Audits													354	25,488	$1,421,061	25,488	$1,421,061		
Routine calibrations													354	16,992	$768,956	16,992	$768,956		
Coordination/implementation													354	1,416	$79,157	1,416	$79,157		
Training													354	1,770	$90,088	1,770	$90,088		
Reporting													354	2,124	$118,359	2,124	$118,359		
QA plan review (annual)													92	46	$2,353	46	$2,353		
QA plan preparation (RO)	92	15	5	$869	276	$15,987										276	$15,987		
Precursor NOy monitors																			
Audits													55	3,960	$220,786	3,960	$220,786		
Routine calibrations													55	2,640	$119,471	2,640	$119,471		
Coordination/implementation													55	220	$12,298	220	$12,298		
Training													55	275	$13,997	275	$13,997		
Reporting													55	330	$18,389	330	$18,389		
QA plan review (annual)													55	6	$281	6	$281		
QA plan preparation	45	15	5	$869	135	$7,820										135	$7,820		
Element #6 totals					411	$23,807								55,267	$2,865,196	55,678	$2,889,004		
7. Supervision																			
Planning/coordination													354	4,248	$255,565	4,248	$255,565		
Supervision/review													354	10,620	$542,416	10,620	$542,416		
Precursor NOy monitors																			
Planning/coordination													55	660	$39,706	660	$39,706		
Supervision/review													55	1,650	$84,274	1,650	$84,274		
Element #7 totals														17,178	$921,960	17,178	$921,960		
[redacted]																			
Summary totals																			$16,492,603

Table 5.3, 2009 NO2 and NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary NO2-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	92	30	7	$1,775	394	$23,331										394	$23,331		
Site selection (RO)	92	8	7	$455	105	$5,983										105	$5,983		
Precursor NOy monitors (RO)																			
Network design study	55	30	7	$1,775	236	$13,948										236	$13,948		
Site selection	55	8	7	$455	63	$3,577										63	$3,577		
Element #1 totals					798	$46,838										798	$46,838		
2. Site Installation																			
Analyzer	278		7	$12,711		$504,804													$504,804
Spare analyzers																			
Procurement	278	8	7	$214	318	$8,500										318	$8,500		
Equipment installation	278	16	7	$739	635	$29,339										635	$29,339		
Precursor NOy monitors																			
Analyzer	55		7	$22,271		$174,988													$174,988
Procurement	55	4	7	$214	31	$1,682										31	$1,682		
Equipment installation	55	16	7	$739	126	$5,804										126	$5,804		
Element #2 totals					1,110	$725,116										1,110	$45,325		$679,792
3. Supplies and Site Visits																			
Supplies													278					$241,615	
Routine site visits													278	33,360	$1,539,694	33,360	$1,539,694		
Precursor NOy monitors																			
Supplies													75					$65,184	
Routine site visits													75	9,000	$415,385	9,000	$415,385		
Element #3 totals														42,360	$1,955,079	42,360	$1,955,079	$306,799	
4. Maintenance																			
Spare parts/supplies													278					$302,019	
Remedial repairs													278	4,448	$225,608	4,448	$225,608		
Routine maintenance													278	19,460	$994,851	19,460	$994,851		
Precursor NOy monitors																			
Spare parts/supplies													75					$81,480	
Remedial repairs													75	1,200	$60,866	1,200	$60,866		
Routine maintenance													75	5,250	$268,395	5,250	$268,395		
Element #4 totals														30,358	$1,549,720	30,358	$1,549,720	$383,499	
5 Data Management																			
Data acquistion/processing													278	5,560	$292,657	5,560	$292,657		
Data reporting													278	2,780	$149,500	2,780	$149,500		
Data validation													278	4,170	$215,642	4,170	$215,642		
Data distribution													278	1,390	$71,277	1,390	$71,277		
Precursor NOy monitors																			
Data acquistion/processing													75	1,500	$78,954	1,500	$78,954		
Data reporting													75	750	$40,333	750	$40,333		
Data validation													75	1,125	$58,177	1,125	$58,177		
Data distribution													75	375	$19,229	375	$19,229		
Element # 5 totals														17,650	$925,767	17,650	$925,767		

Table 5.3, 2009 NO2 and NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary NO2-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6. Quality Assurance																			
Audits													278	20,016	$1,138,612	20,016	$1,138,612		
Routine calibrations													278	13,344	$616,119	13,344	$616,119		
Coordination/implementatior													278	1,112	$63,424	1,112	$63,424		
Training													278	1,390	$72,183	1,390	$72,183		
Reporting													278	1,668	$94,834	1,668	$94,834		
QA plan review (annual)													55	28	$1,435	28	$1,435		
QA plan preparation (RO)	92	15	5	$887	276	$16,312										276	$16,312		
Precursor NOy monitors																			
Audits													75	5,400	$307,180	5,400	$307,180		
Routine calibrations													75	3,600	$166,219	3,600	$166,219		
Coordination/implementatior													75	300	$17,111	300	$17,111		
Training													75	375	$19,474	375	$19,474		
Reporting													75	450	$25,585	450	$25,585		
QA plan review (annual)													75	8	$391	8	$391		
QA plan preparation	55	15	5	$887	165	$9,752										165	$9,752		
Element #6 totals					441	$26,063								47,690	$2,522,567	48,131	$2,548,630		
7. Supervision																			
Planning/coordination													278	3,336	$204,769	3,336	$204,769		
Supervision/review													278	8,340	$434,606	8,340	$434,606		
Precursor NOy monitors																			
Planning/coordination													75	900	$55,243	900	$55,243		
Supervision/review													75	2,250	$117,250	2,250	$117,250		
Element #7 totals														14,826	$811,868	14,826	$811,868		
Summary totals																			$9,253,317

Table 6.0, Summary of O3 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009				Average 2007-2009 O3			
	Summary O3				Summary O3				Summary O3							
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design study (RO)	579	$32,925			579	$33,555			579	$34,236			579	$33,572		
Site selection (RO)	154	$8,443			154	$8,604			154	$8,779			154	$8,609		
Element #1 totals	733	$41,367			733	$42,159			733	$43,014			733	$42,180		
2. Site Installation																
Analyzer				$1,279,910				$1,304,410				$1,330,871				$1,305,064
Spare analyzers				$255,982				$260,882				$266,174				$261,013
Procurement	1,633	$42,024			1,633	$42,828			1,633	$43,697			1,633	$42,850		
Equipment installation	2,722	$120,880			2,722	$123,194			2,722	$125,693			2,722	$123,256		
Element #2 totals	4,356	$162,904		$1,535,892	4,356	$166,022		$1,565,293	4,356	$169,390		$1,597,045	4,356	$166,106		$1,566,077
3. Supplies and Site Visits																
Supplies																
4 month season			$836				$852				$869				$852	
5 month season			$15,324				$15,617				$15,934				$15,625	
6 month season			$71,046				$72,406				$73,875				$72,443	
7 month season			$215,995				$220,130				$224,595				$220,240	
8 month season			$104,201				$106,196				$108,350				$106,249	
9 month season			$4,388				$4,472				$4,563				$4,474	
12 month season			$281,678				$287,070				$292,893				$287,214	
Routine site visits																
4 month season	120	$5,326			120	$5,428			120	$5,538			120	$5,431		
5 month season	2,200	$97,650			2,200	$99,520			2,200	$101,539			2,200	$99,570		
6 month season	10,200	$452,743			10,200	$461,410			10,200	$470,770			10,200	$461,641		
7 month season	31,010	$1,376,428			31,010	$1,402,776			31,010	$1,431,232			31,010	$1,403,479		
8 month season	14,960	$664,023			14,960	$676,734			14,960	$690,462			14,960	$677,073		
9 month season	630	$27,964			630	$28,499			630	$29,077			630	$28,513		
12 month season	40,440	$1,794,994			40,440	$1,829,354			40,440	$1,866,463			40,440	$1,830,270		
Element #3 totals	99,560	$4,419,129	$693,469		99,560	$4,503,721	$706,743		99,560	$4,595,082	$721,080		99,560	$4,505,977	$707,097	
4. Maintenance																
Spare parts/supplies																
4 month season			$1,045				$1,065				$1,086				$1,065	
5 month season			$19,155				$19,521				$19,917				$19,531	
6 month season			$88,808				$90,508				$92,344				$90,553	
7 month season			$269,994				$275,162				$280,744				$275,300	
8 month season			$130,252				$132,745				$135,438				$132,812	
9 month season			$5,485				$5,590				$5,704				$5,593	
12 month season			$352,098				$358,838				$366,117				$359,017	
Remedial repairs																
4 month season	12	$549			12	$559			12	$570			12	$559		
5 month season	220	$10,056			220	$10,249			220	$10,457			220	$10,254		
6 month season	1,020	$46,624			1,020	$47,517			1,020	$48,481			1,020	$47,541		
7 month season	3,101	$141,747			3,101	$144,460			3,101	$147,391			3,101	$144,532		
8 month season	1,496	$68,382			1,496	$69,691			1,496	$71,105			1,496	$69,726		
9 month season	63	$2,880			63	$2,935			63	$2,994			63	$2,936		
12 month season	4,044	$184,851			4,044	$188,390			4,044	$192,211			4,044	$188,484		
Routine maintenance																
4 month season	56	$2,699			56	$2,750			56	$2,806			56	$2,752		
5 month season	1,027	$49,477			1,027	$50,424			1,027	$51,446			1,027	$50,449		
6 month season	4,760	$229,391			4,760	$233,782			4,760	$238,525			4,760	$233,899		

Table 6.0, Summary of O3 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary O3 Labor Hours	2007 Summary O3 Labor Costs	2007 Summary O3 Non-labor O & M	2007 Summary O3 Equip/ Contract $	2008 Summary O3 Labor Hours	2008 Summary O3 Labor Costs	2008 Summary O3 Non-labor O & M	2008 Summary O3 Equip/ Contract $	2009 Summary O3 Labor Hours	2009 Summary O3 Labor Costs	2009 Summary O3 Non-labor O & M	2009 Summary O3 Equip/ Contract $	Average 2007-2009 O3 Labor Hours	Average 2007-2009 O3 Labor Costs	Average 2007-2009 O3 Non-labor O & M	Average 2007-2009 O3 Equip/ Contract $
7 month season	14,471	$697,394			14,471	$710,744			14,471	$725,161			14,471	$711,100		
8 month season	6,981	$336,440			6,981	$342,881			6,981	$349,836			6,981	$343,052		
9 month season	294	$14,168			294	$14,439			294	$14,732			294	$14,447		
12 month season	18,872	$909,468			18,872	$926,878			18,872	$945,680			18,872	$927,342		
Element #4 totals	56,417	$2,694,125	$866,836		56,417	$2,745,698	$883,429		56,417	$2,801,395	$901,350		56,417	$2,747,073	$883,872	
5. Data Management																
Data acquistion/processing																
4 month season	14	$664			14	$677			14	$691			14	$678		
5 month season	257	$12,182			257	$12,416			257	$12,667			257	$12,422		
6 month season	1,190	$56,482			1,190	$57,563			1,190	$58,731			1,190	$57,592		
7 month season	3,618	$171,716			3,618	$175,003			3,618	$178,553			3,618	$175,091		
8 month season	1,745	$82,840			1,745	$84,426			1,745	$86,138			1,745	$84,468		
9 month season	74	$3,489			74	$3,555			74	$3,627			74	$3,557		
12 month season	4,718	$223,934			4,718	$228,221			4,718	$232,850			4,718	$228,335		
Data reporting																
4 month season	9	$457			9	$465			9	$475			9	$466		
5 month season	165	$8,371			165	$8,531			165	$8,704			165	$8,535		
6 month season	765	$38,809			765	$39,552			765	$40,354			765	$39,572		
7 month season	2,326	$117,987			2,326	$120,246			2,326	$122,685			2,326	$120,306		
8 month season	1,122	$56,920			1,122	$58,010			1,122	$59,186			1,122	$58,039		
9 month season	47	$2,397			47	$2,443			47	$2,492			47	$2,444		
12 month season	3,033	$153,867			3,033	$156,812			3,033	$159,993			3,033	$156,891		
Data validation																
4 month season	12	$596			12	$607			12	$619			12	$607		
5 month season	220	$10,918			220	$11,127			220	$11,353			220	$11,133		
6 month season	1,020	$50,621			1,020	$51,590			1,020	$52,636			1,020	$51,615		
7 month season	3,101	$153,896			3,101	$156,842			3,101	$160,024			3,101	$156,921		
8 month season	1,496	$74,243			1,496	$75,665			1,496	$77,200			1,496	$75,703		
9 month season	63	$3,127			63	$3,186			63	$3,251			63	$3,188		
12 month season	4,044	$200,696			4,044	$204,537			4,044	$208,687			4,044	$204,640		
Data distribution																
4 month season	4	$192			4	$196			4	$200			4	$196		
5 month season	73	$3,524			73	$3,592			73	$3,665			73	$3,594		
6 month season	340	$16,341			340	$16,653			340	$16,991			340	$16,662		
7 month season	1,034	$49,679			1,034	$50,630			1,034	$51,657			1,034	$50,655		
8 month season	499	$23,966			499	$24,425			499	$24,921			499	$24,437		
9 month season	21	$1,009			21	$1,029			21	$1,049			21	$1,029		
12 month season	1,348	$64,786			1,348	$66,026			1,348	$67,365			1,348	$66,059		
Element # 5 totals	32,357	$1,583,709			32,357	$1,614,025			32,357	$1,646,766			32,357	$1,614,833		
6. Quality Assurance																
Audits																
4 month season	36	$1,957			36	$1,994			36	$2,035			36	$1,995		
5 month season	660	$35,877			660	$36,563			660	$37,305			660	$36,582		
6 month season	3,060	$166,337			3,060	$169,521			3,060	$172,960			3,060	$169,606		
7 month season	9,303	$505,698			9,303	$515,379			9,303	$525,833			9,303	$515,637		
8 month season	4,488	$243,961			4,488	$248,632			4,488	$253,675			4,488	$248,756		
9 month season	189	$10,274			189	$10,470			189	$10,683			189	$10,476		
12 month season	12,132	$659,479			12,132	$672,103			12,132	$685,737			12,132	$672,439		
Routine calibrations																

Table 6.0, Summary of O3 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary O3				2008 Summary O3				2009 Summary O3				Average 2007-2009 O3			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
4 month season	26	$1,110			26	$1,131			26	$1,154			26	$1,131		
5 month season	477	$20,342			477	$20,732			477	$21,152			477	$20,742		
6 month season	2,210	$94,314			2,210	$96,119			2,210	$98,069			2,210	$96,168		
7 month season	6,719	$286,733			6,719	$292,222			6,719	$298,150			6,719	$292,368		
8 month season	3,241	$138,327			3,241	$140,975			3,241	$143,835			3,241	$141,046		
9 month season	137	$5,825			137	$5,937			137	$6,057			137	$5,940		
12 month season	8,762	$373,928			8,762	$381,086			8,762	$388,816			8,762	$381,276		
Coordination/implementation																
4 month season	4	$219			4	$224			4	$228			4	$224		
5 month season	59	$4,022			59	$4,099			59	$4,183			59	$4,102		
6 month season	227	$18,650			227	$19,007			227	$19,392			227	$19,016		
7 month season	591	$56,699			591	$57,784			591	$58,956			591	$57,813		
8 month season	249	$27,353			249	$27,876			249	$28,442			249	$27,890		
9 month season	9	$1,152			9	$1,174			9	$1,198			9	$1,175		
12 month season	449	$73,940			449	$75,356			449	$76,885			449	$75,394		
Training	5,955	$297,401			5,955	$303,094			5,955	$309,243			5,955	$303,246		
Reporting																
4 month season	6	$328			6	$334			6	$341			6	$335		
5 month season	110	$6,015			110	$6,130			110	$6,254			110	$6,133		
6 month season	510	$27,886			510	$28,420			510	$28,996			510	$28,434		
7 month season	1,551	$84,778			1,551	$86,401			1,551	$88,154			1,551	$86,444		
8 month season	748	$40,899			748	$41,682			748	$42,527			748	$41,703		
9 month season	32	$1,722			32	$1,755			32	$1,791			32	$1,756		
12 month season	2,022	$110,559			2,022	$112,675			2,022	$114,961			2,022	$112,731		
QA plan review (annual)	63	$3,136			63	$3,196			63	$3,261			63	$3,198		
QA plan preparation (RO)	405	$23,019			405	$23,460			405	$23,936			405	$23,471		
Element #6 totals	64,428	$3,321,941			64,428	$3,385,531			64,428	$3,454,209			64,428	$3,387,227		
7. Supervision																
Planning/coordination																
4 month season	12	$708			12	$722			12	$737			12	$722		
5 month season	220	$12,987			220	$13,235			220	$13,504			220	$13,242		
6 month season	1,020	$60,212			1,020	$61,364			1,020	$62,609			1,020	$61,395		
7 month season	3,101	$183,056			3,101	$186,560			3,101	$190,344			3,101	$186,653		
8 month season	1,496	$88,311			1,496	$90,001			1,496	$91,827			1,496	$90,046		
9 month season	63	$3,719			63	$3,790			63	$3,867			63	$3,792		
12 month season	4,044	$238,722			4,044	$243,292			4,044	$248,227			4,044	$243,414		
Supervision/review																
4 month season	30	$1,503			30	$1,532			30	$1,563			30	$1,533		
5 month season	550	$27,564			550	$28,091			550	$28,661			550	$28,105		
6 month season	2,550	$127,795			2,550	$130,241			2,550	$132,883			2,550	$130,306		
7 month season	7,753	$388,521			7,753	$395,958			7,753	$403,990			7,753	$396,157		
8 month season	3,740	$187,432			3,740	$191,020			3,740	$194,895			3,740	$191,116		
9 month season	158	$7,893			158	$8,044			158	$8,207			158	$8,048		
12 month season	10,110	$506,668			10,110	$516,367			10,110	$526,842			10,110	$516,626		
Element #7 totals	34,846	$1,835,091			34,846	$1,870,219			34,846	$1,908,158			34,846	$1,871,156		
Summary totals				$17,154,463				$17,482,844				$17,837,488				$17,491,598

Table 6.1, 2007 O3 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	135	30	7	$1,707	579	$32,925										579	$32,925		
Site selection (RO)	135	8	7	$438	154	$8,443										154	$8,443		
Element #1 totals					733	$41,367										733	$41,367		
2. Site Installation																			
Analyzer	1,191		7	$7,523		$1,279,910							1191						$1,279,910
Spare analyzers	238		7	$7,523		$255,982													$255,982
Procurement	1,429	8	7	$206	1,633	$42,024										1,633	$42,024		
Equipment installation	1,191	16	7	$710	2,722	$120,880										2,722	$120,880		
Element #2 totals					4,356	$1,698,796										4,356	$162,904		$1,535,892
3. Supplies and Site Visits																			
Supplies																			
4 month season													3					$836	
5 month season													44					$15,324	
6 month season													170					$71,046	
7 month season													443					$215,995	
8 month season													187					$104,201	
9 month season													7					$4,388	
12 month season													337					$281,678	
Routine site visits																			
4 month season													3	120	$5,326	120	$5,326		
5 month season													44	2,200	$97,650	2,200	$97,650		
6 month season													170	10,200	$452,743	10,200	$452,743		
7 month season													443	31,010	$1,376,428	31,010	$1,376,428		
8 month season													187	14,960	$664,023	14,960	$664,023		
9 month season													7	630	$27,964	630	$27,964		
12 month season													337	40,440	$1,794,994	40,440	$1,794,994		
Element #3 totals														99,560	$4,419,129	99,560	$4,419,129	$693,469	
4. Maintenance																			
Spare parts/supplies																			
4 month season													3					$1,045	
5 month season													44					$19,155	
6 month season													170					$88,808	
7 month season													443					$269,994	
8 month season													187					$130,252	
9 month season													7					$5,485	
12 month season													337					$352,098	
Remedial repairs																			
4 month season													3	12	$549	12	$549		
5 month season													44	220	$10,056	220	$10,056		
6 month season													170	1,020	$46,624	1,020	$46,624		
7 month season													443	3,101	$141,747	3,101	$141,747		
8 month season													187	1,496	$68,382	1,496	$68,382		
9 month season													7	63	$2,880	63	$2,880		

Table 6.1, 2007 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
12 month season													337	4,044	$184,851	4,044	$184,851		
Routine maintenance																			
4 month season													3	56	$2,699	56	$2,699		
5 month season													44	1,027	$49,477	1,027	$49,477		
6 month season													170	4,760	$229,391	4,760	$229,391		
7 month season													443	14,471	$697,394	14,471	$697,394		
8 month season													187	6,981	$336,440	6,981	$336,440		
9 month season													7	294	$14,168	294	$14,168		
12 month season													337	18,872	$909,468	18,872	$909,468		
Element #4 totals														56,417	$2,694,125	56,417	$2,694,125	$866,836	
5. Data Management																			
Data acquistion/processing																			
4 month season													3	14	$664	14	$664		
5 month season													44	257	$12,182	257	$12,182		
6 month season													170	1,190	$56,482	1,190	$56,482		
7 month season													443	3,618	$171,716	3,618	$171,716		
8 month season													187	1,745	$82,840	1,745	$82,840		
9 month season													7	74	$3,489	74	$3,489		
12 month season													337	4,718	$223,934	4,718	$223,934		
Data reporting																			
4 month season													3	9	$457	9	$457		
5 month season													44	165	$8,371	165	$8,371		
6 month season													170	765	$38,809	765	$38,809		
7 month season													443	2,326	$117,987	2,326	$117,987		
8 month season													187	1,122	$56,920	1,122	$56,920		
9 month season													7	47	$2,397	47	$2,397		
12 month season													337	3,033	$153,867	3,033	$153,867		
Data validation																			
4 month season													3	12	$596	12	$596		
5 month season													44	220	$10,918	220	$10,918		
6 month season													170	1,020	$50,621	1,020	$50,621		
7 month season													443	3,101	$153,896	3,101	$153,896		
8 month season													187	1,496	$74,243	1,496	$74,243		
9 month season													7	63	$3,127	63	$3,127		
12 month season													337	4,044	$200,696	4,044	$200,696		
Data distribution																			
4 month season													3	4	$192	4	$192		
5 month season													44	73	$3,524	73	$3,524		
6 month season													170	340	$16,341	340	$16,341		
7 month season													443	1,034	$49,679	1,034	$49,679		
8 month season													187	499	$23,966	499	$23,966		
9 month season													7	21	$1,009	21	$1,009		
12 month season													337	1,348	$64,786	1,348	$64,786		
Element # 5 totals														32,357	$1,583,709	32,357	$1,583,709		

Table 6.1, 2007 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6. Quality Assurance																			
Audits																			
4 month season													3	36	$1,957	36	$1,957		
5 month season													44	660	$35,877	660	$35,877		
6 month season													170	3,060	$166,337	3,060	$166,337		
7 month season													443	9,303	$505,698	9,303	$505,698		
8 month season													187	4,488	$243,961	4,488	$243,961		
9 month season													7	189	$10,274	189	$10,274		
12 month season													337	12,132	$659,479	12,132	$659,479		
Routine calibrations																			
4 month season													3	26	$1,110	26	$1,110		
5 month season													44	477	$20,342	477	$20,342		
6 month season													170	2,210	$94,314	2,210	$94,314		
7 month season													443	6,719	$286,733	6,719	$286,733		
8 month season													187	3,241	$138,327	3,241	$138,327		
9 month season													7	137	$5,825	137	$5,825		
12 month season													337	8,762	$373,928	8,762	$373,928		
Coordination/implementation																			
4 month season													3	4	$219	4	$219		
5 month season													44	59	$4,022	59	$4,022		
6 month season													170	227	$18,650	227	$18,650		
7 month season													443	591	$56,699	591	$56,699		
8 month season													187	249	$27,353	249	$27,353		
9 month season													7	9	$1,152	9	$1,152		
12 month season													337	449	$73,940	449	$73,940		
Training													1,191	5,955	$297,401	5,955	$297,401		
Reporting																			
4 month season													3	6	$328	6	$328		
5 month season													44	110	$6,015	110	$6,015		
6 month season													170	510	$27,886	510	$27,886		
7 month season													443	1,551	$84,778	1,551	$84,778		
8 month season													187	748	$40,899	748	$40,899		
9 month season													7	32	$1,722	32	$1,722		
12 month season													337	2,022	$110,559	2,022	$110,559		
QA plan review (annual)													125	63	$3,136	63	$3,136		
QA plan preparation (RO)	135	15	5	$853	405	$23,019										405	$23,019		
Element #6 totals					405	$23,019								64,023	$3,298,922	64,428	$3,321,941		
7. Supervision																			
Planning/coordination																			
4 month season													3	12	$708	12	$708		
5 month season													44	220	$12,987	220	$12,987		
6 month season													170	1,020	$60,212	1,020	$60,212		
7 month season													443	3,101	$183,056	3,101	$183,056		
8 month season													187	1,496	$88,311	1,496	$88,311		

Table 6.1, 2007 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
9 month season													7	63	$3,719	63	$3,719		
12 month season													337	4,044	$238,722	4,044	$238,722		
Supervision/review																			
4 month season													3	30	$1,503	30	$1,503		
5 month season													44	550	$27,564	550	$27,564		
6 month season													170	2,550	$127,795	2,550	$127,795		
7 month season													443	7,753	$388,521	7,753	$388,521		
8 month season													187	3,740	$187,432	3,740	$187,432		
9 month season													7	158	$7,893	158	$7,893		
12 month season													337	10,110	$506,668	10,110	$506,668		
Element #7 totals														34,846	$1,835,091	34,846	$1,835,091		
Summary Total $																			$17,454,463

Table 6.2, 2008 O3 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	135	30	7	$1,740	579	$33,555										579	$33,555		
Site selection (RO)	135	8	7	$446	154	$8,604										154	$8,604		
Element #1 totals					733	$42,159										733	$42,159		
2. Site Installation																			
Analyzer	1,191		7	$7,667		$1,304,410													$1,304,410
Spare analyzers	238		7	$7,667		$260,882													$260,882
Procurement	1,429	8	7	$210	1,633	$42,828										1,633	$42,828		
Equipment installation	1,191	16	7	$724	2,722	$123,194										2,722	$123,194		
Element #2 totals					4,356	$1,731,315										4,356	$166,022		$1,565,293
3. Supplies and Site Visits																			
Supplies																			
4 month season													3					$852	
5 month season													44					$15,617	
6 month season													170					$72,406	
7 month season													443					$220,130	
8 month season													187					$106,196	
9 month season													7					$4,472	
12 month season													337					$287,070	
Routine site visits																			
4 month season													3	120	$5,428	120	$5,428		
5 month season													44	2,200	$99,520	2,200	$99,520		
6 month season													170	10,200	$461,410	10,200	$461,410		
7 month season													443	31,010	$1,402,776	31,010	$1,402,776		
8 month season													187	14,960	$676,734	14,960	$676,734		
9 month season													7	630	$28,499	630	$28,499		
12 month season													337	40,440	$1,829,354	40,440	$1,829,354		
Element #3 totals														99,560	$4,503,721	99,560	$4,503,721	$706,743	
4. Maintenance																			
Spare parts/supplies																			
4 month season													3					$1,065	
5 month season													44					$19,521	
6 month season													170					$90,508	
7 month season													443					$275,162	
8 month season													187					$132,745	
9 month season													7					$5,590	
12 month season													337					$358,838	
Remedial repairs																			
4 month season													3	12	$559	12	$559		
5 month season													44	220	$10,249	220	$10,249		
6 month season													170	1,020	$47,517	1,020	$47,517		
7 month season													443	3,101	$144,460	3,101	$144,460		
8 month season													187	1,496	$69,691	1,496	$69,691		

Table 6.2, 2008 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
9 month season													7	63	$2,935	63	$2,935		
12 month season													337	4,044	$188,390	4,044	$188,390		
Routine maintenance																			
4 month season													3	56	$2,750	56	$2,750		
5 month season													44	1,027	$50,424	1,027	$50,424		
6 month season													170	4,760	$233,782	4,760	$233,782		
7 month season													443	14,471	$710,744	14,471	$710,744		
8 month season													187	6,981	$342,881	6,981	$342,881		
9 month season													7	294	$14,439	294	$14,439		
12 month season													337	18,872	$926,878	18,872	$926,878		
Element #4 totals														56,417	$2,745,698	56,417	$2,745,698	$883,429	
5. Data Management																			
Data acquistion/processing																			
4 month season													3	14	$677	14	$677		
5 month season													44	257	$12,416	257	$12,416		
6 month season													170	1,190	$57,563	1,190	$57,563		
7 month season													443	3,618	$175,003	3,618	$175,003		
8 month season													187	1,745	$84,426	1,745	$84,426		
9 month season													7	74	$3,555	74	$3,555		
12 month season													337	4,718	$228,221	4,718	$228,221		
Data reporting																			
4 month season													3	9	$465	9	$465		
5 month season													44	165	$8,531	165	$8,531		
6 month season													170	765	$39,552	765	$39,552		
7 month season													443	2,326	$120,246	2,326	$120,246		
8 month season													187	1,122	$58,010	1,122	$58,010		
9 month season													7	47	$2,443	47	$2,443		
12 month season													337	3,033	$156,812	3,033	$156,812		
Data validation																			
4 month season													3	12	$607	12	$607		
5 month season													44	220	$11,127	220	$11,127		
6 month season													170	1,020	$51,590	1,020	$51,590		
7 month season													443	3,101	$156,842	3,101	$156,842		
8 month season													187	1,496	$75,665	1,496	$75,665		
9 month season													7	63	$3,186	63	$3,186		
12 month season													337	4,044	$204,537	4,044	$204,537		
Data distribution																			
4 month season													3	4	$196	4	$196		
5 month season													44	73	$3,592	73	$3,592		
6 month season													170	340	$16,653	340	$16,653		
7 month season													443	1,034	$50,630	1,034	$50,630		
8 month season													187	499	$24,425	499	$24,425		
9 month season													7	21	$1,029	21	$1,029		

Table 6.2, 2008 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
12 month season													337	1,348	$66,026	1,348	$66,026		
Element # 5 totals														32,357	$1,614,025	32,357	$1,614,025		
6. Quality Assurance																			
Audits																			
4 month season													3	36	$1,994	36	$1,994		
5 month season													44	660	$36,563	660	$36,563		
6 month season													170	3,060	$169,521	3,060	$169,521		
7 month season													443	9,303	$515,379	9,303	$515,379		
8 month season													187	4,488	$248,632	4,488	$248,632		
9 month season													7	189	$10,470	189	$10,470		
12 month season													337	12,132	$672,103	12,132	$672,103		
Routine calibrations																			
4 month season													3	26	$1,131	26	$1,131		
5 month season													44	477	$20,732	477	$20,732		
6 month season													170	2,210	$96,119	2,210	$96,119		
7 month season													443	6,719	$292,222	6,719	$292,222		
8 month season													187	3,241	$140,975	3,241	$140,975		
9 month season													7	137	$5,937	137	$5,937		
12 month season													337	8,762	$381,086	8,762	$381,086		
Coordination/implementation																			
4 month season													3	4	$224	4	$224		
5 month season													44	59	$4,099	59	$4,099		
6 month season													170	227	$19,007	227	$19,007		
7 month season													443	591	$57,784	591	$57,784		
8 month season													187	249	$27,876	249	$27,876		
9 month season													7	9	$1,174	9	$1,174		
12 month season													337	449	$75,356	449	$75,356		
Training													1,191	5,955	$303,094	5,955	$303,094		
Reporting																			
4 month season													3	6	$334	6	$334		
5 month season													44	110	$6,130	110	$6,130		
6 month season													170	510	$28,420	510	$28,420		
7 month season													443	1,551	$86,401	1,551	$86,401		
8 month season													187	748	$41,682	748	$41,682		
9 month season													7	32	$1,755	32	$1,755		
12 month season													337	2,022	$112,675	2,022	$112,675		
QA plan review (annual)													125	63	$3,196	63	$3,196		
QA plan preparation (RO)	135	15	5	$869	405	$23,460										405	$23,460		
Element #6 totals					405	$23,460								64,023	$3,362,072	64,428	$3,385,531		
7. Supervision																			
Planning/coordination																			
4 month season													3	12	$722	12	$722		
5 month season													44	220	$13,235	220	$13,235		

Table 6.2, 2008 O3 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6 month season													170	1,020	$61,364	1,020	$61,364		
7 month season													443	3,101	$186,560	3,101	$186,560		
8 month season													187	1,496	$90,001	1,496	$90,001		
9 month season													7	63	$3,790	63	$3,790		
12 month season													337	4,044	$243,292	4,044	$243,292		
Supervision/review																			
4 month season													3	30	$1,532	30	$1,532		
5 month season													44	550	$28,091	550	$28,091		
6 month season													170	2,550	$130,241	2,550	$130,241		
7 month season													443	7,753	$395,958	7,753	$395,958		
8 month season													187	3,740	$191,020	3,740	$191,020		
9 month season													7	158	$8,044	158	$8,044		
12 month season													337	10,110	$516,367	10,110	$516,367		
Element #7 totals														34,846	$1,870,219	34,846	$1,870,219		
Summary of LS																			$17,462,841

Table 6.3, 2009 O3 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	135	30	7	$1,775	579	$34,236										579	$34,236		
Site selection (RO)	135	8	7	$455	154	$8,779										154	$8,779		
Element #1 totals					733	$43,014										733	$43,014		
2. Site Installation																			
Analyzer	1,191		7	$7,822		$1,330,871													$1,330,871
Spare analyzers	238		7	$7,822		$266,174													$266,174
Procurement	1,429	8	7	$214	1,633	$43,697										1,633	$43,697		
Equipment installation	1,191	16	7	$739	2,722	$125,693										2,722	$125,693		
Element #2 totals					4,356	$1,766,436										4,356	$169,390		$1,597,045
3. Supplies and Site Visits																			
Supplies																			
4 month season													3					$869	
5 month season													44					$15,934	
6 month season													170					$73,875	
7 month season													443					$224,595	
8 month season													187					$108,350	
9 month season													7					$4,563	
12 month season													337					$292,893	
Routine site visits																			
4 month season													3	120	$5,538	120	$5,538		
5 month season													44	2,200	$101,539	2,200	$101,539		
6 month season													170	10,200	$470,770	10,200	$470,770		
7 month season													443	31,010	$1,431,232	31,010	$1,431,232		
8 month season													187	14,960	$690,462	14,960	$690,462		
9 month season													7	630	$29,077	630	$29,077		
12 month season													337	40,440	$1,866,463	40,440	$1,866,463		
Element #3 totals														99,560	$4,595,082	99,560	$4,595,082	$721,080	
4. Maintenance																			
Spare parts/supplies																			
4 month season													3					$1,086	
5 month season													44					$19,917	
6 month season													170					$92,344	
7 month season													443					$280,744	
8 month season													187					$135,438	
9 month season													7					$5,704	
12 month season													337					$366,117	
Remedial repairs																			
4 month season													3	12	$570	12	$570		
5 month season													44	220	$10,457	220	$10,457		
6 month season													170	1,020	$48,481	1,020	$48,481		
7 month season													443	3,101	$147,391	3,101	$147,391		
8 month season													187	1,496	$71,105	1,496	$71,105		
9 month season													7	63	$2,994	63	$2,994		
12 month season													337	4,044	$192,211	4,044	$192,211		

Table 6.3, 2009 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Routine maintenance																			
4 month season													3	56	$2,806	56	$2,806		
5 month season													44	1,027	$51,446	1,027	$51,446		
6 month season													170	4,760	$238,525	4,760	$238,525		
7 month season													443	14,471	$725,161	14,471	$725,161		
8 month season													187	6,981	$349,836	6,981	$349,836		
9 month season													7	294	$14,732	294	$14,732		
12 month season													337	18,872	$945,680	18,872	$945,680		
Element #4 totals														56,417	$2,801,395	56,417	$2,801,395	$901,350	
5. Data Management																			
Data acquistion/processing																			
4 month season													3	14	$691	14	$691		
5 month season													44	257	$12,667	257	$12,667		
6 month season													170	1,190	$58,731	1,190	$58,731		
7 month season													443	3,618	$178,553	3,618	$178,553		
8 month season													187	1,745	$86,138	1,745	$86,138		
9 month season													7	74	$3,627	74	$3,627		
12 month season													337	4,718	$232,850	4,718	$232,850		
Data reporting																			
4 month season													3	9	$475	9	$475		
5 month season													44	165	$8,704	165	$8,704		
6 month season													170	765	$40,354	765	$40,354		
7 month season													443	2,326	$122,685	2,326	$122,685		
8 month season													187	1,122	$59,186	1,122	$59,186		
9 month season													7	47	$2,492	47	$2,492		
12 month season													337	3,033	$159,993	3,033	$159,993		
Data validation																			
4 month season													3	12	$619	12	$619		
5 month season													44	220	$11,353	220	$11,353		
6 month season													170	1,020	$52,636	1,020	$52,636		
7 month season													443	3,101	$160,024	3,101	$160,024		
8 month season													187	1,496	$77,200	1,496	$77,200		
9 month season													7	63	$3,251	63	$3,251		
12 month season													337	4,044	$208,687	4,044	$208,687		
Data distribution																			
4 month season													3	4	$200	4	$200		
5 month season													44	73	$3,665	73	$3,665		
6 month season													170	340	$16,991	340	$16,991		
7 month season													443	1,034	$51,657	1,034	$51,657		
8 month season													187	499	$24,921	499	$24,921		
9 month season													7	21	$1,049	21	$1,049		
12 month season													337	1,348	$67,365	1,348	$67,365		
Element # 5 totals														32,357	$1,646,766	32,357	$1,646,766		
6. Quality Assurance																			
Audits																			

Table 6.3, 2009 O3 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
4 month season													3	36	$2,035	36	$2,035		
5 month season													44	660	$37,305	660	$37,305		
6 month season													170	3,060	$172,960	3,060	$172,960		
7 month season													443	9,303	$525,833	9,303	$525,833		
8 month season													187	4,488	$253,675	4,488	$253,675		
9 month season													7	189	$10,683	189	$10,683		
12 month season													337	12,132	$685,737	12,132	$685,737		
Routine calibrations																			
4 month season													3	26	$1,154	26	$1,154		
5 month season													44	477	$21,152	477	$21,152		
6 month season													170	2,210	$98,069	2,210	$98,069		
7 month season													443	6,719	$298,150	6,719	$298,150		
8 month season													187	3,241	$143,835	3,241	$143,835		
9 month season													7	137	$6,057	137	$6,057		
12 month season													337	8,762	$388,816	8,762	$388,816		
Coordination/implementation																			
4 month season													3	4	$228	4	$228		
5 month season													44	59	$4,183	59	$4,183		
6 month season													170	227	$19,392	227	$19,392		
7 month season													443	591	$58,956	591	$58,956		
8 month season													187	249	$28,442	249	$28,442		
9 month season													7	9	$1,198	9	$1,198		
12 month season													337	449	$76,885	449	$76,885		
Training													1,191	5,955	$309,243	5,955	$309,243		
Reporting																			
4 month season													3	6	$341	6	$341		
5 month season													44	110	$6,254	110	$6,254		
6 month season													170	510	$28,996	510	$28,996		
7 month season													443	1,551	$88,154	1,551	$88,154		
8 month season													187	748	$42,527	748	$42,527		
9 month season													7	32	$1,791	32	$1,791		
12 month season													337	2,022	$114,961	2,022	$114,961		
QA plan review (annual)													125	63	$3,261	63	$3,261		
QA plan preparation (RO)	135	15	5	$887	405	$23,936										405	$23,936		
Element #6 totals					405	$23,936								64,023	$3,430,273	64,428	$3,454,209		
7. Supervision																			
Planning/coordination																			
4 month season													3	12	$737	12	$737		
5 month season													44	220	$13,504	220	$13,504		
6 month season													170	1,020	$62,609	1,020	$62,609		
7 month season													443	3,101	$190,344	3,101	$190,344		
8 month season													187	1,496	$91,827	1,496	$91,827		
9 month season													7	63	$3,867	63	$3,867		
12 month season													337	4,044	$248,227	4,044	$248,227		
Supervision/review																			

Table 6.3, 2009 O3 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor O3									Summary Ozone (O3)			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
4 month season													3	30	$1,563	30	$1,563		
5 month season													44	550	$28,661	550	$28,661		
6 month season													170	2,550	$132,883	2,550	$132,883		
7 month season													443	7,753	$403,990	7,753	$403,990		
8 month season													187	3,740	$194,895	3,740	$194,895		
9 month season													7	158	$8,207	158	$8,207		
12 month season													337	10,110	$526,842	10,110	$526,842		
Element #7 totals														34,846	$1,908,158	34,846	$1,908,158		
Summary Totals																			$17,837,489

Table 7.0, Summary of PM-10 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009				Average 2007-2009 PM-10			
	Summary PM-10				Summary PM-10				Summary PM-10							
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design (reporting org)	591	$33,656			591	$34,301			591	$34,996			591	$34,318		
Site selection (reporting org)	197	$8,898			197	$9,068			197	$9,252			197	$9,073		
Element #1 totals	789	$42,554			789	$43,369			789	$44,249			789	$43,391		
2. Site Installation																
Analyzer																
PM-10 sampler				$1,035,173				$896,866				$640,200				$857,413
PM-10 sampler spares				$51,759				$44,843				$32,010				$42,871
PM-10 sampler (continuous)				$475,474				$484,575				$494,405				$484,818
PM-10 sampler (continuous) spares				$23,774				$24,229				$24,720				$24,241
Sampling platform				$291,051				$281,411				$200,984				$257,816
Procurement	865	$39,774			$752	$35,223			532	$25,430			716	$33,476		
Equipment installation																
PM-10 sampler	721	$30,679			$613	$26,580			429	$18,973			587	$25,411		
PM-10 sampler (continuous)	259	$13,319			$259	$13,574			259	$13,849			259	$13,580		
Element #2 totals	1,844	$83,772		$1,877,230	1,623	$75,376		$1,731,925	1,219	$58,253		$1,392,319	1,562	$72,467		$1,667,158
3. Sampling & analysis																
Filter cost																
Filter (1/1) & acceptance testing			$80,962				$70,135				$50,090				$67,062	
Filter (1/2) & acceptance testing			$3,238				$2,805				$2,004				$2,682	
Filter (1/3) & acceptance testing			$29,551				$25,599				$18,283				$24,478	
Filter (1/6) & acceptance testing			$161,316				$139,743				$99,805				$133,621	
Filter tape continuous			$94,554				$96,364				$98,319				$96,413	
Site visits																
Routine site visits (1/1)	9,000	$414,916			$7,650	$359,430			5,355	$256,705			7,335	$343,684		
Routine site visits (1/2)	720	$33,193			$612	$28,754			428	$20,536			587	$27,495		
Routine site visits (1/3)	13,140	$640,976			$11,169	$555,259			7,818	$396,566			10,709	$530,934		
Routine site visits (1/6)	143,460	$6,998,058			$121,941	$6,062,215			85,359	$4,329,633			116,920	$5,796,635		
Routine site visits (continuous)	5,792	$268,156			$5,792	$273,289			5,792	$278,833			5,792	$273,426		
Laboratory service																
Microbalance				$112,928				$115,090				$117,424				$115,147
Laboratory																
PM-10 sampler 1/1	3,600	$153,742			$3,060	$133,183			2,142	$95,119			2,934	$127,348		
PM-10 sampler 1/2	144	$6,150			$122	$5,327			86	$3,805			117	$5,094		
PM-10 sampler 1/3	1,168	$49,881			$993	$43,210			695	$30,861			952	$41,317		
PM-10 sampler 1/6 & collocated	6,376	$272,295			$5,420	$235,881			3,794	$168,466			5,196	$225,547		
Element #3 totals	183,400	$8,837,368	$369,621	$112,928	156,759	$7,696,549	$334,647	$115,090	111,469	$5,580,524	$268,501	$117,424	150,543	$7,371,480	$324,256	$115,147
4. Maintenance																
Spare parts/supplies																
PM-10 sampler 1/1			$658,224				$539,790				$385,518				$527,844	
PM-10 sampler 1/2			$14,105				$12,219				$8,727				$11,683	
PM-10 sampler 1/3			$83,897				$68,696				$49,062				$67,218	
PM-10 sampler 1/6 & collocated			$129,069				$106,057				$75,746				$103,624	
PM-10 continuous			$104,955				$106,964				$109,134				$107,018	
Remedial repairs																
PM-10 sampler 1/1	10,800	$460,757			$8,690	$377,853			6,083	$269,862			8,525	$369,491		
PM-10 sampler 1/2	324	$13,823			$275	$11,974			193	$8,552			264	$11,450		
PM-10 sampler 1/3	1,752	$74,745			$1,408	$61,202			985	$43,710			1,382	$59,886		
PM-10 sampler 1/6 & collocated	4,782	$204,013			$3,856	$167,639			2,699	$119,728			3,779	$163,793		
PM-10 continuous	1,358	$64,959			$1,358	$66,202			1,358	$67,545			1,358	$66,236		

Table 7.0, Summary of PM-10 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009				Average 2007-2009			
	Summary PM-10				Summary PM-10				Summary PM-10				Average 2007-2009 PM-10			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Routine maintenance																
PM-10 sampler 1/1	10,800	$460,757			$8,690	$377,853			6,083	$269,862			8,525	$369,491		
PM-10 sampler 1/2	324	$13,823			$275	$11,974			193	$8,552			264	$11,450		
PM-10 sampler 1/3	1,752	$74,745			$1,408	$61,202			985	$43,710			1,382	$59,886		
PM-10 sampler 1/6 & collocated	4,782	$204,013			$3,856	$167,639			2,699	$119,728			3,779	$163,793		
PM-10 continuous	2,534	$117,626			$2,534	$119,877			2,534	$122,309			2,534	$119,937		
Element #4 totals	39,208	$1,689,259	$990,251		32,350	$1,423,415	$833,726		23,812	$1,073,559	$628,187		31,790	$1,395,411	$817,388	
5. Data Management																
Data acquistion/processing																
PM-10 sampler 1/1	14,400	$885,155			$11,587	$725,889			8,111	$518,430			11,366	$709,824		
PM-10 sampler 1/2	432	$19,916			$367	$17,253			257	$12,322			352	$16,497		
PM-10 sampler 1/3	2,336	$107,694			$1,877	$88,180			1,314	$62,978			1,842	$86,284		
PM-10 sampler 1/6 & collocated	6,376	$293,945			$5,141	$241,537			3,599	$172,506			5,038	$235,996		
PM-10 continuous	2,172	$106,090			$2,172	$108,121			2,172	$110,314			2,172	$108,175		
Data reporting																
PM-10 sampler 1/1	10,800	$556,669			$8,690	$456,508			6,083	$326,038			8,525	$446,405		
PM-10 sampler 1/2	324	$16,700			$275	$14,467			193	$10,332			264	$13,833		
PM-10 sampler 1/3	1,752	$90,304			$1,408	$73,941			985	$52,809			1,382	$72,352		
PM-10 sampler 1/6 & collocated	4,782	$246,481			$3,856	$202,535			2,699	$144,651			3,779	$197,889		
PM-10 continuous	3,620	$161,877			$3,620	$164,976			3,620	$168,322			3,620	$165,058		
Data validation																
PM-10 sampler 1/1	18,000	$930,917			$14,484	$763,417			10,139	$545,232			14,208	$746,522		
PM-10 sampler 1/2	540	$27,928			$459	$24,193			321	$17,278			440	$23,133		
PM-10 sampler 1/3	2,920	$151,015			$2,346	$123,652			1,642	$88,312			2,303	$120,993		
PM-10 sampler 1/6 & collocated	7,970	$412,189			$6,426	$338,699			4,498	$241,899			6,298	$330,929		
PM-10 continuous	3,620	$180,599			$3,620	$184,056			3,620	$187,790			3,620	$184,148		
Data distribution																
PM-10 sampler 1/1	900	$48,897			$2,897	$160,395			2,028	$114,554			1,942	$107,948		
PM-10 sampler 1/2	36	$1,956			$92	$5,083			64	$3,630			64	$3,556		
PM-10 sampler 1/3	292	$15,864			$469	$25,979			328	$18,554			363	$20,133		
PM-10 sampler 1/6 & collocated	1,280	$69,542			$1,285	$71,161			900	$50,823			1,155	$63,842		
PM-10 continuous	1,086	$56,354			$1,086	$57,433			1,086	$58,598			1,086	$57,462		
Element #5 totals	83,638	$4,380,092			72,157	$3,847,474			53,659	$2,905,373			69,818	$3,710,980		
6. Quality Assurance																
Audit/calibration kit																
PM-10 sampler				$2,959				$2,864				$2,045				$2,623
PM-10 sampler (continuous)				$1,945				$1,982				$2,023				$1,983
QA plan preparation (RO)	442	$22,723			$442	$23,158			442	$23,628			442	$23,170		
QA plan review (annual)	69	$3,463			$69	$3,529			69	$3,600			69	$3,531		
Audits																
PM-10 sampler 1/1	5,400	$239,782			$4,590	$207,716			3,213	$148,351			4,401	$198,616		
PM-10 sampler 1/2	216	$9,591			$184	$8,309			129	$5,934			176	$7,945		
PM-10 sampler 1/3	876	$77,796			$745	$67,392			521	$48,132			714	$64,440		
PM-10 sampler 1/6 & collocated	7,970	$424,680			$6,775	$367,888			4,742	$262,745			6,496	$351,771		
PM-10 continuous	2,172	$100,039			$2,172	$101,954			2,172	$104,022			2,172	$102,005		
Reporting																
PM-10 sampler 1/1	1,800	$98,734			$1,530	$85,530			1,071	$61,086			1,467	$81,783		
PM-10 sampler 1/2	72	$3,949			$61	$3,421			43	$2,443			59	$3,271		
PM-10 sampler 1/3	584	$32,034			$496	$27,750			347	$19,819			476	$26,534		
PM-10 sampler 1/6 & collocated	3,188	$174,868			$2,710	$151,483			1,897	$108,189			2,598	$144,847		

Table 7.0, Summary of PM-10 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary PM-10 Labor Hours	2007 Labor Costs	2007 Non-labor O & M	2007 Equip/ Contract $	2008 Summary PM-10 Labor Hours	2008 Labor Costs	2008 Non-labor O & M	2008 Equip/ Contract $	2009 Summary PM-10 Labor Hours	2009 Labor Costs	2009 Non-labor O & M	2009 Equip/ Contract $	Average 2007-2009 PM-10 Labor Hours	Average 2007-2009 PM-10 Labor Costs	Average 2007-2009 PM-10 Non-labor O & M	Average 2007-2009 PM-10 Equip/ Contract $
PM-10 continuous	724	$39,713			$724	$40,473			724	$41,294			724	$40,493		
Training																
PM-10 sampler 1/1	300	$15,437			$255	$13,373			179	$9,551			245	$12,787		
PM-10 sampler 1/2	24	$1,235			$20	$1,070			14	$764			20	$1,023		
PM-10 sampler 1/3	292	$15,025			$248	$13,016			174	$9,296			238	$12,446		
PM-10 sampler 1/6 & collocated	2,560	$131,728			$2,176	$114,112			1,523	$81,499			2,086	$109,113		
PM-10 continuous	905	$45,764			$905	$46,640			905	$47,586			905	$46,664		
Element # 6 totals	27,594	$1,436,560		$4,904	24,101	$1,276,814		$4,846	18,164	$977,939		$4,068	23,286	$1,230,438		$4,606
7. Supervision																
Planning/coordination																
PM-10 sampler 1/1	300	$16,456			$255	$14,255			179	$10,181			245	$13,631		
PM-10 sampler 1/2	24	$1,316			$20	$1,140			14	$814			20	$1,090		
PM-10 sampler 1/3	292	$16,017			$248	$13,875			174	$9,909			238	$13,267		
PM-10 sampler 1/6 & collocated	2,560	$140,421			$2,176	$121,643			1,523	$86,877			2,086	$116,314		
PM-10 continuous	3,258	$181,923			$3,258	$185,405			3,258	$189,166			3,258	$185,498		
Supervision/review																
PM-10 sampler 1/1	450	$26,799			$383	$23,215			268	$16,580			367	$22,198		
PM-10 sampler 1/2	36	$2,144			$31	$1,857			21	$1,326			29	$1,776		
PM-10 sampler 1/3	438	$26,084			$372	$22,596			261	$16,138			357	$21,606		
PM-10 sampler 1/6 & collocated	3,840	$228,686			$3,264	$198,104			2,285	$141,486			3,130	$189,425		
PM-10 continuous	1,086	$59,380			$1,086	$60,517			1,086	$61,744			1,086	$60,547		
Element #7 totals	12,284	$699,226			11,093	$642,608			9,068	$534,223			10,815	$625,352		
Summary totals				$20,523,766				$18,025,837				$14,584,619				$17,378,074

Table 7.1, 2007 PM-10 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (reporting org)	138	30	7	$1,707	591	$33,656										591	$33,656		
Site selection (reporting org)	138	10	7	$451	197	$8,898										197	$8,898		
Element #1 totals					789	$42,554										789	$42,554		
2. Site Installation																			
Analyzer																			
PM-10 sampler	1,261		7	$5,746		$1,035,173													$1,035,173
PM-10 sampler spares	63		7	$5,746		$51,759													$51,759
PM-10 sampler (continuous)	181		7	$18,388		$475,474													$475,474
PM-10 sampler (continuous) spares	9		7	$18,388		$23,774													$23,774
Sampling platform	975		7	$2,090		$291,051													$291,051
Procurement	1,514	4	7	$184	865	$39,774										865	$39,774		
Equipment installation																			
PM-10 sampler	1,261	4	7	$170	721	$30,679										721	$30,679		
PM-10 sampler (continuous)	181	10	7	$515	259	$13,319										259	$13,319		
Element #2 totals					1,844	$1,961,002										1,844	$83,772		$1,877,230
3. Sampling & analysis																			
Filter cost																			
Filter (1/1) & acceptance testing	75												75					$80,962	
Filter (1/2) & acceptance testing	6												6					$3,238	
Filter (1/3) & acceptance testing	73												73					$29,551	
Filter (1/6) & acceptance testing	797												797					$161,316	
Filter tape continuous	181												181					$94,554	
Site visits																			
Routine site visits (1/1)													75	9,000	$414,916	9,000	$414,916		
Routine site visits (1/2)													6	720	$33,193	720	$33,193		
Routine site visits (1/3)													73	13,140	$640,976	13,140	$640,976		
Routine site visits (1/6)													797	143,460	$6,998,058	143,460	$6,998,058		
Routine site visits (continuous)													181	5,792	$268,156	5,792	$268,156		
Laboratory service																			
Microbalance	1,261		7	$90		$112,928													$112,928
Laboratory																			
PM-10 sampler 1/1													75	3,600	$153,742	3,600	$153,742		
PM-10 sampler 1/2													6	144	$6,150	144	$6,150		
PM-10 sampler 1/3													73	1,168	$49,881	1,168	$49,881		
PM-10 sampler 1/6 & collocated													797	6,376	$272,295	6,376	$272,295		
Element #3 totals						$112,928								183,400	$8,837,368	183,400	$8,837,368	$369,621	$112,928
4. Maintenance																			
Spare parts/supplies																			
PM-10 sampler 1/1													300					$658,224	
PM-10 sampler 1/2													18					$14,105	
PM-10 sampler 1/3													146					$83,897	
PM-10 sampler 1/6 & collocated													797					$129,069	
PM-10 continuous													181					$104,955	
Remedial repairs																			
PM-10 sampler 1/1													300	10,800	$460,757	10,800	$460,757		
PM-10 sampler 1/2													18	324	$13,823	324	$13,823		
PM-10 sampler 1/3													146	1,752	$74,745	1,752	$74,745		
PM-10 sampler 1/6 & collocated													797	4,782	$204,013	4,782	$204,013		
PM-10 continuous													181	1,358	$64,959	1,358	$64,959		

Table 7.1, 2007 PM-10 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Routine maintenance																			
PM-10 sampler 1/1													300	10,800	$460,757	10,800	$460,757		
PM-10 sampler 1/2													18	324	$13,823	324	$13,823		
PM-10 sampler 1/3													146	1,752	$74,745	1,752	$74,745		
PM-10 sampler 1/6 & collocated													797	4,782	$204,013	4,782	$204,013		
PM-10 continuous													181	2,534	$117,626	2,534	$117,626		
Element #4 totals														39,208	$1,689,259	39,208	$1,689,259	$990,251	
5. Data Management																			
Data acquistion/processing																			
PM-10 sampler 1/1													300	14,400	$885,155	14,400	$885,155		
PM-10 sampler 1/2													18	432	$19,916	432	$19,916		
PM-10 sampler 1/3													146	2,336	$107,694	2,336	$107,694		
PM-10 sampler 1/6 & collocated													797	6,376	$293,945	6,376	$293,945		
PM-10 continuous													181	2,172	$106,090	2,172	$106,090		
Data reporting																			
PM-10 sampler 1/1													300	10,800	$556,669	10,800	$556,669		
PM-10 sampler 1/2													18	324	$16,700	324	$16,700		
PM-10 sampler 1/3													146	1,752	$90,304	1,752	$90,304		
PM-10 sampler 1/6 & collocated													797	4,782	$246,481	4,782	$246,481		
PM-10 continuous													181	3,620	$161,877	3,620	$161,877		
Data validation																			
PM-10 sampler 1/1													300	18,000	$930,917	18,000	$930,917		
PM-10 sampler 1/2													18	540	$27,928	540	$27,928		
PM-10 sampler 1/3													146	2,920	$151,015	2,920	$151,015		
PM-10 sampler 1/6 & collocated													797	7,970	$412,189	7,970	$412,189		
PM-10 continuous													181	3,620	$180,599	3,620	$180,599		
Data distribution																			
PM-10 sampler 1/1													75	900	$48,897	900	$48,897		
PM-10 sampler 1/2													6	36	$1,956	36	$1,956		
PM-10 sampler 1/3													73	292	$15,864	292	$15,864		
PM-10 sampler 1/6 & collocated													640	1,280	$69,542	1,280	$69,542		
PM-10 continuous													181	1,086	$56,354	1,086	$56,354		
Element #5 totals														83,638	$4,380,092	83,638	$4,380,092		
6. Quality Assurance																			
Audit/calibration kit																			
PM-10 sampler	793		7	$131		$2,959													$2,959
PM-10 sampler (continuous)	181		7	$376		$1,945													$1,945
QA plan preparation (RO)	138	16	5	$823	442	$22,723										442	$22,723		
QA plan review (annual)													138	69	$3,463	69	$3,463		
Audits																			
PM-10 sampler 1/1													75	5,400	$239,782	5,400	$239,782		
PM-10 sampler 1/2													6	216	$9,591	216	$9,591		
PM-10 sampler 1/3													73	876	$77,796	876	$77,796		
PM-10 sampler 1/6 & collocated													797	7,970	$424,680	7,970	$424,680		
PM-10 continuous													181	2,172	$100,039	2,172	$100,039		
Reporting																			
PM-10 sampler 1/1													75	1,800	$98,734	1,800	$98,734		
PM-10 sampler 1/2													6	72	$3,949	72	$3,949		
PM-10 sampler 1/3													73	584	$32,034	584	$32,034		
PM-10 sampler 1/6 & collocated													797	3,188	$174,868	3,188	$174,868		

Table 7.1, 2007 PM-10 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-10 continuous													181	724	$39,713	724	$39,713		
Training																			
PM-10 sampler 1/1													75	300	$15,437	300	$15,437		
PM-10 sampler 1/2													6	24	$1,235	24	$1,235		
PM-10 sampler 1/3													73	292	$15,025	292	$15,025		
PM-10 sampler 1/6 & collocated													640	2,560	$131,728	2,560	$131,728		
PM-10 continuous													181	905	$45,764	905	$45,764		
Element # 6 totals					442	$27,627								27,152	$1,413,837	27,594	$1,436,560		$4,904
7. Supervision																			
Planning/coordination																			
PM-10 sampler 1/1													75	300	$16,456	300	$16,456		
PM-10 sampler 1/2													6	24	$1,316	24	$1,316		
PM-10 sampler 1/3													73	292	$16,017	292	$16,017		
PM-10 sampler 1/6 & collocated													640	2,560	$140,421	2,560	$140,421		
PM-10 continuous													181	3,258	$181,923	3,258	$181,923		
Supervision/review																			
PM-10 sampler 1/1													75	450	$26,799	450	$26,799		
PM-10 sampler 1/2													6	36	$2,144	36	$2,144		
PM-10 sampler 1/3													73	438	$26,084	438	$26,084		
PM-10 sampler 1/6 & collocated													640	3,840	$228,686	3,840	$228,686		
PM-10 continuous													181	1,086	$59,380	1,086	$59,380		
Element #7 totals														12,284	$699,226	12,284	$699,226		
Summary Totals																			$20,523,766

Table 7.2, 2008 PM-10 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (reporting org)	138	30	7	$1,740	591	$34,301										591	$34,301		
Site selection (reporting org)	138	10	7	$460	197	$9,068										197	$9,068		
Element #1 totals					789	$43,369										789	$43,369		
2. Site Installation																			
Analyzer																			
PM-10 sampler	1,072		7	$5,856		$896,866													$896,866
PM-10 sampler spares	54		7	$5,856		$44,843													$44,843
PM-10 sampler (continuous)	181		7	$18,740		$484,575													$484,575
PM-10 sampler (continuous) spares	9		7	$18,740		$24,229													$24,229
Sampling platform	925		7	$2,130		$281,411													$281,411
Procurement	1,316	4	7	$187	752	$35,223										752	$35,223		
Equipment installation																			
PM-10 sampler	1,072	4	7	$174	613	$26,580										613	$26,580		
PM-10 sampler (continuous)	181	10	7	$525	259	$13,574										259	$13,574		
Element #2 totals					1,623	$1,807,301										1,623	$75,376		$1,731,925
3. Sampling & analysis																			
Filter cost																			
Filter (1/1) & acceptance testing	64												64					$70,135	
Filter (1/2) & acceptance testing	5												5					$2,805	
Filter (1/3) & acceptance testing	62												62					$25,599	
Filter (1/6) & acceptance testing	677												677					$139,743	
Filter tape continuous	181												181					$96,364	
Site visits																			
Routine site visits (1/1)													64	7,650	$359,430	7,650	$359,430		
Routine site visits (1/2)													5	612	$28,754	612	$28,754		
Routine site visits (1/3)													62	11,169	$555,259	11,169	$555,259		
Routine site visits (1/6)													677	121,941	$6,062,215	121,941	$6,062,215		
Routine site visits (continuous)													181	5,792	$273,289	5,792	$273,289		
Laboratory service																			
Microbalance	1,261		7	$91		$115,090													$115,090
Laboratory																			
PM-10 sampler 1/1													64	3,060	$133,183	3,060	$133,183		
PM-10 sampler 1/2													5	122	$5,327	122	$5,327		
PM-10 sampler 1/3													62	993	$43,210	993	$43,210		
PM-10 sampler 1/6 & collocated													677	5,420	$235,881	5,420	$235,881		
Element #3 totals						$115,090								156,759	$7,696,549	156,759	$7,696,549	$334,647	$115,090
4. Maintenance																			
Spare parts/supplies																			
PM-10 sampler 1/1													241					$539,790	
PM-10 sampler 1/2													15					$12,219	
PM-10 sampler 1/3													117					$68,696	
PM-10 sampler 1/6 & collocated													643					$106,057	
PM-10 continuous													181					$106,964	
Remedial repairs																			
PM-10 sampler 1/1													241	8,690	$377,853	8,690	$377,853		
PM-10 sampler 1/2													15	275	$11,974	275	$11,974		

Table 7.2, 2008 PM-10 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-10 sampler 1/3													117	1,408	$61,202	1,408	$61,202		
PM-10 sampler 1/6 & collocated													643	3,856	$167,639	3,856	$167,639		
PM-10 continuous													181	1,358	$66,202	1,358	$66,202		
Routine maintenance																			
PM-10 sampler 1/1													241	8,690	$377,853	8,690	$377,853		
PM-10 sampler 1/2													15	275	$11,974	275	$11,974		
PM-10 sampler 1/3													117	1,408	$61,202	1,408	$61,202		
PM-10 sampler 1/6 & collocated													643	3,856	$167,639	3,856	$167,639		
PM-10 continuous													181	2,534	$119,877	2,534	$119,877		
Element #4 totals														32,350	$1,423,415	32,350	$1,423,415	$833,726	
5. Data Management																			
Data acquistion/processing																			
PM-10 sampler 1/1													241	11,587	$725,889	11,587	$725,889		
PM-10 sampler 1/2													15	367	$17,253	367	$17,253		
PM-10 sampler 1/3													117	1,877	$88,180	1,877	$88,180		
PM-10 sampler 1/6 & collocated													643	5,141	$241,537	5,141	$241,537		
PM-10 continuous													181	2,172	$108,121	2,172	$108,121		
Data reporting																			
PM-10 sampler 1/1													241	8,690	$456,508	8,690	$456,508		
PM-10 sampler 1/2													15	275	$14,467	275	$14,467		
PM-10 sampler 1/3													117	1,408	$73,941	1,408	$73,941		
PM-10 sampler 1/6 & collocated													643	3,856	$202,535	3,856	$202,535		
PM-10 continuous													181	3,620	$164,976	3,620	$164,976		
Data validation																			
PM-10 sampler 1/1													241	14,484	$763,417	14,484	$763,417		
PM-10 sampler 1/2													15	459	$24,193	459	$24,193		
PM-10 sampler 1/3													117	2,346	$123,652	2,346	$123,652		
PM-10 sampler 1/6 & collocated													643	6,426	$338,699	6,426	$338,699		
PM-10 continuous													181	3,620	$184,056	3,620	$184,056		
Data distribution																			
PM-10 sampler 1/1													241	2,897	$160,395	2,897	$160,395		
PM-10 sampler 1/2													15	92	$5,083	92	$5,083		
PM-10 sampler 1/3													117	469	$25,979	469	$25,979		
PM-10 sampler 1/6 & collocated													643	1,285	$71,161	1,285	$71,161		
PM-10 continuous													181	1,086	$57,433	1,086	$57,433		
Element #5 totals														72,157	$3,847,474	72,157	$3,847,474		
6. Quality Assurance																			
Audit/calibration kit																			
PM-10 sampler	753		7	$133		$2,864													$2,864
PM-10 sampler (continuous)	181		7	$383		$1,982													$1,982
QA plan preparation (RO)	138	16	5	$839	442	$23,158										442	$23,158		
QA plan review (annual)													138	69	$3,529	69	$3,529		
Audits																			
PM-10 sampler 1/1													64	4,590	$207,716	4,590	$207,716		
PM-10 sampler 1/2													5	184	$8,309	184	$8,309		
PM-10 sampler 1/3													62	745	$67,392	745	$67,392		
PM-10 sampler 1/6 & collocated													677	6,775	$367,888	6,775	$367,888		

Table 7.2, 2008 PM-10 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary, PM-10			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-10 continuous													181	2,172	$101,954	2,172	$101,954		
Reporting																			
PM-10 sampler 1/1													64	1,530	$85,530	1,530	$85,530		
PM-10 sampler 1/2													5	61	$3,421	61	$3,421		
PM-10 sampler 1/3													62	496	$27,750	496	$27,750		
PM-10 sampler 1/6 & collocated													677	2,710	$151,483	2,710	$151,483		
PM-10 continuous													181	724	$40,473	724	$40,473		
Training																			
PM-10 sampler 1/1													64	255	$13,373	255	$13,373		
PM-10 sampler 1/2													5	20	$1,070	20	$1,070		
PM-10 sampler 1/3													62	248	$13,016	248	$13,016		
PM-10 sampler 1/6 & collocated													544	2,176	$114,112	2,176	$114,112		
PM-10 continuous													181	905	$46,640	905	$46,640		
Element # 6 totals					442	$28,004								23,660	$1,253,655	24,101	$1,276,814		$4,846
7. Supervision																			
Planning/coordination																			
PM-10 sampler 1/1													64	255	$14,255	255	$14,255		
PM-10 sampler 1/2													5	20	$1,140	20	$1,140		
PM-10 sampler 1/3													62	248	$13,875	248	$13,875		
PM-10 sampler 1/6 & collocated													544	2,176	$121,643	2,176	$121,643		
PM-10 continuous													181	3,258	$185,405	3,258	$185,405		
Supervision/review																			
PM-10 sampler 1/1													64	383	$23,215	383	$23,215		
PM-10 sampler 1/2													5	31	$1,857	31	$1,857		
PM-10 sampler 1/3													62	372	$22,596	372	$22,596		
PM-10 sampler 1/6 & collocated													544	3,264	$198,104	3,264	$198,104		
PM-10 continuous													181	1,086	$60,517	1,086	$60,517		
Element #7 totals														11,093	$642,608	11,093	$642,608		
[redacted]																			
Summary totals																			$18,025,837

Table 7.3, 2009 PM-10 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (reporting org)	138	30	7	$1,775	591	$34,996										591	$34,996		
Site selection (reporting org)	138	10	7	$469	197	$9,252										197	$9,252		
Element #1 totals					789	$44,249										789	$44,249		
2. Site Installation																			
Analyzer																			
PM-10 sampler	750		7	$5,975		$640,200													$640,200
PM-10 sampler spares	38		7	$5,975		$32,010													$32,010
PM-10 sampler (continuous)	181		7	$19,121		$494,405													$494,405
PM-10 sampler (continuous) spares	9		7	$19,121		$24,720													$24,720
Sampling platform	648		7	$2,173		$200,984													$200,984
Procurement	931	4	7	$191	532	$25,430										532	$25,430		
Equipment installation																			
PM-10 sampler	750	4	7	$177	429	$18,973										429	$18,973		
PM-10 sampler (continuous)	181	10	7	$536	259	$13,849										259	$13,849		
Element #2 totals					1,219	$1,450,572										1,219	$58,253		$1,392,319
3. Sampling & analysis																			
Filter cost																			
Filter (1/1) & acceptance testing	45												45					$50,090	
Filter (1/2) & acceptance testing	4												4					$2,004	
Filter (1/3) & acceptance testing	43												43					$18,283	
Filter (1/6) & acceptance testing	474												474					$99,805	
Filter tape continuous	181												181					$98,319	
Site visits																			
Routine site visits (1/1)													45	5,355	$256,705	5,355	$256,705		
Routine site visits (1/2)													4	428	$20,536	428	$20,536		
Routine site visits (1/3)													43	7,818	$396,566	7,818	$396,566		
Routine site visits (1/6)													474	85,359	$4,329,633	85,359	$4,329,633		
Routine site visits (continuous)													181	5,792	$278,833	5,792	$278,833		
Laboratory service																			
Microbalance	1,261		7	$93		$117,424													$117,424
Laboratory																			
PM-10 sampler 1/1													45	2,142	$95,119	2,142	$95,119		
PM-10 sampler 1/2													4	86	$3,805	86	$3,805		
PM-10 sampler 1/3													43	695	$30,861	695	$30,861		
PM-10 sampler 1/6 & collocated													474	3,794	$168,466	3,794	$168,466		
Element #3 totals						$117,424								111,469	$5,580,524	111,469	$5,580,524	$268,501	$117,424
4. Maintenance																			
Spare parts/supplies																			
PM-10 sampler 1/1													169					$385,518	
PM-10 sampler 1/2													11					$8,727	
PM-10 sampler 1/3													82					$49,062	
PM-10 sampler 1/6 & collocated													450					$75,746	
PM-10 continuous													181					$109,134	
Remedial repairs																			
PM-10 sampler 1/1													169	6,083	$269,862	6,083	$269,862		
PM-10 sampler 1/2													11	193	$8,552	193	$8,552		
PM-10 sampler 1/3													82	985	$43,710	985	$43,710		

Table 7.3, 2009 PM-10 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-10 sampler 1/6 & collocated													450	2,699	$119,728	2,699	$119,728		
PM-10 continuous													181	1,358	$67,545	1,358	$67,545		
Routine maintenance																			
PM-10 sampler 1/1													169	6,083	$269,862	6,083	$269,862		
PM-10 sampler 1/2													11	193	$8,552	193	$8,552		
PM-10 sampler 1/3													82	985	$43,710	985	$43,710		
PM-10 sampler 1/6 & collocated													450	2,699	$119,728	2,699	$119,728		
PM-10 continuous													181	2,534	$122,309	2,534	$122,309		
Element #4 totals														23,812	$1,073,559	23,812	$1,073,559	$628,187	
5. Data Management																			
Data acquistion/processing																			
PM-10 sampler 1/1													169	8,111	$518,430	8,111	$518,430		
PM-10 sampler 1/2													11	257	$12,322	257	$12,322		
PM-10 sampler 1/3													82	1,314	$62,978	1,314	$62,978		
PM-10 sampler 1/6 & collocated													450	3,599	$172,506	3,599	$172,506		
PM-10 continuous													181	2,172	$110,314	2,172	$110,314		
Data reporting																			
PM-10 sampler 1/1													169	6,083	$326,038	6,083	$326,038		
PM-10 sampler 1/2													11	193	$10,332	193	$10,332		
PM-10 sampler 1/3													82	985	$52,809	985	$52,809		
PM-10 sampler 1/6 & collocated													450	2,699	$144,651	2,699	$144,651		
PM-10 continuous													181	3,620	$168,322	3,620	$168,322		
Data validation																			
PM-10 sampler 1/1													169	10,139	$545,232	10,139	$545,232		
PM-10 sampler 1/2													11	321	$17,278	321	$17,278		
PM-10 sampler 1/3													82	1,642	$88,312	1,642	$88,312		
PM-10 sampler 1/6 & collocated													450	4,498	$241,899	4,498	$241,899		
PM-10 continuous													181	3,620	$187,790	3,620	$187,790		
Data distribution																			
PM-10 sampler 1/1													169	2,028	$114,554	2,028	$114,554		
PM-10 sampler 1/2													11	64	$3,630	64	$3,630		
PM-10 sampler 1/3													82	328	$18,554	328	$18,554		
PM-10 sampler 1/6 & collocated													450	900	$50,823	900	$50,823		
PM-10 continuous													181	1,086	$58,598	1,086	$58,598		
Element #5 totals														53,659	$2,905,373	53,659	$2,905,373		
6. Quality Assurance																			
Audit/calibration kit																			
PM-10 sampler	527		7	$136		$2,045													$2,045
PM-10 sampler (continuous)	181		7	$391		$2,023													$2,023
QA plan preparation (RO)	138	16	5	$856	442	$23,628										442	$23,628		
QA plan review (annual)													138	69	$3,600	69	$3,600		
Audits																			
PM-10 sampler 1/1													45	3,213	$148,351	3,213	$148,351		
PM-10 sampler 1/2													4	129	$5,934	129	$5,934		
PM-10 sampler 1/3													43	521	$48,132	521	$48,132		
PM-10 sampler 1/6 & collocated													474	4,742	$262,745	4,742	$262,745		
PM-10 continuous													181	2,172	$104,022	2,172	$104,022		
Reporting																			

Table 7.3, 2009 PM-10 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-10			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-10 sampler 1/1													45	1,071	$61,086	1,071	$61,086		
PM-10 sampler 1/2													4	43	$2,443	43	$2,443		
PM-10 sampler 1/3													43	347	$19,819	347	$19,819		
PM-10 sampler 1/6 & collocated													474	1,897	$108,189	1,897	$108,189		
PM-10 continuous													181	724	$41,294	724	$41,294		
Training																			
PM-10 sampler 1/1													45	179	$9,551	179	$9,551		
PM-10 sampler 1/2													4	14	$764	14	$764		
PM-10 sampler 1/3													43	174	$9,296	174	$9,296		
PM-10 sampler 1/6 & collocated													381	1,523	$81,499	1,523	$81,499		
PM-10 continuous													181	905	$47,586	905	$47,586		
Element # 6 totals					442	$27,696								17,723	$954,311	18,164	$977,939		$4,068
7. Supervision																			
Planning/coordination																			
PM-10 sampler 1/1													45	179	$10,181	179	$10,181		
PM-10 sampler 1/2													4	14	$814	14	$814		
PM-10 sampler 1/3													43	174	$9,909	174	$9,909		
PM-10 sampler 1/6 & collocated													381	1,523	$86,877	1,523	$86,877		
PM-10 continuous													181	3,258	$189,166	3,258	$189,166		
Supervision/review																			
PM-10 sampler 1/1													45	268	$16,580	268	$16,580		
PM-10 sampler 1/2													4	21	$1,326	21	$1,326		
PM-10 sampler 1/3													43	261	$16,138	261	$16,138		
PM-10 sampler 1/6 & collocated													381	2,285	$141,486	2,285	$141,486		
PM-10 continuous													181	1,086	$61,744	1,086	$61,744		
Element #7 totals														9,068	$534,223	9,068	$534,223		
[redacted]																			
Summary totals																			$1,356,649

Table 8.0, Summary of PM-2.5 2007-2009 Monitoring Costs

Aug 2006

	2007 Summary PM-2.5				2008 Summary PM-2.5				2009 Summary PM-2.5				Average 2007-2009 PM-2.5			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design (RO)	326	$18,513			326	$18,867			326	$19,250			326	$18,876		
Site selection (RO)	130	$6,761			130	$6,890			130	$7,030			130	$6,894		
Element #1 totals	456	$25,273			456	$25,757			456	$26,280			456	$25,770		
2. Site Installation																
Analyzer																
PM-2.5 sampler (sequential)				$1,260,924				$1,285,061				$1,311,130				$1,285,705
PM-2.5 sampler (sequential) spares				$189,139				$192,759				$196,669				$192,856
PM-2.5 sampler (single channel)				$150,451				$153,331				$156,442				$153,408
PM-2.5 sampler (single chan) spare				$22,568				$23,000				$23,466				$23,011
PM-2.5 sampler (sequential) coll				$262,693				$267,721				$273,152				$267,855
PM-2.5 sampler (single channel) coll				$31,344				$31,944				$32,592				$31,960
PM-2.5 sampler (seasonal)				$27,911				$28,445				$29,022				$28,460
PM-2.5 sampler (continuous)				$1,469,496				$1,497,626				$1,528,006				$1,498,376
PM-2.5 sampler (continuous) spares				$220,424				$224,644				$229,201				$224,756
Speciation sampler (RTI, CA, OR)				$471,056				$480,073				$489,811				$480,313
Data acquisition (laptop/PDA)				$65,016				$66,261				$67,605				$66,294
Sampling platform				$516,430				$526,315				$536,992				$526,579
Procurement	4,886	$238,321			4,886	$242,883			4,886	$247,810			4,886	$243,004		
Equipment installation																
Installation (single channel)	199	$9,090			199	$9,264			199	$9,452			199	$9,268		
Installation (sequential)	1,061	$48,479			1,061	$49,407			1,061	$50,409			1,061	$49,431		
PM-2.5 sampler (seasonal)	19	$888			19	$905			19	$923			19	$906		
Installation (continuous)	769	$29,069			769	$29,625			769	$30,226			769	$29,640		
Installation (speciation)	451	$20,962			451	$21,363			451	$21,797			451	$21,374		
Element #2 totals	7,384	$346,808		$4,687,452	7,384	$353,447		$4,777,181	7,384	$360,617		$4,874,089	7,384	$353,624		$4,779,574
3. Sampling & analysis																
Filter (1/1) & acceptance testing			$117,540				$119,790				$122,220				$119,850	
Filter (1/3) & acceptance testing			$226,735				$231,075				$235,762				$231,191	
Filter (1/6) & acceptance testing			$25,389				$25,875				$26,400				$25,888	
Filter (1/12) & acceptance testing			$16,749				$17,070				$17,416				$17,079	
Filter (seasonal) & acceptance testin			$6,994				$7,128				$7,272				$7,131	
Speciation sampling national contract				$7,282,329				$7,422,061				$7,572,380				$7,425,590
Routine site visits (1/1)	22,500	$1,016,590			22,500	$1,036,050			22,500	$1,057,067			22,500	$1,036,569		
Routine site visits (1/3)	57,870	$2,614,671			57,870	$2,664,722			57,870	$2,718,777			57,870	$2,666,056		
Routine site visits (1/6)	12,960	$585,556			12,960	$596,765			12,960	$608,871			12,960	$597,064		
Routine site visits (1/12)	8,550	$386,304			8,550	$393,699			8,550	$401,686			8,550	$393,896		
Routine site visits (seasonal)	527	$34,564			527	$35,226			527	$35,940			527	$35,243		
Routine site visits (continuous)	17,216	$797,061			17,216	$812,319			17,216	$828,797			17,216	$812,726		
Routine site visits (speciation)	47,340	$2,309,271			47,340	$2,353,476			47,340	$2,401,218			47,340	$2,354,655		
Laboratory service																
Microbalance				$501,056				$510,648				$521,006				$510,903
Clean room for weighing				$1,276,149				$1,300,577				$1,326,960				$1,301,229
Laboratory																
PM-2.5 sampler (sequential) 1/1	240	$1,425,368			240	$1,452,653			240	$1,482,121			240	$1,453,381		
PM-2.5 sampler (sequential) 1/3	120	$2,444,032			120	$2,490,816			120	$2,541,344			120	$2,492,064		
PM-2.5 sampler (single channel) 1/6	40	$273,671			40	$278,909			40	$284,567			40	$279,049		
PM-2.5 sampler (collocated) 1/12	20	$180,547			20	$184,003			20	$187,735			20	$184,095		
PM-2.5 sampler (seasonal)	140	$113,079			140	$115,244			140	$117,582			140	$115,302		
Element #3 totals	167,523	$12,180,715	$393,406	$9,059,534	167,523	$12,413,883	$400,937	$9,233,286	167,523	$12,665,705	$409,070	$9,420,346	167,523	$12,420,101	$401,138	$9,237,722

Table 8.0, Summary of PM-2.5 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary PM-2.5 Labor Hours	2007 Summary PM-2.5 Labor Costs	2007 Summary PM-2.5 Non-labor O & M	2007 Summary PM-2.5 Equip/ Contract $	2008 Summary PM-2.5 Labor Hours	2008 Summary PM-2.5 Labor Costs	2008 Summary PM-2.5 Non-labor O & M	2008 Summary PM-2.5 Equip/ Contract $	2009 Summary PM-2.5 Labor Hours	2009 Summary PM-2.5 Labor Costs	2009 Summary PM-2.5 Non-labor O & M	2009 Summary PM-2.5 Equip/ Contract $	Average 2007-2009 PM-2.5 Labor Hours	Average 2007-2009 PM-2.5 Labor Costs	Average 2007-2009 PM-2.5 Non-labor O & M	Average 2007-2009 PM-2.5 Equip/ Contract $
4. Maintenance																
Spare parts/supplies																
PM-2.5 sampler (sequential)			$290,872				$296,440				$302,454				$296,589	
PM-2.5 sampler (single channel)			$45,449				$46,319				$47,258				$46,342	
PM-2.5 sampler (seasonal)			$4,884				$4,978				$5,079				$4,980	
PM-2.5 sampler (continuous)			$87,126				$88,794				$90,595				$88,838	
PM-2.5 sampler (speciation)			$137,391				$140,021				$142,862				$140,091	
Remedial repairs																
PM-2.5 sampler (sequential)	12,992	$623,436			12,992	$635,370			12,992	$648,259			12,992	$635,689		
PM-2.5 sampler (single channel)	1,392	$66,719			1,392	$67,996			1,392	$69,375			1,392	$68,030		
PM-2.5 sampler (seasonal)	238	$11,421			238	$11,639			238	$11,875			238	$11,645		
PM-2.5 sampler (continuous)	5,918	$309,718			5,918	$315,647			5,918	$322,050			5,918	$315,805		
PM-2.5 sampler (speciation)	3,682	$190,699			3,682	$194,349			3,682	$198,292			3,682	$194,447		
Routine maintenance																
PM-2.5 sampler (sequential)	12,992	$718,455			12,992	$732,208			12,992	$747,061			12,992	$732,574		
PM-2.5 sampler (single channel)	1,392	$100,715			1,392	$102,642			1,392	$104,725			1,392	$102,694		
PM-2.5 sampler (seasonal)	238	$13,161			238	$13,413			238	$13,685			238	$13,420		
PM-2.5 sampler (continuous)	7,532	$349,628			7,532	$356,320			7,532	$363,549			7,532	$356,499		
PM-2.5 sampler (speciation)	4,208	$191,523			4,208	$195,190			4,208	$199,149			4,208	$195,287		
Element #4 totals	50,584	$2,575,475	$565,723		50,584	$2,624,776	$576,552		50,584	$2,678,021	$588,248		50,584	$2,626,090	$576,841	
5. Data Management																
Data acquistion/processing																
PM-2.5 sampler (sequential) 1/1	15,000	$696,620			15,000	$709,955			15,000	$724,357			15,000	$710,311		
PM-2.5 sampler (sequential) 1/3	38,580	$1,194,472			38,580	$1,217,337			38,580	$1,242,031			38,580	$1,217,947		
PM-2.5 sampler (single channel) 1/6	2,592	$128,786			2,592	$131,252			2,592	$133,914			2,592	$131,317		
PM-2.5 sampler (collocated) 1/12	935	$87,721			935	$89,401			935	$91,214			935	$89,445		
PM-2.5 sampler (seasonal)	765	$47,370			765	$48,277			765	$49,256			765	$48,301		
PM-2.5 sampler (continuous)	8,608	$445,747			8,608	$454,280			8,608	$463,495			8,608	$454,507		
Data reporting																
PM-2.5 sampler (sequential) 1/1	3,750	$173,959			3,750	$177,289			3,750	$180,886			3,750	$177,378		
PM-2.5 sampler (sequential) 1/3	9,645	$298,282			9,645	$303,992			9,645	$310,159			9,645	$304,144		
PM-2.5 sampler (single channel) 1/6	576	$26,780			576	$27,293			576	$27,847			576	$27,307		
PM-2.5 sampler (collocated) 1/12	935	$21,345			935	$21,754			935	$22,195			935	$21,765		
PM-2.5 sampler (seasonal)	383	$11,829			383	$12,056			383	$12,300			383	$12,062		
PM-2.5 sampler (continuous)	6,456	$327,706			6,456	$333,979			6,456	$340,754			6,456	$334,146		
Data validation																
PM-2.5 sampler (sequential) 1/1	7,875	$548,520			7,875	$559,020			7,875	$570,360			7,875	$559,300		
PM-2.5 sampler (sequential) 1/3	40,509	$940,529			40,509	$958,533			40,509	$977,977			40,509	$959,013		
PM-2.5 sampler (single channel) 1/6	1,728	$87,713			1,728	$89,392			1,728	$91,205			1,728	$89,437		
PM-2.5 sampler (collocated) 1/12	935	$67,646			935	$68,940			935	$70,339			935	$68,975		
PM-2.5 sampler (seasonal)	1,071	$37,299			1,071	$38,013			1,071	$38,784			1,071	$38,032		
PM-2.5 sampler (continuous)	9,146	$476,944			9,146	$486,074			9,146	$495,934			9,146	$486,317		
Data distribution																
PM-2.5 sampler (sequential) 1/1	2,250	$164,556			2,250	$167,706			2,250	$171,108			2,250	$167,790		
PM-2.5 sampler (sequential) 1/3	11,574	$282,159			11,574	$287,560			11,574	$293,393			11,574	$287,704		
PM-2.5 sampler (single channel) 1/6	288	$15,647			288	$15,946			288	$16,270			288	$15,954		
PM-2.5 sampler (collcoated) 1/12	935	$19,183			935	$19,550			935	$19,946			935	$19,560		
PM-2.5 sampler (seasonal)	306	$11,190			306	$11,404			306	$11,635			306	$11,410		
PM-2.5 sampler (continuous)	2,690	$145,585			2,690	$148,371			2,690	$151,381			2,690	$148,446		
Element #5 totals	167,532	$6,257,588			167,532	$6,377,374			167,532	$6,506,742			167,532	$6,380,568		

Table 8.0, Summary of PM-2.5 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary PM-2.5 Labor Hours	2007 Labor Costs	2007 Non-labor O & M	2007 Equip/ Contract $	2008 Summary PM-2.5 Labor Hours	2008 Labor Costs	2008 Non-labor O & M	2008 Equip/ Contract $	2009 Summary PM-2.5 Labor Hours	2009 Labor Costs	2009 Non-labor O & M	2009 Equip/ Contract $	Average 2007-2009 PM-2.5 Labor Hours	Average 2007-2009 PM-2.5 Labor Costs	Average 2007-2009 PM-2.5 Non-labor O & M	Average 2007-2009 PM-2.5 Equip/ Contract $
6. Quality Assurance																
Audit/calibration kit																
PM-2.5 Filter based sampler				$4,951				$5,045				$5,148				$5,048
PM-2.5 sampler (continuous)				$1,156				$1,178				$1,202				$1,179
QA plan preparation (RO)	456	$25,918			456	$26,414			456	$26,950			456	$26,427		
QA plan review (annual)	76	$3,814			76	$3,887			76	$3,966			76	$3,889		
Audits																
PM-2.5 sampler (sequential)	9,280	$432,430			9,280	$440,708			9,280	$449,648			9,280	$440,929		
PM-2.5 sampler (single channel)	1,740	$81,081			1,740	$82,633			1,740	$84,309			1,740	$82,674		
PM-2.5 sampler (seasonal)	85	$7,922			85	$8,073			85	$8,237			85	$8,077		
PM-2.5 sampler (continuous)	5,380	$247,887			5,380	$252,632			5,380	$257,757			5,380	$252,759		
PM-2.5 sampler (speciation)	2,630	$121,179			2,630	$123,499			2,630	$126,004			2,630	$123,561		
Reporting																
PM-2.5 sampler (sequential)	3,712	$203,611			3,712	$207,508			3,712	$211,718			3,712	$207,612		
PM-2.5 sampler (single channel)	696	$38,177			696	$38,908			696	$39,697			696	$38,927		
PM-2.5 sampler (seasonal)	34	$3,730			34	$3,801			34	$3,878			34	$3,803		
PM-2.5 sampler (continuous)	2,152	$118,042			2,152	$120,301			2,152	$122,741			2,152	$120,361		
PM-2.5 sampler (speciation)	1,052	$57,704			1,052	$58,809			1,052	$60,002			1,052	$58,838		
Implementation/coordination																
PM-2.5 sampler (sequential)	12,064	$561,384			12,064	$572,130			12,064	$583,736			12,064	$572,416		
PM-2.5 sampler (single channel)	2,262	$105,259			2,262	$107,274			2,262	$109,450			2,262	$107,328		
PM-2.5 sampler (seasonal)	111	$10,284			111	$10,481			111	$10,693			111	$10,486		
PM-2.5 sampler (continuous)	6,994	$358,059			6,994	$364,913			6,994	$372,316			6,994	$365,096		
PM-2.5 sampler (speciation)	3,419	$175,036			3,419	$178,387			3,419	$182,006			3,419	$178,476		
Training																
PM-2.5 sampler (sequential)	5,568	$277,298			5,568	$282,606			5,568	$288,339			5,568	$282,748		
PM-2.5 sampler (single channel)	1,044	$51,993			1,044	$52,989			1,044	$54,064			1,044	$53,015		
PM-2.5 sampler (seasonal)	102	$5,080			102	$5,177			102	$5,282			102	$5,180		
PM-2.5 sampler (continuous)	3,228	$160,761			3,228	$163,839			3,228	$167,162			3,228	$163,921		
PM-2.5 sampler (speciation)	1,578	$78,588			1,578	$80,092			1,578	$81,717			1,578	$80,132		
Element # 6 totals	63,663	$3,125,237		$6,107	63,663	$3,185,061		$6,224	63,663	$3,249,672		$6,350	63,663	$3,186,657		$6,227
7. Supervision																
Planning/coordination																
PM-2.5 sampler (sequential)	11,136	$612,618			11,136	$624,345			11,136	$637,010			11,136	$624,658		
PM-2.5 sampler (single channel)	1,566	$86,171			1,566	$87,820			1,566	$89,602			1,566	$87,864		
PM-2.5 sampler (seasonal)	204	$11,223			204	$11,437			204	$11,669			204	$11,443		
PM-2.5 sampler (continuous)	4,842	$266,437			4,842	$271,537			4,842	$277,045			4,842	$271,673		
PM-2.5 sampler (speciation)	3,682	$213,506			3,682	$217,593			3,682	$222,007			3,682	$217,702		
Supervision/review																
PM-2.5 sampler (sequential)	29,689	$1,230,390			29,689	$1,253,943			29,689	$1,279,379			29,689	$1,254,571		
PM-2.5 sampler (single channel)	4,176	$230,698			4,176	$235,114			4,176	$239,884			4,176	$235,232		
PM-2.5 sampler (seasonal)	204	$11,223			204	$11,437			204	$11,669			204	$11,443		
PM-2.5 sampler (continuous)	12,912	$713,308			12,912	$726,962			12,912	$741,709			12,912	$727,327		
PM-2.5 sampler (speciation)	3,682	$213,506			3,682	$217,593			3,682	$222,007			3,682	$217,702		
Element #7 totals	72,093	$3,589,078			72,093	$3,657,782			72,093	$3,731,982			72,093	$3,659,614		
Summary Totals				$42,812,395				$43,632,260				$44,517,120				$43,653,925

Table 8.1, 2007 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (RO)	152	15	7	$853	326	$18,513										326	$18,513		
Site selection (RO)	152	6	7	$311	130	$6,761										130	$6,761		
Element #1 totals					456	$25,273										456	$25,273		
2. Site Installation																			
Analyzer																			
PM-2.5 sampler (sequential)	768		7	$11,493		$1,260,924													$1,260,924
PM-2.5 sampler (sequential) spares	115		7	$11,493		$189,139													$189,139
PM-2.5 sampler (single channel)	144		7	$7,314		$150,451													$150,451
PM-2.5 sampler (single chan) spare	22		7	$7,314		$22,568													$22,568
PM-2.5 sampler (sequential) coll	160		7	$11,493		$262,693													$262,693
PM-2.5 sampler (single channel) coll	30		7	$7,314		$31,344													$31,344
PM-2.5 sampler (seasonal)	17		7	$11,493		$27,911													$27,911
PM-2.5 sampler (continuous)	538		7	$19,120		$1,469,496													$1,469,496
PM-2.5 sampler (continuous) spares	81		7	$19,120		$220,424													$220,424
Speciation sampler (RTI, CA, OR)	263		7	$12,538		$471,056													$471,056
Data acquisition (laptop/PDA)	1,089		7	$418		$65,016													$65,016
Sampling platform	1,730		7	$2,090		$516,430													$516,430
Procurement	2,138	16	7	$780	4,886	$238,321										4,886	$238,321		
Equipment installation																			
Installation (single channel)	174	8	7	$366	199	$9,090										199	$9,090		
Installation (sequential)	928	8	7	$366	1,061	$48,479										1,061	$48,479		
PM-2.5 sampler (seasonal)	17	8	7	$366	19	$888										19	$888		
Installation (continuous)	538	10	7	$378	769	$29,069										769	$29,069		
Installation (speciation)	263	12	7	$558	451	$20,962										451	$20,962		
Element #2 totals					7,384	$5,034,260										7,384	$346,808		$4,687,452
3. Sampling & analysis																			
Filter (1/1) & acceptance testing	125												125					$117,540	
Filter (1/3) & acceptance testing	643												643					$226,735	
Filter (1/6) & acceptance testing	144												144					$25,389	
Filter (1/12) & acceptance testing	190												190					$16,749	
Filter (seasonal) & acceptance testing	17												17					$6,994	
Speciation sampling national contract						$7,282,329													$7,282,329
Routine site visits (1/1)													125	22,500	$1,016,590	22,500	$1,016,590		
Routine site visits (1/3)													643	57,870	$2,614,671	57,870	$2,614,671		
Routine site visits (1/6)													144	12,960	$585,556	12,960	$585,556		
Routine site visits (1/12)													190	8,550	$386,304	8,550	$386,304		
Routine site visits (seasonal)													17	527	$34,564	527	$34,564		
Routine site visits (continuous)													538	17,216	$797,061	17,216	$797,061		
Routine site visits (speciation)													263	47,340	$2,309,271	47,340	$2,309,271		
Laboratory service																			
Microbalance	1,119		7	$448		$501,056													$501,056
Clean room for weighing	114		7	$11,194		$1,276,149													$1,276,149
Laboratory																			
PM-2.5 sampler (sequential) 1/1													125	240	$1,425,368	240	$1,425,368		
PM-2.5 sampler (sequential) 1/3													643	120	$2,444,032	120	$2,444,032		
PM-2.5 sampler (single channel) 1/6													144	40	$273,671	40	$273,671		
PM-2.5 sampler (collocated) 1/12													190	20	$180,547	20	$180,547		

Table 8.1, 2007 PM-2.5 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-2.5 sampler (seasonal)													17	140	$113,079	140	$113,079		
Element #3 totals						$9,059,534								167,523	$12,180,715	167,523	$12,180,715	$393,406	$9,059,534
4. Maintenance																			
Spare parts/supplies																			
PM-2.5 sampler (sequential)													928					$290,872	
PM-2.5 sampler (single channel)													174					$45,449	
PM-2.5 sampler (seasonal)													17					$4,884	
PM-2.5 sampler (continuous)													538					$87,126	
PM-2.5 sampler (speciation)													263					$137,391	
Remedial repairs																			
PM-2.5 sampler (sequential)													928	12,992	$623,436	12,992	$623,436		
PM-2.5 sampler (single channel)													174	1,392	$66,719	1,392	$66,719		
PM-2.5 sampler (seasonal)													17	238	$11,421	238	$11,421		
PM-2.5 sampler (continuous)													538	5,918	$309,718	5,918	$309,718		
PM-2.5 sampler (speciation)													263	3,682	$190,699	3,682	$190,699		
Routine maintenance																			
PM-2.5 sampler (sequential)													928	12,992	$718,455	12,992	$718,455		
PM-2.5 sampler (single channel)													174	1,392	$100,715	1,392	$100,715		
PM-2.5 sampler (seasonal)													17	238	$13,161	238	$13,161		
PM-2.5 sampler (continuous)													538	7,532	$349,628	7,532	$349,628		
PM-2.5 sampler (speciation)													263	4,208	$191,523	4,208	$191,523		
Element #4 totals														50,584	$2,575,475	50,584	$2,575,475	$565,723	
5. Data Management																			
Data acquistion/processing																			
PM-2.5 sampler (sequential) 1/1													125	15,000	$696,620	15,000	$696,620		
PM-2.5 sampler (sequential) 1/3													643	38,580	$1,194,472	38,580	$1,194,472		
PM-2.5 sampler (single channel) 1/6													144	2,592	$128,786	2,592	$128,786		
PM-2.5 sampler (collocated) 1/12													190	935	$87,721	935	$87,721		
PM-2.5 sampler (seasonal)													17	765	$47,370	765	$47,370		
PM-2.5 sampler (continuous)													538	8,608	$445,747	8,608	$445,747		
Data reporting																			
PM-2.5 sampler (sequential) 1/1													125	3,750	$173,959	3,750	$173,959		
PM-2.5 sampler (sequential) 1/3													643	9,645	$298,282	9,645	$298,282		
PM-2.5 sampler (single channel) 1/6													144	576	$26,780	576	$26,780		
PM-2.5 sampler (collocated) 1/12													190	935	$21,345	935	$21,345		
PM-2.5 sampler (seasonal)													17	383	$11,829	383	$11,829		
PM-2.5 sampler (continuous)													538	6,456	$327,706	6,456	$327,706		
Data validation																			
PM-2.5 sampler (sequential) 1/1													125	7,875	$548,520	7,875	$548,520		
PM-2.5 sampler (sequential) 1/3													643	40,509	$940,529	40,509	$940,529		
PM-2.5 sampler (single channel) 1/6													144	1,728	$87,713	1,728	$87,713		
PM-2.5 sampler (collocated) 1/12													190	935	$67,646	935	$67,646		
PM-2.5 sampler (seasonal)													17	1,071	$37,299	1,071	$37,299		
PM-2.5 sampler (continuous)													538	9,146	$476,944	9,146	$476,944		
Data distribution																			
PM-2.5 sampler (sequential) 1/1													125	2,250	$164,556	2,250	$164,556		
PM-2.5 sampler (sequential) 1/3													643	11,574	$282,159	11,574	$282,159		
PM-2.5 sampler (single channel) 1/6													144	288	$15,647	288	$15,647		

Table 8.1, 2007 PM-2.5 Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-2.5 sampler (collcoated) 1/12													190	935	$19,183	935	$19,183		
PM-2.5 sampler (seasonal)													17	306	$11,190	306	$11,190		
PM-2.5 sampler (continuous)													538	2,690	$145,585	2,690	$145,585		
Element #5 totals														167,532	$6,257,588	167,532	$6,257,588		
6. Quality Assurance																			
Audit/calibration kit																			
PM-2.5 Filter based sampler	1,382		7	$125		$4,951													$4,951
PM-2.5 sampler (continuous)	538		7	$75		$1,156													$1,156
QA plan preparation (RO)	152	15	5	$853	456	$25,918										456	$25,918		
QA plan review (annual)													152	76	$3,814	76	$3,814		
Audits																			
PM-2.5 sampler (sequential)													928	9,280	$432,430	9,280	$432,430		
PM-2.5 sampler (single channel)													174	1,740	$81,081	1,740	$81,081		
PM-2.5 sampler (seasonal)													17	85	$7,922	85	$7,922		
PM-2.5 sampler (continuous)													538	5,380	$247,887	5,380	$247,887		
PM-2.5 sampler (speciation)													263	2,630	$121,179	2,630	$121,179		
Reporting																			
PM-2.5 sampler (sequential)													928	3,712	$203,611	3,712	$203,611		
PM-2.5 sampler (single channel)													174	696	$38,177	696	$38,177		
PM-2.5 sampler (seasonal)													17	34	$3,730	34	$3,730		
PM-2.5 sampler (continuous)													538	2,152	$118,042	2,152	$118,042		
PM-2.5 sampler (speciation)													263	1,052	$57,704	1,052	$57,704		
Implementation/coordination																			
PM-2.5 sampler (sequential)													928	12,064	$561,384	12,064	$561,384		
PM-2.5 sampler (single channel)													174	2,262	$105,259	2,262	$105,259		
PM-2.5 sampler (seasonal)													17	111	$10,284	111	$10,284		
PM-2.5 sampler (continuous)													538	6,994	$358,059	6,994	$358,059		
PM-2.5 sampler (speciation)													263	3,419	$175,036	3,419	$175,036		
Training																			
PM-2.5 sampler (sequential)													928	5,568	$277,298	5,568	$277,298		
PM-2.5 sampler (single channel)													174	1,044	$51,993	1,044	$51,993		
PM-2.5 sampler (seasonal)													17	102	$5,080	102	$5,080		
PM-2.5 sampler (continuous)													538	3,228	$160,761	3,228	$160,761		
PM-2.5 sampler (speciation)													263	1,578	$78,588	1,578	$78,588		
Element # 6 totals					456	$32,025								63,207	$3,099,319	63,663	$3,125,237		$6,107
7. Supervision																			
Planning/coordination																			
PM-2.5 sampler (sequential)													928	11,136	$612,618	11,136	$612,618		
PM-2.5 sampler (single channel)													174	1,566	$86,171	1,566	$86,171		
PM-2.5 sampler (seasonal)													17	204	$11,223	204	$11,223		
PM-2.5 sampler (continuous)													538	4,842	$266,437	4,842	$266,437		
PM-2.5 sampler (speciation)													263	3,682	$213,506	3,682	$213,506		
Supervision/review																			
PM-2.5 sampler (sequential)													928	29,689	$1,230,390	29,689	$1,230,390		
PM-2.5 sampler (single channel)													174	4,176	$230,698	4,176	$230,698		
PM-2.5 sampler (seasonal)													17	204	$11,223	204	$11,223		
PM-2.5 sampler (continuous)													538	12,912	$713,308	12,912	$713,308		
PM-2.5 sampler (speciation)													263	3,682	$213,506	3,682	$213,506		

Table 8.1, 2007 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Element #7 totals														72,093	$3,589,078	72,093	$3,589,078		
[redacted]																			
Summary Totals																			$42,812,395

Table 8.2, 2008 PM-2.5 Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (RO)	152	15	7	$869	326	$18,867										326	$18,867		
Site selection (RO)	152	6	7	$317	130	$6,890										130	$6,890		
Element #1 totals					456	$25,757										456	$25,757		
2. Site Installation																			
Analyzer																			
PM-2.5 sampler (sequential)	768		7	$11,713		$1,285,061													$1,285,061
PM-2.5 sampler (sequential) spares	115		7	$11,713		$192,759													$192,759
PM-2.5 sampler (single channel)	144		7	$7,454		$153,331													$153,331
PM-2.5 sampler (single chan) spare	22		7	$7,454		$23,000													$23,000
PM-2.5 sampler (sequential) coll	160		7	$11,713		$267,721													$267,721
PM-2.5 sampler (single channel) coll	30		7	$7,454		$31,944													$31,944
PM-2.5 sampler (seasonal)	17		7	$11,713		$28,445													$28,445
PM-2.5 sampler (continuous)	538		7	$19,486		$1,497,626													$1,497,626
PM-2.5 sampler (continuous) spares	81		7	$19,486		$224,644													$224,644
Speciation sampler (RTI, CA, OR)	263		7	$12,778		$480,073													$480,073
Data acquisition (laptop/PDA)	1,089		7	$426		$66,261													$66,261
Sampling platform	1,730		7	$2,130		$526,315													$526,315
Procurement	2,138	16	7	$795	4,886	$242,883										4,886	$242,883		
Equipment installation																			
Installation (single channel)	174	8	7	$373	199	$9,264										199	$9,264		
Installation (sequential)	928	8	7	$373	1,061	$49,407										1,061	$49,407		
PM-2.5 sampler (seasonal)	17	8	7	$373	19	$905										19	$905		
Installation (continuous)	538	10	7	$385	769	$29,625										769	$29,625		
Installation (speciation)	263	12	7	$569	451	$21,363										451	$21,363		
Element #2 totals	9,014	62		$126,384	7,384	$5,130,628										7,384	$353,447		$4,777,181
3. Sampling & analysis																			
Filter (1/1) & acceptance testing	125												125					$119,790	
Filter (1/3) & acceptance testing	643												643					$231,075	
Filter (1/6) & acceptance testing	144												144					$25,875	
Filter (1/12) & acceptance testing	190												190					$17,070	
Filter (seasonal) & acceptance testin	17												17					$7,128	
Speciation sampling national contract						$7,422,061													$7,422,061
Routine site visits (1/1)													125	22,500	$1,036,050	22,500	$1,036,050		
Routine site visits (1/3)													643	57,870	$2,664,722	57,870	$2,664,722		
Routine site visits (1/6)													144	12,960	$596,765	12,960	$596,765		
Routine site visits (1/12)													190	8,550	$393,699	8,550	$393,699		
Routine site visits (seasonal)													17	527	$35,226	527	$35,226		
Routine site visits (continuous)													538	17,216	$812,319	17,216	$812,319		
Routine site visits (speciation)													263	47,340	$2,353,476	47,340	$2,353,476		
Laboratory service																			
Microbalance	1,119		7	$456		$510,648													$510,648
Clean room for weighing	114		7	$11,409		$1,300,577													$1,300,577
Laboratory																			
PM-2.5 sampler (sequential) 1/1													125	240	$1,452,653	240	$1,452,653		
PM-2.5 sampler (sequential) 1/3													643	120	$2,490,816	120	$2,490,816		
PM-2.5 sampler (single channel) 1/6													144	40	$278,909	40	$278,909		

Table 8.2, 2008 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-2.5 sampler (collocated) 1/12													190	20	$184,003	20	$184,003		
PM-2.5 sampler (seasonal)													17	140	$115,244	140	$115,244		
Element #3 totals						$9,233,286								167,523	$12,413,883	167,523	$12,413,883	$400,937	$9,233,286
4. Maintenance																			
Spare parts/supplies																			
PM-2.5 sampler (sequential)													928					$296,440	
PM-2.5 sampler (single channel)													174					$46,319	
PM-2.5 sampler (seasonal)													17					$4,978	
PM-2.5 sampler (continuous)													538					$88,794	
PM-2.5 sampler (speciation)													263					$140,021	
Remedial repairs																			
PM-2.5 sampler (sequential)													928	12,992	$635,370	12,992	$635,370		
PM-2.5 sampler (single channel)													174	1,392	$67,996	1,392	$67,996		
PM-2.5 sampler (seasonal)													17	238	$11,639	238	$11,639		
PM-2.5 sampler (continuous)													538	5,918	$315,647	5,918	$315,647		
PM-2.5 sampler (speciation)													263	3,682	$194,349	3,682	$194,349		
Routine maintenance																			
PM-2.5 sampler (sequential)													928	12,992	$732,208	12,992	$732,208		
PM-2.5 sampler (single channel)													174	1,392	$102,642	1,392	$102,642		
PM-2.5 sampler (seasonal)													17	238	$13,413	238	$13,413		
PM-2.5 sampler (continuous)													538	7,532	$356,320	7,532	$356,320		
PM-2.5 sampler (speciation)													263	4,208	$195,190	4,208	$195,190		
Element #4 totals														50,584	$2,624,776	50,584	$2,624,776	$576,552	
5. Data Management																			
Data acquistion/processing																			
PM-2.5 sampler (sequential) 1/1													125	15,000	$709,955	15,000	$709,955		
PM-2.5 sampler (sequential) 1/3													643	38,580	$1,217,337	38,580	$1,217,337		
PM-2.5 sampler (single channel) 1/6													144	2,592	$131,252	2,592	$131,252		
PM-2.5 sampler (collocated) 1/12													190	935	$89,401	935	$89,401		
PM-2.5 sampler (seasonal)													17	765	$48,277	765	$48,277		
PM-2.5 sampler (continuous)													538	8,608	$454,280	8,608	$454,280		
Data reporting																			
PM-2.5 sampler (sequential) 1/1													125	3,750	$177,289	3,750	$177,289		
PM-2.5 sampler (sequential) 1/3													643	9,645	$303,992	9,645	$303,992		
PM-2.5 sampler (single channel) 1/6													144	576	$27,293	576	$27,293		
PM-2.5 sampler (collocated) 1/12													190	935	$21,754	935	$21,754		
PM-2.5 sampler (seasonal)													17	383	$12,056	383	$12,056		
PM-2.5 sampler (continuous)													538	6,456	$333,979	6,456	$333,979		
Data validation																			
PM-2.5 sampler (sequential) 1/1													125	7,875	$559,020	7,875	$559,020		
PM-2.5 sampler (sequential) 1/3													643	40,509	$958,533	40,509	$958,533		
PM-2.5 sampler (single channel) 1/6													144	1,728	$89,392	1,728	$89,392		
PM-2.5 sampler (collocated) 1/12													190	935	$68,940	935	$68,940		
PM-2.5 sampler (seasonal)													17	1,071	$38,013	1,071	$38,013		
PM-2.5 sampler (continuous)													538	9,146	$486,074	9,146	$486,074		
Data distribution																			
PM-2.5 sampler (sequential) 1/1													125	2,250	$167,706	2,250	$167,706		

Table 8.2, 2008 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-2.5 sampler (sequential) 1/3													643	11,574	$287,560	11,574	$287,560		
PM-2.5 sampler (single channel) 1/6													144	288	$15,946	288	$15,946		
PM-2.5 sampler (collcoated) 1/12													190	935	$19,550	935	$19,550		
PM-2.5 sampler (seasonal)													17	306	$11,404	306	$11,404		
PM-2.5 sampler (continuous)													538	2,690	$148,371	2,690	$148,371		
Element #5 totals														167,532	$6,377,374	167,532	$6,377,374		
6. Quality Assurance																			
Audit/calibration kit																			
PM-2.5 Filter based sampler	1,382		7	$128		$5,045													$5,045
PM-2.5 sampler (continuous)	538		7	$77		$1,178													$1,178
QA plan preparation (RO)	152	15	5	$869	456	$26,414										456	$26,414		
QA plan review (annual)													152	76	$3,887	76	$3,887		
Audits																			
PM-2.5 sampler (sequential)													928	9,280	$440,708	9,280	$440,708		
PM-2.5 sampler (single channel)													174	1,740	$82,633	1,740	$82,633		
PM-2.5 sampler (seasonal)													17	85	$8,073	85	$8,073		
PM-2.5 sampler (continuous)													538	5,380	$252,632	5,380	$252,632		
PM-2.5 sampler (speciation)													263	2,630	$123,499	2,630	$123,499		
Reporting																			
PM-2.5 sampler (sequential)													928	3,712	$207,508	3,712	$207,508		
PM-2.5 sampler (single channel)													174	696	$38,908	696	$38,908		
PM-2.5 sampler (seasonal)													17	34	$3,801	34	$3,801		
PM-2.5 sampler (continuous)													538	2,152	$120,301	2,152	$120,301		
PM-2.5 sampler (speciation)													263	1,052	$58,809	1,052	$58,809		
Implementation/coordination																			
PM-2.5 sampler (sequential)													928	12,064	$572,130	12,064	$572,130		
PM-2.5 sampler (single channel)													174	2,262	$107,274	2,262	$107,274		
PM-2.5 sampler (seasonal)													17	111	$10,481	111	$10,481		
PM-2.5 sampler (continuous)													538	6,994	$364,913	6,994	$364,913		
PM-2.5 sampler (speciation)													263	3,419	$178,387	3,419	$178,387		
Training																			
PM-2.5 sampler (sequential)													928	5,568	$282,606	5,568	$282,606		
PM-2.5 sampler (single channel)													174	1,044	$52,989	1,044	$52,989		
PM-2.5 sampler (seasonal)													17	102	$5,177	102	$5,177		
PM-2.5 sampler (continuous)													538	3,228	$163,839	3,228	$163,839		
PM-2.5 sampler (speciation)													263	1,578	$80,092	1,578	$80,092		
Element # 6 totals					456	$32,638								63,207	$3,158,648	63,663	$3,185,061		$6,224
7. Supervision																			
Planning/coordination																			
PM-2.5 sampler (sequential)													928	11,136	$624,345	11,136	$624,345		
PM-2.5 sampler (single channel)													174	1,566	$87,820	1,566	$87,820		
PM-2.5 sampler (seasonal)													17	204	$11,437	204	$11,437		
PM-2.5 sampler (continuous)													538	4,842	$271,537	4,842	$271,537		
PM-2.5 sampler (speciation)													263	3,682	$217,593	3,682	$217,593		
Supervision/review																			
PM-2.5 sampler (sequential)													928	29,689	$1,253,943	29,689	$1,253,943		
PM-2.5 sampler (single channel)													174	4,176	$235,114	4,176	$235,114		

Table 8.2, 2008 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-2.5 sampler (seasonal)													17	204	$11,437	204	$11,437		
PM-2.5 sampler (continuous)													538	12,912	$726,962	12,912	$726,962		
PM-2.5 sampler (speciation)													263	3,682	$217,593	3,682	$217,593		
Element #7 totals														72,093	$3,657,782	72,093	$3,657,782		
[redacted]																			
Summary Totals																			$43,632,260

Table 8.3, 2009 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (RO)	152	15	7	$887	326	$19,250										326	$19,250		
Site selection (RO)	152	6	7	$324	130	$7,030										130	$7,030		
Element #1 totals					456	$26,280										456	$26,280		
2. Site Installation																			
Analyzer																			
PM-2.5 sampler (sequential)	768		7	$11,950		$1,311,130													$1,311,130
PM-2.5 sampler (sequential) spares	115		7	$11,950		$196,669													$196,669
PM-2.5 sampler (single channel)	144		7	$7,605		$156,442													$156,442
PM-2.5 sampler (single chan) spare	22		7	$7,605		$23,466													$23,466
PM-2.5 sampler (sequential) coll	160		7	$11,950		$273,152													$273,152
PM-2.5 sampler (single channel) coll	30		7	$7,605		$32,592													$32,592
PM-2.5 sampler (seasonal)	17		7	$11,950		$29,022													$29,022
PM-2.5 sampler (continuous)	538		7	$19,881		$1,528,006													$1,528,006
PM-2.5 sampler (continuous) spares	81		7	$19,881		$229,201													$229,201
Speciation sampler (RTI, CA, OR)	263		7	$13,037		$489,811													$489,811
Data acquisition (laptop/PDA)	1,089		7	$435		$67,605													$67,605
Sampling platform	1,730		7	$2,173		$536,992													$536,992
Procurement	2,138	16	7	$812	4,886	$247,810										4,886	$247,810		
Equipment installation																			
Installation (single channel)	174	8	7	$380	199	$9,452										199	$9,452		
Installation (sequential)	928	8	7	$380	1,061	$50,409										1,061	$50,409		
PM-2.5 sampler (seasonal)	17	8	7	$380	19	$923										19	$923		
Installation (continuous)	538	10	7	$393	769	$30,226										769	$30,226		
Installation (speciation)	263	12	7	$580	451	$21,797										451	$21,797		
Element #2 totals	9,014	62		$128,948	7,384	$5,234,705										7,384	$360,617		$4,874,089
3. Sampling & analysis																			
Filter (1/1) & acceptance testing	125												125					$122,220	
Filter (1/3) & acceptance testing	643												643					$235,762	
Filter (1/6) & acceptance testing	144												144					$26,400	
Filter (1/12) & acceptance testing	190												190					$17,416	
Filter (seasonal) & acceptance testin	17												17					$7,272	
Speciation sampling national contract						$7,572,380													$7,572,380
Routine site visits (1/1)													125	22,500	$1,057,067	22,500	$1,057,067		
Routine site visits (1/3)													643	57,870	$2,718,777	57,870	$2,718,777		
Routine site visits (1/6)													144	12,960	$608,871	12,960	$608,871		
Routine site visits (1/12)													190	8,550	$401,686	8,550	$401,686		
Routine site visits (seasonal)													17	527	$35,940	527	$35,940		
Routine site visits (continuous)													538	17,216	$828,797	17,216	$828,797		
Routine site visits (speciation)													263	47,340	$2,401,218	47,340	$2,401,218		
Laboratory service																			
Microbalance	1,119		7	$466		$521,006													$521,006
Clean room for weighing	114		7	$11,640		$1,326,960													$1,326,960
Laboratory																			
PM-2.5 sampler (sequential) 1/1													125	240	$1,482,121	240	$1,482,121		
PM-2.5 sampler (sequential) 1/3													643	120	$2,541,344	120	$2,541,344		
PM-2.5 sampler (single channel) 1/6													144	40	$284,567	40	$284,567		
PM-2.5 sampler (collocated) 1/12													190	20	$187,735	20	$187,735		
PM-2.5 sampler (seasonal)													17	140	$117,582	140	$117,582		

Table 8.3, 2009 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Element #3 totals						$9,420,346								167,523	$12,665,705	167,523	$12,665,705	$409,070	$9,420,346
4. Maintenance																			
Spare parts/supplies																			
PM-2.5 sampler (sequential)													928					$302,454	
PM-2.5 sampler (single channel)													174					$47,258	
PM-2.5 sampler (seasonal)													17					$5,079	
PM-2.5 sampler (continuous)													538					$90,595	
PM-2.5 sampler (speciation)													263					$142,862	
Remedial repairs																			
PM-2.5 sampler (sequential)													928	12,992	$648,259	12,992	$648,259		
PM-2.5 sampler (single channel)													174	1,392	$69,375	1,392	$69,375		
PM-2.5 sampler (seasonal)													17	238	$11,875	238	$11,875		
PM-2.5 sampler (continuous)													538	5,918	$322,050	5,918	$322,050		
PM-2.5 sampler (speciation)													263	3,682	$198,292	3,682	$198,292		
Routine maintenance																			
PM-2.5 sampler (sequential)													928	12,992	$747,061	12,992	$747,061		
PM-2.5 sampler (single channel)													174	1,392	$104,725	1,392	$104,725		
PM-2.5 sampler (seasonal)													17	238	$13,685	238	$13,685		
PM-2.5 sampler (continuous)													538	7,532	$363,549	7,532	$363,549		
PM-2.5 sampler (speciation)													263	4,208	$199,149	4,208	$199,149		
Element #4 totals														50,584	$2,678,021	50,584	$2,678,021	$588,248	
5. Data Management																			
Data acquistion/processing																			
PM-2.5 sampler (sequential) 1/1													125	15,000	$724,357	15,000	$724,357		
PM-2.5 sampler (sequential) 1/3													643	38,580	$1,242,031	38,580	$1,242,031		
PM-2.5 sampler (single channel) 1/6													144	2,592	$133,914	2,592	$133,914		
PM-2.5 sampler (collocated) 1/12													190	935	$91,214	935	$91,214		
PM-2.5 sampler (seasonal)													17	765	$49,256	765	$49,256		
PM-2.5 sampler (continuous)													538	8,608	$463,495	8,608	$463,495		
Data reporting																			
PM-2.5 sampler (sequential) 1/1													125	3,750	$180,886	3,750	$180,886		
PM-2.5 sampler (sequential) 1/3													643	9,645	$310,159	9,645	$310,159		
PM-2.5 sampler (single channel) 1/6													144	576	$27,847	576	$27,847		
PM-2.5 sampler (collocated) 1/12													190	935	$22,195	935	$22,195		
PM-2.5 sampler (seasonal)													17	383	$12,300	383	$12,300		
PM-2.5 sampler (continuous)													538	6,456	$340,754	6,456	$340,754		
Data validation																			
PM-2.5 sampler (sequential) 1/1													125	7,875	$570,360	7,875	$570,360		
PM-2.5 sampler (sequential) 1/3													643	40,509	$977,977	40,509	$977,977		
PM-2.5 sampler (single channel) 1/6													144	1,728	$91,205	1,728	$91,205		
PM-2.5 sampler (collocated) 1/12													190	935	$70,339	935	$70,339		
PM-2.5 sampler (seasonal)													17	1,071	$38,784	1,071	$38,784		
PM-2.5 sampler (continuous)													538	9,146	$495,934	9,146	$495,934		
Data distribution																			
PM-2.5 sampler (sequential) 1/1													125	2,250	$171,108	2,250	$171,108		
PM-2.5 sampler (sequential) 1/3													643	11,574	$293,393	11,574	$293,393		
PM-2.5 sampler (single channel) 1/6													144	288	$16,270	288	$16,270		
PM-2.5 sampler (collcoated) 1/12													190	935	$19,946	935	$19,946		
PM-2.5 sampler (seasonal)													17	306	$11,635	306	$11,635		

Table 8.3, 2009 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-2.5 sampler (continuous)													538	2,690	$151,381	2,690	$151,381		
Element #5 totals														167,532	$6,506,742	167,532	$6,506,742		
6. Quality Assurance																			
Audit/calibration kit																			
PM-2.5 Filter based sampler	1,382		7	$130		$5,148													$5,148
PM-2.5 sampler (continuous)	538		7	$78		$1,202													$1,202
QA plan preparation (RO)	152	15	5	$887	456	$26,950										456	$26,950		
QA plan review (annual)													152	76	$3,966	76	$3,966		
Audits																			
PM-2.5 sampler (sequential)													928	9,280	$449,648	9,280	$449,648		
PM-2.5 sampler (single channel)													174	1,740	$84,309	1,740	$84,309		
PM-2.5 sampler (seasonal)													17	85	$8,237	85	$8,237		
PM-2.5 sampler (continuous)													538	5,380	$257,757	5,380	$257,757		
PM-2.5 sampler (speciation)													263	2,630	$126,004	2,630	$126,004		
Reporting																			
PM-2.5 sampler (sequential)													928	3,712	$211,718	3,712	$211,718		
PM-2.5 sampler (single channel)													174	696	$39,697	696	$39,697		
PM-2.5 sampler (seasonal)													17	34	$3,878	34	$3,878		
PM-2.5 sampler (continuous)													538	2,152	$122,741	2,152	$122,741		
PM-2.5 sampler (speciation)													263	1,052	$60,002	1,052	$60,002		
Implementation/coordination																			
PM-2.5 sampler (sequential)													928	12,064	$583,736	12,064	$583,736		
PM-2.5 sampler (single channel)													174	2,262	$109,450	2,262	$109,450		
PM-2.5 sampler (seasonal)													17	111	$10,693	111	$10,693		
PM-2.5 sampler (continuous)													538	6,994	$372,316	6,994	$372,316		
PM-2.5 sampler (speciation)													263	3,419	$182,006	3,419	$182,006		
Training																			
PM-2.5 sampler (sequential)													928	5,568	$288,339	5,568	$288,339		
PM-2.5 sampler (single channel)													174	1,044	$54,064	1,044	$54,064		
PM-2.5 sampler (seasonal)													17	102	$5,282	102	$5,282		
PM-2.5 sampler (continuous)													538	3,228	$167,162	3,228	$167,162		
PM-2.5 sampler (speciation)													263	1,578	$81,717	1,578	$81,717		
Element # 6 totals					456	$33,300								63,207	$3,222,722	63,663	$3,249,672		$6,350
7. Supervision																			
Planning/coordination																			
PM-2.5 sampler (sequential)													928	11,136	$637,010	11,136	$637,010		
PM-2.5 sampler (single channel)													174	1,566	$89,602	1,566	$89,602		
PM-2.5 sampler (seasonal)													17	204	$11,669	204	$11,669		
PM-2.5 sampler (continuous)													538	4,842	$277,045	4,842	$277,045		
PM-2.5 sampler (speciation)													263	3,682	$222,007	3,682	$222,007		
Supervision/review																			
PM-2.5 sampler (sequential)													928	29,689	$1,279,379	29,689	$1,279,379		
PM-2.5 sampler (single channel)													174	4,176	$239,884	4,176	$239,884		
PM-2.5 sampler (seasonal)													17	204	$11,669	204	$11,669		
PM-2.5 sampler (continuous)													538	12,912	$741,709	12,912	$741,709		
PM-2.5 sampler (speciation)													263	3,682	$222,007	3,682	$222,007		
Element #7 totals														72,093	$3,731,982	72,093	$3,731,982		

Table 8.3, 2009 PM-2.5 Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-2.5			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Summary Totals																			$44,317,120

Table 9.0, Summary of PM coarse 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary PM coarse Labor Hours	2007 Labor Costs	2007 Non-labor O & M	2007 Equip/ Contract $	2008 Summary PM coarse Labor Hours	2008 Labor Costs	2008 Non-labor O & M	2008 Equip/ Contract $	2009 Summary PM coarse Labor Hours	2009 Labor Costs	2009 Non-labor O & M	2009 Equip/ Contract $	Average 2007-2009 PM coarse Labor Hours	Average 2007-2009 PM coarse Labor Costs	Average 2007-2009 PM coarse Non-labor O & M	Average 2007-2009 PM coarse Equip/ Contract $
1. Network Design																
Network design (RO)					107	$3,103			129	$3,799			79	$2,301		
Site selection (RO)					29	$1,133			34	$1,387			21	$840		
Element #1 totals					136	$4,236			163	$5,187			100	$3,141		
2. Site Installation																
Analyzer cost																
PM-coarse sampler (continuous)								$56,891				$68,288				$41,726
PM-coarse sampler (cont collocated)								$5,689				$9,219				$4,969
PM-coarse sampler (FRM)								$67,235				$82,722				$49,985
PM-coarse sampler (FRM collocated								$9,887				$14,123				
PM-coarse speciation sampler																
Sampling platform (see PM-2.5)								$1,034				$1,242				$759
Data acquisition (laptop/PDA)																
Procurement (FEM & FRM)					132	$6,556			134	$6,805			89	$4,454		
Procurement (speciation)																
Equipment installation																
PM-coarse sampler (continuous)					19	$905			23	$1,086			14	$664		
PM-coarse sampler (cont collocated)					2	$91			2	$92			1	$61		
PM-coarse sampler (FRM)					39	$1,810			47	$2,227			29	$1,346		
PM-coarse sampler (FRM collocated					6	$266			7	$326						
PM-coarse speciation sampler																
Element #2 totals					198	$9,628		$140,736	213	$10,537		$175,593	133	$6,524		$97,440
3. Sampling & analysis																
Filters and acceptance testing																
PM-coarse sampler (FRM)							$6,167				$7,744				$4,637	
PM-coarse speciation sampler																
Site visits																
PM-coarse sampler (continuous)					544	$25,668			544	$26,189			363	$17,286		
PM-coarse sampler (cont collocated)					54	$2,567			54	$2,619			36	$1,729		
PM-coarse sampler (FRM)					6,120	$281,806			7,380	$346,718			4,500	$209,508		
PM-coarse sampler (FRM collocated					900	$41,442			1,080	$50,739			660	$30,727		
PM-coarse speciation sampler																
Laboratory service																
Microbalance (see PM-2.5)																
Clean room (see PM-2.5)																
Laboratory																
PM-coarse sampler (FRM)					4,080	$197,561			4,920	$243,068			3,000	$146,876		
PM-coarse sampler (FRM collocated					600	$29,053			720	$35,571			440	$21,541		
PM-coarse speciation (contract)																
Element #3 totals					12,298	$578,097	$6,167		14,698	$704,904	$7,744		8,999	$427,667	$4,637	
4. Maintenance																
Spare parts/supplies																
PM-coarse sampler (continuous)							$10,046				$10,250				$6,766	

Table 9.0, Summary of PM coarse 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009				Average 2007-2009 PM coarse			
	Summary PM coarse				Summary PM coarse				Summary PM coarse							
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-coarse sampler (cont collocated)							$1,005				$1,025				$677	
PM-coarse sampler (FRM)							$10,861				$13,363				$8,075	
PM-coarse sampler (FRM collocated							$1,597				$1,956				$1,184	
PM-coarse speciation sampler																
Remedial repairs																
PM-coarse sampler (continuous)					187	$10,028			187	$10,232			125	$6,753		
PM-coarse sampler (cont collocated)					19	$1,003			19	$1,023			12	$675		
PM-coarse sampler (FRM)					476	$23,279			574	$28,641			350	$17,306		
PM-coarse sampler (FRM collocated					70	$3,423			84	$4,191			51	$2,538		
PM-coarse speciation sampler																
Routine maintenance																
PM-coarse sampler (continuous)					238	$11,259			238	$11,488			159	$7,582		
PM-coarse sampler (cont collocated)					24	$1,126			24	$1,149			16	$758		
PM-coarse sampler (FRM)					544	$26,827			656	$33,006			400	$19,944		
PM-coarse sampler (FRM collocated					80	$3,945			96	$4,830			59	$2,925		
PM-coarse speciation sampler																
Element #4 totals					1,638	$80,890	$23,509		1,878	$94,559	$26,593		1,172	$58,483	$16,701	
5. Data Management																
Data acquistion/processing																
PM-coarse sampler (continuous)					272	$14,355			272	$14,646			181	$9,667		
PM-coarse sampler (cont collocated)					27	$1,435			27	$1,465			18	$967		
PM-coarse sampler (FRM)					646	$31,587			779	$38,863			475	$23,484		
PM-coarse sampler (FRM collocated					95	$4,645			114	$5,687			70	$3,444		
PM-coarse speciation (contract)																
Data reporting																
PM-coarse sampler (continuous)					204	$10,553			204	$10,767			136	$7,107		
PM-coarse sampler (cont collocated)					20	$1,055			20	$1,077			14	$711		
PM-coarse sampler (FRM)					153	$6,444			185	$7,929			113	$4,791		
PM-coarse sampler (FRM collocated					23	$948			27	$1,160			17	$703		
PM-coarse speciation (contract)																
Data validation																
PM-coarse sampler (continuous)					289	$15,359			289	$15,671			193	$10,343		
PM-coarse sampler (cont collocated)					29	$1,536			29	$1,567			19	$1,034		
PM-coarse sampler (FRM)					442	$23,224			533	$28,574			325	$17,266		
PM-coarse sampler (FRM collocated					65	$3,415			78	$4,182			48	$2,532		
PM-coarse speciation (contract)																
Data distribution																
PM-coarse sampler (continuous)					85	$4,688			85	$4,783			57	$3,157		
PM-coarse sampler (cont collocated)					9	$469			9	$478			6	$316		
PM-coarse sampler (FRM)					102	$5,684			123	$6,993			75	$4,226		
PM-coarse sampler (FRM collocated					15	$836			18	$1,023			11	$620		
PM-coarse speciation sampler																
Element #5 totals					2,476	$126,235			2,792	$144,865			1,756	$90,367		

Table 9.0, Summary of PM coarse 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary PM coarse				2008 Summary PM coarse				2009 Summary PM coarse				Average 2007-2009 PM coarse			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6. Quality Assurance																
Audit/calibration kit																
PM-coarse sampler (continuous)								$176				$211				$129
PM-coarse sampler (FRM)								$3,103				$3,818				$2,307
PM-coarse speciation sampler																
QA plan preparation (RO)					75	$4,344			90	$5,319			55	$3,221		
QA plan review (annual) RO					13	$639			52	$2,700			21	$1,113		
Audits																
PM-coarse sampler (continuous)					187	$8,781			200	$9,582			129	$6,121		
PM-coarse sampler (FRM)					390	$18,521			410	$19,866			267	$12,796		
PM-coarse speciation sampler																
Reporting																
PM-coarse sampler (continuous)					75	$4,181			80	$4,563			52	$2,915		
PM-coarse sampler (FRM)					156	$8,721			164	$9,354			107	$6,025		
PM-coarse spec. sampler (contract)																
Implementation/coordination																
PM-coarse sampler (continuous)					243	$12,684			260	$13,841			168	$8,842		
PM-coarse sampler (FRM)					254	$24,044			267	$25,790			173	$16,611		
PM-coarse speciation sampler																
Training																
PM-coarse sampler (continuous)					102	$5,177			120	$6,214			74	$3,797		
PM-coarse sampler (FRM)					102	$10,354			123	$12,739			75	$7,698		
PM-coarse speciation sampler																
Element # 6 totals					1,596	$97,447		$3,279	1,765	$109,968		$4,029	1,120	$69,138		$2,436
7. Supervision																
Planning/coordination																
PM-coarse sampler (continuous)					168	$9,438			180	$10,299			116	$6,579		
PM-coarse sampler (single channel)					351	$19,684			369	$21,113			240	$13,599		
PM-coarse speciation sampler																
Supervision/review																
PM-coarse sampler (continuous)					449	$25,268			480	$27,573			310	$17,614		
PM-coarse sampler (single channel)					936	$52,698			984	$56,524			640	$36,407		
PM-coarse speciation sampler																
Element #7 totals					1,904	$107,088			2,013	$115,509			1,306	$74,199		
Summary Totals								$14,177,512				$14,399,489				$8,560,733

Table 9.1, 2007 PM-coarse Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (RO)																			
Site selection (RO)																			
Element #1 totals																			
2. Site Installation																			
Analyzer cost																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation sampler																			
Sampling platform (see PM-2.5)																			
Data acquisition (laptop/PDA)																			
Procurement (FEM & FRM)																			
Procurement (speciation)																			
Equipment installation																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation sampler																			
Element #2 totals																			
3. Sampling & analysis																			
Filters and acceptance testing																			
PM-coarse sampler (FRM)																			
PM-coarse speciation sampler																			
Site visits																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation sampler																			
Laboratory service																			
Microbalance (see PM-2.5)																			
Clean room (see PM-2.5)																			
Laboratory																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation (contract)																			
Element #3 totals																			
4. Maintenance																			
Spare parts/supplies																			

Table 9.1, 2007 PM-coarse Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation sampler																			
Remedial repairs																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation sampler																			
Routine maintenance																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation sampler																			
Element #4 totals																			
5. Data Management																			
Data acquistion/processing																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation (contract)																			
Data reporting																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation (contract)																			
Data validation																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			
PM-coarse speciation (contract)																			
Data distribution																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (cont collocated)																			
PM-coarse sampler (FRM)																			
PM-coarse sampler (FRM collocated																			

Table 9.1, 2007 PM-coarse Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-coarse speciation sampler																			
Element #5 totals																			
6. Quality Assurance																			
Audit/calibration kit																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (FRM)																			
PM-coarse speciation sampler																			
QA plan preparation (RO)																			
QA plan review (annual) RO																			
Audits																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (FRM)																			
PM-coarse speciation sampler																			
Reporting																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (FRM)																			
PM-coarse spec. sampler (contract)																			
Implementation/coordination																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (FRM)																			
PM-coarse speciation sampler																			
Training																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (FRM)																			
PM-coarse speciation sampler																			
Element # 6 totals																			
7. Supervision																			
Planning/coordination																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (single channel)																			
PM-coarse speciation sampler																			
Supervision/review																			
PM-coarse sampler (continuous)																			
PM-coarse sampler (single channel)																			
PM-coarse speciation sampler																			
Element #7 totals																			
Summary Totals																			

Table 9.2, 2008 PM-coarse Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (RO)							25	30	7	869	107	$3,103				107	$3,103		
Site selection (RO)							25	8	7	317	29	$1,133				29	$1,133		
Element #1 totals											136	$4,236				136	$4,236		
2. Site Installation																			
Analyzer cost																			
PM-coarse sampler (continuous)							17		7	23,426		$56,891							$56,891
PM-coarse sampler (cont collocated)							2		7	$23,426		$5,689							$5,689
PM-coarse sampler (FRM)							34		7	$13,842		$67,235							$67,235
PM-coarse sampler (FRM collocated							5		7	$13,842		$9,887							$9,887
PM-coarse speciation sampler																			
Sampling platform (see PM-2.5)																			
Data acquisition (laptop/PDA)							17		7	426		$1,034							$1,034
Procurement (FEM & FRM)							58	16	7	795	132	$6,556				132	$6,556		
Procurement (speciation)																			
Equipment installation																			
PM-coarse sampler (continuous)							17	8	7	$373	19	$905				19	$905		
PM-coarse sampler (cont collocated)							2	8	7	$373	2	$91				2	$91		
PM-coarse sampler (FRM)							34	8	7	373	39	$1,810				39	$1,810		
PM-coarse sampler (FRM collocated							5	8	7	373	6	$266				6	$266		
PM-coarse speciation sampler																			
Element #2 totals											198	$150,364				198	$9,628		$140,736
3. Sampling & analysis																			
Filters and acceptance testing																			
PM-coarse sampler (FRM)													39					$6,167	
PM-coarse speciation sampler																			
Site visits																			
PM-coarse sampler (continuous)													17	544	$25,668	544	$25,668		
PM-coarse sampler (cont collocated)													2	54	$2,567	54	$2,567		
PM-coarse sampler (FRM)													34	6,120	$281,806	6,120	$281,806		
PM-coarse sampler (FRM collocated													5	900	$41,442	900	$41,442		
PM-coarse speciation sampler																			
Laboratory service																			
Microbalance (see PM-2.5)																			
Clean room (see PM-2.5)																			
Laboratory																			
PM-coarse sampler (FRM)													34	4,080	$197,561	4,080	$197,561		
PM-coarse sampler (FRM collocated													5	600	$29,053	600	$29,053		
PM-coarse speciation (contract)																			
Element #3 totals														12,298	$578,097	12,298	$578,097	$6,167	
4. Maintenance																			
Spare parts/supplies																			
PM-coarse sampler (continuous)													17					$10,046	
PM-coarse sampler (cont collocated)													2					$1,005	

Table 9.2, 2008 PM-coarse Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-coarse sampler (FRM)													34					$10,861	
PM-coarse sampler (FRM collocated													5					$1,597	
PM-coarse speciation sampler																			
Remedial repairs																			
PM-coarse sampler (continuous)													17	187	$10,028	187	$10,028		
PM-coarse sampler (cont collocated)													2	19	$1,003	19	$1,003		
PM-coarse sampler (FRM)													34	476	$23,279	476	$23,279		
PM-coarse sampler (FRM collocated													5	70	$3,423	70	$3,423		
PM-coarse speciation sampler																			
Routine maintenance																			
PM-coarse sampler (continuous)													17	238	$11,259	238	$11,259		
PM-coarse sampler (cont collocated)													2	24	$1,126	24	$1,126		
PM-coarse sampler (FRM)													34	544	$26,827	544	$26,827		
PM-coarse sampler (FRM collocated													5	80	$3,945	80	$3,945		
PM-coarse speciation sampler																			
Element #4 totals														1,638	$80,890	1,638	$80,890	$23,509	
5. Data Management																			
Data acquistion/processing																			
PM-coarse sampler (continuous)													17	272	$14,355	272	$14,355		
PM-coarse sampler (cont collocated)													2	27	$1,435	27	$1,435		
PM-coarse sampler (FRM)													34	646	$31,587	646	$31,587		
PM-coarse sampler (FRM collocated													5	95	$4,645	95	$4,645		
PM-coarse speciation (contract)																			
Data reporting																			
PM-coarse sampler (continuous)													17	204	$10,553	204	$10,553		
PM-coarse sampler (cont collocated)													2	20	$1,055	20	$1,055		
PM-coarse sampler (FRM)													34	153	$6,444	153	$6,444		
PM-coarse sampler (FRM collocated													5	23	$948	23	$948		
PM-coarse speciation (contract)																			
Data validation																			
PM-coarse sampler (continuous)													17	289	$15,359	289	$15,359		
PM-coarse sampler (cont collocated)													2	29	$1,536	29	$1,536		
PM-coarse sampler (FRM)													34	442	$23,224	442	$23,224		
PM-coarse sampler (FRM collocated													5	65	$3,415	65	$3,415		
PM-coarse speciation (contract)																			
Data distribution																			
PM-coarse sampler (continuous)													17	85	$4,688	85	$4,688		
PM-coarse sampler (cont collocated)													2	9	$469	9	$469		
PM-coarse sampler (FRM)													34	102	$5,684	102	$5,684		
PM-coarse sampler (FRM collocated													5	15	$836	15	$836		
PM-coarse speciation sampler																			
Element #5 totals														2,476	$126,235	2,476	$126,235		
6. Quality Assurance																			
Audit/calibration kit																			

Table 9.2, 2008 PM-coarse Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-coarse sampler (continuous)							17		7	362		$176							$176
PM-coarse sampler (FRM)							34		7	639		$3,103							$3,103
PM-coarse speciation sampler																			
QA plan preparation (RO)							25	15	5	869	75	$4,344				75	$4,344		
QA plan review (annual) RO													25	13	$639	13	$639		
Audits																			
PM-coarse sampler (continuous)													19	187	$8,781	187	$8,781		
PM-coarse sampler (FRM)													39	390	$18,521	390	$18,521		
PM-coarse speciation sampler																			
Reporting																			
PM-coarse sampler (continuous)													19	75	$4,181	75	$4,181		
PM-coarse sampler (FRM)													39	156	$8,721	156	$8,721		
PM-coarse spec. sampler (contract)																			
Implementation/coordination																			
PM-coarse sampler (continuous)													19	243	$12,684	243	$12,684		
PM-coarse sampler (FRM)													39	254	$24,044	254	$24,044		
PM-coarse speciation sampler																			
Training																			
PM-coarse sampler (continuous)													17	102	$5,177	102	$5,177		
PM-coarse sampler (FRM)													34	102	$10,354	102	$10,354		
PM-coarse speciation sampler																			
Element # 6 totals											75	$7,623		1,521	$93,103	1,596	$97,447		$3,279
7. Supervision																			
Planning/coordination																			
PM-coarse sampler (continuous)													19	168	$9,438	168	$9,438		
PM-coarse sampler (single channel)													39	351	$19,684	351	$19,684		
PM-coarse speciation sampler																			
Supervision/review																			
PM-coarse sampler (continuous)													19	449	$25,268	449	$25,268		
PM-coarse sampler (single channel)													39	936	$52,698	936	$52,698		
PM-coarse speciation sampler																			
Element #7 totals														1,904	$107,088	1,904	$107,088		
[redacted]																			
Summary Totals																			$4,477,312

Table 9.3, 2009 PM-coarse Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM-coarse			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (RO)	25	30	7	$887	107	$3,166	5	30	7	887	21	$633				129	$3,799		
Site selection (RO)	25	8	7	$324	29	$1,156	5	8	7	324	6	$231				34	$1,387		
Element #1 totals					136	$4,322					27	$864				163	$5,187		
2. Site Installation																			
Analyzer cost																			
PM-coarse sampler (continuous)	17		7	$23,901		$58,045	3		7	23,901		$10,243							$68,288
PM-coarse sampler (cont collocated)	2		7	$23,901		$5,804	1		7	$23,901		$3,414							$9,219
PM-coarse sampler (FRM)	34		7	$14,123		$68,598	7		7	$14,123		$14,123							$82,722
PM-coarse sampler (FRM collocated	6		7	$14,123		$12,106	1		7	$14,123		$2,018							$14,123
PM-coarse speciation sampler																			
Sampling platform (see PM-2.5)																			
Data acquisition (laptop/PDA)	17		7	$435		$1,055	3		7	435		$186							$1,242
Procurement (FEM & FRM)	59	16	7	$812	134	$6,805										134	$6,805		
Procurement (speciation)																			
Equipment installation																			
PM-coarse sampler (continuous)	17	8	7	$380	19	$923	3	8	7	$380	3	$163				23	$1,086		
PM-coarse sampler (cont collocated)	2	8	7	$380	2	$92										2	$92		
PM-coarse sampler (FRM)	34	8	7	$380	39	$1,847	7	8	7	380	8	$380				47	$2,227		
PM-coarse sampler (FRM collocated	5	8	7	$380	6	$272	1	8	7	380	1	$54				7	$326		
PM-coarse speciation sampler																			
Element #2 totals					200	$155,548					13	$30,582				213	$10,537		$175,593
3. Sampling & analysis																			
Filters and acceptance testing																			
PM-coarse sampler (FRM)													48					$7,744	
PM-coarse speciation sampler																			
Site visits																			
PM-coarse sampler (continuous)													17	544	$26,189	544	$26,189		
PM-coarse sampler (cont collocated)													2	54	$2,619	54	$2,619		
PM-coarse sampler (FRM)													41	7,380	$346,718	7,380	$346,718		
PM-coarse sampler (FRM collocated													6	1,080	$50,739	1,080	$50,739		
PM-coarse speciation sampler																			
Laboratory service																			
Microbalance (see PM-2.5)																			
Clean room (see PM-2.5)																			
Laboratory																			
PM-coarse sampler (FRM)													41	4,920	$243,068	4,920	$243,068		
PM-coarse sampler (FRM collocated													6	720	$35,571	720	$35,571		
PM-coarse speciation (contract)																			
Element #3 totals														14,698	$704,904	14,698	$704,904	$7,744	
4. Maintenance																			
Spare parts/supplies																			
PM-coarse sampler (continuous)													17					$10,250	
PM-coarse sampler (cont collocated)													2					$1,025	
PM-coarse sampler (FRM)													41					$13,363	
PM-coarse sampler (FRM collocated													6					$1,956	

Table 9.3, 2009 PM-coarse Monitoring Costs

Aug 2006

Cost Element	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary PM coarse			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
PM-coarse speciation sampler																			
Remedial repairs																			
PM-coarse sampler (continuous)													17	187	$10,232	187	$10,232		
PM-coarse sampler (cont collocated)													2	19	$1,023	19	$1,023		
PM-coarse sampler (FRM)													41	574	$28,641	574	$28,641		
PM-coarse sampler (FRM collocated													6	84	$4,191	84	$4,191		
PM-coarse speciation sampler																			
Routine maintenance																			
PM-coarse sampler (continuous)													17	238	$11,488	238	$11,488		
PM-coarse sampler (cont collocated)													2	24	$1,149	24	$1,149		
PM-coarse sampler (FRM)													41	656	$33,006	656	$33,006		
PM-coarse sampler (FRM collocated													6	96	$4,830	96	$4,830		
PM-coarse speciation sampler																			
Element #4 totals														1,878	$94,559	1,878	$94,559	$26,593	
5. Data Management																			
Data acquistion/processing																			
PM-coarse sampler (continuous)													17	272	$14,646	272	$14,646		
PM-coarse sampler (cont collocated)													2	27	$1,465	27	$1,465		
PM-coarse sampler (FRM)													41	779	$38,863	779	$38,863		
PM-coarse sampler (FRM collocated													6	114	$5,687	114	$5,687		
PM-coarse speciation (contract)																			
Data reporting																			
PM-coarse sampler (continuous)													17	204	$10,767	204	$10,767		
PM-coarse sampler (cont collocated)													2	20	$1,077	20	$1,077		
PM-coarse sampler (FRM)													41	185	$7,929	185	$7,929		
PM-coarse sampler (FRM collocated													6	27	$1,160	27	$1,160		
PM-coarse speciation (contract)																			
Data validation																			
PM-coarse sampler (continuous)													17	289	$15,671	289	$15,671		
PM-coarse sampler (cont collocated)													2	29	$1,567	29	$1,567		
PM-coarse sampler (FRM)													41	533	$28,574	533	$28,574		
PM-coarse sampler (FRM collocated													6	78	$4,182	78	$4,182		
PM-coarse speciation (contract)																			
Data distribution																			
PM-coarse sampler (continuous)													17	85	$4,783	85	$4,783		
PM-coarse sampler (cont collocated)													2	9	$478	9	$478		
PM-coarse sampler (FRM)													41	123	$6,993	123	$6,993		
PM-coarse sampler (FRM collocated													6	18	$1,023	18	$1,023		
PM-coarse speciation sampler																			
Element #5 totals														2,792	$144,865	2,792	$144,865		
6. Quality Assurance																			
Audit/calibration kit																			
PM-coarse sampler (continuous)	17		7	$369		$179	3		7	369		$32							$211
PM-coarse sampler (FRM)	34		7	$652		$3,166	7		7	652		$652							$3,818
PM-coarse speciation sampler																			
QA plan preparation (RO)	25	15	5	$887	75	$4,433	5	15	5	887	15	$887				90	$5,319		

Table 9.3, 2009 PM-coarse Monitoring Costs

Aug 2006

Cost Element	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary PM coarse			
	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
QA plan review (annual) RO													104	52	$2,700	52	$2,700		
Audits																			
PM-coarse sampler (continuous)													20	200	$9,582	200	$9,582		
PM-coarse sampler (FRM)													41	410	$19,866	410	$19,866		
PM-coarse speciation sampler																			
Reporting																			
PM-coarse sampler (continuous)													20	80	$4,563	80	$4,563		
PM-coarse sampler (FRM)													41	164	$9,354	164	$9,354		
PM-coarse spec. sampler (contract)																			
Implementation/coordination																			
PM-coarse sampler (continuous)													20	260	$13,841	260	$13,841		
PM-coarse sampler (FRM)													41	267	$25,790	267	$25,790		
PM-coarse speciation sampler																			
Training																			
PM-coarse sampler (continuous)													20	120	$6,214	120	$6,214		
PM-coarse sampler (FRM)													41	123	$12,739	123	$12,739		
PM-coarse speciation sampler																			
Element # 6 totals					75	$7,778					15	$1,570		1,675	$104,649	1,765	$109,968		$4,029
7. Supervision																			
Planning/coordination																			
PM-coarse sampler (continuous)													20	180	$10,299	180	$10,299		
PM-coarse sampler (single channel)													41	369	$21,113	369	$21,113		
PM-coarse speciation sampler																			
Supervision/review																			
PM-coarse sampler (continuous)													20	480	$27,573	480	$27,573		
PM-coarse sampler (single channel)													41	984	$56,524	984	$56,524		
PM-coarse speciation sampler																			
Element #7 totals														2,013	$115,509	2,013	$115,509		
Summary totals																			$1,399,489

Table 10.0, Summary of Pb 2009-2011 Monitoring Costs

December 2008

	2009				2010				2011							
	Summary Pb				Summary Pb				Summary Pb				Average 2009-2011 Pb			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design (reporting org)	643	$18,996			643	$19,376			643	$19,764			643	$19,379		
One time waivers	0	$0			0	$0			0	$0			0	$0		
Site selection (reporting org)	171	$10,057			171	$10,258			171	$10,463			171	$10,259		
Element #1 totals	814	$29,053			814	$29,635			814	$30,227			814	$29,638		
2. Site Installation																
High volume sampler				$58,355				$103,214				$105,278				$88,949
Audit calibration kit				$3,647				$6,451				$6,580				$5,559
Procurement	215	$8,403			373	$14,863			373	$15,160			320	$12,809		
Equipment installation	215	$7,703			373	$13,624			373	$13,897			320	$11,741		
Element #2 totals	430	$16,106		$62,002	745	$28,487		$109,665	745	$29,057		$111,858	640	$24,550		$94,509
3. Sampling and Analysis																
Supplies			$30,636				$54,187				$55,271				$46,698	
Filters			$30,636				$54,187				$55,271				$46,698	
Laboratory services (contract)				$328,832				$581,612				$593,244				$501,229
Routine site visits	16,920	$791,034			29,340	$1,399,120			29,340	$1,427,103			25,200	$1,205,752		
Element #3 totals	16,920	$791,034	$61,273	$328,832	29,340	$1,399,120	$108,375	$581,612	29,340	$1,427,103	$110,542	$593,244	25,200	$1,205,752	$93,397	$501,229
4. Maintenance																
Spare parts/supplies			$61,273				$108,375				$110,542				$93,397	
Remedial repairs	1,504	$66,788			2,608	$118,129			2,608	$120,491			2,240	$101,802		
Routine maintenance	1,504	$66,788			2,608	$118,129			2,608	$120,491			2,240	$101,802		
Element #4 totals	3,008	$133,575	$61,273		5,216	$236,257	$108,375		5,216	$240,982	$110,542		4,480	$203,605	$93,397	
5. Data Management																
Data acquistion/processing	1,504	$35,947			2,608	$63,580			2,608	$64,852			2,240	$54,793		
Data reporting	752	$40,236			1,304	$71,166			1,304	$72,590			1,120	$61,331		
Data validation	2,256	$120,708			3,912	$213,499			3,912	$217,769			3,360	$183,992		
Data distribution	188	$10,008			326	$17,701			326	$18,055			280	$15,255		
Element # 5 totals	4,700	$206,898			8,150	$365,946			8,150	$373,265			7,000	$315,370		
6. Quality Assurance																
Audits	2,256	$85,782			3,912	$151,725			3,912	$154,759			3,360	$130,755		
Coordination/implementation	752	$38,602			1,304	$68,276			1,304	$69,642			1,120	$58,840		
Training	752	$33,292			1,304	$58,884			1,304	$60,061			1,120	$50,746		
QA plan review (annual) RO	23	$2,348			23	$2,395			23	$2,443			23	$2,395		
QA plan preparation (RO)	360	$19,262			360	$19,647			360	$20,040			360	$19,650		
Element #6 totals	4,143	$179,286			6,903	$300,927			6,903	$306,945			5,983	$262,386		
7. Supervision																
Planning/coordination	752	$42,891			1,304	$75,862			1,304	$77,380			1,120	$65,378		
Supervision/review	1,128	$64,132			1,956	$113,432			1,956	$115,701			1,680	$97,755		
Element #7 totals	1,880	$107,023			3,260	$189,295			3,260	$193,081			2,800	$163,133		
Summary of Burdens and Costs	31,895	$1,462,976	$122,546	$390,834	54,428	$2,549,667	$216,750	$691,277	54,428	$2,600,660	$221,085	$705,103	46,917	$2,204,434	$186,794	$595,738
Summary Totals				**$1,976,356**				**$3,457,694**				**$3,526,848**				**$2,986,966**

Table 10.3, 2011 Pb Monitoring Costs

December 200

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Pb									Summary Pb			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (reporting org)	150	30	7	$922	643	$19,764										643	$19,764		
One time waivers	0	20	7	$0	0	$0										0	$0		
Site selection (reporting org)	150	8	7	$488	171	$10,463										171	$10,463		
Element #1 totals					814	$30,227										814	$30,227		
2. Site Installation																			
High volume sampler	326		7	$2,261		$105,278													$105,278
Audit calibration kit	326		7	$141		$6,580													$6,580
Procurement	326	8	7	$326	373	$15,160										373	$15,160		
Equipment installation	326	8	7	$298	373	$13,897										373	$13,897		
Element #2 totals					745	$140,915										745	$29,057		$111,858
3. Sampling and Analysis																			
Supplies													326					$55,271	
Filters													326					$55,271	
Laboratory services (contract)													326		$593,244				$593,244
Routine site visits													326	29,340	$1,427,103	29,340	$1,427,103		
Element #3 totals														29,340	$2,020,347	29,340	$1,427,103	$110,542	$593,244
4. Maintenance																			
Spare parts/supplies													326					$110,542	
Remedial repairs													326	2,608	$120,491	2,608	$120,491		
Routine maintenance													326	2,608	$120,491	2,608	$120,491		
Element #4 totals														5,216	$240,982	5,216	$240,982	$110,542	
5. Data Management																			
Data acquistion/processing													326	2,608	$64,852	2,608	$64,852		
Data reporting													326	1,304	$72,590	1,304	$72,590		
Data validation													326	3,912	$217,769	3,912	$217,769		
Data distribution													326	326	$18,055	326	$18,055		
Element # 5 totals														8,150	$373,265	8,150	$373,265		
6. Quality Assurance																			
Audits													326	3,912	$154,759	3,912	$154,759		
Coordination/implementation													326	1,304	$69,642	1,304	$69,642		
Training													326	1,304	$60,061	1,304	$60,061		
QA plan review (annual) RO													45	23	$2,443	23	$2,443		
QA plan preparation (RO)	150	12	5	$668	360	$20,040										360	$20,040		
Element #6 totals					360	$20,040								6,543	$286,905	6,903	$306,945		
7. Supervision																			
Planning/coordination													326	1,304	$77,380	1,304	$77,380		
Supervision/review													326	1,956	$115,701	1,956	$115,701		
Element #7 totals														3,260	$193,081	3,260	$193,081		
Summary of Burdens and Costs					1,919	$191,183								52,509	$3,114,580	54,428	$2,600,660	$221,085	$705,103
Summary Totals																			**$3,526,848**

Table 10.2, 2010 Pb Monitoring Costs

December 2008

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Pb									Summary Pb			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (reporting org)	150	30	7	$904	643	$19,376										643	$19,376		
One time waivers	0	20	7	$0	0	$0										0	$0		
Site selection (reporting org)	150	8	7	$479	171	$10,258										171	$10,258		
Element #1 totals					814	$29,635										814	$29,635		
2. Site Installation																			
High volume sampler	326		7	$2,216		$103,214													$103,214
Audit calibration kit	326		7	$139		$6,451													$6,451
Procurement	326	8	7	$319	373	$14,863										373	$14,863		
Equipment installation	326	8	7	$293	373	$13,624										373	$13,624		
Element #2 totals					745	$138,152										745	$28,487		$109,665
3. Sampling and Analysis																			
Supplies													326					$54,187	
Filters													326					$54,187	
Laboratory services (contract)													326		$581,612				$581,612
Routine site visits													326	29,340	$1,399,120	29,340	$1,399,120		
Element #3 totals														29,340	$1,980,732	29,340	$1,399,120	$108,375	$581,612
4. Maintenance																			
Spare parts/supplies													326					$108,375	
Remedial repairs													326	2,608	$118,129	2,608	$118,129		
Routine maintenance													326	2,608	$118,129	2,608	$118,129		
Element #4 totals														5,216	$236,257	5,216	$236,257	$108,375	
5. Data Management																			
Data acquistion/processing													326	2,608	$63,580	2,608	$63,580		
Data reporting													326	1,304	$71,166	1,304	$71,166		
Data validation													326	3,912	$213,499	3,912	$213,499		
Data distribution													326	326	$17,701	326	$17,701		
Element # 5 totals														8,150	$365,946	8,150	$365,946		
6. Quality Assurance																			
Audits													326	3,912	$151,725	3,912	$151,725		
Coordination/implementation													326	1,304	$68,276	1,304	$68,276		
Training													326	1,304	$58,884	1,304	$58,884		
QA plan review (annual) RO													45	23	$2,395	23	$2,395		
QA plan preparation (RO)	150	12	5	$655	360	$19,647										360	$19,647		
Element #6 totals					360	$19,647								6,543	$281,280	6,903	$300,927		
7. Supervision																			
Planning/coordination													326	1,304	$75,862	1,304	$75,862		
Supervision/review													326	1,956	$113,432	1,956	$113,432		
Element #7 totals														3,260	$189,295	3,260	$189,295		
Summary of Burdens and Costs					1,919	$187,434								52,509	$3,053,510	54,428	$2,549,667	$216,750	$691,277
Summary Totals																			**$3,457,694**

Table 10.1, 2009 Pb Monitoring Costs

December 2008

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Pb									Summary Pb			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design (reporting org)	150	30	7	$887	643	$18,996										643	$18,996		
One time waivers	0	20	7	$0	0	$0										0	$0		
Site selection (reporting org)	150	8	7	$469	171	$10,057										171	$10,057		
Element #1 totals					814	$29,053										814	$29,053		
2. Site Installation																			
High volume sampler	188		7	$2,173		$58,355													$58,355
Audit calibration kit	188		7	$136		$3,647													$3,647
Procurement	188	8	7	$313	215	$8,403										215	$8,403		
Equipment installation	188	8	7	$287	215	$7,703										215	$7,703		
Element #2 totals					430	$78,108										430	$16,106		$62,002
3. Sampling and Analysis																			
Supplies													188					$30,636	
Filters													188					$30,636	
Laboratory services (contract)													188		$328,832				$328,832
Routine site visits													188	16,920	$791,034	16,920	$791,034		
Element #3 totals														16,920	$1,119,865	16,920	$791,034	$61,273	$328,832
4. Maintenance																			
Spare parts/supplies													188					$61,273	
Remedial repairs													188	1,504	$66,788	1,504	$66,788		
Routine maintenance													188	1,504	$66,788	1,504	$66,788		
Element #4 totals														3,008	$133,575	3,008	$133,575	$61,273	
5. Data Management																			
Data acquistion/processing													188	1,504	$35,947	1,504	$35,947		
Data reporting													188	752	$40,236	752	$40,236		
Data validation													188	2,256	$120,708	2,256	$120,708		
Data distribution													188	188	$10,008	188	$10,008		
Element # 5 totals														4,700	$206,898	4,700	$206,898		
6. Quality Assurance																			
Audits													188	2,256	$85,782	2,256	$85,782		
Coordination/implementation													188	752	$38,602	752	$38,602		
Training													188	752	$33,292	752	$33,292		
QA plan review (annual) RO													45	23	$2,348	23	$2,348		
QA plan preparation (RO)	150	12	5	$642	360	$19,262										360	$19,262		
Element #6 totals					360	$19,262								3,783	$160,024	4,143	$179,286		
7. Supervision																			
Planning/coordination													188	752	$42,891	752	$42,891		
Supervision/review													188	1,128	$64,132	1,128	$64,132		
Element #7 totals														1,880	$107,023	1,880	$107,023		
Summary of Burdens and Costs					1,604	$126,424								30,291	$1,727,386	31,895	$1,462,976	$122,546	$390,834
Summary Totals																			**$1,976,356**

Table 11. PAMS Summary of 2007-2009 Monitoring Burden and Costs

Aug 2006

Cost Element	Average 2007-2009 VOC					Average 2007-2009 NMOC					Average 2007-2009 NOx and NOy				
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design						118	$6,814			$6,814	81	$4,687			$4,687
2. Site Installation	1,112	$375,186		$259,941	$635,128	99	$3,871		$50,429	$54,300	43	$2,002		$46,799	$48,801
3. Sampling & Analysis	47,377	$2,299,126	$106,201	$1,278,965	$3,684,293	3,480	$157,501	$24,716		$182,217	1,800	$81,466	$12,784		$94,250
4. Maintenance	17,920	$934,175	$439,305		$1,373,480	1,972	$96,021	$30,895		$126,915	1,290	$64,575	$15,980		$80,555
5. Data Management	50,119	$2,720,235			$2,720,235	1,131	$56,445			$56,445	4,950	$254,600			$254,600
6. Quality Assurance	12,990	$743,720	$37,713		$781,433	2,572	$133,768			$133,768	2,072	$107,721			$107,721
7. Supervision	9,315	$553,444			$553,444	1,218	$65,404			$65,404	4,158	$223,276			$223,276

Cost Element	Average 2007-2009 Surface Met					Average 2007-2009 Upper Air					Average 2007-2009 Carbonyl Freq E (8/3/1)				
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design	240	$13,826			$13,826	60	$3,445			$3,445					
2. Site Installation	555	$29,372		$188,371	$217,744	286	$13,630		$371,322	$384,952	8	$407		$10,183	$10,590
3. Sampling & Analysis	2,650	$108,635	$70,542		$179,177	352	$18,469	$23,437		$41,906	414	$48,983	$37,072	$38,186	$124,240
4. Maintenance	1,767	$87,472	$188,112		$275,584	110	$5,766	$46,875		$52,640	1,032	$51,290	$32,458		$83,747
5. Data Management	4,240	$203,913			$203,913	220	$11,180			$11,180	384	$20,006			$20,006
6. Quality Assurance	4,677	$247,867			$247,867	638	$29,949			$29,949	181	$9,296	$14,320		$23,615
7. Supervision	2,562	$2,562			$2,562	113	$9,023			$9,023	216	$12,353			$12,353

Cost Element	Average 2007-2009 Carbonyl Freq D (8/3/3)					Average 2007-2009 Carbonyl Freq Half D (4/3/3)					Average 2007-2009 Carbonyl Misc Freq				
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design															
2. Site Installation	15	$723		$18,092	$18,815	34	$1,627		$40,731	$42,358	46	$2,214		$55,438	$57,652
3. Sampling & Analysis	277	$33,496	$24,594	$67,846	$125,936	273	$38,541	$27,685	$152,742	$218,968	270	$37,810	$32,197	$207,891	$277,899
4. Maintenance	960	$47,611	$19,223		$66,834	1,080	$53,593	$21,639		$75,232	1,256	$62,298	$25,153		$87,450
5. Data Management	341	$17,770			$17,770	384	$20,003			$20,003	453	$23,616			$23,616
6. Quality Assurance	247	$12,643	$8,481		$21,124	293	$14,984	$19,093		$34,077	503	$25,661	$25,986		$51,648
7. Supervision	192	$10,980			$10,980	216	$12,359			$12,359	257	$14,717			$14,717

Grand Total PAMS 2007-2009

Cost Element	Average 2007-2009 California Alternative Plan (CAP)					Average 2007-2009 All PAMS (except O3 and NO2)				
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Total Cost
1. Network Design						499	$28,772	$0	$0	$28,772
2. Site Installation	97	$5,208		$31,321	$36,529	2,295	$434,240	$0	$1,072,627	$1,506,867
3. Sampling & Analysis	868	$18,547		$32,515	$51,063	57,761	$2,842,573	$359,228	$1,778,146	$4,979,948
4. Maintenance	237	$12,815	$7,881		$20,696	27,624	$1,415,615	$827,519	$0	$2,243,134
5. Data Management	454	$24,715			$24,715	62,677	$3,352,483	$0	$0	$3,352,483
6. Quality Assurance	1,099	$62,275	$3,356		$65,631	25,272	$1,387,884	$108,948	$0	$1,496,832
7. Supervision	924	$55,169			$55,169	19,170	$959,287	$0	$0	$959,287
						195,297	$10,420,853	$1,295,696	$2,850,773	$14,567,323

Table 12. Summary of PAMS VOC 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009				Average 2007-2009 VOC Costs			
	Summary VOC Costs				Summary VOC Costs				Summary VOC Costs							
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Nertwork design study (PAMS area) (see O3)																
Site selection (see O3)																
Element #1 totals																
2. Site Installation																
Canister sampling system																
3 months operation				$120,361				$122,665				$125,153				$122,726
12 months operation (1/6 collocation)				$134,570				$137,146				$139,928				$137,215
Procurement																
GC (on site) & GC (lab) for 23 areas	378	$20,046			378	$20,430			378	$20,845			378	$20,440		
Cannister sampling sys and cans	91	$4,693			91	$4,783			91	$4,880			91	$4,785		
Equipment installation																
GC (on site) & GC (lab) for 16 area & ca	472	$334,045			472	$340,439			472	$347,345			472	$340,609		
Canister sampling system	171	$9,171			171	$9,347			171	$9,536			171	$9,351		
Element # 2 totals	1,112	$367,955		$254,931	1,112	$374,998		$259,811	1,112	$382,606		$265,082	1,112	$375,186		$259,941
3. Sampling & Analysis																
Automated GC with FID				$1,109,578				$1,130,818				$1,153,757				$1,131,384
GC installation	3,186	$158,534			3,186	$161,569			3,186	$164,846			3,186	$161,650		
GC annual checkout	3,740	$189,799			3,580	$193,433			3,460	$197,357			3,593	$193,530		
Operation of GC	30,680	$1,425,869			30,680	$1,453,163			30,680	$1,482,642			30,680	$1,453,891		
Canisters																
80 for 8/3/1				$26,747				$27,259				$27,812				$27,273
40 for 8/3/3				$43,464				$44,296				$45,194				$44,318
20 for 4/3/3				$30,090				$27,259				$27,812				$28,387
4 for 1/6				$19,057				$18,740				$18,078				$18,625
Canister analysis																
8/3/1	728	$9,162			728	$9,337			728	$9,526			728	$9,342		
8/3/3	806	$10,143			806	$10,337			806	$10,547			806	$10,343		
4/3/3	209	$21,067			186	$19,084			186	$19,472			194	$19,874		
1/6	435	$43,757			419	$43,030			397	$41,508			417	$42,765		
Canister cleaning system				$28,420				$28,964				$29,552				$28,979
GC support gases			$106,201				$106,201				$106,201				$106,201	
Routine site visits (canister)	8,096	$416,687			7,744	$406,200			7,480	$400,311			7,773	$407,733		
Element # 3 totals	47,880	$2,275,018	$106,201	$1,257,356	47,329	$2,296,153	$106,201	$1,277,336	46,923	$2,326,208	$106,201	$1,302,204	47,377	$2,299,126	$106,201	$1,278,965
4. Maintenance																
Spare parts/supplies (GC)			$154,108				$157,058				$160,244				$157,137	
Spare parts/supplies (canister)			$288,365				$281,107				$277,032				$282,168	
Remedial repairs (GC)	4,720	$240,162			4,720	$244,759			4,720	$249,724			4,720	$244,882		
Remedial repairs (canister)	2,944	$156,294			2,816	$152,360			2,720	$150,151			2,827	$152,935		
Routine maintenance (GC)	4,720	$226,046			4,720	$230,373			4,720	$235,046			4,720	$230,488		
Routine maintenance (canister)	5,888	$312,587			5,632	$304,720			5,440	$300,303			5,653	$305,870		
Element # 4 totals	18,272	$935,089	$442,473		17,888	$932,212	$438,165		17,600	$935,224	$437,276		17,920	$934,175	$439,305	
5. Data Management																
Data acquisition/processing (GC)	4,956	$242,381			4,956	$247,021			4,956	$252,032			4,956	$247,145		
Data acquisition/processing (canisters)	2,208	$113,616			2,112	$110,756			2,040	$109,151			2,120	$111,174		
Data reporting (GC)	1,888	$100,972			1,888	$102,904			1,888	$104,992			1,888	$102,956		
Data reporting (canister)	920	$48,830			880	$47,601			850	$46,911			883	$47,780		
Data validation (GC)	7,552	$400,927			7,552	$408,602			7,552	$416,891			7,552	$408,807		
Data validation (canister)	3,680	$194,166			3,520	$189,279			3,400	$186,535			3,533	$189,993		
Data analysis & trends (GC)	19,470	$1,055,701			19,470	$1,075,910			19,470	$1,097,735			19,470	$1,076,449		

Table 12. Summary of PAMS VOC 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009				Average 2007-2009 VOC Costs			
	Summary VOC Costs				Summary VOC Costs				Summary VOC Costs							
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Data analysis & trends (canister)	10,120	$547,701			9,680	$533,916			9,350	$526,176			9,717	$535,931		
Element # 5 totals	50,794	$2,704,293			50,058	$2,715,990			49,506	$2,740,422			50,119	$2,720,235		
6. Quality Assurance																
Calibration standards			$36,986				$37,694				$38,459				$37,713	
Audits	5,520	$325,948			5,280	$317,745			3,540	$217,355			4,780	$287,016		
Routine calibrations	2,832	$151,889			2,832	$154,796			2,832	$157,936			2,832	$154,874		
Training	4,416	$246,360			4,224	$240,159			2,832	$164,282			3,824	$216,934		
Implementation/coordination	1,416	$75,944			1,416	$77,398			1,416	$78,968			1,416	$77,437		
QA plan review (annual) PAMS areas	12	$602			44	$2,250			12	$626			23	$1,160		
QA plan preparation (PAMS areas)	115	$6,179			115	$6,297			115	$6,425			115	$6,300		
Element # 6 totals	14,311	$806,922	$36,986		13,911	$798,646	$37,694		10,747	$625,593	$38,459		12,990	$743,720	$37,713	
7. Supervision																
Planning/coordination (GC)	2,596	$148,129			2,596	$150,964			2,596	$154,027			2,596	$151,040		
Planning/coordination (canister)	1,840	$106,599			1,760	$103,916			1,700	$102,409			1,767	$104,308		
Supervision/review (GC)	2,832	$167,176			2,832	$170,377			2,832	$173,833			2,832	$170,462		
Supervision/review (canister)	2,208	$130,437			2,112	$127,154			2,040	$125,311			2,120	$127,634		
Element # 7 totals	9,476	$552,341			9,300	$552,411			9,168	$555,580			9,315	$553,444		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Summary totals				$9,739,564				$9,769,647				$9,744,854				$9,748,042

Table 12.1 2007 PAMS VOC Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary VOC Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Nertwork design study (PAMS area) (see O3)																			
Site selection (see O3)																			
Element #1 totals																			
2. Site Installation																			
Canister sampling system																			
3 months operation	36		5	$16,717		$120,361													$120,361
12 months operation (1/6 collocation)	92		5	$7,314		$134,570													$134,570
Procurement																			
GC (on site) & GC (lab) for 23 areas	59	32	5	$1,699	378	$20,046										378	$20,046		
Cannister sampling sys and cans	57	8	5	$412	91	$4,693										91	$4,693		
Equipment installation																			
GC (on site) & GC (lab) for 16 area & ca	59	40	5	$28,309	472	$334,045										472	$334,045		
Canister sampling system	57	15	5	$804	171	$9,171										171	$9,171		
Element # 2 totals					1,112	$622,886										1,112	$367,955		$254,931
3. Sampling & Analysis																			
Automated GC with FID	59		5	$94,032		$1,109,578													$1,109,578
GC installation	59	270	5	$13,435	3,186	$158,534										3,186	$158,534		
GC annual checkout													59	3,740	$189,799	3,740	$189,799		
Operation of GC													59	30,680	$1,425,869	30,680	$1,425,869		
Canisters																			
80 for 8/3/1	4		5	$33,434		$26,747													$26,747
40 for 8/3/3	13		5	$16,717		$43,464													$43,464
20 for 4/3/3	18		5	$8,358		$30,090													$30,090
4 for 1/6	57		5	$1,672		$19,057													$19,057
Canister analysis																			
8/3/1													4	728	$9,162	728	$9,162		
8/3/3													13	806	$10,143	806	$10,143		
4/3/3													18	209	$21,067	209	$21,067		
1/6													57	435	$43,757	435	$43,757		
Canister cleaning system	24		5	$5,921		$28,420													$28,420
GC support gases													59					$106,201	
Routine site visits (canister)													92	8,096	$416,687	8,096	$416,687		
Element # 3 totals					3,186	$1,415,890							361	44,694	$2,116,484	47,880	$2,275,018	$106,201	$1,257,356
4. Maintenance																			
Spare parts/supplies (GC)													59					$154,108	
Spare parts/supplies (canister)													92					$288,365	
Remedial repairs (GC)													59	4,720	$240,162	4,720	$240,162		
Remedial repairs (canister)													92	2,944	$156,294	2,944	$156,294		
Routine maintenance (GC)													59	4,720	$226,046	4,720	$226,046		
Routine maintenance (canister)													92	5,888	$312,587	5,888	$312,587		
Element # 4 totals														18,272	$935,089	18,272	$935,089	$442,473	
5. Data Management																			
Data acquisition/processing (GC)													59	4,956	$242,381	4,956	$242,381		
Data acquisition/processing (canisters)													92	2,208	$113,616	2,208	$113,616		
Data reporting (GC)													59	1,888	$100,972	1,888	$100,972		
Data reporting (canister)													92	920	$48,830	920	$48,830		
Data validation (GC)													59	7,552	$400,927	7,552	$400,927		

Table 12.1 2007 PAMS VOC Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary VOC Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Data validation (canister)													92	3,680	$194,166	3,680	$194,166		
Data analysis & trends (GC)													59	19,470	$1,055,701	19,470	$1,055,701		
Data analysis & trends (canister)													92	10,120	$547,701	10,120	$547,701		
Element # 5 totals														50,794	$2,704,293	50,794	$2,704,293		
6. Quality Assurance																			
Calibration standards													59					$36,986	
Audits													92	5,520	$325,948	5,520	$325,948		
Routine calibrations													59	2,832	$151,889	2,832	$151,889		
Training													92	4,416	$246,360	4,416	$246,360		
Implementation/coordination													59	1,416	$75,944	1,416	75944		
QA plan review (annual) PAMS areas													24	12	$602	12	602		
QA plan preparation (PAMS areas)	24	24	5	$1,287	115	$6,179										115	$6,179		
Element # 6 totals					115	$6,179								14,196	$800,743	14,311	$806,922	$36,986	
7. Supervision																			
Planning/coordination (GC)													59	2,596	$148,129	2,596	$148,129		
Planning/coordination (canister)													92	1,840	$106,599	1,840	$106,599		
Supervision/review (GC)													59	2,832	$167,176	2,832	$167,176		
Supervision/review (canister)													92	2,208	$130,437	2,208	$130,437		
Element # 7 totals														9,476	$552,341	9,476	$552,341		
[redacted]																			
Summary totals																			$3,739,564

Table 12.2, 2008 PAMS VOC Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary VOC Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Nertwork design study (PAMS area) (see O3)																			
Site selection (see O3)																			
Element #1 totals																			
2. Site Installation																			
Canister sampling system																			
3 months operation	36		5	$17,037		$122,665													$122,665
12 months operation (1/6 collocation)	92		5	$7,454		$137,146													$137,146
Procurement																			
GC (on site) & GC (lab) for 23 areas	59	32	5	$1,731	378	$20,430										378	$20,430		
Cannister sampling sys and cans	57	8	5	$420	91	$4,783										91	$4,783		
Equipment installation																			
GC (on site) & GC (lab) for 16 area & ca	59	40	5	$28,851	472	$340,439										472	$340,439		
Canister sampling system	57	15	5	$820	171	$9,347										171	$9,347		
Element # 2 totals					1,112	$634,810										1,112	$374,998		$259,811
3. Sampling & Analysis																			
Automated GC with FID	59		5	$95,832		$1,130,818													$1,130,818
GC installation	59	270	5	$13,692	3,186	$161,569										3,186	$161,569		
GC annual checkout													59	3,580	$193,433	3,580	$193,433		
Operation of GC													59	30,680	$1,453,163	30,680	$1,453,163		
Canisters																			
80 for 8/3/1	4		5	$34,074		$27,259													$27,259
40 for 8/3/3	13		5	$17,037		$44,296													$44,296
20 for 4/3/3	16		5	$8,518		$27,259													$27,259
4 for 1/6	55		5	$1,704		$18,740													$18,740
Canister analysis																			
8/3/1													4	728	$9,337	728	$9,337		
8/3/3													13	806	$10,337	806	$10,337		
4/3/3													16	186	$19,084	186	$19,084		
1/6													55	419	$43,030	419	$43,030		
Canister cleaning system	24		5	$6,034		$28,964													$28,964
GC support gases													59					$106,201	
Routine site visits (canister)													88	7,744	$406,200	7,744	$406,200		
Element # 3 totals					3,186	$1,438,904							353	44,143	$2,134,584	47,329	$2,296,153	$106,201	$1,277,336
4. Maintenance																			
Spare parts/supplies (GC)													59					$157,058	
Spare parts/supplies (canister)													88					$281,107	
Remedial repairs (GC)													59	4,720	$244,759	4,720	$244,759		
Remedial repairs (canister)													88	2,816	$152,360	2,816	$152,360		
Routine maintenance (GC)													59	4,720	$230,373	4,720	$230,373		
Routine maintenance (canister)													88	5,632	$304,720	5,632	$304,720		
Element # 4 totals														17,888	$932,212	17,888	$932,212	$438,165	
5. Data Management																			
Data acquisition/processing (GC)													59	4,956	$247,021	4,956	$247,021		
Data acquisition/processing (canisters)													88	2,112	$110,756	2,112	$110,756		
Data reporting (GC)													59	1,888	$102,904	1,888	$102,904		
Data reporting (canister)													88	880	$47,601	880	$47,601		
Data validation (GC)													59	7,552	$408,602	7,552	$408,602		
Data validation (canister)													88	3,520	$189,279	3,520	$189,279		
Data analysis & trends (GC)													59	19,470	$1,075,910	19,470	$1,075,910		

Table 12.2, 2008 PAMS VOC Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary VOC Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Data analysis & trends (canister)													88	9,680	$533,916	9,680	$533,916		
Element # 5 totals														50,058	$2,715,990	50,058	$2,715,990		
6. Quality Assurance																			
Calibration standards													59					$37,694	
Audits													88	5,280	$317,745	5,280	$317,745		
Routine calibrations													59	2,832	$154,796	2,832	$154,796		
Training													88	4,224	$240,159	4,224	$240,159		
Implementation/coordination													59	1,416	$77,398	1,416	77398		
QA plan review (annual) PAMS areas													88	44	$2,250	44	2250		
QA plan preparation (PAMS areas)	24	24	5	$1,312	115	$6,297										115	$6,297		
Element # 6 totals					115	$6,297								13,796	$792,349	13,911	$798,646	$37,694	
7. Supervision																			
Planning/coordination (GC)													59	2,596	$150,964	2,596	$150,964		
Planning/coordination (canister)													88	1,760	$103,916	1,760	$103,916		
Supervision/review (GC)													59	2,832	$170,377	2,832	$170,377		
Supervision/review (canister)													88	2,112	$127,154	2,112	$127,154		
Element # 7 totals														9,300	$552,411	9,300	$552,411		
[illegible]																			
Summary totals																			$9,789,647

Table 12.3, 2009 PAMS VOC Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary VOC Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Nertwork design study (PAMS area) (see O3)																			
Site selection (see O3)																			
Element #1 totals																			
2. Site Installation																			
Canister sampling system																			
3 months operation	36		5	$17,382		$125,153													$125,153
12 months operation (1/6 collocation)	92		5	$7,605		$139,928													$139,928
Procurement																			
GC (on site) & GC (lab) for 23 areas	59	32	5	$1,766	378	$20,845										378	$20,845		
Cannister sampling sys and cans	57	8	5	$428	91	$4,880										91	$4,880		
Equipment installation																			
GC (on site) & GC (lab) for 16 area & ca	59	40	5	$29,436	472	$347,345										472	$347,345		
Canister sampling system	57	15	5	$837	171	$9,536										171	$9,536		
Element # 2 totals					1,112	$647,687										1,112	$382,606		$265,082
3. Sampling & Analysis																			
Automated GC with FID	59		5	$97,776		$1,153,757													$1,153,757
GC installation	59	270	5	$13,970	3,186	$164,846										3,186	$164,846		
GC annual checkout													59	3,460	$197,357	3,460	$197,357		
Operation of GC													59	30,680	$1,482,642	30,680	$1,482,642		
Canisters																			
80 for 8/3/1	4		5	$34,765		$27,812													$27,812
40 for 8/3/3	13		5	$17,382		$45,194													$45,194
20 for 4/3/3	16		5	$8,691		$27,812													$27,812
4 for 1/6	52		5	$1,738		$18,078													$18,078
Canister analysis																			
8/3/1													4	728	$9,526	728	$9,526		
8/3/3													13	806	$10,547	806	$10,547		
4/3/3													16	186	$19,472	186	$19,472		
1/6													52	397	$41,508	397	$41,508		
Canister cleaning system	24		5	$6,157		$29,552													$29,552
GC support gases													59					$106,201	
Routine site visits (canister)													85	7,480	$400,311	7,480	$400,311		
Element # 3 totals					3,186	$1,467,050								43,737	$2,161,362	46,923	$2,326,208	$106,201	$1,302,204
4. Maintenance																			
Spare parts/supplies (GC)													59					$160,244	
Spare parts/supplies (canister)													85					$277,032	
Remedial repairs (GC)													59	4,720	$249,724	4,720	$249,724		
Remedial repairs (canister)													85	2,720	$150,151	2,720	$150,151		
Routine maintenance (GC)													59	4,720	$235,046	4,720	$235,046		
Routine maintenance (canister)													85	5,440	$300,303	5,440	$300,303		
Element # 4 totals														17,600	$935,224	17,600	$935,224	$437,276	
5. Data Management																			
Data acquisition/processing (GC)													59	4,956	$252,032	4,956	$252,032		
Data acquisition/processing (canisters)													85	2,040	$109,151	2,040	$109,151		
Data reporting (GC)													59	1,888	$104,992	1,888	$104,992		
Data reporting (canister)													85	850	$46,911	850	$46,911		
Data validation (GC)													59	7,552	$416,891	7,552	$416,891		
Data validation (canister)													85	3,400	$186,535	3,400	$186,535		

Table 12.3, 2009 PAMS VOC Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary VOC Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Data analysis & trends (GC)													59	19,470	$1,097,735	19,470	$1,097,735		
Data analysis & trends (canister)													85	9,350	$526,176	9,350	$526,176		
Element # 5 totals														49,506	$2,740,422	49,506	$2,740,422		
6. Quality Assurance																			
Calibration standards													59					$38,459	
Audits													59	3,540	$217,355	3,540	$217,355		
Routine calibrations													59	2,832	$157,936	2,832	$157,936		
Training													59	2,832	$164,282	2,832	$164,282		
Implementation/coordination													59	1,416	$78,968	1,416	78968		
QA plan review (annual) PAMS areas													24	12	$626	12	626		
QA plan preparation (PAMS areas)	24	24	5	$1,338	115	$6,425										115	$6,425		
Element # 6 totals					115	$6,425								10,632	$619,168	10,747	$625,593	$38,459	
7. Supervision																			
Planning/coordination (GC)													59	2,596	$154,027	2,596	$154,027		
Planning/coordination (canister)													85	1,700	$102,409	1,700	$102,409		
Supervision/review (GC)													59	2,832	$173,833	2,832	$173,833		
Supervision/review (canister)													85	2,040	$125,311	2,040	$125,311		
Element # 7 totals														9,168	$555,580	9,168	$555,580		
[redacted]																			
Summary Totals																			$3,744,854

Table 13. Summary of NMOC 2007-2009 Monitoring Costs

Aug 2006

Cost Element	2007 Summary NMOC Costs				2008 Summary NMOC Costs				2009 Summary NMOC Costs				Average 2007-2009 NMOC Costs			
	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design study (RO)	30	$1,707			124	$7,208			124	$7,354			93	$5,423		
Site selection (RO)	8	$438			33	$1,848			33	$1,886			25	$1,391		
Element #1 totals	38	$2,145			157	$9,056			157	$9,240			118	$6,814		
2. Site Installation																
Analyzer				$49,457				$50,404				$51,426				$50,429
Procurement	33	$853			33	$869			33	$887			33	$869		
Equipment installation	66	$2,943			66	$3,000			66	$3,061			66	$3,001		
Element #2 totals	99	$3,796		$49,457	99	$3,869		$50,404	99	$3,947		$51,426	99	$3,871		$50,429
3. Supplies and Site Visits																
Supplies			$24,239				$24,703				$25,204				$24,716	
Routine site visits	3,480	$154,465			3,480	$157,422			3,480	$160,616			3,480	$157,501		
Element #3 totals	3,480	$154,465	$24,239		3,480	$157,422	$24,703		3,480	$160,616	$25,204		3,480	$157,501	$24,716	
4. Maintenance																
Spare parts/supplies			$30,299				$30,879				$31,506				$30,895	
Remedial repairs	348	$15,907			348	$16,212			348	$16,540			348	$16,220		
Routine maintenance	1,624	$78,263			1,624	$79,761			1,624	$81,379			1,624	$79,801		
Element #4 totals	1,972	$94,170	$30,299		1,972	$95,973	$30,879		1,972	$97,919	$31,506		1,972	$96,021	$30,895	
5 Data Management																
Data acquistion/processing	406	$19,270			406	$19,639			406	$20,038			406	$19,649		
Data reporting	261	$13,241			261	$13,494			261	$13,768			261	$13,501		
Data validation	348	$17,271			348	$17,601			348	$17,958			348	$17,610		
Data distribution	116	$5,575			116	$5,682			116	$5,797			116	$5,685		
Element # 5 totals	1,131	$55,357			1,131	$56,416			1,131	$57,561			1,131	$56,445		
6. Quality Assurance																
Audits	1,044	$56,750			1,044	$57,837			1,044	$59,010			1,044	$57,866		
Routine calibrations	754	$32,178			754	$32,794			754	$33,459			754	$32,810		
Coordination/implementation	116	$6,363			116	$6,485			116	$6,616			116	$6,488		
Training	145	$7,242			145	$7,380			145	$7,530			145	$7,384		
Reporting	174	$9,514			174	$9,696			174	$9,893			174	$9,701		
QA plan review (annual) RO	15	$728			15	$742			15	$757			15	$742		
QA plan preparation (RO)	324	$18,415			324	$18,768			324	$19,148			324	$18,777		
Element #6 totals	2,572	$131,189			2,572	$133,701			2,572	$136,413			2,572	$133,768		
7. Supervision																
Planning/coordination	348	$20,543			348	$20,936			348	$21,361			348	$20,947		
Supervision/review	870	$43,601			870	$44,435			870	$45,337			870	$44,457		
Element #7 totals	1,218	$64,143			1,218	$65,371			1,218	$66,697			1,218	$65,404		
Summary Totals				$609,264				$627,794				$640,529				$625,862

Table 13.1, 2007 NMOC Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for NMOC									Summary NMOC			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	7	30	7	$1,707	30	$1,707										30	$1,707		
Site selection (RO)	7	8	7	$438	8	$438										8	$438		
Element #1 totals					38	$2,145										38	$2,145		
2. Site Installation																			
Analyzer	29		7	$11,938		$49,457													$49,457
Procurement	29	8	7	$206	33	$853										33	$853		
Equipment installation	29	16	7	$710	66	$2,943										66	$2,943		
Element #2 totals					99	$53,253										99	$3,796		$49,457
3. Supplies and Site Visits																			
Supplies													29					$24,239	
Routine site visits													29	3,480	$154,465	3,480	$154,465		
Element #3 totals														3,480	$154,465	3,480	$154,465	$24,239	
4. Maintenance																			
Spare parts/supplies													29					$30,299	
Remedial repairs													29	348	$15,907	348	$15,907		
Routine maintenance													29	1,624	$78,263	1,624	$78,263		
Element #4 totals														1,972	$94,170	1,972	$94,170	$30,299	
5 Data Management																			
Data acquistion/processing													29	406	$19,270	406	$19,270		
Data reporting													29	261	$13,241	261	$13,241		
Data validation													29	348	$17,271	348	$17,271		
Data distribution													29	116	$5,575	116	$5,575		
Element # 5 totals														1,131	$55,357	1,131	$55,357		
6. Quality Assurance																			
Audits													29	1,044	$56,750	1,044	$56,750		
Routine calibrations													29	754	$32,178	754	$32,178		
Coordination/implementation													29	116	$6,363	116	$6,363		
Training													29	145	$7,242	145	$7,242		
Reporting													29	174	$9,514	174	$9,514		
QA plan review (annual) RO													29	15	$728	15	$728		
QA plan preparation (RO)	108	15	5	$853	324	$18,415										324	$18,415		
Element #6 totals					324	$18,415								2,248	$112,774	2,572	$131,189		
7. Supervision																			
Planning/coordination													29	348	$20,543	348	$20,543		
Supervision/review													29	870	$43,601	870	$43,601		
Element #7 totals														1,218	$64,143	1,218	$64,143		
[redacted]																			
Summary totals																			$609,264

Table 13.2, 2008 NMOC Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for NMOC									Summary NMOC			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	29	30	7	$1,740	124	$7,208										124	$7,208		
Site selection (RO)	29	8	7	$446	33	$1,848										33	$1,848		
Element #1 totals					157	$9,056										157	$9,056		
2. Site Installation																			
Analyzer	29		7	$12,166		$50,404													$50,404
Procurement	29	8	7	$210	33	$869										33	$869		
Equipment installation	29	16	7	$724	66	$3,000										66	$3,000		
Element #2 totals					99	$54,272										99	$3,869		$50,404
3. Supplies and Site Visits																			
Supplies													29					$24,703	
Routine site visits													29	3,480	$157,422	3,480	$157,422		
Element #3 totals														3,480	$157,422	3,480	$157,422	$24,703	
4. Maintenance																			
Spare parts/supplies													29					$30,879	
Remedial repairs													29	348	$16,212	348	$16,212		
Routine maintenance													29	1,624	$79,761	1,624	$79,761		
Element #4 totals														1,972	$95,973	1,972	$95,973	$30,879	
5 Data Management																			
Data acquistion/processing													29	406	$19,639	406	$19,639		
Data reporting													29	261	$13,494	261	$13,494		
Data validation													29	348	$17,601	348	$17,601		
Data distribution													29	116	$5,682	116	$5,682		
Element # 5 totals														1,131	$56,416	1,131	$56,416		
6. Quality Assurance																			
Audits													29	1,044	$57,837	1,044	$57,837		
Routine calibrations													29	754	$32,794	754	$32,794		
Coordination/implementation													29	116	$6,485	116	$6,485		
Training													29	145	$7,380	145	$7,380		
Reporting													29	174	$9,696	174	$9,696		
QA plan review (annual) RO													29	15	$742	15	$742		
QA plan preparation (RO)	108	15	5	$869	324	$18,768										324	$18,768		
Element #6 totals					324	$18,768								2,248	$114,933	2,572	$133,701		
7. Supervision																			
Planning/coordination													29	348	$20,936	348	$20,936		
Supervision/review													29	870	$44,435	870	$44,435		
Element #7 totals														1,218	$65,371	1,218	$65,371		
Summary totals																			$627,794

Table 13.3, 2009 NMOC Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for NMOC									Summary NMOC			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (RO)	29	30	7	$1,775	124	$7,354										124	$7,354		
Site selection (RO)	29	8	7	$455	33	$1,886										33	$1,886		
Element #1 totals					157	$9,240										157	$9,240		
2. Site Installation																			
Analyzer	29		7	$12,413		$51,426													$51,426
Procurement	29	8	7	$214	33	$887										33	$887		
Equipment installation	29	16	7	$739	66	$3,061										66	$3,061		
Element #2 totals					99	$55,373										99	$3,947		$51,426
3. Supplies and Site Visits																			
Supplies													29					$25,204	
Routine site visits													29	3,480	$160,616	3,480	$160,616		
Element #3 totals														3,480	$160,616	3,480	$160,616	$25,204	
4. Maintenance																			
Spare parts/supplies													29					$31,506	
Remedial repairs													29	348	$16,540	348	$16,540		
Routine maintenance													29	1,624	$81,379	1,624	$81,379		
Element #4 totals														1,972	$97,919	1,972	$97,919	$31,506	
5 Data Management																			
Data acquistion/processing													29	406	$20,038	406	$20,038		
Data reporting													29	261	$13,768	261	$13,768		
Data validation													29	348	$17,958	348	$17,958		
Data distribution													29	116	$5,797	116	$5,797		
Element # 5 totals														1,131	$57,561	1,131	$57,561		
6. Quality Assurance																			
Audits													29	1,044	$59,010	1,044	$59,010		
Routine calibrations													29	754	$33,459	754	$33,459		
Coordination/implementation													29	116	$6,616	116	$6,616		
Training													29	145	$7,530	145	$7,530		
Reporting													29	174	$9,893	174	$9,893		
QA plan review (annual) RO													29	15	$757	15	$757		
QA plan preparation (RO)	108	15	5	$887	324	$19,148										324	$19,148		
Element #6 totals					324	$19,148								2,248	$117,264	2,572	$136,413		
7. Supervision																			
Planning/coordination													29	348	$21,361	348	$21,361		
Supervision/review													29	870	$45,337	870	$45,337		
Element #7 totals														1,218	$66,697	1,218	$66,697		
Summary totals																			$640,529

Table 14, Summary of 2007- 2009 NOx & NOy Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary NOx-NOy				Summary NOx-NOy				Summary NOx-NOy				Average 2007-2009 NOx-NOy			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design study (see NO2)																
Site selection (see NO2)																
Precursor NOy monitors																
Network design study	64	$3,658			64	$3,728			64	$3,804			64	$3,730		
Site selection	17	$938			17	$956			17	$975			17	$957		
Element #1 totals	81	$4,596			81	$4,684			81	$4,779			81	$4,687		
2. Site Installation																
Analyzer (see NO2)																
Procurement (see NO2)																
Equipment installation (see NO2)																
Precursor NOy monitors																
Analyzer				$45,897				$46,775				$47,724				$46,799
Procurement	9	$441			9	$449			9	$459			9	$450		
Equipment installation	34	$1,522			34	$1,552			34	$1,583			34	$1,552		
Element #2 totals	43	$1,963		$45,897	43	$2,001		$46,775	43	$2,042		$47,724	43	$2,002		$46,799
3. Supplies and Site Visits																
Supplies (see NO2)																
Routine site visits (see NO2)																
Precursor NOy monitors																
Supplies			$12,538				$12,778				$13,037				$12,784	
Routine site visits	1,800	$79,896			1,800	$81,425			1,800	$83,077			1,800	$81,466		
Element #3 totals	1,800	$79,896	$12,538		1,800	$81,425	$12,778		1,800	$83,077	$13,037		1,800	$81,466	$12,784	
4. Maintenance																
Spare parts/supplies (see NO2)																
Remedial repairs (see NO2)																
Routine maintenance (see NO2)																
Precursor NOy monitors																
Spare parts/supplies			$15,672				$15,972				$16,296				$15,980	
Remedial repairs	240	$11,707			240	$11,931			240	$12,173			240	$11,937		
Routine maintenance	1,050	$51,624			1,050	$52,612			1,050	$53,679			1,050	$52,638		
Element #4 totals	1,290	$63,331	$15,672		1,290	$64,543	$15,972		1,290	$65,852	$16,296		1,290	$64,575	$15,980	
5 Data Management																
Data acquistion/processing	1,680	$85,043			1,680	$86,670			1,680	$88,429			1,680	$86,714		
Data reporting	840	$43,443			840	$44,274			840	$45,173			840	$44,297		
Data validation	1,260	$62,663			1,260	$63,862			1,260	$65,158			1,260	$63,894		
Data distribution	420	$20,712			420	$21,109			420	$21,537			420	$21,119		
Precursor NOy monitors																
Data acquistion/processing	300	$15,186			300	$15,477			300	$15,791			300	$15,485		
Data reporting	150	$7,758			150	$7,906			150	$8,067			150	$7,910		
Data validation	225	$11,190			225	$11,404			225	$11,635			225	$11,410		
Data distribution	75	$3,699			75	$3,769			75	$3,846			75	$3,771		
Element # 5 totals	4,950	$249,693			4,950	$254,472			4,950	$259,634			4,950	$254,600		
6. Quality Assurance																

Table 14, Summary of 2007- 2009 NOx & NOy Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary NOx-NOy				Summary NOx-NOy				Summary NOx-NOy				Average 2007-2009 NOx-NOy			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Audits (see NO2)																
Routine calibrations (see NO2)																
Coordination/implementation (see NO																
Training (see NO2)																
Reporting (see NO2)																
QA plan review (annual) (see NO2)																
QA plan preparation (RO) (see NO2)																
Precursor NOy monitors																
Audits	1,080	$59,083			1,080	$60,214			1,080	$61,436			1,080	$60,245		
Routine calibrations	720	$31,971			720	$32,583			720	$33,244			720	$32,599		
Coordination/implementation	60	$3,291			60	$3,354			60	$3,422			60	$3,356		
Training	75	$3,746			75	$3,817			75	$3,895			75	$3,819		
Reporting	90	$4,921			90	$5,015			90	$5,117			90	$5,018		
QA plan review (annual)	2	$75			2	$77			2	$78			2	$77		
QA plan preparation	45	$2,558			45	$2,607			45	$2,660			45	$2,608		
Element #6 totals	2,072	$105,645			2,072	$107,667			2,072	$109,851			2,072	$107,721		
7. Supervision																
Planning/coordination	1,008	$59,503			1,008	$60,642			1,008	$61,873			1,008	$60,673		
Supervision/review	2,520	$126,291			2,520	$128,709			2,520	$131,320			2,520	$128,773		
Precursor NOy monitors																
Planning/coordination	180	$10,626			180	$10,829			180	$11,049			180	$10,834		
Supervision/review	450	$22,552			450	$22,984			450	$23,450			450	$22,995		
Element #7 totals	4,158	$218,972			4,158	$223,164			4,158	$227,691			4,158	$223,276		
Summary Totals				$798,202				$813,482				$829,984				$813,889

Table 14.1, 2007 NOx & NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Cost						New Site Hours and Costs for NOx & Precursor NOy									Summary NOx-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (see NO2)																			
Site selection (see NO2)																			
Precursor NOy monitors																			
Network design study	15	30	7	$1,707	64	$3,658										64	$3,658		
Site selection	15	8	7	$438	17	$938										17	$938		
Element #1 totals					81	$4,596										81	$4,596		
2. Site Installation																			
Analyzer (see NO2)																			
Procurement (see NO2)																			
Equipment installation (see NO2)																			
Precursor NOy monitors																			
Analyzer	15		7	$21,418		$45,897													$45,897
Procurement	15	4	7	$206	9	$441										9	$441		
Equipment installation	15	16	7	$710	34	$1,522										34	$1,522		
Element #2 totals					43	$47,860										43	$1,963		$45,897
3. Supplies and Site Visits																			
Supplies (see NO2)																			
Routine site visits (see NO2)																			
Precursor NOy monitors																			
Supplies													15					$12,538	
Routine site visits													15	1,800	$79,896	1,800	$79,896		
Element #3 totals														1,800	$79,896	1,800	$79,896	$12,538	
4. Maintenance																			
Spare parts/supplies (see NO2)																			
Remedial repairs (see NO2)																			
Routine maintenance (see NO2)																			
Precursor NOy monitors																			
Spare parts/supplies													15					$15,672	
Remedial repairs													15	240	$11,707	240	$11,707		
Routine maintenance													15	1,050	$51,624	1,050	$51,624		
Element #4 totals														1,290	$63,331	1,290	$63,331	$15,672	
5 Data Management																			
Data acquistion/processing													84	1,680	$85,043	1,680	$85,043		
Data reporting													84	840	$43,443	840	$43,443		
Data validation													84	1,260	$62,663	1,260	$62,663		
Data distribution													84	420	$20,712	420	$20,712		
Precursor NOy monitors																			
Data acquistion/processing													15	300	$15,186	300	$15,186		
Data reporting													15	150	$7,758	150	$7,758		
Data validation													15	225	$11,190	225	$11,190		
Data distribution													15	75	$3,699	75	$3,699		
Element # 5 totals														4,950	$249,693	4,950	$249,693		

Table 14.1, 2007 NOx & NOy Monitoring Costs

Aug 2006

	Previous Amortized Hours and Cost						New Site Hours and Costs for NOx & Precursor NOy									Summary NOx-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
6. Quality Assurance																			
Audits (see NO2)																			
Routine calibrations (see NO2)																			
Coordination/implementation (see NO2)																			
Training (see NO2)																			
Reporting (see NO2)																			
QA plan review (annual) (see NO2)																			
QA plan preparation (RO) (see NO2)																			
Precursor NOy monitors																			
Audits													15	1,080	$59,083	1,080	$59,083		
Routine calibrations													15	720	$31,971	720	$31,971		
Coordination/implementation													15	60	$3,291	60	$3,291		
Training													15	75	$3,746	75	$3,746		
Reporting													15	90	$4,921	90	$4,921		
QA plan review (annual)													15	2	$75	2	$75		
QA plan preparation	15	15	5	$853	45	$2,558										45	$2,558		
Element #6 totals					45	$2,558								2,027	$103,087	2,072	$105,645		
7. Supervision																			
Planning/coordination													84	1,008	$59,503	1,008	$59,503		
Supervision/review													84	2,520	$126,291	2,520	$126,291		
Precursor NOy monitors																			
Planning/coordination													15	180	$10,626	180	$10,626		
Supervision/review													15	450	$22,552	450	$22,552		
Element #7 totals														4,158	$218,972	4,158	$218,972		
[redacted]																			
Summary Totals																			$798,202

Table 14.2, 2008 NOx & NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor NOy									Summary NOx-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (see NO2)																			
Site selection (see NO2)																			
Precursor NOy monitors																			
Network design study	15	30	7	$1,740	64	$3,728										64	$3,728		
Site selection	15	8	7	$446	17	$956										17	$956		
Element #1 totals					81	$4,684										81	$4,684		
2. Site Installation																			
Analyzer (see NO2)																			
Procurement (see NO2)																			
Equipment installation (see NO2)																			
Precursor NOy monitors																			
Analyzer	15		7	$21,828		$46,775													$46,775
Procurement	15	4	7	$210	9	$449										9	$449		
Equipment installation	15	16	7	$724	34	$1,552										34	$1,552		
Element #2 totals					43	$48,776										43	$2,001		$46,775
3. Supplies and Site Visits																			
Supplies (see NO2)																			
Routine site visits (see NO2)																			
Precursor NOy monitors																			
Supplies													15					$12,778	
Routine site visits													15	1,800	$81,425	1,800	$81,425		
Element #3 totals														1,800	$81,425	1,800	$81,425	$12,778	
4. Maintenance																			
Spare parts/supplies (see NO2)																			
Remedial repairs (see NO2)																			
Routine maintenance (see NO2)																			
Precursor NOy monitors																			
Spare parts/supplies													15					$15,972	
Remedial repairs													15	240	$11,931	240	$11,931		
Routine maintenance													15	1,050	$52,612	1,050	$52,612		
Element #4 totals														1,290	$64,543	1,290	$64,543	$15,972	
5 Data Management																			
Data acquistion/processing													84	1,680	$86,670	1,680	$86,670		
Data reporting													84	840	$44,274	840	$44,274		
Data validation													84	1,260	$63,862	1,260	$63,862		
Data distribution													84	420	$21,109	420	$21,109		
Precursor NOy monitors																			
Data acquistion/processing													15	300	$15,477	300	$15,477		
Data reporting													15	150	$7,906	150	$7,906		
Data validation													15	225	$11,404	225	$11,404		
Data distribution													15	75	$3,769	75	$3,769		
Element # 5 totals														4,950	$254,472	4,950	$254,472		
6. Quality Assurance																			

Table 14.2, 2008 NOx & NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor NOy									Summary NOx-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Audits (see NO2)																			
Routine calibrations (see NO2)																			
Coordination/implementation (see NO																			
Training (see NO2)																			
Reporting (see NO2)																			
QA plan review (annual) (see NO2)																			
QA plan preparation (RO) (see NO2)																			
Precursor NOy monitors																			
Audits													15	1,080	$60,214	1,080	$60,214		
Routine calibrations													15	720	$32,583	720	$32,583		
Coordination/implementation													15	60	$3,354	60	$3,354		
Training													15	75	$3,817	75	$3,817		
Reporting													15	90	$5,015	90	$5,015		
QA plan review (annual)													15	2	$77	2	$77		
QA plan preparation	15	15	5	$869	45	$2,607										45	$2,607		
Element #6 totals					45	$2,607								2,027	$105,061	2,072	$107,667		
7. Supervision																			
Planning/coordination													84	1,008	$60,642	1,008	$60,642		
Supervision/review													84	2,520	$128,709	2,520	$128,709		
Precursor NOy monitors																			
Planning/coordination													15	180	$10,829	180	$10,829		
Supervision/review													15	450	$22,984	450	$22,984		
Element #7 totals														4,158	$223,164	4,158	$223,164		
[redacted]																			
Summary Totals																			$813,482

Table 14.3, 2009 NOx & NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor NOy									Summary NOx-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study (see NO2)																			
Site selection (see NO2)																			
Precursor NOy monitors																			
Network design study	15	30	7	$1,775	64	$3,804										64	$3,804		
Site selection	15	8	7	$455	17	$975										17	$975		
Element #1 totals					81	$4,779										81	$4,779		
2. Site Installation																			
Analyzer (see NO2)																			
Procurement (see NO2)																			
Equipment installation (see NO2)																			
Precursor NOy monitors																			
Analyzer	15		7	$22,271		$47,724													$47,724
Procurement	15	4	7	$214	9	$459										9	$459		
Equipment installation	15	16	7	$739	34	$1,583										34	$1,583		
Element #2 totals					43	$49,766										43	$2,042		$47,724
3. Supplies and Site Visits																			
Supplies (see NO2)																			
Routine site visits (see NO2)																			
Precursor NOy monitors																			
Supplies													15					$13,037	
Routine site visits													15	1,800	$83,077	1,800	$83,077		
Element #3 totals														1,800	$83,077	1,800	$83,077	$13,037	
4. Maintenance																			
Spare parts/supplies (see NO2)																			
Remedial repairs (see NO2)																			
Routine maintenance (see NO2)																			
Precursor NOy monitors																			
Spare parts/supplies													15					$16,296	
Remedial repairs													15	240	$12,173	240	$12,173		
Routine maintenance													15	1,050	$53,679	1,050	$53,679		
Element #4 totals														1,290	$65,852	1,290	$65,852	$16,296	
5 Data Management																			
Data acquistion/processing													84	1,680	$88,429	1,680	$88,429		
Data reporting													84	840	$45,173	840	$45,173		
Data validation													84	1,260	$65,158	1,260	$65,158		
Data distribution													84	420	$21,537	420	$21,537		
Precursor NOy monitors																			
Data acquistion/processing													15	300	$15,791	300	$15,791		
Data reporting													15	150	$8,067	150	$8,067		
Data validation													15	225	$11,635	225	$11,635		
Data distribution													15	75	$3,846	75	$3,846		
Element # 5 totals														4,950	$259,634	4,950	$259,634		
6. Quality Assurance																			

Table 14.3, 2009 NOx & NOy Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Precursor NOy									Summary NOx-NOy			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Audits (see NO2)																			
Routine calibrations (see NO2)																			
Coordination/implementation (see NO																			
Training (see NO2)																			
Reporting (see NO2)																			
QA plan review (annual) (see NO2)																			
QA plan preparation (RO) (see NO2)																			
Precursor NOy monitors																			
Audits													15	1,080	$61,436	1,080	$61,436		
Routine calibrations													15	720	$33,244	720	$33,244		
Coordination/implementation													15	60	$3,422	60	$3,422		
Training													15	75	$3,895	75	$3,895		
Reporting													15	90	$5,117	90	$5,117		
QA plan review (annual)													15	2	$78	2	$78		
QA plan preparation	15	15	5	$887	45	$2,660										45	$2,660		
Element #6 totals					45	$2,660								2,027	$107,192	2,072	$109,851		
7. Supervision																			
Planning/coordination													84	1,008	$61,873	1,008	$61,873		
Supervision/review													84	2,520	$131,320	2,520	$131,320		
Precursor NOy monitors																			
Planning/coordination													15	180	$11,049	180	$11,049		
Supervision/review													15	450	$23,450	450	$23,450		
Element #7 totals														4,158	$227,691	4,158	$227,691		
[redacted]																			
Summary totals																			$829,984

Table 15, Summary of 2007-2009 Surface Met Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary Surface Met				Summary Surface Met				Summary Surface Met				Average 2007-2009 Surface Met			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design & site selection	250	$14,130			239	$13,774			231	$13,575			240	$13,826		
Element #1 totals	250	$14,130			239	$13,774			231	$13,575			240	$13,826		
2. Site Installation																
Met equip/sensors (4 parameters				$137,323				$131,719				$128,091				$132,378
Met equip/sensors (8 parameters				$54,915				$55,966				$57,101				$55,994
Procurement	105	$5,754			101	$5,609			97	$5,527			101	$5,630		
Equipment installation	105	$5,040			101	$4,913			97	$4,841			101	$4,931		
Acceptance testing	368	$19,224			352	$18,740			340	$18,469			353	$18,811		
Element #2 totals	578	$30,017		$192,237	553	$29,262		$187,685	534	$28,838		$185,192	555	$29,372		$188,371
3. Sampling and Analysis																
Supplies			$72,091				$70,277				$69,258				$70,542	
Routine field service checks	2,760	$111,020			2,640	$108,226			2,550	$106,657			2,650	$108,635		
Element #3 totals	2,760	$111,020	$72,091		2,640	$108,226	$70,277		2,550	$106,657	$69,258		2,650	$108,635	$70,542	
4. Maintenance																
Repairs & maintenance	1,840	$89,393			1,760	$87,143			1,700	$85,880			1,767	$87,472		
Spare parts			$192,243				$187,405				$184,688				$188,112	
Element #4 totals	1,840	$89,393	$192,243		1,760	$87,143	$187,405		1,700	$85,880	$184,688		1,767	$87,472	$188,112	
5. Data Management																
Data acquisition, processing, rep.	1,472	$69,784			1,408	$68,028			1,360	$67,042			1,413	$68,285		
Data validation	1,472	$75,744			1,408	$73,837			1,360	$72,767			1,413	$74,116		
Data distribution	1,472	$62,864			1,408	$61,281			1,360	$60,393			1,413	$61,513		
Element #5 totals	4,416	$208,392			4,224	$203,147			4,080	$200,202			4,240	$203,913		
6. Quality Assurance																
Audits	552	$28,452			528	$27,736			510	$27,334			530	$27,841		
Routine calibrations	736	$39,121			704	$38,137			680	$37,584			707	$38,281		
Coordination/implementation	920	$52,482			880	$51,162			850	$50,420			883	$51,355		
Reporting	1,656	$79,300			1,584	$77,304			1,530	$76,184			1,590	$77,596		
Training	920	$48,445			880	$47,226			850	$46,541			883	$47,404		
QA plan review (annual)	12	$1,204			12	$1,227			12	$1,252			12	$1,228		
QA plan preparation	72	$4,082			72	$4,160			72	$4,245			72	$4,162		
Element #6 totals	4,868	$253,088			4,660	$246,953			4,504	$243,560			4,677	$247,867		
7. Supervision																
Planning/coordination	828	$48,253			792	$47,039			765	$46,357			795	$47,216		
Supervision/review	1,840	$107,848			1,760	$105,134			1,700	$103,610			1,767	$105,531		
Element #7 totals	2,668	$2,668			2,552	$2,552			2,465	$2,465			2,562	$2,562		
[redacted]																
Summary Totals				$1,165,280				$1,136,423				$1,120,315				$1,140,673

Table 15.1, 2007 Surface Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Surface Met									Summary Surface Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design & site selection	92	19	7	$1,075	250	$14,130										250	$14,130		
Element #1 totals					250	$14,130										250	$14,130		
2. Site Installation																			
Met equip/sensors (4 parameters	68		7	$14,136		$137,323													$137,323
Met equip/sensors (8 parameters	24		7	$16,017		$54,915													$54,915
Procurement	92	8	7	$438	105	$5,754										105	$5,754		
Equipment installation	92	8	7	$383	105	$5,040										105	$5,040		
Acceptance testing	92	28	7	$1,463	368	$19,224										368	$19,224		
Element #2 totals					578	$222,255										578	$30,017		$192,237
3. Sampling and Analysis																			
Supplies													92					$72,091	
Routine field service checks													92	2,760	$111,020	2,760	$111,020		
Element #3 totals														2,760	$111,020	2,760	$111,020	$72,091	
4. Maintenance																			
Repairs & maintenance													92	1,840	$89,393	1,840	$89,393		
Spare parts													92					$192,243	
Element #4 totals														1,840	$89,393	1,840	$89,393	$192,243	
5. Data Management																			
Data acquisition, processing, rep													92	1,472	$69,784	1,472	$69,784		
Data validation													92	1,472	$75,744	1,472	$75,744		
Data distribution													92	1,472	$62,864	1,472	$62,864		
Element #5 totals														4,416	$208,392	4,416	$208,392		
6. Quality Assurance																			
Audits													92	552	$28,452	552	$28,452		
Routine calibrations													92	736	$39,121	736	$39,121		
Coordination/implementation													92	920	$52,482	920	$52,482		
Reporting													92	1,656	$79,300	1,656	$79,300		
Training													92	920	$48,445	920	$48,445		
QA plan review (annual)													24	12	$1,204	12	$1,204		
QA plan preparation	24	15	5	$850	72	$4,082							24			72	$4,082		
Element #6 totals					72	$4,082								4,796	$249,006	4,868	$253,088		
7. Supervision																			
Planning/coordination													92	828	$48,253	828	$48,253		
Supervision/review													92	1,840	$107,848	1,840	$107,848		
Element #7 totals														2,668	$2,668	2,668	$2,668		
Summary Totals																			$1,165,280

Table 15.2, 2008 Surface Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Surface Met									Summary Surface Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design & site selection	88	19	7	$1,096	239	$13,774										239	$13,774		
Element #1 totals					239	$13,774										239	$13,774		
2. Site Installation																			
Met equip/sensors (4 parameters	64		7	$14,407		$131,719													$131,719
Met equip/sensors (8 parameters	24		7	$16,323		$55,966													$55,966
Procurement	88	8	7	$446	101	$5,609										101	$5,609		
Equipment installation	88	8	7	$391	101	$4,913										101	$4,913		
Acceptance testing	88	28	7	$1,491	352	$18,740										352	$18,740		
Element #2 totals					553	$216,947										553	$29,262		$187,685
3. Sampling and Analysis																			
Supplies													88					$70,277	
Routine field service checks													88	2,640	$108,226	2,640	$108,226		
Element #3 totals														2,640	$108,226	2,640	$108,226	$70,277	
4. Maintenance																			
Repairs & maintenance													88	1,760	$87,143	1,760	$87,143		
Spare parts													88					$187,405	
Element #4 totals														1,760	$87,143	1,760	$87,143	$187,405	
5. Data Management																			
Data acquisition, processing, rep													88	1,408	$68,028	1,408	$68,028		
Data validation													88	1,408	$73,837	1,408	$73,837		
Data distribution													88	1,408	$61,281	1,408	$61,281		
Element #5 totals														4,224	$203,147	4,224	$203,147		
6. Quality Assurance																			
Audits													88	528	$27,736	528	$27,736		
Routine calibrations													88	704	$38,137	704	$38,137		
Coordination/implementation													88	880	$51,162	880	$51,162		
Reporting													88	1,584	$77,304	1,584	$77,304		
Training													88	880	$47,226	880	$47,226		
QA plan review (annual)													24	12	$1,227	12	$1,227		
QA plan preparation	24	15	5	$867	72	$4,160							24			72	$4,160		
Element #6 totals					72	$4,160								4,588	$242,792	4,660	$246,953		
7. Supervision																			
Planning/coordination													88	792	$47,039	792	$47,039		
Supervision/review													88	1,760	$105,134	1,760	$105,134		
Element #7 totals														2,552	$2,552	2,552	$2,552		
Summary Totals																			$1,136,423

Table 15.3, 2009 Surface Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Surface Met									Summary Surface Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design & site selection	85	19	7	$1,118	231	$13,575										231	$13,575		
Element #1 totals					231	$13,575										231	$13,575		
2. Site Installation																			
Met equip/sensors (4 parameters)	61		7	$14,699		$128,091													$128,091
Met equip/sensors (8 parameters)	24		7	$16,655		$57,101													$57,101
Procurement	85	8	7	$455	97	$5,527										97	$5,527		
Equipment installation	85	8	7	$399	97	$4,841										97	$4,841		
Acceptance testing	85	28	7	$1,521	340	$18,469										340	$18,469		
Element #2 totals					534	$214,030										534	$28,838		$185,192
3. Sampling and Analysis																			
Supplies													85					$69,258	
Routine field service checks													85	2,550	$106,657	2,550	$106,657		
Element #3 totals														2,550	$106,657	2,550	$106,657	$69,258	
4. Maintenance																			
Repairs & maintenance													85	1,700	$85,880	1,700	$85,880		
Spare parts													85					$184,688	
Element #4 totals														1,700	$85,880	1,700	$85,880	$184,688	
5. Data Management																			
Data acquisition, processing, rep.													85	1,360	$67,042	1,360	$67,042		
Data validation													85	1,360	$72,767	1,360	$72,767		
Data distribution													85	1,360	$60,393	1,360	$60,393		
Element #5 totals														4,080	$200,202	4,080	$200,202		
6. Quality Assurance																			
Audits													85	510	$27,334	510	$27,334		
Routine calibrations													85	680	$37,584	680	$37,584		
Coordination/implementation													85	850	$50,420	850	$50,420		
Reporting													85	1,530	$76,184	1,530	$76,184		
Training													85	850	$46,541	850	$46,541		
QA plan review (annual)													24	12	$1,252	12	$1,252		
QA plan preparation	24	15	5	$884	72	$4,245							24			72	$4,245		
Element #6 totals					72	$4,245								4,432	$239,315	4,504	$243,560		
7. Supervision																			
Planning/coordination													85	765	$46,357	765	$46,357		
Supervision/review													85	1,700	$103,610	1,700	$103,610		
Element #7 totals														2,465	$2,465	2,465	$2,465		
Summary Totals																			$1,120,315

Table 16, Summary of 2007-2009 Upper Air Meteorological Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary Upper Air Met				Summary Upper Air Met				Summary Upper Air Met				Average 2007-2009 Upper Air Met			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design and site selection	60	$3,379			60	$3,444			60	$3,513			60	$3,445		
Element #1 totals	$60	$3,379			$60	$3,444			$60	$3,513			$60	$3,445		
2. Site Installation																
Continuous - LAP/RASS				$167,914				$171,129				$174,600				$171,214
Continuous - radar profiler				$74,629				$76,057				$77,600				$76,095
Inter. soundings - Rawindsondes				$6,903				$7,035				$7,177				$7,038
Continuous - SODAR				$69,793				$71,129				$72,572				$71,165
Continuous - LAP/RASS +NEXRA				$18,657				$19,014				$19,400				$19,024
Computer hardware & software				$26,269				$26,772				$27,315				$26,786
Acceptance testing	189	$8,088			189	$8,242			189	$8,410			189	$8,247		
Procurement	50	$2,752			50	$2,804			50	$2,861			50	$2,806		
Equipment installation	47	$2,528			47	$2,577			47	$2,629			47	$2,578		
Element #2 totals	$286	$13,368		$364,165	$286	$13,624		$371,136	$286	$13,900		$378,665	$286	$13,630		$371,322
3. Sampling and Analysis																
Supplies/spare parts			$22,986				$23,426				$23,901				$23,437	
Routine field service checks	352	$18,113			352	$18,459			352	$18,834			352	$18,469		
Element #3 totals	$352	$18,113	$22,986		$352	$18,459	$23,426		$352	$18,834	$23,901		$352	$18,469	$23,437	
4. Maintenance																
Remedial field service	110	$5,654			110	$5,763			110	$5,880			110	$5,766		
Spare parts			$45,971				$46,851				$47,802				$46,875	
Element #4 totals	$110	$5,654	$45,971		$110	$5,763	$46,851		$110	$5,880	$47,802		$110	$5,766	$46,875	
5. Data Management																
Data acquistion, processing, etc.	132	$6,436			132	$6,559			132	$6,692			132	$6,562		
Data validation	88	$4,528			88	$4,615			88	$4,708			88	$4,617		
Element # 5 totals	$220	$10,964			$220	$11,174			$220	$11,401			$220	$11,180		
6. Quality Assurance																
Audits	176	$4,827			176	$4,919			176	$5,019			176	$4,922		
Routine calibrations	110	$5,953			110	$6,067			110	$6,190			110	$6,070		
Coordination/implementation	44	$2,345			44	$2,389			44	$2,438			44	$2,391		
Training	176	$9,631			176	$9,815			176	$10,014			176	$9,820		
QA/QC reporting & review	33	$1,770			33	$1,804			33	$1,840			33	$1,805		
QA plan review (annual)	11	$1,104			11	$1,125			11	$1,148			11	$1,126		
QA plan preparation	88	$3,742			88	$3,814			88	$3,891			88	$3,816		
Element #6 totals	$638	$29,372			$638	$29,934			$638	$30,541			$638	$29,949		
7. Supervision																
Planning/coordination	41	$2,345			41	$2,389			41	$2,438			41	$2,391		
Supervision/review	72	$6,505			72	$6,629			72	$6,764			72	$6,633		
Element #7 totals	$113	$8,849			$113	$9,019			$113	$9,202			$113	$9,023		

Table 16, Summary of 2007-2009 Upper Air Meteorological Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary Upper Air Met				Summary Upper Air Met				Summary Upper Air Met				Average 2007-2009 Upper Air Met			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Summary Totals				$522,821				$532,829				$543,638				$533,096

Table 16.1, 2007 Upper Air Meteorology Monitoring Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs for Upper Air Met									Summary Upper Air Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design and site selection	22	19	7	$1,075	60	$3,379										60	$3,379		
Element #1 totals					60	$3,379										$60	$3,379		
2. Site Installation																			
Continuous - LAP/RASS	9		7	$130,600		$167,914													$167,914
Continuous - radar profiler	4		7	$130,600		$74,629													$74,629
Inter. soundings - Rawindsondes	1		7	$48,318		$6,903													$6,903
Continuous - SODAR	7		7	$69,793		$69,793													$69,793
Continuous - LAP/RASS +NEXRAD	1		7	$130,600		$18,657													$18,657
Computer hardware & software	22		7	$8,358		$26,269													$26,269
Acceptance testing	22	60	7	$2,573	189	$8,088										189	$8,088		
Procurement	22	16	7	$876	50	$2,752										50	$2,752		
Equipment installation	22	15	7	$804	47	$2,528										47	$2,528		
Element #2 totals					286	$377,533										$286	$13,368		$364,165
3. Sampling and Analysis																			
Supplies/spare parts													22					$22,986	
Routine field service checks													22	352	$18,113	352	$18,113		
Element #3 totals														352	$18,113	$352	$18,113	$22,986	
4. Maintenance																			
Remedial field service													22	110	$5,654	110	$5,654		
Spare parts													22					$45,971	
Element #4 totals														110	$5,654	$110	$5,654	$45,971	
5. Data Management																			
Data acquistion, processing, etc.													22	132	$6,436	132	$6,436		
Data validation													22	88	$4,528	88	$4,528		
Element # 5 totals														220	$10,964	$220	$10,964		
6. Quality Assurance																			
Audits													22	176	$4,827	176	$4,827		
Routine calibrations													22	110	$5,953	110	$5,953		
Coordination/implementation													22	44	$2,345	44	$2,345		
Training													22	176	$9,631	176	$9,631		
QA/QC reporting & review													22	33	$1,770	33	$1,770		
QA plan review (annual)													22	11	$1,104	11	$1,104		
QA plan preparation	22	20	5	$850	88	$3,742										88	$3,742		
Element #6 totals					88	$3,742								550	$25,630	$638	$29,372		
7. Supervision																			
Planning/coordination													22	41	$2,345	41	$2,345		
Supervision/review													22	72	$6,505	72	$6,505		
Element #7 totals														113	$8,849	$113	$8,849		
Summary Totals																			$522,821

Table 16.2, 2008 Upper Air Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Upper Air Met									Summary Upper Air Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design and site selection	22	19	7	$1,096	60	$3,444										60	$3,444		
Element #1 totals					60	$3,444										$60	$3,444		
2. Site Installation																			
Continuous - LAP/RASS	9		7	$133,100		$171,129													$171,129
Continuous - radar profiler	4		7	$133,100		$76,057													$76,057
Inter. soundings - Rawindsondes	1		7	$49,243		$7,035													$7,035
Continuous - SODAR	7		7	$71,129		$71,129													$71,129
Continuous - LAP/RASS +NEXRA	1		7	$133,100		$19,014													$19,014
Computer hardware & software	22		7	$8,518		$26,772													$26,772
Acceptance testing	22	60	7	$2,623	189	$8,242										189	$8,242		
Procurement	22	16	7	$892	50	$2,804										50	$2,804		
Equipment installation	22	15	7	$820	47	$2,577										47	$2,577		
Element #2 totals					286	$384,760										$286	$13,624		$371,136
3. Sampling and Analysis																			
Supplies/spare parts													22					$23,426	
Routine field service checks													22	352	$18,459	352	$18,459		
Element #3 totals														352	$18,459	$352	$18,459	$23,426	
4. Maintenance																			
Remedial field service													22	110	$5,763	110	$5,763		
Spare parts													22					$46,851	
Element #4 totals														110	$5,763	$110	$5,763	$46,851	
5. Data Management																			
Data acquistion, processing, etc.													22	132	$6,559	132	$6,559		
Data validation													22	88	$4,615	88	$4,615		
Element # 5 totals														220	$11,174	$220	$11,174		
6. Quality Assurance																			
Audits													22	176	$4,919	176	$4,919		
Routine calibrations													22	110	$6,067	110	$6,067		
Coordination/implementation													22	44	$2,389	44	$2,389		
Training													22	176	$9,815	176	$9,815		
QA/QC reporting & review													22	33	$1,804	33	$1,804		
QA plan review (annual)													22	11	$1,125	11	$1,125		
QA plan preparation	22	20	5	$867	88	$3,814										88	$3,814		
Element #6 totals					88	$3,814								550	$26,120	$638	$29,934		
7. Supervision																			
Planning/coordination													22	41	$2,389	41	$2,389		
Supervision/review													22	72	$6,629	72	$6,629		

Table 16.2, 2008 Upper Air Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Upper Air Met									Summary Upper Air Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Element #7 totals														113	$9,019	$113	$9,019		
[redacted]																			
Summary Totals																			$532,829

Table 16.3, 2009 Upper Air Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Upper Air Met									Summary Upper Air Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design and site selection	22	19	7	$1,118	60	$3,513										60	$3,513		
Element #1 totals					60	$3,513										$60	$3,513		
2. Site Installation																			
Continuous - LAP/RASS	9		7	$135,800		$174,600													$174,600
Continuous - radar profiler	4		7	$135,800		$77,600													$77,600
Inter. soundings - Rawindsondes	1		7	$50,242		$7,177													$7,177
Continuous - SODAR	7		7	$72,572		$72,572													$72,572
Continuous - LAP/RASS +NEXRA	1		7	$135,800		$19,400													$19,400
Computer hardware & software	22		7	$8,691		$27,315													$27,315
Acceptance testing	22	60	7	$2,676	189	$8,410										189	$8,410		
Procurement	22	16	7	$910	50	$2,861										50	$2,861		
Equipment installation	22	15	7	$837	47	$2,629										47	$2,629		
Element #2 totals					286	$392,565										$286	$13,900		$378,665
3. Sampling and Analysis																			
Supplies/spare parts													22					$23,901	
Routine field service checks													22	352	$18,834	352	$18,834		
Element #3 totals														352	$18,834	$352	$18,834	$23,901	
4. Maintenance																			
Remedial field service													22	110	$5,880	110	$5,880		
Spare parts													22					$47,802	
Element #4 totals														110	$5,880	$110	$5,880	$47,802	
5. Data Management																			
Data acquistion, processing, etc.													22	132	$6,692	132	$6,692		
Data validation													22	88	$4,708	88	$4,708		
Element # 5 totals														220	$11,401	$220	$11,401		
6. Quality Assurance																			
Audits													22	176	$5,019	176	$5,019		
Routine calibrations													22	110	$6,190	110	$6,190		
Coordination/implementation													22	44	$2,438	44	$2,438		
Training													22	176	$10,014	176	$10,014		
QA/QC reporting & review													22	33	$1,840	33	$1,840		
QA plan review (annual)													22	11	$1,148	11	$1,148		
QA plan preparation	22	20	5	$884	88	$3,891										88	$3,891		
Element #6 totals					88	$3,891								550	$26,650	$638	$30,541		
7. Supervision																			
Planning/coordination													22	41	$2,438	41	$2,438		
Supervision/review													22	72	$6,764	72	$6,764		
Element #7 totals														113	$9,202	$113	$9,202		

Table 16.3, 2009 Upper Air Meteorology Monitoring Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Upper Air Met									Summary Upper Air Met			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Summary Totals																			$543,638

Table 17, Summary of 2007- 2009 Carbonyl Frequency E

Aug 2006

	2007				2008				2009							
	Summary Carbonyl Frequency E				Summary Carbonyl Frequency E				Summary Carbonyl Frequency				Average 2007-2009 Carbonyl Frequency E			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																
Element #1 totals																
2. Site Installation																
Cartridge sampler				$13,373				$10,222				$6,953				$10,183
Procurement	6	$329			5	$252			3	$171			5	$251		
Equipment installation	5	$205			4	$157			2	$106			4	$156		
Element # 2 totals	11	$534		$13,373	8	$408		$10,222	6	$278		$6,953	8	$407		$10,183
3. Sampling & Analysis																
Supplies			$3,134				$2,396				$1,630				$2,387	
Carbonyl sample cartridges			$35,523				$27,152				$18,469				$27,048	
HPLC/UV with autosampler				$49,315				$37,694				$25,639				$37,549
Equipment (auxiliary)				$836				$639				$435				$636
Supplies/reagents			$10,030				$7,667				$5,215				$7,637	
Sample analysis	270	$55,583			270	$42,486			270	$28,898			270	$42,322		
Equipment setup	32	$1,647			24	$1,259			16	$856			24	$1,254		
Routine site visits	160	$7,100			120	$5,427			80	$3,692			120	$5,406		
Element # 3 totals	462	$64,330	$48,688	$50,150	414	$49,171	$37,215	$38,333	366	$33,446	$25,313	$26,074	414	$48,983	$37,072	$38,186
4. Maintenance																
Spare parts/supplies			$42,628				$32,583				$22,163				$32,458	
Remedial calibrations	64	$3,034			48	$2,319			32	$1,577			48	$2,310		
Repairs	416	$19,584			312	$14,969			208	$10,182			312	$14,911		
Maintenance	896	$44,743			672	$34,199			448	$23,262			672	$34,068		
Element # 4 totals	1,376	$67,360	$42,628		1,032	$51,487	$32,583		688	$35,021	$22,163		1,032	$51,290	$32,458	
5. Data Management																
Data acquisition/processing	192	$9,366			144	$7,159			96	$4,869			144	$7,131		
Data reporting	80	$4,246			60	$3,246			40	$2,208			60	$3,233		
Data validation	240	$12,663			180	$9,679			120	$6,584			180	$9,642		
Element # 5 totals	512	$26,275			384	$20,083			256	$13,660			384	$20,006		
6. Quality Assurance																
Calibration standards			$18,806				$14,375				$9,778				$14,320	
Calibrations (site & lab)	56	$2,796			42	$2,137			28	$1,454			42	$2,129		
Audits	48	$2,382			36	$1,821			24	$1,238			36	$1,814		
Training	64	$3,139			48	$2,399			32	$1,632			48	$2,390		
Implementation/coordination	64	$3,398			48	$2,597			32	$1,766			48	$2,587		
QA plan preparation	10	$494			7	$378			5	$257			7	$376		
Element # 6 totals	242	$12,208	$18,806		181	$9,331	$14,375		121	$6,347	$9,778		181	$9,296	$14,320	
7. Supervision																
Planning/coordination	144	$7,723			108	$5,903			72	$4,015			108	$5,881		
Supervision/review	144	$8,500			108	$6,497			72	$4,419			108	$6,472		
Element # 7 totals	288	$16,224			216	$12,401			144	$8,435			216	$12,353		
[redacted]																
Summary totals				$360,577				$275,610				$187,467				$274,551

Table 17.1, 2007 PAMS Carbonyl Costs, Frequency E (8/3/1)

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs for Carbonyl									Summary Carbonyl			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	4		5	$16,717		$13,373													$13,373
Procurement	4	8	5	$412	6	$329										6	$329		
Equipment installation	4	6	5	$256	5	$205										5	$205		
Element # 2 totals					11	$13,908										11	$534		$13,373
3. Sampling & Analysis																			
Supplies													4					$3,134	
Carbonyl sample cartridges													4					$35,523	
HPLC/UV with autosampler	4		5	$61,643		$49,315							4						$49,315
Equipment (auxiliary)	4		5	$1,045		$836							4						$836
Supplies/reagents													4					$10,030	
Sample analysis													4	270	$55,583	270	$55,583		
Equipment setup	4	40	5	$2,058	32	$1,647							4			32	$1,647		
Routine site visits													4	160	$7,100	160	$7,100		
Element # 3 totals					32	$51,797								430	$62,684	462	$64,330	$48,688	$50,150
4. Maintenance																			
Spare parts/supplies													4					$42,628	
Remedial calibrations													4	64	$3,034	64	$3,034		
Repairs													4	416	$19,584	416	$19,584		
Maintenance													4	896	$44,743	896	$44,743		
Element # 4 totals														1,376	$67,360	1,376	$67,360	$42,628	
5. Data Management																			
Data acquisition/processing													4	192	$9,366	192	$9,366		
Data reporting													4	80	$4,246	80	$4,246		
Data validation													4	240	$12,663	240	$12,663		
Element # 5 totals														512	$26,275	512	$26,275		
6. Quality Assurance																			
Calibration standards													4					$18,806	
Calibrations (site & lab)													4	56	$2,796	56	$2,796		
Audits													4	48	$2,382	48	$2,382		
Training													4	64	$3,139	64	$3,139		
Implementation/coordination													4	64	$3,398	64	$3,398		
QA plan preparation	4	12	5	$617	10	$494										10	$494		
Element # 6 totals					10	$494								232	$11,714	242	$12,208	$18,806	
7. Supervision																			
Planning/coordination													4	144	$7,723	144	$7,723		
Supervision/review													4	144	$8,500	144	$8,500		
Element # 7 totals														288	$16,224	288	$16,224		
[redacted]																			
Summary totals																			$360,577

Table 17.2, 2008 PAMS Carbonyl Costs, Frequency E (8/3/1)

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Carbonyl									Summary Carbonyl			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	3		5	$17,037		$10,222													$10,222
Procurement	3	8	5	$420	5	$252										5	$252		
Equipment installation	3	6	5	$261	4	$157										4	$157		
Element # 2 totals					8	$10,630										8	$408		$10,222
3. Sampling & Analysis																			
Supplies													3					$2,396	
Carbonyl sample cartridges													3					$27,152	
HPLC/UV with autosampler	3		5	$62,823		$37,694							3						$37,694
Equipment (auxiliary)	3		5	$1,065		$639							3						$639
Supplies/reagents													3					$7,667	
Sample analysis													3	270	$42,486	270	$42,486		
Equipment setup	3	40	5	$2,098	24	$1,259							3			24	$1,259		
Routine site visits													3	120	$5,427	120	$5,427		
Element # 3 totals					24	$39,591								390	$47,913	414	$49,171	$37,215	$38,333
4. Maintenance																			
Spare parts/supplies													3					$32,583	
Remedial calibrations													3	48	$2,319	48	$2,319		
Repairs													3	312	$14,969	312	$14,969		
Maintenance													3	672	$34,199	672	$34,199		
Element # 4 totals														1,032	$51,487	1,032	$51,487	$32,583	
5. Data Management																			
Data acquisition/processing													3	144	$7,159	144	$7,159		
Data reporting													3	60	$3,246	60	$3,246		
Data validation													3	180	$9,679	180	$9,679		
Element # 5 totals														384	$20,083	384	$20,083		
6. Quality Assurance																			
Calibration standards													3					$14,375	
Calibrations (site & lab)													3	42	$2,137	42	$2,137		
Audits													3	36	$1,821	36	$1,821		
Training													3	48	$2,399	48	$2,399		
Implementation/coordination													3	48	$2,597	48	$2,597		
QA plan preparation	3	12	5	$629	7	$378										7	$378		
Element # 6 totals					7	$378								174	$8,954	181	$9,331	$14,375	
7. Supervision																			
Planning/coordination													3	108	$5,903	108	$5,903		
Supervision/review													3	108	$6,497	108	$6,497		
Element # 7 totals														216	$12,401	216	$12,401		
Summary Totals																			$275,610

Table 17.3, 2009 PAMS Carbonyl Costs, Frequency E (8/3/1)

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Carbonyl									Summary Carbonyl Frequency E			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	2		5	$17,382		$6,953													$6,953
Procurement	2	8	5	$428	3	$171										3	$171		
Equipment installation	2	6	5	$266	2	$106										2	$106		
Element # 2 totals					6	$7,231										6	$278		$6,953
3. Sampling & Analysis																			
Supplies													2					$1,630	
Carbonyl sample cartridges													2					$18,469	
HPLC/UV with autosampler	2		5	$64,098		$25,639							2						$25,639
Equipment (auxiliary)	2		5	$1,086		$435							2						$435
Supplies/reagents													2					$5,215	
Sample analysis													2	270	$28,898	270	$28,898		
Equipment setup	2	40	5	$2,140	16	$856							2			16	$856		
Routine site visits													2	80	$3,692	80	$3,692		
Element # 3 totals					16	$26,930								350	$32,590	366	$33,446	$25,313	$26,074
4. Maintenance																			
Spare parts/supplies													2					$22,163	
Remedial calibrations													2	32	$1,577	32	$1,577		
Repairs													2	208	$10,182	208	$10,182		
Maintenance													2	448	$23,262	448	$23,262		
Element # 4 totals														688	$35,021	688	$35,021	$22,163	
5. Data Management																			
Data acquisition/processing													2	96	$4,869	96	$4,869		
Data reporting													2	40	$2,208	40	$2,208		
Data validation													2	120	$6,584	120	$6,584		
Element # 5 totals														256	$13,660	256	$13,660		
6. Quality Assurance																			
Calibration standards													2					$9,778	
Calibrations (site & lab)													2	28	$1,454	28	$1,454		
Audits													2	24	$1,238	24	$1,238		
Training													2	32	$1,632	32	$1,632		
Implementation/coordination													2	32	$1,766	32	$1,766		
QA plan preparation	2	12	5	$642	5	$257										5	$257		
Element # 6 totals					5	$257								116	$6,090	121	$6,347	$9,778	
7. Supervision																			
Planning/coordination													2	72	$4,015	72	$4,015		
Supervision/review													2	72	$4,419	72	$4,419		
Element # 7 totals														144	$8,435	144	$8,435		
Summary Totals																			$187,467

Table 18, Summary of 2007- 2009 Carbonyl Frequency D (8/3/3)

Aug 2006

	2007				2008				2009							
	Summary Carbonyl Frequency D				Summary Carbonyl Frequency D				Summary Carbonyl Frequency D				Average 2007-2009 Carbonyl Frequency D			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																
Element #1 totals																
2. Site Installation																
Cartridge sampler				$23,404				$20,444				$10,429				$18,092
Procurement	11	$576			10	$503			5	$257			9	$446		
Equipment installation	8	$358			7	$313			4	$160			6	$277		
Element # 2 totals	20	$935		$23,404	17	$816		$20,444	8	$417		$10,429	15	$723		$18,092
3. Sampling & Analysis																
Supplies			$1,828				$1,597				$815				$1,413	
Carbonyl sample cartridges			$21,209				$18,528				$9,452				$16,396	
HPLC/UV with autosampler				$86,300				$75,388				$38,459				$66,716
Equipment (auxiliary)				$1,463				$1,278				$652				$1,131
Supplies/reagents			$8,776				$7,667				$3,911				$6,785	
Sample analysis	90	$32,421			90	$28,322			90	$14,448			90	$25,064		
Equipment setup	21	$961			18	$839			9	$428			16	$743		
Routine site visits	224	$9,946			192	$8,689			96	$4,433			171	$7,689		
Element # 3 totals	335	$43,329	$31,814	$87,763	300	$37,850	$27,791	$76,666	195	$19,309	$14,178	$39,110	277	$33,496	$24,594	$67,846
4. Maintenance																
Spare parts/supplies			$24,866				$21,722				$11,081				$19,223	
Remedial calibrations	112	$5,310			96	$4,638			48	$2,366			85	$4,105		
Repairs	364	$17,128			312	$14,963			156	$7,633			277	$13,241		
Maintenance	784	$39,150			672	$34,199			336	$17,446			597	$30,265		
Element # 4 totals	1,260	$61,588	$24,866		1,080	$53,800	$21,722		540	$27,446	$11,081		960	$47,611	$19,223	
5. Data Management																
Data acquisition/processing	168	$8,191			144	$7,155			72	$3,650			128	$6,332		
Data reporting	70	$3,715			60	$3,246			30	$1,656			53	$2,872		
Data validation	210	$11,080			180	$9,679			90	$4,938			160	$8,566		
Element # 5 totals	448	$22,987			384	$20,080			192	$10,244			341	$17,770		
6. Quality Assurance																
Calibration standards			$10,970				$9,583				$4,889				$8,481	
Calibrations (site & lab)	49	$2,450			42	$2,140			21	$1,092			37	$1,894		
Audits	84	$4,169			72	$3,642			36	$1,858			64	$3,223		
Training	112	$5,493			96	$4,798			48	$2,448			85	$4,246		
Implementation/coordination	63	$3,379			54	$2,952			27	$1,506			48	$2,612		
QA plan preparation	17	$864			14	$755			7	$385			13	$668		
Element # 6 totals	325	$16,355	$10,970		278	$14,287	$9,583		139	$7,288	$4,889		247	$12,643	$8,481	
7. Supervision																
Planning/coordination	126	$6,758			108	$5,903			54	$3,012			96	$5,224		
Supervision/review	126	$7,445			108	$6,504			54	$3,318			96	$5,756		
Element # 7 totals	252	$14,203			216	$12,407			108	$6,329			192	$10,980		
[redacted]																
Summary Totals				$338,213				$295,446				$150,720				$261,460

Table 18.1, 2007 PAMS Carbonyl Costs, Frequency D (8/3/3)

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs for Carbonyl									Summary Carbonyl			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	7		5	$16,717		$23,404													$23,404
Procurement	7	8	5	$412	11	$576										11	$576		
Equipment installation	7	6	5	$256	8	$358										8	$358		
Element # 2 totals					20	$24,338										20	$935		$23,404
3. Sampling & Analysis																			
Supplies													7					$1,828	
Carbonyl sample cartridges													7					$21,209	
HPLC/UV with autosampler	7		5	$61,643		$86,300							7						$86,300
Equipment (auxiliary)	7		5	$1,045		$1,463							7						$1,463
Supplies/reagents													7					$8,776	
Sample analysis													7	90	$32,421	90	$32,421		
Equipment setup	7	15	5	$686	21	$961							7			21	$961		
Routine site visits													7	224	$9,946	224	$9,946		
Element # 3 totals					21	$88,724								314	$42,368	335	$43,329	$31,814	$87,763
4. Maintenance																			
Spare parts/supplies													7					$24,866	
Remedial calibrations													7	112	$5,310	112	$5,310		
Repairs													7	364	$17,128	364	$17,128		
Maintenance													7	784	$39,150	784	$39,150		
Element # 4 totals														1,260	$61,588	1,260	$61,588	$24,866	
5. Data Management																			
Data acquisition/processing													7	168	$8,191	168	$8,191		
Data reporting													7	70	$3,715	70	$3,715		
Data validation													7	210	$11,080	210	$11,080		
Element # 5 totals														448	$22,987	448	$22,987		
6. Quality Assurance																			
Calibration standards													7					$10,970	
Calibrations (site & lab)													7	49	$2,450	49	$2,450		
Audits													7	84	$4,169	84	$4,169		
Training													7	112	$5,493	112	$5,493		
Implementation/coordination													7	63	$3,379	63	$3,379		
QA plan preparation	7	12	5	$617	17	$864										17	$864		
Element # 6 totals					17	$864								308	$15,490	325	$16,355	$10,970	
7. Supervision																			
Planning/coordination													7	126	$6,758	126	$6,758		
Supervision/review													7	126	$7,445	126	$7,445		
Element # 7 totals														252	$14,203	252	$14,203		
Summary Totals																			$338,213

Table 18.2, 2008 PAMS Carbonyl Costs, Frequency D (8/3/3)

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Carbonyl									Summary Carbonyl			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	6		5	$17,037		$20,444													$20,444
Procurement	6	8	5	$420	10	$503										10	$503		
Equipment installation	6	6	5	$261	7	$313										7	$313		
Element # 2 totals					17	$21,261										17	$816		$20,444
3. Sampling & Analysis																			
Supplies													6					$1,597	
Carbonyl sample cartridges													6					$18,528	
HPLC/UV with autosampler	6		5	$62,823		$75,388							6						$75,388
Equipment (auxiliary)	6		5	$1,065		$1,278							6						$1,278
Supplies/reagents													6					$7,667	
Sample analysis													6	90	$28,322	90	$28,322		
Equipment setup	6	15	5	$700	18	$839							6			18	$839		
Routine site visits													6	192	$8,689	192	$8,689		
Element # 3 totals					18	$77,505								282	$37,010	300	$37,850	$27,791	$76,666
4. Maintenance																			
Spare parts/supplies													6					$21,722	
Remedial calibrations													6	96	$4,638	96	$4,638		
Repairs													6	312	$14,963	312	$14,963		
Maintenance													6	672	$34,199	672	$34,199		
Element # 4 totals														1,080	$53,800	1,080	$53,800	$21,722	
5. Data Management																			
Data acquisition/processing													6	144	$7,155	144	$7,155		
Data reporting													6	60	$3,246	60	$3,246		
Data validation													6	180	$9,679	180	$9,679		
Element # 5 totals														384	$20,080	384	$20,080		
6. Quality Assurance																			
Calibration standards													6					$9,583	
Calibrations (site & lab)													6	42	$2,140	42	$2,140		
Audits													6	72	$3,642	72	$3,642		
Training													6	96	$4,798	96	$4,798		
Implementation/coordination													6	54	$2,952	54	$2,952		
QA plan preparation	6	12	5	$629	14	$755										14	$755		
Element # 6 totals					14	$755								264	$13,531	278	$14,287	$9,583	
7. Supervision																			
Planning/coordination													6	108	$5,903	108	$5,903		
Supervision/review													6	108	$6,504	108	$6,504		
Element # 7 totals														216	$12,407	216	$12,407		
Summary totals																			$295,446

Table 18.3, 2009 PAMS Carbonyl Costs, Frequency D (8/3/3)

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs for Carbonyl									Summary Carbonyl Frequency D			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	3		5	$17,382		$10,429													$10,429
Procurement	3	8	5	$428	5	$257										5	$257		
Equipment installation	3	6	5	$266	4	$160										4	$160		
Element # 2 totals					8	$10,846										8	$417		$10,429
3. Sampling & Analysis																			
Supplies													3					$815	
Carbonyl sample cartridges													3					$9,452	
HPLC/UV with autosampler	3		5	$64,098		$38,459							3						$38,459
Equipment (auxiliary)	3		5	$1,086		$652							3						$652
Supplies/reagents													3					$3,911	
Sample analysis													3	90	$14,448	90	$14,448		
Equipment setup	3	15	5	$714	9	$428							3			9	$428		
Routine site visits													3	96	$4,433	96	$4,433		
Element # 3 totals					9	$39,539								186	$18,881	195	$19,309	$14,178	$39,110
4. Maintenance																			
Spare parts/supplies													3					$11,081	
Remedial calibrations													3	48	$2,366	48	$2,366		
Repairs													3	156	$7,633	156	$7,633		
Maintenance													3	336	$17,446	336	$17,446		
Element # 4 totals														540	$27,446	540	$27,446	$11,081	
5. Data Management																			
Data acquisition/processing													3	72	$3,650	72	$3,650		
Data reporting													3	30	$1,656	30	$1,656		
Data validation													3	90	$4,938	90	$4,938		
Element # 5 totals														192	$10,244	192	$10,244		
6. Quality Assurance																			
Calibration standards													3					$4,889	
Calibrations (site & lab)													3	21	$1,092	21	$1,092		
Audits													3	36	$1,858	36	$1,858		
Training													3	48	$2,448	48	$2,448		
Implementation/coordination													3	27	$1,506	27	$1,506		
QA plan preparation	3	12	5	$642	7	$385										7	$385		
Element # 6 totals					7	$385								132	$6,903	139	$7,288	$4,889	
7. Supervision																			
Planning/coordination													3	54	$3,012	54	$3,012		
Supervision/review													3	54	$3,318	54	$3,318		
Element # 7 totals														108	$6,329	108	$6,329		
Summary Totals																			$150,720

Table 19, Summary of 2007- 2009 Carbonyl Frequency Half D (4/3/3)

Aug 2006

	2007				2008				2009							
	Summary Carbonyl Half D				Summary Carbonyl Half D				Summary Carbonyl Half D				Average 2007-2009 Carbonyl Frequency Half D			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																
Element #1 totals																
2. Site Installation																
Cartridge sampler				$53,494				$40,888				$27,812				$40,731
Procurement	26	$1,317			19	$1,007			13	$685			19	$1,003		
Equipment installation	19	$819			14	$626			10	$426			14	$624		
Element # 2 totals	45	$2,136		$53,494	34	$1,633		$40,888	22	$1,111		$27,812	34	$1,627		$40,731
3. Sampling & Analysis																
Supplies			$2,090				$1,597				$1,086				$1,591	
Carbonyl sample cartridges			$24,239				$18,528				$12,602				$18,456	
HPLC/UV with autosampler				$197,258				$150,776				$102,556				$150,197
Equipment (auxiliary)				$3,343				$2,556				$1,738				$2,546
Supplies/reagents			$10,030				$7,667				$5,215				$7,637	
Sample analysis	45	$37,053			45	$28,322			45	$19,264			45	$28,213		
Equipment setup	48	$2,197			36	$1,679			24	$1,142			36	$1,673		
Routine site visits	256	$11,367			192	$8,689			128	$5,910			192	$8,655		
Element # 3 totals	349	$50,617	$36,359	$200,602	273	$38,689	$27,791	$153,331	197	$26,316	$18,903	$104,294	273	$38,541	$27,685	$152,742
4. Maintenance																
Spare parts/supplies			$28,419				$21,722				$14,775				$21,639	
Remedial calibrations	128	$6,068			96	$4,638			64	$3,155			96	$4,620		
Repairs	416	$19,575			312	$14,963			208	$10,177			312	$14,905		
Maintenance	896	$44,743			672	$34,199			448	$23,262			672	$34,068		
Element # 4 totals	1,440	$70,386	$28,419		1,080	$53,800	$21,722		720	$36,594	$14,775		1,080	$53,593	$21,639	
5. Data Management																
Data acquisition/processing	192	$9,361			144	$7,155			96	$4,867			144	$7,128		
Data reporting	80	$4,246			60	$3,246			40	$2,208			60	$3,233		
Data validation	240	$12,663			180	$9,679			120	$6,584			180	$9,642		
Element # 5 totals	512	$26,270			384	$20,080			256	$13,658			384	$20,003		
6. Quality Assurance																
Calibration standards			$25,075				$19,166				$13,037				$19,093	
Calibrations (site & lab)	56	$2,800			42	$2,140			28	$1,456			42	$2,132		
Audits	96	$4,764			72	$3,642			48	$2,477			72	$3,628		
Training	128	$6,277			96	$4,798			64	$3,264			96	$4,780		
Implementation/coordination	72	$3,862			54	$2,952			36	$2,008			54	$2,940		
QA plan preparation	38	$1,976			29	$1,510			19	$1,027			29	$1,505		
Element # 6 totals	390	$19,679	$25,075		293	$15,042	$19,166		195	$10,231	$13,037		293	$14,984	$19,093	
7. Supervision																
Planning/coordination	144	$7,723			108	$5,903			72	$4,015			108	$5,881		
Supervision/review	144	$8,509			108	$6,504			72	$4,424			108	$6,479		
Element # 7 totals	288	$16,232			216	$12,407			144	$8,439			216	$12,359		
[redacted]																
Summary Totals				$529,269				$404,550				$275,171				$402,997

Table 19.1, 2007 PAMS Carbonyl Costs, Frequency Half of D (4/3/3)

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours & Costs for Carbonyl Half D									Summary Carbonyl Half D			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	16		5	$16,717		$53,494													$53,494
Procurement	16	8	5	$412	26	$1,317										26	$1,317		
Equipment installation	16	6	5	$256	19	$819										19	$819		
Element # 2 totals					45	$55,630										45	$2,136		$53,494
3. Sampling & Analysis																			
Supplies													16					$2,090	
Carbonyl sample cartridges													16					$24,239	
HPLC/UV with autosampler	16		5	$61,643		$197,258							16						$197,258
Equipment (auxiliary)	16		5	$1,045		$3,343							16						$3,343
Supplies/reagents													16					$10,030	
Sample analysis													16	45	$37,053	45	$37,053		
Equipment setup	16	15	5	$686	48	$2,197							16			48	$2,197		
Routine site visits													16	256	$11,367	256	$11,367		
Element # 3 totals					48	$202,798								301	$48,420	349	$50,617	$36,359	$200,602
4. Maintenance																			
Spare parts/supplies													16					$28,419	
Remedial calibrations													16	128	$6,068	128	$6,068		
Repairs													16	416	$19,575	416	$19,575		
Maintenance													16	896	$44,743	896	$44,743		
Element # 4 totals														1,440	$70,386	1,440	$70,386	$28,419	
5. Data Management																			
Data acquisition/processing													16	192	$9,361	192	$9,361		
Data reporting													16	80	$4,246	80	$4,246		
Data validation													16	240	$12,663	240	$12,663		
Element # 5 totals														512	$26,270	512	$26,270		
6. Quality Assurance																			
Calibration standards													16					$25,075	
Calibrations (site & lab)													16	56	$2,800	56	$2,800		
Audits													16	96	$4,764	96	$4,764		
Training													16	128	$6,277	128	$6,277		
Implementation/coordination													16	72	$3,862	72	$3,862		
QA plan preparation	16	12	5	$617	38	$1,976										38	$1,976		
Element # 6 totals					38	$1,976								352	$17,703	390	$19,679	$25,075	
7. Supervision																			
Planning/coordination													16	144	$7,723	144	$7,723		
Supervision/review													16	144	$8,509	144	$8,509		
Element # 7 totals														288	$16,232	288	$16,232		
Summary Totals																			$529,269

Table 19.2, 2008 PAMS Carbonyl Costs, Frequency Half of D (4/3/3)

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Half D									Summary Carbonyl Half D			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	12		5	$17,037		$40,888													$40,888
Procurement	12	8	5	$420	19	$1,007										19	$1,007		
Equipment installation	12	6	5	$261	14	$626										14	$626		
Element # 2 totals					34	$42,521										34	$1,633		$40,888
3. Sampling & Analysis																			
Supplies													12					$1,597	
Carbonyl sample cartridges													12					$18,528	
HPLC/UV with autosampler	12		5	$62,823		$150,776							12						$150,776
Equipment (auxiliary)	12		5	$1,065		$2,556							12						$2,556
Supplies/reagents													12					$7,667	
Sample analysis													12	45	$28,322	45	$28,322		
Equipment setup	12	15	5	$700	36	$1,679							12			36	$1,679		
Routine site visits													12	192	$8,689	192	$8,689		
Element # 3 totals					36	$155,010								237	$37,010	273	$38,689	$27,791	$153,331
4. Maintenance																			
Spare parts/supplies													12					$21,722	
Remedial calibrations													12	96	$4,638	96	$4,638		
Repairs													12	312	$14,963	312	$14,963		
Maintenance													12	672	$34,199	672	$34,199		
Element # 4 totals														1,080	$53,800	1,080	$53,800	$21,722	
5. Data Management																			
Data acquisition/processing													12	144	$7,155	144	$7,155		
Data reporting													12	60	$3,246	60	$3,246		
Data validation													12	180	$9,679	180	$9,679		
Element # 5 totals														384	$20,080	384	$20,080		
6. Quality Assurance																			
Calibration standards													12					$19,166	
Calibrations (site & lab)													12	42	$2,140	42	$2,140		
Audits													12	72	$3,642	72	$3,642		
Training													12	96	$4,798	96	$4,798		
Implementation/coordination													12	54	$2,952	54	$2,952		
QA plan preparation	12	12	5	$629	29	$1,510										29	$1,510		
Element # 6 totals					29	$1,510								264	$13,531	293	$15,042	$19,166	
7. Supervision																			
Planning/coordination													12	108	$5,903	108	$5,903		
Supervision/review													12	108	$6,504	108	$6,504		
Element # 7 totals														216	$12,407	216	$12,407		
Summary Totals																			$404,550

Table 19.3, 2009 PAMS Carbonyl Costs, Frequency Half of D (4/3/3)

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Half D									Summary Carbonyl Half D			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	8		5	$17,382		$27,812													$27,812
Procurement	8	8	5	$428	13	$685										13	$685		
Equipment installation	8	6	5	$266	10	$426										10	$426		
Element # 2 totals					22	$28,923										22	$1,111		$27,812
3. Sampling & Analysis																			
Supplies													8					$1,086	
Carbonyl sample cartridges													8					$12,602	
HPLC/UV with autosampler	8		5	$64,098		$102,556							8						$102,556
Equipment (auxiliary)	8		5	$1,086		$1,738							8						$1,738
Supplies/reagents													8					$5,215	
Sample analysis													8	45	$19,264	45	$19,264		
Equipment setup	8	15	5	$714	24	$1,142							8			24	$1,142		
Routine site visits													8	128	$5,910	128	$5,910		
Element # 3 totals					24	$105,436								173	$25,174	197	$26,316	$18,903	$104,294
4. Maintenance																			
Spare parts/supplies													8					$14,775	
Remedial calibrations													8	64	$3,155	64	$3,155		
Repairs													8	208	$10,177	208	$10,177		
Maintenance													8	448	$23,262	448	$23,262		
Element # 4 totals														720	$36,594	720	$36,594	$14,775	
5. Data Management																			
Data acquisition/processing													8	96	$4,867	96	$4,867		
Data reporting													8	40	$2,208	40	$2,208		
Data validation													8	120	$6,584	120	$6,584		
Element # 5 totals														256	$13,658	256	$13,658		
6. Quality Assurance																			
Calibration standards													8					$13,037	
Calibrations (site & lab)													8	28	$1,456	28	$1,456		
Audits													8	48	$2,477	48	$2,477		
Training													8	64	$3,264	64	$3,264		
Implementation/coordination													8	36	$2,008	36	$2,008		
QA plan preparation	8	12	5	$642	19	$1,027										19	$1,027		
Element # 6 totals					19	$1,027								176	$9,204	195	$10,231	$13,037	
7. Supervision																			
Planning/coordination													8	72	$4,015	72	$4,015		
Supervision/review													8	72	$4,424	72	$4,424		
Element # 7 totals														144	$8,439	144	$8,439		
Summary Totals																			$275,171

Table 20, Summary of 2007- 2009 Carbonyl Misc Frequency

Aug 2006

	2007 Summary Carbonyl Misc Frequency				2008 Summary Carbonyl Misc Frequency				2009 Summary Carbonyl Misc Frequency				Average 2007-2009 Carbonyl Misc Frequency			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																
Element #1 totals																
2. Site Installation																
Cartridge sampler				$73,554				$54,518				$38,241				$55,438
Procurement	35	$1,811			26	$1,342			18	$942			26	$1,365		
Equipment installation	26	$1,126			19	$835			13	$586			20	$849		
Element # 2 totals	62	$2,938		$73,554	45	$2,177		$54,518	31	$1,527		$38,241	46	$2,214		$55,438
3. Sampling & Analysis																
Supplies (44/yr)			$287				$293				$199				$260	
Supplies (32/yr)			$139				$142				$72				$118	
Supplies (16/yr)			$35				$18				$36				$30	
Supplies (61/yr)			$133				$68				$138				$113	
Supplies (collocated 61/yr)			$1,992				$1,218				$828				$1,346	
Carbonyl sample cartridges (44/yr)			$3,333				$3,397				$1,733				$2,821	
Carbonyl sample cartridges (32/yr)			$1,616				$1,647				$840				$1,368	
Carbonyl sample cartridges (16/yr)			$404				$206				$420				$343	
Carbonyl sample cartridges (61/yr)			$1,540				$785				$1,602				$1,309	
Carbonyl sample cartridges (coll 61/yr)			$23,103				$14,127				$9,609				$15,613	
HPLC/UV with autosampler				$271,230				$201,034				$141,015				$204,426
Equipment (auxiliary)				$4,597				$3,407				$2,390				$3,465
Supplies/reagents (44/yr)			$1,379				$1,406				$717				$1,167	
Supplies/reagents (32/yr)			$669				$681				$348				$566	
Supplies/reagents (16/yr)			$167				$85				$174				$142	
Supplies/reagents (61/yr)			$637				$325				$663				$542	
Supplies/reagents (collocated 61/yr)			$9,560				$5,846				$3,976				$6,461	
Sample analysis (44/yr)	33	$5,095			33	$5,192			33	$2,649			33	$4,312		
Sample analysis (32/yr)	24	$2,470			24	$2,517			24	$1,284			24	$2,091		
Sample analysis (16/yr)	12	$618			12	$315			12	$642			12	$525		
Sample analysis (61/yr)	46	$2,354			46	$1,200			46	$2,448			46	$2,001		
Sample analysis (collocated 61/yr)	46	$35,316			46	$21,595			46	$14,689			46	$23,867		
Equipment setup	66	$3,020			48	$2,239			33	$1,570			49	$2,276		
Routine site visits (44/yr)	35	$1,563			35	$1,593			18	$813			29	$1,323		
Routine site visits (32/yr)	17	$758			17	$772			9	$394			14	$641		
Routine site visits (16/yr)	4	$189			2	$97			4	$197			4	$161		
Routine site visits (61/yr)	16	$722			8	$368			16	$751			14	$614		
Routine site visits (collocated 61/yr)	244	$10,835			146	$6,625			98	$4,506			163	$7,322		
Element # 3 totals	299	$52,106	$44,994	$275,827	271	$35,888	$30,242	$204,442	240	$25,437	$21,355	$143,405	270	$37,810	$32,197	$207,891
4. Maintenance																
Spare parts/supplies (44/yr)			$3,908				$3,982				$2,032				$3,307	
Spare parts/supplies (32/yr)			$1,895				$1,931				$985				$1,603	
Spare parts/supplies (16/yr)			$474				$241				$493				$402	

Table 20, Summary of 2007- 2009 Carbonyl Misc Frequency

Aug 2006

	2007				2008				2009							
	Summary Carbonyl Misc Frequency				Summary Carbonyl Misc Frequency				Summary Carbonyl Misc Frequency				Average 2007-2009 Carbonyl Misc Frequency			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Spare parts/supplies (61/yr)			$1,806				$920				$1,878				$1,535	
Spare parts/supplies (collocated 61/yr)			$27,086				$16,563				$11,266				$18,305	
Remedial calibrations (44/yr)	18	$834			18	$850			9	$434			15	$706		
Remedial calibrations (32 yr)	9	$405			9	$412			4	$210			7	$342		
Remedial calibrations (16/yr)	2	$101			1	$52			2	$105			2	$86		
Remedial calibrations (61/yr)	8	$386			4	$196			8	$401			7	$328		
Remedial calibrations (collocated 61/yr)	122	$5,784			73	$3,537			49	$2,406			81	$3,909		
Repairs (44/yr)	57	$2,692			57	$2,743			29	$1,399			48	$2,278		
Repairs (32/yr)	28	$1,305			28	$1,330			14	$678			23	$1,105		
Repairs (16/yr)	7	$326			3	$166			7	$339			6	$277		
Repairs (61/yr)	26	$1,244			13	$634			26	$1,293			22	$1,057		
Repairs (collocation 61/yr)	397	$18,658			238	$11,409			159	$7,760			264	$12,609		
Maintenance (44/yr)	123	$6,152			123	$6,270			62	$3,199			103	$5,207		
Maintenance (32/yr)	60	$2,983			60	$3,040			30	$1,551			50	$2,525		
Maintenance (16/yr)	15	$746			7	$380			15	$775			12	$634		
Maintenance (61/yr)	57	$2,843			28	$1,449			57	$2,956			47	$2,416		
Maintenance (collocation 61/yr)	854	$42,645			512	$26,077			342	$17,737			569	$28,820		
Element # 4 totals	1,782	$87,103	$35,168		1,175	$58,545	$23,638		812	$41,245	$16,653		1,256	$62,298	$25,153	
5. Data Management																
Data acquisition/processing (44/yr)	26	$1,287			26	$1,312			13	$669			22	$1,089		
Data acquisition/processing (32/yr)	13	$624			13	$636			6	$324			11	$528		
Data acquisition/processing (16/yr)	3	$156			2	$80			3	$162			3	$133		
Data acquisition/processing (61/yr)	12	$595			6	$303			12	$619			10	$505		
Data acquisition/processing (coll 61/yr)	183	$8,923			110	$5,456			73	$3,711			122	$6,030		
Data reporting (44/yr)	11	$584			11	$595			7	$405			10	$528		
Data reporting (32/yr)	5	$283			5	$288			3	$147			4	$240		
Data reporting (16/yr)	1	$71			1	$72			1	$74			1	$72		
Data reporting (61/yr)	5	$270			5	$275			5	$281			5	$275		
Data reporting (collocation 61/yr)	76	$4,047			46	$2,475			31	$1,683			51	$2,735		
Data validation (44/yr)	33	$1,741			33	$1,774			22	$1,207			29	$1,574		
Data validation (32/yr)	16	$844			16	$860			8	$439			13	$714		
Data validation (16/yr)	4	$211			4	$215			4	$219			4	$215		
Data validation (61/yr)	15	$805			15	$820			15	$837			15	$820		
Data validation (collocation 61/yr)	229	$12,069			137	$7,380			92	$5,020			153	$8,157		
Element # 5 totals	634	$32,510			431	$22,542			296	$15,797			453	$23,616		
6. Quality Assurance																
Calibration standards			$34,478				$25,555				$17,926				$25,986	
Calibrations (site & lab)	154	$7,700			112	$5,707			77	$4,003			114	$5,804		
Audits	264	$13,102			192	$9,711			132	$6,812			196	$9,875		
Training	112	$5,493			112	$5,598			112	$5,711			112	$5,600		
Implementation/coordination (44/yr)	10	$531			10	$541			7	$368			9	$480		

Table 20, Summary of 2007- 2009 Carbonyl Misc Frequency

Aug 2006

	2007				2008				2009							
	Summary Carbonyl Misc Frequency				Summary Carbonyl Misc Frequency				Summary Carbonyl Misc Frequency				Average 2007-2009 Carbonyl Misc Frequency			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Implementation/coordination (32/yr)	5	$257			5	$262			2	$134			4	$218		
Implementation/coordination (16/yr)	1	$64			1	$66			1	$67			1	$66		
Implementation/coordination (61/yr)	5	$245			5	$250			5	$255			5	$250		
Implementation/coordination (coll 61/yr)	69	$3,681			41	$2,251			27	$1,531			46	$2,487		
QA plan preparation	17	$864			17	$881			17	$899			17	$881		
Element # 6 totals	636	$31,938	$34,478		494	$25,267	$25,555		380	$19,780	$17,926		503	$25,661	$25,986	
7. Supervision																
Planning/coordination (44/yr)	20	$1,062			20	$1,082			13	$736			18	$960		
Planning/coordination (32/yr)	10	$515			10	$525			5	$268			8	$436		
Planning/coordination (16/yr)	2	$129			2	$131			2	$134			2	$131		
Planning/coordination (61/yr)	9	$491			9	$500			9	$510			9	$500		
Planning/coordination (collocation 61/yr)	137	$7,361			82	$4,501			55	$3,062			92	$4,975		
Supervision/review (44/yr)	20	$1,170			20	$1,192			13	$811			18	$1,058		
Supervision/review (32/yr)	10	$567			10	$578			5	$295			8	$480		
Supervision/review (16/yr)	2	$142			2	$145			2	$147			2	$145		
Supervision/review (61/yr)	9	$541			9	$551			9	$562			9	$551		
Supervision/review (collocation 61/yr)	137	$8,110			82	$4,959			55	$3,373			92	$5,481		
Element # 7 totals	356	$20,087			247	$14,165			169	$9,898			257	$14,717		
[illegible]																
Summary totals				$690,702				$496,978				$351,264				$512,982

Table 20.1, 2007 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	22		5	$16,717		$73,554													$73,554
Procurement	22	8	5	$412	35	$1,811										35	$1,811		
Equipment installation	22	6	5	$256	26	$1,126										26	$1,126		
Element # 2 totals					62	$76,491										62	$2,938		$73,554
3. Sampling & Analysis																			
Supplies (44/yr)													3					$287	
Supplies (32/yr)													2					$139	
Supplies (16/yr)													1					$35	
Supplies (61/yr)													1					$133	
Supplies (collocated 61/yr)													15					$1,992	
Carbonyl sample cartridges (44/yr)													3					$3,333	
Carbonyl sample cartridges (32/yr)													2					$1,616	
Carbonyl sample cartridges (16/yr)													1					$404	
Carbonyl sample cartridges (61/yr)													1					$1,540	
Carbonyl sample cartridges (coll 61/yr)													15					$23,103	
HPLC/UV with autosampler	22		5	$61,643		$271,230							22						$271,230
Equipment (auxiliary)	22		5	$1,045		$4,597							22						$4,597
Supplies/reagents (44/yr)													3					$1,379	
Supplies/reagents (32/yr)													2					$669	
Supplies/reagents (16/yr)													1					$167	
Supplies/reagents (61/yr)													1					$637	
Supplies/reagents (collocated 61/yr)													15					$9,560	
Sample analysis (44/yr)													3	33	$5,095	33	$5,095		
Sample analysis (32/yr)													2	24	$2,470	24	$2,470		
Sample analysis (16/yr)													1	12	$618	12	$618		
Sample analysis (61/yr)													1	46	$2,354	46	$2,354		
Sample analysis (collocated 61/yr)													15	46	$35,316	46	$35,316		
Equipment setup	22	15	5	$686	66	$3,020							22			66	$3,020		
Routine site visits (44/yr)													3	35	$1,563	35	$1,563		
Routine site visits (32/yr)													2	17	$758	17	$758		
Routine site visits (16/yr)													1	4	$189	4	$189		
Routine site visits (61/yr)													1	16	$722	16	$722		
Routine site visits (collocated 61/yr)													15	244	$10,835	244	$10,835		
Element # 3 totals					66	$278,848								233	$49,085	299	$52,106	$44,994	$275,827
4. Maintenance																			
Spare parts/supplies (44/yr)													3					$3,908	
Spare parts/supplies (32/yr)													2					$1,895	
Spare parts/supplies (16/yr)													1					$474	
Spare parts/supplies (61/yr)													1					$1,806	

Table 20.1, 2007 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Spare parts/supplies (collocated 61/yr)													15					$27,086	
Remedial calibrations (44/yr)													3	18	$834	18	$834		
Remedial calibrations (32 yr)													2	9	$405	9	$405		
Remedial calibrations (16/yr)													1	2	$101	2	$101		
Remedial calibrations (61/yr)													1	8	$386	8	$386		
Remedial calibrations (collocated 61/yr)													15	122	$5,784	122	$5,784		
Repairs (44/yr)													3	57	$2,692	57	$2,692		
Repairs (32/yr)													2	28	$1,305	28	$1,305		
Repairs (16/yr)													1	7	$326	7	$326		
Repairs (61/yr)													1	26	$1,244	26	$1,244		
Repairs (collocation 61/yr)													15	397	$18,658	397	$18,658		
Maintenance (44/yr)													3	123	$6,152	123	$6,152		
Maintenance (32/yr)													2	60	$2,983	60	$2,983		
Maintenance (16/yr)													1	15	$746	15	$746		
Maintenance (61/yr)													1	57	$2,843	57	$2,843		
Maintenance (collocation 61/yr)													15	854	$42,645	854	$42,645		
Element # 4 totals														1,782	$87,103	1,782	$87,103	$35,168	
5. Data Management																			
Data acquisition/processing (44/yr)													3	26	$1,287	26	$1,287		
Data acquisition/processing (32/yr)													2	13	$624	13	$624		
Data acquisition/processing (16/yr)													1	3	$156	3	$156		
Data acquisition/processing (61/yr)													1	12	$595	12	$595		
Data acquisition/processing (coll 61/yr)													15	183	$8,923	183	$8,923		
Data reporting (44/yr)													3	11	$584	11	$584		
Data reporting (32/yr)													2	5	$283	5	$283		
Data reporting (16/yr)													1	1	$71	1	$71		
Data reporting (61/yr)													1	5	$270	5	$270		
Data reporting (collocation 61/yr)													15	76	$4,047	76	$4,047		
Data validation (44/yr)													3	33	$1,741	33	$1,741		
Data validation (32/yr)													2	16	$844	16	$844		
Data validation (16/yr)													1	4	$211	4	$211		
Data validation (61/yr)													1	15	$805	15	$805		
Data validation (collocation 61/yr)													15	229	$12,069	229	$12,069		
Element # 5 totals														634	$32,510	634	$32,510		
6. Quality Assurance																			
Calibration standards													22					$34,478	
Calibrations (site & lab)													22	154	$7,700	154	$7,700		
Audits													22	264	$13,102	264	$13,102		
Training													7	112	$5,493	112	$5,493		
Implementation/coordination (44/yr)													3	10	$531	10	$531		
Implementation/coordination (32/yr)													2	5	$257	5	$257		
Implementation/coordination (16/yr)													1	1	$64	1	$64		

Table 20.1, 2007 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Implementation/coordination (61/yr)													1	5	$245	5	$245		
Implementation/coordination (coll 61/yr)													15	69	$3,681	69	$3,681		
QA plan preparation	7	12	5	$617	17	$864										17	$864		
Element # 6 totals					17	$864								619	$31,073	636	$31,938	$34,478	
7. Supervision																			
Planning/coordination (44/yr)													3	20	$1,062	20	$1,062		
Planning/coordination (32/yr)													2	10	$515	10	$515		
Planning/coordination (16/yr)													1	2	$129	2	$129		
Planning/coordination (61/yr)													1	9	$491	9	$491		
Planning/coordination (collocation 61/yr)													15	137	$7,361	137	$7,361		
Supervision/review (44/yr)													3	20	$1,170	20	$1,170		
Supervision/review (32/yr)													2	10	$567	10	$567		
Supervision/review (16/yr)													1	2	$142	2	$142		
Supervision/review (61/yr)													1	9	$541	9	$541		
Supervision/review (collocation 61/yr)													15	137	$8,110	137	$8,110		
Element # 7 totals														356	$20,087	356	$20,087		
[illegible]																			
Summary Totals																			$690,702

Table 20.2, 2008 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	16		5	$17,037		$54,518													$54,518
Procurement	16	8	5	$420	26	$1,342										26	$1,342		
Equipment installation	16	6	5	$261	19	$835										19	$835		
Element # 2 totals					45	$56,695										45	$2,177		$54,518
3. Sampling & Analysis																			
Supplies (44/yr)													3					$293	
Supplies (32/yr)													2					$142	
Supplies (16/yr)													1					$18	
Supplies (61/yr)													1					$68	
Supplies (collocated 61/yr)													9					$1,218	
Carbonyl sample cartridges (44/yr)													3					$3,397	
Carbonyl sample cartridges (32/yr)													2					$1,647	
Carbonyl sample cartridges (16/yr)													1					$206	
Carbonyl sample cartridges (61/yr)													1					$785	
Carbonyl sample cartridges (coll 61/yr)													9					$14,127	
HPLC/UV with autosampler	16		5	$62,823		$201,034							16						$201,034
Equipment (auxiliary)	16		5	$1,065		$3,407							16						$3,407
Supplies/reagents (44/yr)													3					$1,406	
Supplies/reagents (32/yr)													2					$681	
Supplies/reagents (16/yr)													1					$85	
Supplies/reagents (61/yr)													1					$325	
Supplies/reagents (collocated 61/yr)													9					$5,846	
Sample analysis (44/yr)													3	33	$5,192	33	$5,192		
Sample analysis (32/yr)													2	24	$2,517	24	$2,517		
Sample analysis (16/yr)													1	12	$315	12	$315		
Sample analysis (61/yr)													1	46	$1,200	46	$1,200		
Sample analysis (collocated 61/yr)													9	46	$21,595	46	$21,595		
Equipment setup	16	15	5	$700	48	$2,239							16			48	$2,239		
Routine site visits (44/yr)													3	35	$1,593	35	$1,593		
Routine site visits (32/yr)													2	17	$772	17	$772		
Routine site visits (16/yr)													1	2	$97	2	$97		
Routine site visits (61/yr)													1	8	$368	8	$368		
Routine site visits (collocated 61/yr)													9	146	$6,625	146	$6,625		
Element # 3 totals					48	$206,680								223	$33,649	271	$35,888	$30,242	$204,442
4. Maintenance																			
Spare parts/supplies (44/yr)													3					$3,982	
Spare parts/supplies (32/yr)													2					$1,931	
Spare parts/supplies (16/yr)													1					$241	
Spare parts/supplies (61/yr)													1					$920	

Table 20.2, 2008 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Spare parts/supplies (collocated 61/yr)													9					$16,563	
Remedial calibrations (44/yr)													3	18	$850	18	$850		
Remedial calibrations (32 yr)													2	9	$412	9	$412		
Remedial calibrations (16/yr)													1	1	$52	1	$52		
Remedial calibrations (61/yr)													1	4	$196	4	$196		
Remedial calibrations (collocated 61/yr)													9	73	$3,537	73	$3,537		
Repairs (44/yr)													3	57	$2,743	57	$2,743		
Repairs (32/yr)													2	28	$1,330	28	$1,330		
Repairs (16/yr)													1	3	$166	3	$166		
Repairs (61/yr)													1	13	$634	13	$634		
Repairs (collocation 61/yr)													9	238	$11,409	238	$11,409		
Maintenance (44/yr)													3	123	$6,270	123	$6,270		
Maintenance (32/yr)													2	60	$3,040	60	$3,040		
Maintenance (16/yr)													1	7	$380	7	$380		
Maintenance (61/yr)													1	28	$1,449	28	$1,449		
Maintenance (collocation 61/yr)													9	512	$26,077	512	$26,077		
Element # 4 totals														1,175	$58,545	1,175	$58,545	$23,638	
5. Data Management																			
Data acquisition/processing (44/yr)													3	26	$1,312	26	$1,312		
Data acquisition/processing (32/yr)													2	13	$636	13	$636		
Data acquisition/processing (16/yr)													1	2	$80	2	$80		
Data acquisition/processing (61/yr)													1	6	$303	6	$303		
Data acquisition/processing (coll 61/yr)													9	110	$5,456	110	$5,456		
Data reporting (44/yr)													3	11	$595	11	$595		
Data reporting (32/yr)													2	5	$288	5	$288		
Data reporting (16/yr)													1	1	$72	1	$72		
Data reporting (61/yr)													1	5	$275	5	$275		
Data reporting (collocation 61/yr)													9	46	$2,475	46	$2,475		
Data validation (44/yr)													3	33	$1,774	33	$1,774		
Data validation (32/yr)													2	16	$860	16	$860		
Data validation (16/yr)													1	4	$215	4	$215		
Data validation (61/yr)													1	15	$820	15	$820		
Data validation (collocation 61/yr)													9	137	$7,380	137	$7,380		
Element # 5 totals														431	$22,542	431	$22,542		
6. Quality Assurance																			
Calibration standards													16					$25,555	
Calibrations (site & lab)													16	112	$5,707	112	$5,707		
Audits													16	192	$9,711	192	$9,711		
Training													7	112	$5,598	112	$5,598		
Implementation/coordination (44/yr)													3	10	$541	10	$541		
Implementation/coordination (32/yr)													2	5	$262	5	$262		
Implementation/coordination (16/yr)													1	1	$66	1	$66		

Table 20.2, 2008 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Implementation/coordination (61/yr)													1	5	$250	5	$250		
Implementation/coordination (coll 61/yr)													9	41	$2,251	41	$2,251		
QA plan preparation	7	12	5	$629	17	$881										17	$881		
Element # 6 totals					17	$881								478	$24,386	494	$25,267	$25,555	
7. Supervision																			
Planning/coordination (44/yr)													3	20	$1,082	20	$1,082		
Planning/coordination (32/yr)													2	10	$525	10	$525		
Planning/coordination (16/yr)													1	2	$131	2	$131		
Planning/coordination (61/yr)													1	9	$500	9	$500		
Planning/coordination (collocation 61/yr)													9	82	$4,501	82	$4,501		
Supervision/review (44/yr)													3	20	$1,192	20	$1,192		
Supervision/review (32/yr)													2	10	$578	10	$578		
Supervision/review (16/yr)													1	2	$145	2	$145		
Supervision/review (61/yr)													1	9	$551	9	$551		
Supervision/review (collocation 61/yr)													9	82	$4,959	82	$4,959		
Element # 7 totals														247	$14,165	247	$14,165		
[illegible]																			
Summary totals																			$496,978

Table 20.3, 2009 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq.			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design (see O3)																			
Element #1 totals																			
2. Site Installation																			
Cartridge sampler	11		5	$17,382		$38,241													$38,241
Procurement	11	8	5	$428	18	$942										18	$942		
Equipment installation	11	6	5	$266	13	$586										13	$586		
Element # 2 totals					31	$39,769										31	$1,527		$38,241
3. Sampling & Analysis																			
Supplies (44/yr)													2					$199	
Supplies (32/yr)													1					$72	
Supplies (16/yr)													1					$36	
Supplies (61/yr)													1					$138	
Supplies (collocated 61/yr)													6					$828	
Carbonyl sample cartridges (44/yr)													2					$1,733	
Carbonyl sample cartridges (32/yr)													1					$840	
Carbonyl sample cartridges (16/yr)													1					$420	
Carbonyl sample cartridges (61/yr)													1					$1,602	
Carbonyl sample cartridges (coll 61/yr)													6					$9,609	
HPLC/UV with autosampler	11		5	$64,098		$141,015							11						$141,015
Equipment (auxiliary)	11		5	$1,086		$2,390							11						$2,390
Supplies/reagents (44/yr)													2					$717	
Supplies/reagents (32/yr)													1					$348	
Supplies/reagents (16/yr)													1					$174	
Supplies/reagents (61/yr)													1					$663	
Supplies/reagents (collocated 61/yr)													6					$3,976	
Sample analysis (44/yr)													2	33	$2,649	33	$2,649		
Sample analysis (32/yr)													1	24	$1,284	24	$1,284		
Sample analysis (16/yr)													1	12	$642	12	$642		
Sample analysis (61/yr)													1	46	$2,448	46	$2,448		
Sample analysis (collocated 61/yr)													6	46	$14,689	46	$14,689		
Equipment setup	11	15	5	$714	33	$1,570							11			33	$1,570		
Routine site visits (44/yr)													2	18	$813	18	$813		
Routine site visits (32/yr)													1	9	$394	9	$394		
Routine site visits (16/yr)													1	4	$197	4	$197		
Routine site visits (61/yr)													1	16	$751	16	$751		
Routine site visits (collocated 61/yr)													6	98	$4,506	98	$4,506		
Element # 3 totals					33	$144,975								207	$23,867	240	$25,437	$21,355	$143,405
4. Maintenance																			
Spare parts/supplies (44/yr)													2					$2,032	
Spare parts/supplies (32/yr)													1					$985	
Spare parts/supplies (16/yr)													1					$493	
Spare parts/supplies (61/yr)													1					$1,878	
Spare parts/supplies (collocated 61/yr)													6					$11,266	

Table 20.3, 2009 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
Remedial calibrations (44/yr)													2	9	$434	9	$434		
Remedial calibrations (32 yr)													1	4	$210	4	$210		
Remedial calibrations (16/yr)													1	2	$105	2	$105		
Remedial calibrations (61/yr)													1	8	$401	8	$401		
Remedial calibrations (collocated 61/yr)													6	49	$2,406	49	$2,406		
Repairs (44/yr)													2	29	$1,399	29	$1,399		
Repairs (32/yr)													1	14	$678	14	$678		
Repairs (16/yr)													1	7	$339	7	$339		
Repairs (61/yr)													1	26	$1,293	26	$1,293		
Repairs (collocation 61/yr)													6	159	$7,760	159	$7,760		
Maintenance (44/yr)													2	62	$3,199	62	$3,199		
Maintenance (32/yr)													1	30	$1,551	30	$1,551		
Maintenance (16/yr)													1	15	$775	15	$775		
Maintenance (61/yr)													1	57	$2,956	57	$2,956		
Maintenance (collocation 61/yr)													6	342	$17,737	342	$17,737		
Element # 4 totals														812	$41,245	812	$41,245	$16,653	
5. Data Management																			
Data acquisition/processing (44/yr)													2	13	$669	13	$669		
Data acquisition/processing (32/yr)													1	6	$324	6	$324		
Data acquisition/processing (16/yr)													1	3	$162	3	$162		
Data acquisition/processing (61/yr)													1	12	$619	12	$619		
Data acquisition/processing (coll 61/yr)													6	73	$3,711	73	$3,711		
Data reporting (44/yr)													2	7	$405	7	$405		
Data reporting (32/yr)													1	3	$147	3	$147		
Data reporting (16/yr)													1	1	$74	1	$74		
Data reporting (61/yr)													1	5	$281	5	$281		
Data reporting (collocation 61/yr)													6	31	$1,683	31	$1,683		
Data validation (44/yr)													2	22	$1,207	22	$1,207		
Data validation (32/yr)													1	8	$439	8	$439		
Data validation (16/yr)													1	4	$219	4	$219		
Data validation (61/yr)													1	15	$837	15	$837		
Data validation (collocation 61/yr)													6	92	$5,020	92	$5,020		
Element # 5 totals														296	$15,797	296	$15,797		
6. Quality Assurance																			
Calibration standards													11					$17,926	
Calibrations (site & lab)													11	77	$4,003	77	$4,003		
Audits													11	132	$6,812	132	$6,812		
Training													7	112	$5,711	112	$5,711		
Implementation/coordination (44/yr)													2	7	$368	7	$368		
Implementation/coordination (32/yr)													1	2	$134	2	$134		
Implementation/coordination (16/yr)													1	1	$67	1	$67		
Implementation/coordination (61/yr)													1	5	$255	5	$255		
Implementation/coordination (coll 61/yr)													6	27	$1,531	27	$1,531		

Table 20.3, 2009 PAMS Carbonyl Costs, Misc Frequency

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours & Costs for Carbonyl Misc Frequency									Summary Carbonyl Misc Freq			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
QA plan preparation	7	12	5	$642	17	$899										17	$899		
Element # 6 totals					17	$899								363	$18,881	380	$19,780	$17,926	
7. Supervision																			
Planning/coordination (44/yr)													2	13	$736	13	$736		
Planning/coordination (32/yr)													1	5	$268	5	$268		
Planning/coordination (16/yr)													1	2	$134	2	$134		
Planning/coordination (61/yr)													1	9	$510	9	$510		
Planning/coordination (collocation 61/yr)													6	55	$3,062	55	$3,062		
Supervision/review (44/yr)													2	13	$811	13	$811		
Supervision/review (32/yr)													1	5	$295	5	$295		
Supervision/review (16/yr)													1	2	$147	2	$147		
Supervision/review (61/yr)													1	9	$562	9	$562		
Supervision/review (collocation 61/yr)													6	55	$3,373	55	$3,373		
Element # 7 totals														169	$9,898	169	$9,898		
Summary Totals																			$35,264

Table 21, Summary of California Alternative Plan (CAP) 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary CAP				Summary CAP				Summary CAP				Average 2007-2009 CAP			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Nertwork design study (PAMS area) (see O3																
Site selection (see O3)																
Element #1 totals																
2. Site Installation																
Canister sampling system				$30,717				$31,305				$31,940				$31,321
Procurement (can sampling sys and cans)	34	$1,729			34	$1,762			34	$1,798			34	$1,763		
Equipment installation (can sampling system	63	$3,379			63	$3,444			63	$3,513			63	$3,445		
Element # 2 totals	97	$5,108		$30,717	97	$5,206		$31,305	97	$5,311		$31,940	97	$5,208		$31,321
3. Sampling & Analysis																
Canisters (4 for 1/6)				$7,021				$7,155				$7,301				$7,159
Canister cleaning system				$24,868				$25,344				$25,858				$25,356
Canister analysis	651	$7,021			651	$7,155			651	$7,301			651	$7,159		
Routine site visits (canister)	217	$11,169			217	$11,382			217	$11,613			217	$11,388		
Element # 3 totals	868	$18,190		$31,889	868	$18,538		$32,499	868	$18,914		$33,158	868	$18,547		$32,515
4. Maintenance																
Spare parts/supplies (canister)			$7,729				$7,877				$8,037				$7,881	
Remedial repairs (canister)	79	$4,189			79	$4,269			79	$4,356			79	$4,272		
Routine maintenance (canister)	158	$8,378			158	$8,539			158	$8,712			158	$8,543		
Element # 4 totals	237	$12,568	$7,729		237	$12,808	$7,877		237	$13,068	$8,037		237	$12,815	$7,881	
5. Data Management																
Data acquisition/processing (canisters)	59	$3,045			59	$3,104			59	$3,167			59	$3,105		
Data reporting (canister)	25	$1,309			25	$1,334			25	$1,361			25	$1,335		
Data validation (canister)	99	$5,204			99	$5,304			99	$5,412			99	$5,307		
Data analysis & trends (canister)	271	$14,680			271	$14,961			271	$15,265			271	$14,969		
Element # 5 totals	454	$24,239			454	$24,703			454	$25,204			454	$24,715		
6. Quality Assurance																
Calibration standards			$3,291				$3,354				$3,422				$3,356	
Audits	315	$18,600			315	$18,956			315	$19,341			315	$18,966		
Routine calibrations	252	$13,516			252	$13,774			252	$14,054			252	$13,781		
Training	252	$14,059			252	$14,328			252	$14,618			252	$14,335		
Implementation/coordination	252	$13,516			252	$13,774			252	$14,054			252	$13,781		
QA plan review (annual)	3	$33			3	$34			3	$34			3	$34		
QA plan preparation	25	$1,352			25	$1,377			25	$1,405			25	$1,378		
Element # 6 totals	1,099	$61,074	$3,291		1,099	$62,244	$3,354		1,099	$63,506	$3,422		1,099	$62,275	$3,356	
7. Supervision																
Planning/coordination (canister)	420	$24,332			420	$24,798			420	$25,301			420	$24,811		
Supervision/review (canister)	504	$29,774			504	$30,344			504	$30,959			504	$30,359		
Element # 7 totals	924	$54,106			924	$55,142			924	$56,260			924	$55,169		
Summary totals				$248,910				$253,675				$258,824				$253,802

Table 21.1, 2007 PAMS California Alternative Plan (CAP) Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary CAP Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Nertwork design study (PAMS area) (see O3)																			
Site selection (see O3)																			
Element #1 totals																			
2. Site Installation																			
Canister sampling system	21		5	$7,314		$30,717													$30,717
Procurement (can sampling sys and cans)	21	8	5	$412	34	$1,729										34	$1,729		
Equipment installation (can sampling system)	21	15	5	$804	63	$3,379										63	$3,379		
Element # 2 totals					97	$35,825										97	$5,108		$30,717
3. Sampling & Analysis																			
Canisters (4 for 1/6)	21		5	$1,672		$7,021													$7,021
Canister cleaning system	21		5	$5,921		$24,868													$24,868
Canister analysis													21	651	$7,021	651	$7,021		
Routine site visits (canister)													21	217	$11,169	217	$11,169		
Element # 3 totals						$31,889								868	$18,190	868	$18,190		$31,889
4. Maintenance																			
Spare parts/supplies (canister)													21					$7,729	
Remedial repairs (canister)													21	79	$4,189	79	$4,189		
Routine maintenance (canister)													21	158	$8,378	158	$8,378		
Element # 4 totals														237	$12,568	237	$12,568	$7,729	
5. Data Management																			
Data acquisition/processing (canisters)													21	59	$3,045	59	$3,045		
Data reporting (canister)													21	25	$1,309	25	$1,309		
Data validation (canister)													21	99	$5,204	99	$5,204		
Data analysis & trends (canister)													21	271	$14,680	271	$14,680		
Element # 5 totals														454	$24,239	454	$24,239		
6. Quality Assurance																			
Calibration standards													21					$3,291	
Audits													21	315	$18,600	315	$18,600		
Routine calibrations													21	252	$13,516	252	$13,516		
Training													21	252	$14,059	252	$14,059		
Implementation/coordination													21	252	$13,516	252	$13,516		
QA plan review (annual)													21	3	$33	3	$33		
QA plan preparation	21	6	5	$322	25	$1,352										25	$1,352		
Element # 6 totals					25	$1,352								1,074	$59,723	1,099	$61,074	$3,291	
7. Supervision																			
Planning/coordination (canister)													21	420	$24,332	420	$24,332		
Supervision/review (canister)													21	504	$29,774	504	$29,774		
Element # 7 totals														924	$54,106	924	$54,106		
Summary totals																			$248,910

Table 21.2, 2008 PAMS California Alternative Plan (CAP) Costs

Aug 2006

	Previous Amortized Hours and Costs						New Site Hours and Costs									Summary CAP Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Nertwork design study (PAMS area) (see O3)																			
Site selection (see O3)																			
Element #1 totals																			
2. Site Installation																			
Canister sampling system	21		5	$7,454		$31,305													$31,305
Procurement (can sampling sys and cans)	21	8	5	$420	34	$1,762										34	$1,762		
Equipment installation (can sampling system)	21	15	5	$820	63	$3,444										63	$3,444		
Element # 2 totals					97	$36,511										97	$5,206		$31,305
3. Sampling & Analysis																			
Canisters (4 for 1/6)	21		5	$1,704		$7,155													$7,155
Canister cleaning system	21		5	$6,034		$25,344													$25,344
Canister analysis													21	651	$7,155	651	$7,155		
Routine site visits (canister)													21	217	$11,382	217	$11,382		
Element # 3 totals						$32,499								868	$18,538	868	$18,538		$32,499
4. Maintenance																			
Spare parts/supplies (canister)													21					$7,877	
Remedial repairs (canister)													21	79	$4,269	79	$4,269		
Routine maintenance (canister)													21	158	$8,539	158	$8,539		
Element # 4 totals														237	$12,808	237	$12,808	$7,877	
5. Data Management																			
Data acquisition/processing (canisters)													21	59	$3,104	59	$3,104		
Data reporting (canister)													21	25	$1,334	25	$1,334		
Data validation (canister)													21	99	$5,304	99	$5,304		
Data analysis & trends (canister)													21	271	$14,961	271	$14,961		
Element # 5 totals														454	$24,703	454	$24,703		
6. Quality Assurance																			
Calibration standards													21					$3,354	
Audits													21	315	$18,956	315	$18,956		
Routine calibrations													21	252	$13,774	252	$13,774		
Training													21	252	$14,328	252	$14,328		
Implementation/coordination													21	252	$13,774	252	$13,774		
QA plan review (annual)													21	3	$34	3	$34		
QA plan preparation	21	6	5	$328	25	$1,377										25	$1,377		
Element # 6 totals					25	$1,377								1,074	$60,866	1,099	$62,244	$3,354	
7. Supervision																			
Planning/coordination (canister)													21	420	$24,798	420	$24,798		
Supervision/review (canister)													21	504	$30,344	504	$30,344		
Element # 7 totals														924	$55,142	924	$55,142		
[redacted]																			
Summary totals																			$253,675

Table 21.3, 2009 PAMS California Alternative Plan (CAP) Costs

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary CAP Costs			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New	Hours	O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Nertwork design study (PAMS area) (see O3																			
Site selection (see O3)																			
Element #1 totals																			
2. Site Installation																			
Canister sampling system	21		5	$7,605		$31,940													$31,940
Procurement (can sampling sys and cans)	21	8	5	$428	34	$1,798										34	$1,798		
Equipment installation (can sampling system	21	15	5	$837	63	$3,513										63	$3,513		
Element # 2 totals					97	$37,251										97	$5,311		$31,940
3. Sampling & Analysis																			
Canisters (4 for 1/6)	21		5	$1,738		$7,301													$7,301
Canister cleaning system	21		5	$6,157		$25,858													$25,858
Canister analysis													21	651	$7,301	651	$7,301		
Routine site visits (canister)													21	217	$11,613	217	$11,613		
Element # 3 totals						$33,158								868	$18,914	868	$18,914		$33,158
4. Maintenance																			
Spare parts/supplies (canister)													21					$8,037	
Remedial repairs (canister)													21	79	$4,356	79	$4,356		
Routine maintenance (canister)													21	158	$8,712	158	$8,712		
Element # 4 totals														237	$13,068	237	$13,068	$8,037	
5. Data Management																			
Data acquisition/processing (canisters)													21	59	$3,167	59	$3,167		
Data reporting (canister)													21	25	$1,361	25	$1,361		
Data validation (canister)													21	99	$5,412	99	$5,412		
Data analysis & trends (canister)													21	271	$15,265	271	$15,265		
Element # 5 totals														454	$25,204	454	$25,204		
6. Quality Assurance																			
Calibration standards													21					$3,422	
Audits													21	315	$19,341	315	$19,341		
Routine calibrations													21	252	$14,054	252	$14,054		
Training													21	252	$14,618	252	$14,618		
Implementation/coordination													21	252	$14,054	252	$14,054		
QA plan review (annual)													21	3	$34	3	$34		
QA plan preparation	21	6	5	$335	25	$1,405										25	$1,405		
Element # 6 totals					25	$1,405								1,074	$62,101	1,099	$63,506	$3,422	
7. Supervision																			
Planning/coordination (canister)													21	420	$25,301	420	$25,301		
Supervision/review (canister)													21	504	$30,959	504	$30,959		
Element # 7 totals														924	$56,260	924	$56,260		
Summary Totals																			$258,621

Table 22, Summary Ambient Air Monitor Network for Hazardous Air Pollutants 2007-2009 Monitoring Costs

Aug 2006

	2007				2008				2009							
	Summary Ambient Net. for Hazardous AP				Summary Ambient Net. for Hazardous AP				Summary Ambient Net. for Hazardous AP				Average 2007-2009 Hazardous AP			
Cost Element	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																
Network design study																
Site selection																
Element #1 totals																
2. Site Installation																
Analyzer																
Procurement																
Equipment installation																
Element #2 totals																
3. Supplies and Site Visits																
Supplies																
Routine site visits																
Analysis (grant for NATTS)				$2,804,243				$2,857,923				$2,915,898				$2,859,355
Analysis (grant for CSATMP)				$6,000,000				$6,000,000				$6,000,000				$6,000,000
Element #3 totals				$8,804,243				$8,857,923				$8,915,898				$8,859,355
4. Maintenance																
Spare parts/supplies																
Remedial repairs																
Routine maintenance																
Element #4 totals																
5 Data Management																
Data acquistion/processing																
Data reporting																
Data validation																
Data distribution																
Element # 5 totals																
6. Quality Assurance																
Audits																
Routine calibrations																
Coordination/implementation																
Training																
Reporting																
QA plan review (annual)																
QA plan preparation (RO)																
Element #6 totals																
7. Supervision																
Planning/coordination																
Supervision/review																
Element #7 totals																
Summary totals				$8,804,243				$8,857,923				$8,915,898				$8,859,355

Table 22.1, 2007 Ambient Air Monitor Network for Hazardous Air Pollutants

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary Ambient Net. for Hazardous AP			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study	Amoratized calculations included with other pollutants																		
Site selection	Amoratized calculations included with other pollutants																		
Element #1 totals																			
2. Site Installation																			
Analyzer	Amoratized calculations included with other pollutants																		
Procurement	Amoratized calculations included with other pollutants																		
Equipment installation	Amoratized calculations included with other pollutants																		
Element #2 totals																			
3. Supplies and Site Visits																			
Supplies	Amoratized calculations included with other pollutants																		
Routine site visits	Amoratized calculations included with other pollutants																		
Analysis (grant for NATTS)	23					$2,804,243													$2,804,243
Analysis (grant for CSATMP)	15					$6,000,000													$6,000,000
Element #3 totals						$8,804,243													$8,804,243
4. Maintenance																			
Spare parts/supplies	Amoratized calculations included with other pollutants																		
Remedial repairs	Amoratized calculations included with other pollutants																		
Routine maintenance	Amoratized calculations included with other pollutants																		
Element #4 totals																			
5 Data Management																			
Data acquistion/processing	Amoratized calculations included with other pollutants																		
Data reporting	Amoratized calculations included with other pollutants																		
Data validation	Amoratized calculations included with other pollutants																		
Data distribution																			
Element # 5 totals																			
6. Quality Assurance																			
Audits	Amoratized calculations included with other pollutants																		
Routine calibrations	Amoratized calculations included with other pollutants																		
Coordination/implementation	Amoratized calculations included with other pollutants																		
Training	Amoratized calculations included with other pollutants																		
Reporting	Amoratized calculations included with other pollutants																		
QA plan review (annual)	Amoratized calculations included with other pollutants																		
QA plan preparation (RO)	Amoratized calculations included with other pollutants																		
Element #6 totals																			
7. Supervision																			
Planning/coordination	Amoratized calculations included with other pollutants																		
Supervision/review	Amoratized calculations included with other pollutants																		
Element #7 totals																			
Summary Totals																			$8,804,243

Table 22.2, 2008 Ambient Air Monitor Network for Hazardous Air Pollutants

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary Ambient Net. for Hazardous AP			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study	Amoratized calculations included with other pollutants																		
Site selection	Amoratized calculations included with other pollutants																		
Element #1 totals																			
2. Site Installation																			
Analyzer	Amoratized calculations included with other pollutants																		
Procurement	Amoratized calculations included with other pollutants																		
Equipment installation	Amoratized calculations included with other pollutants																		
Element #2 totals																			
3. Supplies and Site Visits																			
Supplies	Amoratized calculations included with other pollutants																		
Routine site visits	Amoratized calculations included with other pollutants																		
Analysis (grant for NATTS)	23					$2,857,923													$2,857,923
Analysis (grant for CSATMP)	15					$6,000,000													$6,000,000
Element #3 totals						$8,857,923													$8,857,923
4. Maintenance																			
Spare parts/supplies	Amoratized calculations included with other pollutants																		
Remedial repairs	Amoratized calculations included with other pollutants																		
Routine maintenance	Amoratized calculations included with other pollutants																		
Element #4 totals																			
5 Data Management																			
Data acquistion/processing	Amoratized calculations included with other pollutants																		
Data reporting	Amoratized calculations included with other pollutants																		
Data validation	Amoratized calculations included with other pollutants																		
Data distribution																			
Element # 5 totals																			
6. Quality Assurance																			
Audits	Amoratized calculations included with other pollutants																		
Routine calibrations	Amoratized calculations included with other pollutants																		
Coordination/implementation	Amoratized calculations included with other pollutants																		
Training	Amoratized calculations included with other pollutants																		
Reporting	Amoratized calculations included with other pollutants																		
QA plan review (annual)	Amoratized calculations included with other pollutants																		
QA plan preparation (RO)	Amoratized calculations included with other pollutants																		
Element #6 totals																			
7. Supervision																			
Planning/coordination	Amoratized calculations included with other pollutants																		
Supervision/review	Amoratized calculations included with other pollutants																		
Element #7 totals																			
Summary totals																			$8,857,923

Table 22.3, 2009 Ambient Air Monitor Network for Hazardous Air Pollutants

Aug 2006

	Previous Amoritized Hours and Costs						New Site Hours and Costs									Summary Ambient Net. for Hazardous AP			
Cost Element	# Old Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# New Sites	Hours/ Site	Years Amor.	Cost/ Site	Total Amor. Hours	Total Amor. Cost	# Old Plus New Sites	Labor Hours	Labor O & M	Labor Hours	Labor Costs	Non-labor O & M	Equip/ Contract $
1. Network Design																			
Network design study	Amoratized calculations included with other pollutants																		
Site selection	Amoratized calculations included with other pollutants																		
Element #1 totals																			
2. Site Installation																			
Analyzer	Amoratized calculations included with other pollutants																		
Procurement	Amoratized calculations included with other pollutants																		
Equipment installation	Amoratized calculations included with other pollutants																		
Element #2 totals																			
3. Supplies and Site Visits																			
Supplies	Amoratized calculations included with other pollutants																		
Routine site visits	Amoratized calculations included with other pollutants																		
Analysis (grant for NATTS)	23					$2,915,898													$2,915,898
Analysis (grant for CSATMP)	15					$6,000,000													$6,000,000
Element #3 totals						$8,915,898													$8,915,898
4. Maintenance																			
Spare parts/supplies	Amoratized calculations included with other pollutants																		
Remedial repairs	Amoratized calculations included with other pollutants																		
Routine maintenance	Amoratized calculations included with other pollutants																		
Element #4 totals																			
5 Data Management																			
Data acquistion/processing	Amoratized calculations included with other pollutants																		
Data reporting	Amoratized calculations included with other pollutants																		
Data validation	Amoratized calculations included with other pollutants																		
Data distribution																			
Element # 5 totals																			
6. Quality Assurance																			
Audits	Amoratized calculations included with other pollutants																		
Routine calibrations	Amoratized calculations included with other pollutants																		
Coordination/implementation	Amoratized calculations included with other pollutants																		
Training	Amoratized calculations included with other pollutants																		
Reporting	Amoratized calculations included with other pollutants																		
QA plan review (annual)	Amoratized calculations included with other pollutants																		
QA plan preparation (RO)	Amoratized calculations included with other pollutants																		
Element #6 totals																			
7. Supervision																			
Planning/coordination	Amoratized calculations included with other pollutants																		
Supervision/review	Amoratized calculations included with other pollutants																		
Element #7 totals																			
Summary Totals																			$8,915,898