

Appendix 6

Detailed Emissions Calculations

Appendix 6

DETAILED EMISSIONS CALCULATIONS

Please Attach Emission Calculations

Instructions

1. Provide descriptions of all emissions, and provide emission rates, of any pollutants for which the source is major and all emissions of regulated air pollutants from all emission units. [NAC 445B.3363.1(a), NAC 445B.3363.1(b), NAC 445B.295.8]

See Section 3 of permit application and the associated Tables attached below.

2. Provide the emission rates of all regulated air pollutants that are subject to an emissions limitation pursuant to an applicable requirement. The emission rate must be described in pounds per hour and tons per year and in such terms as are necessary to establish compliance using the applicable standard reference test method. [NAC 445B.3363.1(d)]

See attached Tables below.

3. Provide all supporting calculations and documentation of all emission factors for the emission rates specified in 1 and 2 above. This information shall be provided for each emission unit. (*Note: A listing of default emission control efficiency values is contained in Attachment 4.*) [NAC 445B.3363.1(f)]

See attached Tables below.

4. Provide any other information required by any applicable requirement for each emission unit. [NAC 445B.3363.1(e)]

Additional information will be provided upon request.

5. Provide all emissions of regulated air pollutants (in pounds per hour and tons per year) from **each insignificant activity** (see Section 4 of Appendix 2 to determine if these calculations are required), and calculations and supporting documentation. The emissions and supporting calculations should reflect all insignificant activities listed in Appendix 2. [NAC 445B.295.8]

NOT APPLICABLE – NO CHANGE

OPTION 12A

DETAILED EMISSION CALCULATIONS

Table A	PSD Applicability Determination (using gr/acf emission factors)
Table B	PSD Applicability Determination (using lb/ton emission factors)
Table 1	Allowable PM₁₀ emissions as contained in current permit using gr/acf
Table 1a	Allowable PM₁₀ emissions as contained in current permit using lb/ton
Table 1b	Allowable PM_{2.5} emissions as contained in current permit using gr/acf
Table 1c	Allowable PM_{2.5} emissions as contained in current permit using lb/ton
Table 2	Actual PM₁₀ emissions for 2005 (calculated with both gr/acf and lb/ton)
Table 2a	Actual PM_{2.5} emissions for 2005 (calculated with both gr/acf and lb/ton)
Table 3	Actual PM₁₀ emissions for 2006 (calculated with both gr/acf and lb/ton)
Table 3a	Actual PM_{2.5} emissions for 2006 (calculated with both gr/acf and lb/ton)
Table 4	Actual combustion emissions (gaseous other than GHG and PM) for 2005
Table 5	Actual combustion emissions (gaseous other than GHG and PM) for 2006
Table 6	Allowable GHG (PTE) while burning 100% natural gas
Table 6a	Actual GHG emissions for 2005 while burning natural gas
Table 6b	Actual GHG emissions for 2005 while burning natural gas
Table 7	Allowable GHG (PTE) while burning 100% No. 2 fuel oil
Table 7a	Actual GHG emissions for 2006 while burning No. 2 fuel oil
Table 7b	Actual GHG emissions for 2006 while burning No. 2 fuel oil

Table A Nevada Cement Company - PSD Applicability Determination for Finish Grind Mode for #2 Raw Mill Project (Option 12A) Systems 12, 13, 21, 25(b), & 26 - using gr/acf Emission Factors

Pollutant	Actual Emissions (tpy) ¹		Average Actual Emissions (tpy) 2005 / 2006	Potential to Emit Permit No. AP3241-0387.02 ²	Net Change	PSD Significance Threshold	PSD Applicability
	2005	2006					
NO _x	7.6 tpy	6.8 tpy	7.2 tpy	8.4 tpy	1.2 tpy	40 tpy	No
CO	1.9 tpy	1.7 tpy	1.8 tpy	3.7 tpy	1.9 tpy	100 tpy	No
SO ₂	0.1 tpy	0.1 tpy	0.1 tpy	0.7 tpy	0.6 tpy	40 tpy	No
VOC	2.0 tpy	1.8 tpy	1.9 tpy	2.2 tpy	0.3 tpy	40 tpy	No
PM ₁₀	39.4 tpy	34.8 tpy	37.1 tpy	43.1 tpy	6.0 tpy	15 tpy	No
PM _{2.5}	13.9 tpy	12.3 tpy	13.1 tpy	15.2 tpy	2.1 tpy	10 tpy	No
CO _{2e}	6,609.5 tpy	5,870.7 tpy	6,240.1 tpy	7,174.6 tpy	934.5 tpy	75,000 tpy	No

¹ using gr/acf emission factor (EF) & actual hours per year (hr/yr) of operation

² based on potential to emit (PTE) from Permit No. AP3241-0387.02, using gr/dscf EF and 8,760 hr/yr of operation, and assuming 100% natural gas in the System 12 #2 Raw Mill Heater

Table B Nevada Cement Company - PSD Applicability Determination for Finish Grind Mode for #2 Raw Mill Project (Option 12A) Systems 12, 13, 21, 25(b), & 26 - using lb/ton Emission Factors

Pollutant	Actual Emissions (tpy) ³		Average Actual Emissions (tpy) 2005 / 2006	Potential to Emit Permit No. AP3241-0387.02 ⁴	Net Change	PSD Significance Threshold	PSD Applicability
	2005	2006					
NO _x	7.6 tpy	6.8 tpy	7.2 tpy	8.4 tpy	1.2 tpy	40 tpy	No
CO	1.9 tpy	1.7 tpy	1.8 tpy	3.7 tpy	1.9 tpy	100 tpy	No
SO ₂	0.1 tpy	0.1 tpy	0.1 tpy	0.7 tpy	0.6 tpy	40 tpy	No
VOC	2.0 tpy	1.8 tpy	1.9 tpy	2.2 tpy	0.3 tpy	40 tpy	No
PM ₁₀	30.1 tpy	27.9 tpy	29.0 tpy	43.1 tpy	14.1 tpy	15 tpy	No
PM _{2.5}	10.6 tpy	9.9 tpy	10.2 tpy	15.2 tpy	5.0 tpy	10 tpy	No
CO _{2e}	0.0 tpy	0.0 tpy	0.0 tpy	6,492.2 tpy	6,492.2 tpy	75,000 tpy	No

³ using lb/ton emission factors & production throughput

⁴ based on potential to emit (PTE) from Permit No. AP3241-0387.02, using lb/ton EF and 8,760 hr/yr of operation, and assuming 100% #2 fuel oil in the System 12 #2 Raw Mill Heater

**Table 1 Nevada Cement Company
 PM₁₀ Potential to Emit for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)
 Using gr/acf Emission Factor & 8,760 Hours per Year of Operation**

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM ₁₀ Emission Rates ¹	
									lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	36,331 acfm	10,200 dscfm	0.01285 gr/acf	4.00	17.52
12A		#2 Raw Mill Operations (combusting #2 FO)								
13	S2.055	#2 Raw Mill	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	16,956 acfm		0.02064 gr/acf	3.00	13.14
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.020 gr/acf	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.02393 gr/acf	0.410	1.80
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.02393 gr/acf	0.308	1.35
									43.1	

¹ (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

Table 1a Nevada Cement Company
PM₁₀ Potential to Emit for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)
Using lb/ton Emission Factor & Permitted Annual Throughput / Production Rates

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM ₁₀ Emission Rates ¹	
									lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	36,331 acfm	10,200 dscfm	0.10000 lb/ton	4.00	17.52
12A		#2 Raw Mill Operations (combusting #2 FO)								
13	S2.055	#2 Raw Mill	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	16,956 acfm		0.07500 lb/ton	3.00	13.14
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.41	1.80
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.31	1.35
									43.1	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

Table 1b Nevada Cement Company
PM_{2.5} Potential to Emit for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)
Using gr/acf Emission Factor & 8,760 Hours per Year of Operation

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM _{2.5} Emission Rates ¹	
									lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	36,331 acfm	10,200 dscfm	0.00453 gr/acf	1.41	6.18
12A		#2 Raw Mill Operations (combusting #2 FO)								
13	S2.055	#2 Raw Mill	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	16,956 acfm		0.00729 gr/acf	1.06	4.64
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.007 gr/acf	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00845 gr/acf	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00845 gr/acf	0.109	0.48
									15.2	

Emission No. Emission Factor Source and/or Control Efficiency

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

Table 1c Nevada Cement Company
PM_{2.5} Potential to Emit for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)
Using lb/ton Emission Factor & Permitted Annual Throughput / Production Rates

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM _{2.5} Emission Rates ¹	
									lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	36,331 acfm	10,200 dscfm	0.03529 lb/ton	1.41	6.18
12A		#2 Raw Mill Operations (combusting #2 FO)								
13	S2.055	#2 Raw Mill	8,760 hr/yr	40.00 ton/hr	350,400 ton/yr	16,956 acfm		0.02647 lb/ton	1.06	4.64
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.14	0.63
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.11	0.48
									15.2	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

**Table 2 Nevada Cement Company
2005 Actual PM₁₀ Emissions for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM ₁₀ Emission Rates ¹		PM ₁₀ Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	8,070 hr/yr	37.82 ton/hr	305,177 ton/yr	36,331 acfm	10,200 dscfm	0.10000 lb/ton	0.01285 gr/acf	3.78	15.26	4.00	16.14
12A		#2 Raw Mill Operations (combusting #2 FO)											
13	S2.055	#2 Raw Mill	8,070 hr/yr	37.82 ton/hr	305,177 ton/yr	16,956 acfm		0.07500 lb/ton	0.02064 gr/acf	2.84	11.44	3.00	12.11
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	65.07 ton/hr	570,006 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	0.020 gr/acf	0.73	3.21	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	6.0 ton/hr	52,920 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.02393 gr/acf	0.02	0.11	0.410	1.80
26	S2.106	Fly Ash Bulk Loading	712 hr/yr	75.0 ton/hr	53,435 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.02393 gr/acf	0.23	0.08	0.308	0.11
Total										30.1		39.4	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 2a Nevada Cement Company
2005 Actual PM_{2.5} Emissions for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM _{2.5} Emission Rates ¹		PM _{2.5} Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	8,070 hr/yr	37.82 ton/hr	305,177 ton/yr	36,331 acfm	10,200 dscfm	0.03529 lb/ton	0.00453 gr/acf	1.33	5.39	1.41	5.70
12A		#2 Raw Mill Operations (combusting #2 FO)											
13	S2.055	#2 Raw Mill	8,070 hr/yr	37.82 ton/hr	305,177 ton/yr	16,956 acfm		0.02647 lb/ton	0.00729 gr/acf	1.00	4.04	1.06	4.27
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	65.07 ton/hr	570,006 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.007 gr/acf	0.26	1.13	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	6.04 ton/hr	52,920 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.00845 gr/acf	0.01	0.04	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	712 hr/yr	75.05 ton/hr	53,435 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.00845 gr/acf	0.08	0.03	0.109	0.04
total										10.6		13.9	

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 3 Nevada Cement Company
2006 Actual PM₁₀ Emissions for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM ₁₀ Emission Rates ¹		PM ₁₀ Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	7,168 hr/yr	39.28 ton/hr	281,579 ton/yr	36,331 acfm	10,200 dscfm	0.10000 lb/ton	0.01285 gr/acf	3.93	14.08	4.00	14.34
12A		#2 Raw Mill Operations (combusting #2 FO)											
13	S2.055	#2 Raw Mill	7,168 hr/yr	39.28 ton/hr	281,579 ton/yr	16,956 acfm		0.07500 lb/ton	0.02064 gr/acf	2.95	10.56	3.00	10.75
21	S2.086 - S2.093	Cement Bulk Loading	7,423 hr/yr	72.43 ton/hr	537,658 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	0.020 gr/acf	0.82	3.03	2.12	7.86
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,712 hr/yr	10.4 ton/hr	90,656 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.02393 gr/acf	0.04	0.19	0.410	1.79
26	S2.106	Fly Ash Bulk Loading	570 hr/yr	75.0 ton/hr	42,744 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.02393 gr/acf	0.23	0.07	0.308	0.09
Total										27.9		34.8	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 3a Nevada Cement Company
2006 Actual PM_{2.5} Emissions for Sources Affected by Finish Grind Mode for #2 Raw Mill Project (Option 12A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM _{2.5} Emission Rates ¹		PM _{2.5} Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
12	S2.050 - S2.054	#2 Raw Mill Operations (combusting Nat Gas)	7,168 hr/yr	39.28 ton/hr	281,579 ton/yr	36,331 acfm	10,200 dscfm	0.03529 lb/ton	0.00453 gr/acf	1.39	4.97	1.41	5.06
12A		#2 Raw Mill Operations (combusting #2 FO)											
13	S2.055	#2 Raw Mill	7,168 hr/yr	39.28 ton/hr	281,579 ton/yr	16,956 acfm		0.02647 lb/ton	0.00729 gr/acf	1.04	3.73	1.06	3.79
21	S2.086 - S2.093	Cement Bulk Loading	7,423 hr/yr	72.43 ton/hr	537,658 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.007 gr/acf	0.29	1.07	0.75	2.78
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,712 hr/yr	10.41 ton/hr	90,656 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.00845 gr/acf	0.02	0.07	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	570 hr/yr	74.99 ton/hr	42,744 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.00845 gr/acf	0.08	0.02	0.109	0.03
Total										9.9		12.3	

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 4 Nevada Cement Company
2005 Actual Criteria Emissions (Excluding PM / PM₁₀ / PM_{2.5}) - (Option 12A)**

System	Emission Unit	Source Description	Annual Operation	Process Data			
				Heat Rate	Fuel Consumption		
12 / 12A	S2.054	#2 Raw Mill Natural Gas-Fired & Oil-Fired Heater 211	8,070 hr/yr	14.0 MMBtu/hr	0.0135 MMscf/hr	108.63 MMscf/yr	
			0 hr/yr		Nat Gas HHV	1,040 Btu/scf	
	0.00 gal/hr	0 gal/yr					
		Oil HHV	140,000 Btu/gal				
			Emission Rates				
	Pollutant	Emission Factor	Short-term		Annual		
			lb/hr	g/sec	tpy	g/sec	
		NO _x	140 lb/MMscf	1.89	0.2382	7.6	0.2194
		CO	35 lb/MMscf	0.48	0.0599	1.9	0.0551
		SO ₂	2.20 lb/MMscf	0.03	0.0037	0.1	0.0034
	VOC	36.760 lb/MMscf	0.49	0.0623	2.0	0.0574	

Sample Emission Calculations:

(lb/MMscf) (MMscf/hr) = lb/hr; (lb/MMscf) (MMscf/yr) (ton/2,000 lb) = ton/yr

**Table 5 Nevada Cement Company
2006 Actual Criteria Emissions (Excluding PM / PM₁₀ / PM_{2.5}) - (Option 12A)**

System	Emission Unit	Source Description	Annual Operation	Process Data			
				Heat Rate	Fuel Consumption		
12 / 12A	S2.054	#2 Raw Mill Natural Gas-Fired & Oil-Fired Heater 211	7,168 hr/yr	14.0 MMBtu/hr	0.0135 MMscf/hr	96.49 MMscf/yr	
			0 hr/yr		Nat Gas HHV	1,040 Btu/scf	
					0.00 gal/hr	0 gal/yr	
			Oil HHV		140,000 Btu/gal		
			Emission Rates				
	Pollutant	Emission Factor	Short-term		Annual		
			lb/hr	g/sec	tpy	g/sec	
		NO _x ¹	140 lb/MMscf	1.89	0.2382	6.8	0.1949
		CO ¹	35 lb/MMscf	0.48	0.0599	1.7	0.0490
		SO ₂ ¹	2.20 lb/MMscf	0.03	0.0037	0.1	0.0031
	VOC ¹	36.760 lb/MMscf	0.49	0.0623	1.8	0.0510	

Sample Emission Calculations:

(lb/MMscf) (MMscf/hr) = lb/hr; (lb/MMscf) (MMscf/yr) (ton/2,000 lb) = ton/yr

Table 6 Nevada Cement Company
Estimated Potential Greenhouse Gas Emissions (GHG) - System 12 Burning Natural Gas (Option 12A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					12 / 12A	S2.054	#2 Raw Mill Heater 211	8,760	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 6a Nevada Cement Company
2005 Actual Greenhouse Gas Emissions (GHG) - System 12 Burning Natural Gas (Option 12A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					12 / 12A	S2.054	#2 Raw Mill Heater 211	8,070	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 6b Nevada Cement Company
2006 Actual Greenhouse Gas Emissions (GHG) - System 12 Burning Natural Gas (Option 12A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					12 / 12A	S2.054	#2 Raw Mill Heater 211	7,168	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7 Nevada Cement Company
Estimated Potential Greenhouse Gas Emissions (GHG) - System 12 Burning #2 Fuel Oil (Option 12A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					12 / 12A	S2.054	#2 Raw Mill Heater 211	8,760	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7a Nevada Cement Company
2005 Actual Greenhouse Gas Emissions (GHG) - System 12 Burning #2 Fuel Oil (Option 12A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					12 / 12A	S2.054	#2 Raw Mill Heater 211	0	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7b Nevada Cement Company
2006 Actual Greenhouse Gas Emissions (GHG) - System 12 Burning #2 Fuel Oil (Option 12A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					12 / 12A	S2.054	#2 Raw Mill Heater 211	0	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

OPTION 6A

DETAILED EMISSION CALCULATIONS

Table A	PSD Applicability Determination (using gr/acf emission factors)
Table B	PSD Applicability Determination (using lb/ton emission factors)
Table 1	Allowable PM ₁₀ emissions as contained in current permit using gr/acf
Table 1a	Allowable PM ₁₀ emissions as contained in current permit using lb/ton
Table 1b	Allowable PM _{2.5} emissions as contained in current permit using gr/acf
Table 1c	Allowable PM _{2.5} emissions as contained in current permit using lb/ton
Table 2	Actual PM ₁₀ emissions for 2005 (calculated with both gr/acf and lb/ton)
Table 2a	Actual PM _{2.5} emissions for 2005 (calculated with both gr/acf and lb/ton)
Table 3	Actual PM ₁₀ emissions for 2006 (calculated with both gr/acf and lb/ton)
Table 3a	Actual PM _{2.5} emissions for 2006 (calculated with both gr/acf and lb/ton)
Table 4	Actual combustion emissions (gaseous other than GHG and PM) for 2005
Table 5	Actual combustion emissions (gaseous other than GHG and PM) for 2006
Table 6	Allowable GHG (PTE) while burning 100% natural gas
Table 6a	Actual GHG emissions for 2005 while burning natural gas
Table 6b	Actual GHG emissions for 2005 while burning natural gas
Table 7	Allowable GHG (PTE) while burning 100% No. 2 fuel oil
Table 7a	Actual GHG emissions for 2006 while burning No. 2 fuel oil
Table 7b	Actual GHG emissions for 2006 while burning No. 2 fuel oil

Table A Nevada Cement Company - PSD Applicability Determination for Finish Grind Mode for #1 Raw Mill Project (Option 6A) Systems 6, 21, 25(b), & 26 - using gr/acf Emission Factors

Pollutant	Actual Emissions (tpy) ¹		Average Actual Emissions (tpy) 2005 / 2006	Potential to Emit Permit No. AP3241-0387.02 ²	Net Change	PSD Significance Threshold	PSD Applicability
	2005	2006					
NO _x	7.1 tpy	7.3 tpy	7.2 tpy	8.4 tpy	1.2 tpy	40 tpy	No
CO	1.8 tpy	1.8 tpy	1.8 tpy	3.8 tpy	2.0 tpy	100 tpy	No
SO ₂	0.1 tpy	0.1 tpy	0.1 tpy	0.8 tpy	0.7 tpy	40 tpy	No
VOC	1.9 tpy	1.9 tpy	1.9 tpy	2.2 tpy	0.3 tpy	40 tpy	No
PM ₁₀	33.8 tpy	32.8 tpy	33.3 tpy	38.7 tpy	5.4 tpy	15 tpy	No
PM _{2.5}	11.9 tpy	11.6 tpy	11.8 tpy	13.7 tpy	1.9 tpy	10 tpy	No
CO _{2e}	6,177.9 tpy	6,309.1 tpy	6,243.5 tpy	7,174.6 tpy	931.1 tpy	75,000 tpy	No

¹ using gr/acf emission factor (EF) & actual hours per year (hr/yr) of operation

² based on potential to emit (PTE) from Permit No. AP3241-0387.02, using gr/dscf EF and 8,760 hr/yr of operation, and assuming 100% natural gas in the System 12 #2 Raw Mill Heater

Table B Nevada Cement Company - PSD Applicability Determination for Finish Grind Mode for #1 Raw Mill Project (Option 6A) Systems 6, 21, 25(b), & 26 - using lb/ton Emission Factors

Pollutant	Actual Emissions (tpy) ³		Average Actual Emissions (tpy) 2005 / 2006	Potential to Emit Permit No. AP3241-0387.02 ⁴	Net Change	PSD Significance Threshold	PSD Applicability
	2005	2006					
NO _x	7.1 tpy	7.3 tpy	7.2 tpy	8.4 tpy	1.2 tpy	40 tpy	No
CO	1.8 tpy	1.8 tpy	1.8 tpy	3.8 tpy	2.0 tpy	100 tpy	No
SO ₂	0.1 tpy	0.1 tpy	0.1 tpy	0.8 tpy	0.7 tpy	40 tpy	No
VOC	1.9 tpy	1.9 tpy	1.9 tpy	2.2 tpy	0.3 tpy	40 tpy	No
PM ₁₀	25.3 tpy	26.3 tpy	25.8 tpy	38.7 tpy	12.9 tpy	15 tpy	No
PM _{2.5}	8.9 tpy	9.3 tpy	9.1 tpy	13.7 tpy	4.5 tpy	10 tpy	No
CO _{2e}	0.0 tpy	0.0 tpy	0.0 tpy	6,492.2 tpy	6,492.2 tpy	75,000 tpy	No

³ using lb/ton emission factors & production throughput

⁴ based on potential to emit (PTE) from Permit No. AP3241-0387.02, using lb/ton EF and 8,760 hr/yr of operation, and assuming 100% #2 fuel oil in the System 12 #2 Raw Mill Heater

Table 1 Nevada Cement Company
PM₁₀ Potential to Emit for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)
Using gr/acf Emission Factor & 8,760 Hours per Year of Operation

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM ₁₀ Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	65.00 ton/hr	569,400 ton/yr	43,000 acfm	22,650 dscfm	0.01628 gr/acf	6.00	26.28
06A		#1 Raw Mill (combusting #2 FO)								
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.020 gr/acf	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.02393 gr/acf	0.410	1.80
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.02393 gr/acf	0.308	1.35
									38.7	

¹ (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

Table 1a Nevada Cement Company
PM₁₀ Potential to Emit for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)
Using lb/ton Emission Factor & Permitted Annual Throughput / Production Rates

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM ₁₀ Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	65.00 ton/hr	569,400 ton/yr	43,000 acfm	22,650 dscfm	0.09231 lb/ton	6.00	26.28
06A		#1 Raw Mill (combusting #2 FO)								
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.41	1.80
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.31	1.35
									38.7	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

Table 1b Nevada Cement Company
PM_{2.5} Potential to Emit for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)
Using gr/acf Emission Factor & 8,760 Hours per Year of Operation

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM _{2.5} Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	65.00 ton/hr	569,400 ton/yr	43,000 acfm	22,650 dscfm	0.00575 gr/acf	2.12	9.28
06A		#1 Raw Mill (combusting #2 FO)								
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.007 gr/acf	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00845 gr/acf	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00845 gr/acf	0.109	0.48
									13.7	

Emission No. Emission Factor Source and/or Control Efficiency

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

Table 1c Nevada Cement Company
PM_{2.5} Potential to Emit for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)
Using lb/ton Emission Factor & Permitted Annual Throughput / Production Rates

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM _{2.5} Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	65.00 ton/hr	569,400 ton/yr	43,000 acfm	22,650 dscfm	0.03258 lb/ton	2.12	9.28
06A		#1 Raw Mill (combusting #2 FO)								
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.14	0.63
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.11	0.48
									13.7	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

**Table 2 Nevada Cement Company
2005 Actual PM₁₀ Emissions for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM ₁₀ Emission Rates ¹		PM ₁₀ Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,543 hr/yr	62.91 ton/hr	474,563 ton/yr	43,000 acfm	22,650 dscfm	0.09231 lb/ton	0.01628 gr/acf	5.81	21.90	6.00	22.63
06A		#1 Raw Mill (combusting #2 FO)											
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	65.07 ton/hr	570,006 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	0.020 gr/acf	0.73	3.21	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	6.0 ton/hr	52,920 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.02393 gr/acf	0.02	0.11	0.410	1.80
26	S2.106	Fly Ash Bulk Loading	712 hr/yr	75.0 ton/hr	53,435 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.02393 gr/acf	0.23	0.08	0.308	0.11
Total										25.3		33.8	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 2a Nevada Cement Company
2005 Actual PM_{2.5} Emissions for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM _{2.5} Emission Rates ¹		PM _{2.5} Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,543 hr/yr	62.91 ton/hr	474,563 ton/yr	43,000 acfm	22,650 dscfm	0.03258 lb/ton	0.00575 gr/acf	2.05	7.73	2.12	7.99
06A		#1 Raw Mill (combusting #2 FO)											
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	65.07 ton/hr	570,006 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.007 gr/acf	0.26	1.13	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	6.04 ton/hr	52,920 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.00845 gr/acf	0.01	0.04	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	712 hr/yr	75.05 ton/hr	53,435 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.00845 gr/acf	0.08	0.03	0.109	0.04
total										8.9		11.9	

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 3 Nevada Cement Company
2006 Actual PM₁₀ Emissions for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM ₁₀ Emission Rates ¹		PM ₁₀ Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,703 hr/yr	64.82 ton/hr	499,317 ton/yr	43,000 acfm	22,650 dscfm	0.09231 lb/ton	0.01628 gr/acf	5.98	23.05	6.00	23.11
06A		#1 Raw Mill (combusting #2 FO)											
21	S2.086 - S2.093	Cement Bulk Loading	7,423 hr/yr	72.43 ton/hr	537,658 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	0.020 gr/acf	0.82	3.03	2.12	7.86
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,712 hr/yr	10.4 ton/hr	90,656 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.02393 gr/acf	0.04	0.19	0.410	1.79
26	S2.106	Fly Ash Bulk Loading	570 hr/yr	75.0 ton/hr	42,744 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.02393 gr/acf	0.23	0.07	0.308	0.09
Total										26.3		32.8	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 3a Nevada Cement Company
2006 Actual PM_{2.5} Emissions for Sources Affected by Finish Grind Mode for #1 Raw Mill Project (Option 6A)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM _{2.5} Emission Rates ¹		PM _{2.5} Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,703 hr/yr	64.82 ton/hr	499,317 ton/yr	43,000 acfm	22,650 dscfm	0.03258 lb/ton	0.00575 gr/acf	2.11	8.13	2.12	8.16
06A		#1 Raw Mill (combusting #2 FO)											
21	S2.086 - S2.093	Cement Bulk Loading	7,423 hr/yr	72.43 ton/hr	537,658 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.007 gr/acf	0.29	1.07	0.75	2.78
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,712 hr/yr	10.41 ton/hr	90,656 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.00845 gr/acf	0.02	0.07	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	570 hr/yr	74.99 ton/hr	42,744 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.00845 gr/acf	0.08	0.02	0.109	0.03
Total										9.3		11.6	

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 4 Nevada Cement Company
2005 Actual Criteria Emissions (Excluding PM / PM₁₀ / PM_{2.5}) - (Option 6A)**

System	Emission Unit	Source Description	Annual Operation	Process Data			
				Heat Rate	Fuel Consumption		
6 / 6A	S2.022	#1 Raw Mill Natural Gas-Fired & Oil-Fired Heater 211	7,543 hr/yr	14.0 MMBtu/hr	0.0135 MMscf/hr	101.54 MMscf/yr	
			0 hr/yr		Nat Gas HHV	1,040 Btu/scf	
	0.00 gal/hr	0 gal/yr					
	Oil HHV	140,000 Btu/gal					
			Emission Rates				
	Pollutant	Emission Factor	Short-term		Annual		
			lb/hr	g/sec	tpy	g/sec	
		NO _x	140 lb/MMscf	1.89	0.2382	7.1	0.2051
		CO	35 lb/MMscf	0.48	0.0599	1.8	0.0515
		SO ₂	2.20 lb/MMscf	0.03	0.0037	0.1	0.0032
	VOC	36.760 lb/MMscf	0.49	0.0623	1.9	0.0537	

Sample Emission Calculations:

(lb/MMscf) (MMscf/hr) = lb/hr; (lb/MMscf) (MMscf/yr) (ton/2,000 lb) = ton/yr

**Table 5 Nevada Cement Company
2006 Actual Criteria Emissions (Excluding PM / PM₁₀ / PM_{2.5}) - (Option 6A)**

System	Emission Unit	Source Description	Annual Operation	Process Data			
				Heat Rate	Fuel Consumption		
6 / 6A	S2.022	#1 Raw Mill Natural Gas-Fired & Oil-Fired Heater 211	7,703 hr/yr	14.0 MMBtu/hr	0.0135 MMscf/hr	103.70 MMscf/yr	
			0 hr/yr		Nat Gas HHV	1,040 Btu/scf	
	0.00 gal/hr	0 gal/yr					
		Oil HHV	140,000 Btu/gal				
			Emission Rates				
	Pollutant	Emission Factor	Short-term		Annual		
			lb/hr	g/sec	tpy	g/sec	
		NO _x ¹	140 lb/MMscf	1.89	0.2382	7.3	0.2095
		CO ¹	35 lb/MMscf	0.48	0.0599	1.8	0.0526
		SO ₂ ¹	2.20 lb/MMscf	0.03	0.0037	0.1	0.0033
	VOC ¹	36.760 lb/MMscf	0.49	0.0623	1.9	0.0548	

Sample Emission Calculations:

(lb/MMscf) (MMscf/hr) = lb/hr; (lb/MMscf) (MMscf/yr) (ton/2,000 lb) = ton/yr

Table 6 Nevada Cement Company
Estimated Potential Greenhouse Gas Emissions (GHG) - System 6 Burning Natural Gas (Option 6A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#1 Raw Mill Heater 211	8,760	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 6a Nevada Cement Company
2005 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning Natural Gas (Option 6A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#1 Raw Mill Heater 211	7,543	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 6b Nevada Cement Company
2006 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning Natural Gas (Option 6A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#1 Raw Mill Heater 211	7,703	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7 Nevada Cement Company
Estimated Potential Greenhouse Gas Emissions (GHG) - System 6 Burning #12 Fuel Oil (Option 6A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#2 Raw Mill Heater 211	8,760	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7a Nevada Cement Company
2005 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning #2 Fuel Oil (Option 6A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#2 Raw Mill Heater 211	0	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7b Nevada Cement Company
2006 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning #2 Fuel Oil (Option 6A)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#2 Raw Mill Heater 211	0	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

OPTION 6B

DETAILED EMISSION CALCULATIONS

Table A	PSD Applicability Determination (using gr/acf emission factors)
Table B	PSD Applicability Determination (using lb/ton emission factors)
Table 1	Allowable PM ₁₀ emissions as contained in current permit using gr/acf
Table 1a	Allowable PM ₁₀ emissions as contained in current permit using lb/ton
Table 1b	Allowable PM _{2.5} emissions as contained in current permit using gr/acf
Table 1c	Allowable PM _{2.5} emissions as contained in current permit using lb/ton
Table 2	Actual PM ₁₀ emissions for 2005 (calculated with both gr/acf and lb/ton)
Table 2a	Actual PM _{2.5} emissions for 2005 (calculated with both gr/acf and lb/ton)
Table 3	Actual PM ₁₀ emissions for 2006 (calculated with both gr/acf and lb/ton)
Table 3a	Actual PM _{2.5} emissions for 2006 (calculated with both gr/acf and lb/ton)
Table 4	Actual combustion emissions (gaseous other than GHG and PM) for 2005
Table 5	Actual combustion emissions (gaseous other than GHG and PM) for 2006
Table 6	Allowable GHG (PTE) while burning 100% natural gas
Table 6a	Actual GHG emissions for 2005 while burning natural gas
Table 6b	Actual GHG emissions for 2005 while burning natural gas
Table 7	Allowable GHG (PTE) while burning 100% No. 2 fuel oil
Table 7a	Actual GHG emissions for 2006 while burning No. 2 fuel oil
Table 7b	Actual GHG emissions for 2006 while burning No. 2 fuel oil

Table A Nevada Cement Company - PSD Applicability Determination for Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B) Systems 6, 11, 21, 25(b), & 26 - using gr/acf Emission Factors

Pollutant	Actual Emissions (tpy) ¹		Average Actual Emissions (tpy) 2005 / 2006	Potential to Emit Permit No. AP3241-0387.02 ²	Net Change	PSD Significance Threshold	PSD Applicability
	2005	2006					
NO _x	7.1 tpy	7.4 tpy	7.3 tpy	8.4 tpy	1.1 tpy	40 tpy	No
CO	1.8 tpy	1.9 tpy	1.8 tpy	3.8 tpy	2.0 tpy	100 tpy	No
SO ₂	0.1 tpy	0.1 tpy	0.1 tpy	0.8 tpy	0.7 tpy	40 tpy	No
VOC	1.9 tpy	1.9 tpy	1.9 tpy	2.2 tpy	0.3 tpy	40 tpy	No
PM ₁₀	44.2 tpy	44.1 tpy	44.1 tpy	52.4 tpy	8.3 tpy	15 tpy	No
PM _{2.5}	15.6 tpy	15.5 tpy	15.6 tpy	18.5 tpy	2.9 tpy	10 tpy	No
CO _{2e}	6,177.9 tpy	6,440.4 tpy	6,309.1 tpy	7,174.6 tpy	865.5 tpy	75,000 tpy	No

¹ using gr/acf emission factor (EF) & actual hours per year (hr/yr) of operation

² based on potential to emit (PTE) from Permit No. AP3241-0387.02, using gr/dscf EF and 8,760 hr/yr of operation, and assuming 100% natural gas in the System 12 #2 Raw Mill Heater

Table B Nevada Cement Company - PSD Applicability Determination for Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B) Systems 6, 11, 21, 25(b), & 26 - using lb/ton Emission Factors

Pollutant	Actual Emissions (tpy) ³		Average Actual Emissions (tpy) 2005 / 2006	Potential to Emit Permit No. AP3241-0387.02 ⁴	Net Change	PSD Significance Threshold	PSD Applicability
	2005	2006					
NO _x	7.1 tpy	7.4 tpy	7.3 tpy	8.4 tpy	1.1 tpy	40 tpy	No
CO	1.8 tpy	1.9 tpy	1.8 tpy	3.8 tpy	2.0 tpy	100 tpy	No
SO ₂	0.1 tpy	0.1 tpy	0.1 tpy	0.8 tpy	0.7 tpy	40 tpy	No
VOC	1.9 tpy	1.9 tpy	1.9 tpy	2.2 tpy	0.3 tpy	40 tpy	No
PM ₁₀	56.1 tpy	58.5 tpy	57.3 tpy	39.4 tpy	-17.9 tpy	15 tpy	No
PM _{2.5}	19.8 tpy	20.7 tpy	20.2 tpy	13.9 tpy	-6.3 tpy	10 tpy	No
CO _{2e}	0.0 tpy	0.0 tpy	0.0 tpy	6,492.2 tpy	6,492.2 tpy	75,000 tpy	No

³ using lb/ton emission factors & production throughput

⁴ based on potential to emit (PTE) from Permit No. AP3241-0387.02, using lb/ton EF and 8,760 hr/yr of operation, and assuming 100% #2 fuel oil in the System 12 #2 Raw Mill Heater

Table 1 Nevada Cement Company
PM₁₀ Potential to Emit for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)
Using gr/acf Emission Factor & 8,760 Hours per Year of Operation

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM ₁₀ Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	43,000 acfm	22,650 dscfm	0.01628 gr/acf	6.00	26.28
06A		#1 Raw Mill (combusting #2 FO)								
11	S2.043 - S2.049	#1 Finish Mill Operations	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	18,180 acfm	11,205 dscfm	0.020 gr/acf	3.12	13.65
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.020 gr/acf	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.02393 gr/acf	0.410	1.80
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.02393 gr/acf	0.308	1.35
									52.4	

¹ (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

Table 1a Nevada Cement Company
PM₁₀ Potential to Emit for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)
Using lb/ton Emission Factor & Permitted Annual Throughput / Production Rates

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF ²	PM ₁₀ Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	43,000 acfm	22,650 dscfm	0.09231 lb/ton	3.05	13.34
06A		#1 Raw Mill (combusting #2 FO)								
11	S2.043 - S2.049	#1 Finish Mill Operations	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	18,180 acfm	11,205 dscfm	0.09444 lb/ton	3.12	13.65
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.41	1.80
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.31	1.35
									39.4	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² lb/ton emission factor derived from gr/acf emission factor as contained in Permit No. AP3241-0387.02

(0.01628 gr/acf) (43,000 acf/min) (lb/7,000 gr) (60 min/hr) = 6.0 lb/hr ; (6.0 lb/hr) (8,760 hr/yr) (ton/2,000 lb) = 26.28 tpy; (6.0 lb/hr) / (65 ton/hr) = **0.09231 lb/ton**; or (26.28 ton/yr) / (569,400 ton/yr) (2,000 lb/ton) = **0.09231 lb/ton**
(0.020 gr/acf) (18,180 acf/min) (lb/7,000 gr) (60 min/hr) = 3.12 lb/hr ; (3.12 lb/hr) (8,760 hr/yr) (ton/2,000 lb) = 13.65 tpy; (3.12 lb/hr) / (33 ton/hr) = **0.09444 lb/ton**; or (13.6 ton/yr) / (289,080 ton/yr) (2,000 lb/ton) = **0.09444 lb/ton**
(0.020 gr/acf) (12,360 acf/min) (lb/7,000 gr) (60 min/hr) = 2.12 lb/hr ; (2.12 lb/hr) (8,760 hr/yr) (ton/2,000 lb) = 9.28 tpy; (2.12 lb/hr) / (187.9 ton/hr) = **0.01128 lb/ton**; or (9.28 ton/yr) / (1,646,004 ton/yr) (2,000 lb/ton) = **0.01128 lb/ton**
(0.02393 gr/acf) (2,000 acf/min) (lb/7,000 gr) (60 min/hr) = 0.41 lb/hr ; (0.41 lb/hr) (8,760 hr/yr) (ton/2,000 lb) = 1.80 tpy; (0.41 lb/hr) / (100 ton/hr) = **0.00410 lb/ton**; or (1.80 ton/yr) / (876,000 ton/yr) (2,000 lb/ton) = **0.00410 lb/ton**
(0.02393 gr/acf) (3,000 acf/min) (lb/7,000 gr) (60 min/hr) (0.5% control) = 0.31 lb/hr; (0.31 lb/hr) (8,760 hr/yr) (ton/2,000 lb) = 1.35 tpy; (0.31 lb/hr) / (100 ton/hr) = **0.00308 lb/ton**; or (1.35 ton/yr) / (876,000 ton/yr) (2,000 lb/ton) = **0.00308 lb/ton**

Table 1b Nevada Cement Company
PM_{2.5} Potential to Emit for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)
Using gr/acf Emission Factor & 8,760 Hours per Year of Operation

System	Emission Unit	Source Description	Operating Hours	Allowable Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM _{2.5} Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	43,000 acfm	22,650 dscfm	0.00575 gr/acf	2.12	9.28
06A		#1 Raw Mill (combusting #2 FO)								
11	S2.043 - S2.049	#1 Finish Mill Operations	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	18,180 acfm	11,205 dscfm	0.007 gr/acf	1.10	4.82
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.007 gr/acf	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00845 gr/acf	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00845 gr/acf	0.109	0.48
									18.5	

Emission No. Emission Factor Source and/or Control Efficiency

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

Table 1c Nevada Cement Company
PM_{2.5} Potential to Emit for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)
Using lb/ton Emission Factor & Permitted Annual Throughput / Production Rates

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	PM _{2.5} Emission Rates ¹	
									lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	43,000 acfm	22,650 dscfm	0.03258 lb/ton	1.08	4.71
06A		#1 Raw Mill (combusting #2 FO)								
11	S2.043 - S2.049	#1 Finish Mill Operations	8,760 hr/yr	33.00 ton/hr	289,080 ton/yr	18,180 acfm	11,205 dscfm	0.03333 lb/ton	1.10	4.82
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	187.90 ton/hr	1,646,004 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.14	0.63
26	S2.106	Fly Ash Bulk Loading	8,760 hr/yr	100.00 ton/hr	876,000 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.11	0.48
									13.9	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

**Table 2 Nevada Cement Company
2005 Actual PM₁₀ Emissions for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM ₁₀ Emission Rates ¹		PM ₁₀ Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,543 hr/yr	62.91 ton/hr	474,563 ton/yr	43,000 acfm	22,650 dscfm	0.18182 lb/ton	0.01628 gr/acf	11.44	43.14	6.00	22.63
06A		#1 Raw Mill (combusting #2 FO)											
11	S2.043 - S2.049	#1 Finish Mill Operations	7,114 hr/yr	28.46 ton/hr	202,459 ton/yr	16,956 acfm		0.09444 lb/ton	0.02000 gr/acf	2.69	9.56	2.91	10.34
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	65.07 ton/hr	570,006 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	0.020 gr/acf	0.73	3.21	2.12	9.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	6.0 ton/hr	52,920 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.02393 gr/acf	0.02	0.11	0.410	1.80
26	S2.106	Fly Ash Bulk Loading	712 hr/yr	75.0 ton/hr	53,435 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.02393 gr/acf	0.23	0.08	0.308	0.11
Total										56.1		44.2	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 2a Nevada Cement Company
2005 Actual PM_{2.5} Emissions for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM _{2.5} Emission Rates ¹		PM _{2.5} Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,543 hr/yr	62.91 ton/hr	474,563 ton/yr	43,000 acfm	22,650 dscfm	0.06417 lb/ton	0.00575 gr/acf	4.04	15.23	2.12	7.99
06A		#1 Raw Mill (combusting #2 FO)											
11	S2.043 - S2.049	#1 Finish Mill Operations	7,114 hr/yr	28.46 ton/hr	202,459 ton/yr	16,956 acfm		0.03333 lb/ton	0.00706 gr/acf	0.95	3.37	1.03	3.65
21	S2.086 - S2.093	Cement Bulk Loading	8,760 hr/yr	65.07 ton/hr	570,006 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.007 gr/acf	0.26	1.13	0.75	3.28
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,760 hr/yr	6.04 ton/hr	52,920 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.00845 gr/acf	0.01	0.04	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	712 hr/yr	75.05 ton/hr	53,435 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.00845 gr/acf	0.08	0.03	0.109	0.04
total										19.8		15.6	

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 3 Nevada Cement Company
2006 Actual PM₁₀ Emissions for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM ₁₀ Emission Rates ¹		PM ₁₀ Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,864 hr/yr	63.50 ton/hr	499,317 ton/yr	43,000 acfm	22,650 dscfm	0.18182 lb/ton	0.01628 gr/acf	11.54	45.39	6.00	23.59
06A		#1 Raw Mill (combusting #2 FO)											
11	S2.043 - S2.049	#1 Finish Mill Operations	7,376 hr/yr	28.30 ton/hr	208,779 ton/yr	16,956 acfm		0.09444 lb/ton	0.02000 gr/acf	2.67	9.86	2.91	10.72
21	S2.086 - S2.093	Cement Bulk Loading	7,423 hr/yr	72.43 ton/hr	537,658 ton/yr	12,360 acfm	10,236 dscfm	0.01128 lb/ton	0.020 gr/acf	0.82	3.03	2.12	7.86
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,712 hr/yr	10.4 ton/hr	90,656 ton/yr	2,000 acfm	1,764 dscfm	0.00410 lb/ton	0.02393 gr/acf	0.04	0.19	0.410	1.79
26	S2.106	Fly Ash Bulk Loading	570 hr/yr	75.0 ton/hr	42,744 ton/yr	3,000 acfm	2,645 dscfm	0.00308 lb/ton	0.02393 gr/acf	0.23	0.07	0.308	0.09
Total										58.5		44.1	

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr ; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 3a Nevada Cement Company
2006 Actual PM_{2.5} Emissions for Sources Affected by Pre-Grind Mode for #1 Raw Mill to Finish Mill #1 Project (Option 6B)**

System	Emission Unit	Source Description	Operating Hours	Actual Throughputs / Production		Exhaust Flow Rate		Controlled EF	Controlled EF	PM _{2.5} Emission Rates ¹		PM _{2.5} Emission Rates ²	
										lb/hr	tpy	lb/hr	tpy
06	S2.017 - S2.022	#1 Raw Mill (combusting Nat Gas)	7,864 hr/yr	63.50 ton/hr	499,317 ton/yr	43,000 acfm	22,650 dscfm	0.06417 lb/ton	0.00575 gr/acf	4.07	16.02	2.12	8.33
06A		#1 Raw Mill (combusting #2 FO)											
11	S2.043 - S2.049	#1 Finish Mill Operations	7,376 hr/yr	28.30 ton/hr	208,779 ton/yr	16,956 acfm		0.03333 lb/ton	0.00706 gr/acf	0.94	3.48	1.03	3.78
21	S2.086 - S2.093	Cement Bulk Loading	7,423 hr/yr	72.43 ton/hr	537,658 ton/yr	12,360 acfm	10,236 dscfm	0.00398 lb/ton	0.007 gr/acf	0.29	1.07	0.75	2.78
25(b)	S2.104 - S2.105	Rail Unloading/Transfer	8,712 hr/yr	10.41 ton/hr	90,656 ton/yr	2,000 acfm	1,764 dscfm	0.00145 lb/ton	0.00845 gr/acf	0.02	0.07	0.145	0.63
26	S2.106	Fly Ash Bulk Loading	570 hr/yr	74.99 ton/hr	42,744 ton/yr	3,000 acfm	2,645 dscfm	0.00109 lb/ton	0.00845 gr/acf	0.08	0.02	0.109	0.03
Total										20.7		15.5	

Note: For estimating the fraction of total PM₁₀ that is PM_{2.5}, AP42 Appendix B.2 (Generalized Particle Size Distributions) was used to develop the fraction (%) of PM₁₀ that is PM_{2.5}. Category 4 - Mechanically Generated Processed Ores and Nonmetallic Minerals was used for particle size data. See worksheet title PM2.5 (FF). Resulting mass fraction of PM_{2.5} = 0.35. Example calc (0.02 gr PM₁₀/acf) * (0.35) = 0.007 gr PM_{2.5}/acf.

¹ (lb/ton) (ton/hr) = lb/hr; (lb/ton) (ton/yr) (ton/2,000 lb) = tpy

² (gr/acf) (acf/min) (lb/7,000 gr) (60 min/hr) = lb/hr; (lb/hr) (hr/yr) (ton/2,000 lb) = tpy

**Table 4 Nevada Cement Company
2005 Actual Criteria Emissions (Excluding PM / PM₁₀ / PM_{2.5}) - (Option 6B)**

System	Emission Unit	Source Description	Annual Operation	Process Data			
				Heat Rate	Fuel Consumption		
6 / 6A	S2.022	#1 Raw Mill Natural Gas-Fired & Oil-Fired Heater 211	7,543 hr/yr	14.0 MMBtu/hr	0.0135 MMscf/hr	101.54 MMscf/yr	
			0 hr/yr		Nat Gas HHV	1,040 Btu/scf	
	0.00 gal/hr	0 gal/yr					
		Oil HHV	140,000 Btu/gal				
			Emission Rates				
	Pollutant	Emission Factor	Short-term		Annual		
			lb/hr	g/sec	tpy	g/sec	
		NO _x	140 lb/MMscf	1.89	0.2382	7.1	0.2051
		CO	35 lb/MMscf	0.48	0.0599	1.8	0.0515
		SO ₂	2.20 lb/MMscf	0.03	0.0037	0.1	0.0032
	VOC	36.760 lb/MMscf	0.49	0.0623	1.9	0.0537	

Sample Emission Calculations:

(lb/MMscf) (MMscf/hr) = lb/hr; (lb/MMscf) (MMscf/yr) (ton/2,000 lb) = ton/yr

**Table 5 Nevada Cement Company
2006 Actual Criteria Emissions (Excluding PM / PM₁₀ / PM_{2.5}) - (Option 6B)**

System	Emission Unit	Source Description	Annual Operation	Process Data			
				Heat Rate	Fuel Consumption		
6 / 6A	S2.022	#1 Raw Mill Natural Gas-Fired & Oil-Fired Heater 211	7,864 hr/yr	14.0 MMBtu/hr	0.0135 MMscf/hr	105.86 MMscf/yr	
			0 hr/yr		Nat Gas HHV	1,040 Btu/scf	
	0.00 gal/hr	0 gal/yr					
		Oil HHV	140,000 Btu/gal				
			Emission Rates				
	Pollutant	Emission Factor	Short-term		Annual		
			lb/hr	g/sec	tpy	g/sec	
		NO _x ¹	140 lb/MMscf	1.89	0.2382	7.4	0.2138
		CO ¹	35 lb/MMscf	0.48	0.0599	1.9	0.0537
		SO ₂ ¹	2.20 lb/MMscf	0.03	0.0037	0.1	0.0033
	VOC ¹	36.760 lb/MMscf	0.49	0.0623	1.9	0.0560	

Sample Emission Calculations:

(lb/MMscf) (MMscf/hr) = lb/hr; (lb/MMscf) (MMscf/yr) (ton/2,000 lb) = ton/yr

Table 6 Nevada Cement Company
Estimated Potential Greenhouse Gas Emissions (GHG) - System 6 Burning Natural Gas (Option 6B)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#1 Raw Mill Heater 211	8,760	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 6a Nevada Cement Company
2005 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning Natural Gas (Option 6B)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#1 Raw Mill Heater 211	7,543	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 6b Nevada Cement Company
2006 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning Natural Gas (Option 6B)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#1 Raw Mill Heater 211	7,864	14.00 MMBtu/hr	53.02 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7 Nevada Cement Company
Estimated Potential Greenhouse Gas Emissions (GHG) - System 6 Burning #2 Fuel Oil (Option 6B)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#2 Raw Mill Heater 211	8,760	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7a Nevada Cement Company
2005 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning #2 Fuel Oil (Option 6B)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#2 Raw Mill Heater 211	0	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Table 7b Nevada Cement Company
2006 Actual Greenhouse Gas Emissions (GHG) - System 6 Burning #2 Fuel Oil (Option 6B)

System	Emission Unit	Source Description	hr/yr	Heat Rate	CO ₂ Emission ¹		CH ₄ Emission ¹		N ₂ O Emission ¹		CO ₂ e Emission Rate ²
					Factor	Rate	Factor	Rate	Factor	Rate	
					6 / 6A	S2.022	#2 Raw Mill Heater 211	0	9.06 MMBtu/hr	73.96 kg/MMBtu	

¹ All GHG emission factors for heaters are from Table C-2 of Subpart C of Part 98 - *Default Emission Factors for various types of fuel* (natural gas).

² CO₂e emissions are defined as the sum of the mass emissions for individual GHGs, with each adjusted to account for its global warming potential (GWP) relative to a value of 1.0 for CQ
(CO₂ tpy)*(1 GWP) + (CH₄ tpy) * (21 GWP) + (N₂O) * (310 GWP) = tpy CO₂e

Appendix 7

Emissions CAP

Appendix 7

EMISSIONS CAP

Please Attach Emission Cap Information

Please Check if not applicable

Instructions

Federally enforceable emissions cap: Please include in Appendix 6 the information required in 1 through 3 below for each federally enforceable emissions cap in Appendix 6. The request for a federally enforceable emissions cap must, at a minimum:

1. State each applicable requirement which the applicant seeks to avoid [NAC 445B.296.2(a)];
2. Demonstrate that any applicable requirements not avoided by the cap will be met [NAC 445B.296.2(b)];
3. Contain proposed conditions, including monitoring and recordkeeping conditions for each proposed federally enforceable emissions cap, of the operating permit which will ensure compliance with any applicable requirement [NAC 445B.296.2(c)].
4. Contain any additional information that the director determines necessary to process the application. [NAC 445B.296.2(d)]

(Note: A common example of an emissions cap is a combined limitation on the yearly (annual) amount of fuel which may be combusted between two boilers.)

NOT APPLICABLE – NO CHANGE FOR OPTION 6A, 6B, or 12A

Appendix 8

Narrative Description, Process Flow Diagram(s), Plot Plan, Map, and Dust Control Plan

Appendix 8

**NARRATIVE
DESCRIPTION**

-

**PROCESS FLOW
DIAGRAM**

-

PLOT PLAN

-

MAP

-

DUST CONTROL PLAN

Instructions

This Appendix must include the following:

1. A narrative description of the entire process. The narrative must include descriptions of all emissions of any regulated air pollutants for which the source is defined as major, and a description of all emissions of regulated air pollutants from all emission units. [NAC 445B.3363.1(a), NAC 445B.3363.1(b)]

See the attached process description following this Appendix 8 for the Minor Revision for the three proposed alternative modes of operation for the #1 and #2 Raw Mills. In addition see Section 3.1 of the permit application for a discussion of emissions and the associated emission calculation tables.

2. A detailed process flow diagram of all processes indicating emissions control application points, throughput rate/design heat input rate value, and emission unit identification numbers. [NAC 445B.295.8]

See attached Systems 6A, 6B, 12A Process Flow Diagram along with Figures 1 through 3 (Area Map, Local Map, and Simplified Plot Plan Existing Emission Units).

3. A plot plan of the entire source, drawn to scale (include scale). The plot plan shall include the location of all emission units (clearly labeled), emission release points (stack and/or emission point locations, clearly labeled), the fence line, and the property boundary. [NAC 445B.295.8]

See Figures 1 through 3 (Area Map, Local Map, and Simplified Plot Plan Existing Emission Units).

4. A USGS 7-1/2" or 15" map or other topographic map (with topographic lines clearly visible) indicating the following [NAC 445B.295.8]:

See Figures 1 through 3 (Area Map, Local Map, and Simplified Plot Plan Existing Emission Units).

- a. Exact location of entire source (also indicate all areas of surface disturbance).
 - b. Property boundary.
 - c. Location of fence or other physical barrier around source (NOTE: This is required.)
 - d. Scale of map.
 - e. UTM's, if other than a USGS 7-1/2" or 15" map is submitted.
 - f. Elevation contours and contour intervals, and contour values, clearly visible and in sufficient detail to determine elevations.
5. For surface area disturbance that will exceed 20 acres, provide a dust control plan, with the exception of Pahrump Valley. In Pahrump Valley, for surface area disturbance of **5 acres or more**, please provide a dust control plan. [NAC 445B.295.8]

Not Applicable.

Process Description for the Finish Grind Modes for #1 & #2 Raw Mills

The purpose of these proposed alternative operating modes is to increase the operating time and economic value of the #1 and #2 Raw Mills by using them part-time as finish mills. Although this idea has rarely been feasible in the past, poor market conditions have resulted in the mills having increased availability to run as finish mills if this mode of operation were approved. Because these new modes of operation may not always be needed in the future, and because they involve a few new pieces of material handling equipment with different equipment numbers than those in System 06 and System 12, it seemed appropriate to propose the new Systems 06A, 06B, and 12A with the new descriptions and requirements. This is the approach that was agreed upon during the meeting with NDEP on November 4, 2011 when we originally were considering only the proposed System 12A. Since that meeting, NCC realized that we may eventually need the #1 Raw Mill (System 06) to have a finish mill operating mode as well, and reasoned that the NDEP would prefer to have all similar revisions having the same purpose grouped together to maximize the calculated emissions impacts, as opposed to submitting separate revisions in stages. Following are brief process descriptions for each alternative mode of operation.

Finish Grind Mode for the #2 Raw Mill Minor Revision (Option 12A)

Under this new mode of operation, the feed bins for the #2 Raw Mill, which normally hold limestone, clay, and iron, would be filled with clinker, gypsum, and pozzolan. When making cement, all three would be used; when making Class N Pozzolan, only the raw pozzolan would be used. The storage building already stores all of the materials needed for raw mills and finish mills, and these would simply be rearranged in different feed bins when the raw mill changes its mode of operation. Therefore, there is no basis for calculating a change in emissions from the storage building.

The raw mill circuit will operate in the same manner under both modes of operation. The existing 1914 (System 12) and DC-1914-2 (System 13) dust collectors and fans will not be modified. The air heater may not be needed for the finish mill mode, but it was assumed to be always on for the purpose of having worst-case emissions calculations.

After the material has been milled to a sufficiently small size, it is discharged out the bottom of the 1910 Mechanical Separator and into the 1917 Airslide. Under the existing mode of operation, this airslide conveys the material to the 213 Transport Pump, which conveys the material pneumatically through a pipe to the blend silos. Under the proposed new mode of operation, this airslide would convey the material to a new 1917-10 Airslide, which would convey to a new 213-10 Transport Pump, and then through a pipe to the cement storage silos. All of this new equipment for material handling and conveying is totally enclosed and does not cause any new emissions inside the Mill Building.

When material is pneumatically conveyed into the storage silos, the conveying air must be removed in order to prevent positive pressure buildup or dust leakage through any silo openings. The purpose of the two existing dust collectors (DC-611 & DC-618) analyzed in the emissions calculations is to remove this conveying air and maintain negative pressure in the silos (System 25b and System 21 respectively). See Systems 6A, 6B, 12A Flow Diagram.

Finish Grind Mode for the #1 Raw Mill Minor Revision (Option 06A)

Under this new mode of operation, the feed bins for the #1 Raw Mill, which normally hold limestone, clay, and iron, would be filled with clinker, gypsum, and pozzolan. When making cement, all three would be used; when making Class N Pozzolan, only the raw pozzolan would be used. The storage building already stores all of the materials needed for raw mills and finish mills, and these would simply be rearranged in different feed bins when the raw mill changes its mode of operation. Therefore, there is no basis for calculating a change in emissions from the storage building.

The raw mill circuit will operate in the same manner under all modes of operation. The existing DC-210

(System 06) dust collector and fan will not be modified. The air heater may not be needed for the finish mill mode, but it was assumed to be always on for the purpose of having worst-case emissions calculations.

After the material has been milled to a sufficiently small size, it is discharged out the bottom of the 206 Mechanical Separator and into the 207 Airslide. Under the existing mode of operation, this airslide conveys the material to the 213 Transport Pump, which conveys the material pneumatically through a pipe to the blend silos. Under the proposed new mode of operation, this airslide would convey the material to a new 207-10 Airslide, which would convey to the new 213-10 Transport Pump, and then through a pipe to the cement storage silos. All of this new equipment for material handling and conveying is totally enclosed and does not cause any new emissions inside the Mill Building.

When material is pneumatically conveyed into the storage silos, the conveying air must be removed in order to prevent positive pressure buildup or dust leakage through any silo openings. The purpose of the existing dust collectors (DC-611 & DC-618) analyzed in the emissions calculations is to remove this conveying air and maintain negative pressure in the silos (System 25b and System 21 respectively). See Systems 6A, 6B, 12A Flow Diagram.

Pre-Grind Mode for the #1 Raw Mill & Transfer of Raw Material to #1 Finish Mill Minor Revision (Option 06B)

Under this new mode of operation the #1 Raw Mill would also be used as a finish mill, but it would function as a pre-grind mill in series with the #1 Finish Mill. A new 2-way diverter valve would be installed under the 206 Mechanical Separator allowing material to be sent either to the existing 207 Airslide, or to a new 207-11 Airslide. This new airslide would convey pre-milled material to the inlet of the #1 Finish Mill for final grinding. The #1 Finish Mill circuit is not modified, except for having the inlet chute adapted to enclose the discharge of the 207-11 Airslide. During this new operating mode, the #1 Finish Mill would be fed by the #1 Raw Mill, instead of from its own feed bins. This mode of operation would allow the unique capabilities of each mill to complement each other because they are operating in series, and is expected to be used for milling difficult materials.

The raw mill circuit will operate in the same manner under all modes of operation. The existing DC-210 (System 06) dust collector and fan will not be modified. The air heater may not be needed for the finish mill mode, but it was assumed to be always on for the purpose of having worst-case emissions calculations. The #1 Finish Mill will operate in the same manner under all modes of operation and the existing DC-510 (System 11) dust collector and fan will not be modified.

After the material has been milled in the #1 Finish Mill it is transferred to the cement storage silos via existing equipment. The new equipment for material handling and conveying (207-11 Airslide) is totally enclosed and does not cause any new emissions inside the Mill Building.

When material is pneumatically conveyed into the storage silos, the conveying air must be removed in order to prevent positive pressure buildup or dust leakage through any silo openings. The purpose of the existing dust collectors (DC-611 & DC-618) analyzed in the emissions calculations is to remove this conveying air and maintain negative pressure in the silos (System 25b and System 21 respectively). See Systems 6A, 6B, 12A Flow Diagram.

Process Description of Existing Facility

The Portland cement produced by NCC is a cementitious, crystalline compound composed primarily of calcium, aluminum and iron silicates. Limestone containing calcium carbonate and aluminum, iron, and silicon oxides, clay and sand are combined and fired in rotary kilns where the raw materials are calcinated and sintered through the pyroprocess to create cement clinker. The cement clinker is then refined by grinding and milling and stored for shipping.

Limestone Crushing and Screening

Run-of-mine limestone is quarried and delivered to the NCC facility by truck where it is loaded into the dump hopper. The hopped limestone is then fed through an apron feeder to a primary crusher for initial size reduction, a secondary crusher for further reduction, and a triple deck screen for size separation, all connected by associated conveyors. The crushed limestone is conveyed to an enclosed raw materials storage building where it is stored along with clay and iron ore. The crushing and screening circuits' particulate emissions are controlled by two baghouses, a pneumatic spray dust suppression system, covered conveyors, and the enclosed raw materials storage building. The particulate emissions captured by the baghouses are returned to the covered conveyors that move all of the raw material to the covered storage building or are pneumatically conveyed to a dust tank near the raw mills.

Number 1 and 2 Raw Mill Operations

The raw materials stored in the raw materials building are loaded by an overhead crane into ten bins equipped with weigh feeders for weighing and dispensing of the respective raw materials. The weighed materials are then transferred by conveyor to the raw mills for final milling. The particulate emissions generated from the weigh feeders are controlled by the enclosed building. Particulate emissions from each raw mill and the associated conveyance and elevating systems are controlled by baghouses.

Blend Silos

The milled raw materials are pneumatically transported to blending silos where the raw materials are further blended and discharged to the respective kiln feed bin. The particulate emissions from the blend silos are controlled by one baghouse.

Number 1 and 2 Kiln and Kiln Feed Systems

The blended raw materials discharged from the blending silos are conveyed pneumatically to the kiln feed tanks and rotary feeders. The raw materials are fed via bucket elevators into their respective inclined kiln and fired.

Particulate emissions from the feed systems are controlled by baghouses. Particulate emissions from the kilns themselves are controlled by two large baghouses, one for each kiln. Emissions of SO₂ generated from the combustion of the coal/coke blend used by NCC, are controlled by the rotary kiln process itself. The advantage of using a rotary kiln process is that the SO₂ gases are exposed to the lime and limestone dust in the kiln and baghouse, and are reduced through this natural dry scrubbing process.

Number 1 and 2 Clinker Coolers

The resultant clinker produced by the firing of the raw materials, is discharged from the kiln to the clinker cooler where it is cooled. The cooled clinker is conveyed by bucket elevator to clinker storage tubes which are located in the enclosed clinker storage building. The clinker coolers are each controlled by a separate baghouse.

Number 1, 2 and 3 Finish Mills

The clinker is transferred to a weigh feeder which feeds to the respective finish (ball) mill. The clinker is combined with about 5% gypsum, pulverized, and pneumatically conveyed to the cement storage silos for final bulk storage and shipping. Particulate emissions from the finish mills are controlled by individual baghouses for each mill.

Cement Storage, Loadout, and Packhouse

The cement storage consists of fifteen (15) cement silos which are used for loadout to truck or rail car. Emissions for the storage silos and the loadout processes are controlled by baghouses respectively.

The packhouse consists of packing or bagging of cement into bags for shipping. The packhouse emissions are controlled by a baghouse.

Coal/Coke Handling and Storage

The coal/coke handling and storage systems consist of rail unloading and transport by covered conveyor to storage. The coal and coke is then transported to the coal feed bin and the coke feed bin. The coal or coke is then fed from the bins onto weigh feeders before being conveyed to the grinding mill. The grinding mill is an air swept mill so all ground fuel goes to the system dust collector. The collection system under the dust collector transports the coal or coke to the proper bin for storage as the coal and coke are ground at different times. The ground coal/coke conveying and storage system has several dust collectors to control particulate emissions. In addition, building enclosures, covered conveyor systems and moisture in the coal and coke also control emissions.

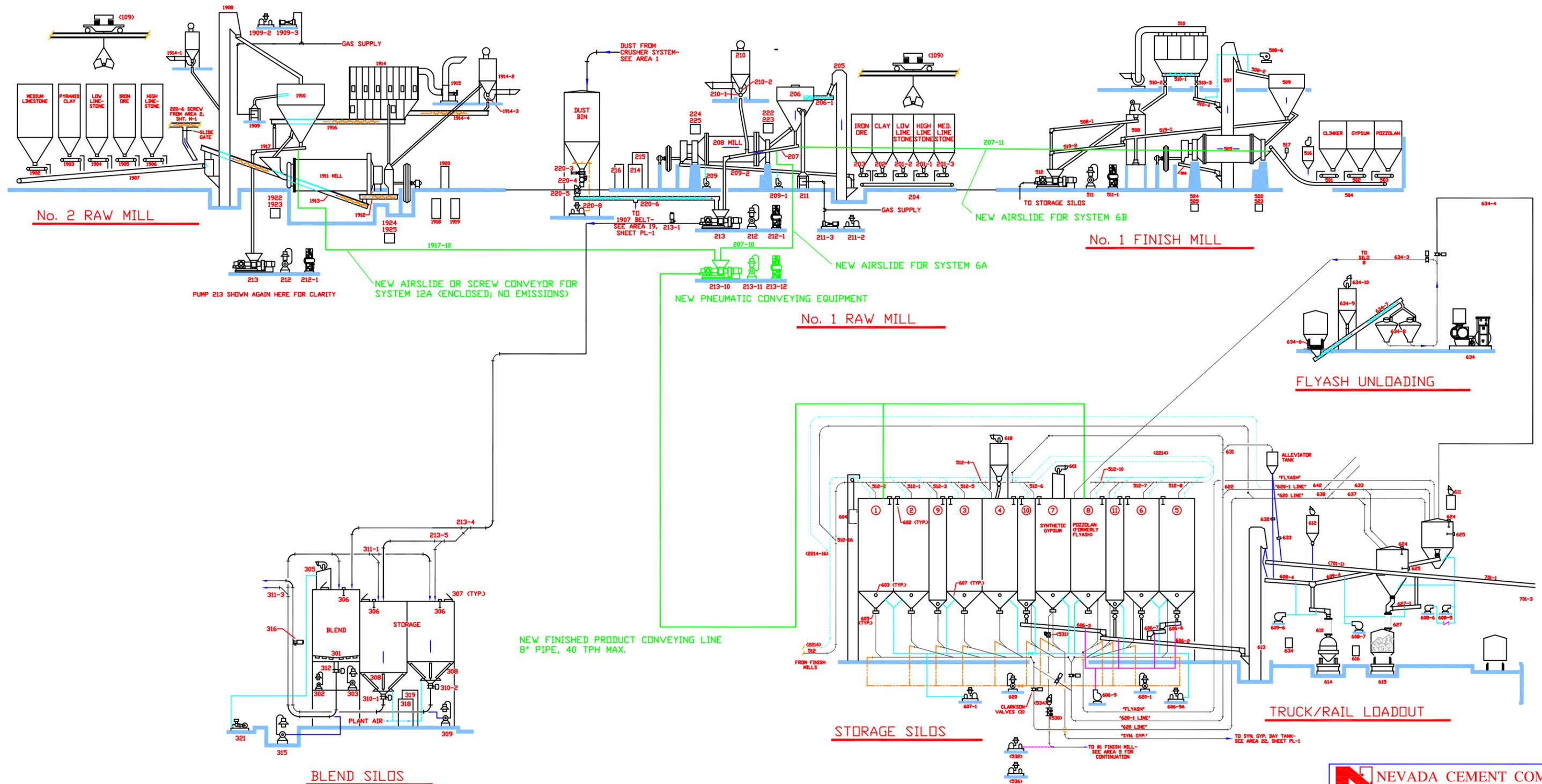
Other Miscellaneous Activities

Fugitive Dust: Material stockpiles (i.e., uncrushed clay, uncrushed limestone and clay, transfer points, etc.) and haul-roads within the facility generate fugitive dust emissions. Primary control measure to mitigate dust at the site is the best practical method (BPMs) which includes use of water trucks to spray water on disturbed areas on a regular basis and other appropriate measures (refer to NCC's Fugitive Dust Control Plan dated August 14, 2003).

Insignificant Activities

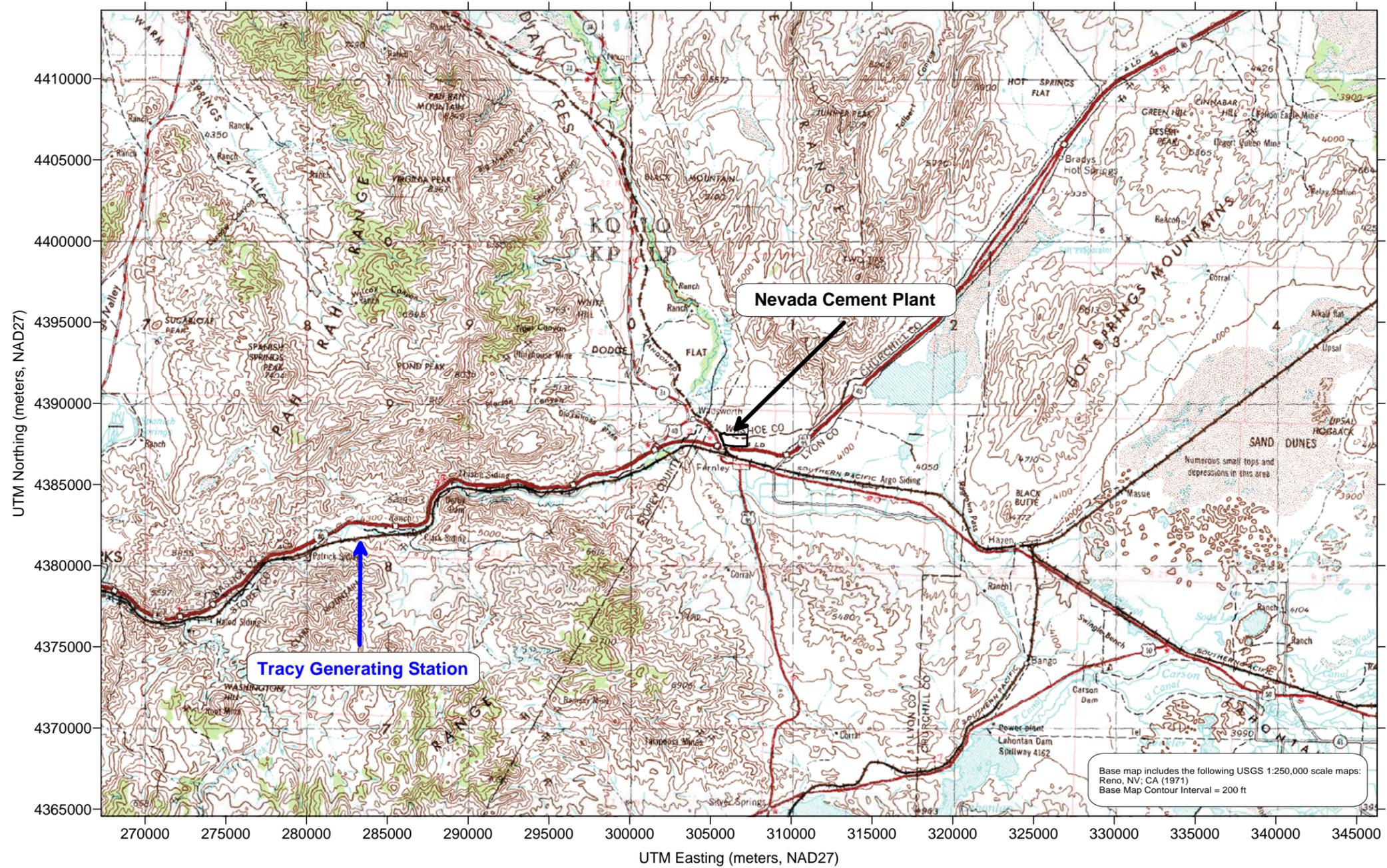
- North Tank #1: installation date - 1970; and capacity - 43,758 gallons. Based on capacity, this tank does not qualify as insignificant activities [NAC 445B.288.2.(d)]. Because of tank's extremely low VOC emissions of 0.0015 lb/hr (0.0065 ton/yr), NBAPC has approved this tank as Insignificant activities. This tank is not subject to NSPS requirements.
- South Tank #2: installation date - 1970; and capacity - 43,758 gallons. Based on capacity, this tank does not qualify as insignificant activities [NAC 445B.288.2.(d)]. Because of tank's extremely low VOC emissions of 0.0015 lb/hr (0.0065 ton/yr), NBAPC has approved this tank as Insignificant activities. This tank is not subject to NSPS requirements.
- Raw Mill Tank #3: installation date - 1975; and capacity - 40,303 gallons. Based on capacity, this tank is not subject to NSPS requirements (Subpart K). This tank does not qualify as insignificant activities [NAC 445B.288.2.(d)]. Because of tank's extremely low VOC emissions of 0.0017 lb/hr (0.0076 ton/yr), NBAPC has approved this tank as Insignificant activities.
- Quarry Diesel Tank: installation date - 1964; and capacity - 12,000 gallons. Based on capacity, this tank qualifies as insignificant activities [NAC 445B.288.2.(d)]. This tank is not subject to NSPS requirements.
- Unleaded Fuel Tank: installation date - 1992; and capacity - 3,000 gallons. Based on capacity, this tank is not subject to NSPS requirements (Subpart Kb). This tank qualifies as insignificant activities [NAC 445B.288.2.(d)].
- Motor Oil Storage Tank: installation date - 1979; and capacity - 10,000 gallons. Based on capacity, this tank is not subject to NSPS requirements (Subpart Ka). This tank qualifies as insignificant activities [NAC 445B.288.2.(d)].
- Pony Motor #1: This motor is a stationary internal combustion engine and rated less than 250 hp. This motor qualifies as insignificant activities [NAC 445B.288.2.(g)(1)].

- Pony Motor #2: This motor is a stationary internal combustion engine and rated less than 250 hp. This motor qualifies as insignificant activities [NAC 445B.288.2.(g)(1)].
- Portable Generator: This is an emergency generator and the operating time is based on 500 hours per year. This generator qualifies as insignificant activities [NAC 445B.288.2.(h)]. In addition it is a stationary internal combustion engine and rated less than 250 hp, it also qualifies as insignificant activities per [NAC 445B.288.2.(g)(1)].
- Cooling Tower: NCC's estimated PM-10 emissions are 0.0153 lb/hr and 0.0670 ton/yr. These emissions are less than 1 lb/hr (or 1,000 lbs/yr) and 4,000 lbs/yr respectively. Based on NCC's provided information and request, NDEP's Administrator has approved this Cooling Tower as an insignificant activity on July 28, 2003.

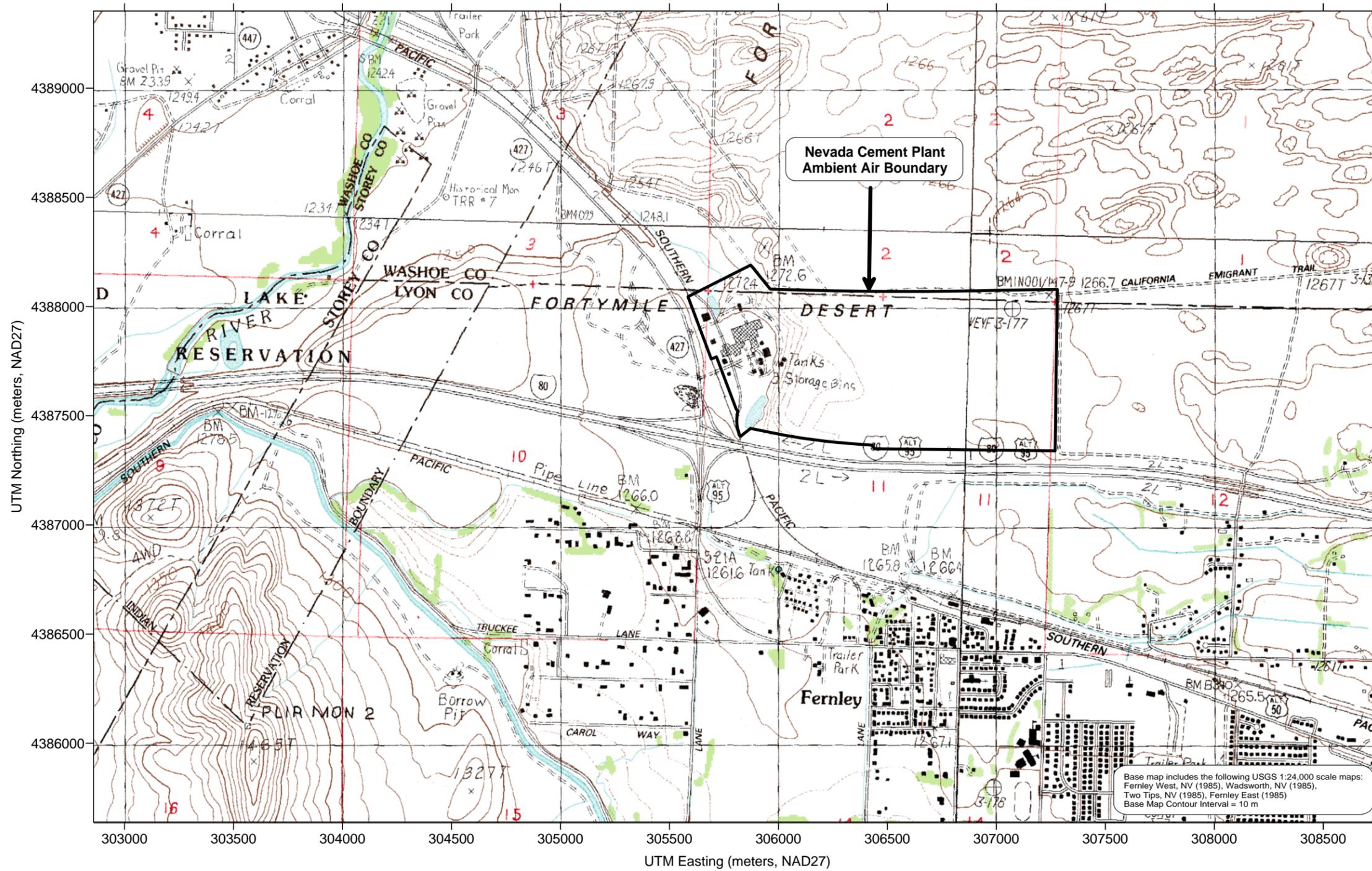


NOTE: NEW EQUIPMENT REQ'D FOR SYSTEMS 6A, 6B, 12A SHOWN IN GREEN.

 A SUBSIDIARY OF		
SCALE: NONE	APPROVED BY:	DRAWN BY GSP
DATE 1-24-12		REVISED
SYSTEMS 6A,6B,12A DIAGRAM		
		DRAWING NUMBER

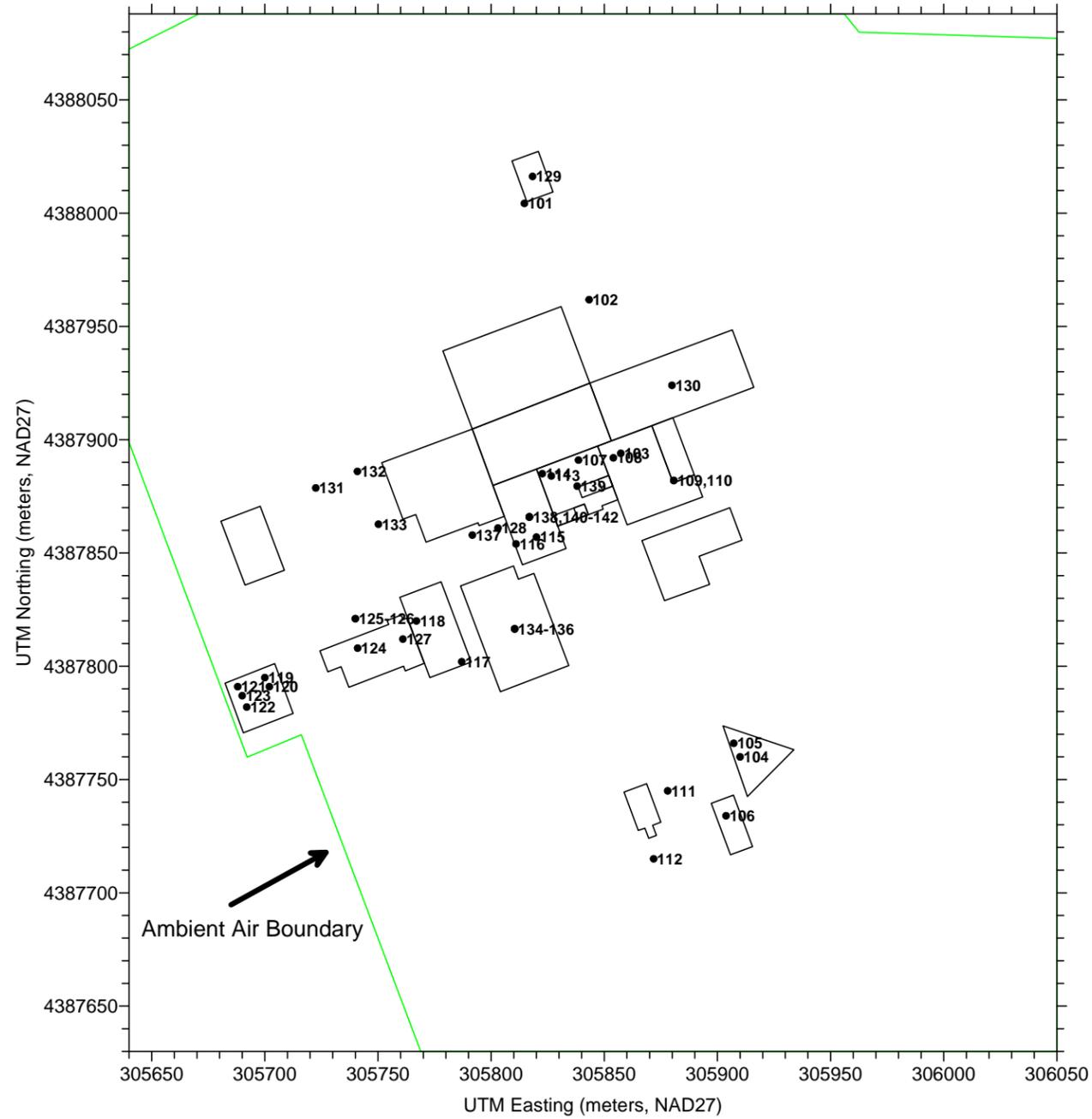


NEVADA CEMENT COMPANY FERNLEY, NV	AREA MAP
Date: 04/09/2008	



NEVADA CEMENT COMPANY
 FERNLEY, NV
 Date: 04/09/2008

Local Map



No.	Name
101	DC105
102	DC1084
103	DC210
104	DC305
105	DC405
106	DC419
107	DC413
108	DC510
109	DC1914
110	DC19142
111	DC2001
112	DC9109
113	DC2021
114	DC2102
115	DC22071
116	DC22072
117	DC601
118	DC618
119	DC6461
120	DC652
121	DC6462
122	DC6463
123	DC653
124	DC710
125	DC6349
126	DC611
127	DC612
128	DC22383
129	F1001
130	F1002_6
131	F1007
132	F1008
133	F1009
134	F1010
135	F101112
136	F101314
137	F1015
138	F1016
139	F101718
140	F101920
141	F102122
142	F102324

NEVADA CEMENT COMPANY
FERNLEY, NV

SIMPLIFIED PLOT PLAN
EXISTING EMISSION UNITS

Date: 05/01/2008

Appendix 9

Environmental Evaluation and Dispersion Modeling Files

Appendix 9

ENVIRONMENTAL EVALUATION AND DISPERSION MODELING FILES

Please Attach Modeling Files and Supporting Information

***NOT APPLICABLE – NO CHANGE IN PERMITTED ALLOWABLE EMISSIONS FOR
OPTION 6A, 6B, or 12A AS CONTAINED IN PERMIT NO. AP3241-0387.02***

Instructions

Environmental Evaluation [NAC 445B.3363.3]:

An applicant for an operating permit to construct or a revision to an operating permit to construct must submit, in Appendix 9, an environmental evaluation for:

1. A new stationary source which emits, or has the potential to emit, greater than 25 tons of a regulated air pollutant per year [NAC 445B.310.1];
2. A modification to an existing stationary source that meets the following criteria [NAC 445B.310.2]:
 - a. The existing stationary source has the potential to emit greater than 25 tons of a regulated air pollutant per year; and
 - b. The proposed modification has the potential to emit greater than 10 tons of a regulated air pollutant per year.
3. The environmental evaluation shall contain all information required in NAC 445B.311.
4. The environmental evaluation includes of dispersion models used to determine the location and estimated value of the highest concentration of regulated air pollutants [NAC 445B.311.4].

Modeling Analyses: [NAC 445B.311.1(f); NAC 445B.311.3; NAC 445B.311.4]

The modeling analyses must utilize the latest USEPA approved or equivalent air dispersion models. The analysis must clearly identify the following information at a minimum.

1. Model
 - Name and type used.
 - Default options used.
2. Emissions Data
 - Source parameters (stack/source height, location, dimensions).
 - Building dimensions.
 - Background pollutant concentrations.
3. Meteorological Data
 - Location of data set utilized.
 - Year of data record utilized.
 - Quality of data utilized.
 - Method for treating missing data.
4. Receptors
 - Grid spacing
 - Excluded receptors from within fence line/property boundary
 - Identify simple or complex terrain

The modeling analysis must be provided in digital format and must consist of both the input and output data files. One hard copy of the input and output files must be provided. All meteorological data utilized that has not been provided by the Bureau of Air Pollution Control must also be submitted in digital format. Please include all modeling files in Appendix 8.

Appendix 10

Operating Permit Template

Appendix 10

OPERATING PERMIT TEMPLATE

Please provide a draft operating permit with appropriate conditions.

An electronic copy of the operating permit template is available upon request.

The following template contains conditions for the following System Nos. only:

System 6A

System 6B

System 12A

System 13

System 21

System 25(b)

System 26



BUREAU OF AIR POLLUTION CONTROL

901 SOUTH STEWART STREET SUITE 4001

CARSON CITY, NEVADA 89701-5249

p: 775-687-9350 • www.ndep.nv.gov/bapc • f: 775-687-6396

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Mailing Address: P.O. BOX 840, FERNLEY, NEVADA 89408-0840

Physical Address: INTERSTATE 80, EXIT 46, FERNLEY, NEVADA

General Facility Location: Section(s) 10 & 11, T20N, R24E, MDB&M (HA 76)

Emission Unit List: (137 Emission Units)

A. System 01 – Limestone Truck Dump

PF1.001 Limestone Truck Dump to Primary Crusher Hooper 101

B. System 02 - Primary Crusher Circuit

S2.001 Primary Crusher Hopper 101 transfer to Primary Crusher 102

S2.002 Primary Crusher 102

S2.003 Primary Crusher 102 to Apron Feeder-103

S2.004 Apron Feeder-103 transfer to Conveyor 104

S2.005 Drag Chain Conveyor 103-1 transfer to Conveyor 104

S2.006 Conveyor 104 transfer to Primary Crusher-102

C. Systems 03 & 04 – Secondary Screening Circuit & Secondary Crusher Circuit

S2.007 Conveyor 104 transfer to Shaker Screen 106-1

S2.008 Shaker Screen 106-1

S2.009 Shaker Screen 106-1 transfer to Conveyor 107

S2.010 Shaker Screen 106-1 transfer to Conveyor 108

S2.011 Shaker Screen 106-1 transfer to Conveyor 106-2

S2.012 Conveyor 106-2 transfer to Conveyor 106-3

S2.013 Conveyor 106-3 transfer to Secondary Crusher 106

S2.014 Secondary Crusher 106 transfer to Conveyor 106-4

S2.015 Secondary Crusher 106

S2.016 Conveyor 106-4 transfer to Secondary Screen 106-1

D. System 05 – Raw Material Storage

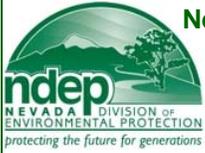
PF1.002 Conveyor 108 Feed End Chute

PF1.003 Conveyor 108 transfer to Conveyor 115

PF1.004 Overhead Crane 109 transfer to Storage bins (Limestone)

PF1.005 Overhead Crane 109 transfer (Iron Ore)

PF1.006 Overhead Crane 109 transfer (Clay)



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Emission Unit List: (137 Emission Units) (continued)

E-1. System 06 – #1 Raw Mill System

- S2.017 Conveyor 204 transfer to Bucket Elevator 205
- S2.018 Bucket Elevator 205 transfer to Air Separator 206
- S2.019 Air Separator 206 to Air Slide 207
- S2.020 Air Slide 207 transfer to Pump 213
- S2.021 #1 Raw Mill 208
- S2.022 Heater 211 firing either 14 MMBtu/hr Natural Gas or 10.54 MMBtu/hr #2 fuel oil

E-2. System 06A – #1 Raw Mill System – Used as a Finish Mill

- [S2.017 Conveyor 204 transfer to Bucket Elevator 205](#)
- [S2.018 Bucket Elevator 205 transfer to Air Separator 206](#)
- [S2.019 Air Separator 206 to Air Slide 207 to Air Slide 207-10](#)
- [S2.020 Air Slide 207-10 transfer to Pump 213-10](#)
- [S2.021 #1 Raw Mill 208](#)
- [S2.022 Heater 211 firing either 14 MMBtu/hr Natural Gas or 10.54 MMBtu/hr #2 fuel oil](#)

E-3. System 06B – #1 Raw Mill System – Used as Pre-Grind Mill & Transferring Raw Material to #1 Finish Mill

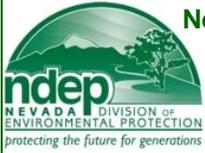
- [S2.017 Conveyor 204 transfer to Bucket Elevator 205](#)
- [S2.018 Bucket Elevator 205 transfer to Air Separator 206](#)
- [S2.019 Air Separator 206 to Air Slide 207-11](#)
- [S2.020 Air Slide 207-11 transfer to #1 Finish Mill 505](#)
- [S2.021 #1 Raw Mill 208](#)
- [S2.022 Heater 211 firing either 14 MMBtu/hr Natural Gas or 10.54 MMBtu/hr #2 fuel oil](#)

F. System 07 – Blending Operations Storage Silos

- S2.023 Pump 213 transfer to Blending & Storage Silos 300-7
- S2.024 Pump Silo to East or West Storage Silos

G. System 08 – #1 Kiln Feed System

- S2.025 Pump Storage Silos transfer to Kiln Feed Bin 401
- S2.026 Kiln Feed Bin 401 transfer to Air Slide 401-1
- S2.027 Air Slide 401-1 transfer to Bucket Elevator 402
- S2.028 Bucket Elevator 402 transfer to Constant Head Feeder 404
- S2.029 Constant Head Feeder 404 transfer to Kiln #1 406



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Emission Unit List: (137 Emission Units) (continued)

H. System 09 – #1 Kiln Circuit (combusting 100% Coal or Coal/Coke blend: Non-hazardous used oils and greases; and Non-hazardous hydrocarbon contaminated soils)

- S2.030 Kiln #1 406
- S2.031 Coal Mill 805
- S2.032 Screw Conveyors 420-2 & 420-3 to 420-1
- S2.033 Screw Conveyor 416 transfer to Screw Conveyor 420-4
- S2.034 Screw Conveyor 414-1 transfer to Screw Conveyor 420-4
- S2.035 Screw Conveyor 420-1 to Screw Conveyor 420-4
- S2.036 Screw Conveyor 420-4 transfer to Bucket Elevator 414
- S2.037 Rotary Feeder 417 transfer to Bucket Elevator 414
- S2.038 Bucket Elevator 414 transfer to Kiln #1 406

I. System 09A – #1 Kiln Circuit / Alternative Operating Scenario (combusting 100% Natural Gas)

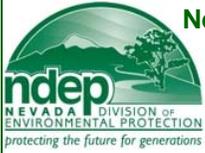
- S2.030 Kiln #1 406
- S2.031 Coal Mill 805
- S2.032 Screw Conveyors 420-2 & 420-3 to 420-1
- S2.033 Screw Conveyor 416 transfer to Screw Conveyor 420-4
- S2.034 Screw Conveyor 414-1 transfer to Screw Conveyor 420-4
- S2.035 Screw Conveyor 420-1 to Screw Conveyor 420-4
- S2.036 Screw Conveyor 420-4 transfer to Bucket Elevator 414
- S2.037 Rotary Feeder 417 transfer to Bucket Elevator 414
- S2.038 Bucket Elevator 414 transfer to Kiln #1 406

J. System 10 – #1 Kiln Clinker Cooler System

- S2.039 Kiln #1 Clinker Cooler 408
- S2.040 Clinker Breaker 409 transfer to Drag Chain 410
- S2.041 Drag Chain 410 to Bucket Elevators 412-1 or 412-2
- S2.042 Bucket Elevators 412-1 or 412-2 to Clinker Storage Stacker Tube 412-4

K. System 11 – #1 Finish Mill Operations

- S2.043 Conveyor 504 transfer to #1 Finish Mill 505 or Airslide 207-11 transfer to #1 Finish Mill 505
- S2.044 #1 Finish Mill 505
- S2.045 Air Slide 506 transfer to Bucket Elevator 507
- S2.046 Bucket Elevator 507 transfer to Air Separator 509
- S2.047 Air Separator 509 transfer to Air Slide 519-1
- S2.048 Air Slide 519-1 to Air Slide 519-2 and transfer to FK Pump 512
- S2.049 Dust Collector 510 transfer to FK Pump 512



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Emission Unit List: (137 Emission Units) (continued)

L-1. System 12 – #2 Raw Mill System

- S2.050 Bucket Elevator 1908 transfer to Air Separator 1910
- S2.051 Screw Conveyor 1916 transfer to Air Slide 1917
- S2.052 Air Separator 1910 transfer to Air Slide 1917
- S2.053 Air Slide 1917 transfer to Pump 213
- S2.054 Heater 1909 firing either 14 MMBtu/hr Natural Gas or 9.06 MMBtu/hr #2 fuel oil

L-2. System 12A - #2 Raw Mill System – Used as a Finish Mill

- [S2.050 Bucket Elevator 1908 transfer to Air Separator 1910](#)
- [S2.051 Screw Conveyor 1916 transfer to Air Slide 1917](#)
- [S2.052 Air Separator 1910 transfer to Air Slide 1917 to Air Slide 1917-10](#)
- [S2.053 Air Slide 1917-10 transfer to Pump 213-10](#)
- [S2.054 Heater 1909 firing either 14 MMBtu/hr Natural Gas or 9.06 MMBtu/hr #2 fuel oil](#)

M. System 13 – #2 Raw Mill

- S2.055 #2 Raw Mill 1911

N. System 14 – #2 Kiln Feed System

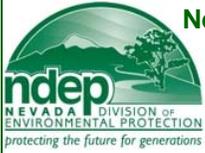
- S2.056 Pump Storage Silos transfer to Kiln Feed Bin 2002
- S2.057 Kiln Feed Bin 2002 transfer to Air slide 2004
- S2.058 Air Slide 2004 transfer to Bucket Elevator 2005
- S2.059 Bucket Elevator 2005 to Constant Head Feeder 2006
- S2.060 Constant Head Feed Screw 2006 transfer to Kiln Feed Screw 2010
- S2.061 Screw 2010 transfer to Kiln #2 2013

O. System 15 – #2 Kiln Circuit (combusting 100% Coal or Coal/Coke blend; Non-hazardous used oils and greases; and Non-hazardous hydrocarbon contaminated soils)

- S2.062 Kiln #2 2013
- S2.063 Coal Mill 2043
- S2.064 Baghouse Screw Conveyors to Screw Conveyor 9085
- S2.065 Screw Conveyor 9085 transfer to Bucket Elevator 2010-1
- S2.066 Bucket Elevator 2010-1 transfer to Screw 2009 and Dust Tank
- S2.067 Dust Tank to Weigh Screw 2009-14

P. System 15A – #2 Kiln Circuit / Alternative Operating Scenario (combusting 100% Natural Gas)

- S2.062 Kiln #2 2013
- S2.063 Coal Mill 2043
- S2.064 Baghouse Screw Conveyors to Screw Conveyor 9085
- S2.065 Screw Conveyor 9085 transfer to Bucket Elevator 2010-1
- S2.066 Bucket Elevator 2010-1 transfer to Screw 2009 and Dust Tank
- S2.067 Dust Tank to Weigh Screw 2009-14



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Emission Unit List: (137 Emission Units) (continued)

Q. System 16 – #2 Kiln Clinker Cooler and Reclaim System

- S2.068 Kiln #2 Clinker Cooler 2017
- S2.069 Clinker Breaker 2020 transfer to Drag Chain 2023
- S2.070 Reclaim Conveyor 2116 transfer to Bucket Elevator 2117

R. System 17 – #2 Kiln Clinker Handling System

- S2.071 Drag Chain 2023 transfer to Bucket Elevator 2101-1
- S2.072 Bucket Elevator 2101-1 to Clinker Storage or Drag Chain 2201

S. System 18 – #2 Finish Mill Systems

- S2.073 Drag Chain 2201 transfer to Feed Bins 2001-6 & 2201-7
- S2.074 Feed Bins 2001-6 & 2201-7 transfer to #2 Finish Mill 2203-1
- S2.075 #2 Finish Mill 2203-1
- S2.076 Bucket Elevator 2204-1 transfer to Air Slide 2205-1
- S2.077 Air Slide 2205-1 transfer to Air Separator 2206-1
- S2.078 Air Separator 2206-1 transfer to Pump 2212

T. System 19 – #3 Finish Mill Systems

- S2.079 Drag Chain 2201 transfer to Feed Bins 2001-8 & 2201-9
- S2.080 Feed Bins 2001-8 & 2201-9 transfer to #3 Finish Mill 2203-2
- S2.081 #3 Finish Mill 2203-2
- S2.082 Bucket Elevator 2204-2 transfer to Screw 2205-2
- S2.083 Screw Conveyor 2205-2 transfer to Air Separator 2206-2
- S2.084 Air Separator 2206-2 transfer to Pump 2212

U. System 20 – Cement Storage Silo

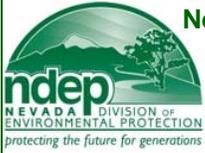
- S2.085 Transfer to Storage Silo #7

V. System 21 – Cement Bulk Loading

- S2.086 Silo transfers to Air Slides
- S2.087 Air slides transfer to Bucket Elevator 613
- S2.088 Bucket Elevator 613 to Air Slides 609-4 & 701-1
- S2.089 Air Slides transfer to Loading Spout 627
- S2.090 Silo transfers to North Rail Storage Bin 624
- S2.091 North Rail Bin transfers to Spout 627
- S2.092 #1 Finish Mill Pump 512 transfer into Silos
- S2.093 #2 & 3 Finish Mill Pump 2212 [and #1 & #2 Raw Mill Pump 213-10](#) transfer into Silos

W. System 22(a) – Cement Bulk Loading – 1

- S2.094 Silo #12 Fill
- S2.095 Silo #13 Fill



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Emission Unit List: (137 Emission Units) (continued)

X. System 22(b) – Cement Bulk Loading – 4

S2.096 Silos #12 & 13 to Loading Spouts 672-1 & 672-2

Y. System 23(a) – Cement Bulk Loading – 2

S2.097 Silo #14 Fill

Z. System 23(b) – Cement Bulk Loading – 3

S2.098 Silo #15 Fill

AA. System 23(c) – Cement Bulk Loading – 5

S2.099 Silos #14 & 15 to Loading Spouts 672-3 & 672-4

AB. System 24 – Packhouse

S2.100 Pack Storage Bin transfer to Bucket Elevator 704

S2.101 Bucket Elevator 704 to Air Slide 706-1 & 705-1

S2.102 Air Slide 705-1 transfer to Packer 707 and Air Slides 706-1 and 706-2

AC. System 25(a) – Rail Unloading/Transfer

S2.103 Rail Hopper 634-6 transfer to Air Slide 634-7 and to Transfer System 634-8

AD. System 25(b) – Rail Unloading/Transfer

S2.104 Rail Transfer 634-8 to South Storage Bin 625

S2.105 Silo #~~87~~ Transfer to South Storage Bin 625

AE. System 26 – Fly Ash Bulk Loading

S2.106 South Storage Bin 625 transfer to Air Slide 609-4 and Loading Spout 610

AF. System 27(a) – Coal/Coke Handling (Rail Unloading)

PF1.007 Railcar Unloading to Conveyor 111

AG. System 27(b) – Coal/Coke Handling (Covered Conveyors)

PF1.008 Conveyor 111 transfer to Conveyor 111-1 or 2302

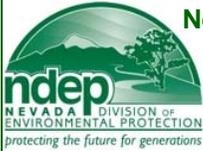
PF1.009 Conveyor 2302 transfer to Conveyor 2302-1

PF1.010 Conveyor 2302-1 transfer to Conveyor 2302-2

AH. System 27(c) – Coal/Coke Handling (Coal/Coke Storage Building)

PF1.011 Conveyor 2302-2 transfer to Belt Tripper 2303

PF1.012 Belt Tripper 2303 transfer to Coal Storage



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
GENERAL REQUIREMENTS**

Issued to: Nevada Cement Company, hereafter called the Permittee

Emission Unit List: (137 Emission Units) (continued)

AI. System 27(d) – Coal/Coke Handling (Coal/Coke Storage Building)

PF1.013 Inside Storage 2300-23A transfer to Feeders 2305-1, 2B, 3, 4, 5B

PF1.014 Feeders 2305-1, 2B, 3, 4, 5B transfer to Conveyor 2306

AJ. System 27(e) – Coal/Coke Handling (Coal/Coke Storage Building)

PF1.015 Conveyor 2306 transfer to Conveyor 2316

AK. System 27(f) – Coal/Coke Handling (Mill Building Enclosure)

PF1.016 Conveyor 2307 transfer to Coal Mill #1 Storage Bin 803

AL. System 27(g) – Coal/Coke Handling (Mill Building Enclosure)

PF1.017 Storage Bin 803 transfer to Feeder Belt 804

PF1.018 Feeder Belt 804 transfer to Coal Mill #1 805

AM. System 27(h) – Coal/Coke Handling (Mill Building Enclosure)

PF1.019 Conveyor 2309 transfer to Conveyor 2307

PF1.020 Conveyor 2316 transfer to Bin 2041 or Conveyor 2309

AN. System 27(i) – Coal/Coke Handling (Mill Building Enclosure)

PF1.021 Storage Bin 2041 transfer to Feeder Belt 2042

PF1.022 Feeder Belt 2042 transfer to Coal Mill #2 2043

AO. System 28(a) – Finish Mill Feed Storage Tank and Handling

S2.107 Pneumatic Loading and transfer to Finish Mill Feed Storage Tank

AP. System 28(b) – Finish Mill Feed Storage Tank and Handling (Handling Conveyors)

PF1.023 Finish Mill Feed Storage Tank and transfer to Screw Conveyor (# 2242)

PF1.024 Screw Conveyor (# 2242) and transfer to Screw Conveyor (# 2243)

AQ. System 29(a) – Cement Kiln Dust to Dump Truck

PF1.025 Dust Tank (S2.067) and transfer to Screw Conveyor (2009-2)

PF1.026 Screw Conveyor (2009-2) and transfer to Truck Loadout Spout (2009-3)

PF1.027 Truck Loadout Spout (2009-3) and transfer into Dump Truck

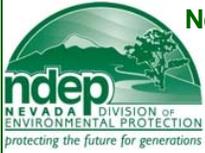
AR. System 29(b) – Cement Kiln Dust to Griffin Storage Silo

PF1.028 Dust Tank (S2.067) and transfer to Griffin Storage Silo

S2.108 Griffin Storage Silo Loading

PF1.029 Griffin Storage Silo Unloading and transfer into Tank Truck

*******End of Emission Unit List*******



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

E. Emission Unit #(s): S2.017 - S2.022, location North 4,387.894 km, East 305.8573 km, UTM (Zone 11)

Table with 3 columns: System ID, Description, and Fuel/Flow Rate. Includes System 06A - #1 Raw Mill System - Used as Finish Mill with various sub-units (S 2.017-2.022).

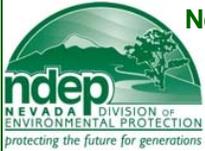
1. NAC 445B.3405 (NAC 445B.316) Part 70 Program Air Pollution Control Equipments

a. Emissions from S2.017 - S2.022 each shall be ducted to a control system consisting of a Baghouse (DC 210) with 100% capture and a maximum volume flow rate of 43,000 actual cubic feet per minute (acfm).

Stack Height (feet from ground level): 69.9
Stack Inside Diameter (feet): 2.99
Stack Temperature (°F): 180
Stack Exit Velocity (ft/sec): 102.07

2. NAC 445B.3405 (NAC 445B.316) Part 70 Program Emission Limits

- a. On and after the date of startup of S2.017 - S2.022, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of Baghouse (DC 210), the following pollutants in excess of the following specified limits: (i) NAC 445B.305 Part 70 Program - The discharge of PM10... (ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere... (iii) NAC 445B.305 Part 70 Program - The discharge of NOx... (iv) NAC 445B.305 Part 70 Program - The discharge of CO... (v) NAC 445B.305 Part 70 Program - The discharge of SO2... (vi) NAC 445B.305 Part 70 Program - The discharge of Sulfur... (vii) NAC 445B.305 Part 70 Program - The discharge of VOC... (viii) NAC 445B.22033 (Federally Enforceable SIP Requirement) - The discharge of PM10... (ix) NAC 445B.2203 (Federally Enforceable SIP Requirement) - The discharge of PM10... (x) NAC 445B.2203 (Federally Enforceable SIP Requirement) - The discharge of PM10... (xi) NAC 445B.22047 (Federally Enforceable SIP Requirement) - The discharge of Sulfur... (xii) NAC 445B.22047 (Federally Enforceable SIP Requirement) - The discharge of Sulfur... (xiii) NAC 445B.22017 (Federally Enforceable SIP Requirement) - The opacity from the exhaust stack of Baghouse (DC 210), will not equal or exceed 20% in accordance with NAC 445B.22017.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

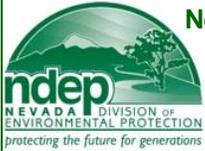
E. Emission Unit #(s): S2.017 - S2.022 (continued)

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters
 - a. The maximum allowable throughput rate of raw materials (limestone, clay, iron ore & slag, pozzolan, clinker, gypsum) for the system consisting of **S2.017 - S2.021** will not exceed **65.0** tons per any one-hour period.
 - b. The maximum allowable heat input rate of natural gas for **S2.022** will not exceed **14.0 MMBtu** per any one-hour period, combusting a maximum of **13,462.0** cubic feet per hour of natural gas.
 - c. The maximum allowable fuel consumption rate of #2 fuel oil for **S2.022** will not exceed **75.29** gallons per any one-hour period.
 - d. **S2.022** will combust pipeline quality natural gas as the primary fuel only.
 - e. **S2.022** will combust #2 fuel oil as the secondary fuel in the event of natural gas curtailment, or for economic reasons.
 - f. Hours
 - (i) **S2.017 - S2.021** each, may operate **8,760** hours.
 - (ii) **S2.022** may operate **8,760** hours, combusting pipeline quality natural gas.
 - (iii) **S2.022** may operate **3,000** hours per 12-month rolling period, combusting #2 fuel oil.

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program
 - a. Monitoring, Recordkeeping, Reporting and Compliance

When **System 06** is in operation, the permittee shall:

 - (i) Monitor and record the throughput rate for the system consisting of **S2.017 - S2.021** on a daily basis.
 - (ii) Monitor and record the fuel consumption rate of natural gas for **S2.022** on a daily basis.
 - (iii) Monitor and record the fuel consumption rate of #2 fuel oil for **S2.022** on a daily basis.
 - (iv) Monitor and record the hours of operation for the system consisting of **S2.017 - S2.022** on a daily basis.
 - (v) Monitor and record the throughput rate for the system consisting of **S2.017 - S2.021** on a cumulative monthly basis, for each 12-month rolling period.
 - (vi) Monitor and record the fuel consumption rate of natural gas for **S2.022** on a cumulative monthly basis, for each 12-month rolling period.
 - (vii) Monitor and record the fuel consumption rate of #2 fuel oil for **S2.022** on a cumulative monthly basis, for each 12-month rolling period.
 - (viii) Conduct a weekly observation of the **Baghouse (DC 210)** and verify that the **Baghouse (DC 210)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 210)**. Record and verify that any maintenance work on the **Baghouse (DC 210)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
 - (ix) Conduct and record a weekly visible emission inspection of the **Baghouse (DC 210)**; record the time of the survey and indicate whether any visible emission was observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.
 - (x) The required monitoring established in (i) through (ix) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for the system consisting of **S2.017 - S2.021** in tons, for the corresponding date.
 - (c) The total daily fuel consumption rate of natural gas for **S2.022** in cubic feet, for the corresponding date.
 - (d) The total daily fuel consumption rate of #2 fuel oil for **S2.022** in gallons, for the corresponding date.
 - (e) The total daily hours of operation for the system consisting of **S2.017 - S2.022** for the corresponding date.
 - (f) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (e) above.
 - (g) The corresponding average hourly fuel consumption rate of natural gas in cubic feet per hour. The average hourly fuel consumption rate will be determined from the daily fuel consumption rate and the total daily hours of operation recorded in (c) and (e) above.
 - (h) The corresponding average hourly fuel consumption rate of #2 fuel oil in gallons per hour. The average hourly fuel consumption rate will be determined from the daily fuel consumption rate and the total daily hours of operation recorded in (d) and (e) above.
 - (i) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (j) The cumulative monthly fuel consumption rate of natural gas in cubic feet, for each 12-month rolling period.
 - (k) The cumulative monthly fuel consumption rate of #2 fuel oil in gallons for each 12-month rolling period.
 - (l) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 210)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 210)** used for control of emissions.
 - (m) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

E. Emission Unit #(s): S2.017 - S2.022 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program (continued)

b. Performance/Compliance Testing (NAC 445B.252.1)

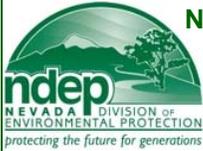
At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 210)**:

- (i) Method 5 (that includes the back-half catch) in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
- (ii) Methods 201A and 202 tests for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
- (iii) Methods 201A and 202 tests required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **E.2.a.(i)** of this section.
- (iv) A Method 7E compliance test for NO_x, Method 10 compliance test for CO, Method 6C compliance test for SO₂, and Methods 25 or 25A compliance tests for VOC in accordance with 40 CFR Part 60, Appendix A (or an alternative EPA reference method approved by the director).
- (v) A Method 29 compliance test for metallic hazardous air pollutants (HAPs) in accordance with 40 CFR Part 60, Appendix A (or an alternative EPA reference method approved by the director).
- (vi) Methods 320 or 321 compliance test for hydrogen chloride (HCl) and Method 320 (or Method 18 of Appendix A to 40 CFR Part 60) compliance test for specific organic HAPs in accordance with 40 CFR Part 63, Appendix A.
- (vii) For the purposes of demonstrating compliance with the opacity standard established in **E.2.a.(xiii)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
- (viii) Performance/compliance tests required under **E.4.b.** of this section that are conducted below the maximum allowable throughput/fuel consumption rate, as established in **E.3.a., E.3.b. and E.3.c.** of this section, shall be subject to the director's review to determine if the throughputs/fuel consumption rates during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
- (ix) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.

5. NAC 445B.3405 (NAC 445B.316) Part 70 Program

Shielded Requirements

- a. No shielded requirements are specified.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

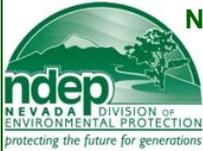
E. Emission Unit #(s): S2.017 - S2.022, location North 4,387.894 km, East 305.8573 km, UTM (Zone 11)

Table with 3 columns: System ID, Description, and Fuel/Flow Rate. Includes System 06B - #1 Raw Mill System and various conveyor and separator units.

- 1. NAC 445B.3405 (NAC 445B.316) Part 70 Program Air Pollution Control Equipments
a. Emissions from S2.017 - S2.022 each shall be ducted to a control system consisting of a Baghouse (DC 210) with 100% capture and a maximum volume flow rate of 43,000 actual cubic feet per minute (acfm).

Stack Height (feet from ground level): 69.9
Stack Inside Diameter (feet): 2.99
Stack Temperature (°F): 180
Stack Exit Velocity (ft/sec): 102.07

- 2. NAC 445B.3405 (NAC 445B.316) Part 70 Program Emission Limits
a. On and after the date of startup of S2.017 - S2.022, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of Baghouse (DC 210), the following pollutants in excess of the following specified limits:
(i) NAC 445B.305 Part 70 Program - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 6.00 pounds per hour, nor more than 26.28 tons per 12-month rolling period.
(ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed 6.00 pounds per hour, nor more than 26.28 tons per 12-month rolling period.
(iii) NAC 445B.305 Part 70 Program - The discharge of NOx (nitrogen oxides) to the atmosphere will not exceed 1.91 pounds per hour, nor more than 8.38 tons per 12-month rolling period.
(iv) NAC 445B.305 Part 70 Program - The discharge of CO (carbon monoxide) to the atmosphere will not exceed 1.13 pound per hour, nor more than 3.82 tons per 12-month rolling period.
(v) NAC 445B.305 Part 70 Program - The discharge of SO2 (sulfur dioxide) to the atmosphere will not exceed 0.53 pound per hour, nor more than 0.83 ton per 12-month rolling period.
(vi) NAC 445B.305 Part 70 Program - The discharge of Sulfur to the atmosphere will not exceed 0.27 pound per hour, nor more than 0.42 ton per 12-month rolling period.
(vii) NAC 445B.305 Part 70 Program - The discharge of VOC (volatile organic compounds) to the atmosphere will not exceed 0.50 pound per hour, nor more than 2.19 tons per 12-month rolling period.
(viii) NAC 445B.22033 (Federally Enforceable SIP Requirement) - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 47.05 pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by E.3.a. of this section.
(ix) NAC 445B.2203 (Federally Enforceable SIP Requirement) - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 0.55 pounds per MMBtu maximum allowable emission limit as determined from NAC 445B.2203 and the maximum allowable throughput as limited by E.3.b. of this section.
(x) NAC 445B.2203 (Federally Enforceable SIP Requirement) - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 0.59 pounds per MMBtu maximum allowable emission limit as determined from NAC 445B.2203 and the maximum allowable throughput as limited by E.3.c. of this section.
(xi) NAC 445B.22047 (Federally Enforceable SIP Requirement) - The discharge of Sulfur to the atmosphere will not exceed 9.80 pounds per hour maximum allowable emission limit as determined from NAC 445B.22047 and the maximum allowable throughput as limited by E.3.b. of this section.
(xii) NAC 445B.22047 (Federally Enforceable SIP Requirement) - The discharge of Sulfur to the atmosphere will not exceed 7.38 pounds per hour maximum allowable emission limit as determined from NAC 445B.22047 and the maximum allowable throughput as limited by E.3.c. of this section.
(xiii) NAC 445B.22017 (Federally Enforceable SIP Requirement) - The opacity from the exhaust stack of Baghouse (DC 210), will not equal or exceed 20% in accordance with NAC 445B.22017.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

CLASS I AIR QUALITY OPERATING PERMIT SPECIFIC OPERATING REQUIREMENTS

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

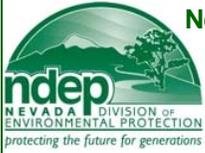
E. Emission Unit #(s): S2.017 - S2.022 (continued)

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters
 - a. The maximum allowable throughput rate of raw materials (limestone, clay, iron ore & slag, pozzolan, clinker, gypsum) for the system consisting of S2.017 - S2.021 will not exceed 33,065.0 tons per any one-hour period.
 - b. The maximum allowable heat input rate of natural gas for S2.022 will not exceed 14.0 MMBtu per any one-hour period, combusting a maximum of 13,462.0 cubic feet per hour of natural gas.
 - c. The maximum allowable fuel consumption rate of #2 fuel oil for S2.022 will not exceed 75.29 gallons per any one-hour period.
 - d. S2.022 will combust pipeline quality natural gas as the primary fuel only.
 - e. S2.022 will combust #2 fuel oil as the secondary fuel in the event of natural gas curtailment, or for economic reasons.
 - f. Hours
 - (i) S2.017 - S2.021 each, may operate 8,760 hours.
 - (ii) S2.022 may operate 8,760 hours, combusting pipeline quality natural gas.
 - (iii) S2.022 may operate 3,000 hours per 12-month rolling period, combusting #2 fuel oil.

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program
 - a. Monitoring, Recordkeeping, Reporting and Compliance

When **System 06** is in operation, the permittee shall:

 - (i) Monitor and record the throughput rate for the system consisting of S2.017 - S2.021 on a daily basis.
 - (ii) Monitor and record the fuel consumption rate of natural gas for S2.022 on a daily basis.
 - (iii) Monitor and record the fuel consumption rate of #2 fuel oil for S2.022 on a daily basis.
 - (iv) Monitor and record the hours of operation for the system consisting of S2.017 - S2.022 on a daily basis.
 - (v) Monitor and record the throughput rate for the system consisting of S2.017 - S2.021 on a cumulative monthly basis, for each 12-month rolling period.
 - (vi) Monitor and record the fuel consumption rate of natural gas for S2.022 on a cumulative monthly basis, for each 12-month rolling period.
 - (vii) Monitor and record the fuel consumption rate of #2 fuel oil for S2.022 on a cumulative monthly basis, for each 12-month rolling period.
 - (viii) Conduct a weekly observation of the **Baghouse (DC 210)** and verify that the **Baghouse (DC 210)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 210)**. Record and verify that any maintenance work on the **Baghouse (DC 210)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
 - (ix) Conduct and record a weekly visible emission inspection of the **Baghouse (DC 210)**; record the time of the survey and indicate whether any visible emission was observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.
 - (x) The required monitoring established in (i) through (ix) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for the system consisting of S2.017 - S2.021 in tons, for the corresponding date.
 - (c) The total daily fuel consumption rate of natural gas for S2.022 in cubic feet, for the corresponding date.
 - (d) The total daily fuel consumption rate of #2 fuel oil for S2.022 in gallons, for the corresponding date.
 - (e) The total daily hours of operation for the system consisting of S2.017 - S2.022 for the corresponding date.
 - (f) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (e) above.
 - (g) The corresponding average hourly fuel consumption rate of natural gas in cubic feet per hour. The average hourly fuel consumption rate will be determined from the daily fuel consumption rate and the total daily hours of operation recorded in (c) and (e) above.
 - (h) The corresponding average hourly fuel consumption rate of #2 fuel oil in gallons per hour. The average hourly fuel consumption rate will be determined from the daily fuel consumption rate and the total daily hours of operation recorded in (d) and (e) above.
 - (i) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (j) The cumulative monthly fuel consumption rate of natural gas in cubic feet, for each 12-month rolling period.
 - (k) The cumulative monthly fuel consumption rate of #2 fuel oil in gallons for each 12-month rolling period.
 - (l) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 210)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 210)** used for control of emissions.
 - (m) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

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**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

E. Emission Unit #(s): S2.017 - S2.022 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program (continued)

b. Performance/Compliance Testing (NAC 445B.252.1)

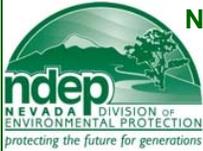
At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 210)**:

- (i) Method 5 (that includes the back-half catch) in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
- (ii) Methods 201A and 202 tests for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
- (iii) Methods 201A and 202 tests required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **E.2.a.(i)** of this section.
- (iv) A Method 7E compliance test for NO_x, Method 10 compliance test for CO, Method 6C compliance test for SO₂, and Methods 25 or 25A compliance tests for VOC in accordance with 40 CFR Part 60, Appendix A (or an alternative EPA reference method approved by the director).
- (v) A Method 29 compliance test for metallic hazardous air pollutants (HAPs) in accordance with 40 CFR Part 60, Appendix A (or an alternative EPA reference method approved by the director).
- (vi) Methods 320 or 321 compliance test for hydrogen chloride (HCl) and Method 320 (or Method 18 of Appendix A to 40 CFR Part 60) compliance test for specific organic HAPs in accordance with 40 CFR Part 63, Appendix A.
- (vii) For the purposes of demonstrating compliance with the opacity standard established in **E.2.a.(xiii)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
- (viii) Performance/compliance tests required under **E.4.b.** of this section that are conducted below the maximum allowable throughput/fuel consumption rate, as established in **E.3.a., E.3.b. and E.3.c.** of this section, shall be subject to the director's review to determine if the throughputs/fuel consumption rates during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
- (ix) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.

5. NAC 445B.3405 (NAC 445B.316) Part 70 Program

Shielded Requirements

- a. No shielded requirements are specified.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

K. Emission Unit #(s): **S2.043 - S2.049**, location North 4,387.892 km, East 305.854 km, UTM (Zone 11)

System 11 – #1 Finish Mill Operations

S	2.043	Conveyor 504 transfer to #1 Finish Mill 505 <u>or Airslide 207-11 transfer to #1 Finish Mill 505</u>
S	2.044	#1 Finish Mill 505
S	2.045	Air Slide 506 transfer to Bucket Elevator 507
S	2.046	Bucket Elevator 507 transfer to Air Separator 509
S	2.047	Air Separator 509 transfer to Air Slide 519-1
S	2.048	Air Slide 519-1 to Air Slide 519-2 and transfer to FK Pump 512
S	2.049	Dust Collector 510 transfer to FK Pump 512

1. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Air Pollution Control Equipments

a. Emissions from **S2.043 - S2.049** each shall be ducted to a control system consisting of a **Baghouse (DC 510)** with 100% capture and a maximum volume flow rate of **18,180** actual cubic feet per minute (acfm). The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A.

Stack Height (feet from ground level): 65
Stack Inside Diameter (feet): 2
Stack Temperature (°F): 160
Stack Exit Velocity (ft/sec): 96.45

b. Emissions from **516** (Feeder Section Dust Collector & Fan) are discharged back onto the feeder belt and 100% captured by the **Baghouse (DC 510)**.

2. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Emission Limits

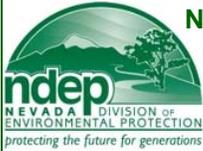
a. On and after the date of startup of **S2.043 - S2.049**, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse (DC 510)**, the following pollutants in excess of the following specified limits:

- (i) NAC 445B.305 Part 70 Program - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **3.12** pounds per hour, nor more than **13.65** tons per 12-month rolling period.
- (ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed **3.12** pounds per hour, nor more than **13.65** tons per 12-month rolling period.
- (iii) NAC 445B.22033 (*Federally Enforceable SIP Requirement*) - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **40.80** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by **K.3.a.** of this section.
- (iv) NAC 445B.22017 (*Federally Enforceable SIP Requirement*) - The opacity from the exhaust stack of **Baghouse (DC 510)** will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters

a. The maximum allowable throughput rate of finished product (portland cement and Class N Pozzolan) for the system consisting of **S2.043 - S2.049** will not exceed **33.0** tons per any one-hour period.

b. Hours
(i) **S2.043 - S2.049** each, may operate **8,760** hours.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

L. Emission Unit #(s): S2.050 - S2.054, location North 4,387.882 km, East 305.8807 km, UTM (Zone 11)

Table with 2 columns: System ID and Description. System 12A - #2 Raw Mill System - Used as a Finish Mill. Includes units S 2.050 through S 2.054 with descriptions of equipment and fuel types.

- 1. NAC 445B.3405 (NAC 445B.316) Part 70 Program Air Pollution Control Equipments
a. Emissions from S2.050 - S2.054 each shall be ducted to a control system consisting of a Baghouse (DC 1914) with 100% capture and a maximum volume flow rate of 36,331 actual cubic feet per minute (acfm).
Stack Height (feet from ground level): 44
Stack Inside Diameter (feet): 2.3
Stack Temperature (°F): 180
Stack Exit Velocity (ft/sec): 145.74
b. Emissions from 1914-1 (Dust Collector & Fan) are discharged into the bucket elevator 1908 and 100% captured by the Baghouse (DC 1914).
2. NAC 445B.3405 (NAC 445B.316) Part 70 Program Emission Limits
a. On and after the date of startup of S2.050 - S2.054, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack Baghouse (DC 1914), the following pollutants in excess of the following specified limits:
(i) NAC 445B.305 Part 70 Program - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 4.00 pounds per hour, nor more than 17.52 tons per 12-month rolling period.
(ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed 4.00 pounds per hour, nor more than 17.52 tons per 12-month rolling period.
(iii) NAC 445B.305 Part 70 Program - The discharge of NOx (nitrogen oxides) to the atmosphere will not exceed 1.91 pounds per hour, nor more than 8.38 tons per 12-month rolling period.
(iv) NAC 445B.305 Part 70 Program - The discharge of CO (carbon monoxide) to the atmosphere will not exceed 1.13 pound per hour, nor more than 3.74 tons per 12-month rolling period.
(v) NAC 445B.305 Part 70 Program - The discharge of SO2 (sulfur dioxide) to the atmosphere will not exceed 0.46 pound per hour, nor more than 0.72 ton per 12-month rolling period.
(vi) NAC 445B.305 Part 70 Program - The discharge of Sulfur to the atmosphere will not exceed 0.23 pound per hour, nor more than 0.36 ton per 12-month rolling period.
(vii) NAC 445B.305 Part 70 Program - The discharge of VOC (volatile organic compounds) to the atmosphere will not exceed 0.50 pound per hour, nor more than 2.19 tons per 12-month rolling period.
(viii) NAC 445B.22033 (Federally Enforceable SIP Requirement) - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 42.53 pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by L.3.a. of this section.
(ix) NAC 445B.2203 (Federally Enforceable SIP Requirement) - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 0.55 pounds per MMBtu maximum allowable emission limit as determined from NAC 445B.2203 and the maximum allowable throughput as limited by L.3.b. of this section.
(vii) NAC 445B.2203 (Federally Enforceable SIP Requirement) - The discharge of PM10 (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed 0.61 pounds per MMBtu maximum allowable emission limit as determined from NAC 445B.2203 and the maximum allowable throughput as limited by L.3.c. of this section.
(viii) NAC 445B.22047 (Federally Enforceable SIP Requirement) - The discharge of Sulfur to the atmosphere will not exceed 9.80 pounds per hour maximum allowable emission limit as determined from NAC 445B.22047 and the maximum allowable throughput as limited by L.3.b. of this section.
(ix) NAC 445B.22047 (Federally Enforceable SIP Requirement) - The discharge of Sulfur to the atmosphere will not exceed 6.34 pounds per hour maximum allowable emission limit as determined from NAC 445B.22047 and the maximum allowable throughput as limited by L.3.c. of this section.
(x) NAC 445B.22017 (Federally Enforceable SIP Requirement) - The opacity from the exhaust stack of Baghouse (DC 1914), will not equal or exceed 20% in accordance with NAC 445B.22017.



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**CLASS I AIR QUALITY OPERATING PERMIT
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Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

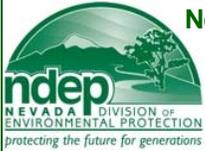
L. Emission Unit #(s): S2.050 - S2.054 (continued)

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program Operating Parameters
 - a. The maximum allowable throughput rate of raw materials (limestone, clay, iron ore & slag, clinker, gypsum, pozzolan) for the system consisting of **S2.050 - S2.053** will not exceed **40.0** tons per any one-hour period.
 - b. The maximum allowable heat input rate of natural gas for **S2.054** will not exceed **14.0 MMBtu** per any one-hour period, combusting a maximum of **13,462.0** cubic feet per hour of natural gas.
 - c. The maximum allowable fuel consumption rate of #2 fuel oil for **S2.054** will not exceed **64.71** gallons per any one-hour period.
 - d. **S2.054** will combust pipeline quality natural gas as the primary fuel only.
 - e. **S2.054** will combust #2 fuel oil as the secondary fuel in the event of natural gas curtailment, or for economic reasons.
 - f. Hours
 - (i) **S2.050 - S2.053** each, may operate **8,760** hours.
 - (ii) **S2.054** may operate **8,760** hours, combusting pipeline quality natural gas.
 - (iii) **S2.054** may operate **3,000** hours per 12-month rolling period, combusting #2 fuel oil.

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program
 - a. Monitoring, Recordkeeping and Compliance

When **System 12** is in operation, the permittee shall:

 - (i) Monitor and record the throughput rate for the system consisting of **S2.050 – S2.053** on a daily basis.
 - (ii) Monitor and record the fuel consumption rate of natural gas for **S2.054** on a daily basis.
 - (iii) Monitor and record the fuel consumption rate of #2 fuel oil for **S2.054** on a daily basis.
 - (iv) Monitor and record the hours of operation for the system consisting of **S2.050 - S2.054** each, on a daily basis.
 - (v) Monitor and record the throughput rate for the system consisting of **S2.050 – S2.053** on a cumulative monthly basis, for each 12-month rolling period.
 - (vi) Monitor and record the fuel consumption rate for **S2.054** on a cumulative monthly basis, for each 12-month rolling period.
 - (vii) Monitor and record the fuel consumption rate of #2 fuel oil for **S2.054** on a cumulative monthly basis, for each 12-month rolling period.
 - (viii) Conduct a weekly observation of the **Baghouse (DC 1914)** and verify that the **Baghouse (DC 1914)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 1914)**. Record and verify that any maintenance work on the **Baghouse (DC 1914)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
 - (ix) Conduct and record a weekly visible emission inspection of the **Baghouse (DC 1914)**; record the time of the survey and indicate whether any visible emission was observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.
 - (x) The required monitoring established in (i) through (ix) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for the system consisting of **S2.050 – S2.053** in tons, for the corresponding date.
 - (c) The total daily fuel consumption rate for **S2.054** in cubic feet, for the corresponding date.
 - (d) The total daily fuel consumption rate of #2 fuel oil for **S2.054** in gallons for the corresponding date.
 - (e) The total daily hours of operation for the system consisting of **S2.050 – S2.054** each, for the corresponding date.
 - (f) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (e) above.
 - (g) The corresponding average hourly fuel consumption rate of natural gas in cubic feet per hour. The average hourly fuel consumption rate will be determined from the daily fuel consumption rate and the total daily hours of operation recorded in (c) and (e) above.
 - (h) The corresponding average hourly fuel consumption rate of #2 fuel oil in gallons per hour. The average hourly fuel consumption rate will be determined from the daily fuel consumption rate and the total daily hours of operation recorded in (d) and (e) above.
 - (i) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (j) The cumulative monthly fuel consumption rate of natural gas in cubic feet, for each 12-month rolling period.
 - (k) The cumulative monthly fuel consumption rate of #2 fuel oil in gallons for each 12-month rolling period.
 - (l) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 1914)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 1914)** used for control of emissions.
 - (m) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.



BUREAU OF AIR POLLUTION CONTROL

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Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
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Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

L. Emission Unit #(s): S2.050 - S2.054 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program (continued)

b. Performance/Compliance Testing (NAC 445B.252.1)

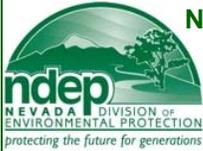
At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 1914)**:

- (i) Method 5 (that includes the back-half catch) in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
- (ii) Methods 201A and 202 tests for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
- (iii) Methods 201A and 202 tests required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **L.2.a.(i)** of this section.
- (iv) A Method 7E compliance test for NO_x, Method 10 compliance test for CO, Method 6C compliance test for SO₂, and Methods 25 or 25A compliance tests for VOC in accordance with 40 CFR Part 60, Appendix A (or an alternative EPA reference method approved by the director).
- (v) A Method 29 compliance test for metallic hazardous air pollutants (HAPs) in accordance with 40 CFR Part 60, Appendix A (or an alternative EPA reference method approved by the director).
- (vi) Methods 320 or 321 compliance test for hydrogen chloride (HCl) and Method 320 (or Method 18 of Appendix A to 40 CFR Part 60) compliance test for specific organic HAPs in accordance with 40 CFR Part 63, Appendix A.
- (vii) For the purposes of demonstrating compliance with the opacity standard established in **L.2.a.(xiii)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
- (viii) Performance/compliance tests required under **L.4.b.** of this section that are conducted below the maximum allowable throughput/fuel consumption rate, as established in **L.3.a.**, **L.3.b.** and **L.3.c.** of this section, shall be subject to the director's review to determine if the throughputs/fuel consumption rates during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
- (ix) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.

5. NAC 445B.3405 (NAC 445B.316) Part 70 Program

Shielded Requirements

- a. No shielded requirements are specified.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

M. Emission Unit #(s): **S2.055**, location North 4,387.882 km, East 305.8807 km, UTM (Zone 11)

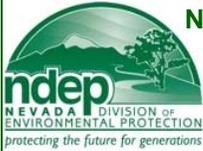
System 13 – #2 Raw Mill		
S	2.055	#2 Raw Mill 1911

1. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Air Pollution Control Equipments
 - a. Emissions from **S2.055** shall be ducted to a control system consisting of a **Baghouse (DC 1914-2)** with 100% capture and a maximum volume flow rate of **16,956** actual cubic feet per minute (acfm). The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A.

Stack Height (feet from ground level): 29.9
Stack Inside Diameter (feet): 2.3
Stack Temperature (°F): 180
Stack Exit Velocity (ft/sec): 68

2. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Emission Limits
 - a. On and after the date of startup of **S2.055**, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse (DC 1914-2)**, the following pollutants in excess of the following specified limits:
 - (i) NAC 445B.305 Part 70 Program - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **3.00** pounds per hour, nor more than **13.14** tons per 12-month rolling period.
 - (ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed **3.00** pounds per hour, nor more than **13.14** tons per 12-month rolling period.
 - (iii) NAC 445B.22033 (*Federally Enforceable SIP Requirement*) - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **42.53** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by **M.3.a.** of this section.
 - (iv) NAC 445B.22017 (*Federally Enforceable SIP Requirement*) - The opacity from the exhaust stack of **Baghouse (DC 1914-2)** will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters
 - a. The maximum allowable throughput rate of raw materials (limestone, clay, iron ore & slag, clinker, gypsum, pozzolan) for **S2.055** will not exceed **40.0** tons per any one-hour period.
 - b. Hours
 - (i) **S2.055** may operate **8,760** hours.



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**CLASS I AIR QUALITY OPERATING PERMIT
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Section VI. Specific Operating Conditions (continued)

M. Emission Unit #(s): S2.055 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program

a. Monitoring, Recordkeeping and Compliance

When **System 13** is in operation, the permittee shall:

- (i) Monitor and record the throughput rate for **S2.055** on a daily basis.
- (ii) Monitor and record the hours of operation for **S2.055** on a daily basis.
- (iii) Monitor and record the throughput rate for **S2.055** on a cumulative monthly basis, for each 12-month rolling period.
- (iv) Conduct a weekly observation of the **Baghouse (DC 1914-2)** and verify that the **Baghouse (DC 1914-2)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 1914-2)**. Record and verify that any maintenance work on the **Baghouse (DC 1914-2)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
- (v) Conduct and record a weekly visible emission inspection of the **Baghouse (DC 1914-2)**; record the time of the survey and indicate whether any visible emission was observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.
- (vi) The required monitoring established in (i) through (v) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for **S2.055** in tons, for the corresponding date.
 - (c) The total daily hours of operation for the corresponding date.
 - (d) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (c) above.
 - (e) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (f) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 1914-2)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 1914-2)** used for control of emissions.
 - (g) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.

b. Performance/Compliance Testing (NAC 445B.252.1)

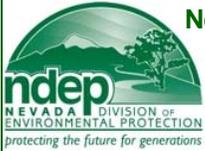
At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 1914-2)**:

- (i) Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
- (ii) A Method 201A test for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
- (ii) The Method 201A test required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **M.2.a.(i)** of this section.
- (iii) For the purposes of demonstrating compliance with the opacity standard established in **M.2.a.(iv)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
- (iv) Performance/compliance tests required under **M.4.b.** of this section that are conducted below the maximum allowable throughput, as established in **M.3.a.** of this section, shall be subject to the director's review to determine if the throughputs/fuel consumption rates during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
- (vi) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.

5. NAC 445B.3405 (NAC 445B.316) Part 70 Program

Shielded Requirements

- a. No shielded requirements are specified.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

V. Emission Unit #(s): **S2.086 - S2.093**, location North 4,387.820 km, East 305.767 km, UTM (Zone 11)

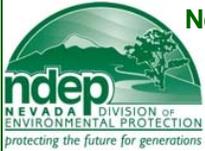
System 21 – Cement Bulk Loading	
S	2.086 Silo transfers to Air Slides
S	2.087 Air Slides transfer to Bucket Elevator 613
S	2.088 Bucket Elevator 613 to Air Slides 609-4 & 701-1
S	2.089 Air Slides transfer to Loading Spout 627
S	2.090 Silo transfers to North Rail Storage Bin 624
S	2.091 North Rail Bin transfers to Spout 627
S	2.092 #1 Finish Mill Pump 512 transfer into Silos
S	2.093 #2 & 3 Finish Mills Pump 2212 transfer into Silos

1. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Air Pollution Control Equipments
 - a. Emissions from **S2.086 - S2.093** each shall be ducted to a control system consisting of a **Baghouse (DC 618)** with 100% capture and a maximum volume flow rate of **12,360** actual cubic feet per minute (acfm). The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A.

Stack Height (feet from ground level): 111.9
Stack Inside Diameter (feet): 1.78
Stack Temperature (°F): 125
Stack Exit Velocity (ft/sec): 82.78

2. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Emission Limits
 - a. On and after the date of startup of **S2.086 - S2.093**, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse (DC 618)**, the following pollutants in excess of the following specified limits:
 - (i) NAC 445B.305 Part 70 Program - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **2.12** pounds per hour, nor more than **9.28** tons per 12-month rolling period.
 - (ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed **2.12** pounds per hour, nor more than **9.28** tons per 12-month rolling period.
 - (iii) NAC 445B.22033 (*Federally Enforceable SIP Requirement*) - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **57.84** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by **V.3.a.** of this section.
 - (iv) NAC 445B.22017 (*Federally Enforceable SIP Requirement*) - The opacity from the exhaust stack of **Baghouse (DC 618)** will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters
 - a. The maximum allowable throughput rate of portland cement and pozzolan for the system consisting of **S2.086 - S2.093** will not exceed **187.9** tons per any one-hour period.
 - b. Hours
 - (i) **S2.086 - S2.093** each, may operate **8,760** hours.



BUREAU OF AIR POLLUTION CONTROL

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**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

V. Emission Unit #(s): S2.086 - S2.093 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program

a. Monitoring, Recordkeeping and Compliance

When **System 21** is in operation, the permittee shall:

- (i) Monitor and record the throughput rate for the system consisting of **S2.086 - S2.093** on a daily basis.
- (ii) Monitor and record the hours of operation for the system consisting of **S2.086 - S2.093** on a daily basis.
- (iii) Monitor and record the throughput rate for the system consisting of **S2.086 - S2.093** on a cumulative monthly basis, for each 12-month rolling period.
- (iv) Conduct a weekly observation of the **Baghouse (DC 618)** and verify that the **Baghouse (DC 618)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 618)**. Record and verify that any maintenance work on the **Baghouse (DC 618)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
- (v) Conduct and record a weekly visible emission inspection of the **Baghouse (DC 618)**; record the time of the survey and indicate whether any visible emission was observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.
- (vi) The required monitoring established in (i) through (v) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for the system consisting of **S2.086 - S2.093** in tons, for the corresponding date.
 - (c) The total daily hours of operation for the corresponding date.
 - (d) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (c) above.
 - (e) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (f) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 618)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 618)** used for control of emissions.
 - (g) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.

b. Performance/Compliance Testing (NAC 445B.252.1)

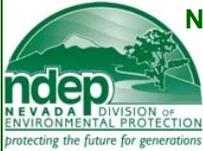
At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 618)**:

- (i) Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
- (ii) A Method 201A test for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
- (iii) The Method 201A test required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **V.2.a.(i)** of this section.
- (iv) For the purposes of demonstrating compliance with the opacity standard established in **V.2.a.(iv)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
- (v) Performance/compliance tests required under **V.4.b.** of this section that are conducted below the maximum allowable throughput, as established in **V.3.a.** of this section, shall be subject to the director's review to determine if the throughputs during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
- (vi) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.

5. NAC 445B.3405 (NAC 445B.316) Part 70 Program

Shielded Requirements

- a. No shielded requirements are specified.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

AD. Emission Unit #(s): **S2.104 - S2.105**, location North 4,387.802 km, East 305.756 km, UTM (Zone 11)

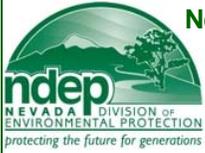
System 25(b) – Rail Unloading/Transfer		
S	2.104	Rail Transfer 634-8 to South Storage Bin 625
S	2.105	Silo #7 Transfer to South Storage Bin 625

1. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Air Pollution Control Equipments
 - a. Emissions from **S2.104 - S2.105** each shall be ducted to a control system consisting of a **Baghouse (DC 611)** with 100% capture and a maximum volume flow rate of **2,000** actual cubic feet per minute (acfm). The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A.

Stack Height (feet from ground level): 60
Stack Inside Diameter (feet): 0.94
Stack Temperature (°F): Ambient
Stack Exit Velocity (ft/sec): 48.03

2. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Emission Limits
 - a. On and after the date of startup of **S2.104 - S2.105**, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse (DC 611)**, the following pollutants in excess of the following specified limits:
 - (i) NAC 445B.305 Part 70 Program - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.41** pounds per hour, nor more than **1.80** tons per 12-month rolling period.
 - (ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed **0.41** pounds per hour, nor more than **1.80** tons per 12-month rolling period.
 - (iii) NAC 445B.22033 (*Federally Enforceable SIP Requirement*) - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **51.28** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by **AD.3.a.** of this section.
 - (iv) NAC 445B.22017 (*Federally Enforceable SIP Requirement*) - The opacity from the exhaust stack of **Baghouse (DC 611)** will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters
 - a. The maximum allowable throughput rate of materials (portland cement, fly ash, pozzolan) for the system consisting of **S2.104 - S2.105** will not exceed **100.0** tons per any one-hour period.
 - b. Hours
 - (i) **S2.104 - S2.105** each, may operate **8,760** hours.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

AD. Emission Unit #(s): S2.104 - S2.105 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program

a. Monitoring, Recordkeeping and Compliance

When **System 25(b)** is in operation, the permittee shall:

- (i) Monitor and record the throughput rate for the system consisting of **S2.104 - S2.105** on a daily basis.
- (ii) Monitor and record the hours of operation for the system consisting of **S2.104 - S2.105** on a daily basis.
- (iii) Monitor and record the throughput rate for the system consisting of **S2.104 - S2.105** on a cumulative monthly basis, for each 12-month rolling period.
- (iv) Conduct a weekly observation of the **Baghouse (DC 611)** and verify that the **Baghouse (DC 611)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 611)**. Record and verify that any maintenance work on the **Baghouse (DC 611)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
- (v) Conduct and record a weekly visible emission inspection of the **Baghouse (DC 611)**; record the time of the survey and indicate whether any visible emission was observed. If any visible emissions are observed, conduct and record a Method 9 visible emissions test within 24 hours and perform any necessary corrective actions. The Method 9 visible emissions test must be conducted by a certified visible emissions reader in accordance with 40 CFR Part 60, Appendix A, Method 9.
- (vi) The required monitoring established in (i) through (v) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for the system consisting of **S2.104 - S2.105** in tons, for the corresponding date.
 - (c) The total daily hours of operation for the corresponding date.
 - (d) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (c) above.
 - (e) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (f) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 611)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 611)** used for control of emissions.
 - (g) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.

b. Performance/Compliance Testing (NAC 445B.252.1)

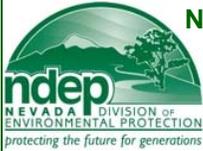
At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 611)**:

- (i) Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
- (ii) A Method 201A test for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
- (iii) The Method 201A test required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **AD.2.a.(i)** of this section.
- (iv) For the purposes of demonstrating compliance with the opacity standard established in **AD.2.a.(iv)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
- (v) Performance/compliance tests required under **AD.4.b.** of this section that are conducted below the maximum allowable throughput, as established in **AD.3.a.** of this section, shall be subject to the director's review to determine if the throughputs during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
- (vi) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.

5. NAC 445B.3405 (NAC 445B.316) Part 70 Program

Shielded Requirements

- a. No shielded requirements are specified.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

AE. Emission Unit #(s): S2.106, location North 4,387.8067 km, East 305.7474 km, UTM (Zone 11)

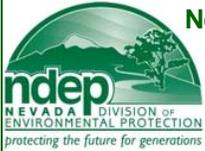
System 26 – Fly Ash Bulk Loading		
S	2.106	South Storage Bin 625 transfer to Air Slide 609-4 and Loading Spout 610

1. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Air Pollution Control Equipments
 - a. Emissions from **S2.106** shall be ducted to a control system consisting of a **Baghouse (DC 612)** with 100% capture and a maximum volume flow rate of **3,000** actual cubic feet per minute (acfm). The volumetric flow rate may be determined by utilizing Method 2 - *Determination of Stack Gas Velocity and Volumetric Flow Rate* as referenced in 40 CFR Part 60, Appendix A. The **Baghouse (DC 612)** is located inside the load-out building.

Stack Height (feet from ground level): 50
Stack Inside Diameter (feet): 0.94
Stack Temperature (°F): Ambient
Stack Exit Velocity (ft/sec): 72.05

2. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Emission Limits
 - a. On and after the date of startup of **S2.106**, Permittee will not discharge or cause the discharge into the atmosphere from the exhaust stack of **Baghouse (DC 612)**, the following pollutants in excess of the following specified limits:
 - (i) NAC 445B.305 Part 70 Program - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **0.308** pounds per hour, nor more than **1.35** tons per 12-month rolling period.
 - (ii) NAC 445B.305 Part 70 Program - The discharge of PM (particulate matter) to the atmosphere will not exceed **0.308** pounds per hour, nor more than **1.35** tons per 12-month rolling period.
 - (iii) NAC 445B.22033 (*Federally Enforceable SIP Requirement*) - The discharge of PM₁₀ (particulate matter less than 10 microns in diameter) to the atmosphere will not exceed **51.28** pounds per hour maximum allowable emission limit as determined from NAC 445B.22033 and the maximum allowable throughput as limited by **AE.3.a.** of this section.
 - (iv) NAC 445B.22017 (*Federally Enforceable SIP Requirement*) - The opacity from the exhaust stack of **Baghouse (DC 612)** will not equal or exceed 20% in accordance with NAC 445B.22017.

3. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Operating Parameters
 - a. The maximum allowable throughput rate of materials (portland cement, fly ash, pozzolan) for **S2.106** will not exceed **100.0** tons per any one-hour period.
 - b. Hours
 - (i) **S2.106** may operate **8,760** hours.



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**CLASS I AIR QUALITY OPERATING PERMIT
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Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

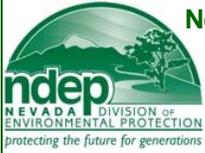
AE. Emission Unit #(s): S2.106 (continued)

4. NAC 445B.3405 (NAC 445B.316) *Part 70 Program*

a. Monitoring, Recordkeeping and Compliance

When **System 26** is in operation, the permittee shall:

- (i) Monitor and record the throughput rate for **S2.106** on a daily basis.
- (ii) Monitor and record the hours of operation for **S2.106** on a daily basis.
- (iii) Monitor and record the throughput rate for **S2.106** on a cumulative monthly basis, for each 12-month rolling period.
- (iv) Conduct a weekly observation of the **Baghouse (DC 612)** and verify that the **Baghouse (DC 612)** is operating normally; record the time of observation and indicate the status of the **Baghouse (DC 612)**. Record and verify that any maintenance work on the **Baghouse (DC 612)** is done in accordance with the O&M (Operation & Procedural Maintenance) Plan as submitted on February 19, 2009. The O&M Plan needs to be updated every five (5) years to incorporate any physical changes, etc.
- (v) Conduct and record a visible emissions reading on each exit of the load-out building (including but not limited to doors, windows, vents, chimney's, etc.) on a weekly basis. Visible emissions readings will use the procedures contained in 40 CFR Part 60, Appendix A, Method 9. The visible emissions reading must be conducted by a certified visible emissions reader for a period of 6 minutes and must be made while these emission units are operating and have the potential to create visible emissions. The Method 9 visible emissions reading requirement can be waived for each exit of the building enclosure (including but not limited to doors, windows, vents, chimney's, etc.) providing the following conditions are met.
 - (a) A survey of each exit of the building enclosure (including but not limited to doors, windows, vents, chimney's, etc.) must be made in accordance with the procedures contained in 40 CFR Part 60, Appendix A, Method 22. The survey will be conducted for a minimum of 6 minutes.
 - (b) If the survey detects visible emissions, excluding condensed water vapor, for more than 18 seconds of the survey time, a Method 9 visible emission reading must be conducted by a certified visible emissions reader within 1 hour of the initial survey.
 - (c) The results of the survey including date and time, and any corrective action taken (including the result of any further Method 9 visible emission reading) will be recorded in a contemporaneous log.
- (vi) The required monitoring established in (i) through (v) above, will be maintained in a contemporaneous log containing at a minimum, the following recordkeeping:
 - (a) The calendar date of any required monitoring.
 - (b) The total daily throughput rate for **S2.106** in tons, for the corresponding date.
 - (c) The total daily hours of operation for the corresponding date.
 - (d) The corresponding average hourly throughput rate in tons per hour. The average hourly throughput rate will be determined from the daily throughput rate and the total daily hours of operation recorded in (b) and (c) above.
 - (e) The cumulative monthly throughput rate in tons, for each 12-month rolling period.
 - (f) The results and verification of the weekly observations and the implementation and proper use of the **Baghouse (DC 612)**, and any corrective actions taken to maintain implementation and proper use of the **Baghouse (DC 612)** used for control of emissions.
 - (g) The results and verification of the weekly visible emissions survey, and documentation of any Method 9 visible emission tests that were undertaken, including all documents require under 40 CFR Part 60, Appendix A.



BUREAU OF AIR POLLUTION CONTROL

Facility ID No. A0030

Permit No. AP3241-0387.02

**CLASS I AIR QUALITY OPERATING PERMIT
SPECIFIC OPERATING REQUIREMENTS**

Issued to: Nevada Cement Company, as Permittee

Section VI. Specific Operating Conditions (continued)

AE. Emission Unit #(s): S2.106 (continued)

4. NAC 445B.3405 (NAC 445B.316) Part 70 Program (continued)
 - b. Performance/Compliance Testing (NAC 445B.252.1)

At least 90 days prior to the date of expiration of this permit, but no earlier than 365 days from the date of expiration of this permit, Permittee will conduct and record the following performance/compliance tests on the exhaust stack of the **Baghouse (DC 612)**:

 - (i) Method 5 in Appendix A of 40 CFR Part 60 shall be used to determine the particulate matter concentration. The sample volume for each test run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250°F)) in order to prevent water condensation on the filter.
 - (ii) A Method 201A test for PM₁₀ in accordance with 40 CFR Part 51, Appendix M (or an alternative EPA reference method approved by the director).
 - (iii) The Method 201A test required in this section may be replaced by a Method 5 test that includes the back-half catch. All particulate captured in the Method 5 tests with back-half catch performed under this provision shall be considered PM₁₀ emissions for determination of compliance with the emission limitations established in **AE.2.a.(i)** of this section.
 - (iv) For the purposes of demonstrating compliance with the opacity standard established in **AE.2.a.(iv)** of this section, opacity observations shall be conducted concurrently with the performance test and in accordance with Reference Method 9 in Appendix A of 40 CFR Part 60. The minimum total time of observations shall be six minutes (24 consecutive observations recorded at 15-second intervals).
 - (v) Performance/compliance tests required under **AE.4.b.** of this section that are conducted below the maximum allowable throughput, as established in **AE.3.a.** of this section, shall be subject to the director's review to determine if the throughputs during the performance/compliance tests were sufficient to provide adequate compliance demonstration. Should the director determine that the performance/compliance tests do not provide adequate compliance demonstration, the director may require additional performance testing.
 - (vi) Permittee shall comply with the requirements of Section I.U.3 through I.U.8 and Section I.V.3 through I.V.8 for all performance testing.
5. NAC 445B.3405 (NAC 445B.316) Part 70 Program
Shielded Requirements
 - a. No shielded requirements are specified.

Appendix 11

Application Certification

Appendix 11

APPLICATION CERTIFICATION

Please complete the certification checklist for all forms and information provided in your application submittal. The responsible official must sign and date the application certification found in Appendix 9. *If the application is signed by a person other than the responsible official, as defined in NAC 445B.156, the application will be returned as incomplete.*

Note: According to NAC 445B.156, **Responsible Official** means:

1. For a corporation:
 - (a) A president;
 - (b) A vice president in charge of a principal business function;
 - (c) A secretary;
 - (d) A treasurer; or
 - (e) An authorized representative of such a person who is responsible for the overall operation of the facility and who is designated in writing by the officer of the corporation and approved in advance by the director.
2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
3. For a municipality or a state, federal or other public agency: a ranking elected official or a principal executive officer, including, for a federal agency, a chief executive officer who has responsibility for the overall operations of a principal geographic unit of the agency.
4. For an affected source: the designated representative or his alternate, as defined in 42 U.S. C. § 7651 a (26).

APPLICATION CERTIFICATION

Certification of application content consisting of the following:

(Please check each of the appropriate boxes to indicate the information provided in your application submittal)

General Company Information

General Company Information Form

Emission Unit Application Forms (Appendix 1)

Industrial Process Application Form(s)

Combustion Equipment Application Form(s) **Not Applicable – No Change for Option 6A, 6B or 12A**

Storage Silos Application Form(s)

Liquid Storage Tank Application Form(s) **Not Applicable – No Change for Option 6A, 6B or 12A**

Surface Area Disturbance Form(s) **Not Applicable – No Change for Option 6A, 6B or 12A**

Insignificant Emissions Unit Information (Appendix 2)

Insignificant Emissions Unit Information Form(s) **Not Applicable – No Change for Option 6A, 6B or 12A**

Facility-Wide Applicable Requirements (Appendix 3)

Table 1 - Facility-Wide Applicable Requirements **Not Applicable – No Change for Option 6A, 6B or 12A**

Streamlining and Shield Allowance (Appendix 4)

Streamlining Demonstration **Not Applicable – No Change for Option 6A, 6B or 12A**

Facility-Wide Potential To Emit Tables (Appendix 5)

Table 1 - Facility-Wide Potential To Emit **Not Applicable – No Change for Option 6A, 6B or 12A**

Table 2 - Insignificant Activities Potential To Emit **Not Applicable – No Change for Option 6A, 6B or 12A**

Detailed Emissions Calculations (Appendix 6)

Detailed Emissions Calculations Provided

Emissions Cap Information (Appendix 7)

Emissions Cap Information Provided **Not Applicable – No Change for Option 6A, 6B or 12A**

Process Narrative, Process Flow Diagram, Plot Plan, Map, Dust Control Plan (Appendix 8)

Process Narrative Provided

Flow Diagram Provided

Plot Plan Provided **Not Applicable – No Change for Option 6A, 6B or 12A**

Map Provided **Not Applicable – No Change for Option 6A, 6B or 12A**

Dust Control Plan Provided **Not Applicable – No Change for Option 6A, 6B or 12A**

Dispersion Modelling Files (Appendix 9)

Dispersion Modeling Provided **Not Applicable – No Change for Option 6A, 6B or 12A**

Draft Operating Permit (Appendix 10)

Draft Operating Permit Provided

Application Certification (Appendix 11)

Application Certification

Additional Information Requested by the Director

Any Additional Information Required by the Director **Not Applicable**

PLEASE NOTE THE FOLLOWING REQUIREMENTS WHICH APPLY TO PERMIT APPLICANTS DURING THE APPLICATION PROCESS:

- A. A permit applicant must submit supplementary facts or corrected information upon discovery [NAC 445B.297.1(b)].
- B. A permit applicant is required to provide any additional information which the Director requests in writing within the time specified in the Director's request [NAC 445B.297.1(c)].
- C. Submission of fraudulent data or other information may result in prosecution for an alleged criminal offense (NRS 445B.470).

APPLICATION CERTIFICATION (continued)

CERTIFICATION: I certify that, based on information and belief formed after reasonable inquiry, the statements contained in this application are true, accurate and complete.

CERTIFICATION: I certify that the proposed modification complies with the criteria for a minor revision set forth in Section 14 of General Company Information of this application.

Signature of Responsible Official

Joseph Sells - President

Print or Type Name and Title

Date