

CLASS I-A APPLICATION REVIEW

FOR:

Graymont Western US Inc. – Pilot Peak Operations Area
North of Wendover, Nevada

Title V Facility-Wide Class 1 Operating Permit Application

Log Number 97AP0158



BY

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL

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1.0 INTRODUCTION

Pursuant to Nevada Administrative Code (NAC) 445B.295, existing major sources (e.g. sources that emit over 100 tons per year of non-fugitive criteria pollutants or 10 tons per year individual or 25 tons per year combined hazardous air pollutants) are required to submit applications for Class I Title V Air Quality Operating permits. In addition, contracted activities that support the primary activities of a major stationary source are also subject to the same requirements. The emissions from the support activities must also be included in the facility-wide emissions inventory and the emission units are required to have established permit limits and conditions.

On November 12, 1996, Continental Lime Inc. submitted an application to the Nevada Division of Environmental Protection, Bureau of Air Pollution Control (NDEP-BAPC), requesting a Class I Title V Air Quality Operating Permit. The application is for the Pilot Peak Operations Area, facility-wide Title V, Class 1 Air Quality Operating Permit, designated by NDEP-BAPC as AP3274-1329. (An administrative amendment application was submitted to the NDEP-BAQPC on September 18, 2000, requesting a name change to Graymont Western US Inc., hereinafter in this review, known as Graymont),

Graymont is located off of Interstate 80 (Pilot Peak Interchange); approximately 12.5 miles Northwest of West Wendover, Nevada. The facility's legal location is at Section 14, Township 34 North, Range 68 East (UTM coordinates – North 4,522.85 kilometers, East 734.42 kilometers); **Hydrographic Area 191**. This area is designated attainment for particulate matter and unclassified for all other criteria pollutants. The Standard Industrial Classification Code (SIC) for lime manufacturing is 3274.

PERMITTING HISTORY/CURRENT STATUS

Graymont currently operates a lime manufacturing facility, which includes a raw limestone quarry operation, and is currently permitted under Class I State issued Air Quality Operating Permit AP3274-0261. The existing facility operation has been previously permitted under the Prevention of Significant Deterioration regulations, 40 CFR Part 52.21, (the Pilot Peak plant commenced construction on November 4, 1988) and as such, has triggered the baseline date for Hydrographic Area 191-Pilot Peak Valley. (Graymont is categorized as a lime plant, and is one of the 28 source categories pursuant to PSD applicability, and thus is subject to the 100 ton per year threshold of criteria pollutants, and implementation of BACT control technology). The purpose of this technical review is to determine if the proposed facility-wide Title V, Class 1 Air Quality Operating Permit will not exceed the ambient air quality standards, PSD Class I area or Class II area increments, nor degrade the air quality related values in the area.

2.0 DESCRIPTION OF PROCESS

2.1 Limestone Quarry

The lime manufacturing process consists of a quarrying operation and a lime manufacturing operation. Limestone is mined from the on-site quarry through conventional drilling and blasting operations, and then loaded onto trucks for transport to the crushing circuit. The emissions generated from these operations are true-fugitive types (i.e. these emissions do not pass through a stack, chimney, vent or functionally equivalent opening), and are designated as F0.001 through F0.003. The limestone quarry drilling operation has an hourly process rate of 1,475 tons, and an operating schedule of 8,760 hours per year. The limestone quarry blasting operation uses ANFO as the blasting agent with a current ANFO annual usage of 750 tons per year; a rate of 1 blast per hour (also per day), and a blasting operations rate of 150 blasts per year. The limestone truck loading operation has an hourly process rate of 540 tons, and an operating schedule of 8,760 hours per year.

2.2 Limestone Crushing and Screening

Trucks deliver the run-of-mine limestone to a primary crusher hopper, which subsequently discharges the limestone onto the primary crusher. The primary crusher reduces the size of the limestone rock and then discharges the crushed limestone to a conveyor belt that feeds a sizing screen. The sizing screen separates surplus limestone and recycles it through various conveyors for additional crushing, or transfers the limestone to oversize and undersize stockpiles. Suitably sized limestone is conveyed to a radial stacker conveyor and transferred to a stockpile. Limestone is reclaimed from the stockpile via an underground reclaim system and then, it is passed over a stone dressing screen to remove any fines, which are in turn, conveyed to a fines stockpile. Oversize limestone is then conveyed to one of the three kiln feed bins. The limestone is then fed to one of the three kiln feed bins which meters the limestone into the associated kiln pre-heater and lime kiln.

2.0 DESCRIPTION OF PROCESS (Continued)

2.3 Kiln Circuits

As the limestone is introduced into each kiln, it is chemically altered by exposure to heat generated from the combustion of coal in the kiln. The following ideal chemical reaction describes the conversion process:



Once the limestone is calcined (converted to lime), the lime is cooled and conveyed to an associated bucket elevator for product storage and loadout. The Kiln # 2 Circuit includes a Cyclone Catch Bin for collection of cyclone dust associated with the kiln combustion process. This Cyclone Catch Bin has a small baghouse (D-282) installed as a pollutant control for loading of the cyclone dust into the bin.

Graymont Pilot Peak Operations Area currently operates three kiln circuits. Each of these kiln circuits undergoes several start-ups and shut-downs per year. Graymont has submitted information detailing the duration of start-up of each kiln circuit, as well as an operating and maintenance plan for baghouse controls, and are included in **Attachment (2)** of this review. Start-ups of each kiln circuit differ significantly, in terms of operating parameters and potential emissions, from the normal operation of each kiln circuit. This Title V operating permit for the Pilot Peak Operations Area will reflect both start-up duration and normal operations for each kiln circuit.

2.4 Product Lime Load-out

The associated bucket elevator discharges the lime to a product lime screen. Oversize lime is stored in a kiln run silo while undersize lime is transferred and stored in lime product bins for load-out. The oversize product lime temporarily stored in the kiln run silo is fed to a lime crusher to further reduce the size. The crushed lime is discharged to the bucket elevator for return to the product lime screen and eventually to product load-out.

2.5 Coal Transfer

Coal, used as the fuel-burning agent for the three kiln burners, is received by truck and discharged to a coal hopper. The coal is then conveyed to a coal storage silo, where the coal is pneumatically fed to the associated kiln burner.

2.0 DESCRIPTION OF PROCESS (Continued)

2.6 Specific Issues

Graymont has identified eleven emission units contained in this draft permit that are not compliant with the hourly throughput rate limits as of the proposed date of issuance of this final Class 1 (Title V) Air Quality Operating Permit. Each of these eleven units are located in the limestone crushing and screening systems. Graymont has submitted updated application forms for each applicable system that is affected by this non-compliance throughput rate issue, documenting the requested throughput rate for each affected emission unit. These forms were not submitted in any attempt to modify these sources. Rather, these forms are completed in a manner representative of long-standing operating conditions at the Pilot Peak Plant.

Additionally, Graymont has submitted an ambient air quality impact modeling analysis, based on throughput rates well in excess of those throughput rates documented in the updated application forms, which demonstrate compliance with all applicable ambient air quality standards.

3.0 APPLICABLE REQUIREMENTS

Applicable requirements are those regulatory requirements that apply to a stationary source or to emission units contained within a stationary source. In the Nevada air quality program, regulations governing the emissions of air pollutants from which the applicable requirements originate, are derived from four categories of regulations:

Nevada Revised Statutes (NRS)
Nevada Administrative Code (NAC)
Applicable State Implementation Plan (ASIP)
Code of Federal Regulations, Title 40 (40 CFR)

Definitions and applicability of the four categories of requirements, as well as any additional specific requirements applicable to the Graymont facility, can be found in following sections of this review.

3.1 GENERALLY APPLICABLE REQUIREMENTS

Within the four categories of regulations governing emissions of air pollutants in Nevada, there are many generally applicable requirements that apply to stationary sources and emission units located at a stationary source. A comprehensive summary of all the generally applicable permit requirements is contained in Sections I through IV of the proposed operating permit provided in **Attachment 3** of this review.

3.2 SPECIFIC APPLICABLE REQUIREMENTS

The remainder of this section of the review will focus on specific applicable requirements associated with each emission unit or process system at the Graymont facility. A list of the emission units, as identified in the applications, and a summary of the specific applicable requirements are contained in Table 3.2.1. Applicability of each standard will be explained in the following sections.

TABLE 3.2.1 – List of Emission Units and Associated Specific Applicable Standards for the Title V, Class I Air Quality Operating Permit for the Graymont Pilot Peak Operations Area

System	EU #	System Description	Applicable Standards					
			NAC (445B)	SIP (445) (Article)	NSPS (40 CFR Part 60)	NESHAPS (Parts 61, 63)	PSD (Part 52) NOTE	Acid Rain (Parts 72-78)
1	F0.001 Thru F0.003	Limestone Quarry Drilling/Blasting	N/A	N/A	N/A	N/A	N/A	N/A
2	PF1.001 Thru PF1.002	Limestone Truck Dump	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
3	S2.001 Thru S2.010	Primary Crushing & Screening Circuit	.305 .3405 .22017 .22033	.721 .732	(Subpart 000) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
4	S2.011 Thru S2.015	Secondary Screening Circuit	.305 .3405 .22017 .22033	.721 .732	(Subpart 000) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
5	PF1.003 Thru PF1.009	Limestone Quarry Conveyance Transfers	.305 .3405 .22017 .22033	.721 .732	(Subpart 000) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
6	F0.004 Thru F0.019	Limestone Quarry Conveyance Wind Erosion	N/A	N/A	N/A	N/A	N/A	N/A
7	PF1.010 Thru PF1.028	Lime Plant Conveyance Transfers	.305 .3405 .22017 .22033	.721 .732	(Subpart 000) 60.7 60.11 60.670 60.672	N/A	N/A	N/A

TABLE 3.2.1 – List of Emission Units and Associated Specific Applicable Standards for the Title V, Class I Air Quality Operating Permit for the Graymont Pilot Peak Operations Area (Continued)

System	EU #	System Description	Applicable Standards					
			NAC (445B)	SIP (Article) (445)	NSPS (40 CFR Part 60)	NESHAPS (Parts 61, 63)	PSD (Part 52) NOTE	Acid Rain (Parts 72-78)
8	S2.016 Thru S2.019	Lime Plant Stone Dressing Screen (Kilns 1 & 2)	.305 .3405 .22017 .22033	.721 .732	(Subpart OOO) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
9	S2.020 Thru S2.023	Lime Plant Stone Dressing Screen (Kiln 3)	.305 .3405 .22017 .22033	.721 .732	(Subpart OOO) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
10	F0.020 Thru F0.029	Lime Plant Wind Erosion	N/A	N/A	N/A	N/A	N/A	N/A
11	S2.024 Thru S2.030	Lime Plant Stone Surge Bin N-19 (Kiln 1); Bin N-219 (Kiln 2)	.305 .3405 .22017 .22033	.721 .732	(Subpart OOO) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
12	S2.031 Thru S2.033	Kiln # 1 Circuit	.305 .3405 .22017 .2202 .22033 .22047	.721 .731 .732 8.2.1.1	(Subpart HH) 60.7 60.11 60.340 60.342 60.343	N/A	N/A	N/A
13	PF1.029 Thru PF1.032	Kiln # 1 Coal Handling Circuit	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
14	S2.034 And S2.035	Kiln # 1 Coal Silo T-90	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A

TABLE 3.2.1 – List of Emission Units and Associated Specific Applicable Standards for the Title V, Class I Air Quality Operating Permit for the Graymont Pilot Peak Operations Area (Continued)

	EU #	System Description	Applicable Standards
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System			NAC (445B)	SIP (Article) (445)	NSPS (40 CFR Part 60)	NESHAPS (Parts 61, 63)	PSD (Part 52) NOTE	Acid Rain (Parts 72-78)
15	F0.030 And F0.031	Kiln # 1 Coal Handling Wind Erosion	N/A	N/A	N/A	N/A	N/A	N/A
16	S2.036 Thru S2.038	Kiln # 2 Circuit	.305 .3405 .22017 .2202 .22033 .22047	.721 .731 .732 8.2.1.1	(Subpart HH) 60.7 60.11 60.340 60.342 60.343	N/A	N/A	N/A
17	PF1.033 Thru PF1.035	Kiln # 2 Coal Handling Circuit	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
18	F0.032 And F0.033	Kiln # 2 Coal Handling Wind Erosion	N/A	N/A	N/A	N/A	N/A	N/A
19	S2.039 And S2.040	Kiln # 2 Coal Silo T-290	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
20	S2.041	Lime Plant Stone Feed to Kiln # 3	.305 .3405 .22017 .22033	.721 .732	(Subpart OOO) 60.7 60.11 60.670 60.672	N/A	N/A	N/A
21	S2.042 Thru S2.044	Kiln # 3 Circuit	.305 .3405 .22017 .2202 .22033 .22047	.721 .731 .732 8.2.1.1	(Subpart HH) 60.7 60.11 60.340 60.342 60.343	N/A	N/A	N/A

TABLE 3.2.1 – List of Emission Units and Associated **Specific Applicable Standards** for the Title V, Class I Air Quality Operating Permit for the Graymont Pilot Peak Operations Area (Continued)

EU #	System Description	Applicable Standards
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System			NAC (445B)	SIP (Article) (445)	NSPS (40 CFR Part 60)	NESHAPS (Parts 61, 63)	PSD (Part 52) NOTE	Acid Rain (Parts 72-78)
22	PF1.036 Thru PF1.038	Kiln # 3 Coal Handling Circuit	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
23	F0.034 And F0.035	Kiln # 3 Coal Handling Wind Erosion	N/A	N/A	N/A	N/A	N/A	N/A
24	S2.045 And S2.046	Kiln # 3 Coal Silo T-391	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
25	S2.047 Thru S2.070	Product Lime Loadout from Kiln #1	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
26	S2.071 Thru S2.079	Product Lime Loadout from Kiln #2 (DC-230)	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
27	S2.080 Thru S2.113	Product Lime Loadout from Kiln #2 (DC-30)	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
28	PF1.039	Kiln # 1 and Kiln # 2 Cyclone/Baghouse Fines Silo Discharge	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A

TABLE 3.2.1 – List of Emission Units and Associated **Specific Applicable Standards for the Title V, Class I Air Quality Operating Permit for the Graymont Pilot Peak Operations Area (Continued)**

	EU #	System Description	Applicable Standards
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System			NAC (445B)	SIP (Article) (445)	NSPS (40 CFR Part 60)	NESHAPS (Parts 61, 63)	PSD (Part 52) NOTE	Acid Rain (Parts 72-78)
29	S2.114 And S2.115	Kiln # 1 and Kiln # 2 Cyclone/Baghouse Collection Product Loadout	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
30	S2.116	Kiln # 3 Baghouse Collection Product Loadout	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
31	S2.117	Kiln # 3 Baghouse Fines Discharge	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
32	S2.118 Thru S2.120	Hydrate Plant Surge Bin	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
33	S2.121 And S2.122	Hydrate Plant Hydrator	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
34	S2.123 Thru S2.132	Hydrate Plant Lime Transfer DC-1132	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
35	S2.133 Thru S2.139	Hydrate Plant Lime Transfer DC-1140	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A

TABLE 3.2.1 – List of Emission Units and Associated **Specific Applicable Standards for the Title V, Class I Air Quality Operating Permit for the Graymont Pilot Peak Operations Area (Continued)**

	EU #	System Description	Applicable Standards
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System			NAC (445B)	SIP (Article) (445)	NSPS (40 CFR Part 60)	NESHAPS (Parts 61, 63)	PSD (Part 52) NOTE	Acid Rain (Parts 72-78)
36	S2.140 Thru S2.154	Product Lime Kiln #3 – Control Device #1 (DC-331)	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
37	S2.155 Thru S2.181	Product Lime Kiln #3 – Control Device #2 (DC-333)	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
38	S2.182 Thru S2.187	Product Lime Kiln #3 – Control Device #3 (DC-343)	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A
39	S2.188 And S2.189	Product Lime Kiln #3 – Control Device #4 (DC-361)	.305 .3405 .22017 .22033	.721 .732	N/A	N/A	N/A	N/A

NOTE:

November, 1988 – Pilot Peak Plant commences construction. Facility is 1 of 28 Source Categories, subject to 100 ton per year threshold for regulated pollutants. PM₁₀, SO₂, NO_x and CO pollutants exceed threshold. Any subsequent modifications with regulated pollutant increases greater than Significant Level threshold (major modification) will be viewed as a PSD Major Modification application.

May 2, 1995 – Major Modification request submitted by Pilot Peak Plant:

Addition of Kiln # 3 & Associated

Equipment – Increase of Regulated Pollutants is greater than Significant Levels as outlined in 40 CFR Part 52.21(b)(23)(i)

BACT Review performed by Facility - PSD (40 CFR Part 52.21(j))[Control Technology Review]. This specific requirement applies to all equipment associated with Major Mod. Revision.

3.0 APPLICABLE REQUIREMENTS (Continued)

3.2.2 NEVADA REVISED STATUTES

The Nevada Revised Statutes (NRS) is the statutory authority for the adoption and implementation of administrative regulations. The statutes relating to the control of air pollution are contained in NRS 445B.100 through 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Because the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. Rather, the NRS provides, generally, broad authority for the adoption and implementation of air pollution control regulations.

3.2.3 NEVADA ADMINISTRATIVE CODE

The Nevada Administrative Codes (NAC) for air quality are administrative regulations that contain specific requirements relating to the control of air pollution. The State Environmental Commission adopts these regulations. The NAC requires that, where state regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM₁₀ and sulfur emitting processes. The maximum allowable sulfur emissions are based on a maximum heat input of the operation in millions of BTU's per hour, whereas the maximum allowable PM₁₀ emissions are based on a maximum material throughput rate. For the three kilns at the Graymont facility, a maximum allowable Sulfur restriction was calculated using the heat input rate of the feed coal in units of Btu per pound of coal, as submitted in the original Title V application. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of regulated air pollutants in the ambient air. Still other NAC regulations specify the requirements for applying for and method of processing applications for operating permits. All of the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC.

3.0 APPLICABLE REQUIREMENTS (Continued)

3.2.4 NEVADA APPLICABLE SIP (ASIP)

The Applicable State Implementation Plan (ASIP) is a document prepared by a State or Local air regulatory agency. Federal regulations require this plan to be submitted to the U.S. EPA for approval. Title I of the federal Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit a SIP. The contents of the SIP are intended to show how a State, through the implementation and enforcement of the provisions contained in the SIP, will either show how attainment of the ambient air quality standards (NAAQS) will be achieved or how a State will continue to maintain compliance with the NAAQS. Nevada's most recent ASIP, which was approved by U.S. EPA, is based on State regulations codified in 1982. In general, the regulations contained in the ASIP closely parallel the current NAC regulations. However, because the ASIP is based on older air quality regulations (at this time), compliance with all of the current NAC regulatory requirements does not necessarily ensure compliance with the ASIP requirements. All of the equipment considered in this application must also meet, at a minimum, the standards set forth in the ASIP.

3.2.5 CODE OF FEDERAL REGULATIONS (CFR)

The Code of Federal Regulations (CFR) are regulations adopted by the U.S. EPA and published in the Federal Register pursuant to the authority granted by Congress in the Clean Air Act. The CFR addresses multiple aspects, including but not limited to, permitting requirements, performance standards, testing methods, and monitoring requirements.

3.2.5.1 New Source Performance Standards (NSPS)

The U.S. EPA has promulgated maximum emission standards and/or monitoring/recordkeeping methods for selected source categories. These standards are contained in Title 40 of the CFR, Part 60, and are known as the New Source Performance Standards (NSPS). The NSPS are considered the maximum emissions that may be emitted from a source, unless the NAC or PSD provisions are more stringent. Numerous, but not all, of the emission units in operation at the Graymont facility are subject to the NSPS (Subpart HH, 40 CFR Part 60.340 - Standards of Performance for Lime Manufacturing Plants; and Subpart OOO, 40 CFR Part 60.670 - Standards of Performance for Nonmetallic Mineral Processing Plants).

3.0 APPLICABLE REQUIREMENTS (Continued)

3.2.5.2 National Emission Standards for Hazardous Air Pollutants (NESHAP)

The federal NESHAP requirements are found in two parts of the 40 CFR: Part 61 and Part 63. Part 63 contains the provisions for maximum achievable control technology (MACT) requirements for various source categories. **Attachment 1** contains the Graymont facility's emissions inventory, which quantify regulated as well as HAP pollutants, and indicate that the Graymont facility will not be a major source for HAP's (i.e. does not emit greater than 10 ST/year of a single HAP, or 25 ST/year of any combination of HAP's), and therefore the application and implementation of MACT control technology is not applicable to this facility.

3.2.6 Prevention Of Significant Deterioration Regulations (PSD)

As required by the Clean Air Act, all new major stationary sources and all major modifications to new and existing major stationary sources are required to obtain an operating permit prior to commencement of construction. This process is required whether the major source or major modification is planned in a non-attainment area, an attainment area, or an unclassified area. The review process is termed New Source Review (NSR) and the operating permits for attainment or unclassified areas are referred to as Prevention of Significant Deterioration (PSD) permits, while operating permits for non-attainment areas are referred to as non-attainment area (NAA) permits.

The PSD regulations implemented by the State of Nevada are contained in 40 CFR Part 52.21. These regulations specify federally required permitting procedures for a "major stationary source" located in an attainment or unclassifiable area. The PSD regulations define a "stationary source" as *"any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act."* A "building structure facility or installation" is defined as *"all of the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same 'Major Group' (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement."*

3.0 APPLICABLE REQUIREMENTS (Continued)

3.2.6 Prevention Of Significant Deterioration Regulations (PSD) (Continued)

The PSD regulations also specify two major stationary source applicability thresholds (40 CFR 52.21(b)(1)). The first threshold is for a stationary source that emits or has the potential to emit 100 tons per year or more of any pollutant regulated under the act and **is defined as one of 28 specific categories of sources** (see 40 CFR 52.21(b)(1)(i)(a)). The other applicability threshold is for any other stationary source that emits or has the potential to emit 250 tons per year or more of any pollutant regulated under the act (see 40 CFR 52.21(b)(1)(i)(b)).

The SIC code for this facility is 3274 (Lime). Therefore, the major SIC grouping is 32, which is identified as "Stone, Clay, Glass, and Concrete Products" in the SIC manual. Lime manufacturing plants **are** one of the 28 specific categories of sources. Therefore, major source status is classified at the 100 tons per year emission threshold for any pollutant regulated under the Act.

As stated in the introduction, Graymont is considered a major source for PSD purposes. This facility is a Lime Manufacturing Plant (1 of the 28 specific source categories) and the potential to emit of each of the following regulated pollutants: PM₁₀, SO₂, NO_x and CO exceeds 100 tons per year (see Attachment 1 of this review). Therefore, this facility is subject to requirements of Class I and PSD permitting. The existing facility operation has been previously permitted under the Prevention of Significant Deterioration regulations, 40 CFR Part 52.21, (the Pilot Peak plant commenced construction on November 4, 1988) and as such, has triggered the [baseline date](#) for Hydrographic Area 191-Pilot Peak Valley. 40 CFR Part 51.166(j) requires a facility subject to PSD provisions to apply the "Best Available Control Technology" (BACT) for each pollutant regulated under the Federal Clean Air Act that will be emitted in significant amounts. 40 CFR Part 52.21(b)(23) defines significant in reference to the increase of the potential to emit of pollutants, due to a modification request, greater than a rate standard subjected for a pollutant. A facility subject to PSD review is limited by the BACT analysis performed for the PSD review. This analysis actually determines the control method and emission rate that will be reviewed.

3.0 APPLICABLE REQUIREMENTS (Continued)

3.2.6 Prevention Of Significant Deterioration Regulations (PSD) (Continued)

A full BACT analysis was performed and submitted by Graymont for the Kiln # 3 major modification application submittal (December 20, 1994). Table 3.2.6.1 documents the increase in criteria regulated emissions, as requested and included in the Kiln # 3 major modification application, compared to the individual pollutant significance levels as outlined in 40 CFR 52.21.

Table 3.2.6.1 Criteria Pollutant De Minimus Levels

Pollutant	Existing Annual Emissions (TPY)	Proposed Annual Emissions <u>Increase</u> (TPY)	De Minimus Level (TPY)	Greater than De Minimus?
TSP	138.48	154.39	25	Yes
PM ₁₀	111.10	115.84	15	Yes
SO ₂	153.30	147.17	40	Yes
NO _x	582.54	1,519.86	40	Yes
CO	416.10	4,971.30	100	Yes
VOC	3.83	89.53	40 (as ozone)	Yes
Lead	0.306	0.263	0.6	N/A

The major modification request was approved, and the permit revised accordingly on May 2, 1995. The full BACT analysis and PSD Review submitted by Graymont was required because the major modification request (i.e. the addition of Kiln # 3 and associated equipment) resulted in a significant net regulated emissions increase.

The current, existing facility-wide emissions for the Pilot Peak facility can be found in the emissions inventory located in **Attachment 1**. Future permits for this facility will be reviewed as PSD Permits if emission increases from future modifications are greater than the significant emissions thresholds as outlined in 40 CFR 52.21.

3.0 APPLICABLE REQUIREMENTS (Continued)

3.2.7 Compliance Assurance Monitoring (CAM)

The U.S. EPA has promulgated requirements for sources to provide detailed monitoring plans that will ensure compliance with all applicable requirements and are contained in 40 CFR Part 64. Section 64.2 specifies that these monitoring requirements apply to a "pollutant specific emission unit at a major source" if all of the following are satisfied:

- * The unit is subject to an emission limitation or standard;
- * The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- * The unit has potential pre-control device (uncontrolled) emissions equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

The key factors which will qualify a facility for CAM plan submittal are: 1) the facility must be defined as a "major source"; and 2) the units must be subject to an emission limitation or standard (acid rain limitations and standards are not included).

The Graymont Pilot Peak facility has installed and currently operates a Continuous Opacity Monitoring System (COMS) on each of the three lime kilns, and will use such system to satisfy the requirements of 40 CFR Part 64.3 (d). The owner or operator shall submit to the permitting authority monitoring that satisfies the design requirements in 40 CFR Part 64.3. The submission shall include the following information: If applicable, the indicator ranges and performance criteria for a CEMS, COMS or PEMS pursuant to 40 CFR Part 64.3 (d).

3.2.4.5 Acid Rain

The Clean Air Act Amendments of 1990 (Title IV) established a requirement to reduce the emissions of pollutants contributing to acid rain (SO₂ and NO_x). It also established a market-based emissions trading program for SO₂. U.S. EPA is responsible for

developing regulations and implementing the requirements of the acid rain provisions of the Clean Air Act Amendments. As a result, U.S. EPA adopted acid rain related regulations at 40 CFR Parts 72 through 78.

The overall goal of the Acid Rain Program is to achieve environmental and public health benefits through reductions in emissions of SO₂ and NO_x. To achieve this goal, the program employs both traditional and innovative, market-based approaches for controlling air pollution. Title IV of the Clean Air Act sets as its primary goal the reduction of annual SO₂ emissions by 10 million tons below 1980 levels. To achieve these reductions, the law requires a two-phase tightening of the restrictions placed on **fossil fuel-fired Power plants**.

Phase I began in 1995 and affects 263 units at 110 mostly coal-burning electric utility plants located in 21 eastern and mid-western states. An additional 182 units joined Phase I of the program as substitution or compensating units, bringing the total of Phase I affected units to 445. Emissions data indicate that 1995 SO₂ emissions at these units nationwide were reduced by almost 40% below their required level.

Phase II, began in the year 2000, tightens the annual emissions limits imposed on these large, higher emitting plants and also sets restrictions on smaller, cleaner plants fired by coal, oil, and gas, encompassing over 2,000 units in all. The program affects existing utility units serving generators with an output capacity of greater than 25 megawatts and all new utility units.

The NO_x program embodies many of the same principles of the SO₂ trading program in its design: a results-orientation, flexibility in the method to achieve emission reductions, and program integrity through measurement of the emissions. However, it does not "cap" NO_x emissions as the SO₂ program does, nor does it utilize an allowance trading system. The Act calls for a 2 million ton reduction in NO_x emissions by the year 2000. A significant portion of this reduction will be achieved by coal-fired utility boilers that will be required to install low NO_x burner technologies and to meet new emissions standards.

3.0 APPLICABLE REQUIREMENTS (Continued)

3.3 CLASS I (Title V) REQUIREMENTS

This application is being processed pursuant to Nevada's Class I permitting program. Nevada's Class I operating permit program requirements are intended to apply to those sources that would be required to obtain an operating permit under the requirements of Title V of the Clean Air Act. NAC 445B.337 specifies, in part, that:

An owner or operator of a stationary source must file a Class I-A application and obtain a Class I operating permit for:

1. An existing major source;
2. An existing major source subject to a standard, a limitation or any other requirement adopted pursuant to 42 U.S.C. § 7411 or 7412,
3. An existing major source in a category of sources designated by the administrator pursuant to 42 U.S.C. § 7661a(a);

NAC 445B.094 defines major source as follows (in part):

1. ...“major source” means any stationary source that:
 - (a) Is located on one or more contiguous or adjacent properties;
 - (b) Is under the common control of the same person or persons;
 - (c) Belongs to a single major industrial grouping as described in the *Standard Industrial Classification Manual*, as incorporated by reference in [NAC 445B.221](#); and
 - (d) Meets one of the following conditions:
 - (1) Is located in a non-attainment area and is required to obtain an operating permit pursuant to 42 U.S.C. §§ 7501 to 7515, inclusive;
 - (2) Directly emits or has the potential to emit:
 - (I) One hundred tons per year or more of any regulated air pollutant, excluding particulate matter more than 10 microns in diameter; or
 - (II) Ten tons per year or more of a hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants or a lesser quantity as established by the commission; ...

Therefore, this facility is subject to Class I permitting requirements based on the potential to emit of regulated, criteria pollutants is greater than 100 ST/year of PM₁₀, NO_x, SO₂, and CO.

4.0 EMISSIONS INVENTORY

Regulated pollutant emission estimates were obtained from previously submitted

permit applications and permit technical reviews. All potential emissions are based on an operating schedule of 24-hours per day, 8760 hours per year.

This facility also emits trace metal and organic compounds, which result from the combustion of the coal and the calcination of the raw limestone. Emission factors for non-HCL Hazardous Air Pollutants (HAP's) were obtained from the report "Testing of Hazardous Air Pollutants at Two Lime Kilns – Final Test Report", prepared for the National Lime Association, Arlington, Virginia; February 1997. Emission factors for HCL emissions were obtained from testing performed at the Pilot Peak facility on December 12 and 13, 2002.

Individual emission calculations and emission factor references are contained in **Attachment 1**.

4.1 Summary of Annual Emissions

See Attachment 1 for a comprehensive emissions summary per System for the Pilot Peak facility.

Existing Pollutant Emissions (Tons per Year)
for the Graymont Pilot Peak Operations Area, Facility–Wide, Title V, Class 1
Air Quality Operating Permit

Table 4.1-1	PM ST/yr	PM₁₀ ST/yr	SO₂ ST/yr	NO_x ST/yr	CO ST/yr	VOC's ST/yr	HAP's ST/yr	Lead (Pb) ST/yr
Facility- wide Total	371.9	257.5	300.5	2,102.4	5,387.4	93.36	4.62	0.57

5.0 AIR QUALITY IMPACTS

The purpose of the air quality analysis is to demonstrate that the emissions from the stationary source will not cause or contribute to a violation of any applicable federal or

state ambient air quality standards prior to the issuance of an operating permit.

Ambient air quality modeling was NOT performed for this facility-wide Title V, Class 1 Draft Air Quality Operating Permit application. It is the NDEP-BAPC's policy to require the facility to perform a comprehensive, facility-wide air dispersion modeling analysis upon renewal or any modification of this Title V, Class 1 Air Quality Operating Permit.

Based on the most recent modeling analysis performed and submitted, by Graymont, for this facility, (December 20, 1994; kiln # 3 modification application submittal – no subsequent modifications to the Graymont facility since the kiln # 3 modification application) and the NDEP-BAPC's technical review performed on March 31, 1995, the results of the modeling analysis (documented in Table 5.3) indicate no violation of the ambient air quality standards is expected to occur for this facility-wide Title V, Class 1 Air Quality Operating Permit application.

5.1 CLASSIFICATION OF AIR BASIN

The Graymont Pilot Peak Operations Area facility is located within Hydrographic Basin 191. Basin 191 is currently designated as unclassified for all pollutants that have an ambient air quality standard.

5.2 MODEL SELECTION

Software Model "IGM" – a combination of both ISCST2 and COMPLEX1 models.

TABLE 5.3 Ambient Air Quality Impact Analysis Summary

Pollutant	Averaging Period	Modelled Impact ($\mu\text{g}/\text{m}^3$)	Ambient Air Quality Standard ($\mu\text{g}/\text{m}^3$)	Background Concentration ($\mu\text{g}/\text{m}^3$)
NO _x	Annual	14.1	100	N/A
CO	8-hour	806.0	10,000	N/A
CO	1-hour	5,199.0	40,000	N/A
SO ₂	Annual	1.9	80	N/A
SO ₂	24-hour	20.0	365	N/A
SO ₂	3-hour	102.0	1,300	N/A
PM ₁₀	Annual	12.77	50	17.0
PM ₁₀	24-hour	33.82	150	95.0
VOC	1-hour	111.0	235	78.4

6.0 PSD INCREMENT EVALUATION

The PSD provisions establish limits for pollutants that can be emitted above baseline levels. These limits or increments, are pollutant and area classification specific and are

dependent on the magnitude of the emissions emitted from the source. The increment is the maximum allowable increase in concentration that is allowed to occur above the baseline concentration. Baseline dates and relevant averaging periods are currently established for particulate matter (PM₁₀), sulfur dioxide and nitrogen dioxide and are discussed in the baseline date summary below.

6.1 LOCATION OF CLASS 1 AREA

The nearest Class 1 area to the facility is the Jarbridge National Wilderness Area located approximately 80 miles northwest of the Pilot Peak facility site. The PSD provisions require that any impact on a Class 1 area, from a source, that is greater than or equal to 1 µg/m³ is to be considered a significant impact.

6.0 PSD INCREMENT EVALUATION (Continued)

6.2 BASELINE DATE

There are three types of dates that relate to baseline: major source date, trigger

date and minor source date. The major source baseline date is the date after which actual emissions associated with construction of a major stationary source, or major modification (i.e. physical changes or changes in the method of operation by which the potential to emit is greater than the significant rate standard as outlined in 40 CFR Part 52.21(b)(23)) affect the available PSD increment. The baseline date is that date which the first PSD application for the area is deemed complete. Other changes in actual emissions occurring at any major source for which construction began prior to the major source baseline date, do not consume increment instead, they contribute to the baseline concentration. The trigger date is the date after which the minor source baseline date may be established. Both the major source baseline date and the trigger date are fixed dates. The minor source baseline date is the earliest date after the trigger date on which a complete application is received by the permitting authority. The minor source baseline date for an affected pollutant is only triggered by a complete PSD application if the proposed increase in emissions of the pollutant is significant. For this reason, the minor source baseline dates for different pollutants may not be the same in a particular area. Because the minor source baseline date marks the point in time after which actual emission changes from all sources affect the available increment, regardless of whether the emission changes are a result of construction, it is often referred to as the “baseline date”.

Graymont’s original PSD application for the Pilot Peak facility was deemed complete on June 23, 1988. Since this date is after the applicable major source baseline date for all pollutants (PM₁₀ and SO₂ – January 6, 1975; NO_x – February 8, 1988), the minor source baseline date is the same date that the original PSD application was deemed complete. As a result, all emission changes may affect the available increment in the area. The actual increment consumed is determined on a case-by-case basis. This increment analysis will consider all other sources (both minor and major) within the Pilot Peak facility area of influence that began construction after June 23, 1988.

6.0 PSD INCREMENT EVALUATION (Continued)

6.3 INCREMENT ANALYSIS

The modeling analysis impact results, previously submitted by Graymont, serve the same purpose in determining increment analysis, and are directly compared against the applicable increments and pollutant averaging periods for consumption in both Class 1 and Class 2 areas, as indicated in Table 6.3.1 and Table 6.3.2, respectively. All impacts are allowed one exceedence per year at any one location, except for annual impacts.

Table 6.3.1 Increment Analysis Summary (Class 1 Area)

Pollutant	Averaging Period	Modelled Impact ($\mu\text{g}/\text{m}^3$)	Increment Standard ($\mu\text{g}/\text{m}^3$)
PM ₁₀	Annual	0.01	4.0
PM ₁₀	24-hour	0.13	8.0
SO ₂	Annual	0	2.0
SO ₂	24-hour	0.07	5.0
SO ₂	3-hour	0.46	25.0
NO _x	Annual	0.03	2.5

Table 6.3.2 Increment Analysis Summary (Class 2 Area)

Pollutant	Averaging Period	Modelled Impact ($\mu\text{g}/\text{m}^3$)	Increment Standard ($\mu\text{g}/\text{m}^3$)
PM ₁₀	Annual	12.77	17.0
PM ₁₀	24-hour	27.19	30.0
SO ₂	Annual	1.9	20.0
SO ₂	24-hour	17.0	91.0
SO ₂	3-hour	75.0	512.0
NO _x	Annual	14.1	25.0

7.0 CONCLUSIONS / RECOMMENDATIONS

Based on the above review and supporting data and analyses, Graymont's request for a Class I, Title V Facility-wide Air Quality Operating Permit for the Pilot Peak Operations Area will not violate any applicable requirements. As a result, I recommend that the proposed operating permit be issued.

Attachment 1

Emissions Inventory

Attachment 2

Kiln Startup Plan and Baghouse O/M Plan

Attachment 3

Proposed Operating Permit