

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will effect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

Routine or predictable emissions during Startup, Shutdown, and Maintenance (SSM): Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

Schlumberger Technology Corporation operates a bulk cement preparation plant at 1105 W. Bender Avenue in Hobbs, Lea County, New Mexico. This facility, known as the Hobbs District for Schlumberger, currently operates under NSR Air Quality Permit No. 2715-R8, the most recent revision issued by the NMED in September 2012. Operations at the Hobbs District involve the blending and dispensing of specialty cement mixtures and sand materials to serve oilfield services field operations. The Hobbs District facility as it is now operated is comprised of a Bulk Cement Plant (Permit Unit No. 1), Sand Plant (Unit No. 2), and a Gel Tank (Unit 4). In this revision, the equipment components comprising these permitted Units have been relisted as the individual components (See Table A-2 in UA2).

As addressed in this application, the Hobbs District plans to upgrade the Bulk Cement Plant to improve dust control and operating flexibility, which will involve revisions to the most recent version of the NSR permit to include replacement blending vessels, new truck transfer equipment, and new dust controllers. By installing separate dust control devices on each product silo, the facility will be able transfer materials while operating the dust controller for the individual silos. These physical changes will accommodate an increase in potential throughput of the Cement Plant. In addition, the Hobbs District seeks in this application to remove the Bulk Acid Blending/Loading facility (current permit Unit 3) from the permit, as this equipment has been decommissioned and removed from the facility. The existing Sand Plant silos (4) and existing Gel Tank will not be modified.

The Bulk Cement Plant at the Hobbs District (existing permit Unit 1) currently consists of:

- Eleven (11) bulk cement product storage tanks, with capacity ranging from 1,700 to 2,300 cubic foot volume. These are numbered Silo 1 through Silo 12, with non-existent Silo 11 skipped in the facility numbering system. The eleven storage tanks currently are collectively vented to a single cyclone-filter system (Metroplex, Inc.);
- One (1) Junk tank, 1,200 cubic foot capacity (TK 13);
- One (1) Vent tank, 1,200 cubic foot capacity (TK 14);
- One (1) Weigh Batcher tank, 650 cubic foot capacity (TK 15);
- One (1) Double Stack tank, a pair of 250 cubic foot capacity vessels (TK 16); and,
- One (1) Holding tank; 350 cubic foot capacity (TK 17).

No physical changes are proposed for the current Sand Plant equipment, or an existing Gel Tank. The Sand Plant (existing permit Unit 2) at the Hobbs District consists of:

- Four storage silos (Sand-1 to Sand-4), each with 3,350 cubic foot capacity collectively vented to DC S1, a cyclone-filter system (Metroplex, Inc. M-Plex Model CF-600); and

- Pneumatic delivery systems (Sand-5) for each silo to receive sand from railcars or trucks, and a pneumatic loading system to load out sand to trucks, conveyance air vented to DC S1.

Purpose of the Significant Revision

One purpose of this Significant Revision application is to address the Bulk Cement Plant upgrade project, as outlined above, including the addition of eleven individual dust control devices on product storage tanks listed in the Hobbs District permit. This revision also seeks to remove from the permit the Bulk Acid Blending/Loading plant that has been decommissioned and removed from the site. Refer to the process flow diagrams in Section 4 that illustrate the role of the equipment in the Bulk Cement Plant process. There will be no net change in the number of storage tanks/silos at the facility. In summary, the changes to the Hobbs District facility are:

- Repurposing of the existing Junk tank to be the new Pre-Blend Tank, to be numbered TK 13;
- Relocation of the existing Vent tank to be numbered TK 14;
- Removal of the existing Weigh Batcher and Double Stack tanks, and installation of *replacement* tanks to be numbered TK 15 and TK 16, having similar capacity and function;
- Installation of a *replacement* Holding Tank to be numbered TK 17 increasing to 1,800 cubic foot capacity from the current 350 cubic foot capacity;
- Installation of eleven *new* Silo Dust Collectors (C&W Mfg. Co. Model LPR-8-S) DC 1 to DC 12, with the DC unit numbers matching storage tank unit numbers (Silo 1 through Silo 12, skipping number 11, which does not exist);
- Installation of a *new* cyclone-filter dust collector DC 13 (Metroplex, Model m-Plex CF-600) to serve TK 13, TK 14, TK 16 and TK 17;
- Installation of a *new* cyclone-filter dust collector DC 15 (Metroplex, Model M-Plex CF-600) to serve TK 15; and
- Installation of one *replacement* Additive Hopper (HP 1), enclosed inside the existing Warehouse.

This application includes in Section 16 a request for a waiver from dispersion modeling that is specified for inclusion in NSR permit revision applications (NMAC 20.2.72.203.A(4)). This waiver is appropriate for the modified facility because the controlled particulate emissions levels are sufficiently low that none of the hourly emission thresholds stated in the current NMED Modeling Guidance are approached. Consequently, the emissions from routine operations will not violate any New Mexico or National Ambient Air Quality Standards.

Type of Permit Application and Regulatory Citation

For the substantive technical corrections to the current permit, and installation of new equipment, the Hobbs District facility is submitting this NSR Significant Revision application (20.2.72.219.D NMAC). The lists provided above and in Table 2-A identify the planned facility equipment changes. The physical changes to the Bulk Cement Plant equipment, including the replacement and upgrade of several items, will alter the control devices that were present at the time of 2007 and 2012 permitting.

This permit revision is submitted pursuant to 20.2.72.219.D NMAC, and the application contents follow the listed items in NMAC 20.2.72.203. Based on conservative estimates of controlled PTE for the entire facility, including the requested modifications, total site-wide emissions are estimated to be less than 0.5 pounds per hour of PM₁₀. However, because the dust control configuration is changing and the facility relies on the dust controllers to achieve the estimated potential to emit, the facility is required to submit an NSR Significant Revision application.

Table 6-1
EMISSION CALCULATIONS - TSP / PM₁₀ / PM_{2.5}: Bulk Cement Plant - Controlled

Permit No. 2715-R8 NSR Permit Revision Application
Schlumberger Technology Corp. - Hobbs District

Bulk Cement Plant: Storage Silos, Truck/Railcar receiving, Truck loadout, Dust Collectors
 Storage Silo Controls: Silo Dust Collectors (DC 1 - 12) C&W Manufacturing Co., 2,340 cfm (typical), 8-cartidge filters, pulse-jet cleaning
 Control Efficiency %: 99.93% is used for emissions estimates, vendor specifications (without reference to particle size) is 99.99% control.
 and other tank controls: Cyclone-Filter Dust Collectors (DC 13 and DC 15) Metroplex, 2,000 - 3,000 cfm (typical), fabric filters, pulse-jet cleaning
 Control Efficiency: 99.0% is used for emissions estimates, vendor specifications (without reference to particle size) is 99.9% control.

Max. Hourly Transfer: 50 tons per hour per truck load/unload pipe (pneumatic loading capacity)
 Annual Production: Assume PTE scenario for maximum hourly emissions, and requested maximum annual throughput of 100,000 tons/yr per silo for annual emissions.

Emission Factors: AP-42, Chapter 11.12, (June 2006) Table 11.12-2. Emission factors: Cement unloading to elevated storage silo (pneumatic).

Unit No.	Emission Point Description	Process Description, Emissions Basis	PTE Process Rates ¹		Control Efficiency % ²	AP-42 Emission Factor ³	TSP PTE Emissions		AP-42 Emission Factor ³	PM ₁₀ PTE Emissions		AP-42 Emission Factor ³	PM _{2.5} PTE Emissions	
			(ton/hr)	(ton/yr)			(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)
DC 1	Silo 1 Dust Collector (DC 1)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 2	Silo 2 Dust Collector (DC 2)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 3	Silo 3 Dust Collector (DC 3)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 4	Silo 4 Dust Collector (DC 4)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 5	Silo 5 Dust Collector (DC 5)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 6	Silo 6 Dust Collector (DC 6)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 7	Silo 7 Dust Collector (DC 7)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 8	Silo 8 Dust Collector (DC 8)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 9	Silo 9 Dust Collector (DC 9)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 10	Silo 10 Dust Collector (DC 10)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 12	Silo 12 Dust Collector (DC 12)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	99.93%	0.73	0.026	0.026	0.47	0.016	0.016	0.47	0.016	0.016
DC 13	TK 13, 14, 16,17 Cyclone-Filter Dust Coll. (DC 13)	Transfer to Pre Blend, Vent/Holding Tank, and Double Stack Tanks ⁴	50	220,000	99.90%	0.73	0.037	0.080	0.47	0.024	0.052	0.47	0.024	0.052
DC 15	Cyclone-Filter Dust Coll. (DC 15)	Transfer to Weigh Batcher Tank (TK 15) ⁴	50	220,000	99.90%	0.73	0.037	0.080	0.47	0.024	0.052	0.47	0.024	0.052
Total Emissions							0.35	0.44		0.23	0.28		0.23	0.28

1 - The total facility maximum process rate is 2,200 tons per day, and 803,000 tons per year. These throughputs are distributed across 5 truck unload/load points, each capable of 50 tons per hour.

The 803,000 tons/yr is conservatively represented as 100,000 tons/yr maximum throughput for each of the 11 Silos.

2 - The control efficiency conservatively assumed for estimates is lower than specified by vendor (C&W), but matches the PM10 control efficiency used in Table 11.12-2 for cement loading (SCC 3-05-011-07) The vendor also does not specify control efficiency dependency on particle size.

3 - Uncontrolled emissions fractors from Document AP-42, Chapter 11.12, (June 2006) Table 11.12-1. Emission factors: Cement unloading to elevated storage silo (pneumatic). The PM_{2.5} factor is conservatively assumed to be equal to PM₁₀ factor.

4 - Transfer operations consist of pneumatic conveying of product materials from silos to the tank vessels, vented emissions are controlled by M-Plex cyclone-filter units. It is assumed the full annual throughput is transferred though these tanks.

5 - Loading of trucks is via pneumatic conveying, with vented are from truck vessel returned to the Vent tank, and controlled by a dust collector. It is assumed the full annual throughput is transferred to trucks.

Table 6-2
EMISSION CALCULATIONS - TSP / PM₁₀ / PM_{2.5}: Sand Plant - Controlled

Permit No. 2715-R8 NSR Permit Revision Application
Schlumberger Technology Corp. - Hobbs District

Sand Plant: Storage Silos, Truck/Railcar receiving, Truck loadout, Dust Collector DC-S1
Controls: Metro-Plex Cyclone-Filter Dust Collector
Control Efficiency: 90% Conservatively reduced from 99.9% filter efficiency quoted by vendor, to account for uncertainty in capture efficiency

Max. Hourly Transfe 25 tons per hour - Loading to silos
25 tons per hour - Truck Loadout
Annual Production: Assume PTE scenario of 8,760 hours per year at Max. Hourly Transfer rate for controlled truck/railcar delivery and truck loadout. Actual throughput anticipated to be less than 100,000 tons/yr
Emission Factors: AP-42, Chapter 11.12, June 2006, Table 11.12-2. (PM and PM₁₀ emission factors)
AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles, Equation 1, November 2006 (PM_{2.5} emission factors)

Unit No.	Emission Point Description	Process Description, Emissions Basis	PTE Process Rates		Control Efficiency (%)	AP-42 Emission Factor ¹ (lb/ton)	TSP PTE Emissions		AP-42 Emission Factor ¹ (lb/ton)	PM ₁₀ PTE Emissions		AP-42 Emission Factor ^{1,2} (lb/ton)	PM _{2.5} PTE Emissions	
			(ton/hr)	(ton/yr)			(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)
DC S1	Cyclone-Filter Dust Collector	Transfer to Sand Plant Silos from railcar/tru	25	219,000	90.0%	0.0021	0.0053	0.023	0.00099	0.0025	0.0108	0.00099	0.0025	0.0108
Sand 5	Truck Loading - controlled by DC S1	Transfer pneumatically to truck	25	219,000	90.0%	0.0051	0.013	0.056	0.0024	0.0060	0.0263	0.00037	0.00093	0.0041
Total Emissions							0.018	0.079		0.0085	0.037		0.0034	0.015

1 - The emission factor in Table 11.12-2 for Sand Transfer to elevated silo, uncontrolled. For truck loading, AP-42 batch drop Equation 1 (below) was used with a mean moisture of 4.17%.
3 - PM_{2.5} emission factor not provided in AP-42, Chapter 11.12 for sand transfer. However as footnoted in Table 11.12-2, the emission factors for PM and PM₁₀ were each derived from the the AP-42 Aggregate Handling and Storage Pile (Equation 1). Referring to AP-42, Chapter 13.2.4, a separate PM_{2.5} emission factor can be calculated from Equation 1.

AP-42 13.2.4-3 (Eq. 1) $E = (k(0.0032)(U/5)^{1.3}) / (m/2)^{1.4}$
WHERE:
E = emission factor (lb/ton)
k = particle size multiplier = 0.74 for PM, 0.35 for PM₁₀, 0.053 for PM_{2.5}
U = mean wind speed in miles per hour (mph)
M = material moisture content (%)

Sand - As received and loaded	E (PM) =	0.00513 lb/ton
	E (PM₁₀) =	0.00243 lb/ton
	E (PM_{2.5}) =	0.00037 lb/ton
U for exposed handling areas = 20 mph (assumed conservative annual average). M is estimated at 4.17%, based on average of "sand" materials provided in AP-42 Table 11.12-2 footnote b.		

Table 6-3
EMISSION CALCULATIONS - TSP / PM₁₀ / PM_{2.5}: Bulk Cement Plant - Uncontrolled

Permit No. 2715-R8 NSR Permit Revision Application
 Schlumberger Technology Corp. - Hobbs District

Bulk Cement Plant: Storage Silos, Truck/Railcar receiving, Truck loadout, Dust Collectors Neglected

Max. Hourly Transfer: 50 tons per hour per truck load/unload pipe (pneumatic loading capacity)
 Annual Production: Assume PTE scenario for maximum hourly emissions, and requested maximum annual throughput of 100,000 tons/yr per silo for annual emissions.

Emission Factors: AP-42, Chapter 11.12, (June 2006) Table 11.12-2. Emission factors: Cement unloading to elevated storage silo (pneumatic).

Unit No.	Emission Point Description	Process Description, Emissions Basis	PTE Process Rates ¹		Control Efficiency % ²	AP-42 Emission Factor ³	TSP PTE Uncontrolled Emissions		AP-42 Emission Factor ³	PM ₁₀ PTE Uncontrolled Emissions		AP-42 Emission Factor ³	PM _{2.5} PTE Uncontrolled Emissions	
			(ton/hr)	(ton/yr)			(lb/hr)	(ton/yr)		(lb/ton)	(lb/hr)		(ton/yr)	(lb/ton)
DC 1	Silo 1 Dust Collector (DC 1)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 2	Silo 2 Dust Collector (DC 2)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 3	Silo 3 Dust Collector (DC 3)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 4	Silo 4 Dust Collector (DC 4)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 5	Silo 5 Dust Collector (DC 5)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 6	Silo 6 Dust Collector (DC 6)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 7	Silo 7 Dust Collector (DC 7)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 8	Silo 8 Dust Collector (DC 8)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 9	Silo 9 Dust Collector (DC 9)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 10	Silo 10 Dust Collector (DC 10)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 12	Silo 12 Dust Collector (DC 12)	Solids transfer to Silo, PTE schedule and throughput	50	100,000	0.0%	0.73	36.5	36.5	0.47	23.5	23.5	0.47	23.5	23.5
DC 13	TK 13, 14, 16,17 Cyclone-Filter Dust Coll. (DC 13)	Transfer to Pre Blend, Vent/Holding Tank, and Double Stack Tanks ⁴	50	220,000	0.0%	0.73	36.5	80.3	0.47	23.5	51.7	0.47	23.5	51.7
DC 15	Cyclone-Filter Dust Coll. (DC 15)	Transfer to Weigh Batcher Tank (TK 15) ⁴	50	220,000	0.0%	0.73	36.5	80.3	0.47	23.5	51.7	0.47	23.5	51.7
Total Emissions							474.5	562.1		305.5	361.9		305.5	361.9

1 - The total facility maximum process rate is 2,200 tons per day, and 803,000 tons per year. These throughputs are distributed across 5 truck unload/load points, each capable of 50 tons per hour.

The 803,000 tons/yr is conservatively represented as 100,000 tons/yr maximum throughput for each of the 11 Silos.

2 - The control efficiency of the installed dust collectors is neglected for the uncontrolled case.

3 - Uncontrolled emissions factors from Document AP-42, Chapter 11.12, (June 2006) Table 11.12-1. Emission factors: Cement unloading to elevated storage silo (pneumatic). The PM_{2.5} factor is conservatively assumed to be equal to PM₁₀ factor.

4 - Transfer operations consist of pneumatic conveying of product materials from silos to the tank vessels. It is assumed the full annual throughput is transferred through these tanks.

5 - Loading of trucks is via pneumatic conveying, with vented air from truck vessel returned to the Vent tank. It is assumed the full annual throughput is transferred to trucks.

Table 6-4

EMISSION CALCULATIONS - TSP / PM₁₀ / PM_{2.5}: Sand Plant - Controlled

Permit No. 2715-R8 NSR Permit Revision Application
Schlumberger Technology Corp. - Hobbs District

Sand Plant: Storage Silos, Truck/Railcar receiving, Truck loadout, Dust Collector Neglected

Max. Hourly Transfer: 25 tons per hour - Loading to silos
25 tons per hour - Truck Loadout

Annual Production: Assume PTE scenario of 8,760 hours per year at Max. Hourly Transfer rate for controlled truck/railcar delivery and truck loadout. Actual throughput anticipated to be less than 100,000 tons/yr

Emission Factors: AP-42, Chapter 11.12, June 2006, Table 11.12-2. (PM and PM₁₀ emission factors)

AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles, Equation 1, November 2006 (PM_{2.5} emission factors)

Unit No.	Emission Point Description	Process Description, Emissions Basis	PTE Process Rates		Control Efficiency ² (%)	AP-42 Emission Factor ³ (lb/ton)	TSP PTE Emissions		AP-42 Emission Factor ³ (lb/ton)	PM ₁₀ PTE Emissions		AP-42 Emission Factor ^{1,3} (lb/ton)	PM _{2.5} PTE Emissions	
			(ton/hr)	(ton/yr)			(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)
DC S1	Cyclone-Filter Dust Collector	Transfer to Sand Plant Silos from railcar/truck	25	219,000	0.0%	0.0021	0.0525	0.230	0.00099	0.0248	0.1084	0.00099	0.0248	0.1084
Sand 5	Truck Loading - controlled by DC S1	Transfer pneumatically to truck	25	219,000	0.0%	0.0051	0.128	0.558	0.0024	0.0600	0.2628	0.00037	0.00925	0.0405
		Total Emissions					0.180	0.788		0.0848	0.371		0.0340	0.149

1 - The emission factor in Table 11.12-2 for Sand Transfer to elevated silo, uncontrolled. For truck loading, AP-42 batch drop Equation 1 (below) was used with a mean moisture of 4.17%.

2 - For the uncontrolled case, the control efficiency of the installed dust collector is neglected.

3 - PM_{2.5} emission factor not provided in AP-42, Chapter 11.12 for sand transfer. However as footnoted in Table 11.12-2, the emission factors for PM and PM₁₀ were each derived from the the AP-42 Aggregate Handling and Storage Pile (Equation1). Referring to AP-42, Chapter 13.2.4, a separate PM_{2.5} emission factor can be calculated from Equation 1.

AP-42 13.2.4-3 (Eq. 1) $E = (k(0.0032)(U/5)^{1.3}) / (m/2)^{1.4}$

WHERE:

E = emission factor (lb/ton)

k = particle size multiplier = 0.74 for PM, 0.35 for PM₁₀, 0.053 for PM_{2.5}

U = mean wind speed in miles per hour (mph)

M = material moisture content (%)

Sand - As received and loaded

E (PM) = 0.00513 lb/ton

E (PM₁₀) = 0.00243 lb/ton

E (PM_{2.5}) = 0.00037 lb/ton

U for exposed handling areas = 20 mph (assumed conservative annual average).

M is estimated at 4.17%, based on average of "sand" materials provided in AP-42 Table 11.12-2 footnote b.

Section 10

Written Description of the Routine Operations of the Facility

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

The Hobbs District facility located in Lea County, New Mexico is comprised of a Bulk Cement Plant and a Sand Plant. The planned modifications in dust controllers may result in slight changes to current emissions of total suspended particulates (TSP), inhalable particulates less than 10 microns in diameter (PM₁₀), and fine particulates less than 2.5 microns in diameter (PM_{2.5}). Emission estimates conservatively reflect the maximum operation within the design capacity of the Cement Plant; however, the improvement in dust control is expected to result in an reduction in actual emissions.

The Hobbs District facility emission sources comprise the dust collector vents associated with the Cement Bulk Plant, a dust collector at the Sand Plant, and operation of vehicles within the facility boundaries. The material blending and transfer processes at the Hobbs District will be controlled by silo exhaust dust collectors and cyclone/filter dust collectors. Within these process areas, the post-modification PM emission sources are:

- Eleven Cement Bulk Plant product storage tanks (Silos 1 – 10 and Silo 12) served by silo dust collectors (DC 1 through 10, and 12)
- Five Cement Bulk Plant product preparation tanks (TK 13 through TK 17): pre-blending, holding, double-stack, weigh batcher, and vent tanks served by cyclone-filter dust collectors (DC 13 and 15);
- Four existing Sand Plant silos, and pneumatic loading systems, served collectively by existing cyclone-filter dust collector (DC S1); and,
- Fugitive dust emissions from in-plant truck traffic.

At the Cement Bulk Plant facility, cement/additives are delivered by vendor trucks to the facility, and unloaded pneumatically into one of eleven (11) existing bulk storage tanks (Silos 1-10 and 12). The pneumatic conveyance air for the current silos, will be controlled by new silo vent dust collectors (DC 1 - 10 and 12) prior to release to atmosphere. To produce a blended solids product, ingredient material is suctioned from the various storage tanks to the weigh batcher tank (TK 15), and conveyance air vented from this tank is controlled by a dust collector (DC 15) prior to release to atmosphere. Blended material may be pneumatically transferred to other tanks (TK 13, 14, 16, and 17), to prepare batches for shipment. These tanks (TK 13, 14, 16, and 17) vent conveyance air streams to a second cyclone-filter dust collector (DC 13). To prepare blended product, sack material may be added manually, to the Blend Tank, which is pneumatically unloaded from or loaded from the Holding Tank and vented back to the Vent Tank controlled by a dust collector (DC 13).

At the Sand Plant facility, sand materials are pneumatically transferred to the four silos (Sand 1 through Sand 4) from either railcar or truck delivery lines. For shipment, sand materials are transferred pneumatically from the sand plant silos to one of four loading lines (Sand 5). The pneumatic conveyance air is controlled by an existing cyclone-filter dust collector (DC S1). None of the Sand Plant equipment will be modified as part of the proposed project.

The fugitive dust emissions generated from on-site truck traffic on paved plant areas are characterized in Table 6-5, included in form UA-2. This source assumes the trucks are typical over-the-road dry bulk tank trailers, with one or three compartments that are loaded and off-loaded by pneumatic transfer. Based on facility estimates, up to 24 trucks may be accommodated per 24-hour day. Hourly emissions estimates are based on the loading/unloading capacity for one truck at one time.

A Bulk Acid Blending/Loading facility (Unit 3) is currently permitted, but has been decommissioned and removed from the site. A small gel tank (7,350 gallons) used to store pre-mixed gel solutions is present at the site (current permit Unit 4).

Section 16

Air Dispersion Modeling

- 1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
- 2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
- 3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. Note: Neither modeling nor a modeling waiver is required for VOC emissions.	X
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	X

Check each box that applies:

- See attached, approved modeling **waiver for all** pollutants from the facility.
- See attached, approved modeling **waiver for some** pollutants from the facility.
- Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.
- Attached in UA4 is a **modeling report for some** pollutants from the facility.
- X** No modeling is required.

Source Description and Emission Controls

The Hobbs District facility emission sources after the planned project will be comprised of the dust collector vents associated with the Cement Bulk Plant, a dust collector at the Sand Plant, and operation of vehicles within the facility boundaries:

- Cement Bulk Plant silo dust collectors (DC 1 through 10, and 12)
- Cement Bulk Plant blending, holding, and vent tanks with cyclone-filter dust collectors (DC 13 and 15);

- Sand Plant dust collector (DC S1); and,
- Fugitive dust emissions from interior paved areas.

As described in Sections 3 and 10, the pneumatic conveyance air for the current silos, and two new silos after modification, will be efficiently controlled by individual dust collectors (DC 1-10 and 12) prior to release to atmosphere. To produce a blended solids product, ingredient material is suctioned from the various storage tanks to the weigh batcher tank (TK 15), and conveyance air vented from this tank is controlled by a dust collector (DC 15) prior to release to atmosphere. Several tanks (TK 13, 14, 16, and 17) vent conveyance air streams to a second cyclone-filter dust collector (DC 13). Blended material is pneumatically loaded into up to five trucks simultaneously from the Holding Tank and vented back to the Vent Tank controlled by a dust collector (DC 13). Section 6 provides a summary of the emission sources and controlled emissions results comprising the Cement Bulk Plant.

At the Sand Plant facility (Permit Unit 2), sand materials are pneumatically transferred to the four silos (Sand 1 through Sand 4) from either railcar or truck delivery lines. For shipment, sand materials are transferred pneumatically from the sand plant silos to one of four loading lines (Sand 5). The pneumatic conveyance air is controlled by an existing cyclone-filter dust collector (DC S1). None of the Sand Plant equipment will be modified as part of the proposed project.

Request for Waiver from Dispersion Modeling

This SCT facility is similar in function and equipment to other SCT facilities in Farmington and Artesia, New Mexico. In prior applications, the AQB Modeling Section has granted waivers from dispersion modeling for Farmington, Artesia as well as for SCT Hobbs. The waiver discussion is included in the section of the application, as indicated in the AQB Modeling Guidelines (2016), Section 2.3.1. Each of the control devices existing or planned for the SCT Hobbs facility is at a release height greater than 20 feet, and the release points are neither horizontal nor protected by rain caps that direct the emissions horizontally.

Based on the conservative emissions analysis presented in Section 6 and attached spreadsheets, the Hobbs facility currently and after the planned dust control upgrades will have very low post-control emissions of TSP, PM10 and PM2.5. Maximum hypothetical emissions for stack sources are summarized in Table 2-D, and developed in detail in supporting Tables 6-1 and 6-2. The fugitive emissions for on-site truck travel is calculated in Table 6-5. The post-project existing and modified sources will have total controlled emissions, conservatively assuming simultaneous operation of all material storage transfer units, which compare to the de minimis modeling thresholds as follows:

Particulate Species	Maximum Controlled Hourly Emissions (lb/hr) ¹	AQB Modeling Threshold Emissions (lb/hr) ²
TSP	0.50	5
PM ₁₀	0.37	1.0
PM _{2.5}	0.25	0.3

1 – Combined Cement Plant, Sand Plant, and fugitive truck travel emissions, refer to supporting calculations in Tables 6-1, 6-2, and 6-5.
 2 - *New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines - September 2016*, Table 1- Very Small Emission Rate Model Waiver Requirements. Values are from the column for “all emissions come from stacks 20 feet or greater in height and there are no horizontal stacks or raincaps.”

The daily and hourly actual routine emissions are proportionately lower, because the all the sources present at the facility cannot be practically operated simultaneously (i.e., transfers to all tanks cannot occur at once, no capacity for trucks to unload and load at the same time). Based on these calculated maximum particulate emissions, routine process operations with lower emission rates will not violate any New Mexico or National Ambient Air Quality Standards.

SCT requests that the AQB Modeling Section grant a waiver from dispersion modeling exercise for this very small emissions source. If the Section concurs with this request, please include a written confirmation that can be included in the application file for the requested permit revision.