**Table 6-1**
**EMISSION CALCULATIONS - TSP / $PM_{10}$ / $PM_{2.5}$: 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/ton) | (lb/hr) | (ton/yr) | (lb/ton) | (lb/hr) | (ton/yr) | (lb/ton) | (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 $PM_{10}$ 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.