TECHNICAL SUPPORT MEMORANDUM FOR PROPOSED SYNTHETIC MINOR PERMITTING ACTION

Permit No. 7321-SM

TO: File

FROM: Stephen S. Ours, P.E.
Chief, Permitting Branch

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SUBJECT: **Miller & Long Co., Inc.**
Synthetic Minor Permit No. 7321-SM to Construct and Operate Two Ready-Mix Concrete Batch Plants and Associated Engines at 66 New York Avenue NE, Washington DC

DATE: July 22, 2022

This Technical Support Memorandum has been prepared to document the basis for a facility-wide potential-to-emit-limited operating permit for the following:

Applicant and Permittee:
Miller & Long Co., Inc.
4001 Brandywine Street NW
Washington DC, 20001

Facility Location:
66 New York Avenue NE
Washington DC 20016

Application Signatory per 20 DCMR 200.13:
Mr. Jim Martinoski, Vice President

FACILITY DESCRIPTION AND BACKGROUND INFORMATION:

On January 3, 2022, the Air Quality Division (AQD) of the Department of Energy and Environment (the Department) received an application for a synthetic minor permit to construct

and operate a concrete batch plant at 66 New York Avenue NE, Washington DC 20016, to assist in the construction of the Securities and Exchange Commission's new building. The proposed permitting action accompanying this Technical Support Memorandum addresses this application. Miller & Long Co., Inc., located at 4001 Brandywine Street NW, Washington DC 20001, is the applicant who has proposed to construct and operate the temporary concrete batch plant. The application proposed installation and operation of primary emission units consist of two (2) Model 275 CEMCO Concrete Batch Plants, two (2) factory mounted generator sets powered by 173 hp (129 kWm) John Deere diesel-fired engines attached to and powering the CEMCO Batch Plants, one (1) 397 kWe[1] Caterpillar generator set powered by a Caterpillar model C18 diesel engine with an advertised power output of 838 hp (maximum rating of 861 hp), and one (1) 320 kWe Baldor Model TS400 generator set powered by a 538 hp John Deere diesel-fired engine.

However, upon evaluation of the original application, it was determined that the proposed Caterpillar and Baldor generator set engines (Tier 2 and Tier 3, respectively) did not comply with the requirements of 20 DCMR 209 (Minor New Source Review). As such, on July 20, 2022, the applicant amended their application to replace those two units with two MQ Power WhisperWatt^{TM}, Model DCA400SSI4F3, 336 kWe generator sets powered by Isuzu Model BQ-6WG1X 512.3 hp (382 kWm) diesel engines (Model year 2021, Tier 4). The reduction in potential to emit (PTE) from the replacement of these two engines reduced the PTE to below major source thresholds even without the "synthetic" limit, making the facility a natural (true) minor source. However, in order to expedite permit processing, the facility requested that AQD continue to process the permit as a synthetic minor with a limit of 3,744 hours of operation per 12-consecutive-month rolling period applied to all facility equipment.

The equipment at the site will also include a small Pearson Model P-10-25W No. 2 fuel oil-fired hot water boiler with a rated heat input of 3.5 MMBTU/hr.

DISCUSSION OF PROPOSED SYNTHETIC MINOR LIMITATIONS

In the application submitted on January 3, 2022, the applicant requested to construct and operate two (2) concrete batch plants with factory mounted diesel generators as well as two (2) auxiliary diesel generators for general site power. In follow-up submittals, the applicant requested various modifications to the operating hour limits placed on the equipment. However, as discussed above, with the replacement in the application of the Baldor and Caterpillar generator sets with the MQ Power generator sets, the application was revised again to request a limit of 3, 744 hours of operation per 12-consecutive-month rolling period applied to all facility equipment. Limits on the concrete production rate of 275 cubic yards per hour per plant and 1,029,600 cubic yards in any consecutive 12-month period have also been requested.

As demonstrated in the emissions summary below, although these limitations are not necessary to ensure that emissions are maintained below the District's major source threshold of 25 tons

[1] The unit did not specify the electric power output of generator, but this value was determined by multiplying the voltage of the unit (480 volts) by the current rating (828 amperes, and dividing by 1000 to convert to kWe from Watts.

per year of NO_x or any other pollutant major source threshold, they will provide additional assurance of lower emissions from this site.

With the establishment of these operational limits in Conditions III(a)(2)(A), III(a)(2)(H)(ii), and III(b)(2)(B) of the permit, along with associated monitoring and record keeping requirements[2], and a requirement to report exceedances of these operational limits found in Condition I(c)(3)(B), the operational limits are enforceable as a practical matter, and pursuant to 20 DCMR 200.6, this facility qualifies as a minor source.

EMISSIONS SUMMARY:

The following is an estimate of overall potential emissions from the facility:

FACILITY-WIDE EMISSIONS SUMMARY [TONS PER YEAR]		
Pollutants	**Potential Emissions without 20 DCMR 200.6†**	**Potential Emissions with 20 DCMR 200.6‡**
Sulfur Dioxide (SO_2)	12.33	5.27
Oxides of Nitrogen (NO_x)	14.62	6.25
Coarse Particulate Matter (PM10)	8.59	3.67
Fine Particulate Matter (PM2.5)	3.07	1.31
Volatile Organic Compounds (VOCs)	1.96	0.84
Carbon Monoxide (CO)	38.83	16.60

† Assumes 8760 hours per year of operation for all facility operations.
‡ Assumes 3,744 hours per year of operation for all facility operations per the facility's requested limits.

REGULATORY REVIEW:

This facility has been found to be subject to the requirements of the following regulations (except as specified in notes below):

Federal and District Enforceable:
20 DCMR Chapter 1 - General Rules
20 DCMR Chapter 2 - General and Non-Attainment Area Permits
20 DCMR 500 - Records and Reports
20 DCMR 502 - Sampling, Tests, and Measurements
20 DCMR 600 - Fuel-Burning Particulate Emission
20 DCMR 604 - Open Burning
20 DCMR 603 - Particulate Process Emissions
20 DCMR 605 - Control of Fugitive Dust

[2] See Conditions III(a)(3)(A), III(a)(3)(M), III(a)(4)(A), III(b)(3)(A), and III(b)(4)(A)(i) for these associated monitoring and record keeping requirements.

20 DCMR 606 - Visible Emissions
20 DCMR 774 - Architectural and Industrial Maintenance Coatings
20 DCMR 800 - Control of Asbestos
20 DCMR 801 - Sulfur Contents of Fuel Oils
20 DCMR 805 - Reasonably Available Control Technology for Major Stationary Sources of the Oxides of Nitrogen
20 DCMR 903 - Odorous or Other Nuisance Air Pollutants
40 CFR 51.212, 52.12, 52.30, 60.11, and 61.12 - Credible Evidence
40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CIICE)
40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE)

District Enforceable Only:
20 DCMR 402 - Chemical Accident Prevention *(Note: AQD did not make a positive determination that this regulation was applicable to the facility, but included it as a standard requirement in the permit.)*
20 DCMR 900 - Engine idling
20 DCMR 901 - Vehicular exhaust emissions
20 DCMR 902 - Lead Content of Gasoline
20 DCMR 903 - Odorous or other nuisance air pollutants
20 DCMR 1406 - Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

20 DCMR Chapter 2, Section 200 – General Permit Requirements:
All stationary engines regardless of size as well as concrete mixing equipment are subject to the Chapter 2 permitting requirements of this section. As such, all the significant units at the facility are subject to Chapter 2 permitting requirements. The 2.5 MMBTU/hr boiler would not separately be considered a significant unit requiring a permit, however, is it equipment used as part of the concrete plant operation and has applicable requirements. As such, it has been included in the permit as part of the concrete plant significant units.

As discussed above, the applicant has requested an operating hour limit of 3,744 hours per 12-consecutive-month rolling period for all operations at the site. Limits on the concrete production rate of 275 cubic yards per hour per plant and 1,029,600 cubic yards in any consecutive 12-month period have also been requested. Though not strictly required to achieve minor source status, these limits have been requested in accordance with 20 DCMR 200.6.

20 DCMR Chapter 2, Section 204 – Permit Requirements for Sources Affecting Non-Attainment Areas:
This section does not apply to the facility, because the potential emissions of NOx and all other pollutants from the equipment do not exceed the definition of “significant”.

20 DCMR Chapter 2, Section 209 – Permit Requirements for Non-Major Stationary Sources (Minor New Source Review):
In the initial application submitted for this facility, this section applied to the Baldor and Caterpillar generator sets, which each had a potential to emit greater than 5 tons per year of NOx, even after taking operating hour limits. However, when the control technologies for the units (Tier 2 and Tier 3, respectively) were evaluated, it was determined that they did not comply with this section. In order to remedy this, the applicant removed these units from the application, and instead proposed to use two MQ Power generator sets that met Tier 4 emission standards. However, because the MQ Power generator sets have much more effective NOx control technologies installed, they do not have the potential to emit greater than 5 tons per year of NOx. As such, they do not trigger applicability of 20 DCMR 209. Thus, this section is not applicable to the facility as now proposed.

20 DCMR Chapter 5 – Source Monitoring and Testing:
Throughout the permit, appropriate monitoring, testing, and record keeping requirements have been established to ensure that all emission and operational limits in the permit are enforceable as a practical matter. These requirements are established under the authority of Chapter 5.

20 DCMR Chapter 6, Section 603 and Appendix 6-1: Particulate Process Emissions:
The discharge of particulate matter[3] into the atmosphere from any process shall not exceed three hundredths (0.03) grains per dry standard cubic foot of the exhaust. Additionally, pursuant to 20 DCMR 603.1 and Appendix 6-1, based on the high process weight throughput of the equipment, the equipment is limited to emitting 40 pounds per hour of particulate matter. These limits are contained in Conditions III(a)(1)(C) and (D) of the draft permit.

To meet the particulate matter emissions standards, the applicant has proposed the use of dust collectors controlling emissions from the mixer and truck loading operations and elevated storage silo loading. All dust collector filters are required to maintain a control efficiency of 99.9%. Proper operation of the dust collectors will be monitored regularly through the use of differential pressure monitoring (to monitor filter element status) and regular (at least weekly) visible emissions monitoring. To ensure continuous proper operation, the permit requires the Permittee to keep replacement filter elements for the dust collectors on site.

Additionally, to ensure the equipment is maintained, records of maintenance are required in the permit.

20 DCMR Chapter 6, Section 605: Control of Fugitive Dust
The visible emissions limitations of 20 DCMR 605 are applicable to this concrete mix equipment. Reasonable precautions shall be taken to minimize the emissions of any fugitive dust into the outdoor atmosphere. The reasonable precautions shall include, but not be limited to, in

[3] 20 DCMR 603 refers to "particulate matter", however, at the time that this regulation was promulgated, that term referred to what is now termed "total suspended particulate matter" (TSP), or total filterable particulate matter. As such, in order to avoid confusion with other classifications of particulate matter, the permit refers to TSP in lieu of the regulatory language.

the case of demolition of building or structures, use, to the extent possible, of water; in the case of removal of demolition debris, which is dusty or likely to become dusty, use of water to thoroughly wet the material before moving or removing the material and keeping it wet or otherwise in a dust-free condition until eventual disposal. These requirements are found in Condition II(c) of this permit. Specific related operational requirements are found in Condition III(a)(2)(F) and (J). The facility must monitor the site for compliance per Condition III(a)(3)(F) and maintain records of deviations per Condition III(a)(4)(I).

20 DCMR Chapter 6 – Section 606: Visible Emissions:
The visible emissions limitations of 20 DCMR 606 apply to these concrete mix plant operations. Visible emissions shall not be emitted into the outdoor atmosphere from the operation of the concrete mix plant; provided that discharges not exceeding forty percent (40%) opacity (unaveraged) shall be permitted for two minutes in any sixty (60) minute period and for an aggregate of twelve (12) minutes in any twenty-four hour (24 hr.) period during start-up, or malfunction of equipment.

This requirement is contained in Condition III(a)(1)(F). Monitoring for compliance is required pursuant to Condition III(a)(3)(C). Records of any deviation must be kept pursuant to Condition III(a)(4)(F).

Note that language has been included in the permit notifying the facility that there is an outstanding call for a State Implementation Plan (SIP) revision from EPA that may result in revisions to the applicable regulation. As such, if the regulation is changed, the new regulatory requirements will supersede those expressed in the permit specifically.

20 DCMR 801: Sulfur Content of Fuel Oils:
This regulation limits fuel oil sulfur content to 1% by weight in all circumstances. There are more stringent requirements for commercial fuel oil, but the only portion of 20 DCMR 801 applicable to the emergency engines is the 1% sulfur content limit. This requirement is streamlined with the more stringent requirements found 40 CFR 60.4207(b) for the facility's NSPS engines. Additionally, it applies to the commercial fuel oil used in the small boiler where the sulfur content of the distillate fuel oil used in the unit must not exceed 15 parts per million by weight (ppmw) pursuant to 20 DCMR 801.3. This is specified in Condition III(a)(2)(H)(i).

40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines:
This regulation applies to all four diesel engines to be installed and operated at the site. It applies to stationary compression ignition internal combustion engines (CI-ICE) that: 1) are model year of 2007 or later, 2) commenced construction after July 11, 2005 and were manufactured after April 1, 2006, or 3) were modified or reconstructed after July 11, 2005.

The Department confirmed that the diesel CI-ICEs identified below are subject to 40 CFR 60, Subpart IIII:

Equipment Location	Emission Unit ID	Emission Unit Description
Parking Lot	Plant Gen 1	One factory mounted 129 kWe John Deere diesel generator set, Model# BJDXL06.8116 (Model year 2011)
Parking Lot	Plant Gen 2	One factory mounted 129 kWe John Deere diesel generator set, Model# BJDXL06.8116 (Model year 2011)
Parking Lot	Gen 1	One MQ Power WhisperWatt™, Model DCA400SSI4F3, 336 kWe generator set powered by an Isuzu Model BQ-6WG1X 512.3 hp (382 kWm) Diesel Engine (Model year 2021)
Parking Lot	Gen 2	One MQ Power WhisperWatt™, Model DCA400SSI4F3, 336 kWe generator set powered by an Isuzu Model BQ-6WG1X 512.3 hp (382 kWm) Diesel Engine (Model year 2021)

The requirements of this regulation applicable to these unit are incorporated throughout Condition III(b) of the permit.

40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources:
As part of the equipment at the site, the permit applicant has proposed to install a Pearson Model P-10-25W hot water boiler, rated at 3.5 MMBTU/hr heat input and fueled by No. 2 fuel oil. This equipment is covered by this regulation. The tune-up requirements are contained in Condition III(a)(2)(I). Reporting requirements are contained in Condition III(a)(4)(L). Record keeping related to this regulation is specified in Conditions III(a)(4)(M) and (N).

40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE):
Subpart ZZZZ of 40 CFR 63 regulates HAPs such as acetaldehyde, acrolein, benzene, toluene, xylene, cadmium, chromium, lead, etc., through surrogate compounds such as formaldehyde, CO and/or VOC.

A facility that emits or has the PTE 10 tons/year of any single HAP or 25 tons/year of any combination of HAPs is considered a major source of HAPs. Any source that is not a major source is an area source of HAPs. Because this facility does not have a PTE of more than 10 tons/year of a single HAP or an aggregate of more than 25 tons of total HAPs, it is not a major source; it is an area source.

Subpart ZZZZ is applicable to new or reconstructed compression ignition (CI) engines at this facility, where “new” is defined as those engines that are manufactured or reconstructed after June 12, 2006. Two of the generator sets (Plant Gen 1 and Plant Gen 2 have model year 2011 engines; Gen 1 and Gen 2 have model year 2021 engines), therefore they are therefore considered “new” rather than “existing” with respect to this regulation. Pursuant to 40 CFR

63.6590(c)(1), because these units are subject to 40 CFR 60, Subpart IIII, their only requirement under 40 CFR 63, Subpart ZZZZ is to comply with the requirements of 40 CFR 60, Subpart IIII.

PROCEDURE FOR SUBMITTING COMMENTS OR REQUESTING PUBLIC HEARING:

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The District shall grant such a request if it is deemed appropriate. The venue, date, and time for any public hearing will be announced in the D.C. Register and on the Department's website.

COMMENT PERIOD:

Beginning Date: July 29, 2022
Ending Date: August 29, 2022

All written comments should be addressed to the following individual and office:

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