

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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APPLICATION PROCESSING AND CALCULATIONS

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Equipment Location

Flint Group North America Corp.
13055 E. Temple Ave.
City of Industry, California 91746

Title V Revision:

Application No. 516721

**PERMIT TO CONSTRUCT
MODIFICATION**

Equipment Description

Application No. 516719 (Previous Application No. 404153)

MODIFICATION TO EXISTING MIXING SYSTEM NO.2 CONSISTING OF:

1. PORTABLE MIXER, SCHOLD MACHINERY CORPORATION, DUAL SHAFT, WITH A 40-HP AND A 100-HP MOTOR
2. ONE 800 GALLON MIXING TANK

BY THE REMOVAL OF
ONE 800 GALLON MIXING TANK

AND THE ADDITION OF;
ONE 1,000 GALLON MIXING TANK

Application No. 516720(Previous Application No. 404154)

MODIFICATION TO EXISTING MIXING SYSTEM NO.3 CONSISTING OF:

1. PORTABLE MIXER, SCHOLD MACHINERY CORPORATION, DUAL SHAFT, WITH A 40-HP AND A 100-HP MOTOR
2. ONE 800 GALLON MIXING TANK

BY THE REMOVAL OF
ONE 800 GALLON MIXING TANK

AND THE ADDITION OF;
ONE 1,000 GALLON MIXING TANK

Recommendation:

Permit to Construct is recommended for application No. 516719 & 516720 subject to the following conditions:

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Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULE 1141.1 AND 1171.
4. MATERIALS PROCESSED IN THE MIXERS NUMBER 1, 2, AND 3 ~~UNDER APPLICATION NOS. 404152, 404153 & 404154~~ SHALL NOT EXCEED 1,416,600 POUNDS IN ANY CALENDAR MONTH.
5. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC COMPOUNDS WITH A LISTING DATE OF MAY 2, 2003 OR EARLIER IDENTIFIED IN RULE 1401 EXCEPT COPPER AND COPPER COMPOUNDS.

Periodic Monitoring:

6. THE OPERATOR SHALL PERFORM SEMI-ANNUAL INSPECTION OF THE EQUIPMENT TO ENSURE THAT THE MOVABLE COVERS ARE CLOSED. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
 - A. NAME OF THE PERSON PERFORMING THE INSPECTION OF THE COVER.
 - B. DATE, TIME, AND RESULT OF THE INSPECTION.
[RULE 3004(a)(4)]
7. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE CLEANING LOG THAT INCLUDES STATEMENT OF THE APPROVED CLEANING METHOD.
[RULE 3004(a)(4)]
8. THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON AN ANNUAL BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE ANNUAL PERIOD. THE ROUTINE ANNUAL INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS.

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IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE-HOUR, THE OPERATOR SHALL VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST, AND EITHER:

- A. TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR
- B. HAVE A CARB-CERTIFIED SMOKE READER DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

- A. STACK OR EMISSION POINT IDENTIFICATION;
- B. DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;
- C. DATE AND TIME VISIBLE EMISSION WAS ABATED; AND
- D. VISIBLE EMISSION OBSERVATION RECORDED BY A CERTIFIED SMOKE READER.

[RULE 3004 (a)(4)]

Emissions And Requirements:

- 9. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 405, SEE APPENDIX B FOR EMISSION LIMITS
VOC: RULE 1141.1
VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS
VOC: RULE 109

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**PERMIT TO OPERATE
CHANGE OF CONDITION**

Application No. 516722 (Previous application no. 404152)

MIXING SYSTEM NO. 1 CONSISTING OF:

1. PORTABLE MIXER, SCHOLD MACHINERY CORPORATION, DUAL SHAFT, WITH A 40-HP AND A 75-HP MOTOR
2. ONE 800 GALLON MIXING TANK

Change of condition:

4. MATERIALS PROCESSED IN THE MIXERS NUMBER 1, 2, AND 3 UNDER APPLICATION NOS. 404152, 404153 & 404154 SHALL NOT EXCEED 1,416,600 POUNDS IN ANY CALENDAR MONTH.

Background

Flint Group North America Corp is in the business of manufacturing inks primarily for news print. They submitted several applications on 12/01/2010 to modify two existing mixers, No. 2 & 3, changing their capacities from 800 gallon to 1,000 gallons. Mixer No. 1's capacity will remain unchanged. The three mixers are subject to a usage cap of 1,416,600 pounds in any calendar month. Condition no. 4 referenced the devices by application number which required Mixer No. 1 also be subject to a change of condition. To prevent a similar situation from occurring in the future, the mixers will be numbered and condition number 4 will refer to the mixer number instead of an application number. Below is a summary of the applications submitted to make the changes to the mixers.

Application No.	Previous App. No.	Description	Action
516721			Title V Revision
516719	404153	Portable Mixer No.2	Modification
516720	404154	Portable Mixer No.3	Modification
516722	404152	Portable Mixer No.1	Change of Condition

The initial Title V facility Permit was issued on July 26, 2005 and reissued on November 16, 2010. The revision application, a/n 516721, was submitted to modify mixers No.2 & 3 by increasing the mixer capacity from 800 gallons to 1,000 gallons. The descriptions will also be changed to designate each mixer a number so condition number 4 will refer to this number instead of an application number.

A review of District records indicates that the facility has had no citizen complaints filed, Notices to Comply or Notices of Violation issued in the last two years. The facility is currently operating in compliance with all District rules and regulations.

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Process Description:

The process is a “batch” process in which raw materials are charged to the mixing tanks and then mixed or blended into a homogeneous mixture. The raw materials are listed and described below:

<u>Raw Material</u>	<u>Approx Wt%</u>	<u>Description</u>
Petroleum Oil	0-35	Petroleum Distillates, b.p. > 400 ⁰ F
Varnish vehicle	10-25	Mixture, soy bean oil and resin
Soy Bean Oil	10-23	soy bean oil
Pigment Flush	20-40	Concentrated mixture of pigment and soy bean oil.
Clay (Only Dry addition)	10-12	Kaolin Clay

From the MSDS, the Petroleum Distillate has only a 3.4wt% volatile volume and a VOC content of 0.26 lbs/gal.

The soy oil and resin is a semi solid with a zero VOC content.

The Pigment flush is a semi solid with a VOC content of 0.38 lbs/gal and the Kaolin clay is 100% solid with no VOC content.

Their 2002/2003 Annual Emissions Report shows an annual process rate of 7,293,300 lbs per year or 1753.2 lbs/hour based on a 16 hr/day, 5 days per week and 52 weeks per year.

The original mixers used to mix the inks in covered portable 800 gallon tubs. These tubs are approximately 8 feet in diameter and 6 feet tall. They are not heated. Heat is generated during the mixing process because of the viscous nature of the ink materials. Directly over the tank there was a very slight solvent odor, but away from the mixing process there were no odors.

Initially Flush(pigment) and oils are put into a tub. The flush is very thick almost a solid. The flush is mixed with oils to break it down into a thick paste. This paste is sent to their lab for Q/C. If Q/C results are satisfactory, they will add clays and more oils to the batch and mixed until smooth. This material is then sent to the lab for analysis before packaging. The clays are the only particulates that may become airborne. These are added to the tub which is vented to a baghouse to reduce the dust generated. There was no dust on the floors around the tubs. Clay residue was seen on the tub cover.

The baghouse uses a reverse pulse jet to clean the cartridges. The dust collected is discharged into an enclosed 55 gallon drum. The operators empty the drum approximately every 6 weeks. The particulate waste is reused in the manufacture of the black inks. Scheduled maintenance on the baghouse is performed once a year.

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Emissions Calculations

The increase in mixer capacity for the two mixers NO. 2 & 3 from 800 gallons to 1,000 gallons will have no impact on the emissions from these three mixers. Condition no. 4 limits the three to 1,416,600 pounds per calendar month.

The original emissions were determined using a process emission factor taken from The National Association Of Printing Ink Manufactures(NAPIM) of 0.013 lbs VOC/100 lbs Ink for sheet fed inks. This number, according to NAPIM is considered to be appropriate provided the VOC content does not exceed the amount of the tested ink, which was 38.4%. Flint’s paste inks have a maximum VOC content of 4%.

Maximum ink production: 17,000,000 lbs/yr, 1,416,600 lbs/month
(total for three mixers)

Operating Schedule: 16 hr/day, 5 days per week and 52 weeks per year
4160 hrs/yr

ROG:

Hourly: Three Mixers

Mixer #1- 800 gal, Mixer #2 & #3 - 1,000 gal.

R1/R2 = 17,000,000 lbs Ink/yr(0.013 lb VOC/100 lb Ink) = 2,210.0 lbs VOC/yr

Capacity Ratio: Mixer #1 800gal/2,800gal = 0.2858

Mixer #2,#3 1,000gal/2,800gal = 0.3571

Previous Hourly:

R1/R2 = 0.177 lbs VOC/hr

New Hourly:

Mixer #1

2210.0lbs VOC/yr(0.2858) = 631.62 lbs VOC/yr

631.62 lbs VOC/yr/(4160hrs/yr)

= 0.152 lbs VOC/hr

Mixer #2, #3

2210.0lbs VOC/yr(0.3571) = 789.19 lbs VOC/yr

789.19 lbs VOC/yr/(4160hrs/yr)

= 0.190 lbs VOC/hr

Daily:

Mixer #1

R1 = R2 = 0.152 lbs VOC/hr(16 hrs/day

= 2.43 lbs/day each

delta = -0.4 lbs VOC/day reduction

Mixer #2,#3

R1 = R2 = 0.190 lbs VOC/hr(16 hrs/day

= 3.04 lbs/day each

delta = +0.208 lbs VOC/day increase each

30-day average:

Equipment Cap in place. No Offsets required. 30-day average = 0

Particulates:

The emission factor from NAPIM is 0.11lb PM/100 lb ink.

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PM10 = 50% PM

Previous Hourly:

R1 = 1.36 lbs PM/hr 0.68 lbs PM10/hr
 R2 = 0.0136 lbs PM/hr 0.00681 lbs PM10/hr

New Hourly:

Mixer #1

R1 = 17,000,000 lbs Ink/yr(0.1lb PM/100 lb Ink) = 17000.0 lbs PM/yr
 = 17,000.0 lbs PM/yr(0.2858) = 4,858.6 lbs PM/yr
 = 4,858.6 lbs PM/yr each/4160 hrs/yr
 = 1.17 lbs PM/hr 0.585 lbs PM10/hr
 R2 = 1.17 lbs PM/hr(1-0.99)
 = 0.0117 lbs PM/hr 0.00585 lbs PM10/hr

Mixer #2, #3

R1 = 17,000,000 lbs Ink/yr(0.1lb PM/100 lb Ink) = 17000.0 lbs PM/yr
 = 17,000.0 lbs PM/yr(0.3571) = 6,070.7 lbs PM/yr
 = 6,070.7 lbs PM/yr each/4160 hrs/yr
 = 1.46 lbs PM/hr 0.73 lbs PM10/hr each
 R2 = 1.46 lbs PM/hr(1-0.99)
 = 0.0146 lbs PM/hr 0.0073 lbs PM10/hr each

Daily:

Mixer #1:

R1 = 1.17 lbs PM/hr(16 hrs/day)
 = 18.72 lbs PM/day 9.36 lbs PM10/day

R2 = 18.72 lbs PM/day(1-0.99)
 = 0.1872 lbs PM/day 0.0936 lbs PM10/day

Delta = -0.304lbs PM/day -0.0154 lbs PM10/day Reduction

Mixer #2, #3:

R1 = 1.46 lbs PM/hr(16 hrs/day)
 = 23.36 lbs PM/day 11.68 lbs PM10/day

R2 = 23.36 lbs PM/day(1-0.99)
 = 0.2336 lbs PM/day 0.1168 lbs PM10/day

Delta = +0.016 lbs PM/day +0.008 lbs PM10/day Increase each

30-day Average PM10

Equipment Cap in place. No Offsets required. 30-day average = 0

Risk Assessment:

There will be no change in the emissions from the mixer capacity increase. Compliance with Rule 1401 is expected with no increase in health risk.

Evaluation & Rule Review

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Rule 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school.

No public notice is required since no school is located within 1,000 ft from the above site.

Rule 212 (c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The proposed project will not result in an emission increase from the facility in excess of the limits specified in Rule 212(g). Therefore, a public notice requirement will not be required under this section of the rule.

Rule 212(c)(3): This section requires a public notice for all new or modified permit unit with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in MICR greater than 1E-6 per permit unit or greater than 10E-6 per facility.

The proposed project will not result in an emission increase of toxic emissions associated with the operation three mixers, therefore, a public notice is not required under this section of the rule.

Rule 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The emission increase due to the operation of the three mixers is summarized below:

	Maximum Daily Emissions					
	<u>ROG</u>	<u>NO_x</u>	<u>PM₁₀</u>	<u>SO₂</u>	<u>CO</u>	<u>Pb</u>
Emission increase	0	0	0	0	0	0
MAX Limit (lb/day)	30	40	30	60	220	3
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

A Rule 212(g) notice will not be required since the emissions from this equipment will not exceed the maximum limit of this rule.

Rule 401: Compliance with this rule is expected.

Rule 402: Compliance with this rule is expected.

Rule 404: Maximum Concentration of Particulate Matter allowed in discharge gas at 4,000 cfm is 0.112 Grains per cubic foot. The Calculated PM concentration is as follows:

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$$0.04 \text{ lb PM/hr} \times (7,000 \text{ gr/lb}) \times (\text{hr}/60 \text{ min}) = 4.67 \text{ gr/min}$$

$$4.67 \text{ gr/min} / (4,000 \text{ cuft/min}) = 0.00116 \text{ gr/cuft}$$

The Particulate concentration emitted from the bag house exhaust will comply with the requirements of this rule. Compliance is expected.

Rule 405: Maximum Discharge Rate allowed for Solid Particulate Matter for a process weight of 12,000 lbs/hr is 9.32 lbs PM/hr. The controlled PM emissions from the process are 0.04 lbs PM/hr. The PM emission rate of 0.04 lbs/hr is less than the Maximum Discharge Rate allowed. Compliance with this rule is expected.

Rule 1141.1: This facility is expected to comply with all work practice standards and recordkeeping requirements specified in this rule.

Rule 1171: The inks manufactured at this facility are water-base and can be cleaned-up using water and a detergent. Compliance with this rule is expected.

REG XIII: New Source Review.

BACT: The particulate emissions from the mixing operation are controlled by a bag house which is considered BACT for controlling PM/PM10 emissions.

1303(b) States that a new permit unit must meet each of the four requirements:

1) Modeling:

No further modeling is required for PM10 since the PM10 emissions for the mixing operation 0.007lbs/hr, less than the 0.41lbs/hr PM10 threshold limit in Rule 1303, Table A-1. No modeling is required for ROG or SOx.

2) Emission Offsets:

The modification/change of condition will not trigger any emission increase since the equipment is capped to an existing usage limit. No offsets are required.

3) Facility Compliance:

This facility is in compliance with all applicable rule and regulations of the AQMD.

4) Major Polluting Facilities:

The change of condition is not considered a major modification to this major polluting facility.

Rule 1401: Toxics

There is no change in the operation and usage of materials in the mixing operations. No increase in toxics will occur. A toxic risk assessment will not be triggered. Compliance with this rule is expected.

REGULATION XXX:

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This facility is not in the RECLAIM program. The proposed project is considered as a “minor permit revision” to the Title V permit for this facility.

Rule 3000(b)(6) defines a “minor permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NOx	40
PM10	30
Sox	60
CO	220

To determine if a project is considered as a “minor permit revision” for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the initial Title V permit shall be accumulated and compared to the above threshold levels. This proposed project is the 1st permit revision to the renewed Title V permit issued to this facility on November 16, 2010. The following table summarizes the cumulative emission increases resulting from all permit revisions since the initial Title V permit was issued:

Revision	HAP	VOC	NOx	PM ₁₀	SOx	CO
1 st Permit Revision; Modify Mixers #2 & #3 to increase mixer capacity from 800 gallons to 1,000 gallons and change the reference in the equipment limit from application no. to equipment number.	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	0
Maximum Daily	30	30	40	30	60	220

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “minor permit revision”.

RECOMMENDATION

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The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “minor permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.