

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Sun Chemical
Attn: Terry Harris
135 West Lake Street
Northlake, Illinois 60164

Application No.: 08070057

I.D. No.: 091804AAF

Applicant's Designation:

Date Received: July 24, 2008

Subject: 2009 Expansion

Date Issued: September 9, 2009

Location: 3200 Festival Drive, Kankakee, Kankakee County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of an increase in production by the existing ink production equipment as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit authorizes modifications to existing printing ink manufacturing operations (affected operations) to increase production which would facilitate plant consolidation by Sun Chemical.
- b. This permit authorizes operation of the source as a major source of emissions for hazardous air pollutants (HAPs).
- c. This permit supersedes Construction Permit 06060001, effective on the date of issuance.
- 2a. The affected operations are subject to the National Emissions Standards for Hazardous Air Pollutants: Miscellaneous Coatings Manufacturing, 40 CFR 63 Subpart HHHHH. This is because the increase in production would result in an increase in potential emissions, such that the source would be a major source of HAPs, subject to the requirements of 40 CFR Part 63, Subpart HHHHH. In particular, this permit allows annual emissions of more than 10 tons of an individual HAP, i.e. toluene.

Note: Certain emission controls were installed pursuant to Construction Permit 06060001 to reduce emissions of HAPs, including addition of vent condensers to batch processing vessels, addition of carbon adsorbers and vapor balancing to bulk storage tanks, addition of vapor balancing and vent condensers to tanker truck loading operations, and implementation of a Leak Detection and Repair (LDAR) program on piping components. For a detailed description, see Attachment A. The original purpose of these improvements was to reduce emissions of HAPs so that the source would not be a major source of HAP emissions. The additional emission controls must now be operated pursuant to the NESHAP, which is now applicable due to the source being a major source of HAPs.

- b. Pursuant to this NESHAP, the Permittee shall implement a Leak Detection and Repair (LDAR) Program for all readily accessible components in VOM service at the plant that meet the requirements of 40 CFR 63, Subpart UU, National Emission Standards for Equipment Leaks--Control Level 2 Standards.
- 3. This permit does not relax or otherwise revise any requirements and conditions that apply to the operation of the source, including applicable monitoring, testing, recordkeeping, and reporting requirements in the current CAAPP permit for the source.
- 4a.
 - i. The annual usage of VOM solvent by the affected operations shall not exceed 200 million pounds per year.
 - ii. Emissions of VOM from the source shall not exceed 80.0 tons/year.
 - iii. Compliance with these annual limits shall be determined from a running total of 12 months of data, i.e., from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- b. VOM emissions from individual affected operations or groups of operations shall not exceed the limits in Table 1.
- c. This permit is issued based on this project not being a major modification for purposes of the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This is because the source is not a major source for emissions of volatile organic material (VOM).
- 5. At all times, the Permittee shall maintain and operate the affected operations, including associated control devices, in a manner consistent with good air pollution control practice for minimizing emissions.
- 6a. The Permittee shall install, operate, and maintain a continuous monitoring device to record the temperature of the coolant supply to the condensers.
- b. The Permittee shall install, operate and maintain instrumentation on each condenser to measure inlet and outlet gas temperatures for each condenser.
- 7a. The Permittee shall measure the VOM concentration in the exhaust from the canister in each carbon adsorber on a regular basis until breakthrough occurs and the adsorbent is replaced. These requirements shall be conducted on a weekly basis until 80 percent of the theoretical adsorption capacity is reached, based on appropriate engineering calculations and records. Thereafter measurements shall be conducted on a daily basis.

- b. The Permittee shall verify (confirm correct connection and operation of) vapor balance lines during each bulk loading and unloading transfer.
- 8a. The Permittee shall conduct applicable performance tests as required by the NESHAP, 40 CFR 63, Subpart HHHHH.
- b. Testing for purposes of the NESHAP, 40 CFR 63, Subpart HHHHH shall be conducted using the applicable methods and procedures specified by 40 CFR 63, Subparts A and HHHHH.
- 9a. The Permittee shall fulfill all applicable recordkeeping requirements of the NESHAP, including the recordkeeping required by 40 CFR 63.8080.
- b. The Permittee shall keep a file that contains records of the HAP content of each HAP containing material used, with source of data and date, and supporting documentation, e.g., analysis data, supplier formulation data, an MSDS, etc.
- c. The Permittee shall keep records of usage of VOM solvent, toluene and any other individual HAP used in significant quantities at the plant (pounds/month and pounds/year).
- d. For each operation controlled by a condenser and/or a carbon adsorber, the Permittee shall keep:
 - i. Operating records.
 - ii. A file with design information and either engineering calculations or specifications for the performance of the device.
 - iii. For each carbon adsorber, a file containing the length of operation in days until the capacity of a canister is reached (or break through occurs), based on the capacity of the canister and the maximum daily rate of VOM generating from the units being controlled.
 - iv. An operating log or other records, that includes detailed information for any malfunction or breakdown.
 - v. Logs of inspection, maintenance, and repairs.
 - vi. Records of VOM and HAP emissions (tons/month and tons/year) with supporting calculations.
- e. For each operation controlled by vapor balancing, the Permittee shall keep:
 - i. Operating records.
 - ii. A file with design information and engineering calculations for the performance of the vapor balancing.

- iii. An operating log or other records, that includes detailed information for any malfunction or breakdown.
 - iv. Logs of inspection, maintenance, and repairs.
 - v. Records of VOM and HAP emissions (tons/month and tons/year) with supporting calculations.
- f. For each unit subject to the LDAR program, the Permittee shall keep records meeting the requirements of 40 CFR 63.1038, including:
- i. A file with design information and engineering calculations including applicable emission factors, HAP content and number of monitored components.
 - ii. Records documenting performance of required leak monitoring.
 - iii. Records for other leaks, which are identified by means other than monitoring.
 - iv. Records documenting timely repair of leaks and performance of follow-up monitoring.
 - v. Records of VOM and HAP emissions (tons/month and tons/year) with supporting calculations.
- g. For each uncontrolled operation, the Permittee shall keep:
- i. Operating records.
 - ii. Logs of inspection, maintenance, and repairs.
 - iii. Records of VOM and HAP emissions (tons/month and tons/year) with supporting calculations.
- h. For purposes of these records:
- i. Operating records shall include records of hours of operation or raw material usage or production, so as to be able to determine actual uncontrolled emissions from the affected operation.
 - ii. Records of HAP emissions shall separately address toluene and other individual HAPs.
- 10a. The Permittee shall fulfill all applicable reporting requirements of the NESHAP, including the reporting required by 40 CFR 63.8075
- b. The Permittee shall promptly notify the Illinois EPA of any deviation from the requirements of this permit, consistent with provisions in its CAAPP permit, e.g., reports shall describe the probable cause of such deviations, and corrective actions and any preventive measures taken.

11. The Permittee is allowed to operate the affected operations pursuant to this construction permit until final action is taken to address this project in a renewal of the source's CAAPP Permit.

If you have any questions on this, please call Kevin Hecht at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

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cc: Region 1

Attachment A: List of Process Equipment and
Emission Control Measures

System	Unit Description	Vessel ID	Emission Control
New Varnish Production	Pre-Mix	M-40	Condenser #3
	Storage Tank	STK-16	Condenser #13
	Packaging	---	Vapor balancing
	Fugitive Equipment Leaks	---	LDAR Program
Yellow 5 & 6	Pre-Mix	M-33	Condenser #1 and Dust Collector #5
	Feed Vessel	M-34	Condenser #1
	Feed Vessel	M-35	Condenser #1
	Storage Tank	STK-12	Condenser #12
	Storage Tank	STK-13	Condenser #12
	Storage Tank	STK-14	Condenser #12
	Storage Tank	STK-15	Condenser #12
	Storage Tank	STK-66	Condenser #9
	Storage Tank	STK-71	Condenser #9
	Storage Tank	STK-73	Condenser #9
	Blend Vessel	M-52	Condenser #16
	Blend Vessel	M-53	Condenser #16
	Blend Vessel	M-54	Condenser #16
	Packaging (Tanker Loading)	--	Vapor Balancing
	Tote Filling	--	None
	Filter Changing	--	None
	Fugitive Equipment Leaks	--	LDAR Program
Red 8 & 9	Pre-Mix	M-39	Condenser #3 and Dust Collector #3
	Feed Vessel	M-38	Condenser #3
	Storage Tank	STK-17	Condenser #13
	Storage Tank	STK-20	Condenser #13
	Storage Tank	STK-24	Condenser #13
	Storage Tank	STK-65	Condenser #7
	Storage Tank	STK-72	Condenser #7
	Blend Vessel	M-48	Condenser #15
	Blend Vessel	M-49	Condenser #15
	Blend Vessel	M-50	Condenser #15
	Packaging (Tanker Loading)	--	Condenser #16
	Tote Filling	--	None
	Filter Changing	--	None
	Fugitive Equipment Leaks	--	LDAR Program
Blue 3 & 4	Premix	M-30	Condenser #4 and Dust Collector #7
	Premix	M-31	Condenser #4 and Dust Collector #6
	Feed Vessel	M-32	Condenser #4
	Feed Vessel	M-29	Condenser #4
	Storage Tank	STK-4	Condenser #11
	Storage Tank	STK-6	Condenser #11
	Storage Tank	STK-7	Condenser #10
	Storage Tank	STK-10	Condenser #11

System	Unit Description	Vessel ID	Emission Control
Blue 3 & 4 (Continued)	Storage Tank	STK-68	Condenser #8
	Storage Tank	STK-69	Condenser #8
	Blend Vessel	M-43	Condenser #15
	Blend Vessel	M-44	Condenser #15
	Blend Vessel	M-51	Condenser #16
	Packaging (Tanker Loading)	--	Vapor Balancing and Condenser #16
	Tote Filling	--	None
	Filter Changing	--	None
	Fugitive Equipment Leaks	--	LDAR Program
Black 1, 2 & 7	Pre-Mix	M-28	Condenser #5 and Dust Collector #8
	Pre-Mix	M-37	Condenser #2 and Dust Collector #4
	Feed Vessel	M-27	Condenser #5
	Feed Vessel	M-36	Condenser #2
	Storage Tank	STK-3	Condenser #10
	Storage Tank	STK-5	Condenser #10
	Storage Tank	STK-8	Condenser #11
	Storage Tank	STK-21	Condenser #15
	Storage Tank	STK-67	Condenser #8
	Storage Tank	STK-70	Condenser #7
	Blend Vessel	M-45	Condenser #15
	Blend Vessel	M-46	Condenser #15
	Blend Vessel	M-47	Condenser #15
	Blend Vessel	M-57	Condenser #16
	Packaging (Tanker Loading)	--	Vapor Balancing and Condenser #16
	Tote Filling	--	None
	Filter Changing	--	None
Fugitive Equipment Leaks	--	LDAR Program	
Extender	Blend Vessel	M-55	Condenser #16
	Blend Vessel	M-56	Condenser #16
	Blend Vessel	M-62	Condenser #15
	Packaging (Tanker Loading)	--	Vapor Balancing and Condenser #16
	Filter Changing	--	None
	Fugitive Equipment Leaks	--	LDAR Program
Clay Base	Premix	M-42	Condenser #14 and Dust Collector #1
	Feed/Grind	M-41	Condenser #14
	Storage Tank	STK-11	Condenser #10
	Storage Tank	STK-18	Condenser #13
	Filter Changing	--	None
	Fugitive Equipment Leaks	--	LDAR Program
Gilsonite	Premix	M-25	Condenser #6 and Dust Collector #10
	Truck Unloading	--	Dust Collector #17
	Storage Tank	STK-1	Condenser #6
	Storage Tank	STK-9	Condenser #6

System	Unit Description	Vessel ID	Emission Control
Gilsonite (Continued)	Filter Changing	--	None
	Fugitive Equipment Leaks	--	LDAR Program
Varnish & Wax	Premix	M-26	Condenser #6 and Dust Collector #9
	Storage Tank	STK-2	--
	Storage Tank	STK-19	Condenser #13
	Packaging (Tanker Loading)	--	Condenser #16
	Fugitive Equipment Leaks	---	LDAR Program
Equipment Cleaning	All Systems	--	Block Production Management
Bulk Storage	Varnish Storage	TK-101A	Vapor Balancing
	Varnish Storage	TK-101B	Vapor Balancing
	Varnish Storage	TK-102	Vapor Balancing
Bulk Storage	Varnish Storage	TK-103	Vapor Balancing
	Varnish Storage	TK-104	Vapor Balancing
	Varnish Storage	TK-105	Vapor Balancing
Bulk Storage	Solvent Storage	TK-200	Carbon Unit #19; Vapor Balancing
	Solvent Storage	TK-210	Carbon Unit #19; Vapor Balancing
	Solvent Storage	TK-260	Carbon Unit #19; Vapor Balancing
Bulk Storage	Solvent Storage	TK-220	Carbon Unit #20; Vapor Balancing
	Solvent Storage	TK-230	Carbon Unit #20; Vapor Balancing
	Solvent Storage	TK-240	Carbon Unit #20; Vapor Balancing
	Solvent Storage	TK-250	Carbon Unit #20; Vapor Balancing
Bulk Storage	Varnish Storage	TK-300	Vapor Balancing
	Varnish Storage	TK-310	Vapor Balancing
	Varnish Storage	TK-320	Vapor Balancing

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Table 1: Limits on Emissions of Volatile Organic Material (VOM)

Area, Activity or Emission Unit	Control Device	Limit	
		Tons/Year	Tons/Month
Emission Units Not Equipped with Control Devices			
Filter Losses for Ink Systems 1, 2, & 7 (Black), Ink Systems 3 & 4 (Blue), Ink Systems 8 & 9 (Red), and Ink Systems 5 & 6 (Yellow)	---	0.17	0.02
Filter Losses for Clay System, Gilsonite System, Varnish/Wax (EHEC) System, and Extender System	---	0.02	0.01
Base Transfer to Totes	---	1.44	0.14
Tanker Truck Washing	---	0.41	0.04
Sitewide LDAR Components	(LDAR Program)	8.54	0.85
	Subtotal	10.59	1.06
Emission Units with Condensers			
M-33 thru 35	Condenser 1	0.44	0.04
M-36 & 37	Condenser 2	0.26	0.03
M-38, 39 & 40	Condenser 3	0.90	0.09
M-29 thru 32	Condenser 4	0.44	0.04
M-27 & 28	Condenser 5	0.26	0.03
M-25 & 26, STK-1 & 6	Condenser 6	1.79	0.18
STK-65, 70 & 72	Condenser 7	0.16	0.02
STK-67 thru 69	Condenser 8	0.12	0.01
STK-66, 71 & 73	Condenser 9	0.11	0.01
STK-3, 5, 7 & 11	Condenser 10	0.21	0.02
STK-4, 6, 8 & 10	Condenser 11	0.16	0.02
STK-12 thru 15	Condenser 12	0.14	0.01
STK-16 thru 20 & 24	Condenser 13	0.66	0.07
M-41 & 42	Condenser 14	0.23	0.02
M-43 thru 50 & 62, STK-21	Condenser 15	0.41	0.04
M-51 thru 57, Truck Loading	Condenser 16	1.58	0.16
	Subtotal	7.87	0.79
Emission Units with Vapor Balance Systems			
Varnish Bulk Storage	Systems 1 & 4	0.49	0.05
Product Loading	Systems 5 & 6	0.70	0.07
	Subtotal	1.19	0.12
Emission Units with Carbon Canisters and/or Vapor Balance Systems			
Solvent Bulk Storage, STK-200, 210, 220, 230, 240 250 & 260	Carbon 19 & 20/ Systems 2 & 3	0.24	0.03
	Subtotal	0.24	0.03
	Total	19.89	1.99

Notes:

M = Blend Vessel or Feed Vessel
 STK = Storage Tank
 LDAR = Leak Detection and Repair

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