Title V Air Operation Permit Renewal
Permit No. 1130004-046-AV

APPLICANT

The applicant for this project is Taminco US LLC. The applicant's responsible official and mailing address are: Shane Fowler, Site Manager, Taminco US LLC, Taminco Pace Plant, 4575 Highway 90 East, Pace, Florida 32571-0467.

FACILITY DESCRIPTION

The applicant operates the existing Taminco Pace Plant, which is located in Santa Rosa County at 4575 Highway 90 East, Pace, Florida.

Taminco Pace Plant is an existing Chemical Processing Plant, which is categorized under Standard Industrial Classification Code No. 2869. The existing Taminco Pace Plant is comprised of five chemical manufacturing units. Plant Nos. 1 and 4 produce methylamines; Plant No. 2 produces a variety of higher amines, including alkylamines and amylamines; Plant No. 3 processes higher amines; and the DIMLA Plant produces dimethyl laurylamine (DIMLA12), dimethyl myristylamine (DIMLA14), dimethyl hexadecylamine (DIMLA16) and a blend of DIMLA12, DIMLA14 and/or DIMLA16 (e.g. DIMLA1214). The Utilities area contains two boilers and three cogeneration units. The cogeneration units are owned by Florida Power & Light Company but operated by Taminco and permitted separately under Facility ID No. 1130173.

Methylamines Plant Nos. 1 and 4

At Methylamines (MA) Plants Nos. 1 and 4, methanol is continuously reacted with ammonia to yield methylamines. A natural gas-fired preheater is used to reach reaction temperature. Volatile off-gases from the low-pressure absorbers are controlled with the Amines Plants Flare (EU 005) or the boilers (EU 001 and EU 003). Process gases from the high-pressure absorber vents can be routed to the boilers or to the Amines Plants Flare. Visible emissions from the gas-fired heater and the flare are controlled by proper combustion. Wastewater generated is treated in the wastewater treatment system.

Higher Amines Plant Nos. 2 and 3

At Higher Amines Plants Nos. 2 and 3, alcohols, ammonia, ethers, aldehydes, ketones and other amines are reacted to yield various alkylamines and amylamines. A natural gas-fired preheater is used to bring the mixture to reaction temperature. The volatile off-gases from the low-pressure absorbers are controlled by the Amines Plants Flare or the boilers. Process gases from the high-pressure absorber vent in Higher Amines Plant No. 2 can be routed to the boilers or to the Amines Plants Flare. Visible emissions from the gas-fired heater and the flare are controlled by proper combustion. Wastewater generated is treated in the wastewater treatment system.

Amines Plants Flare

The Amines Plants Flare is a non-assisted flare with a natural gas pilot. Off-gases from the product absorbers at MA Plants, the Higher Amines Plants and the DIMLA Plant, as well as other process vents at the facility, are continuously released to the flare for destruction. An infra-red and a flame strength camera are utilized to continuously monitor the flame. The flame strength will alarm the control room operator if the flame goes out. The flare pilot will not relight itself. An alarm delay is built into the computer logic to avoid false alarms during brief instances when weather conditions may disrupt the flame viewed by the camera. Natural gas is fed with process gas in a ratio of 0.3:1 for streams that do not have direct BTU measurement to ensure that the minimum net heating value of gas being combusted by the flare is maintained, and a high flow alarm on the gas flow to the flare ensures that the maximum allowable flare exit velocity is not exceeded.

DIMLA Plant

At the DIMLA Plant, Dimethyl Laurylamine is manufactured from a C12 alcohol (lauryl alcohol), a C14 alcohol (myristyl alcohol), a C16 straight chain alcohol (Hexadecyl alcohol) or a mixture of the C12, C14, and/or C16

alcohols. The alcohol feed (ROH) is reacted with dimethylamine (DMA) in a catalyzed reaction with hydrogen present. Vent streams from the amines absorption column, the amines reactor and the amines desorption column are sent to the low-pressure absorber in the MA Plant No. 1 or in the MA Plant No. 4 or directly to the flare header. Wastewater from the amines desorption column can go to the wastewater treatment system. The water phase from the decanters is also sent to the wastewater treatment system via the wastewater recycle tank TK-62057 or the wastewater tank TK-62099. Residue from the ROH evaporator and a portion of the DIMLA purification column residue are sold or disposed of offsite. Off-gases from the vacuum system are recovered using an atmospheric scrubber that feeds the amines absorption column.

Boilers

The Riley Stoker boiler (EU 001) and B&W boiler (EU 003) are designed to burn natural gas and off gases from the amines and dimethyl laurylamine processes. The vent gases are fed through annular burners with natural gas to ensure complete combustion. Each boiler is designed for a maximum firing rate of 130 million British thermal units per hour (MMBtu/hr) and is capable of producing about 90,000 pounds per hour (lb/hr) of 600 pounds per square inch gauge (psig) steam. Flue Gas Recirculation (FGR) has been added to the Riley Stoker boiler for control of NOx emissions. An estimated 50% control of NOx is expected; however, the Riley Stoker Boiler is not required to operate the FGR to stay in compliance because emissions calculations were done without taking the FGR NOx reduction into account.

Florida Power & Light Company owns three cogeneration units located within the Taminco Pace Plant boundaries. Taminco personnel operate the units, but the Florida Power & Light Company maintains compliance with a separate Title V air operation permit under Facility No. 1130173.

Reciprocating Internal Combustion Engines

The Taminco Pace Plant operates four *existing* stationary emergency, diesel fueled, compression ignition, reciprocating internal combustion engines (CI RICE):

Equip. I.D.	Area/Location	Existing or New	Construction Commenced Date	Brake hp	Fuel Type
PG24101C	B-Area well water pump	Existing	04/19/1994	234	Diesel
PG24101B	No. 2 well water pump	Existing	04/06/1994	234	Diesel
D24018	Plant emergency generator	Existing	06/07/1991	330	Diesel
PG24121	South Foxtrot fire water pump	Existing	04/15/1994	340	Diesel

These engines are *existing* stationary reciprocating internal combustion engines [per 40 CFR 63.6590(a)(1)(ii)] with a rating of less than 500 brake horsepower (Hp), located at a major source of hazardous air pollutants (HAP) and constructed before June 12, 2006. These stationary CI RICE are subject to 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines and must comply with the applicable emission limitations in Table 2c to 40 CFR 63, Subpart ZZZZ for Emergency Stationary CI RICE.

Taminco also operates one *new* stationary emergency, diesel fueled, compression ignition, reciprocating internal combustion engine:

Equip. I.D.	Area/Location	Existing or New	Construction Commenced Date	Brake hp	Fuel Type
PG24114	Main fire water pump	New	06/2016	268	Diesel

This new CI RICE is regulated by 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. The fire pump engine is a "new" stationary emergency CI RICE with a displacement of less than 30 liters per cylinder, located at a major source of HAP, commenced construction on or after 6/12/2006, and has a post-2007 model year.

REGULATED EMISSIONS UNIT IDENTIFICATION NUMBERS AND DESCRIPTIONS

EU No.	Brief Description
Regulated Emissions Units	
	Methanol Storage:
029	Methylamines Plants Nos. 1 and 4 HON Group 1 Storage Tanks (Methanol)
047	Methanol Storage HON Maintenance Wastewater
048	Methylamines Plants Sample Points (HON)
	Boilers:
001	Riley Stoker Boiler
003	B & W Boiler
	Methylamines Plant No. 1:
005	Amines Plants Flare
006	Methylamines Plant No. 1 Gas Fired Heater
036	Methylamines Plants Nos. 1 and 4 HON Equipment Leaks
046	Sitewide HON Heat Exchangers
049	Methylamines Plant No. 1 Process Vents
050	Methylamines Plant No. 1 Wastewater
051	Methylamines Plant No. 1 HON Maintenance Wastewater
054	Methylamines Plants Nos. 1 and 4 NSPS Storage Tanks
	Higher Amines Plants:
007	Higher Amines Plant No. 2 Gas-Fired Heater
055	72-inch Batch Column Process Vent
056	72-inch Batch Column Maintenance Wastewater
059	72-inch Batch Column Wastewater
070	Higher Amines Plant Process Vents
	Methylamines Plant No. 4:
060	Methylamines Plant No. 4 Gas-Fired Heater
033	Methylamines Plant No. 4 Process Vents
034	Methylamines Plant No. 4 Wastewater
035	Methylamines Plant No. 4 HON Maintenance Wastewater
037	Methylamines Plant No. 4 VOC Equipment Leaks
053	Methylamines Plants Nos. 1 and 4 HON Group 2 Storage Tanks
	DIMLA Plant:
058	DIMLA MON Group 2 Storage Tanks
071	DIMLA MON Maintenance Wastewater
072	DIMLA MON Wastewater
077	DIMLA MON Equipment Leaks
078	DIMLA VOC Equipment Leaks
079	DIMLA Scrubber
	Plant Wide:
080	Existing Emergency Reciprocating Internal Combustion Engines (Before 2006)
081	New Emergency Reciprocating Internal Combustion Engine (After 2007)
Unregulated Emissions Units and Activities (see Appendix U, List of Unregulated Emissions Units and/or Activities)	
062	Facility-Wide Equipment Leak Fugitives
063	Cooling Towers (4) (that do not use chromium-based water treatment chemicals)
075	Wastewater Treatment Plant Fugitives
076	DIMLA Storage Tanks and Loading

Also included in this permit are miscellaneous insignificant emissions units and/or activities (see Appendix I, List of Insignificant Emissions Units and/or Activities).

APPLICABLE REGULATIONS

Based on the Title V air operation permit renewal application received on February 24, 2025, this facility is a major source of hazardous air pollutants (HAP). The existing facility is a prevention of significant deterioration (PSD) major source of air pollutants in accordance with Rule 62-212.400, F.A.C. A summary of applicable regulations is shown in the following table:

Regulation	EU No(s).
Federal Rule Citations	
40 CFR 60, Subpart A, NSPS General Provisions	005, 054
40 CFR 60, Subpart Kb, NSPS for Volatile Organic Liquid Storage Vessels After July 23, 1984	054
40 CFR 60, Subpart VVa, NSPS for Equipment Leaks of VOC After November 7, 2006	037, 078
40 CFR 60, Subpart IIII, Standards of Performance for Stationary CI RICE	081
40 CFR 63, Subpart A, NESHAP General Provisions	005, 029
40 CFR 63, Subpart F, NESHAP for the Synthetic Organic Chemical Manufacturing Industry	005, 029, 033, 034, 035, 046, 047, 049, 050, 051, 053
40 CFR 63, Subpart G, NESHAP for Process Vents-Stg Vessels-Transfer Ops-Wastewater	005, 029, 033, 034, 035, 046, 047, 049, 050, 051, 053
40 CFR 63, Subpart H, NESHAP for Equipment Leaks	005, 036, 037, 048
40 CFR 63, Subpart SS	005
40 CFR 63, Subpart FFFF, NESHAP for Miscellaneous Organic Chemical Manufacturing	005, 058, 071, 072, 077, 079
40 CFR 63, Subpart ZZZZ, NESHAP for Stationary Reciprocating Internal Combustion Engines	080
40 CFR 63, Subpart DDDDD, NESHAP for Boilers and Process Heaters	001, 003, 006, 007, 060
State Rule Citations	
Rule 62-210.200(Definitions), F.A.C.	Facility-Wide
Rule 62-210.370, F.A.C., Emissions Computation and Reporting	Facility-Wide
Rule 62-210.900, F.A.C., Forms and Instructions	Facility-Wide
Rule 62-212.400(12), F.A.C., Source Obligation	Facility-Wide
Rule 62-213.205, F.A.C., Annual Emissions Fee	Facility-Wide
Rule 62-296.320(1), (2) & (4), F.A.C., General Pollutant Emission Limiting Standards	Facility-Wide
Rule 62-210.370(3), F.A.C., Annual Operating Report (AOR)	Facility-Wide
Rule 62-213.440, F.A.C., Permit Content	Facility-Wide
Rule 62-210.300(2)(a), F.A.C., Minimum Requirements for All Air Operation Permits	001, 003
Rule 62-210.700, F.A.C., Excess Emissions	054
Rule 62-212.300(1)(e), F.A.C., Actual Emissions Recordkeeping and Reporting Requirements	029, 001, 003

Regulation	EU No(s).
Rule 62-213.440(1), F.A.C., Standard Permit Requirements	029, 001, 003, 006, 007, 060
Rule 62-4.070(3), F.A.C., Reasonable Assurance	029, 001, 003, 005, 006, 007, 035, 058, 060, 077, 078, 079
Rule 62-204.800, F.A.C., Compliance Assurance, Standards Adopted: NSPS and NESHAP	001, 003, 005, 006, 007, 029, 033, 034, 035, 036, 037, 046, 047, 048, 049, 050, 051, 053, 054, 058, 060, 071, 072, 077, 078, 079, 080
Rule 62-296.406(1), F.A.C., Visible Emissions Requirement for Fossil Fuel Steam Generators with Less Than 250 Million Btu Per Hour Heat Input	001, 003
Rule 62-297.310, F.A.C., General Emissions Test Requirements	001, 003

Definitions:

'HON' is an abbreviation for Hazardous Organic NESHAP (National Emission Standards for Hazardous Air Pollutants).

'MON' is an abbreviation for Miscellaneous Organic NESHAP.

'Group 1 wastewater stream' means a wastewater stream consisting of process wastewater at an existing or new source that meets the criteria for Group 1 status in 40 CFR 63.2485(c) for compounds in Tables 8 and 9 of 40 CFR 63, Subpart FFFF and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in 40 CFR 63.132(d) for compounds in Table 8 of 40 CFR 63, Subpart G.

'Group 2 wastewater stream' means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

'The MON Rule': 40 CFR 63, Subpart FFFF, National Emissions Standards for Hazardous Air Pollutants, applies to new and existing Miscellaneous Organic Chemical (MON) manufacturers. This regulation indicates that all pressure relief devices (PRDs) in HAP service (except as specified in in paragraphs (e)(4) and (5) of 40 CFR 63.2480) must be equipped with a monitoring device by August 12, 2023.

The regulation applies to all existing and new Miscellaneous Organic Chemicals manufacturing process units that have the possibility of emitting Hazardous Air Pollutants. The list of HAPs emitted from the DIMLA MON manufacturing facility includes (but is not limited to) methanol and formaldehyde.

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V permit for the above referenced facility. This project renews Title V air operation permit No. 1130004-035-AV, which was effective on January 21, 2021.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Renewed Title V Air Operation Permit issued January 21, 2021
Revised Title V Air Operation Permit issued September 21, 2021
Revised Title V Air Operation Permit issued December 2, 2022
Revised Title V Air Operation Permit issued August 6, 2024
Application for a Title V Air Operation Permit Renewal received February 24, 2025

PRIMARY REGULATORY REQUIREMENTS

Standard Industrial Classification (SIC) Code: 2869 – Industrial Organic Chemicals, Not Elsewhere Classified.

North American Industry Classification System (NAICS): 325199 – All Other Basic Organic Chemical Manufacturing.

HAP: The facility is identified as a major source of hazardous air pollutants (HAP).

Title IV: The facility does not operate units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAIR: The facility is subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility.

GHG: The facility is not identified as a major source of greenhouse gas (GHG) pollutants.

PROJECT REVIEW

This project renews Title V air operation permit No. 1130004-035-AV, issued on January 21, 2021. Administrative changes were made to specific conditions throughout the permit for clarity and consistency with current permitting templates.

Changes Since the Last Title V Air Operation Permit Renewal

Permit No. 1130004-037-AC: This project authorized removal of a duplicative prevention of significant deterioration (PSD) tracking requirement, specifically, the limit on the amount of steam fed to the Dimethyl Laurylamine (DIMLA) Plant. No actual construction was authorized by this project.

Permit No. 1130004-038-AC: This project authorized the expansion of the DIMLA Plant to increase the production of dimethyl laurylamine (DIMLA) at the facility. Construction work for the DIMLA Plant expansion project will be allowed to proceed in phases (project milestones) as described in Administrative Requirement 9. of this permit.

{Permitting Note: Phase 3 construction authorized by this permit was not completed as permitted, see Permit No. 1130004-045-AC for revised phases}

Permit No. 1130004-039-AV: This project revised the existing Title V Permit for the above referenced facility and incorporated air construction Permit No. 1130004-037-AC. Issue Date: September 21, 2021. Expiration Date: January 21, 2026.

Permit No. 1130004-040-AC: This project authorized the expansion of the Higher Amines Plants to increase the production of higher amines at the facility.

Permit No. 1130004-041-AC: Exemption from permitting pursuant to Rule 62-4.040(1)(b), F.A.C., to change the material of construction for three existing heat exchangers (E-62015A-C) from *carbon steel* to *stainless steel* in the DIMLA Plant.

Permit No. 1130004-042-AV: This project revised the Title V air operation permit for the above referenced facility and incorporated the Phase 1 construction activities that were authorized by Permit Nos. 1130004-038-AC and 1130004-040-AC. Issue Date: December 2, 2022. Expiration Date: January 21, 2026.

Permit No. 1130004-043-AC: Exemption from permitting pursuant to Rule 62-4.040(1)(b), F.A.C., to replace several fugitive components (valves, relief valves, a pump, and associated piping and instrumentation) associated with methylamines crude storage tank (D-67134C).

Permit No. 1130004-044-AV: This project revised the Title V air operation permit for the above referenced facility and incorporated the Phase 2 construction activities authorized by Permit Nos. 1130004-038-AC and 1130004-040-AC. Issue Date: August 6, 2024. Expiration Date: January 21, 2026.

Permit No. 1130004-045-AC: This project authorized additional expansions to the Dimethyl Laurylamine (DIMLA) Plant to increase the production of DIMLA at the facility (Project). This air construction permit superseded Permit No. 1130004-038-AC and replaced the Phase 3 construction work that is authorized by Permit No. 1130004-038-AC with five new construction phases to further expand the DIMLA Plan.

{Permitting Note: This permit is not incorporated into the Title V air operation permit as of this renewal}

CONCLUSION

This project renews Title V air operation Permit No. 1130004-035-AV, which was effective on January 21, 2021. This Title V air operation permit renewal is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210, and 62-213, F.A.C.