



**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Southwest Regional Office

Air Quality Program



PLAN APPROVAL PERMIT # 04-00740C

SHELL CHEM APPALACHIA LLC

Potter Township, Beaver County

Issue Date: February 18, 2021

Expiration Date:



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM

PLAN APPROVAL

Issue Date: February 18, 2021

Effective Date: March 1, 2021

Expiration Date: XXXXXXXXXX

In accordance with the provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and 25 Pa. Code Chapter 127, the Owner, [and Operator if noted] (hereinafter referred to as permittee) identified below is authorized by the Department of Environmental Protection (Department) to construct, install, modify or reactivate the air emission source(s) more fully described in the site inventory list. This Facility is subject to all terms and conditions specified in this plan approval. Nothing in this plan approval relieves the permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

The regulatory or statutory authority for each plan approval condition is set forth in brackets. All terms and conditions in this permit are federally enforceable unless otherwise designated as "State-Only" requirements.

Plan Approval No. 04-00740C

Federal Tax Id - Plant Code: 46-1624986-1

Owner Information

Name: SHELL CHEM APPALACHIA LLC

Mailing Address: 300 FRANKFORT RD
MONACA, PA 15061-2210**Plant Information**

Plant: SHELL CHEM APPALACHIA/PETROCHEMICALS COMPLEX

Location: 04 Beaver County

04947 Potter Township

SIC Code: 2821 Manufacturing - Plastics Materials And Resins

Responsible Official

Name: WILLIAM WATSON

Title: GEN MGR

Phone: (724) 709 - 2825

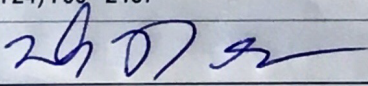
Plan Approval Contact Person

Name: KIMBERLY KAAL

Title: ENV MGR

Phone: (724) 709 - 2467

[Signature]



MARK R. GOROG, P.E., ENVIRONMENTAL PROGRAM MANAGER, SOUTHWEST REGION

Pages 2-54 Redacted

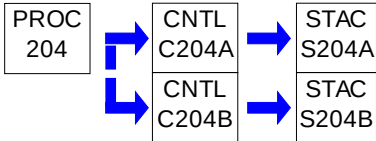
SECTION D. Source Level Plan Approval Requirements

Source ID: 204

Source Name: LOW PRESSURE (LP) HEADER SYSTEM

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G05
G08

**I. RESTRICTIONS.****Emission Restriction(s).**

001 [REDACTED]

Plan approval terms and conditions.

[REDACTED]

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[REDACTED]

[REDACTED]

Control Device Efficiency Restriction(s).

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The LP incinerator shall be designed and operated to reduce collected VOC emissions by a minimum of 99.9%.

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The MPGF shall be designed and operated to reduce collected VOC emissions by a minimum of 98%.

II. TESTING REQUIREMENTS.

005 [REDACTED]

Plan approval terms and conditions.

[REDACTED]

006 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall perform VOC destruction efficiency testing upon the LP incinerator in accordance with 40 CFR §63.985(b)(1)(ii). Initial performance testing is required within 180 days of startup of the LP incinerator or on an alternative schedule as approved by the Department. Subsequent performance testing is required at a minimum of once every 5 years thereafter. Extension of the initial and subsequent performance testing deadlines may be granted by the Department in

SECTION D. Source Level Plan Approval Requirements

writing in response to a written request from the Owner/Operator and upon a satisfactory showing that an extension is justified.

III. MONITORING REQUIREMENTS.

007 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Monitoring for compliance with the 99.9% destruction efficiency requirement for the LP incinerator shall be performed in accordance with 40 CFR §63.985(c). Operating parameter monitoring shall include combustion temperature at a minimum.

008 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Monitoring for compliance with the 98% destruction efficiency requirement for the MPGF shall be performed in accordance with 40 CFR §63.987(c). Operating parameter monitoring shall include flame detection at a minimum.

009 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall comply with the applicable flare monitoring and work practice requirements, including limits on maximum exit velocity and minimum net heating value requirements, specified in 40 CFR §60.18(c) through (f) and 40 CFR §63.11(b).

010 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Net heating value of the combustion zone gas at the MPGF header shall be measured and recorded at a minimum of once every 15 minutes. An adjusted net heating value of hydrogen of 1,212 Btu/scf may be used for this calculation.

011 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare headers that feed the flare as well as any flare supplemental gas used.

012 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare.

013 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall utilize a gas chromatograph (or equivalent monitor) to measure, calculate, and record VOC content at the LP Incinerator header at a minimum of once every 15 minutes.

IV. RECORDKEEPING REQUIREMENTS.

014 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

VOC content measured by the gas chromatograph (or equivalent monitor) shall be used to calculate 12-month rolling total VOC and GHG emissions for all sources impacted by the gas stream.

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

SECTION D. Source Level Plan Approval Requirements

VI. WORK PRACTICE REQUIREMENTS.

015 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The LP incinerator shall, at all times that vapors are being collected by the LP System, be operated at or above the minimum temperature at which at least 99.9% destruction efficiency is guaranteed by the manufacturer or demonstrated during performance testing.

016 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The MPGF shall be equipped with automated controls for control of the supplemental gas flow rate to the flare.

017 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall minimize flaring resulting from startups, shutdowns, and unforeseeable events by operating at all times in accordance with an approved flare minimization plan. The plan shall include the following:

- Procedures for operating and maintaining the HP and LP Systems during periods of process unit startup, shutdown, and unforeseeable events.
- A program of corrective action for malfunctioning process equipment.
- Procedures to minimize discharges either directly to the atmosphere or to the HP and LP Systems during the planned and unplanned startup or shutdown of process unit and air pollution control equipment.
- Procedures for conducting root cause analyses.
- Procedures for taking identified corrective actions.
- The baseline flow to the HP and LP Systems determined in accordance with the provisions of 40 CFR §60.103a(a)(4).

018 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall conduct a root cause analysis within 45 days after any startup flaring event, shutdown flaring event, or unforeseeable flaring event. Flaring event shall be defined as an event that exceeds the baseline by 500,000 scf within a 24 hour period. The analysis shall address the following:

- The date and time that the flaring event started and ended.
- The total quantity of gas flared during each event.
- An estimate of the quantity of VOC that was emitted and the calculations used to determine the quantities.
- The steps taken to limit the duration of the flaring event of the quantity of emissions associated with the event.
- A detailed analysis that sets forth the root cause and all significant contributing causes of the flaring event to the extent determinable.
- An analyses of the measures that are available to reduce the likelihood of a recurrence of a flaring event resulting from the same root cause or significant contributing causes in the future.
- A demonstration that the actions taken during the flaring event are consistent with the procedures specified in the flare minimization plan.
- In response to a flaring event, the Owner/Operator shall implement, as expeditiously as practicable, such interim and/or long-term corrective actions as are consistent with good engineering practice to minimize the likelihood of a recurrence of the root cause and all significant contributing causes of that flaring event.
- If any items required to be addressed in this analysis are still under investigation 45 days after the flaring event, the Owner/Operator shall include a statement of the anticipated date by which a follow-up report fully conforming to the requirements of this Condition shall be completed.

019 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Net heating value of the combustion zone gas at the MPGF header shall equal or exceed 500 Btu/scf on a three-hour rolling average, calculated every 15 minutes.

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

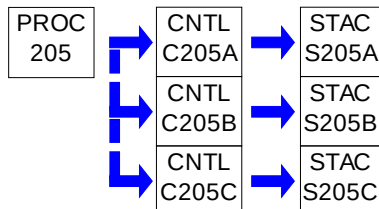
SECTION D. Source Level Plan Approval Requirements

Source ID: 205

Source Name: HIGH PRESSURE (HP) HEADER SYSTEM

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G05
G08



I. RESTRICTIONS.

Emission Restriction(s).

001

Plan approval terms and conditions.

Control Device Efficiency Restriction(s).

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The HP ground flares and emergency elevated flare shall be designed and operated to reduce collected VOC emissions by a minimum of 98%.

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

III. MONITORING REQUIREMENTS.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Net heating value of the combustion zone gas at the HP ground flare header shall be measured and recorded at a minimum of once every 15 minutes. An adjusted net heating value of hydrogen of 1,212 Btu/scf may be used for this calculation.

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Monitoring for compliance with the 98% destruction efficiency requirement for the HP ground flares shall be performed in accordance with 40 CFR §63.987(c). Operating parameter monitoring shall include flame detection at a minimum.

005 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall comply with the applicable flare monitoring and work practice requirements, including limits on maximum exit velocity and minimum net heating value requirements, specified in 40 CFR §60.18(c) through (f) and 40 CFR §63.11(b).

006 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare headers that feed each flare as well as any flare supplemental gas used.

SECTION D. Source Level Plan Approval Requirements

007 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with each flare.

008 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall utilize a gas chromatograph (or equivalent monitor) to measure, calculate, and record VOC content at the HP header at a minimum of once every 15 minutes.

IV. RECORDKEEPING REQUIREMENTS.

009 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

VOC content measured by the gas chromatograph (or equivalent monitor) shall be used to calculate 12-month rolling total VOC emissions for all sources impacted by the gas stream.

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

VI. WORK PRACTICE REQUIREMENTS.

010 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall minimize flaring resulting from startups, shutdowns, and unforeseeable events by operating at all times in accordance with an approved flare minimization plan. The plan shall include the following:

- Procedures for operating and maintaining the HP and LP Systems during periods of process unit startup, shutdown, and unforeseeable events.
- A program of corrective action for malfunctioning process equipment.
- Procedures to minimize discharges either directly to the atmosphere or to the HP and LP Systems during the planned and unplanned startup or shutdown or process unit and air pollution control equipment.
- Procedures for conducting root cause analyses.
- Procedures for taking identified corrective actions.
- The baseline flow to the HP and LP Systems determined in accordance with the provisions of 40 CFR §60.103a(a)(4).

011 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The Owner/Operator shall conduct a root cause analysis within 45 days after any startup flaring event, shutdown flaring event, or unforeseeable flaring event. Flaring event shall be defined as an event that exceeds the baseline by 500,000 scf within a 24 hour period. The analysis shall address the following:

- The date and time that the flaring event started and ended.
- The total quantity of gas flared during each event.
- An estimate of the quantity of VOC that was emitted and the calculations used to determine the quantities.
- The steps taken to limit the duration of the flaring event of the quantity of emissions associated with the event.
- A detailed analysis that sets forth the root cause and all significant contributing causes of the flaring event to the extent determinable.
- An analyses of the measures that are available to reduce the likelihood of a recurrence of a flaring event resulting from the same root cause or significant contributing causes in the future.
- A demonstration that the actions taken during the flaring event are consistent with the procedures specified in the flare minimization plan.
- In response to a flaring event, the Owner/Operator shall implement, as expeditiously as practicable, such interim and/or long-term corrective actions as are consistent with good engineering practice to minimize the likelihood of a recurrence of

SECTION D. Source Level Plan Approval Requirements

the root cause and all significant contributing causes of that flaring event.

i. If any items required to be addressed in this analysis are still under investigation 45 days after the flaring event, the Owner/Operator shall include a statement of the anticipated date by which a follow-up report fully conforming to the requirements of this Condition shall be completed.

012 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Net heating value of the combustion zone gas at the HP ground flare header shall equal or exceed 500 Btu/scf on a three-hour rolling average, calculated every 15 minutes.

013 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Vapors collected by the HP System shall only be routed to the HP elevated flare in the event that the combined capacities of the HP ground flares is exceeded due to malfunction or emergency, or due to maintenance of the HP ground flare(s).

014 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The HP ground flares shall be equipped with automated controls for control of the supplemental gas flow rate to the flares.

015 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The emergency elevated flare shall be equipped with automated controls for control of the total steam mass flow rate to the flare.

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

Pages 61-127 Redacted



***** End of Report *****
