



New Mexico Environment Department Testimony in EIB 21-27 (R)

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Section 20.2.50.121 – Pig Launching
and Receiving



Overview of Pig Launching and Receiving

- Natural gas passing through gathering pipelines contains VOC
- Changes in temperature or pressure may result in development of natural gas condensates in a liquid phase in the pipeline.
- These condensates can accumulate in low elevation segments of the gathering pipelines, impeding the flow of natural gas.
- To maintain gas flow, operators insert a device called a “pig” into the pipeline which is swept along the pipeline by the pressure of the existing gas flow.



Overview of Pig Launching and Receiving

- Condensate formed in the pipeline is pushed in front of the pig until it reaches a “receiver”
- The pig is isolated in a pipeline segment and condensates and liquids are drained out of the pipeline.
- The pig is then reinserted and swept along the next segment of pipeline.
- Emissions occur at the pig launcher and receiver when the pipeline is opened to insert or extract the pig.
- Emissions from pigging operations depend on factors such as the launcher or receiver volume, pipeline pressure, the amount of liquid trapped in the pig receiver barrel prior to depressurization, frequency of pigging, and gas composition.



Overview of Control Options

- Options to control emissions include process modifications, add-on controls such as a flare, enclosed combustor or thermal oxidizer, or by using a vapor recovery unit (VRU).
- Process modifications identified by EPA to minimize emissions include:
 - ▣ *Installing pig ball valves*
 - ▣ *Receiver Barrel Design: Pig Ramps*
 - ▣ *Route High Pressure Systems to Lower Pressure Lines*
 - ▣ *Barrel Pump-down Systems*
 - ▣ *Enhanced Liquid Containment*



Summary of Applicability and Emission Standards

- Affected facilities required to comply with best management practices and emission limits.
- Owners and operators of pigging operations with a PTE equal to or greater than 1.0 ton VOC per year are required to capture and reduce VOC emissions by 95%.
- Owners and operators must employ best management practices and equipment modifications during pigging operations to prevent or reduce emissions.



Basis for Proposed Requirements

- The proposed requirements for pigging operations are based on Pennsylvania GP-5 and GP-5A, Ohio's General Permit 21.1, and EPA guidance.
 - Pennsylvania GP-5/GP-5A: requires best management practices for all pigging operations and 95% control of emissions from pigging operations with emissions equal to or above 2.7 tpy VOC after BMPs.
 - Ohio General Permit 21.1: limits VOC emissions from one discrete pig launcher or receiver to less than 0.27 tons per month, averaged over a rolling 12-month period (equivalent to less than 3.24 tpy). The Ohio General Permits require use of an add-on control device to control emissions if needed to comply with the VOC emission limitations.
 - EPA Guidance: Best management practices are also recommended in EPA's PRO Fact Sheet No. 505, *Recover Gas from Pipeline Pigging Operations*.



Estimated Emission Reductions and Cost Estimates

- For the pigging facilities identified in the NMED equipment inventory, NMED estimates an overall emission reduction of 22.9 tons of allowable VOC as a result of the rule. The NMED equipment inventory does not list all pigging facilities, so greater emission reductions are expected as a result of the rule.
- Implementation costs of a skid-mounted flare are estimated to be \$21,000 with operating costs of \$3,000/year as calculated by the US EPA in the EPA Natural Gas STAR Program's PRO Fact Sheet No. 904, *Install Flares* (2011).



Summary of Applicability and Emission Standards

20.2.50.121 PIG LAUNCHING AND RECEIVING:

A. **Applicability:** Individual pipeline pig launching and receiving operations with a PTE equal to or greater than 1 tpy VOC located within or outside of the property boundary of, and under common ownership or control with, of wellhead sites, tank batteries, gathering and boosting sites/stations, natural gas processing plants, and transmission compressor stations are subject to the requirements of 20.2.50.121 NMAC.

B. Emission standards:

(1) Owners and operators of affected pipeline pig launching and receiving operations with a PTE equal to or greater than one tpy of VOC shall capture and reduce VOC emissions from pigging operations by at least ninety-eight five percent; within two years of the beginning on the effective date of this Part. If a combustion control device is used, the combustion device shall have a minimum design combustion efficiency of ninety-eight percent.

(2) The owner or operator conducting an affected the pig launching and receiving operation shall:

(a) employ best management practices to minimize the liquid present in the pig receiver chamber and to prevent-minimize emissions from the pig receiver chamber to the atmosphere after receiving the pig in the receiving chamber and before opening the receiving chamber to the atmosphere;

(b) employ a method to prevent emissions, such as installing a liquid ramp or drain, routing a high-pressure chamber to a low-pressure line or vessel, using a ball valve type chamber, or using multiple pig chambers;

(c) recover and dispose of receiver liquid in a manner that prevents-minimizes emissions to the atmosphere to the extent practicable; and

(d) ensure that the material collected is returned to the process or disposed of in a manner compliant with state law.



Summary of Emission Standards and Monitoring Requirements

(3) The emission standards in Paragraphs (1) and (2) of Subsection B of 20.2.50.121 NMAC cease to apply to an individual pipeline pig launching and receiving operation if the ~~uncontrolled~~ actual annual VOC emissions of the launcher or receiver ~~the~~ operation are less than one ~~half-ton per year~~ of VOC.

(4) An owner or operator complying with Paragraph (2) of Subsection B of 20.2.50.121 NMAC through use of a control device shall comply with the control device requirements in 20.2.50.115 NMAC.

C. Monitoring requirements:

(1) ~~The owner or operator of pig launching and receiving operations shall monitor the type and volume of liquid cleared.~~

~~(2)~~ The owner or operator of an affected pig launching and receiving operations site shall inspect the equipment for ~~a~~ leaks using AVO, RM 21, or OGI on either:

(a) a monthly basis if pigging operations at a site occur on a monthly basis or more frequently; or

(b) prior to ~~immediately before~~ the commencement and ~~immediately~~ after the conclusion of the pig launching or receiving operation, ~~and according to the requirements in 20.2.50.116 NMAC~~ if less frequent.

~~(23)~~ The monitoring shall be performed using the methodologies outlined in Subsection (C) of 20.2.50.116 NMAC as applicable and at the frequency required in Paragraph (1) of Subsection (C) of 20.2.50.121 NMAC. The monitoring shall be performed when the pig trap is under pressure.

~~(3)~~ An owner or operator complying with Paragraph (1) of Subsection B of 20.2.50.121 NMAC through use of a control device shall comply with the monitoring requirements in 20.2.50.115 NMAC.

~~(44)~~ The owner or operator shall comply with the monitoring requirements in 20.2.50.112 NMAC.



Summary of Recordkeeping Requirements

D. Recordkeeping requirements:

(1) The owner or operator of an affected pig launching and receiving ~~operations site~~ shall maintain a record of the following:

(a) the pigging operation, including the location, date, and time of the pigging operation ~~and the type and volume of liquid cleared~~;

(b) the data and methodology used to estimate the actual emissions to the atmosphere and used to estimate the PTE;

(c) date and time of any monitoring and the results of the monitoring; and

(d) the type of control device and its ~~location~~, ~~make~~, and model.

(2) The owner or operator shall comply with the recordkeeping requirements in 20.2.50.112 NMAC.

E. **Reporting requirements:** The owner or operator shall comply with the reporting requirements in 20.2.50.112 NMAC.

[20.2.50.121 NMAC - N, XX/XX/2021]