

**STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD**

IN THE MATTER OF:

PROPOSED NEW REGULATION

20.2.50

No. EIB 21-27 (R)

Oil and Gas Sector – Ozone Precursor Pollutants

REBUTTAL TESTIMONY OF MARISE TEXTOR

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Marise Lada Textor. My business address is 424 Lechuguilla Court, El Paso, Texas 79912.

Q. WHAT IS YOUR OCCUPATION?

A. I am an independent consultant, focusing on air quality matters and associated regulatory development.

Q. HOW LONG HAVE YOU HELD YOUR CURRENT POSITION?

A. I have held my current position for 10 months.

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I have B.S. and M.S. degrees in Chemical Engineering from Cornell University in Ithaca, New York.

Q. IS NMOGA EXHIBIT 52 YOUR CURRENT RESUME?

A. Yes.

Q. PLEASE BRIEFLY SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.

A. I have over 40 years of experience working for oil and chemical companies. I spent the first six years of my career in technical positions at Chevron including process engineering and operations, first in a corporate process engineering and design group and then in a petroleum refinery. While working for Chevron, I moved into environmental leadership and then environmental, health, and safety (EHS) leadership. I also gained experience at Chevron in industry stakeholder groups focused on developing new environmental regulations. After working for Chevron for 20 years including leadership roles in two petroleum refineries, I accepted a position at AlliedSignal as the EHS manager in a large

and complex chemical plant, where my work continued to include industry stakeholder leadership for regulatory development. AlliedSignal merged with Honeywell and changed the name to Honeywell, and I transferred to a larger role as the director of EHS for a business within the company where I gained international experience. After 9 years with that company, I then worked for TPC Group (formerly called Texas Petrochemicals), a chemical company headquartered in Houston, initially as the Corporate Senior Director of EHS and then in a position focused entirely on industry stakeholder engagement and leadership in regulatory development for both federal and state regulations. After 7 years with TPC Group, I returned to the petroleum industry 7 years ago and my work continued to be focused on state and federal regulatory development, largely but not entirely air regulations. Initially in that period, I worked for Western Refining which was purchased by Tesoro who changed their name to Andeavor and was subsequently purchased by Marathon Petroleum Company. In October 2020, I left Marathon Petroleum and became an independent consultant, mainly focused on air matters including regulatory development and related strategies.

Q. WHAT ARE YOUR PROFESSIONAL AFFILIATIONS, IF ANY?

A. I am a registered professional engineer in the States of Texas and California. In addition, I am a member of a variety of professional associations including:

- Air & Waste Management Association (AWMA)
- American Institute of Chemical Engineers (AIChE)
- American Society of Safety Professionals (ASSP)
- Environmental Law Institute (ELI)
- Texas Association of Environmental Professionals (TAEP)
- Texas Oil & Gas Association (TXOGA)
- Women's Energy Network (WEN)

Q. WHAT HAVE YOU BEEN ASKED TO ADDRESS IN YOUR TESTIMONY BEFORE THE BOARD?

A. I have been asked to address the proposed regulations regarding pigging and dehydrators, NMOGA's recommended changes to the proposed regulations and the reasons why, and the costs and challenges with the proposed regulations.

Q. IN NMED EXHIBIT 32, NMED TECHNICAL WITNESSES MS. KUEHN AND MR. PALMER TESTIFY THAT STANDARDS FOR PIG LAUNCHING AND RECEIVING DETAILED IN PROPOSED 20.2.50.121 NMAC SHOULD BE ADOPTED AS PROVIDED IN NMED EXHIBIT 41. HAVE YOU REVIEWED THIS PROPOSAL AND RELATED TESTIMONY?

A. Yes. I reviewed that material as well as other background material and consulted with representatives of companies operating in New Mexico that would be subject to the rules.

Q. TO SUPPORT NMED'S PROPOSAL, MS. KUEHN AND MR. PALMER TESTIFIED IN EXHIBIT 32, PAGES 118 TO 122 THAT PIG BALL VALVES, PIG RAMPS, JUMPER LINES, BARREL PUMP DOWN SYSTEMS, AND ENHANCED LIQUID CONTAINMENT SYSTEMS COULD BE INSTALLED. ARE THESE CONTROLS NECESSARY AND COST EFFECTIVE FOR RECEIVERS OR LAUNCHERS WITH A LOW POTENTIAL TO EMIT?

A. These controls are neither necessary nor cost-effective for receivers or launchers with a low potential to emit.

The potential emissions from pigging operations vary based on a wide variety of factors including the fluid in the pipeline, whether the fluid is a gas or a liquid, the pressure in the pipeline, and the volume and design of the pig launcher and receiver. Some pigging operations have very low emissions, for example for a small diameter pipeline that carries liquids only and that is pigged infrequently. Other pigging operations have higher emissions such as for a large diameter, high pressure, gas pipeline with certain design features in the launcher or receiver, especially if this pipeline needs to be pigged frequently, at least several times per year. Air emissions controls are not appropriate or cost-effective on pig launchers and receivers with low emissions, where the controls have a lower cost-effectiveness.

For a pig launcher or receiver with low emissions, less than one ton per year, the cost to install the controls would far outweigh the benefits. NMED's testimony of Kuehn and Palmer indicates 1.6 tons per year of uncontrolled emissions from 5 pigging operations sites, or 0.32 tons per year per site across the entire state. Many pigging locations throughout New Mexico are in remote locations with no electricity or infrastructure such as onsite flares to support emissions controls, thus driving up the cost to control. Furthermore, at these remote sites, the captured material would not be recovered, but would be destroyed through combustion or flaring, thus further damaging the economics.

Furthermore, emissions from flaring or combustors could have a harmful effect on the environment because the combustion emits nitrogen oxides and, as indicated in testimony from Dennis McNally, ozone in New Mexico tends to be NOx sensitive, meaning that changes up or down in NOx have the potential for a more significant impact on ozone levels up or down.

In summary, very high costs to control a very small quantity of emissions results in controls that are neither cost-effective nor necessary but could be harmful.

Q. BASED ON YOUR KNOWLEDGE, IS THERE A THRESHOLD AT WHICH IT BECOMES COST INEFFECTIVE TO TRY TO CONTROL VOC EMISSIONS FROM PIG LAUNCHING AND RECEIVING?

A. NMOGA believes, and I agree, that the controls on pigging should not be included in the rule at all because they are not cost effective considering relatively low emissions from pigging. EPA recognized the low emissions when they did not include air emissions controls for pigging in their Control Techniques Guidelines (CTGs) for the oil and gas

industry. These CTGs were published during the Obama administration and their purpose according to the federal Clean Air Act is to describe Reasonably Available Control Technology (RACT) to define controls required in ozone nonattainment areas.

Furthermore, EPA did not include controls for air emissions associated with pigging in their New Source Performance Standards OOOO and OOOOa for crude oil and natural gas facilities, to be applied at new and modified installations even though controls would generally be less expensive in these situations and therefore more cost effective than for the vast number of retrofits required by this proposed NMED rule.

Yet another place where EPA recognized that pigging has low emissions and control would not be cost effective is in their proposed Federal Implementation Plan (FIP) for the U&O Tribal Reservation in the Uintah Basin ozone nonattainment area in Utah where EPA proposed controls for VOC emissions on oil & gas production equipment and did not include any requirements for controls on pig launching or receiving.

Thus, EPA has already shown that air emission controls on pigging operations would not be cost-effective. Although other states such as Pennsylvania and Ohio require controls on some pigging operations, NMED has not evaluated the viability and economics in New Mexico where there may be no access to electrical infrastructure.

Furthermore, considering the McNally testimony that New Mexico ozone is largely NOx-limited, controlling this relatively low amount of emissions using NOx-emitting combustors and/or relying on compressors driven by NOx emitting engines in areas without electricity infrastructure may not even be effective towards reducing ozone, let alone cost effective.

NMED recommended an applicability threshold of 1 ton per year as a compromise. This is much lower than the 2.7 ton per year threshold in the Pennsylvania rule on which NMED patterned this portion of the rule. It is similarly lower than the 0.27 tons per month threshold used in the Ohio rule on which NMED also relied, which equates to 3.24 tons per year. The 1 ton per year threshold would be acceptable under the following circumstances:

1. *If* based on a single pig launcher or receiver and not site-wide or statewide emissions for the applicability threshold and
2. The rule only requires controls on pig launchers or receivers located on the site of other substantial operations and not for offsite operations.

Another area in which the Pennsylvania rule applicability differs from then NMED proposal is in its limited applicability to natural gas pigging whereas the NMED proposal would apply to pipelines containing either gas or liquid. In NMED Exhibits 37 and 38, the Pennsylvania rules define “Pigging Operations” as follows:

Pigging Operations – The process of removing and collecting condensed liquids including condensate, intermediate hydrocarbons, or produced water, from

a pipeline using a spherical or bullet-shaped device, known as a pig, forced through the pipeline by natural gas pressure. The liquids are then collected at their eventual destination in a storage tank, often referred to as a slug tank. This process also includes operation conducted for pipeline integrity evaluation. [emphasis added]

Thus, the Pennsylvania rule applies only to natural gas pigging, creating a higher applicability threshold by excluding all liquids pipelines from the requirement for controls.

In summary, the NMED proposal has much wider applicability than the Pennsylvania rule that it was patterned after, does not recognize EPA's repeated exclusion of pigging through cost-effectiveness determinations, and covers both gas and liquids pipelines. The applicability of the NMED rule should be trimmed back to those individual onsite pig launchers or receivers with emissions greater than or equal to one ton per year VOC as NMOGA recommended to improve cost effectiveness.

Q. SHOULD THIS THRESHOLD BE APPLIED TO ALL "PIGGING" OPERATIONS, AS IT DOES IN EXHIBIT 41, OR SHOULD IT APPLY TO AN INDIVIDUAL PIG LAUNCHING OR RECEIVING SITE, AS STATED IN NMOGA'S PROPOSED REDLINE? WHY?

A. As stated above, this threshold of 1 ton per year should not apply to all pigging operations as indicated Exhibit 41. It should only apply to an individual pig launching or receiving site as stated in NMOGA's proposed redline.

The individual launch/receive site approach is consistent with the applicability determination methods for other sections of the proposed rule including engines and tanks, which rely on a single piece of equipment for the determination. Each tank, each engine, each pig launcher, and each pig receiver functions as an individual unit operation. There is no reason to consider pigging launchers and/or receivers combined. There is no reason to treat pig launchers and receivers differently than other equipment. A rule with different bases for determining applicability of standards for different equipment in different parts of the rule can lead to confusion and possible inadvertent noncompliance.

Thus, the applicability determination should be done on an individual pig launcher or receiver basis.

Q. IN PROPOSED 20.2.50.121, NMED HAS PROPOSED TO APPLY THE RULE TO ALL PIG LAUNCHERS AND RECEIVERS WHETHER "ON" OR "OFF" SITE. WHAT PROBLEMS DOES THIS CAUSE?

A. Requiring the controls on pig launchers or receivers located offsite poses several problems.

The controls rely on the availability of infrastructure such as electricity and perhaps other utilities as well as emissions control devices such as flares or combustion devices. While operators may have this infrastructure available onsite, it would be impractical and perhaps impossible to install it at many or most offsite locations and could be cost prohibitive.

1 Considering a remotely located pig receiver or launcher, it would be very expensive and
2 impractical to install the infrastructure.

3
4 The pipeline would likely be installed on property on which the owning company has a
5 relatively narrow right-of-way, and it would not be large enough to accommodate the
6 equipment needed such as a portable flare or other control device and appurtenances. The
7 landowner may not be amenable to expanding the right-of-way. If BLM or SLO owns the
8 land, it may be even more difficult to gain access to a larger plot.

9
10 Furthermore, controlling pigging emissions offsite would likely entail the use of portable
11 combustion equipment such as a flare. A portable propane tank may be needed to light to
12 flare initially. Flare operation has emissions including problematic NOx emissions that
13 could cause an *increase* in ozone in accordance with the McNally testimony that NOx
14 limiting conditions exist in New Mexico. The hose or temporary piping connecting the
15 pigging equipment to the control device would ultimately need to be emptied of
16 hydrocarbon during dismantlement and this would necessarily be done with the control
17 device already turned off, resulting in additional VOC emissions. Depending on the
18 distance needed between the flare and the pigging equipment, the final emptying of the
19 connection hose or temporary piping could have even more VOC emissions than opening
20 the pig launcher or receiver to air without controls whereas onsite, permanent equipment
21 could be installed to avoid this.

22
23 Another problem that would interfere with pigging operations in offsite locations would be
24 during very dry conditions when the Forest Service, BLM, or SLO call for no flaring as a
25 safety measure to prevent wildfires. Moreover, wildfires would cause even more pollution
26 of both ozone and harmful, small, inhalable particulate matter called PM_{2.5}. Yet the pigging
27 itself is a safety operation that should not be delayed when it is needed.

28
29 Thus, the rule should not require emission controls on offsite pig launchers and receivers;
30 requiring controls poses right-of-way, logistics, and potentially other problems and could
31 have the opposite of the intended effect on ozone by increasing total VOC emissions and/or
32 due to increasing NOx emissions.

33
34 Q. BASED ON YOUR KNOWLEDGE OF THE INDUSTRY, IS IT FEASIBLE AT OFF-
35 SITE LOCATIONS TO INSTALL A PIPELINE PRESSURE STORAGE TANK, A VAPOR
36 RECOVERY SYSTEM ON A DEPRESSURIZATION VESSEL, AND A COMPRESSOR AT
37 SUCH OFF-SITE LOCATIONS?

38
39 A. No, installing this equipment at offsite locations would not be feasible. As explained
40 previously, the site may be remote; it may lack sufficient land or right-of-way or supporting
41 infrastructure such as electricity needed to compress the gas upstream of the vapor recovery
42 system. In the absence of electricity, using engines to drive such compressors would not
43 be a good solution because the engines emit NOx which, as explained in the McNally
44 testimony, could make ozone worse due to NOx limiting conditions in New Mexico.

Some of these remote pigging sites only involve infrequent pigging, perhaps as little as once every two or three years. Installing this type of equipment for a site used so infrequently drives the cost up exorbitantly. Furthermore, leaving the equipment out of service for so long could require significant additional attention and resources to minimize and monitor the idle control equipment for corrosion and deterioration and even then, equipment damage could result in leaks upon startup for use.

Q. SIMILARLY, AT AN OFF-SITE LOCATION, WOULD THERE BE FACILITIES AVAILABLE FOR CONTROLLING EMISSIONS SUCH AS CONTROLS USED ON OTHER EQUIPMENT?

A. Facilities to control emissions such as flares or combustors would virtually never be available at offsite locations and would need to be brought in as portable equipment for each pigging event, further escalating costs.

Q. DO YOU AGREE WITH MS. KUEHN'S AND MR. PALMER'S ASSERTION THAT SKID-MOUNTED FLARES CAN BE OPERATED AT A COST OF \$21,000 + \$3000/YEAR AND FUEL?

A. No, I do not agree.

Simply put, the Kuehn/Palmer cost quote for a portable flare, based on a 2011 paper from EPA, is out of date. A current estimate to purchase a portable flare is three times higher today than in 2011, plus there would be mobilization and demobilization costs and costs for appurtenances to connect the flare to each pigging system. This is based on a current internet cost estimate obtained from a company called PRM Filtration.

Furthermore, the example presented in the Kuehn/Palmer testimony does not closely match the proposed rule requirements except for some rare ideal situations at an operating site, never at an offsite location. The testimony describes the recovery equipment as a best management practice but the actual EPA paper that it came from describes it more as a specific narrowly defined situation. The example is entitled "Recover Gas from Pipeline Pigging Operations" but a close read of the text reveals that the pigged liquids would be routed to low pressure storage tank where the gases would "flash" off from the liquid, and these gases could be compressed and recovered. Thus, the example is more about tank emissions than about pigging emissions.

The example document states:

The required equipment to be installed includes an electric or a gas engine driven vapor recovery compressor. A liquid/vapor flash vessel and low pressure liquid pump may also be required depending on system design and/or ambient temperature and pressure. It is assumed that a pig launcher and receiver on gathering lines, vapor/liquid separation and pressurized liquid storage vessels, and low pressure liquid storage tanks would already be present on the site.

As previously explained, such equipment would virtually never be available at an offsite location. It may or may not be available at an onsite location. Wherever the equipment would not be available, whether onsite or offsite, costs would be substantially higher to follow this methodology.

Furthermore, wherever an engine would be needed to power the compressor and pump due to lack of electricity infrastructure, the engine would emit harmful NOx, potentially increasing ozone.

Thus, we find this example to be a limited situation at best, not a good generalization even for onsite pig operations, with out-of-date costs, and potentially not an environmental benefit. For these reasons, we do not agree with the cost estimate.

Q. BASED ON THE FOREGOING CONSIDERATIONS, DO YOU BELIEVE THAT NMOGA'S REDLINE AT NMOGA EXHIBIT 47, 20.2.50.121.A, BETTER SETS FORTH THOSE PIG LAUNCHING AND RECEIVING LOCATIONS FOR WHICH CONTROL IS TECHNICALLY REASONABLE AND POTENTIALLY COST-EFFECTIVE?

A. Yes, NMOGA's redline sets forth those launching and receiving locations for which control is technically reasonable and potentially cost-effective, for two reasons:

1. The NMOGA version limits applicability to individual pig launchers or receivers meeting the 1 ton per year applicability threshold, thus providing an acceptable threshold yet still more conservative than other states.
2. The NMOGA version limits control requirements to those pigging locations onsite with other oil and gas activities, and does not require controls offsite where infrastructure, land access, and other limitations result in high costs, impracticality, or impossibility.

Q. IN NMED EXHIBIT 41, NMED HAS PROPOSED THAT OPERATORS CAPTURE AND REDUCE EMISSIONS BY 98%, WHICH MS. KUEHN AND MR. PALMER STATE IN EXHIBIT 32 PAGES IS BASED ON PENNSYLVANIA AND OHIO REQUIREMENTS. IN FACT DOESN'T PENNSYLVANIA ONLY REQUIRE CONTROL BY 95% AND OHIO ONLY THAT A PIG LAUNCHER OR RECEIVER BE ROUTED TO A CONTROL DEVICE?

A. Yes, that is correct. The Pennsylvania and Ohio rules allow far greater flexibility to the operator for these relatively low volume emissions by requiring 95% control or simply routing to a control device, respectively.

- NMED Exhibits 37 and 38 provide Pennsylvania requirements. In both, Section K. addresses Pigging Operations, and neither require a device that can achieve 98% control.
- NMED Exhibit 86 provides Ohio requirements, the use of "add-on control (vapor recovery, flare/combustor or equivalent)" without stating the efficiency required.

A reduction of 98% would be difficult to achieve. In particular, 98% control efficiency of any device would not be appropriate. The control efficiency is composed of two parts where the individual efficiencies multiplied by each other represent the control efficiency:

1. A capture efficiency
2. A destruction efficiency

Under steady state conditions, the destruction efficiencies of control devices may be optimized at 98%, and lower under the changing flow rate conditions expected during depressurization of small volume equipment like pig launchers and receivers. Multiplying the capture and destruction efficiencies would necessarily result in a control efficiency of less than 98%.

In fact, the Kuehn/Palmer testimony in NMED Exhibit 32 states, "Combustion devices that are designed to meet a 98% control efficiency may not continuously meet this efficiency in practice, due to factors such as variability of field conditions." (Page 142, lines 11-13). Moreover, this statement quotes NMED Exhibit 34, the EPA Control Techniques Guidelines for the Oil and Natural Gas Industry (October 2016) (page 4-11). Note however, that the Control Techniques Guidelines document does not contemplate controlling depressurization of small volume equipment such as pig launchers and receivers where the flow rate will change during depressurization and lower efficiencies may be realized under these field conditions.

For these reasons, the NMED rule should require no more than a design destruction efficiency of 95% control efficiency.

Q. IN 20.2.50.121.B.(1), NMOGA RECOMMENDS CHANGING THE PROPOSED RULE LANGUAGE SUCH THAT IT REQUIRES ROUTING PIG LAUNCHING AND RECEIVING EMISSIONS TO THE PROCESS OR TO A DEVICE DESIGNED TO ACHIEVE A 95% DESTRUCTION EFFICIENCY. WHAT IS THE IMPORTANCE OF THIS LANGUAGE?

A. Pigging emissions are relatively small, infrequent, and of short duration. Considering this, operators may often choose to control them with a portable device. Considering the short duration required to depressure pig launching and receiving equipment, it may be impossible to ascertain the actual destruction efficiency of the portable device in the field under the same conditions and burning the same gases as during actual use as a control device. By using a device designed to achieve 95% destruction efficiency, it will be possible to assure compliance.

Q. NMOGA ALSO RECOMMENDS THAT WHERE INFEASIBLE TO ROUTE PIG LAUNCHING AND RECEIVING EMISSIONS TO THE PROCESS, THAT THE EMISSION STANDARDS NOT REQUIRE THE USE OF A CONTROL DEVICE THAT REQUIRES SUPPLEMENTAL FUEL TO ACHIEVE DESTRUCTION. WHAT IS THE PROBLEM WITH REQUIRING SUPPLEMENTAL FUEL?

A. Given the ephemeral and variable nature of pig launching and receiving emissions, supplemental fuel may be needed to maintain the combustion efficiency of a portable combustion device. The flow rate of the gases to be controlled will change during depressurization of the pig launching or receiving equipment. If the control device requires the addition of supplemental fuel as the flow rate of gases to the device decreases, the supplemental fuel will increase the cost to control these emissions with costs not accounted for in the cost estimate provided by NMED for the proposed rule.

More importantly, the supplemental fuel will increase VOC emissions for the uncombusted portion of the supplemental fuel, due to the combustion efficiency of the control device. Moreover, it will increase NOx emissions from the control device, which, as discussed in the McNally testimony, will tend to increase ozone, the opposite of the desired effect from controlling emissions from pig launching and receiving.

Q. NMED EXHIBIT 41 AT PROPOSED 20.2.50.121, SUBSECTION B, PARAGRAPH (2) REQUIRES THE VARIOUS MEASURES LISTED TO “PREVENT” EMISSIONS. DO THESE MEASURES “PREVENT” EMISSIONS OR DO THESE MINIMIZE EMISSIONS?

A. The emissions cannot be prevented, they can only be minimized. For example, any device such as a flare or enclosed combustion device has a destruction efficiency where it burns a very high percentage of the hydrocarbon gases sent to it, 95%-plus, but it does not burn 100%. Any other type of equipment would have fugitive leakage at valves and connectors. In addition to these issues, there is a capture efficiency as well, and less than 100% of hydrocarbon gases may be captured. In the specific control methods listed in the referenced paragraph, namely “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”, each is a different way to “minimize” emissions, and none “prevent” emissions.

Q. SHOULD THE LANGUAGE IN THE NMOGA REDLINE CALLING FOR EMISSIONS TO BE “MINIMIZED” BE USED IN LIEU OF “PREVENT” IN SUBSECTION B OF PROPOSED 20.2.50.121?

A. Yes. As stated above, it is not possible to completely prevent emissions. Emissions can only be minimized. NMED should accept NMOGA’s redline calling for emissions to be “minimized.”

Q. IF A PIG LAUNCHER OR RECEIVER DROPS BELOW 1 TPY POTENTIAL TO EMIT, SHOULD IT CONTINUE TO BE CONTROLLED OR ARE THE BENEFITS OUTWEIGHED BY THE COSTS?

A. The costs would outweigh the benefits of continuing to control the emissions. Wherever the situation does not warrant installing permanent equipment, the cost of portable or rental equipment would be the same independent of the quantity of emissions collected. The leak detection portion of the requirements also poses a high ongoing cost, \$1000 to \$2000 per pig launching or receiving event based on NMOGA member company experience to implement the requirements as proposed due to the specialized nature of the acceptable detection methods and use of specialized contractors to perform this work.

The lower the quantity of potential emissions, the lower the cost-effectiveness of the rule. Likewise, the higher the cost of control, the lower the cost-effectiveness of the rule.

There is no reason why not in comparing two similar operations, if one could be initially exempted due to low cost-effectiveness, then the rule should allow the other to be exempted if it initially exceeds the applicability threshold but later falls below it. NMOGA’s

recommended approach to allow the pigging equipment to move back out of applicability for the controls requirements is consistent with NMED's approach for glycol dehydrators presented in NMED Exhibit 41 (page 18).

Q. IS THE FREQUENCY THAT PIGS ARE LAUNCHED AND RECEIVED VARIABLE?

A. The frequency of pig launching and receiving varies widely. The frequency of pigging depends on the amount of material that deposits in the pipeline including condensed liquids, dirt, and debris. Pigging is also done to monitor the condition of the pipeline from the inside, such as to detect corrosion, pitting, or other deterioration. This type of "smart" pigging may not be done frequently.

Q. DOES IT MAKE SENSE TO REQUIRE MONTHLY INSPECTION OF PIGGING SITES THAT ARE USED VERY INFREQUENTLY OR SHOULD INSPECTION BE LIMITED TO BEFORE AND IMMEDIATELY AFTER USE?

A. It does not make sense to do a monthly inspection according to RM21 or OGI at a pigging site used less than monthly. Any fugitive leaks would be very small and the cost of RM21 or OGI inspection would be relatively high at \$1000 to \$2000 per monitoring event, based on NMOGA member company experience, resulting in very low cost-effectiveness for this activity. The rule should allow monitoring just prior to and after using pig launching and receiving sites that are used less than monthly to assure reasonable cost-effectiveness.

Furthermore, the rule should allow monitoring pig launching and receiving sites by AVO due to its lower cost. Additionally, as the proposed rule defines AVO (20.2.50.116.C.(1) on page 15 of NMED Exhibit 41), AVO can pick up deteriorating conditions that have not yet started to leak such as cracks and damaged materials that neither RM21 nor OGI can detect, and therefore AVO can prevent a leak from occurring in the first place.

Q. DOES THE NMOGA REDLINE AT PAGE 45, WHICH CALLS FOR MONTHLY INSPECTIONS OF SITES WITH FREQUENT LAUNCHES OR RECEIVES, AND INSPECTION BEFORE AND IMMEDIATELY AFTER LAUNCH OR RECEIVE AT INFREQUENT SITES, MORE COST EFFECTIVE AND LIKELY AS EFFECTIVE IN REDUCING EMISSIONS?

A. Yes, doing the leak detection monitoring immediately before and after launching or receiving at infrequently used pigging sites would be far more cost effective and likely as effective in reducing emissions. In fact, the NMOGA recommendation on that page requires doing the monitoring when the pig trap is under pressure, a provision that will improve effectiveness of the monitoring but which the NMED version does not include.

Q. IN 20.2.50.121.C.(3) OF ITS MOST RECENT REDLINE SUBMITTED, NMOGA DIFFERENTIATED BETWEEN THE MONITORING, TESTING, AND INSPECTION REQUIREMENTS FOR NON-PORTABLE CONTROL DEVICES AND PORTABLE CONTROL DEVICES. WHY DID NMOGA MAKE THIS DISTINCTION?

A. NMOGA made this distinction because portable devices available to buy or to rent on the market may not have all the monitoring capability that can be installed on fixed equipment. It is not obvious whether these portable devices can be altered to meet all the monitoring requirements and furthermore, in the case of using rental control devices that may be used to control infrequent pig launching and receiving emissions, rental companies will not want their rental equipment to be altered by the company renting it.

Q. DOES THE LANGUAGE SUGGESTED BY NMOGA, SPECIFICALLY THAT A “PORTABLE DEVICE SHALL BE INSTALLED CONSISTENT WITH MANUFACTURER’S SPECIFICATIONS AND IS NOT SUBJECT TO THE REQUIREMENTS OF 20.2.50.115 NMAC” RESOLVE THIS CONCERN?

A. Yes, NMOGA’s proposed language resolves this concern. By installing the portable device consistent with manufacturer’s specifications, the equipment will be used in the optimal manner per its manufacture and design, and it will not require additional appurtenances that may not be able to be installed.

Q. IS IT POSSIBLE OR BENEFICIAL TO COLLECT THE TYPE AND VOLUME OF LIQUID CLEARED OR IS SUCH INFORMATION SPECULATIVE AND OF LITTLE VALUE?

A. Collecting the type and volume of liquid cleared provides no environmental benefit and no improvement in capturing air emissions; it should not be a requirement of this air emissions control rule. Attempts to gather this information could increase emissions due to available sample collection methods, e.g., opening a sample port, removing the cover from a catch basin, or opening a tank thief hatch. Furthermore, where the liquids are hard piped to a tank, it may not even be possible to gather this information because the liquid would comingle with other liquid from other sources in the tank before it could be accessed for a sample.

Q. CONSIDERING EVERYTHING, IS IT POSSIBLE TO COMPLY WITH THE PIGGING REQUIREMENTS ON ITS EFFECTIVE DATE OF THIS RULE AS CURRENTLY PROPOSED?

A. It is not practical nor possible to comply with the pigging requirements of this rule on the effective date of the rule. A minimum of three years is needed to comply. Compliance will require substantial capital investment, requiring time to fold the need into budgets and funding mechanisms, detailed engineering design, management of change, procurement, contracting, construction, procedure development, training, and startup, all of this at a time when all the other operating companies in New Mexico are trying to do the same thing but supply chains and labor remain restricted in the aftermath of the initial COVID responses. Even where portable rental flares are used for compliance, time will be needed for scoping the size needed, contracting and procurement, procedures, training, and to overcome the sudden high demand for this equipment that could exceed current supply.

The NMOGA redline shows three years for compliance, an appropriate timeframe.

20.2.50.118 GLYCOL DEHYDRATORS:

Q. IN EXHIBIT 41, NMED HAS PROPOSED REGULATIONS FOR GLYCOL DEHYDRATORS. BASED UPON YOUR EXPERIENCE, IN ADDITION TO THE TWO TPY OF VOC THRESHOLD PROPOSED BY NMED, SHOULD THE BOARD CONSIDER A PRODUCTION THRESHOLD FOR DETERMINING APPLICABILITY?

A. Yes, the Board should consider a production threshold for glycol dehydrators in addition to the tons per year threshold. In the rulemaking for 40 CFR Part 63 Subpart HH for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities (MACT HH), EPA has already determined that only those glycol dehydrators equal to or greater than the production threshold of 3 MMSCF/day have sufficiently high emissions that they need more stringent controls. A requirement to control smaller units would reduce the cost effectiveness and would provide little if any environmental benefit. This is especially the case in light of the McNally testimony that much of New Mexico ozone is in the NOx sensitive regime, indicating that reducing small amounts of VOC emissions would provide marginal if any ozone air quality benefits.

Q. DOES THE NMOGA EXHIBIT 47, PROPOSED 20.2.50.118.A, WHICH SUGGESTS INCLUDING ONLY DEHYDRATORS WITH AN ANNUAL AVERAGE FLOWRATE GREATER THAN 3 MMSCFD ACHIEVE THIS OBJECTIVE AND BETTER ALIGN WITH FEDERAL REGULATIONS?

A. Yes, the NMOGA redline recommending controlling only those dehydrators with an annual average flowrate greater than 3 MMSCFD achieves this objective and aligns well with the Federal MACT HH regulations. MACT HH requires more stringent controls for large glycol dehydrators, defined as those with flow rates equal to or greater than 85 thousand standard cubic meters per day and annual average benzene emissions equal to or greater than 0.90 megagrams per year. Converting 85 thousand standard cubic meters per day to MMSCFD, it equates to 3 MMSCFD.

Having the same volume threshold for the two rules ensures that both rules require controls on those systems with a consistent and appropriate minimum flow rate and makes it easier to comply with both rules simultaneously. Different compliance thresholds can lead to confusion and inadvertent noncompliance with one rule or the other.

Q. IN NMED EXHIBIT 41, NMED HAS PROPOSED TO REQUIRE 95% CONTROL OF VOC EMISSIONS FROM THE STILL VENT AND FLASH TANK. DO ALL GLYCOL DEHYDRATORS HAVE BOTH A STILL VENT AND FLASH TANK?

A. All glycol dehydrators have a still vent. While many or even perhaps even most have a flash tank, all do not have a flash tank.

A problem could arise for those glycol dehydrators that do not have a flash tank in attempting to comply with the proposed emission limitations in NMED Exhibit 41 on page 18, 20.2.50.118.B.(1) and (2). These two paragraphs require a minimum capture and control efficiency compliance point based on the combination of the still and flash tank off gases. For glycol dehydrators that do not have a flash tank, the compliance requirement would be unclear. The wording could lead to a question of whether the rule requires adding a flash tank, even though nothing in the record suggests that was NMED's intent.

Q. DOES THE NMOGA EXHIBIT 47 AT PAGE 38, LINES 22 AND 27, WHICH ADDS THE WORDS "WHERE PRESENT" ADDRESS THIS CONCERN?

A. Yes, NMOGA's recommendation to add "where present" addresses this concern because it allows for systems that do not have flash tank when determining the minimum control efficiency.

Q. IN NMED EXHIBIT 41, PROPOSED 20.2.50.118 SUBSECTION B, PARAGRAPH (3)(b) DISCUSSES REINJECTION OF NATURAL GAS INTO THE PROCESS OR A NATURAL GAS PIPELINE. IS THIS ALWAYS NATURAL GAS AS IS COMMONLY UNDERSTOOD OR IS ANOTHER TERM BETTER?

A. The term "natural gas" in this paragraph should be replaced with "vapor" as NMOGA recommended previously. The term "natural gas" applies to a gaseous material with relatively high methane content, generally greater than 80% and as high as 95% for pipeline quality natural gas. The off gases from the flash tank would be more appropriately termed "vapor" due to the much lower methane content, often less than 50%, and higher content of heavier hydrocarbons than natural gas would have.

Q. SIMILARY, IN NMED EXHIBIT 41, PROPOSED 20.2.50.118, SUBSECTION B, PARAGRAPH (3)(c), NMED PROPOSES TO PROHIBIT STILL VENT AND FLASH TANK EMISSIONS VENTING TO THE ATMOSPHERE AT ALL TIMES. IS THIS POSSIBLE?

A. In the May 2021 version of the proposed rule, NMED proposed to prohibit still vent and flash tank emissions from venting to the atmosphere at all times, but it would be impossible to comply with this.

This wording is inconsistent with unavoidable releases such as those due to emissions vented to atmosphere via air pollution control equipment downstream of the control. For example, it would seemingly prohibit controlling emissions with a flare because the flare might have a 98% combustion efficiency, thus venting the remainder without combustion. It would prevent the necessary venting of emissions from startup or shutdown, and emissions associated with startup of certain air pollution control equipment such as a thermal oxidizer.

It is also inconsistent with subsection B, paragraph (3)(b), which allows a VRU used to control emissions at a glycol dehydrator to have up to 5% downtime. The 5% VRU

downtime allowance plays an important role in compliance as it allows maintenance to keep the VRU operating efficiently and in optimal condition.

Q. DOES THE NMOGA JULY 28, 2021 REDLINE, WHICH STATES THAT “STILL VENT AND FLASH TANK EMISSIONS SHALL NOT BE VENTED DIRECTLY TO THE ATMOSPHERE DURING NORMAL OPERATIONS” BETTER CAPTURE WHAT IS BEING SOUGHT?

A. Although it would be preferable to remove the venting prohibition altogether, NMOGA appreciates this change from NMED as it provides a rule with which industry can comply more practically.

- The addition of “directly” resolves the concern of the necessary venting downstream of a control device, for example the small, unburned portion of flared gases.
- The addition of “during normal operation” resolves the concern of control device maintenance, startup and shutdown emissions, and emissions associated with startup of certain control devices.

Q. IN NMED EXHIBIT 41, PROPOSED 20.2.50.118, NMED REQUESTS “AN ANNUAL EXTENDED GAS ANALYSIS ON THE DEHYDRATOR INLET GAS” FOR PURPOSE OF CALCULATING PTE. IS THIS NECESSARY OR IS A REPRESENTATIVE GAS ANALYSIS ADEQUATE?

A. The proposed rule requires an extended gas analysis for each glycol dehydrator, an unnecessary and costly requirement. Analysis of a sample deemed to be representative by engineering judgment, for example from a nearby facility, should be adequate. It is unclear if or how NMED accounted for the cost of this analysis. If accounted for, it is not transparent in the documentation provided by NMED.

The Kuehn/Palmer testimony in NMED Exhibit 32 on page 102 explains that this analysis must be used to calculate controlled and uncontrolled dehydrator emissions to assess compliance with the 95% emission reduction requirement. However, small differences in the analytical will not change the emissions calculations appreciably. The proposed requirement increases compliance costs without environmental benefit and without any significant benefit to recordkeeping and reporting.

Analysis of a representative sample as shown in NMOGA’s redline should be acceptable, as it will not change any compliance decisions, nor will it affect emissions.

Q. THE VRU DOWNTIME ALLOWANCE IN 20.2.50.118.B.(3)(b) CONFLICTS WITH THE VRU REQUIREMENTS IN THE CONTROL DEVICE SECTION IN 20.2.50.115.E. AND APPEARS TO REQUIRE REDUNDANT CONTROLS. WOULD THIS BE PROBLEMATIC?

A. Yes, this conflict would be problematic. The glycol dehydrator section reference to the VRU requirements in the control device section of the rule brings in a requirement for a redundant VRU per 20.2.50.115.E.(1)(b). Existing sites with VRUs most likely do not have a redundant VRU. Any requirement to add a redundant system would carry a high

price tag but would not have any real environmental benefit due to the very small reductions in emissions for the small time, 5% or less, that it would be used. This is especially the case in light of the McNally testimony about the NOx sensitive conditions in New Mexico, meaning that VOC reductions have little if any benefit towards reducing ozone.

Moreover, requiring a redundant VRU would disincentivize the use of VRUs in new installations, but VRUs should be a preferred control technology because they do not emit NOx.

It does not appear that NMED meant to require the redundant VRU in the glycol dehydrator section, based on the inclusion of the 5% maximum downtime allowance.

The problem could be resolved by including a statement in the paragraph with the 5% VRU downtime allowance, 20.2.50.118.B.(3)(b), stating that it supersedes the VRU backup requirement in section 115.

By: /s/ Marise Textor
Marise Textor