COLORADO OIL & GAS CONSERVATION COMMISSION
POLICY ON THE USE OF MODULAR LARGE VOLUME TANKS IN COLORADO

June 13, 2014

This policy was developed in response to the recent and increasing use of modular large volume storage tanks (MLVT) (defined below) to hold large volumes of fresh water typically associated with new well completions. MLVTs are above-ground tanks typically comprised of a free-standing steel structure (commonly a modular ring) with a synthetic liner draped inside to hold fluids. Current MLVTs are capable of storing up to 50,000 barrels (bbls) or more of water for well completion operations and are being used in lieu of historic in-ground pits or multiple mobile 500 bbl steel tanks. The use of MLVTs can significantly reduce the number of truck trips and decrease time required for set-up of completion operations.

Although MLVTs meet the Colorado Oil & Gas Conservation Commission (COGCC) 100-Series regulatory definition of an Oil and Gas Facility, this emerging and beneficial technology is not explicitly addressed in COGCC's 300-, 600-, or 900-Series Rules.

Between October 2011 and June 2013, five catastrophic failures of MLVTs containing fresh water in Colorado have been reported to the COGCC. Causes of the failures have been attributed to liner seam failure, improper liner installation, steel weld failure, poor MLVT siting (one MLVT failed and caused an adjacent MLVT to fail), and unsuitable or underprepared substrate. Failures have not been limited to any specific Operator, manufacturer, or MLVT construction type.

This policy is being adopted to provide guidance to Operators utilizing MLVTs. As MLVT technology advances, this policy may be subject to change.

POLICY

Definitions

Freshwater: For the purposes of this policy, Freshwater does not include E&P wastes such as produced water, flowback fluids, or recycled or treated produced water or flowback. Operator must have a valid water right or permit allowing for industrial use or have purchased water from a seller that has a valid water right or permit allowing for industrial use. Operator must also use the water in the location set forth in the water right decree or well permit. Section 37-92-103(5), C.R.S. (2011).

Modular Large Volume Tanks (MLVTs): For the purposes of this policy, MLVTs include any aboveground tank field assembled from multiple uniform factory prepared components used to support a synthetic liner which provides primary containment for 5,000 barrels or more of fluids. By this definition, MLVTs are typically field assembled on an Oil and Gas Location for temporary use and are dismantled for movement to a different location following their use.

Capitalized words and terms in this policy are defined in current COGCC Rules and those definitions apply to this Policy.

COGCC Jurisdiction over MLVTs

COGCC has jurisdiction over a MLVT when it is being used by an Operator on an Oil and Gas Location in the conduct of Oil and Gas Operations. In that circumstance, MLVTs are considered Oil and Gas Facilities but not Production Facilities. A MLVT may be used for purposes other than conducting Oil and Gas Operations on Oil

and Gas Locations; in these circumstances, the MLVTs are not considered Oil and Gas Facilities and COGCC does not have jurisdiction over such uses of MLVTs.

Appropriate Use of MLVT Technology

This policy allows Operators to store freshwater in MLVTs in support of Oil and Gas Operations. This policy does not allow for E&P waste to be stored in MLVTs at this time.

COGCC staff will evaluate the efficacy of this policy and the performance of MLVTs for a period of time prior to considering whether to expand the policy to cover storage of E&P waste in MLVTs.

During this evaluation period, the Director will consider requests to store recycled E&P waste in MLVTs on a case by case basis pursuant to a Rule 502.b variance or a waste management plan under Rule 907.a.(3). Storing E & P Waste in an MLVT prior to obtaining a variance or an approved waste management plan would constitute a violation of Rules 907.a.(1) & (2).

Consistent with the primary objective for enacting Rule 317B, Public Water System Protection, MLVTs shall not be situated within the Buffers established in that Rule.

Notice to COGCC

Operators must notify the COGCC prior to placing a MLVT into service at an Oil and Gas Location as follows:

1. For use on a new Oil and Gas Location (as defined in Rule 303.b.(1)), an Operator must indicate such use on the Form 2A, Oil and Gas Location Assessment.
2. For use on an existing Oil and Gas Location with an approved Form 2A, an Operator may submit a Form 4, Sundry Notice, indicating its intent to use a MLVT and requesting a modification of the listed Oil and Gas Facilities. However, consistent with Rule 303.b.(1).B., modification or expansion of an existing Oil and Gas Location to accommodate the MLVT would require a new Form 2A and consistent with Rule 303.d substantive changes would also require a new Form 2A.

The following information regarding a proposed MLVT will be included on the Form 2A or Form 4: manufacturer or vendor of the MLVT, number and size(s) of the MLVTs, anticipated timeframe MLVTs will be onsite, a Location Drawing indicating where the MLVTs will be located with respect to other facility equipment, property boundaries, and the Operator's certification that the MLVTs will be designed and implemented consistent with this policy.

MLVTs need not be considered in determining whether a proposed Oil and Gas Location is located within a Designated Setback Location because they are not considered Production Facilities under this policy.
An Operator proposing to locate MLVT within 1,000 feet of a Building Unit must include best management practices to mitigate noise, lights, and dust associated with the use of the MLVTs in its proposal. Additionally, if a Building Unit is located down gradient from a proposed MLVT, the Operator must include BMPs to eliminate or minimize potential adverse impacts to the Building Unit, such as berming, diversions, or secondary containment.

COGCC will not approve MLVTs within 500 feet of a Building Unit or 1,000 feet of a High Occupancy Building Unit unless the Operator meets with the Director to discuss reasons for siting the MLVT at the proposed location and to discuss all potential alternative locations.

Design Criteria

The MLVT design package must be certified and sealed by a Licensed Professional Engineer stating that the design specifications are adequate to withstand the loads resulting from using the tank. The Licensed Professional Engineer must either be licensed in Colorado or the state where the MLVT was designed or manufactured. The design package must include the following components:

1. Detailed tank design.
2. Specific tank installation and assembly procedures.
3. Documentation of appropriate site conditions for installation, which includes grades, bedding material, and potential weather impact.
4. Appropriate site preparation.
5. The required liner material and minimum thickness for the application along with applicable standards.
6. Liner installation procedures and quality control measures.
7. Periodic testing or reinspection requirements including what to perform, when to perform, and testing guidelines/protocols.
8. Detailed Standard Operating Procedures (SOP) for all of the above items.

Operators may obtain individually certified and sealed design package components instead of a fully certified design package as listed above.

Operators are not required to submit the MLVT design package to the COGCC with their Form 2A or Form 4 but must make the records available to the COGCC upon request.

Site Preparation & Installation

The Operator is responsible for maintaining records from the contractor who installed the MLVT of verification that the site was prepared and the MLVT was installed in accordance with the above design package specifications and associated SOPs, and that the MLVT is being used for its intended purpose.

MLVTs must be located in compliance with the following safety setbacks:

- Seventy-five (75) feet from a wellhead, fired vessel, heater-treater, or a compressor with a rating of 200 horsepower or more;
- Fifty (50) feet from a separator, well test unit, or other non-fired equipment.

If areas are to be graded and disturbed, the Operator must conduct such activity in accordance with Rules 1002.b. and 1002.c.

All liner seams must be welded and tested in accordance with applicable ASTM International standards. Any repairs to liners must be made using acceptable practices and applicable standards.

The oil and gas Operator must be present during the initial filling of a MLVT but the contractor who installed the MLVT, with stop work authority, would supervise and inspect the MLVT for leaks during filling. If leaks are observed, filling must cease, the leaks must be repaired, and the integrity of the tank must be evaluated prior to continuing to fill or otherwise use the MLVT. Contractors can observe all future fillings without an Operator present, provided they are granted the authority to stop work if unsafe or upset conditions are observed.

MLVT Operations and Contingency Planning

Operators employing MLVTs on their Oil and Gas Locations must comply with the testing and reinspection requirements and associated written standard operating procedure (SOP) listed in the design package above. However, testing and reinspection SOPs must be implemented at least every 50 set-ups regardless of what the design package states. Records of these inspections and action items must be maintained for a period of at least 5 years per Rule 205 and must be provided to the COGCC upon request.

Signs must be posted on each MLVT to indicate that the contents are fresh water and that no E&P waste fluids are allowed. Location and additional signage must include name of Operator, Operator's emergency contact telephone number, tank capacity, and tank contents.

MLVTs will be operated with a minimum of 1 foot freeboard at all times.

Access to the tanks must be limited to operational personnel and authorized regulatory agency personnel.

Operator, contractor, or MLVT owner must conduct daily visual inspections of the exterior wall of a MLVT and the surrounding area for any integrity deficiencies. If deficiencies are noted, they must be repaired as soon as practicable. Records of repairs made must be maintained per Rule 205 and must be provided to the COGCC upon request.

Each Operator must develop a contingency plan/emergency response plan for any MLVT leak or catastrophic failure of the tank integrity and resulting loss of fluid. The contingency plan should include procedures for notifying all required regulatory agencies, and local emergency authority (municipality, county or both). This includes filing a Form 22-Accident Report within 10 days after discovery, conducting a "root cause analysis", and providing it to the COGCC on a Form 4-Sundry Notice within 30 days of the failure. Best Management Practices (BMPs) must be employed to prevent injuries, property damage or environmental impacts, such as erosion of onsite sediment into nearby surface water. The contingency plan must be made available to the COGCC upon request.