

Potential Memorandum of Understanding Terms



*The numbered items comprise the operational measures previously found in the body of the proposed surface use agreement, primarily in Exhibit 7. Each is followed by a comment from the Companies or by new wording in **red and blue text**.*

1. The Companies **agree to shall** create four-foot berms within the perimeter of each Oil and Gas Operations Area that have no more than two standard storage tanks within each berm which shall comply with COGCC Rule 603(e)(12) and (13).

- The Companies shall construct secondary containment around crude oil/condensate storage tanks **as specified herein. by Secondary containment shall consist of** installing an impermeable liner inside of and fastened to corrugated steel panels. The liner shall meet the standards of COGCC Rule 904.b and be a minimum 40 mils in thickness. The liner shall be topped by a felt (or similar material **as selected by the Companies**) pad and gravel pack prior to placement of the tanks. No more than two tanks shall be placed inside any one secondary containment area, which shall be designed with sufficient capacity to contain 150% of the volume of the largest tank in the containment area in accordance with COGCC Rule 603.e(12). The tanks shall meet the standards of COGCC Rule 603.e(13), and the loadlines shall be bull-plugged or capped and equipped with a catchment system at the connection for offloading crude oil/condensate **in compliance with COGCC Rule 603.e(9).**

2. The Company shall install a **6-foot tall** chain link fence with opaque beige mesh screening at the edge of ~~the berm around~~ the well site at the Livingston Location and the North Location. The chain link fence shall be secured by a locked gate (keys for which shall be given to the City), and shall be of a quality comparable to that typically used in the oil and gas industry. ~~and shall be as tall as the highest structure on each Oil and Gas Operations Area, excluding any vent stack, subject to the City's approval. In the event that the COGCC or other regulatory agency requires the Companies to install other equipment which is taller than the fence at some time in the future, the Companies will not be required to adjust the elevation of the surface or replace the fence.~~

- The production facilities will need to include crude oil/condensate storage tanks sufficient to store the production from high-volume horizontal wells. ~~These are~~ anticipated to be 500 barrel tanks, which will extend above the height of any reasonable fence (the same is true of the height of any emission combustion device that may be required under AQCC Reg. 7).

3. ~~The Companies shall assure that there is no significant degradation of air and water quality from the operations on the Property.~~

- This is a vague, unenforceable aspirational statement. The Companies are subject to COGCC Rule 324A, which states, in part:

The operator shall take precautions to prevent significant adverse environmental impacts to air, water, soil, or biological resources to the extent necessary to protect public health, safety and welfare, including the environment and wildlife resources, taking into consideration cost-effectiveness and technical feasibility to prevent the unauthorized discharge or disposal of oil, gas, E&P waste, chemical substances, trash, discarded equipment or other oil field waste.

- Rule 324A further provides that no operations or practices shall constitute a violation of applicable CDPHE water or air quality standards. However, there is no reason for the MOU to recite or duplicate the requirements of existing rules.

4. The Companies shall provide **industry standard** above-ground, low-profile, fiberglass tanks for all produced water and waste.

- The MOU should not dictate the material used for produced water tanks (e.g. concrete, steel, fiberglass).

5. The grading design for each Oil and Gas Operations Area shall include one collection point for drainage, including guiding ditches to one collection point. This system shall have a sediment basin at its lowest point that is lined with an impermeable liner.

- See comment to 6 below.

6. The Companies shall complete a drainage study and shall establish drainage trenches based on such drainage study to capture and contain any release from Oil and Gas Operations Areas.

- The grading design and drainage system for each Oil and Gas Operations Area shall be incorporated in a Broomfield grading and erosion control permit, which permit shall be in accordance with the terms of the applicable construction storm water permit issued by the Colorado Department of Public Health and Environment for oil and gas locations.

7. The Companies shall use crushed asphalt on access roads and turnarounds to eliminate dust and mud issues at access points to Lowell Boulevard.

- This term is acceptable to the Companies.

8. ~~The Companies shall use dual-walled flow and gathering lines with corrosive protection or non-corrosive resistant flow and gathering lines. Annual integrity testing of the flow lines shall be performed and results supplied to City.~~

- The Companies are subject to COGCC Rule 1101, which provides, in pertinent part:

a. Material.

(1) Materials for pipe and other components of pipelines shall be:

A. Able to maintain the structural integrity of the pipeline under temperature, pressure, and other conditions that may be anticipated;

B. Compatible with the substances to be transported.

C. Locatable by a tracer line or location device placed adjacent to or in the trench of all buried nonmetallic pipelines to facilitate the location of such pipelines.

b. **Design.** Each component of a pipeline shall be designed and installed to prevent failure from corrosion and to withstand anticipated operating pressures and other loadings without impairment of its serviceability. The pipe shall have sufficient wall thickness or be installed with adequate protection to withstand anticipated external pressures and loads that will be imposed on the pipe after installation.

- The Companies would not object to a MOU term requiring cathodic protection to be installed.

9. The Companies shall ~~use sealed, closed loop tanks to contain all water, fracking fluids and waste used on, in or produced by a well~~ **employ pitless drilling systems and contain all flowback fluids and other E&P waste in above-ground tanks or vaults.**

10. ~~The Companies shall use environmentally benign, chemically inert, non-polluting water-based drilling and fracking fluids.~~

- This is a vague, unenforceable aspirational statement. For example, water – the “universal solvent” – is not chemically inert.
- The Companies would not object to acknowledging in the MOU that diesel shall not be used in hydraulic fracturing fluids. (Note that fracturing operations utilizing diesel are not exempt from EPA permitting under the underground injection control program of the Safe Drinking Water Act.)

11. ~~All well pads shall be lined with an impermeable liner of a minimum thickness of 40 mil, in order to protect soil, drinking and groundwater from contamination.~~

- This is a technically infeasible requirement. No liner system exists that can withstand the weight of drilling rigs and the “skidding” of rigs on a multi-well pad.

12. ~~The Companies’ operations on the Property shall not pose a risk nor cause any degradation of water resources including subsurface water resources and at a minimum comply with COGCC rules 324 and 325.~~

- See comment to #3 above.

13. The City agrees that the Companies shall not be required to plant trees or other vegetation around the Oil and Gas Operations Areas; however, the City reserves the right to plant trees or other vegetation on the surface of the Property outside the Oil and Gas Operations Areas;

provided that, such vegetation or trees do not interfere with or block access by the Companies to the Oil and Gas Operations Areas and pipeline easements and, provided, further, that the Companies shall not be liable for or be required to replace any such trees or vegetation that are damaged from their non-negligent oil and gas operations.

- This term is acceptable to the Companies.

14. For their part, the Companies acknowledge that the City intends to use the Property for the construction and operation of a water reservoir which will be used to supply potable water to the City's citizens and constituents and the construction of associated educational and recreational facilities. ~~Without waiving or otherwise compromising the other obligations to which the Companies are bound by this Agreement, the Companies hereby agree to conduct their operations in a manner which, to the greatest extent practicable, prevents any contamination of the water contained in or flowing to or from the reservoir by oil, gas or other hydrocarbon substances or related materials or substances, including without limitation substances used by the Companies in the exploration for, or development and production of oil, gas or other hydrocarbon substances at, on, under or near the Property. If contamination to the water contained in or flowing to the reservoir is found to have been caused by the Companies' operations, whether or not such contamination is found to exceed applicable drinking water standards, the Companies shall immediately remediate and indemnify and hold the City harmless for such contamination at their sole expense.~~

- Accordingly, the Companies agree to conduct their drilling, completion, production and storage operations in accordance with the standards and requirements of COGCC Rule 317B.e applicable to such operations within the external buffer zone to protect a public surface water supply, regardless of whether the Broomfield Reservoir is designated on the Public Water System Surface Water Supply Area Map maintained by the Commission.

15. ~~Maintenance and General Operation.~~ The Companies shall at all times keep the Oil and Gas Operations Areas, access roads used exclusively by them, and pipeline easements used exclusively by them, safe and in good order and free of noxious weeds, litter and debris. The Companies shall dispose of all litter, sewage, waste, and debris off the Property at an appropriate disposal site. The Companies shall promptly reclaim and reseed the Oil and Gas Operations Areas in accordance with COGCC regulations and use their best efforts to prevent the release or discharge of any toxic or hazardous chemicals or wastes on the Property; provided, however, in the event of a release or discharge, the Companies shall comply with COGCC regulations and any other applicable laws, rules, and regulations that apply to the release or discharge.

- This term is acceptable to the Companies.

16. ~~Water, Fluids and Waste.~~ All water, fluids and waste of any nature whatsoever which are used, produced or discharged from the Companies' operations or facilities shall be used, produced and discharged in accordance with all applicable rules and regulations of the **state and federal governmental agencies** ~~governmental authorities~~ having jurisdiction over

such matters. Further, all water, fluids and waste of any nature whatsoever which are used, produced or discharged in connection with the Companies' oil and gas operations shall not be discharged on, in, under, or near the Property and shall be ~~discharged and held only in a closed loop system that includes sealed storage temporarily stored in above ground tanks and managed~~ and disposed of in accordance with COGCC Rule 907 **which provides for temporary storage in above ground tanks.** The Companies shall, in accordance with **applicable requirements of the United States Environmental Protection Agency's a Spill Prevention, Control and Countermeasure (SPCC) Program, 40 C.F.R. Part 112, use good engineering** practices to avoid the spill, release or discharge of any pollutants, contaminants, chemicals, solid wastes, or industrial, toxic or hazardous substances or wastes at, on, in, under, or near the Property. Any such spill, release or discharge, including without limitation, of oil, gas, grease, solvents, or hydrocarbons that occurs at, on, in, under, or near the Property shall be remediated in compliance with ~~applicable laws~~ **COGCC Rule 906.** Any such spill, release or discharge that is reportable to regulatory authorities under applicable laws shall be reported to the owner of the Property within 24 hours **of discovery of the spill, release or discharge** by telephone, fax, or e-mail, to be followed by copies of written notices that Company has filed with regulatory authorities within five business days after such filing.

17. Broomfield and the Companies reserve their rights under COGCC Rules 306 (Consultation) and 503.b(7) (Hearings on Applications for Permit to Drill) with respect to matters not addressed in this MOU, or when site-specific conditions or technological developments make it appropriate to reconsider a term of this MOU.

18. Broomfield and Companies agree that if any part or provision of this MOU is in conflict with ~~contradicts~~ **COGCC rules, the COGCC rules shall govern.**