



**Approval**

Signed: \_\_\_\_\_

*Matthew Lee*

Title: \_\_\_\_\_

Director of Cogcc

Date: \_\_\_\_\_

01/02/2014

**Best Management Practices**

**No BMP/COA Type**

**Description**

--	--	--

**CONDITIONS OF APPROVAL:**

**COA Type**

**Description**

	<p>FORM 2A OIL AND GAS LOCATION ASSESSMENT PERMIT #400505289 COAs:</p> <p>Notify the COGCC 48 hours prior to start of temporary frac pad reconstruction/regrading and pipeline testing, using Form 42 (the appropriate COGCC individuals will automatically be email notified, including the LGD for hydraulic stimulation operations).</p> <p>Notify the COGCC 48 hours prior to start of hydraulic stimulation operations supported by this frac pad, using Form 42 (the appropriate COGCC individuals will automatically be email notified, including the LGD for hydraulic stimulation operations).</p> <p>Surface Water Testing. When sufficient water exists in Beaver Creek, collection of baseline surface water data consisting of a pre-completion activities surface water sample collected immediately downgradient of the oil and gas location (frac pad) and follow-up surface water data consisting of a sample collected at the same location three (3) months after the conclusion of any completion activities. The sample parameters shall include: pH; alkalinity; specific conductance; major cations/anions (chloride, fluoride, sulfate, sodium); total dissolved solids (TDS); benzene, toluene, ethylbenzene, total xylenes (BTEX); gasoline range organics (GRO): diesel range organics (DRO); total petroleum hydrocarbons (TPH); polyaromatic hydrocarbons (PAH's [including benzo(a)pyrene]); and metals (arsenic, barium, calcium, chromium, iron, magnesium, selenium). Copies of all test results described above shall be provided to the Commission. The sample location shall be surveyed in accordance with Rule 215. In addition, the analytical results and surveyed sample locations shall be submitted to the COGCC in an electronic data deliverable format to the COGCC.</p> <p>Operator shall prepare an emergency spill response program that includes employee training, safety, and maintenance provisions. In the event of a spill or release, the operator shall immediately implement the emergency response procedures in the above-described emergency response program. If a spill or release impacts or threatens to impact an PWS, the operator shall notify the COGCC &amp; CDPHE immediately following discovery of the release, and the spill or release shall be reported to the Commission in accordance with Rule 906.b.(3), and to the Environmental Release/Incident Report Hotline (1-877-518-5608) in accordance with Rule 906.b.(4).</p> <p>The access road will be maintained to prevent sediment migration from the access road to nearby surface water or any drainages leading to other nearby surface waters.</p> <p>Operator must ensure secondary containment for any volume (total manifolded volume) of fluids contained at frac pad site during operations; including, but not limited to, construction of a berm or diversion dike, site grading, or other comparable measures (i.e., best management practices (BMPs) associated with stormwater management) sufficiently protective of Divide Creek and all other nearby surface water. Any berm constructed at the pit/frac pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition.</p> <p>Strategically apply fugitive dust control measures, including enforcing established speed limits on private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources.</p> <p>Operator shall stabilize exposed soils and slopes as an interim measure during frac pad operations at this site.</p> <p>Because of proximity of the frac pad to Beaver Creek, operator shall, to the extent practical, grade the well pad surface to slope towards the southeast, away from the</p>
--	--

edges of the fill slope side. In addition, tertiary containment will be required at the well pad location consisting of two lined lateral collection trenches/ditches along the west and north sides of the pad (outside of the well pad berm/ditches). The trenches will be graded to flow into an oversized catchment basin located near the northwest corner of the well pad. This basin will be lined and surrounded by additional stormwater controls (i.e., straw waddle and/or silt fencing, or equivalent).

A spill response trailer will be on location 24 hours a day, 7 days a week during completion operations to facilitate a timely response to any spills that may occur.

Appropriate heavy equipment (e.g., a backhoe) will be staged at the location during all drilling and completion operations so that any emergency diversions or pits to contain spills can be built immediately upon discovery.

All personnel working at the location during all drilling and completion operations will receive training on spill response and reporting. Documentation of this training will be maintained in the operator's office/onsite trailer.

At a minimum, weekly spill prevention meetings will be held identifying staff responsibilities in order to provide a quick and effective response to a spill. Appropriate documentation will be maintained in the operator's office/onsite trailer.

Operator will conduct daily inspections of equipment for leaks and equipment problems with appropriate documentation retained in the operator's office/onsite trailer. All equipment deficiencies shall be corrected. Daily monitoring should end approximately 14 days after well completion and/or after production has been stabilized; however, timely inspections should continue during the production phase.

Operator shall have trained personnel present at the frac tanks during water transfer into or out of tanks; personnel shall be able to shut off transfer pumps or close valves as necessary in response to upset conditions.

Additional containment shall be required where temporary or permanent pumps and other necessary equipment or chemicals are located on the frac pad site.

Operator will use adequately sized containment devices for all hazardous chemicals and/or materials stored or used on location.

Operator will implement measures to ensure that adequate separation of hydrocarbons from the influent occurs to minimize accumulation of oil on the surface of stored fluids. Operator shall also employ a method for monitoring buildup of phase-separated hydrocarbons on the surface of stored fluids.

Operator shall pressure test pipelines in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface or permanent buried (steel/poly) pipelines and following any reconfiguration of the pipeline network. Operator shall notify the COGCC Oil and Gas Location Assessment (OGLA) Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us) and the COGCC Field Inspection Supervisor for Northwest Colorado (Shaun Kellerby; email shaun.kellerby@state.co.us) 48 hours prior to testing surface or buried steel/poly pipelines.

Operator must implement best management practices to contain any unintentional release of fluids along all portions of the surface pipeline route where temporary pumps and other necessary equipment are located.

Operator must routinely inspect the entire length of the surface pipeline to ensure integrity. Operator shall conduct daily inspections of surface poly pipeline routes for leaks during active transfer of fluids. Inspections shall be conducted by viewing the length of the pipeline; operator will endeavor to minimize surface disturbance during pipeline monitoring. The operator shall maintain records of inspections, findings and repairs, if necessary, for the life of the pipelines.

Operator must ensure appropriate secondary containment for volume of fluids that may be released before pump shut down from the surface pipeline at all stream, intermittent stream, ditch, and drainage crossings. Catchment basins, if needed, should be sized to contain the volume between pump stations or between the nearest pump station and

the frac pad being used for this well pad location. Pump stations along the surface poly or steel pipeline route will be continuously monitored when operating in order to swiftly respond to such a failure.

Operator will utilize, to the extent practical, all existing access and other public roads, and/or existing pipeline right-of-ways, when placing/routing the surface pipelines.

FORM 15 PIT PERMIT #400509505 COAs:

Notify COGCC Oil and Gas Location Assessment (OGLA) Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us) and the COGCC Field Inspection Supervisor for Northwest Colorado (Shaun Kellerby; email shaun.kellerby@state.co.us) 48 hours prior to start of reconstruction/regarding (if necessary) of the well/frac pad, start of construction of the pit (if different), pit liner installation, and start of fracing operations at nearby well pads (via Form 42).

The completions pit must be double-lined. The pit will also require a leak detection system (Rule 904.e).

Delivery and vacuum truck hoses will not be allowed to be placed directly onto the pit liner. Operator will construct a loading/unloading station (or equivalent delivery/retrieval system) located next to the pit, to deliver fluids to or remove fluids from the pit by truck. The loading/unloading station shall be designed and utilized to prevent hoses from being dropped into the pits and dragged over the liner, which could lead to liner damage. The loading/unloading station will be the only permitted access for manual fluids transfers to or from the pit. Vehicles will not be allowed to approach the pit any closer than the loading/unloading station. Each station will have a catch basin in case a leak occurs while operations personnel are connecting or disconnecting hoses. Signs clearly marking the truck loading/unloading station shall be provided and maintained by the operator.

Operator must submit as-built drawings (plan view and cross-sections) of the completion pit within 14 calendar days of construction.

After installation of the uppermost liner and prior to operating the pit, the synthetic liner (s) shall be tested by filling the pit with at least 75 percent of operating capacity of water, measured from the base of the pit (not to exceed the 2-foot freeboard requirement). The operator shall monitor the pit for leaks for a period of 72 hours prior to draining the pit and commencing operations. The leak detection system must also be monitored during the entire test. Operator shall notify the COGCC Oil and Gas Location Assessment (OGLA) Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us) 48 hours prior to start of the hydrotest. Hydrotest monitoring results must be maintained by the operator for the life of the pit and provided to COGCC prior to using the pit.

No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a professional engineer, subject to review and approval by the director prior to construction of the pit. The construction and lining of the pit shall be supervised by a professional engineer or their agent. The entire base of the pit must be in cut.

For pits containing fluids other than freshwater only; the pit must be fenced. If the pit is not drained, or closure has not begun within 30 days after last use for well completion, the pit must be netted. The operator must maintain the fencing and netting until the pit is closed.

Submit additional disposal facilities (wells, pits, etc.), if necessary (i.e., if original disposal option changes), for pit liquid contents to COGCC via a Form 4 Sundry prior to disposal.

Pits used exclusively for drilling shall be closed in accordance with the 1000-Series Rules. Any pit(s) used for purposes other than drilling shall be closed in accordance with Rule 905. Closure of Pits, and Buried or Partially Buried Produced Water Vessels; with an approved Site Investigation and Remediation Workplan, Form 27.

At the time of pit closure, operator must submit disposal information for solids, if necessary, via a Form 4 Sundry Notice to the COGCC Location Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us). The disposal method will need to be approved prior to operator starting pit closure.