



**Speakman A Pad Expansion
Attachment J
Best Management Practices (BMP) LIST**

CONSTRUCTION AND SITE STABILIZATION

- **MULTI-WELL PAD** - The pad expansion will result in the ability to drill 26 wells from a single location and eliminate the need for an additional well pad; hence a reduction in surface disturbance, traffic, and impacts to the environment and wildlife habitat.
- **DUST CONTROL** - The pad and access road will be graveled to reduce fugitive dust; which will be controlled using water or other dust suppressants.
- **INTERIM RECLAMATION** - The site will be stabilized using seed mixes and materials compatible with soil types, moisture, and local climate conditions as specified in landowner surface use agreements, or locally acceptable industry practices.
- **SAFETY** - The location and site layout has been designed to accommodate all operations within the limits of disturbance while meeting Federal and state safety regulations, including required buffers and distances between operating components and combustion sources.
- **NOXIOUS WEEDS** – Weeds will be managed in accordance with Ursa’s Noxious Weed plan; to include three treatments per year, mapping, etc.
- **SPILLS / INCIDENTS** – Spills and incidents will be managed in accordance with Ursa’s Spill Management Plan; including notifications, reporting, response actions, remediation and corrective actions.
- **STORMWATER** - The pad and the expansion will be constructed in accordance with the CDPHE Stormwater regulations as implemented by Ursa’s Stormwater Management Plan, so as to control sediment run-off.
- **STORMWATER** - Stormwater inspections and corrective actions will be conducted on a 14-day schedule under CDPHE stormwater regulations until 70% reclamation is achieved. Once achieved, inspections will be conducted under COGCC regulations until 80% reclamation is achieved and the site fully stabilized.
- **WASTE / CHEMICALS** - The pad and expansion will be constructed to minimize the potential for any exploration and production wastes, chemicals, fluids, etc. from leaving the location, including berms, barriers, and use of spill control materials.

DRILLING

- **DIRECTIONAL DRILLING** - Directional drilling will be implemented to avoid the need for additional well pads; reducing habitat loss and fragmentation.



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- NOISE - A sound barrier will be erected prior to drilling and remain in place through completions to minimize noise.
- WASTE - A closed-loop (pitless) drilling system will be used; No cuttings pit will be constructed; cuttings will be hauled to an approved waste facility.
- WATER SAMPLING - Baseline and post drilling water well testing will be performed for permitted water wells in accordance with COGCC Sec 609.

COMPLETIONS

- CHEMICAL USE – All chemicals used will be tracked and reported in accordance with COGCC rules and submitted through FracFocus.
- ODORS - Well completions will utilize flowback completion technologies and/or flares to reduce odors from plug drillout, and venting of salable and non-salable gas
- WASTE - No stimulation or flowback pits will be constructed.
- WORK HOURS - Completions will be conducted during daylight hours.

PRODUCTION

- ODORS - Combustor controls will be used to mitigate odors from production tanks
- SPILL PREVENTION – Spills will be managed in accordance with Ursa's SPCC plan including prevention, spill containment and monthly inspections. High level alarms will be installed on production tanks.
- VISUAL IMPACTS - Above-ground facilities (e.g. production tanks) will be managed to minimize visual effects (e.g. painted to blend with environment)
- REMOTE MONITORING - Remote monitoring will be used to reduce truck traffic, fugitive dust to the extent practical.
- WATER LINES - Water pipeline infrastructure will be installed concurrently with the gas pipeline infrastructure where possible. No water infrastructure currently exists.
- WATER RECYCLING – Produced water used for well completions will be recycled and treated to the maximum extent practical.
- WILDLIFE – All separators/dehydrators and heater –treater equipment are outfitted with bird cones.

WILDLIFE BMPS

- A Wildlife Mitigation Plan (March 24, 2010) is in place that was agreed to by Ursa (previously Antero). The plan allows for 90+ well pads. Currently, Ursa has 62 well pads.