EXHIBIT B

BEST MANAGEMENT PRACTICES FOR WELL SITES AND NEW WELLS AT WELLS SITES

Operator shall include the BMPs listed in this Exhibit B on all Applications for Permit-to-Drill, Form 2 ("Form 2"), and Oil and Gas Location Assessments, Form 2A ("Form 2A"), submitted to the Commission for a "New Well" on the Well Sites. For the purposes of this provision, "New Well" shall mean any Operator-operated well spudded during the term of this Agreement, and located on the Well Sites, including any production facilities directly associated with such well, and its associated Well Pad, insofar as it covers lands located in the City limits. The BMPs shall apply to all New Wells drilled by the Operator on the Well Sites, while this Agreement is effective. The re-entry of a previously plugged and abandoned well is not allowed.

1. *Well Sites*. The Operator agrees that the maximum number of New Wells to be drilled at each of the Well Sites set forth on Exhibit A shall be as follows:

   - Livingston Pad – 19 New Wells;
   - Northwest A Pad – 8 New Wells;
   - Northwest B Pad – 8 New Wells;
   - United Pad – 16 New Wells;
   - Interchange A Pad – 16 New Wells; and
   - Interchange B Pad – 17 New Wells.

   For purposes of this Agreement, the phases of operation at a Well Site shall be defined as follows:

   "Construction Phase" shall mean the conducting of civil and earth work in connection with the construction and installation of drilling pads, visual mitigation measures, access routes, pipelines and launcher/receiver locations.

   "Drilling Phase" shall mean the period in which a drilling rig is utilized to penetrate the surface of the earth with a drill bit and the installation of well casing and cement at one or more wells.

   "Completion Phase" shall mean the period of hydraulic fracturing, coiling, workover, installation of tubing and flowback of one or more wells.

   "Production Phase" shall mean the period in which one or more wells is capable of producing hydrocarbons that flow through permanent separator facilities and into the pipeline gathering system.

   For the avoidance of doubt, it is possible for multiple phases of operation to be occurring at the same time with respect to a single Well Site. Notwithstanding the

foregoing, Operator agrees that it will not conduct hydraulic fracturing and drilling operations simultaneously at a single Well Site.

2. *Quiet Technology*. The Operator agrees to use the Liberty Quiet Fleet or comparable technology from an alternative vendor on all Well Sites.

3. *Use of Pipelines*. The Operator agrees to build pipelines for the transport of oil, gas, and produced water from the Well Sites to the specifications set forth in Exhibit D and to utilize such pipelines at the Well Sites before the Production Phase commences. During the Completion Phase, the Operator will use pipelines for produced water for flowback to the maximum extent feasible. All fresh water shall be transported to the Well Sites by means other than by truck. The Operator's obligation to build and utilize such pipelines is subject to the City granting Operator all necessary right-of-way and the City issuing Operator the necessary Public/Private Improvement Permits. Operator shall be permitted to utilize temporary tanks during drilling, flowback, workover, completion, hydraulic fracturing and maintenance operations. If requested by the City, Operator will conduct a risk analysis to identify potential risks associated with pipelines and the measures implemented that are intended to mitigate such risks.

4. *Air Modeling Study*. The Operator has completed an air modeling study that meets the standards requested by the City and such study has been conducted and indicates that emissions from the equipment proposed on the Well Sites meets EPA standards.

5. *Regulations*. The Operator shall comply with all applicable state, and federal regulations in addition to the terms of this Agreement and the BMPs set forth in this Exhibit B. The City agrees that it will not impose any fine on the Operator for violation of this Agreement if the activity or condition that created the violation is also subject to regulation by the COGCC, and if the violation results in action taken by the COGCC against the Operator.

6. *Notification to the City Regarding Commencement of Operations*. Operator shall provide written notice to the City no less than thirty (30) days prior to the commencement of any of the following: Construction Phase (unless the Construction Phase commences within 45 days of the approval of the applicable Form 2 or Form 2A), Drilling Phase, Completion Phase, or any recompletion, re-drilling or plugging and abandonment of a New Well. Any notification provided by Operator to City pursuant to this Agreement may be used by the City for public notification.

7. *Inspections*. The City shall have the right to have the City's designated oil and gas inspector (the "Inspector") inspect the Well Sites, upon reasonable notice to the Operator and the Operator shall provide a safety escort to accompany the Inspector. Reasonable notice may include notification by the Inspector at the Well Site. If the Inspector notifies the Operator of any conditions that the Inspector believes are out of compliance with this Agreement, Operator shall promptly address such conditions. If the Operator disagrees

with the findings of the Inspector, the City and Operator shall resolve the disagreement consistent with the provisions set forth in Section 22 of the Agreement.

8. *Containment Berms*. The Operator shall utilize steel-rim berms around all permanent facility equipment at the Well Sites with sufficient capacity to contain 1.5 times the maximum volume of liquids that such facility will contain at any given time plus sufficient freeboard to prevent overflow. All berms and containment devices shall be inspected quarterly by the Operator and maintained in good condition. No potential ignition sources shall be installed inside the secondary containment area unless the containment area encloses a fired vessel or such sources are rated in accordance with industry codes and standards. Secondary containment such as duck ponds or lined earthen berms for temporary tanks shall also be used.

   A. Permanent containment berms shall be constructed of steel rings, designed and installed to prevent leakage and resist degradation from erosion or routine operation.

   B. Secondary containment for tanks shall be constructed with a synthetic or engineered liner that contains all primary containment vessels and is mechanically connected to the steel ring to prevent leakage.

   C. For locations within five hundred (500) feet and up-gradient of a surface water body, tertiary containment, such as an earthen berm, is required around production facilities.

9. *Closed-Loop Pitless Systems for the Containment and/or Recycling of Drilling Fluids.* Wells shall be drilled, completed and operated using closed-loop pitless systems for containment and/or recycling of all drilling, completion, flowback and produced fluids. Operator shall recycle fluids to the maximum extent practicable, with the understanding that Operator is limited in its ability to recycle all fluids, as doing so would necessitate the use of permanent tanks, which is otherwise prohibited by the terms of the Agreement, and result in the potential for additional emissions. Other than for irrigating landscape material, Operator shall not use City water for any of its oil and gas operations. Operator shall not store waste onsite for periods longer than 30 days.

10. *Anchoring.* All New Well equipment and all existing equipment at the Well Sites shall be anchored to the extent necessary to resist flotation, collapse, lateral movement, or subsidence in compliance with applicable Federal Emergency Management Agency (FEMA) (as administered by this City) and COGCC rules and regulations.

    All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.

11. *Burning.* No open burning shall occur on the site of any oil and gas operation.

12. *Chains.* Traction chains from heavy equipment shall be removed before entering a City street.

13. *Chemical Disclosure and Storage.* All fracturing chemicals must be disclosed to the City pursuant to the process set forth below before bringing on site. Prior to the bringing of such chemicals onto the property, the Operator shall make available to the City, in table format, the name, Chemical Abstracts Service (CAS) number, storage, containment and disposal method for such chemicals to be used on the Well Sites, which the City may make available to the public as public records. Fracturing chemicals shall be uploaded onto the Frac Focus website within sixty days of the completion of fracturing operations. The Operator shall not permanently store fracturing chemicals, flowback from hydraulic fracturing, or produced water in the City limits. Operator shall remove all hydraulic fracturing chemicals at a Well Site within thirty (30) days following the completing of hydraulic fracturing at that Well Site.

In addition to any substances that not permitted to be used in accordance with state or federal rules or regulations in place from time to time, the following chemicals shall not be utilized in hydraulic fracturing fluid at the Well Sites:

Ingredient Name	**CAS #**
Benzene	71-43-2
Lead	7439-92-1
Mercury	7439-97-6
Arsenic	740-38-2
Cadmium	7440-43-9
Chromium	7440-47-3
Ethylbenzene	100-41-4
Xylenesf	1330-20-7
1,3,5-trimethylbenzene	108-67-8
1,4-dioxane	123-91-1
1-butanol	71-36-3
2-butoxyethanol	111-76-2

N,N-dimethylformamide	68-12-2
2-ethylhexanol	104-76-7
2-mercaptoethanol	60-24-2
benzene, 1,1′-oxybis-, tetrapropylene derivatives, sulfonated, sodium salts (BOTS)	119345-04-9
butyl glycidyl ether	8/6/2426
polysorbate 80	9005-65-6
quaternary ammonium compounds, dicoco alkyldimethyl, chlorides (QAC)	61789-77-3
bis hexamethylene triamine penta methylene phosphonic acid (BMPA)	35657-77-3
diethylenetriamine penta (methylene-phosphonic acid)(DMPA)	15827-60-8
FD&C blue no. 1	3844-45-9
Tetrakis(triethanolaminato) zirconium(IV) (TTZ)	101033-44-7

14. *Color*. Permanent facilities shall be painted in a uniform, non-contrasting, non-reflective color, to blend with the surrounding landscape and, with colors that match the land rather than the sky, consistent with COGCC regulations. If the City desires a specific color or colors, it shall notify Operator of such color or colors prior to the Pad Construction of a Well Site and Operator shall utilize such color or colors.

15. *Cultural and Historical Resource Protection*. The Operator has completed a site assessment and is not currently aware of any historical or cultural sites on the Well Sites. However, if a significant surface or sub-surface archaeological site is discovered during construction, the Operator shall be responsible for immediately contacting the City to report the discovery. If any disturbance of a site deemed by the State Historic Preservation Office to be a historical or cultural resource occurs, the Operator shall be responsible for mitigating the disturbance to the cultural or historical property through a data recovery plan in consultation with the City's Historic Landmark Board and the State Historic Preservation Office, with copy to the City.

16. *Discharge Valves*. Open-ended discharge valves on all storage tanks, pipelines and other containers within the Well Site shall be secured and shall not be accessible to the general

public. Open-ended discharge valves within the Well Site shall be placed within the interior of the secondary containment area.

17. *Fugitive Dust Suppression.* Dust associated with on-site activities and traffic on access roads shall be minimized throughout construction, drilling and operational activities such that there are no visible dust emissions from access roads or the Well Sites to the extent practical given wind conditions. No untreated produced water or other process fluids shall be used for dust suppression. The Operator will avoid creating dust or dust suppression activities within three hundred (300) feet of the ordinary high water mark of any waterbody, unless the dust suppressant is water. Material Safety Data Sheets (MSDS) for any chemical based dust suppressant, other than magnesium chloride, shall be submitted to the City prior to use. Operator must submit to the City a grading, drainage, dust mitigation and erosion control plan in accordance with Section 37.

18. *Electric Equipment.* The drilling rig(s) used during the Drilling Phase and all permanent production equipment, such as compressors, motors and pump jacks, shall utilize electric line power in order to mitigate noise and to reduce emissions.

19. *Emergency Preparedness Plan.* The Operator is required to complete a detailed Emergency Plan in accordance with the provisions of this Section, and Operator shall pay for any reasonably necessary training and equipment of emergency response personnel specifically required due to the operations contemplated by this Agreement, including any inventory of Aqueous film forming foam (AFFF) required to be purchased from time to time so that sufficient quantities are on-hand to respond to emergencies on the Well Sites. The City and the North Metro Fire Rescue District must approve of the Emergency Plan before the Drilling Phase commences. As long as all requirements of this Section are met, the City and the North Metro Fire Department shall not unreasonably withhold approval and shall approve the Emergency Plan within thirty (30) days of submittal.

    The Emergency Plan shall be filed with the City and the North Metro Fire Rescue District and updated on an annual basis or as conditions change (responsible field personnel change, ownership changes, etc.). The Emergency Plan shall include a notification system for potentially affected citizens and occupied buildings and an evacuation plan.

    The Emergency Plan shall consist of at least the following information:

    A. Name, address and phone number, including twenty-four (24)-hour emergency numbers for at least two persons responsible for emergency field operations as well as the contact information for any subcontractor of Operator engaged for well-control emergencies.

    B. An as-built facilities map in a format suitable for input into the City's GIS system depicting the locations and type of above and below ground facilities, including sizes and depths below grade of all oil and gas flow lines and associated equipment, isolation valves, surface operations and their functions, as well as transportation routes to and from exploration and development sites, for

emergency response and management purposes. The information concerning flowlines and isolation valves shall be held confidentially by the City and shall only be disclosed in the event of an emergency or to emergency responders or for the training of emergency responders. The City shall deny the right of inspection of the as-built facilities maps to the public pursuant to C.R.S. § 24-72-204.

C. Detailed information addressing each reasonable potential emergency that may be associated with the operation. This may include any or all of the following: explosions, fires, gas, oil or water pipeline leaks or ruptures, hydrogen sulfide or other toxic gas emissions, or hazardous material vehicle accidents or spills. A provision that any spill outside of the containment area, that has the potential to leave the facility or to threaten waters of the state, or as required by the City-approved Emergency Plan shall be reported to the local emergency dispatch and the COGCC Director in accordance with COGCC regulations.

D. Detailed information identifying access or evacuation routes, and health care facilities anticipated to be used.

E. A project-specific plan for any project that involves drilling or penetrating through known zones of hydrogen sulfide gas.

F. A statement and detailed information indicating that the Operator has adequate personnel, supplies, and training to implement the Emergency Plan immediately at all times during construction and operations.

G. The Operator shall have current Material Safety Data Sheets (MSDS) for all chemicals used or stored on a site. The MSDS sheets shall be provided immediately upon request to City officials, a public safety officer, or a health professional as required by COGCC Rule 205.

H. The Emergency Plan shall include a provision establishing a process by which the Operator notifies surrounding neighbors to inform them about the on-site operations and provide sufficient contact information for surrounding neighbors to communicate with the Operator.

I. All training associated with the Emergency Plan shall be coordinated with the City and the North Metro Fire Rescue District.

J. A provision obligating the Operator to reimburse the appropriate emergency agencies for their expenses resulting from the Operator's operations, to the extent required by Colorado State Statutes.

K. Operator shall provide the City with its emergency shutdown protocols and promptly notify the City of any emergency shut downs that would have an impact to any area beyond the confines of the Well Site.

20. *Air Quality*. In order to minimize degradation to air quality, Operator agrees to the provisions set forth in this Section. Operator must eliminate, capture, or minimize all potentially harmful emissions and minimize dust associated with onsite activities and traffic on access roads pursuant to the terms of this Agreement. Operator shall comply with all applicable state and federal regulations including regulations promulgated by CDPHE, COGCC and US EPA.

A. Minimization of Emissions.

To protect air quality, the following will be required:

1. The use of electric equipment and line power, as detailed in Section 18.
2. The use of Tier 2 and liquefied natural gas dual fuel hydraulic fracturing pumps. If Tier 4 fracturing pumps become commonly available, Operator will begin using Tier 4 fracturing pumps.
3. Comply with traffic provisions set forth in Section 40. Limitations on truck traffic to and from the site.
4. The utilization of pipelines pursuant to Section 3.
5. Manufacture test or other data demonstrating hydrocarbon destruction or control efficiency that complies with a design destruction efficiency of 98% or better.
6. The use of no-bleed continuous and intermittent pneumatic devices. This requirement can be met by replacing natural gas with electricity or instrument air, or routing the discharge emissions to a closed loop-system or process.
7. Any flare, auto ignition system, recorder, vapor recovery device or other equipment used to meet the hydrocarbon destruction or control efficiency requirement shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.
8. No use of glycol dehydrators.
9. No use of desiccant gas processing dehydrators.
10. Year-round application of odor requirements pursuant to COGCC and CDPHE regulations.
11. Reduction or elimination of emissions of associated gas from hybrid gas-oil wells (i.e. gas that is co-produced from a well that primarily produces oil), including prohibition of uncontrolled venting.

12. Best management practices during liquids unloading (i.e. maintenance activities to remove liquids from existing wells that are inhibiting production), including at least 90% emissions reduction when utilizing combustion and the installation of artificial lift or unloading through the separator where feasible.

13. Reduction or elimination of emissions from oil and gas pipeline maintenance activities such as pigging or blowdowns. If any maintenance activity will involve the intentional venting of gas from a well tank, compressor or pipeline, beyond routine pipeline maintenance activity and pigging, the operator shall provide forty eight (48) hour advance written notice to the City of such proposed venting. Such notice shall identify the duration and nature of the venting event, a description as to why venting is necessary, a description of what vapors will likely be vented, what steps will be taken to limit the duration of venting, and what steps the operator proposes to undertake to minimize similar events in the future. If emergency venting is required, or if accidental venting occurs, the operator shall provide such notice to the City of such event as soon as possible, but in no event longer than 24 hours from the time of the event, with the information listed above and with an explanation as to the cause and how the event will be avoided in the future.

14. Compliance with dust suppression techniques set forth in Section 17.

15. Compliance with odor requirements set forth in Section 48.

16. Consolidation of product treatment and storage facilities within a Well Site.

17. Centralization of compression facilities within a Well Site.

18. Telemetric control and monitoring systems, including surveillance monitors to detect when pilot lights on control devices are extinguished.

19. Operator will comply with all CDPHE air permits, if any, and will comply with all OSHA work practice requirements with respect to benzene.

20. Flaring shall be eliminated or minimized to the maximum extent practicable.

21. Exhaust from all engines, motors, coolers, and all other equipment must be vented up and away from nearest residences.

22. Operator agrees to participate in Natural Gas STAR program or other voluntary programs to encourage innovation in pollution control at well sites.

23. Use of a pressure-suitable separator and vapor recovery unit (VRU) where applicable.

24. Pipeline infrastructure will be constructed prior to the Production Phase.

B. *Leak Detection and Repair*. Operator shall develop and maintain an acceptable leak detection and repair ("LDAR") program as required by CDPHE using modern leak detection technologies such as infra-red cameras for equipment used on the Well Sites. For the five (5) year period beginning with the start of the Drilling Phase at the first Well Site, Operator shall conduct quarterly IR camera monitoring of all equipment at the Well Sites. When an IR camera is used, Operator must retain an infrared image or video of all leaking components before and after repair. Such records must be maintained for two years and must be made available to the City upon request. Except when an emergency circumstance would necessitate an immediate repair, Operator must repair leaks as quickly as practicable. If more than 48-hours repair time is needed after a leak is discovered, an explanation of why more time is required must be submitted to the City. Operator shall conduct continuous pressure monitoring to detect leaks. At least once per year, the Operator shall notify the City five (5) business days prior to an LDAR inspection of its facilities to provide the City the opportunity to observe the inspection.

C. *Ambient Air Sampling*. The Operator shall conduct, as approved by the City, a specific ambient air quality test that includes:

1. Pre-construction baseline air quality testing shall be completed within 500 feet of the Well Sites by a consultant approved by the City and paid for by the Operator.
2. Operator agrees to provide the City $20,000 annually towards air quality sampling. The City may use these funds for sampling within its discretion. Extraction will provide initial funds prior to the Construction Phase. Such amount shall be adjusted each year by the increase or decrease in the Consumer Price Index issued by the United States Bureau of Labor Statistics for the Denver – Boulder metropolitan area.
3. In addition, the City may require the Operator to conduct additional air monitoring as needed to respond to emergency events such as spill, process upsets, or accidental releases.
4. Operator shall provide access to the Well Sites to the City's designated inspector to allow air sampling to occur.

An air modeling and emissions inventory based upon the proposed development and equipment have been completed by a third-party consultant.

D. *Air Quality Action Days*. The Operator shall respond to air quality Action Day advisories posted by the Colorado Department of Public Health and Environment for the Front Range Area by implementing their suggested air emission reduction measures as feasible. Emission reduction measures shall be implemented for the duration of an air quality Action Day advisory and may include measures such as:

1. Minimize vehicle and engine idling;
2. Reduce truck traffic and worker traffic;
3. Delay vehicle refueling;
4. Suspend or delay use of fossil fuel powered ancillary equipment; and
5. Postpone construction activities, if feasible.
6. Within 30 days following the conclusion of each annual Air Quality Action Day season, Operator must submit a report to the City that details which measures it implemented during any Action Day advisories.

E. *Compliance.* The Operator must submit annual reports to the City certifying (a) compliance with these air quality requirements and documenting any periods of material non-compliance, including the date and duration of each such deviation and a compliance plan and schedule to achieve compliance, (b) that the equipment at the Well Sites continues to operate within its design parameters, and if not, what steps will be taken to modify the equipment to enable the equipment to operate within its design parameters. The annual report must contain a certification as to the truth, accuracy and completeness of the reports, signed by a responsible corporate official. The Operator may satisfy this reporting obligation in whole or in part by submitting its AQCC Regulations No. 7 annual reports for the prior calendar year to the City, and supplementing them as needed to meet these reporting requirements for covered facilities within the City. The Operator will also provide the City will a copy of any self-reporting submissions that Operator provides to the CDPHE due to any incidence of non-compliance with any CDPHE air quality rules or regulations at the Well Sites.

21. *Reduced Emission Completions (Commonly known as Green Completions).* At Well Sites Operator shall employ reduced emission completions, also commonly known as green completions, which comply with federal and state requirements. In addition, Operator shall comply with the following:

A. Gas gathering lines, separators, and sand traps capable of supporting green completions as described in COGCC Rule 805 shall be installed per the provisions of COGCC Rule 805.

B. Operator shall comply with 40 CFR 60.5375(a)(1), (2) for green completions.

C. Uncontrolled venting is prohibited other than where necessary for safety.

D. Temporary flowback flaring and oxidizing equipment where allowed shall include the following:

1. Adequately sized equipment to handle 1.5 times the largest flowback volume of gas from a vertical/directional and/or horizontally completed well respectively as reported to the COGCC in a ten mile radius;

2. Valves and porting available to divert gas to flaring and oxidizing equipment; pursuant to the above Rules 40 CFR 60.5375 & COGCC Rule 805;

3. Auxiliary fueled with sufficient supply and heat to combust or oxidize non-combustible gases in order to control odors and hazardous gases. The flowback combustion device shall be equipped with a reliable continuous ignition source over the duration of flowback, except in conditions that may result in a fire hazard or explosion; and

4. The Operator has a general duty to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery/operation.

22. *Exhaust.* The exhaust from all engines, motors, coolers and other mechanized equipment shall be vented up or in a direction away from the nearest occupied building.

23. *Fencing.* Permanent perimeter fencing shall be installed around production equipment unless such fencing is not required by the Visual Mitigation Plan for a Well Site , and shall be secured. The main purpose of the fencing is to deter entrance by unauthorized people and a Well Site shall be properly secured prior to the commencement of drilling at the Well Site. The Operator shall use visually interesting fencing, when feasible, but the parties recognize that there is a need for air circulation, and for the field personnel who regularly inspect the facilities to be able to identify visual operational deficiencies when driving by. Landscaping may be used for screening. If a chain link fence is required to achieve safety requirements set by the COGCC, then landscaping and other screening mechanisms shall be required that comply with the City's Land Use Code regulations and the Operator's safety requirements.

24. *Flammable Material.* All ground within twenty-five (25) feet of any tank, or other structure containing flammable or combustible materials, shall be kept free of dry weeds, grass or rubbish, and shall conform to COGCC 600 Series Safety Regulations and the applicable Fire Code.

25. *Flares and Combustion Devices.* To the extent flares, thermal oxidizers, or combustion devices are utilized, all such flares shall be designed and operated as follows:

A. The flare must be fired with natural gas and designed to operate with a 98% of higher hydrocarbon destruction efficiency.

B. The flare must be designed and operated in a manner that will ensure no visible emissions during normal operation. Visible emissions means observations of smoke for any period or periods of duration greater than or equal to one (1)

minute in any fifteen (15) minute period during normal operation, pursuant to EPA Method 22. Visible emissions do not include radiant energy or water vapor.

C. The flare must be operated with a flame present at all times when emissions may be vented to it, or other mechanism that does not allow uncontrolled emissions.

D. All combustion devices must be equipped with an operating auto-igniter.

26. *Water Quality Monitoring Plan.* Oil and gas operations shall, to the extent practicable, avoid causing degradation to surface or ground waters within the City and to wetlands within the City. The following standards set forth by the City are consistent with the COGCC rules and regulations. If Operator needs to seek a variance from a COGCC provision then an approved COGCC variance will apply to this Agreement upon notice of such variance from Operator to the City.

Using records of the Colorado Division of Water Resources, Operator must implement a water quality monitoring and well testing plan that includes the following:

A. Operator must obtain initial baseline samples and subsequent monitoring samples from all available water sources within a one-half (1/2) mile radius of the Well Sites. Water sources include registered water wells or permitted or adjudicated springs.

B. Operator must collect initial testing of baseline samples from available water sources prior to the commencement of drilling a well, or prior to the re-stimulation of an existing well for which no samples were collected and tested during the previous 6-12 months.

C. Post-stimulation samples of available water sources shall be collected and tested pursuant to the following time frame:

1. One sample approximately one (1) year after commencement of the Production Phase;

2. One sample approximately three (3) years after commencement of the Production Phase; and

3. One sample approximately six (6) years after commencement of the Production Phase.

D. Operator shall collect a sample from at least one upgradient and two down-gradient water sources within a one-half (1/2) mile radius of a Well Site. If no such water sources are available, Operator shall collect samples from additional water sources within a radius of up to one (1) mile from the Well Site until samples from a total of at least one upgradient and two down-gradient water sources are collected. Operator should give priority to the selection of water sources closest to the Well Site.

E. Operator may rely on existing groundwater sampling data from any water source within the radii described above that was collected in accordance with accepted standards, provided the data was collected within the 12 months preceding the commencement of Drilling Phase for such Well Site, the data includes measurement of all of the constituents measured in Table 1 below and there has been no significant oil and gas activity within a one-mile radius in the time period between the original sampling and the commencement of the Drilling Phase for such Well Site.

F. Operator shall make reasonable efforts to obtain the consent of the owner of the water source. If the Operator is unable to locate and obtain permission of the water source, the Operator must advise the City that Operator could not obtain access to the water source from the surface owner.

G. Testing for the analytes listed in Table 1 below, and subsequent testing as necessary or appropriate.

H. Operator must follow standard industry procedures in collecting samples, consistent with the COGCC model Sampling and Analysis Plan.

I. Operator must report the location of the water source using a GPS with submeter resolution.

J. Operator must report results of field observations including reporting on damaged or unsanitary well conditions, adjacent potential pollution sources, odor, water color, sediment, bubbles, and effervescence.

K. Operator must provide copies of all test results described above to the City, the COGCC, and the water source owners within 30 days after receiving the samples.

L. Subsequent sampling. If sampling shows water contamination, additional measures may be required including:

1. If free gas or a dissolved methane concentration level greater than one (1) milligram per liter (mg/l) is detected in a water source, determination of the gas type using gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen).

2. If the test results indicate thermogenic or a mixture of thermogenic and biogenic gas, an action plan to determine the source of the gas.

3. Immediate notification to the City, the COGCC, and the owner of the water well if the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l.

4. Immediate notification to the City, the COGCC and the owner of the water well if BTEX and/or TPH are detected as a result of testing. Such detections may result in required subsequent sampling for additional analytes.

5. Further water well sampling in response to complaints from water source owners.

6. Timely production and distribution of test results in electronic deliverable format to the City, the COGCC and the water source owners.

7. Qualified Independent Professional Consultant. All water source testing must be conducted by the Operator or, if requested by a surface owner, by a qualified independent professional consultant.

Additionally, the City may make available a water testing program to any persons with an available water sources within one-half (1/2) mile of the radius of the proposed track of the borehole of any proposed New Well. If such sampling shows water contamination, the Operator shall work with the City and the COGCC to help identify the source of the contamination.

TABLE 1

GENERAL WATER QUALITY

Alkalinity, Conductivity & TDS, pH, Dissolved Organic Carbon (or Total Organic Carbon), Bacteria, and Hydrogen Sulphide

MAJOR IONS

Bromide, Chloride, Fluoride, Magnesium, Potassium, Sodium, Sulfate, and Nitrate + Nitrite as N

METALS

Arsenic, Barium, Boron, Chromium, Copper, Iron, Lead, Manganese, Selenium, Strontium, Mercury, Uranium, and Radium

DISSOLVED GASES and VOLATILE ORGANIC COMPOUNDS

Methane, Ethane, Propane, BTEX as Benzene, Toluene, Ethylbenzene and Xylenes, Total Petroleum, and Hydrocarbons (TPH)

OTHER

Water Level, Stable isotopes of water (Oxygen, Hydrogen, Carbon), Phosphorus.

27. *Landscaping.* Operator shall implement the Visual Mitigation Plan for a Well Site approved during the application process for such Well Site..

28. *Lighting.* The intent of this provision is to minimize light spillage beyond the perimeter of the Well Sites and for the Operator to take appropriate steps in order to achieve this. All permanent lighting or lighting higher than a perimeter wall must be downward facing. All bulbs must be fully shielded to prevent light emissions above a horizontal plane drawn from the bottom of the fixture. Prior to installation of permanent lighting on any facility, the Operator agrees to submit to the City a lighting plan and the City shall communicate with Operator any modifications to the plan that it deems appropriate and Operator shall make such modifications if reasonable or required by law. The lighting plan shall indicate the location of all outdoor lighting on the site and any structures, and include cut sheets (manufacturer's specifications with picture or diagram) of all proposed fixtures. During the Drilling and Completion Phases, consistent with applicable law, Operator will construct a minimum 32 foot wall around as much of the perimeter of the well pads as operations allow to reduce light escaping from the site, unless shorter walls are mutually agreed to by City and Operator on a site-specific basis.

29. *Maintenance of Machinery.* Routine field maintenance of vehicles or mobile machinery shall not be performed within three hundred (300) feet of any water body. All fueling must occur over impervious material.

30. *Mud Tracking.* The Operator shall take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets, in excess of *de minimus* levels, the streets shall be cleaned immediately by the Operator. If for some reason this cannot be done, or needs to be postponed, the City shall be notified of the Operator's plan for mud removal.

31. *Noise Mitigation.* Noise mitigation measures shall be constructed along any edge of any Well Site if such edge is in proximity to existing residential development. The noise mitigation measures shall use the most current equipment to minimize noise impact during the Drilling and Completion Phases, including those measures set forth in Sections 2 and 18. Operator shall comply with the sound limitation regulations set forth in COGCC 800 Series Aesthetic and Noise Control Regulations. The Operator shall not unload pipe between 8:00 p.m. and 7:00 a.m. The Operator will complete a baseline

noise mitigation study at each Well Site that demonstrates that noise is expected to be mitigated to the extent practicable and a copy will be provided to the City. A noise mitigation study has been completed that demonstrated that noise is expected to be mitigated to the extent practicable and to levels acceptable to the City. The Operator shall address C scale noise/vibration through berming and other associated BMPs. During the Drilling and Completion Phases, the operator shall construct a perimeter wall and/or use hay bales to mitigate noise as appropriate on a case-by-case or modeled basis. If Operator uses any engines that are not electrically operated, Operator shall use quiet design mufflers (also referred to as hospital grade or dual dissipative) or equivalent and shall use acoustically insulated housing or covers to enclose the engines.

The Operator shall comply with all provisions of COGCC Rule 802 on Noise Abatement with respect to the Well Sites; provided, however, that the Operator and City agree that the maximum permissible noise levels to be applied under Rule 802 shall be, other than during pad construction at the Well Sites, the greater of (i) the levels set forth for the land use type of "Residential/Agricultural/Rural" under Rule 802 if measurements are taken at 1,000 feet from the sound walls at the Well Site and (ii) 4 dB(A) higher than baseline ambient sound measured at 1,000 feet from the sound walls at the Well Site. During pad construction at the Well Sites, the Operator agrees that noise levels shall not exceed those produced by the construction of a typical residential or commercial development. All measurements considered for compliance with this Section 31 shall be taken by a third party contractor using industry standard equipment and practices.

Both the City and the Operator have conducted an Ambient noise survey for each Well Site at baseline and will place noise meters near Well Sites to monitor ongoing noise levels until the commencement of the Production Phase.

32. *Flowlines.* Any newly constructed or substantially modified flowlines on the Well Sites shall be constructed and operated under the provisions of the COGCC 1100 Series Flow line regulations, any future COGCC flowline regulations, and any applicable surface use agreements with the surface owners. Operator shall pressure test all flowlines following their construction, including those rated at less than 15 PSI. Operator will provide to the City all records required to be submitted to State agencies related to inspections, pressure testing, accidents and other safety incidents related to flowlines at the Well Sites and, upon specific request by the City, Operator will provide to the City any other records submitted to State agencies related to flowlines at the Well Sites.

33. *Recordation of Flowlines.* All new flowlines and pipelines shall have the legal description of the location recorded with the Clerk and Recorder of the City within thirty (30) days of completion of construction. Abandonment of any recorded flowlines shall be recorded with the Clerk and Recorder of the City within thirty (30) days after abandonment.

34. *Removal of Debris.* All construction-related debris shall be removed from the site for proper disposal in a timely manner. The site shall be maintained free of debris and excess

materials at all times during operation. Operator shall not burn or bury debris at any time on the Well Sites.

35. *Removal of Equipment.* All equipment used for drilling, re-completion and maintenance of the facility shall be removed from the site within thirty (30) days of completion of the work, weather condition permitting, unless otherwise agreed to by the surface owner. Permanent storage of removable equipment on Well Sites shall not be allowed.

36. *Plugged and Decommissioned Well Testing.* Prior to and following the fracturing of any New Well, Operator shall assess the integrity of plugged and decommissioned wells or removed from use and dry, or removed from use ("Previously Abandoned Wells), within one-quarter (¼) mile of the projected track of the borehole of the proposed New Well.

    This shall include:

    1. Based upon examination of COGCC and other publicly available records, identification of all Previously Abandoned Wells located within one-quarter (¼) mile of the projected track of the borehole of a proposed well.
    2. Risk assessment of leaking gas or water to the ground surface or into subsurface water resources, taking into account plugging and cementing procedures described in any recompletion or plugged and abandoned report filed with the COGCC.
    3. Notification of the City and COGCC of the results of the assessment of the plugging and cementing procedures.
    4. Permission from each surface owner with a Previously Abandoned Well on their property to access the property to test the soil within a 10' radius of the Previously Abandoned Well. If a surface owner has not provided permission to access and test after thirty (30) days from receiving notice, the Operator shall not be required to test the Previously Abandoned Well. Notice to the surface owner will be sent by Certified US Mail, return receipt requested, to assure that the surface owner receives proper notice.
    5. For each Previously Abandoned Well for which access and permission to test is granted, a soil gas survey to test the soil within a 10' radius of the Previously Abandoned Well shall be completed prior to production from the proposed New Well and again one (1) year after production has commenced on the New Well.
    6. Notification of the results of the soil gas survey to the City and the COGCC within three (3) months of conducting the survey or advise the City that access to the Previously Abandoned Wells could not be obtained from the surface owner.

37. *Stormwater Control Plan.* All oil and gas operations at the Well Sites shall comply and conform with the City's stormwater control regulations, including the submission of an Erosion Control Report and Plan.

38. *Temporary Access Roads.* Temporary access roads associated with oil and gas operations at the Well Sites shall be reclaimed and revegetated to the original state within

a reasonable amount of time, taking into account planting seasons, or as directed by the landowner in a Surface Use Agreement and subject to applicable COGCC variances. Operator must control erosion while access roads are in use.

39. *Trailers.* A construction trailer(s) is permitted as an accessory use during active drilling and well completion or workover operations only. No permanent residential trailers shall be permitted at the Well Sites; provided, however, that until ninety (90) days following the end of the Completion Phase on a Well Site, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator's personnel and the personnel of its subcontractors on a temporary basis.

40. *Transportation and Circulation.* The Operator will comply with all Transportation and Circulation requirements as contained in the City Land Use Code as may be reasonably required by the City's Traffic Engineer and will comply with all applicable hazardous material regulations. The Operator will submit a traffic plan to the City that includes detailed descriptions of all proposed access routes for equipment, water, sand, waste fluids, waste solids, mixed waste, and all other material to be hauled on the public streets and roads of the City. The Operator will obtain necessary access permits. The traffic plan shall include the following:

A. estimated weights of vehicles when loaded, a description of the vehicles, including the number of wheels and axles of such vehicles and trips per day.

B. Detail of access locations for each well site including sight distance, turning radius of vehicles and a template indicating this is feasible, sight distance, turning volumes in and out of each site for an average day and what to expect during the peak hour.

C. Truck traffic volumes converted to equivalent single axle loads and compared with existing volumes. Trucks anticipated on roadways that are being accessed to equivalent single axle loads using existing volumes and proposed with extraction activities.

D. Core drilled samples of City roads to be used and determined the adequacy of the existing roadway structure and determined that the roadway section is adequate for extraction activities.

E. Truck routing map and truck turning radius templates with a listing of required and determined that certain improvements are necessary at intersections along the route.

F. Complete traffic report, determining operational changes and geometric modifications necessary as a result of extraction activities.

G. Identification of need for any additional traffic lanes, which would be subject to the final approval of the City's engineer.

H. Restriction of non-essential traffic to and from Well Sites to periods outside of peak am and pm traffic periods and during school hours (generally 7-9am and 3-6pm).

41. *Wastewater and Waste Management.* Operator must submit a waste management plan to the City that complies with the following: All fluids shall be contained and there shall be no discharge of fluids. Waste shall be stored in tanks, transported by tanker trucks and/or pipelines, and disposed of at licensed disposal or recycling sites. The plan shall incorporate secondary containment and stormwater measures consistent with Sections 8 and 37. No land treatment of oil impacted or contaminated drill cuttings are permitted. A copy of the Operator's Spill Prevention, Control, and Countermeasure Plan (SPCC) will be given to the City, which describes spill prevention and mitigation practices. The Operator shall not dispose of any wastewater within the City. All other waste shall be disposed of in accordance with state regulations.

42. *Water Supply.* The Operator agrees to comply with applicable State of Colorado, Department of Natural Resources and other applicable State regulations concerning the source(s) of water used in the Drilling Phase and Completions Phase. The Operator shall notify the City, upon its request, of the source(s) of water to be used at Well Sites during the Drilling Phase and Completion Phase and will provide the City with an estimate of the volumes of water to be utilized, with such estimates subject to change. All water volumes actually used by Operator shall be reported by the Operator to the State of Colorado in accordance with its regulations.

43. *Noxious Weed Control.* The Operator shall be responsible for ongoing noxious weed (as defined under State law) control at the Well Sites and along access roads per City or other applicable agency regulations.

44. *Insurance.* The Operator agrees to provide liability and insurance under the conditions, and in the amounts, set forth in Exhibit G.

45. *Injection Wells.* The Operator shall drill no injection wells in Broomfield.

46. *Alternative Site Analysis.* Operator has consulted with the City, to the City's satisfaction, in order to identify alternative sites based upon factors determined by the City. The Well Sites were mutually selected by the Operator and the City as the final sites following this consultation.

47. *General Maintenance.* Operator shall operate and maintain all equipment pursuant to manufacturer specifications consistent with technological limitations and reasonable and customary maintenance practices.

48. *Odor.* Odor emitting from Well Sites must be controlled. Operator to prevent odors from oil and gas operations by proactively addressing and, to the extent possible, resolving complaints filed by impacted members of the community, in coordination with City

public health staff. Operator must use a filtration system or additives to the drilling and fracturing fluids to minimize odors. Operator is prohibited from masking odors from any oil and gas facility site by using masking fragrances.

49. *Reclamation.* Operator must submit an oil and gas site reclamation plan and reclaim a Well Site not later than six (6) months after plugging and abandoning the last New Well at such Well Site, weather and planting season permitting.

50. *Well Integrity.* Operator must equip the bradenhead access to the annulus between the production and the surface casing, as well as any intermediate casing, with a fitting to allow safe and convenient determinations of pressure and fluid flow. Valves used for annular pressure monitoring shall remain exposed and not buried to allow for visual inspection. The Operator shall take bradenhead pressure readings as required by the COGCC.

51. *Fires and Explosions.* Any accident or natural event involving a fire, explosion or detonation shall be reported to the City within 24 hours. This report shall include such specifics, to the extent available:

    A. Fuel source

    B. Location

    C. Proximity to residences and other occupied buildings

    D. Cause

    E. Duration

    F. Intensity

    G. Volume

    H. Specifics and degree of damage to properties, if any beyond the Well Site

    I. Injuries to person(s)

    J. Emergency management response; and

    K. Remedial and preventive measures to be taken within a specified amount of time

    The Operator shall provide the City with an additional report containing the information above after the conclusion of the accident or natural event if lasting more than 24 hours.

52. *Spills.* Operator must notify the City of any spill of any material on permeable ground on the Well Sites that has a reportable spill quantity under any law. The Operator will also provide the City with a copy of any self-reporting submissions that Operator provides to the COGCC due to any spills at the Well Sites.

53. *Bradenhead Monitoring.* Operator will conduct bradenhead monitoring on the New Wells in accordance with COGCC Rules.

54. *Variances.* Except as specifically provided elsewhere in the Agreement, including its Exhibits, all variances, waivers, exceptions, and similar modifications require written

approval from the City, such approval not to be unreasonably withheld, conditioned or delayed.

55. *Risk Assessment.* As part of Operator's application to the City, Operator agrees to provide a risk management plan, which will include the identification of potential risks, methods of risk avoidance and controls that implement techniques to prevent accidents and losses and reduce the impact or cost after the occurrence of identified potential events.

56. *Automatic Safety Protective Systems and Surface Safety Valve.* An automated safety system, governed by safety devices and a programmable logic computer, will be installed at the Well Sites. The automated safety system shall include the installation, monitoring and remote control of a Surface Safety Valve ("SSV") among many other engineered measures and devices that are implemented to greatly reduce or eliminate the potential for a well event. All New Wells will have a SSV installed prior to the commencement of the Production Phase connected to the production tubing at the surface. The SSV will be equipped to operate remotely via the automated safety protective system, which monitors multiple flowing pressures and rates which have predetermined maximum and/or minimum threshold values programmed and will remotely shut the well in should certain upset conditions be detected. Additionally, the automated safety system provides the ability to remotely shut-in wells on demand through operator remote intervention. The SSV will have documented quarterly testing to ensure functionality. The practice of utilizing automated safety protective systems, including SSV's, exceeds the current State regulations and requirements for wells operated within Colorado.

57. *Possible Berms, Bales or Sound Walls.* Operator shall utilize the additional mitigation measures of berms, bales, and/or sound walls at one or more of the locations set forth on Exhibit I if so requested by the City in writing. The particular measure(s) employed at any such location shall be as determined by mutual agreement between the City and the Operator.