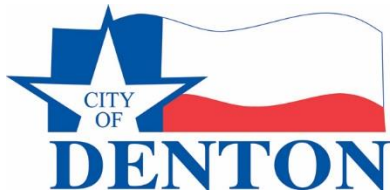


Gas Well Erosion and Sediment Control Plan Guidance Document

City of Denton Watershed Protection

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1.0 PROJECT INFORMATION

1.1 Contact Information (see note below)

Operator Name
Address
Representative
Telephone
Facsimile
Email
Alternate Contact
Telephone
Email
Signature
Date

Note: The contact person for the Erosion and Sediment Control Plan may or may not be the same as Gas Well Site operator. Contact information should be provided for both active drilling and production phases of the well.

1.2 Physical Site Description

Provide current land use (agriculture, rangeland, commercial, industrial, residential, institutional), general vegetation types (prairie, turf grass, crop, forest, small trees/shrub), surface waters on parcel and their proximity to the pad site and roads, and other planned site activities that will disturb soils.

1.3 Topography

Provide a map including elevations for the site with pre construction and post construction contour lines (2 foot resolution) noted on the site map. Indicate source of contour information (City map information, site survey, other).

1.4 Hydrologic Analysis

Include information on flow of water across the site. Denote any discharge points or outfalls where water is carried to an existing drainage outfall such as a pipe, ditch, etc. Include existing conditions and proposed changes.

1.5 Receiving Waters

Provide a description of receiving waters to which the parcel drains. Include a description of any waterways, wetlands, ponds or springs, natural or manmade, present on the site.

1.6 Soils

Provide a general description of soil type on site, including the soil erodibility (k factor) for soils that will be disturbed. Soils information is available from the Natural Resource Conservation Service through their website: <http://websoilsurvey.nrcs.usda.gov/app/>

1.7 Description of Proposed Activities

Describe proposed activities for the site, including a generalized timeline.

1.8 Well Pad Site Plan

Provide surface development schematics for both the drilling and operations phases of surface development. Note any potential for erosion/sedimentation and areas of concern for stormwater

contamination. Include any fueling areas, maintenance operation areas, vehicle wash areas, waste disposal container(s) and hazardous materials storage areas, product and condensate storage tanks, and plans for stabilizing points of entry to the pad site.

2.0 SOIL STABILIZATION, EROSION CONTROL, AND SITE MANAGEMENT MEASURES

2.1 Best Management Practices

Describe control measures that will be implemented to minimize pollution. Control measures (also referred to as Best Management Practices or BMPs) for the site must be selected based on site conditions. Please refer to the **most recent** version of the Reasonable and Prudent Practices for Stabilization of Oil and Gas Construction Sites (RAPPS) document (available at www.fracfocus.org) for guidance on control measure selection criteria. Potential pollutants from the project include sediment (formed by dust on the crushed rock pad surface), soils tracked off-site by construction vehicles exiting the site, spills of chemicals such as fuels, paints, lubricants and solvents at the site, wind-blown dust from disturbed areas, solid waste generated within the site (see section 2.2 below), and drips and leaks of fuel and oil from equipment. Certain BMPs may need to be in place until the well is plugged and abandoned and should be implemented as appropriate (i.e. active drilling/completion and long term BMPs). All BMPs must include a projected timeline for installation.

- Provide a description of any soil stabilization measures that will be utilized on the site. List the measures and indicate their location on the site map as appropriate. Include measures to minimize dust in this section.
- Controls may include an active drilling/completion set of BMPs and long term stabilization BMPs. Controls should be selected from the RAPPS guidance document. Controls not found in RAPPS will be evaluated by the City of Denton Watershed Protection Department on a case by case basis, and should include calculations of efficiencies similar to those used by RAPPS, as well as a description of why the proposed BMP is appropriate for the application. List the erosion and sediment control measures and management practices for the disturbed areas of the pad site as determined by the RAPPS decision trees. Measures should have an acceptable level of efficiency of 70%, as specified by RAPPS. Additionally, provide information on the final stabilization of the site using RAPPS (see “Final Stabilization”) as guidance. Identify revegetation goals and a prospective timeline for final stabilization of the site.

2.2 Solid Waste Disposal

Indicate how solid waste materials will be managed on the site in accordance with the requirements found in Denton Development Code 35.22.2.B.8, 35.22.2.B.9, 35.22.2.D.3, and 35.22.2.E.15.

2.3 Sanitary/Septic Systems

Provide information explaining how sanitary system waste will be managed for the site. Note that all liquid waste haulers pumping septic tanks from drilling sites are required to be permitted in accordance with Chapter 26, Article IX “On Site Sewage Facilities” of the City of Denton Code of Ordinances.

3.0 PERMANENT STORMWATER MANAGEMENT STRUCTURE MAINTENANCE

Maintenance of BMPS is essential and will be evaluated via site inspections until the well is plugged and abandoned in accordance with Denton Development Code requirements. Provide the following information:

- Description of maintenance activities
- Schedule of maintenance procedures (e.g., every 6 months)
- Detailed or manufacturer-specific maintenance requirements for proprietary stormwater management devices.

4.0 MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROL PLAN

The Erosion and Sediment Control Plan is a living document and should be modified as needed by the operator to prevent sediment and other pollutants from escaping the project site. If additional controls are needed to accomplish this goal, they should be installed and noted on the site plan. Changes or modifications must be provided to the City of Denton Gas Well Inspections Department and City of Denton Watershed Protection Department.

5.0 SUBMISSION CHECKLIST

I have reviewed the checklist and all submittals for completeness and accuracy.

Signature: _____

Date: _____

Print Name: _____

Please use the checklist below to indicate whether the items are included in the application by checking the "yes" or "no" column. If an item is checked "no", an explanation must be provided as to why the item is not included. The application must include all information on the following checklist IN THIS ORDER. Please note that if an item is checked "no", the application could be rejected.

ITEM	YES	NO	PAGE #
<p>1.1 Contact information (Operator name and address, representative, telephone, fax, email, alternate contact, telephone, email, signature, date) Note: Contact person for Erosion and Sediment Control may or may not be the same as the Gas Well Site Operator. Please include this information for both active drilling and production phase.</p>			
<p>1.2 Physical Site Description, including: A. Current land use description (agriculture, rangeland, commercial, industrial, residential, institutional) B. General vegetation types present (prairie, turf grass, crop, forest, small trees/shrub) C. Surface waters on parcel and their proximity to the pad site and roads.</p>			
<p>1.3 Topography Provide a site map showing: A. Elevations for the site with pre construction and post construction contour lines (2 foot resolution) noted on the site map. B. Indicate source of contour information (GPS, City map information, site survey, other).</p>			
<p>1.4 Hydrologic Analysis On site map (can consolidate information from multiple sections on one site map), include: A. Directional arrows denoting flow of water across the site. B. Discharge points or outfalls where water leaves the site. C. Description of existing drainage conditions and any proposed changes</p>			

<p>1.5 Receiving Waters A description of: A. Receiving waters to which the site drains. B. A description of any waterways, wetlands, ponds, or springs, natural or manmade, present on the parent tract (if applicable)</p>			
<p>1.6 Soils General description of soil type on site, including propensity for erosion by water and wind (information available from Natural Resource Conservation Service, http://websoilsurvey.nrcs.usda.gov/app/)</p>			
<p>1.7 Description of Proposed Activities Narrative description of proposed activities for the pad site, including a generalized timeline.</p>			
<p>1.8 Well Pad Site Plan A description of pad site, including: A. Site surface development schematics for both the drilling and operations phases of the site surface development B. A List of potential areas for erosion/sedimentation with any areas of concern for stormwater contamination noted. C. Location of fueling areas, maintenance operation areas, vehicle wash areas, waste disposal container(s), hazardous material storage areas, product and condensate storage tanks. D. Plans for stabilization of points of entry to the pad site.</p>			
<p>2.1 Best Management Practices Provide: A. A list of appropriate sedimentation and erosion control measures to be installed prior to the initial dirt work, as selected based on RAPPS guidance B. The timeline for BMP installation on the pad site. Note if BMPs will be installed in phases C. A site map showing BMP locations D. Plans for final stabilization of the site, as outlined in RAPPs. Include revegetation goals and a timeline for final stabilization of the site.</p>			
<p>2.2 Solid Waste Disposal Provide a solid waste management plan for the site, based on the requirements found in Denton Development Code 35.22.2.B.8, 35.22.2.B.9, 35.22.2.D.3, and 35.22.2.E.15.</p>			
<p>2.3 Sanitary/Septic Systems Provide information explaining how the sanitary system waste will be managed for the site, based Chapter 26, Article IX “On Site Sewage Facilities” of the City of Denton Code of Ordinances.</p>			
<p>3.0 Permanent Stormwater Management Structure Maintenance Provide: A. A description of maintenance plan to be used B. A schedule of maintenance procedures (e.g., every 6 months) C. A detailed or manufacturer-specific maintenance items for proprietary control devices (oil-water separators, etc.), underground detention structures, filtration systems, and non-traditional stormwater controls (constructed wetlands, bio-retention, etc.) D. Provisions for transference of ownership should the well change hands at some point in the future.</p>			