

AMENDED

CITY COUNCIL OVERSIGHT COMMITTEE MEETING

MUNICIPAL BUILDING MULTI-PURPOSE ROOM

201 WEST GRAY

THURSDAY, DECEMBER 18, 2014

5:00 P.M.

- 1. CONTINUED DISCUSSION REGARDING POSSIBLE ORDINANCE AMENDMENTS TO CHAPTER 13, SECTION 13-1501, ET. SEQ., OIL AND GAS WELL REGULATIONS.**
- 2. MISCELLANEOUS PUBLIC COMMENTS.**



office memorandum

To: City Council Oversight Committee

From: Susan Connors, Director of Planning and Community Development
Leah Messner, Assistant City Attorney

Date: December 11, 2014

Subject: Proposed Oil and Gas Ordinance Amendments

BACKGROUND:

At the November 13, 2013 Oversight Committee meeting, the committee members discussed oil well site security. The Committee requested that Staff prepare information on the City of Norman’s well site safety policy. Staff prepared a report on this that was distributed to City Council members in December, 2013. This topic was then placed on the Oversight Committee’s May 14, 2014 agenda. At that meeting Staff presented background information on the history of the City’s oil well site security and fencing language in the current Code. Changes to the current Code language regarding fencing, screening, and security were discussed at that meeting by the Oversight Committee.

The Committee discussed and supported fencing around well sites and directed Staff to draft a revised Ordinance incorporating the requested changes as well as a phasing-in period requiring older well sites to comply. The Committee also requested information regarding the average cost for fencing around well sites. Staff was also asked to get feedback from those in the affected industry. The Committee requested Staff bring back information to a future Council Conference. Staff met with industry representatives in June to get their feedback on the proposed changes to fencing and oil and gas well security.

City Council discussed oil and gas well fencing at their conference on August 26, 2014. They provided input to Staff and asked that Staff seek additional input from oil well operators and mineral interest owners.

On September 18, 2014 the Oversight Committee held another meeting to discuss oil and gas issues. The main topic of this meeting was oil and gas well regulations in the Lake Thunderbird Watershed. The Committee requested that Staff prepare additional information based on their discussion. The items of information requested for investigation were the following:

1. Research other cities insurance requirements
2. Provide specific language on location distance from ground water
3. Spill contingency plans with permit – may consider engineering solutions in WQPZ if meeting additional requirements
4. Look at entire floodplain, not just floodway
5. Consider only steel containment for tanks batteries

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6. Storage of chemicals in original containers
7. Water diversion during the drilling process
8. Best practices

The Oversight Committee also requested that Staff again meet with industry representatives to discuss ideas and get their feedback. City Staff met on October 23, 2014 with thirteen companies represented. Staff went page by page to discuss the proposed amendments. The City Attorney's Office also received a Memorandum of Law from the legal representatives of Norman well operators which puts forth their view of municipal regulatory authority over the oil and gas industry. The Legal Department has reviewed that Memorandum and provided a confidential memorandum to Council on that subject.

The Oversight Committee met again on November 13, 2014. At that meeting, the Committee discussed the proposed changes to the draft Ordinance and asked Staff to gather some additional information and make some changes to the proposed Ordinance. The Committee's requests were primarily focused in five areas: fencing; water testing; water quality protection zones; waivers; and insurance requirements. These areas of amendment are highlighted in yellow on the attached Ordinance draft.

DISCUSSION:

Attached is a draft ordinance that incorporates the changes suggested by the Oversight Committee at their November 13, 2014 meeting as well as additional suggestions from Staff regarding language to clean up and/or modernize the oil and gas ordinance.

Fencing

At the November 13, 2014 meeting, Staff recommended that the Committee consider requiring fences to be constructed with heavy gauge chain-link and steel posts set in concrete. Staff also suggested allowing a 12' removable panel so operators could access the well sites to perform maintenance. The Committee requested that Staff insert that language. Therefore, in Section 13-1508(c), Staff has drafted language as follows:

Any person who owns, operates, maintains, or completes any well as a producer that is located within six hundred (600) feet of any dwelling or business structure or is closer than six hundred (600) feet to a public roadway shall enclose such well and its tank batteries by a heavy commercial grade chain-link fence at least six (6) feet high with posts set in concrete with at least three (3) strands of barbed wire secured across the top of the fence around the well and tank batteries. The bottom of the chain-link fence shall have a #9 gauge tension wire running the length of the fence. The maximum opening between the ground and the fence shall be four (4) inches. The fence may be constructed with removable

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front and side sections built of the same material as the permanent fence.

Staff believes that the above language regarding fencing construction standards provides the most protection for neighboring property owners while also allowing operators to have two removable fence panels to allow better access to the well site when repair work is necessary.

At the request of the Committee, Staff has also incorporated language into the fencing requirements allowing property owners outside of the Current Urban Service Area to waive the requirement for a fence. That language has been added to Section 13-1508(c)(3) as follows:

All wells and tank batteries already in existence within City limits as of [insert the effective date of this amendment] shall be in compliance with all fencing requirements of this section within one (1) year of [insert the effective date of this amendment] unless the well site is located outside the Current Urban Service Area as designated on the Norman 2025 Land Use and Transportation Plan or any subsequently adopted Plans and the fencing requirement is waived in writing by all property owners within six hundred (600) feet of the well site.

The underlined language above has also been added to Section 13-1508(c)(4) in regards to allowing a waiver of fencing requirements when a home or business is newly constructed within 600 feet from a well site and that property is outside the Current Urban Service Area.

Section 13-1508(c)(4) has also been amended to clarify that both existing oil wells and existing tank batteries must be fenced according to the provisions of the ordinance when a dwelling or business is constructed within six hundred feet of such oil well or tank batteries. Previously, tank batteries were not specified in this section.

One of the attorneys representing the operators expressed concerns with the draft language requiring oil wells that are “visible from a public roadway” to comply with the fencing requirements as seasonal changes and different vantage points may effect whether an oil well is visible or not. For that reason, Staff has amended Section 13-1508 to require fencing of oil wells located within six hundred feet of the centerline of a public roadway. Staff believes that this language might be preferable in terms of ease of interpretation and enforcement.

Water Testing

The Oversight Committee asked for additional information regarding the proposed regulations on water testing. In order to respond to those questions, Staff has done additional research that includes contacting the Oklahoma Water Resources Board (OWRB), the Oklahoma Department of Environmental Quality (ODEQ), Dr. Robert Puls, and reviewing programs and ordinances from other jurisdictions. Dr. Puls, the Director of the Oklahoma Water Survey and an Associate Professor in the College of Atmospheric and Geographic Sciences at the University of Oklahoma, provided a paper that he co-wrote from the Oklahoma Cooperative Extension Service

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as well as excerpts from previous presentations that he has made regarding baseline monitoring programs for water wells near oil wells. Those materials are attached to this memo. He recommends testing for the following: bromide, chloride, total dissolved solids, methane, iron, manganese, arsenic, boron, and lithium. The draft ordinance has been amended to reflect that suggestion. In addition, Staff has amended the provision regarding when and how often to test water wells based on information from Dr. Puls. According to his materials, at least eleven states have, or are in the process of creating, baseline monitoring programs. Of the eleven that he provided information on, six require post-drilling water sampling. Colorado requires three post-drilling samples to be taken in years one, three, and six post-drilling. Dr. Puls stated that groundwater moves very slowly so taking samples over a longer term would be advisable. Therefore, Section 13-1510 has been amended as follows:

Domestic and public water supply wells located within a radius of one-quarter ($\frac{1}{4}$) mile of any new oil or gas well shall be tested for the presence of deleterious substances. One test shall occur prior to drilling and one test shall occur every other year after completion for five years for a total of three tests post-completion of the well. The substances to be tested for are: bromide, chloride, total dissolved solids, methane, iron, manganese, arsenic, boron, and lithium. Such testing is the responsibility of the permittee and, at the permittee's expense, to be conducted by a person or company approved by the Oil and Gas Inspector. However, testing shall not be required if the water well owner denies access to the water well or waives the testing. The Oil and Gas Inspector and the water well owner shall be notified forty-eight (48) hours in advance of such testing and may be present. Test results shall be filed with the City upon completion.

In order to provide additional context, the Planning Department has obtained mapping data from the OWRB regarding permitted water wells within the City of Norman. Using that information, along with City data, they have created the attached map. A larger version of this map will be available at the meeting. City Staff reached out to the Ana-Lab, Corporation, a water testing firm that does work in the City of Norman, and they quoted a fee of \$365.00 to collect and test a water sample. Samples could also be taken to ODEQ for testing, but they do not collect the samples. They quoted a price of \$350.00 to \$400.00 for testing a water sample.

In addition, Dr. Puls advised that water testing accomplishes two main purposes: 1) it engenders public trust, provides operators with a "social license" to operate, and increases transparency and accountability and 2) provides protection for the oil and gas industry because it insulates them from claims of damage to wells if test results show no contamination. He said that a large number of the complaints against oil companies for water well contamination are unfounded. He also recommended that the water testing program, if adopted by Council, only include testing water wells around newly drilled oil wells. He believes that water testing around existing oil wells goes much further than any other baseline monitoring program that he is aware of and would not provide useable data. Dr. Puls also said it is important to strike a balance between

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level of testing and the cost involved. He said that some jurisdictions only test post-drilling if a complaint is made. Or, he said that many states do post-drilling testing for a shorter list of the more common contaminants and then require more extensive testing if a water well owner alleges contamination.

Also, Staff has amended the ordinance as requested to include providing notice 48 hours in advance of testing to the water well owner.

Water Quality Protection Zones – Stream Planning Corridors

The Committee had several concerns about drilling in water quality protection zone areas. For that reason, the Public Works Department recommends amending the draft Ordinance to reference “stream planning corridors” as opposed to “water quality protection zones” in order to properly identify sensitive watershed areas that have not been included within a final plat. Therefore, Section 13-1509(a)(4) has been amended to prohibit drilling on land “designated as a ‘Stream Planning Corridor’ as defined in Chapter 19, Section 19-210(PP).” Amending the draft ordinance in this way addresses the Committee’s concerns that the previous draft was too vague in its treatment of prohibiting drilling in watershed areas. A map of the stream planning corridors within the city limits is attached, and a larger copy will be available at Thursday’s meeting.

In addition, if Council elects to adopt the proposed Ordinance as drafted, an amendment to the Floodplain Ordinance contained in Chapter 22 may also need to be considered. Currently, the development of oil and gas wells is allowed in the floodplain so long as the requirements of the Floodplain Ordinance are met. If the proposed amendments to Chapter 13 are adopted, no oil or gas wells will be permitted in the Stream Planning Corridors. Therefore, an operator would no longer be able to get a floodplain permit to drill in those areas. However, an operator would still be able to get a floodplain permit for oil and gas operations in areas designated as floodplain but not as Stream Planning Corridors – primarily the 10 Mile Flat area. These areas of floodplain are not included as stream planning corridors because they do not drain into Lake Thunderbird. If Council wishes to proceed with the amendments as drafted, here is a suggested revision to Chapter 22:

- (d) Special Requirements for Drilling Oil and Gas Wells in a Special Flood Hazard Area (SFHA)
 - (i) No floodplain permits shall be issued for oil and gas wells proposed to be located within a Stream Planning Corridor as defined in Chapter 19, Section 19-210(PP).
 - (ii) Base Flood Elevation Determination: For areas designated as zone AE the Flood Insurance Rate Map (FIRM) base flood elevations (BFE) are provided and usually a floodway is mapped. For areas designated as zone A on the FIRM only a floodplain boundary is provided and the applicant must provide a BFE based on an acceptable method of determination.
 - (iii) Floodways: If the drilling site is in the floodway portion of the floodplain, the developer (i.e. petroleum company) will have to demonstrate through

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an engineering study that there will be no increase in flood stages during the discharge of the one percent chance caused by the development. No reserve pits will be allowed within the floodway, as stated in the City of Norman's Oil and Gas Ordinance O-8283-69. (O-0809-3)

- (iiiiv) Buildings and other Structures: Any buildings and other structures (including fuel storage tanks) in the floodplain will either have to be elevated to or above the BFE or floodproofed (made watertight) to that elevation. Any electrical and mechanical equipment must be elevated or floodproofed to the BFE. Any storage tanks and any equipment at the site that could be damaged by floodwaters will have to be elevated above the BFE or made watertight and anchored to resist floatation, collapse and lateral movement. A registered engineer will have to certify the design of the floodproofing measures. As this is non-residential construction, the drill site and road to the well does not need to be elevated. The drilling operation shall comply with all other local, state and federal requirements prior to issuance of a floodplain development permit. All new or replacement flowlines, pipelines, etc., that will cross rivers, streams, creeks, and channels, shall be bored to be below the bed. The depth below the bed shall be a minimum of 10 feet. The pipe used for the crossing shall be 1 pipe grade higher, or have a wall thickness twice the thickness of the standard pipe used for the flowline, pipeline, etc. If the flowline, pipeline, etc. becomes exposed, the crossing must be rebored. The ground surface shall not be disturbed within 50 feet of the river, stream, creek, or channel banks. (O-0809-3)

Insurance

Planning Staff contacted an insurance agent, Daniel Somers with Somers Insurance Agency in Lindsay, Oklahoma, who writes insurance policies for oil and gas operators. Mr. Somers advised that the most common insurance coverage for oil and gas operators is \$1,000,000 in commercial general liability coverage. Pollution liability can be included in the commercial general liability policy via an endorsement for an additional premium cost or a separate pollution liability policy can be purchased. The premium for a commercial general liability policy is driven by payroll, the insured sub-contractor, and the number of wells and their depths. As an example, if a company operating less than ten wells purchased a \$5,000,000 pollution liability policy, the minimum cost would be a \$5,000 to \$7,500 annual premium depending on the situation and how the limits are being procured. Mr. Somers advised that excess pollution liability coverage is expensive and often difficult to obtain. It is coverage that is not offered by many insurance companies. He also said that because each operator's circumstance is different, no coverage, exposure, or premium will be the same.

Waiver

The Committee requested additional information in order to consider Finley Resources' request to amend the current process allowing for a waiver from a property owner within six hundred

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feet of oil well sites. Buddy Behrens, the attorney representing Finley Resources specifically requested that the Committee consider the following amendment:

No oil or gas well shall be drilled within six hundred (600) feet of any occupied dwelling or occupied business structure unless waived by the record owner of such dwelling or business structure, subject to the exception that if the drilling location for the proposed well was the site of active oil and gas well operations at the time of the construction of such dwelling or business structure, then no such waiver shall be required.

As background information for this request, Planning Staff reviewed pad site application on five of the newer well sites within the City of Norman. Those well sites ranged in size from 1.04 acres to 2.34 acres with an average of 1.83 acres. Each operator tends to configure and manage the well site differently depending on their business plan and practices. It also depends on how much land area a surface may be willing to lease out for oil and gas operations. For those reasons, Staff does not recommend setting a limit on the size of oil well sites.

In addition, research into a definition of a “well pad” indicates that it is not a commonly defined term in the industry that includes a dimensional component other than to indicate a location for drilling multiple wellbores from a single surface location. With pad drilling, up to twenty or more wells can be drilled from a single, more compact, pad location. This practice saves time and money for operators that would previously have been spent packing and moving a drilling rig to new locations and preparing multiple drilling sites. It also has a smaller impact on area landscape.

One city researched, Ft. Worth, Texas, requires waivers from neighboring property owners similar to the language currently in the City of Norman’s ordinance. However, the Ft. Worth also requires the waivers to be filed, at the expense of the operator, in the county property records. Amending the City of Norman’s ordinance to include this requirement would put successive owners of property within six hundred feet of an oil well on notice that there is an oil well nearby whose location has been agreed to by a previous owner.

Staff recommends, if the Committee wants to consider amending Section 13-1509(b) of the Ordinance to accommodate Mr. Behrens’ request, the following amendment:

No such oil or gas well shall be drilled within six hundred (600) feet of any dwelling, business structure, church school, unless waived by the landowner, or within three hundred (300) feet of any producing freshwater well. Such a waiver, if received, shall be written, notarized, and identify the property address. The operator must file the waiver in the Office of the Cleveland County Clerk and produce evidence of such filing prior to the issuance of a permit. Subsequent waivers are not required if an operator requests, and receives, a permit to drill additional well bores on the

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currently permitted ten acre site as identified in the original permit application.

This amendment addresses the request made by Finley Resources, and it also streamlines the Ordinance by combining Sections 1509(b) and (c). An annotated version of those changes is attached.

Staff Suggested Minor Revisions

In making the changes requested by the Committee, Staff took the opportunity to correct and/or clarify a few minor points. First, the word ‘and’ has been deleted from Section 13-1501(d). Section 13-1501 lists the types of permits required, but operators do not have to receive one of each type of permit so using ‘and’ as a conjunctive to link all the types of permits together was incorrect. Second, in 13-1501(b)(7), Staff has amended the language to more accurately identify the disposal site and the Oklahoma Corporation Commission ‘land application’ permit for the disposal site.

Third, Staff corrected an error in Section 13-1502.1 that identified bodily injury limits as “one hundred thousand twenty-five dollars” instead of the correct language of “one hundred twenty-five thousand dollars”. Fourth, Section 1504 has been amended to require minimum pressure testing of 1,500 pounds per square inch to mirror current Oklahoma Corporation Commission standards. Fifth, Section 13-1509 has been amended to prohibit the issuance of permits on “any land” instead of “any parcel of land” in order to reflect the added prohibition of drilling in designated stream planning corridors since that prohibition might allow drilling on a part of parcel containing a stream planning corridor so long as the drilling was not within the corridor itself.

Sixth, language has been amended in Section 13-1509(c) for improved clarity as follows: “In granting a permit, the Oil and Gas Inspector may impose requirements for ~~much of the following but not limited to~~ the following non-exclusive list of items as may be reasonably necessary to protect the health, welfare and safety of persons and property.” Seventh, Section 13-1514(b) has been amended to clarify that all lines, regardless of being steel or some other material, must have signs at all property lines and public and private street crossings.

RECOMMENDATION:

The above information, along with the attached draft Ordinance, is provided for the Committee’s information and discussion at the December 18, 2014 City Council Oversight Committee meeting. Staff will be available for questions and comments at that time.

Attachments: Draft Ordinance
Maps

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**Proposed Amendments to City of Norman Ordinance
Regulating Oil and Gas Drilling and Operations**

Sec. 13-1501. Permits required.

- (a) No person shall drill, reenter, maintain or operate an oil, gas or disposal well, or otherwise mine or produce other minerals, without having previously obtained an appropriate permit from the Oil and Gas Inspector as provided in this section.
- (1) An oil/gas well drilling permit fee of five thousand dollars (\$5,000.00) shall be required. The term of said permit shall be for a period of one (1) year from the date of issuance;
 - (2) An annual inspection fee of four hundred fifty dollars (\$450.00) shall be required per year.
 - (3) A re-entry permit fee of ~~one thousand dollars (\$1,000.00)~~ three thousand dollars (\$3,000.00) shall be required. The term of said permit shall be for a period of one (1) year from the date of issuance.
 - (4) ~~To~~ A convert a producing well to an injection well ~~permit requires a permit fee~~ of one thousand dollars (\$1,000.00) ~~shall be required~~. The term of said permit shall be a period of one (1) year from the date of issuance; and
 - (5) A plugging permit fee of two hundred fifty dollars (\$250.00) shall be required.
- (b) ~~In addition to the information required in Article I of this chapter,~~ All applicants desiring a permit to drill, reenter, maintain or operate an oil, gas or disposal well shall submit:
- (1) A description of the location of the well, specifying and identifying the well location within a particular ten (10) acre tract within a specific quarter, section, township and range, including thereon the distance to all existing dwelling houses, buildings or other structures designed for the occupancy of human beings or animals within six hundred sixty (660) feet of any such well, and the location of all known existing oil, gas or fresh water wells within said ten (10) acre tract;
 - (2) A list of all equipment that will be utilized in the drilling, operation or maintenance of the particular well;
 - (3) The mud program to be utilized on that particular well;

- (4) A copy of the approved drilling permit from the Corporation Commission and a copy of the staking plat;
- (5) The size, depth and quality of surface and production casing;
- (6) A statement of the provisions for water for the drilling ~~rig~~ and completion operations;
- (7) ~~At the time of permitting, a~~ A written plan for disposal of deleterious substances produced during the drilling operations ~~shall be submitted. and any deleterious substances produced as a result of production from the well.~~ This plan shall include the method of transportation for the deleterious substances and the name and location of the permitted disposal pit site, ~~including~~ or a copy of the Oklahoma Corporation Commission 'land application' permit for the disposal site and a contract with the owner of the permitted site for the disposal of said deleterious substances. Before commencing drilling operations, this plan must have received approval from the Oklahoma Corporation Commission. ~~or in the alternative, provide proof of ownership of the permitted disposal site. The permittee shall provide monthly reports to the City of the amount of sale water and other deleterious substances produced, along with receipts for disposal of same;~~
- (8) The names of the surface ~~and surface lease~~ owners;
- (9) A drilling prognosis, to specify in detail the amount, weight and size of conductor pipe and surface pipe and the procedures to be used for cementing such. Plugging procedures to be used in the event production is not established shall also be specified;
- (10) A statement of verification by the applicant that all submitted information is accurate.
- (11) Copy of receipts reflecting notice, by certified mail, to all property owners within three hundred (300) feet of the exterior of the entire well site (including all accessory equipment), notifying them of applicant's intention to drill a well.
- (12) A signed surface owner's statement or letter or a court proceeding allowing drilling on the property.
- (13) Maps and drawings showing the means to be used for diverting surface water from the drilling/production site.
- (14) Statement acknowledging the operator's obligation to have a Spill

Prevention Control and Countermeasure Plan, as required by the Environmental Protection Agency, and acknowledging a willingness to produce such a plan upon request of the Oil and Gas Inspector.

- (c) An application for the permit to drill or reenter a well for enhanced recovery or substance disposal shall be in the same form as required for a permit to drill an original well and shall contain the following additional information:
- (1) A block map of the well site, showing all equipment to be used at the site, location of pipelines, access road, and distances from the well to any and all fences, public roadways and buildings within a radius of three hundred (300) feet;
 - (2) A block map of the project, showing the location of:
 - a. All water supply wells within a one-quarter mile radius of each injection or disposal well;
 - b. All public water supply wells, disposal wells, injection wells, producing wells, and plugged and abandoned wells within the project area and those sections immediately adjacent;
 - c. All conduits; and
 - d. Tank battery, pumping station and appurtenant equipment;
 - ~~(3) All wells within the project area and those sections immediately adjacent shall be indicated by status (e.g., plugged and abandoned, injection, salt water, oil, etc.) and show the following additional information:~~
 - ~~a. Footage (surface casing);~~
 - ~~b. Derrick floor and ground level elevation;~~
 - ~~c. Drilled total depth;~~
 - ~~d. Packer total depth;~~
 - ~~e. Size, depth and A.P.I. grade of surface and production casing, including zones from which casing has been removed;~~
 - ~~f. Location of all plugs, packers, cement plugs, tubing anchors, etc., with the well bore;~~
 - ~~g. Depth and nature of all cement squeeze jobs;~~

- ~~h. Formation name and depth of all open perforations in a producing open hole;~~
- ~~i. Volume and type of cement used on surface and production strings; and~~
- ~~j. Top of cement (measured or calculated);~~
- ~~k. One (1) copy of all electric, mechanical, sample and driller's logs. These logs shall be held in confidential files for a period not to exceed one (1) year from the date the last submitted formation evaluation type wire line log was run. An extension of six (6) months may be granted administratively by the Oil and Gas Inspector, upon approval of a written request from the current operator of the well;~~
- ~~l. Operation name for each well;~~
- ~~m. One (1) copy of all cement bond logs and production logs;~~
- ~~n. One (1) copy of all work performed on the well;~~

~~(3)(8) Copies of all information supplied to the Corporation Commission, and said Commission's approval of the project;~~

~~(4)(9) All operators, contractors, drillers, service companies, pipe-pulling and salvaging contractors, or other persons, shall be knowledgeable of and prepared to implement, if necessary, emergency procedures as detailed in the Oklahoma Corporation Commission's "Guidelines for Petroleum Emergency Field Situations in the State of Oklahoma."~~

(d) An annual inspection fee of four hundred fifty dollars (\$450.00) shall be paid for each well operated or maintained under a permit issued by the City. Such fee is due on or before June 30 of each calendar year. Failure to pay the required permit fee by June 30 of each calendar year will result in a late charge of four hundred fifty dollars (\$450.00) per well. At the time the annual inspection fee is paid, the inspector may request to view the annual inspection sheet required by the Environmental Protection Agency in conjunction with the Spill Prevention Control and Countermeasure Plan.

Sec. 13-1502. Blanket bond, blanket irrevocable letter of credit, or cash required.

(a) Prior to the issuance of any permits, any person who drills or ~~operates~~ ~~operators~~ any well for the exploration, development or production of oil or gas, or as an injection or disposal well, with this City shall furnish on forms approved by the City's Legal Department and maintain at all times a blanket bond, ~~or~~ ~~blanket irrevocable letter of credit~~ or provide a cash payment in the principal sum of at

least twenty-five thousand dollars (\$25,000.00). Said bond or letter ~~of~~ credit must be executed by a reliable insurance company or bank authorized to do business in the state, as surety or creditor, and with the applicant/permittee as principal or debtor, running to the City for the benefit of the City and all persons concerned, conditioned that the applicant/permittee shall comply with the terms and conditions of this chapter in the drilling and operation of oil wells drilled or operated within the City. Said bond, ~~or~~ letter of credit, or cash payment deposited must become effective on or before the date the same is filed with the City and remain in full force and effect for at least twelve (12) months subsequent to the expiration of the permit term and, in addition, the bond, ~~or~~ letter of credit, or cash payment must be conditioned that the applicant/permittee must promptly pay all fines, penalties and other assessments imposed upon the applicant/permittee by reason of his breach of any of the terms, provisions or conditions of this chapter, and that the applicant/permittee must promptly restore the streets, sidewalks and other public property of the City which may be disturbed or damaged during the applicant/permittee's operations to their former conditions; that the applicant/permittee must promptly clear all premises of all litter, trash, waste and other substances and must, after plugging and abandoning ~~abandonment~~, grade, level and restore said property to the same surface condition, as far as possible, as existed prior to commencing operations or a condition agreed to by the property owner in writing; further that the applicant/permittee shall indemnify and hold harmless the City from any and all liability attributable to granting the permit; that the applicant/permittee shall promptly pay all sums with respect to deductibles on covered losses under insurance policies required by this chapter; and that the applicant/permittee shall comply with all of the terms of this chapter concerning the plugging and abandoning ~~abandonment and/or plugging~~ of all such wells. Each bond, ~~or~~ letter of credit, or cash payment submitted shall cover all wells drilled or operated by said person within the City.

- (b) For good cause, the Oil and Gas Inspector, after consulting with and receiving approval from the City's Legal Department, may require the filing of a blanket bond, ~~or~~ letter of credit, or cash payment in an amount higher than ~~that~~ twenty-five thousand dollars (\$25,000.00), but not to exceed one hundred thousand dollars (\$100,000.00) by the permittee. "Good cause" shall include, but shall not be limited to, a showing that the operator or permittee has previously violated any of the provisions of Chapter 13, Article 15 of this Code.
- (c) The blanket bond, ~~or~~ letter of credit, or cash payment required by this section shall be submitted and maintained in full force and effect at all times by all persons drilling, completing, operating, maintaining and/or producing any well located within the limits of the City.
- (d) Upon noncompliance with the above-listed conditions, the cash amount or the blanket bond or blanket irrevocable letter of credit shall be forfeited and shall provide for the plugging of the well and/or restoration of the land's surface.

Sec. 13-1502.1. Insurance requirements.

- (a) Prior to the issuance of any permit, the applicant shall deposit a copy of the following insurance policies issued by a corporate insurer licensed to do business in the State of Oklahoma:
- (1) A policy or policies covering seepage and pollution in an amount not less than one million dollars (\$1,000,000.00) for each occurrence, ~~except stripper wells, which may be reduced to five hundred thousand dollars (\$500,000.00) coverage;~~ and such policy shall contain coverage for contamination or pollution of surface or subterranean streams, watercourses, lakes or public or private water supplies.
 - (2) A policy or policies of standard comprehensive public liability insurance, including contractual liability covering:
 - a. Bodily injury: One hundred **twenty-five** thousand dollars (~~\$100,000.00~~ \$125,000.00) per person, three hundred thousand dollars (\$300,000.00) per accident or occurrence; and
 - b. Property damage: Two hundred thousand dollars (\$200,000.00) per accident or occurrence.
- (b) All such policies shall be endorsed to include the City as an additional insured.
- (c) All policies shall be endorsed to read:

“THIS POLICY WILL NOT BE CANCELLED OR NON-RENEWED WITHOUT 30 DAY ADVANCED WRITTEN NOTICE TO THE OWNER AND TO THE CITY OF NORMAN EXCEPT WHEN THIS POLICY IS BEING CANCELLED FOR NONPAYMENT OF PREMIUM, IN WHICH CASE TEN (10) DAYS ADVANCED WRITTEN NOTICE IS REQUIRED”.

~~Thirty (30) days’ notice~~ Notice of cancellation shall be provided to the City of Norman, Office of City Attorney/Code Enforcement Oil and Gas Inspector, P.O. Box 370, Norman, Oklahoma 73070.

- (d) If said insurance policy or policies are cancelled or allowed to expire, the Oil and Gas Inspector may seek termination of electric service to all uninsured wells. In addition, or in the alternative, the City of Norman may seek injunctive relief or any other legal remedy available to cease operations of the well(s) until the insurance coverage is reinstated.

Sec. 13-1503. Definitions.

The following words and phrases, when used in this article, shall, for the purposes of this article, have the meanings respectively ascribed to them in this section, except where the context otherwise requires:

Abandoned well:

- (1) Each well in which no production casing has been run, and for which drilling or testing operations have ceased for thirty (30) consecutive days; or
- (2) Any other well for which there is no current city permit.

Circulating mud pit: The working pit from which drilling muds are continuously recirculated during the drilling process into and from the drilling hole for the purpose of flushing therefrom the drill bit cuttings and as a lubricant to reduce torque, drag, heat, friction and differential sticking during the drilling process.

Deleterious substance: Any chemical, salt water, oil field brine, waste oil, waste emulsified oil, basic sediment, mud or injurious substance produced or used in the drilling, development, producing, transportation, refining and processing of oil, gas or condensate.

Disposal or injection well: Any well drilled or actually used for injection of salt water or other substances into the earth different than the point of extraction or production thereof from the earth.

Enhanced recovery: An operation by which fluid or energy is introduced into a source of supply for the purpose of facilitating recovery therefrom.

Lake Thunderbird drainage basin: That land encompassed by the following legal description: Secs. 18, 19, 30, 31 and 32, T10N R1E of I.M.; Secs. 25, 26, 27, 32, 33, 34, 35 and 36, T10N R1W of I.M.; S/2 of Sec. 34 and that part of Sec. 35 annexed by Ordinances 1323, 1324 and 1361, less the portion deannexed by Ordinance No. 1428, T10N R3W of I.M.; Secs. 3, 4, 5, 6, 7, 8, 9, the W/2 of Sec. 10, the W/2 of Sec. 16, Secs. 17, 18, 19, 20, the W/2 of Sec. 21, the NW/4 of Sec. 28, Secs. 29, 30, 31, and the W/2 of Sec. 32, T9N R1E of I.M.; Secs. 1 through 36, T9N R1W of I.M.; Secs. 1 through 18, the E/2 of the NW/4 of Sec. 19, Secs. 20 through 28, the NE/4 of Sec. 29, the E/2 of Sec. 33, and Secs. 34, 35 and 36, T9N R2W of I.M.; Secs. 1, 2, 3, the E/2 of Sec. 4, Secs. 10, 11, 12, 13, and the E/2 and NW/4 of Sec. 14, the NE/4 of Sec. 15, and the NE/4 of Sec. 24, T9N R3W of I.M.; the W/2 and NE/4 of Sec. 6 and the W/2 of Sec. 7, T8N R1E of I.M.; Secs. 1 through 23, and the W/2 of Sec. 24, T8N R1W of I.M.; Secs. 1, 2, 3, the SE/4 of Sec. 9, Secs. 10, 11, 12, 13, 14, the E/2 and the NW/4 of Sec. 15, and the NE/4 of Sec. 16, T8N R2W of I.M.; all in Cleveland County, Oklahoma.

Mud: The drilling fluid used and recirculated through the drilling hole as a lubricant to reduce torque, drag, heat, friction and differential sticking and to flush drill bit cuttings from the hole during the drilling process.

Mud program: The planning usage of drilling fluid lubricants, specifying with particularity the type, name and physical and chemical composition and characteristics of all ingredients thereof, together with such laboratory and other technical data as may be necessary or required ~~by the Public Works Department~~ to evaluate the same as polluting or deleterious, as enumerated in the current EPA Priority Pollutant Series listing.

Oil or gas well: Any well drilled, operated or maintained for the production of oil, gas, casinghead gas, or any of them or their by-products or derivatives.

Plugged and abandoned: Any well which has been plugged per Oklahoma Corporation Commission rules and regulations.

Pollution: The contamination or other alteration of the physical, chemical or biological properties of any natural waters of the City, or such discharge of any liquid, gaseous or solid substance into any water of the City as will, or is likely to, create a nuisance or render such waters harmful or detrimental or injurious: to public health, safety or welfare; to domestic, commercial, industrial, agricultural, recreational or other beneficial uses; or the livestock, animals or aquatic life.

Producing Well: Any well, hole or bore, of any depth which is not plugged for the purpose of producing oil or gas or disposing of saltwater or any other by-product thereof.

Reserve pit: Any excavation, pit or receptacle designed or actually used to receive, store or hold rocks, drill bit cuttings, shale, sand, fresh water or drilling mud that contains no salt water, oil, oil derivatives, caustics, acids or other deleterious substances harmful to soil or vegetation, or injurious to animal or human life.

Salt water: As used in this ordinance shall mean any water containing more than 500 mg/l chlorides.

Slush pit: An excavation, pit or receptacle, designed or actually used to receive, store or hold waste oil, oil derivatives, sand, salt water or other waste products or deleterious substances produced or used in the drilling, swabbing, cleaning or reworking of any oil, gas or disposal well.

Stripper wells: Any well which produces ten (10) barrels of oil or less per day. To qualify as a stripper well, the operator of the well will have to provide the City Oil and Gas Inspector with copies of the Corporation Commission Production Forms for the previous year, then every year before July 1, thereafter, to qualify for the next fiscal year.

Surface Facilities: Tank batteries, booster pumps or any other surface equipment used in the production of oil or gas or disposal of saltwater or any other by-product thereof, except the pumping units.

Treatable water: Surface and subsurface water in its natural state which may or may not require treatment to be useful for human consumption and contains less than ten thousand (10,000) mg/l total dissolved solids and/or five thousand (5,000) mg/l chlorides.

Sec. 13-1504. Casing.

- (a) The provisions of this section shall apply to all oil, gas, injection and disposal wells.
- (b) Suitable and sufficient surface casing or a stage collar shall be installed to a depth of at least ~~one thousand (1,000)~~ twelve hundred (1,200) feet below the surface or a depth of two hundred (200) feet below treatable water strata encountered in the well, whichever is deeper, and the annular space behind the casing shall be filled with cement from the base of the surface casing, or from the stage collar, to the surface of the ground, by either pump and plug method or by the displacement method. No further drilling shall be accomplished until a ~~the cement~~ bond log has been run, read and approved ~~set for at least eight (8) hours~~. No braden head cement job shall be performed between the surface casing and any other casing string except by special order of the Corporation Commission.
 - (1) Production casing of a size not less than four and one-half (4 ½) inches outside diameter, in good condition, shall be set no higher than the top of the producing formation and cemented with a sufficient amount of cement to obtain a minimum of five hundred (500) feet of annular fillup above the casing producing zone.
- (c) ~~The~~ Each casing string and blow-out preventer shall be tested before drilling the cement plug, at a minimum pressure of one thousand five hundred (1,000 1,500) pounds per square inch held for one (1) hour. Whenever the pressure drops five (5) percent within the hour, the casing will be deemed inadequate and shall be repaired and retested until the requirements hereof are met.
- (d) Permittee shall fill out a form provided by the Oil and Gas Inspector showing the results of the casing pressure test. The test results shall be filed with the Oil and Gas Inspector upon completion of such test. The Oil and Gas Inspector shall be notified in advance of the casing pressure test to enable him to be present if he so chooses.
- (e) Rupture in surface casing. In the event a rupture, break or opening occurs in the surface ~~production~~ casing, the permittee or the operator or drilling contractor shall take immediate action to repair it, and shall report the incident to the Oil and Gas Inspector promptly.

Sec. 13-1505. ~~Earthen circulation pits.~~ Closed Loop System.

- (a) ~~Except in those areas of the Lake Thunderbird basin or Garber Wellington Aquifer recharge area, earthen circulation pits may be constructed or used in connection with the drilling, swabbing, cleaning out or reworking of oil or gas wells. All earthen circulation pits will be vinyl lined, and the contents of such pits~~

~~will be hauled to a disposal facility. All circulating mud pits utilized shall be exclusively of metal construction.~~

- ~~(b) Such circulation pits shall be leveled and the surface of the ground restored as nearly as possible to its original condition within thirty (30) days after completion of said drilling, swabbing, cleanout or reworking operations.~~

Sec. 13-1506. ~~Earthen retaining wall ditches and/or dikes.~~

- ~~(a) The applicant shall submit maps and drawings showing the means to be used for diverting surface water from the drilling/production site.~~
- ~~(b) Each owner and operator is required to construct and maintain dikes or berms surrounding the facility adequate to prevent downward or lateral seepage of deleterious materials. Before drilling operations commence, ditches shall be constructed around the drilling rig, sump pumps shall be installed, and all fluid from the sumps shall be pumped into steel containers for removal. Size and location of ditches and dikes and berms [are] that may be required shall to be determined by the Oil and Gas Inspector.~~

Sec. 13-1507. ~~Earthen reserve pits.~~ Safety standards and Practices.

- ~~(a) Steel mud or circulating pits shall be used. Such pits and contents shall be removed from the premises and the drilling site within fifteen (15) days after completion of the well. Earthen pits will be allowed only as temporary emergency pits and/or as catch basins. Catch basin pits shall be used only for the purpose of catching any deleterious substance runoff and shall be no greater than three hundred twenty (320) cubic feet in volume. Such catch basins will be equipped with a liquid level activated pump designed to keep fluids pumped out of such catch basin pits. All such earthen pits must be lined and approved in writing by the Oil and Gas Inspector. Emergency pits shall be emptied as soon as the emergency is over and all such pits shall be emptied and then leveled within fifteen (15) days after completion of the well. Approved equipment, standard devices and all ordinary methods commonly known and used in the oil and gas drilling and producing industry for the safety and protection of property from damage due to drilling and operating activities shall be used at all locations. Failure on the part of any owner, driller or operator to utilize such equipment, devices or methods shall be the basis for injunction thereof by the City or any person affected thereby, in addition to any penalties provided in this chapter.~~
- ~~(b) All waste oil, salt water, liquid with oil content, gasoline or other oil derivatives or by products, sand, sludge or other waste produced in connection with the drilling, testing, cleaning, swabbing, reworking or operating of any oil, gas or disposal well shall be captured and retained in steel tanks or vessels and transported from the premises to a disposal facility. All drilling rigs shall be~~

equipped with a master gate or its equivalent, adequate blowout preventers, flow lines and valves commensurate with the working pressures involved.

- (c) ~~No person shall permit such substances to escape from the premises owned, leased or controlled by the persons conducting such operations by seepage, overflow or otherwise, nor flow across the surface of the ground or upon any public way, into any storm or sanitary sewer, drainage ditch, upon any gutter or paving or into any Galloway, stream or tributary. All chemicals and/or hazardous materials shall be stored in such a manner to prevent, contain, and facilitate rapid remediation and cleanup of any accidental spill, leak, or discharge of a hazardous material. The operator shall have all material safety data sheets for all hazardous materials on site. All applicable federal and state regulatory requirements for the proper labeling of containers shall be followed. Appropriate pollution prevention actions may be required and include, but not be limited to: chemicals and materials in original containers, raised from the ground, and protected from stormwater and weather elements.~~

Sec. 13-1508. Premises maintained.

- (a) The premises upon which any oil, gas or disposal well is drilled, operated or maintained shall be kept free of all accumulations of rubbish, litter, unused equipment or materials, excess rotary mud, salt water, waste oil or oil by-products and other waste, insofar as the same may be reasonably done in the conduct of operations.
- (b) The permittee will promptly restore the streets, sidewalks, vegetation and other public property which may be disturbed or damaged in the permittee's operations to their former condition, and the permittee will promptly clear all premises of all litter, trash and waste, and will, after plugging and abandoning the well abandonment, grade, level and restore said property to the same surface condition as practical and as possible, as existed prior to commencing operations or a condition agreed to by the property owner in writing.
- (c) Any person who owns, operates, maintains, or completes any well as a producer that is located within six hundred (600) feet of any dwelling or business structure or is closer than six hundred (600) feet from the centerline of a public roadway shall enclose such well, ~~together with~~ and its tank batteries, by a heavy commercial grade chain-link fence at least six (6) feet high with posts set in concrete and constructed of a material and in a manner so as to be impregnable to ~~children and animals under ordinary or foreseeable circumstances; provided, that where the well site is greater than six hundred (600) feet from a dwelling or business structure, the Oil and Gas Inspector may waive the requirement of a fence or may designate the type of fence to be erected. Fences must be kept locked at all times when workers of the permittee are not present. A duplicate set of keys to such lock shall be filed with the Oil and Gas Inspector. with at least~~

three (3) strands of barbed wire secured across the top of the fence around the well and tank batteries. The bottom of the chain-link fence shall have a #9 gauge tension wire running the length of the fence. The maximum opening between the ground and the fence shall be four (4) inches. The fence may be constructed with removable front and side sections built of the same material as the permanent fence. Well sites and tank batteries may be fenced separately as long as each separate fence complies with the requirements of this section.

1. The well operator shall be responsible for maintaining the fencing in compliance with the requirements of this section.
2. Fencing shall not be required on drill sites during initial drilling, completion, or reworking operations as long as twenty-four (24) hour onsite supervision is provided. However, a secured entrance gate on the access road containing a lock shall be provided. All gates shall be kept locked when the well operator or his employees or agents are not on the premises. A duplicate set of keys to all required locks shall be provided to the Oil and Gas Inspector, or some other appropriate means of accessibility for City Personnel.
3. All wells and tank batteries already in existence within City limits as of [insert the effective date of this amendment] shall be in compliance with all fencing requirements of this section within one (1) year of [insert the effective date of this amendment] unless the well site is located outside the Current Urban Service Area as designated on the Norman 2025 Land Use and Transportation Plan or any subsequently adopted Plans and the fencing requirement is waived in writing by all property owners within six hundred (600) feet of the well site.
4. If a dwelling or business structure is constructed within six hundred (600) feet of an existing well or tank batteries not subject to fencing requirements prior to said construction, the well operator shall then be immediately subject to and come into compliance with all fencing requirements of this section within sixty (60) days of written notification by the building permit holder of issuance of a building permit for said dwelling or business structure unless the well site is located outside the Current Urban Service Area as designated on the Norman 2025 Land Use and Transportation Plan or any subsequently adopted Plans and the fencing requirement is waived in writing by all property owners within six hundred (600) feet of the well site. If the fencing requirements of this

section have not been satisfied by the well operator within sixty (60) days after said notification, then the well operator's oil and gas permit for the non-compliant well may be subject to revocation. A certificate of occupancy shall not be issued for said dwelling or business structure until the fencing requirements of this section have been satisfied.

5. If a property where an oil well is located changes designation to Current Urban Service Area, the well operator must fence according to the requirements of this section any existing well or tank batteries, not previously subject to fencing requirements prior to said change of designation within sixty (60) days of written notification by the moving party behind the change in designation.

- (d) All lines that leave the premises (drilling pad), whether oil or gas, shall be buried with tracer wire and trench tape in a trench so the top of the pipe is no less than three (3) feet deep and shall be pressure tested at a minimum of one hundred fifty (150) percent of the normal working pressure held for one (1) hour. In addition line markers shall be installed and maintained at all roads, streets, fences and property lines (private or public). The Oil and Gas Inspector shall be notified forty-eight (48) hours before the trench is started and in advance of the pressure test and may supervise same.
- (e) All leaks or spills, including, but not limited to, oil and salt water, over two (2) barrels are to be reported to the Oil and Gas Inspector within twenty-four (24) hours.
- (f) The operator shall maintain the premises of the growth of grass and weeds to less than twelve (12) inches in height along the lease road and within the designated well site area.

Sec. 13-1509. ~~Production prohibitions.~~ Drilling location.

- (a) No person shall drill, mine or produce or cause to be drilled, mined or produced any gas, oil or other materials in the Norman City limits without first obtaining a permit from the Oil and Gas Inspector as provided in section 13-1501 of this chapter. However oil and gas exploration permits shall not be granted on any parcel of land:
 - (1) Containing ten (10) acres or less except upon written consent of the surface owner;
 - (2) Contained or described by any approved Final Plat;
 - (3) Contained or described by an approved certificate of survey subdivision as

per section 19-607;

- (4) ~~Unless the applicant is in compliance with environmental criteria and standards as outlined in a Department of Housing and Urban Development guidebook entitled, Siting of HUD-Assisted Projects Near Hazardous Facilities (HUD-1060-CPD, second version, April, 1987), which is incorporated herein. Designated as a 'Stream Planning Corridor' as defined in Chapter 19, Section 19-210(PP).~~
- (5) Zoned PL, Park Land District or Planned Unit Development District (PUD) by the City Council.
- (b) ~~No steam, gasoline, natural gas, diesel or other internal combustion engine of any kind shall be operated in conjunction with the drilling and/or operation of an~~ No oil or gas well shall be drilled within six hundred (600) feet of any dwelling, or business structure, church, or school unless waived by the landowner, or within three hundred (300) feet of any producing freshwater well. Such a waiver, if received, shall be written, notarized, and identify the property address. The operator must file the waiver in the Office of the Cleveland County Clerk and produce evidence of such filing prior to the issuance of a permit. Subsequent waivers are not required if an operator requests, and receives, a permit to drill additional well bores on the currently permitted ten acre site as identified in the original permit application.
- (c) ~~No oil, gas or disposal well shall be drilled, operated or maintained, nor shall any operation in connection therewith be carried on or conducted within six hundred (600) feet of any church or school, unless waived by the landowner, or within three hundred (300) feet of any producing freshwater well.~~
- (d) In granting a permit, the Oil and Gas Inspector may impose requirements for much of the following but not limited to the following non-exclusive list of items as may be reasonably necessary to protect the health, welfare and safety of persons and property:
 - (1) Protective berms, including landscaping thereof;
 - (2) Electric motors for pumping a completed well; and
 - (3) ~~Prohibition of earthen circulation pits; and~~ Designating routes and prohibiting ~~traffie~~ access to the well site through residential areas.

**Sec. 13-1510. ~~Reserve pits and mud circulation pits in Lake Thunderbird drainage basin.~~
Water Testing.**

- (a) ~~Circulation pits located in the Lake Thunderbird drainage basin shall be exclusively metal tanks or vessels.~~ Domestic and public water supply wells

located within a radius of one-quarter (1/4) mile of any new oil or gas well shall be tested for the presence of deleterious substances. One test shall occur prior to drilling and one test shall occur every other year after completion for five years for a total of three tests post-completion of the well. The substances to be tested for are: bromide, chloride, total dissolved solids, methane, iron, manganese, arsenic, boron, and lithium. Such testing is the responsibility of the permittee and, at the permittee's expense, to be conducted by a person or company approved by the Oil and Gas Inspector. However, testing shall not be required if the water well owner denies access to the water well or waives the testing. The Oil and Gas Inspector and the water well owner shall be notified forty-eight (48) hours in advance of such testing and may be present. Test results shall be filed with the City upon completion.

- ~~(b) — All circulating mud pits utilized within such area shall likewise be exclusively of metal construction.~~
- ~~(c) — No chemicals or substances shall be placed in said reserved or circulating mud pits except as indicated in the mud program approved by the Public Works Department at the time of issuance of the drilling permit and all contents of such reserve and circulating mud pits shall, during operation and upon completion of the drilling of said well, be transported from the premises to a disposal facility.~~

Sec. 13-1511. Safety devices and practices. Reserved.

~~(a) — Approved equipment, standard devices and all ordinary methods commonly known and used in the oil and gas drilling and producing industry for the safety and protection of property from damage due to drilling and operating activities shall be used at all locations. Failure on the part of any owner, driller or operator to utilize such equipment, devices or methods shall be the basis for injunction thereof by the City or any person affected thereby, in addition to any penalties provided in this chapter.~~

~~(b) — All drilling wells shall be equipped with a master gate or its equivalent, adequate blowout preventers, flow lines and valves commensurate with the working pressures involved.~~

Sec. 13-1512. Storage tanks.

- (a) Storage tanks or other types of tanks containing flammable substances used in connection with any oil, gas or disposal well shall have earthen embankments steel or concrete containment walls constructed around them, of sufficient size and height to be able to adequately contain one and one-half (1½) times the volume of such tanks should a rupture occur at the floor of such tanks. The inside of the containment shall be lined with a minimum thirty (30) mill seamless liner.
- (b) No drain plugs, openings or siphons shall be placed in the walls of dikes which will permit the escape of any liquids through the same.

- (c) No ~~such~~ storage tank shall be located closer than one hundred (100) feet to a street or highway right-of-way, nor closer than six hundred (600) feet to a dwelling, business structure, church or school, unless the distance requirement is waived by the affected landowner.
- (d) Storage tank areas shall be kept free of all liquids, vegetation and debris.
- (e) All service lines that protrude over or out of the containment dike or wall retaining berm shall be equipped with a valve that can be locked or plugged. This valve will be kept locked or plugged unless the tanks are being serviced. All service lines shall be equipped with a pollution control container at the loading point.
- ~~(f) Stripper storage tanks. Storage and other types of tanks containing flammable substances used in connection with any stripper well shall have earthen embankments constructed around them of sufficient size and height to be able to adequately contain two (2) times the volume of such tanks should a rupture occur at the floor of such tanks.~~

Sec. 13-1513. Tubing.

- (a) Upon completion of any flowing well, the wellhead equipment shall have, on the tubing, at least one (1) master valve plus a flow valve and a valve on the casing annulus.
- (b) All producing wells shall be equipped with flow tubing, separate from the production casing, extending from not less than fifty (50) feet from the top of the lowest producing formation.
- (c) All disposal/injection wells/~~injection~~ shall be equipped with ~~flow~~ tubing set on a packer and a pressure gauge in good working condition and shall be installed on the ~~flow~~ tubing at all times.

Sec. 13-1514. Disposal/Injection wells.

- (a) Every such disposal or injection ~~or disposal~~ well shall be constructed so as to seal the injection zone from the upper portion of the casing. The annulus between the injection tubing and the casing shall be filled with a noncorrosive fluid, then sealed, and a one-fourth-inch female fitting with cut-off valve shall be attached so that the pressure in the annulus may be measured by the Oil and Gas Inspector by attaching a gauge having a one-fourth-inch male fitting. A pressure shall be maintained in the annulus of not less than twenty-five (25) psi at all times to insure the integrity of the packer, tubing and casing. Any significant deviation from the established pressure shall be cause to shut down the well and may result in cancellation of the operating permit until such time as the established pressure can once again be maintained.

- (b) Injection lines shall be buried in a trench of a depth so that the top of the pipe is no less than three (3) feet, and shall be pressure tested (static) annually, at a minimum of one hundred fifty (150) percent of the pressure normally encountered at the injection pump discharge, for a period of one (1) hour. The Oil and Gas Inspector shall be notified forty-eight (48) hours in advance of such test and may supervise same. Test results shall be filed with the City upon completion. All non-steel lines shall have tracer wire installed and all lines shall have signs at all property lines and public and private street crossings.
- (c) Domestic and public water supply wells located within a radius of one-quarter (1/4) mile of any enhanced recovery or disposal well shall be tested prior to beginning injection or disposal and thereafter annually for the presence of deleterious substances. The substances to be tested for are: bromide, chloride, total dissolved solids, methane, iron, manganese, arsenic, boron, and lithium. Such testing is the responsibility of the permittee and, at the permittee's expense, to be conducted by a person or company approved by the Oil and Gas Inspector. The ~~Such~~ Oil and Gas Inspector and the water well owner shall be notified forty-eight (48) hours in advance of such testing and may be present therefor. Test results shall be filed with the City upon completion.

Sec. 13-1515. Lease roads.

Lease roads shall be maintained in such a manner as to safely allow for ingress and egress of City or state personnel traveling in a common passenger motor vehicle. A duplicate set of keys to the lock of the fence of a lease road shall be filed with the Oil and Gas Inspector.

Sec. 13-1516. Approaches.

- (a) ~~During the drilling operations a gravel~~ ~~An estimate of the cost of the materials of the work to be done on the temporary~~ driveway approach is required ~~shall be submitted to the Oil and Gas Inspector.~~
- (b) The maximum drive elevation across a ditch shall be at surface. Improper culvert, drainage ditch, or drive installation and/or maintenance may be corrected by the City, if deemed necessary, at the expense of the ~~lease owner~~ operator.
- (c) Culverts shall be laid in the bottom of the ditch at the established grade and have a minimum cover (clay to rock) of six (6) inches.
- (d) The minimum width for an oil or gas lease road approach shall be fifty (50) feet at the throat, with a fifteen-foot radius on each side or as directed by the City Traffic Engineer, except that State requirements shall apply to all approaches on State highways.

- (e) If the well is a producer, the approach will be made like the surface of the abutting street within one (1) year after the date the drilling permit was issued. If the street is black top or concrete, a permanent approach permit will be required and the approach shall comply with the officially adopted specifications of the City.

Sec. 13-1517. Determination of routes to well sites.

- (a) At least ~~thirty (30)~~ fourteen (14) days prior to the actual commencement of any operations at the well site, the permittee shall notify the Oil and Gas Inspector in writing of the proposed date for commencement of such operations. Such notification shall also contain the following information:
 - (1) The permittee shall identify the maximum length, width and weight of any motor vehicles and the maximum weight of the load to be carried by any motor vehicles to be used in traveling to and from the well site.
 - (2) The permittee shall submit a complete list of the proposed routes to and from the well site for all motor vehicles to be used in travel to and from the well site. Such list shall identify any and all roads ~~highways~~ within the City ~~limits of the City~~ proposed to be used by such motor vehicles in traveling to and from the well site.
 - (3) The Oil and Gas Inspector may also require any additional information which he deems necessary to evaluate the proposed routes.
- (b) Upon receipt of the notification required under subsection (a), the Oil and Gas Inspector shall have ~~twenty five (25)~~ seven (7) days to review the information submitted by the permittee. In reviewing the proposed routes to the well site, the Oil and Gas Inspector shall consult with the Engineering Department of the City.
- (c) Following review of the information submitted by the permittee, the Oil and Gas Inspector shall ~~prepare a written order~~ provide written confirmation which either approves or disapproves the routes to and from the well site as proposed by said permittee. If the Oil and Gas Inspector disapproves of all or part of the proposed routes, then such Inspector shall designate alternate routes which are acceptable. If the permittee disagrees with the routes as designated by the Oil and Gas Inspector, then he shall have such right of appeal as provided for by law.
- (d) During all drilling and production activities for the particular well, all motor vehicles used by any person to travel to and from the well site shall be restricted to the roads ~~highway~~ approved by the Oil and Gas Inspector as appropriate routes to and from the well site.

- (e) The Oil and Gas Inspector shall have the power and authority to amend the order designating routes to and from the well site upon his own initiative or upon application by the permittee.

Sec. 13-1518. Signs.

- (a) A sign will be posted at the entrance of the drilling site in conformance with Oklahoma Corporation Commission sign regulations with the addition of the City permit number. The sign shall be no smaller than two (2) feet by two (2) feet and shall be no larger than three (3) feet by three (3) feet. Stating the operator's name and the City permit number before spudding a well.
- ~~(b) Within thirty (30) days after the completion of any producing oil or gas well, a sign shall be posted and maintained at the location, showing the operator of the well, name of firm, number of the well, legal description of the well, and the identifying number of the permit issued by the City. The sign shall be no smaller than two (2) feet by two (2) feet and shall be no larger than three (3) feet by three (3) feet.~~

Sec. 13-1519. Plugging of wells.

- (a) The owner and operator of any oil, gas, disposal, injection or other service well, or any seismic core or other exploratory hole, whether cased or uncased, shall be jointly and severally liable and responsible for the plugging thereof in accordance with the rules and regulations of the Corporation Commission of the State of Oklahoma.
- (b) A copy of "Intention to Plug" for each well shall be filed with the Oil and Gas Inspector (Form 1001) at least forty-eight (48) hours prior to the commencement of plugging operations. The plugging operator shall notify the Oil and Gas Inspector of the exact time or times during which all plugging operations will take place, to enable the Oil and Gas Inspector to be present if he so chooses. The Oil and Gas Inspector may waive or reduce the forty-eight (48) hours' notice requirements whenever a qualified representative of the Conservation Division of the Corporation Commission of the State of Oklahoma is available to supervise the plugging operation.
- (c) A copy of the plugging record (Form 1003) will be sent to the Oil and Gas Inspector no later than thirty (30) days after a well has been plugged.
- (d) The City of Norman requires a minimum of two hundred (200) feet of cement to be set at the end of the surface casing. Of that two hundred (200) foot minimum of cement, at least one hundred (100) feet shall extend above the bottom of the surface casing and at least one hundred (100) feet shall extend below the bottom of surface casing. In addition, at least fifty (50) feet of cement shall be pumped

extending from five (5) feet below the restored ground level elevation down into the well bore.

Sec. 13-1520. Completion.

- (a) A copy of the completion report (Form 1002A) will be filed with the Oil and Gas Inspector within thirty (30) days after the well is completed.
- (b) The operator will call the Oil and Gas Inspector for a final inspection of the drilling site after completion of the well and after all reserve pits have been filled and leveled and the well is ready for production.

Sec. 13-1521. Motive power.

Motive power for all well-pumping equipment shall be electricity; provided, however, that in respect to wells in operation with nonelectric pumping equipment and which do not have the capability for electric power, the Oil and Gas Inspector shall have the authority to waive the requirements of this section if he determines in a particular case that electric pumping equipment is not necessary to protect the public health, safety or welfare.

Sec. 13-1522. Oil and Gas Inspector.

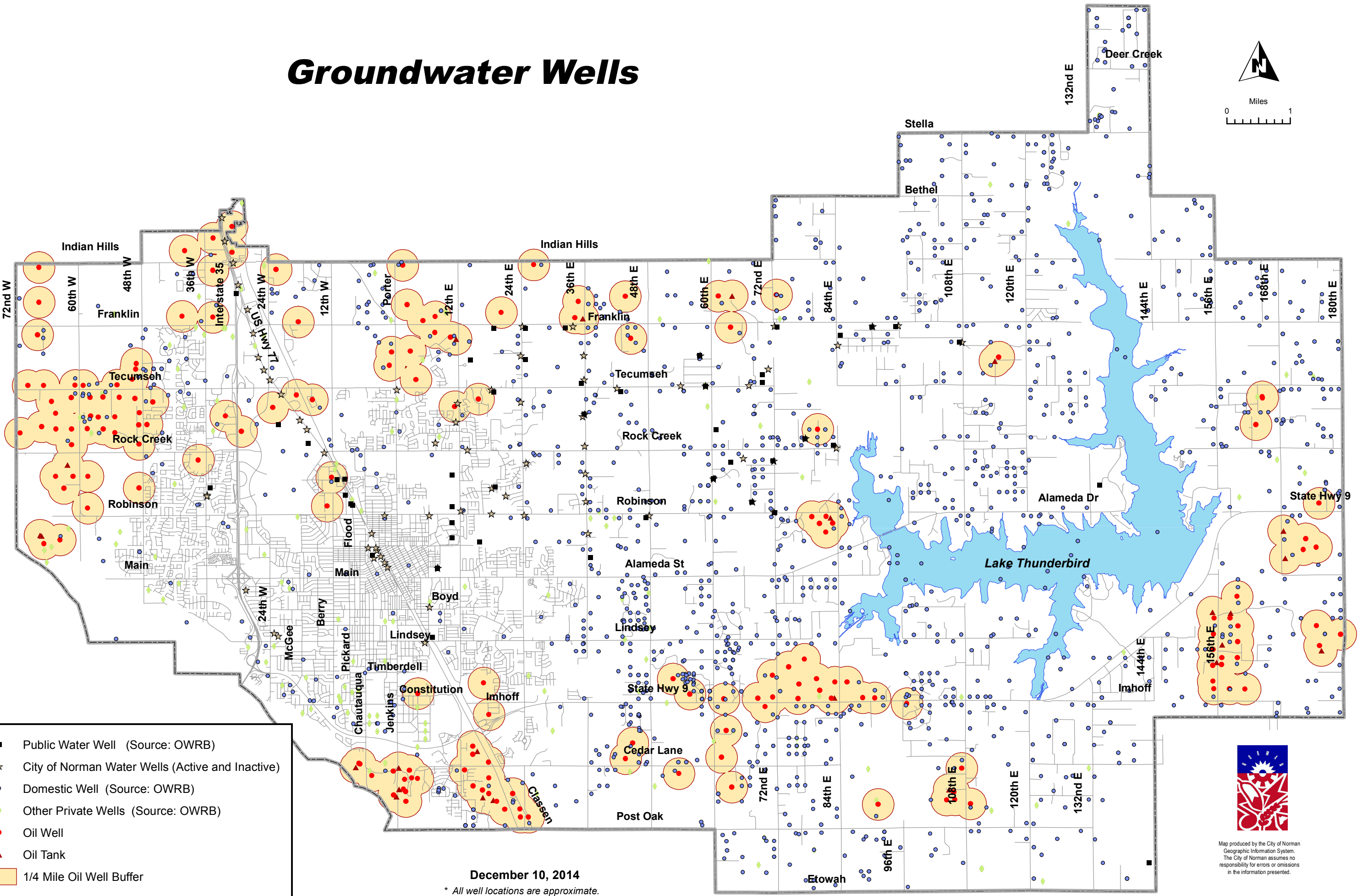
- (a) The City Manager shall employ a qualified person, persons, firm or corporation as an Oil and Gas Inspector, whose duty it shall be to enforce the applicable provisions of this chapter.
- (b) The Oil and Gas Inspector shall have the authority to issue such orders or directives as are required to carry out the intent and purpose of this chapter and its particular provisions. This includes issuing an order ceasing operation of a well or well site that is in violation of any of the provisions of this chapter until such time that compliance is achieved. Failure to abide by any such order or directive shall be a violation of this chapter.
- (c) The Oil and Gas Inspector shall have the authority to go upon and inspect any premises covered by the terms of this chapter to ascertain whether [the applicable provisions of] this chapter and the applicable laws, rules, regulations, standards or directives of the state are being complied with. Failure to permit access to the Oil and Gas Inspector shall be deemed a violation of this chapter.
- (d) The Oil and Gas Inspector shall have the authority to request and receive any records, specified in this article, relating to the status or condition of any well or project or the appurtenances thereof within the City. Failure to provide any such requested material shall be deemed a violation of this chapter.

Sec. 13-1523. Penalties.

- (a) Failure to comply with any of the terms and conditions of this article may result in the revocation of the permit issued hereunder and further may result in the forfeiture of any and all amounts deposited with the City in order to repair any damages to public property which may have resulted from the failure to comply with this article.
- (b) Any persons, company or corporation violating any of the provisions of this article, or causing or permitting the same to be done, may be deemed guilty of a misdemeanor and, upon conviction thereof, may be punished by a fine of not less than fifty dollars (\$50.00) nor more than two hundred dollars (\$200.00) per day. Each day of violation shall be deemed a separate offense under this article.

DRAFT

Groundwater Wells



- Public Water Well (Source: OWRB)
- ☆ City of Norman Water Wells (Active and Inactive)
- Domestic Well (Source: OWRB)
- ◆ Other Private Wells (Source: OWRB)
- Oil Well
- ▲ Oil Tank
- 1/4 Mile Oil Well Buffer

December 10, 2014

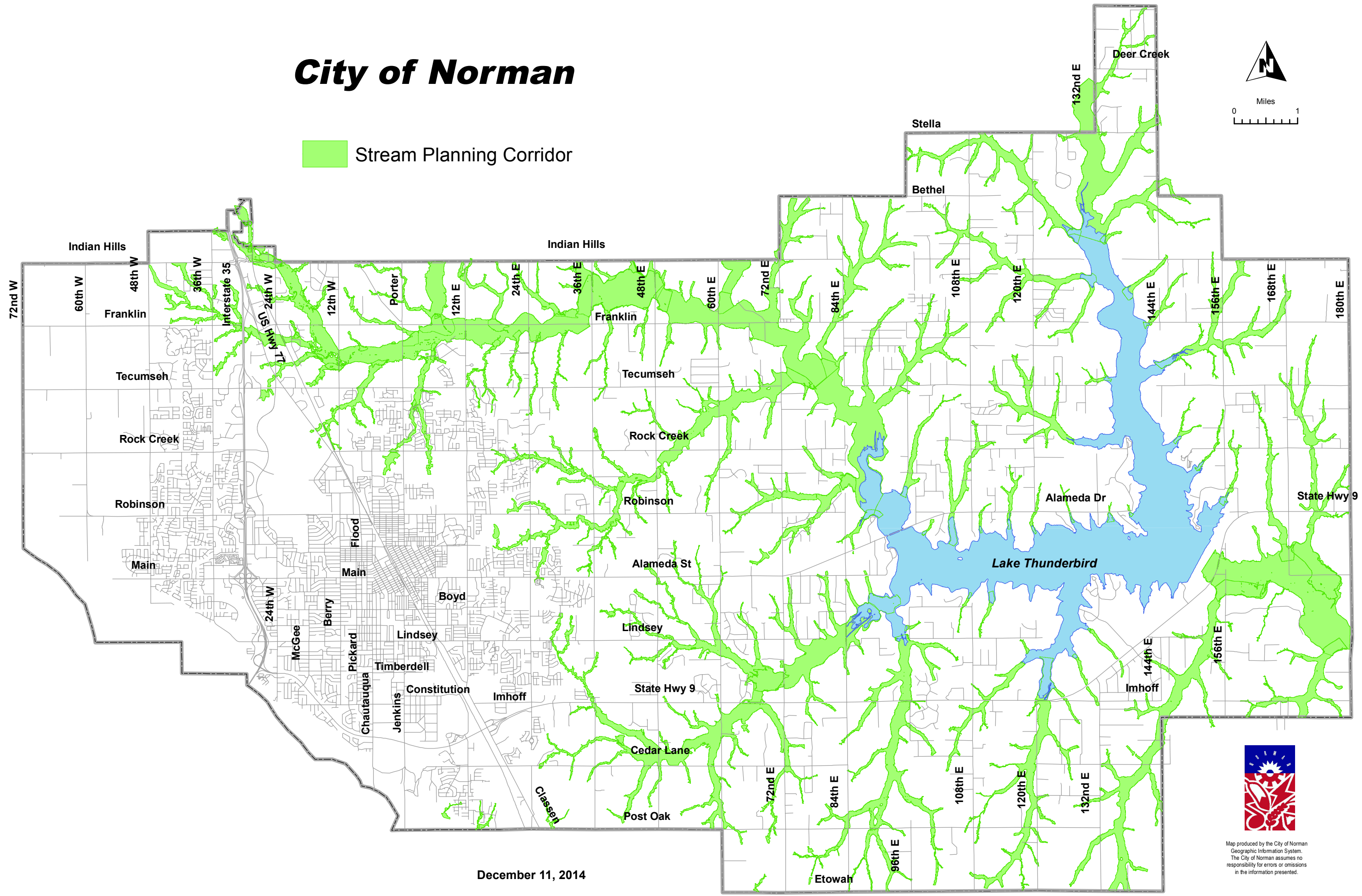
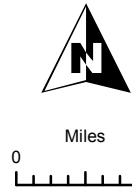
* All well locations are approximate.



Map produced by the City of Norman Geographic Information System. The City of Norman assumes no responsibility for errors or omissions in the information presented.

City of Norman

 Stream Planning Corridor



December 11, 2014



Map produced by the City of Norman Geographic Information System. The City of Norman assumes no responsibility for errors or omissions in the information presented.