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# 2013 Consumer Confidence Report

City of Norman

To Our Citizens:

The Norman Utilities Authority continues to provide innovative leadership and superior services to insure that our citizens have access to adequate supplies of safe, high quality water.

In 2013, the city took significant steps toward insuring long-term water supplies for our community and protecting this most precious resource. We are near completion of an update of the Strategic Water Supply Plan with many public meetings and lots of input from a citizen advisory committee. The city also updated its Conservation and Drought Contingency Plan, which includes mandatory odd/even watering year round. Norman is a leader in the state which has established the goal of using no more fresh water in 2060 than we do today.

Stewardship of our resources remains a top priority. This past year the City completed a pilot project to determine the best methods to deal with taste odor and to treat for unregulated contaminants such as pharmaceuticals, personal care products, and trace chemicals. The proposed treatment will include bio-filters, ozone and ultra-violet light as treatment techniques.

We continue to meet all current regulatory requirements for water quality including Chromium VI. We proactively are monitoring EPA regulations. In March of 2014, Norman hosted a national conference of utility providers with the Water Research Foundation, a nationally recognized research foundation, to discuss the sources and chemistry of chromium in drinking water.

Thanks to the overwhelming support of Norman voters, a wastewater rate increase will support \$63 million worth of improvements and additional capacity at the Water Reclamation Facility. The project will meet new tougher discharge regulations, replace old and obsolete equipment, and provide increased capacity for the future. Construction is scheduled to begin in June.

Norman staff continues to be a leader in the State working with legislators, regulators and scientists in developing reuse rules and opportunities. Improved ways to treat wastewater make the use of this highly treated effluent safe for the environment and us.

The Water Treatment Plant, the Water Reclamation Facility and Environmental Services were recognized for operating the whole year without a lost time accident or injury. Operating 24/7 under all weather conditions and with mechanical, biological and chemical hazards, these facilities have an enviable safety record. We are very proud of the men and women who provide Norman with safe water and treatment to clean and return the water to the environment.

I encourage you to read this brochure and be part of the community conversation about protecting our natural resources and planning for the future.

Sincerely,

Mayor Cindy Rosenthal



**2013 Detectable Contaminants Table (Water Wells)**

Well #	Nitrite-Nitrate (ppm) MCL=10	Fluoride (ppm) MCL=4	Barium (ppb) MCL=2000	Selenium (ppb) MCL=50	Arsenic (ppb) MCL=10	Chromium (ppb) MCL=100	Adjusted Gross Alpha (pCi/L) MCL=15	Uranium (ppb) MCL=30	Toluene (ppb) MCL=1000
Well # 3A	0.58	0.27	293			44	9.4	10	
sample date	2/18/2013	5/25/2012	5/25/2012			5/25/2012	*	*	
Well # 1	0.11	0.29	217		1.2	63	19 ^	13	
sample date	5/22/2013	9/28/2012	9/28/2012		9/28/2012	9/28/2012	*	*	
Well # 2	0.32	0.25	120			31	19 ^	22	
sample date	3/12/2013	11/20/2011	9/20/2012			11/20/2012	*	*	
Well # 5	0.23						6.1	12	
sample date	11/28/2006						*	*	
POE3	0.52	1.0	121	21			4.2		
sample date	2/5/2013	5/25/2012	5/25/2012	9/28/2012			*		
Well # 6	0.23		336		9.8		22 #	21	
sample date	3/12/2013		11/20/2012		*		*	*	
Well # 8	0.47	0.24	224		3.4	43	17	21	
sample date	2/18/2013	11/20/2012	11/20/2012		11/20/2012	11/20/2012	*	*	
Well # 19	0.62		455		7.6		6.6	11	
sample date	3/12/2013		11/20/2012		*		2/21/2011	2/21/2011	
Well # 20	0.29		894		2.8		8.9	10	
sample date	12/19/2013		11/20/2012		11/20/2012		*	*	
Well #31	0.62	0.37	178		8.2	49	10	7.1	
sample date	2/18/2013	11/20/2012	11/20/2012		*	11/20/2012	3/15/2012	3/12/2012	
Well # 34	0.58	0.31	207			54	6	6.8	
sample date	5/7/2013	11/20/2012	11/20/2012			11/20/2012	3/12/2012	3/12/2012	
Well # 35	0.77						1.9	4.8	
sample date	10/27/2009						*	*	
Well # 33	0.61	0.32	220		1.5	51	7.2	10	
sample date	3/12/2013	11/20/2012	11/20/2012		*	11/20/2012	2/21/2011	2/21/2011	
Well # 36	0.44						3.1	14	
sample date	5/9/2006						*	*	
Well # 37	0.20						5.9	6.4	
sample date	11/28/2006						*	*	
Well # 38	0.64	0.29	306			21	8.5	8.2	
sample date	4/23/2013	11/20/2012	11/20/2012			11/20/2012	2/21/2011	2/21/2011	
Well # 39	0.42	0.31	251		6.0	59	7.7	17	
sample date	3/12/2013	11/20/2012	11/20/2012		*	11/20/2012	3/12/2012	3/12/2012	
Well # 40	0.37	0.29	231			46	6.9	4.9	1.9
sample date	2/18/2013	11/20/2012	11/20/2012			11/20/2012	8/15/2013	8/15/2013	6/14/2008

Source Water Assessment Plan (SWAP) - Qualitative Susceptibility Rating is Moderate

^ Awaiting 4th quarter data to determine compliance with MCL

# Reduced the size of the pump in an effort to improve water quality. We will continue to monitor and make improvements.

Well #	Nitrite-Nitrate (ppm) MCL=10	Fluoride (ppm) MCL=4	Barium (ppb) MCL=2000	Selenium (ppb) MCL=50	Arsenic (ppb) MCL=10	Chromium (ppb) MCL=100	Adjusted Gross Alpha (pCi/L) MCL=15	Uranium (ppb) MCL=30
<b>POE 2</b>	0.48	0.47	194		4.0	45	5.9	5.6
<b>sample date</b>	2/18/2013	9/28/2012	9/28/2012		*	6/25/2007	3/12/2012	3/12/2012
<b>Well # 41</b>	0.49		216	3.9	3.9	50	6.4	5.5
<b>sample date</b>	2/18/2013		7/18/2011	7/18/2011	7/18/2011	7/18/2011	*	*
<b>Well # 42</b>	0.7		268			41	2.3	4.5
<b>sample date</b>	4/23/2013		7/18/2011			7/18/2011	*	*
<b>Well # 43</b>	0.68	0.35	419				4.4	2
<b>sample date</b>	4/23/2013	5/25/2012	5/25/2012				6/11/2013	6/11/2013
<b>Well # 44</b>	0.26	0.36	198			92	4.4	8.3
<b>sample date</b>	2/18/2013	5/25/2012	5/25/2012			5/25/2012	6/11/2013	6/11/2013
<b>Well # 45</b>	0.33		220		2.0	75	12	5.4
<b>sample date</b>	2/18/2013		5/25/2012		5/25/2012	5/25/2012	*	*
<b>Well # 46</b>	0.2	0.25	239		2.0	53	12	8.4
<b>sample date</b>	2/27/2013	5/25/2012	5/25/2012		5/22/2013	5/25/2012	*	*
<b>Well # 47</b>	0.44		458				5.5	3.8
<b>sample date</b>	3/26/2013		5/25/2012				*	*
<b>Well # 48</b>	0.3	0.46	219	22	8.6	87	11	9.1
<b>sample date</b>	2/27/2013	5/25/2012	5/25/2012	5/25/2012	5/25/2012	5/25/2012	*	*
<b>Well # 49</b>	0.29	0.33	182		5.3	96	12	11
<b>sample date</b>	3/12/2013	5/25/2012	5/25/2012		5/22/2013	5/25/2012	*	*
<b>Well # 51</b>	0.25		360			30	10	8.1
<b>sample date</b>	3/12/2013		5/25/2012			5/25/2012	*	*
<b>Well # 52</b>	0.22		132		9.9	18	14.7	24
<b>sample date</b>	3/12/2013		5/25/2012		*	5/25/2012	*	*
<b>Well # 54</b>	0.23	0.29	283			50	5.2	6.1
<b>sample date</b>	3/12/2013	5/25/2012	5/25/2012			5/25/2012	*	*
<b>Well # 55</b>	0.26	0.22	304		4.9	28	5.4	5.1
<b>sample date</b>	2/18/2013	5/25/2012	5/25/2012		5/22/2013	5/25/2012	*	*
<b>Well # 56</b>	0.21		377			14	9.4	7.1
<b>sample date</b>	3/12/2013		5/25/2012			5/25/2012	3/12/2013	3/12/2013
<b>Well # 57</b>	0.21	0.26	244		3.7	48	8.3	5.6
<b>sample date</b>	2/18/2013	5/25/2012	5/25/2012		5/25/2012	5/25/2012	3/12/2013	3/12/2013
<b>Well # 58</b>	0.20	0.21	337			26	7.7	7.9
<b>sample date</b>	3/12/2013	5/25/2012	5/25/2012			5/25/2012	*	*
<b>Well # 59</b>	0.27	0.28	206			45	5.3	5.5
<b>sample date</b>	3/12/2013	5/25/2012	5/25/2012			5/25/2012	*	*
<b>Well # 60</b>	0.21	0.44	299	19	4.6	38	5.8	9.3
<b>sample date</b>	4/23/2013	5/22/2012	5/25/2012	5/25/2012	8/15/2013	5/25/2012	*	*
<b>Well # 61</b>	0.24	0.34	179	11	11.8 @	46	7.9	10
<b>sample date</b>	2/18/2013	5/25/2012	5/25/2012	5/25/2012	*	5/25/2012	*	*

\* indicates a composite of quarterly data

@ Staff is planning to combine a group of wells to reduce the arsenic level at the point of entry to the distribution system.

**Contaminants that may be present in source water include:**

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can, also, come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring, or be the result of oil and gas production and mining activities.

**Information Regarding Lead in Drinking Water:**

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Norman Utilities Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

Parameter	Units	MCLG	MCL	Major Sources in Drinking Water
Nitrite-Nitrate	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride – Total	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer
Barium – Total	ppb	2000	2000	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits
Selenium – Total	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Arsenic – Total	ppb	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Chromium – Total	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Lead	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
Copper	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Turbidity	NTU	NA	TT= >0.3 NTU in not more than 5% of samples	Soil runoff
Total Organic Carbon (TOC)	ppm		TT= ratio must be greater or equal to 1.00 for compliance	Naturally occurring
Gross Alpha	pCi/L	15	15	Decay of natural and man-made deposits.
Gross Beta	pCi/L	50	50	
Radium 226	pCi/L	5	5	
Total Trihalomethanes	ppb	0	80 (RAA)	By-product of drinking water chlorination.
Haloacetic Acid	ppb	0	60 (RAA)	By-product of drinking water chlorination.
Coliform Bacteria	CFU	0	presence of coliform bacteria in <5% of samples	Naturally present in the environment
<u>MRDL</u>				
Chloramine	ppm	none	4	Water additive used to control microbes

ABBREVIATION TABLE	
MCL	Maximum Contaminant Level . The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology
MCLG	Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. Compliance with the MRDL is calculated as a Running Annual Average (RAA).
MRDLG	Maximum Residual Disinfectant Level Goal - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
RAA	Running Annual Average - average of last 12 months, or last 4 quarters that facility is in operation.
AL	Action Level
TT	(Treatment Technique) A required process intended to reduce the level of a contaminant in drinking water
NTU	Nephelometric Turbidity Units (a measure of clarity)
pCi/L	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/L)
ppb	part per billion, or micrograms per liter (ug/L)
CFU	Colony Forming Units
<	less than
>	greater than
POE	Point of Entry combining more that one water source

## Water Usage for Citizens of Norman

In 2013, Norman observed a 199% increase in water production in July (the peak month) compared to February (the minimum month). The majority of this difference is the result of lifestyle changes associated with seasonal usage including landscape irrigation.

In 2013, total water production during the peak month of July was an average of 15.38 million gallons per day. **Peak day usage occurred on July 11<sup>th</sup>, when 20.61 million gallons of water was produced. This equated to 199 gallons per person on this day. The minimum day usage was 67 gallons per person per day was on January 24<sup>th</sup>. For 2013 the average usage was 108 gallons per person per day.**

During 2013, the Oklahoma City treated water supply line was used to produce 4.291 million gallons.

In 2013, Norman utilized 100.4 percent of its permitted allocation from Lake Thunderbird according to official records kept by the Central Oklahoma Master Conservancy District. Staff made a concerted effort to reduce usage to within our allocation and to save allocation for the anticipated peak demand of the summer of 2014.

Our allocation from Lake Thunderbird is 8.4 million gallons per day. In 2013, our records show we produced an average of 7.32 million gallons of water per day from Lake Thunderbird at our Water Treatment Plant., for an annual total of 2.671 billion gallons.

Our average production of well water was 3.86 million gallons per day in 2013. We produced a total of 1,411 million gallons of water from our wells in the Garber-Wellington Aquifer

# Water Quality Summary 2013-Distribution System and Water Treatment Plants

DETECTED CONTAMINANTS	UNITS	IDEAL GOAL (EPA'S MCLG)	HIGHEST LEVEL ALLOWED (EPA'S MCL)	NORMAN WTP PWS ID 1020801	HEFNER WTP PWS ID 1020902	DRAPER WTP PWS ID 1020902B	OVERHOLSER WTP PWS ID 1020902C	UNIVERSITY OF OKLAHOMA PWS ID 3001414	GRIFFIN MEMORIAL HOSPITAL PWS ID OK3001404	COMPLIANCE	MAJOR SOURCES IN DRINKING WATER	
<b>Inorganic Compounds</b>												
Fluoride	ppm	4	4	Highest level 2013							YES	Added during treatment for dental health or dissolved from natural deposits.
					1.41	1.18	1.64					
Lead	ppb	0	AL = 15	2012-90th percentile non-detectable	Most recent systemwide distribution testing			2009 90th percentile non-detectable		All Sites < AL	YES	Corrosion of household plumbing; erosion of natural deposits
					Sep - Oct 2012 - 90th Percentile = 2.5							
Barium	ppm	2	2	Highest level detected in 2013						YES	Discharge of Drilling Wastes; discharge from metal refineries; erosion of natural deposits	
				0.12	0.052	0.057	0.032					
Copper	ppm	0	AL = 1.3	2012-90th percentile 0.02	Most recent systemwide distribution testing			2009 90th percentile non-detectable		All Sites < AL	YES	Corrosion of household plumbing; erosion of natural deposits
					Sep - Oct 2012 - 90th Percentile = 0.08							
Arsenic	ppb	0	10	Range detected in 2013						YES	Erosion of natural deposits; runoff from orchards; runoff from electronics and glass production wastes	
				<2	< 2	< 2	< 2					
Nitrate-Nitrite	ppm	10	10	Highest level 2013						YES	Runoff from fertilizer; leaching from septic tanks, sewage or erosion of natural deposits	
				0.51	0.444	0.385	0.464					
<b>Radiological</b>												
				Most recent testing 2009	Most recent testing 2012					YES	Decay of natural and man-made deposits	
Gross Alpha	pCi/L	0	15	1.3	<2.229	<0.4744	<2.373					
Gross Beta	pCi/L	0	50	3.1	6.784	2.611	6.824					
Radium 226 + 228	pCi/L	0	5	<0.82	<0.545	<0.495	0.980					
Uranium	ppb	0	30	<1	<1	<1	<1					
Bromate	ppb	0	10	Highest quarterly average (RAA)								
			(RAA)	Range detected - <8.75 - <8.75								
<b>Precursor Removal</b>												
Total Organic Carbon (TOC)			TT = Ratio must be greater than or equal to 1.00 for compliance	Average of monthly ratios						YES	Naturally occurring	
				1.3	1.85	0.519	1.82					
				Monthly Ratio = (% TOC removed) ÷ (% TOC removal required)								

**Bromate:** Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

DETECTED CONTAMINANTS	UNITS	IDEAL GOAL (EPA'S MCLG)	HIGHEST LEVEL ALLOWED (EPA'S MCL)	NORMAN WTP PWS ID 1020801	HEFNER WTP PWS ID 1020902	DRAPER WTP PWS ID 1020902B	OVERHOLSER WTP PWS ID 1020902C	UNIVERSITY OF OKLAHOMA PWS ID 3001414	GRIFFIN MEMORIAL HOSPITAL PWS ID OK3001404	COMPLIANCE	MAJOR SOURCES IN DRINKING WATER	
<b>Disinfection Residual</b>												
Chloramines	ppm	NA	MRDL	Average readings						YES	Water additive used to control microbes	
			4.0	3.0	3.64	3.36	3.15	1.70	2.00			
			Range detected	0.1-4.1	2.67 - 4.20	2.83 - 3.91	1.98 - 4.13	0.2-2.9	0.8-2.6			
<b>Microbiological</b>												
Coliform Bacteria	CFUs	0	Presence of Coliform bacteria allowed in samples in 1 month <5%	2013 System-wide distribution testing-Month having the highest % positive				No positive samples in 2013	No positive samples in 2013	YES	Naturally present in the environment <b>No Fecal Coliforms or E. Coli results in 2013</b>	
				January 1 in 103 samples 0.97%	February 1 positive in 243 samples 0.41%							
				1 positive in 1051=0.09%	3 positive results in 2980 samples=0.10 %							
<b>Clarity</b>												
Turbidity	NTU	NA	TT = > 0.3 NTU	Monthly lowest % < 0.3 NTU					YES	Lime and/or calcium carbonate particles from softening efforts; Soil runoff		
			in not more	100%	99.5%	99.5%	99.1%					
			than 5% of	Highest single reading								
			samples	0.24	0.80	0.34	0.30					
<b>LT2 Source Water Monitoring - 2008 Monitoring Results</b>				Source water tested in the lowest category	Cryptosporidium : all source waters tested at less than 0.075 cysts/L (lowest risk category)			YES	EPA Required Source Water Monitoring to test for presence of cryptosporidium			
<b>Stage 2 Disinfection Byproducts Rule Monitoring</b>												
Total Trihalomethanes	ppb	NA	80 (LRAA)	Most recent systemwide distribution testing 2013				YES	By-product of drinking water disinfection			
				Highest Locational Running Annual Average (LRAA)								
				1803 Creighton Dr: 17.7	6400 N Westminster Rd (Draper): 67.7		13.5			non-detectable		
			4-42.4	Range Detected: 2.1 - 85.9		5.9-19.9						
Total Trihalomethanes	ppb	0	80 (RAA)	Highest quarterly average (LRAA)				YES	By-product of drinking water chlorination			
				30	24.0	67.7	64.3					
				Range detected								
6.9-30	2.1 - 40.8	38.5 - 85.9	35.8 - 82.6									
Haloacetic Acids	ppb	0	60 (RAA)	Highest quarterly average (LRAA)				YES	By-product of drinking water disinfection			
				18	13.6	38.5	30.3					
				Range detected								
6.0-18	2.4 - 19.3	15.0 - 53.1	16.1 - 40.0									
Haloacetic Acids	ppb	NA	60 (LRAA)	Most recent systemwide distribution testing 2013				YES	By-product of drinking water disinfection			
				Highest Locational Running Annual Average (LRAA)								
				1803 Creighton Dr: 12.4	6400 N Westminster Rd (Draper): 38.5		10			non-detectable		
			4.5-24.6	Range Detected: 2.4 - 53.1		<6.0-15.3						

## Unregulated Contaminants Monitoring Rule 3—Detected Analytes

Detected Contaminant	Units	IDEAL GOAL (EPA's MCLG)	HIGHEST LEVEL ALLOWED (EPA's MCL)	Average		Range		MAJOR SOURCES IN DRINKING WATER
				Norman	Oklahoma City	Norman	Oklahoma City	
Chlorate	ppb	NA	NA	234	36.4	<20-970	< 20.0 - 36.4	By-product of drinking water disinfection, making of dyes, explosives, matches, printing fabrics, herbicides, antiseptics, toothpastes and in paper pulp processing.
Hexavalent Chromium	ppb	NA	NA	41	0.141	0.08-97	< 0.030 - 0.391	Naturally occurring. By-product of making steel and other alloys, plating, dyes and pigments, leather and wood preservation.
Total Chromium	ppb	100	100	41	0.428	0.31-89	< 0.200 - 0.471	Naturally occurring. By-product of making steel and other alloys, plating, dyes and pigments, leather and wood preservation.
Molybdenum	ppb	NA	NA	1.4	2.76	1.0-2.6	< 1.00 - 3.24	Naturally occurring. By-product of making steel and other alloys, lubricants, dyes and pigments, fertilizers.
Strontium	ppb	NA	NA	442	295	89-820	42.9 - 763	Naturally occurring. By-product of making electronics and fireworks.
Vanadium	ppb	NA	NA	28	2.78	2.8-140	< 0.200 - 7.50	Naturally occurring. By-product of making steel alloys, chemical manufacturing, ceramics and batteries.

Contaminants that may reasonably be expected to be found in drinking water, including bottled water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems.

### **Advisory Notice From EPA**

*Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).*

*The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.*

# Drought Contingency Plan

## Stage 1 - Everyday Conservation

Odd/Even Watering Requirements Last number of the building address – 1, 3, 5, 7, 9 – water odd number calendar days

Last number of the building address – 0, 2, 4, 6, 8 – water even number calendar days

Hand watering landscape and gardens with a hand held hose with a positive shut off nozzle is allowed any time. Also, soaker hoses are allowed any time throughout all stages listed below.

## Stage 2 - Moderate Conservation

Single-family resident address ends in odd number – Saturdays & Wednesdays

Single-family resident address ends in even number – Sundays & Thursdays

All others – Tuesdays & Fridays (Duplexes, Triplexes, home owner association properties, commercial, industrial, government)

All outdoor watering or irrigation is prohibited between the hours of 9 AM and 6 PM.

Washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking areas or any other paved surfaces is prohibited.

Excessive water run-off from any landscaped area onto streets, alleys or parking lots or other paved surfaces is prohibited.

Water run-off is excessive when it extends for a distance greater than ten feet from the property's boundary lines or ten feet past the targeted irrigation area.

Eliminate non-essential City water use (e.g. street cleaning, vehicle washing, flushing of water lines, fire hydrant testing, etc.).

City to reduce splash pad operation hours by 2 hours per day

## Stage 3 - Severe Conservation

All of the water use restrictions implemented under Stage 1 and 2 shall continue in force except as amended or replaced by the restrictions set out in Stage 3.

Landscape watering is limited to one day per week. Outdoor watering or irrigation is prohibited between the hours of 9 AM and 6 PM.

Residential landscape watering shall comply with the following mandatory five day watering schedule; watering is allowed only on the day the garbage is collected

Landscape beds may be watered on any day by using a hand operated hose equipped with a positive shut off nozzle. Soaker hoses for foundation maintenance are authorized as necessary. In all instances, run-off is prohibited

Watering of City property, medians, parks, and athletic complexes will be allowed one day per week, following the North, South, East, West, Central schedule, and only before 9 am or after 6 pm. Golf course watering and irrigation using potable water shall be limited to greens and tee boxes only

City splash pads will be shut off

Pools may use water to maintain operational levels. Use of potable water to refill ponds and lakes is prohibited

Use of potable water at construction sites for dust control, compaction or wash-downs is prohibited

Washing of cars, trucks, trailers or other vehicles is prohibited, unless these items are taken to a commercial carwash

## Stage 4 - Emergency Conservation

All of the water use restrictions implemented under Stage 1, 2, and 3 shall continue in force except as amended or replaced by the restrictions set out in Stage 4

Hand watering gardens & flower beds only

Commercial car wash with water recycling operations only

## Stage 5 - Emergency Conservation

All of the water use restrictions implemented under Stage 1, 2, 3, and 4 shall continue in force except as amended or replaced by the restrictions set out in Stage 5

Ban all outdoor watering and washing of vehicles

## For More Information

The Norman Utilities Authority members are also the elected Mayor and City Council members. Their meetings are held at the same time as City Council meetings and are open to the public. Meeting schedule: Second and fourth Tuesday of each month at City Hall, beginning at 6:30 p.m.

### For Questions Regarding Water Quality Phone (405) 321-2182

Chris Mattingly \_\_\_\_\_ Superintendent of Water Treatment — E-mail: [chris.mattingly@normanok.gov](mailto:chris.mattingly@normanok.gov)

Bryan Hapke \_\_\_\_\_ Supervisor of Water Treatment — E-mail: [bryan.hapke@normanok.gov](mailto:bryan.hapke@normanok.gov)

Geri Wellborn \_\_\_\_\_ Laboratory Manager — E-mail: [geri.wellborn@normanok.gov](mailto:geri.wellborn@normanok.gov)

### For Questions Regarding City Services

The Action Center \_\_\_\_\_ Phone (405) 366-5396— E-mail: [action.center@normanok.gov](mailto:action.center@normanok.gov)

Customer Service/Billing \_\_\_\_\_ 405) 366-5320

Water/Sewer Emergency \_\_\_\_\_ (405) 329-0703 (Daytime) **(405) 321-1600 (After hours)**



## Spirea

(*Spiraea*, Zones 3 to 8)

If you want an easy-to-grow shrub with exciting color, look for a spirea at the garden center. While they provide several seasons of interest, it's the summer blooms that are impressive. Sure, the individual flowers are tiny, but together they pack quite a punch. Spirea prefers full sun. It's important to find a cultivar that's right for your space—some grow only 18 inches tall, while others can get to be several feet.

**Favorites:** Many spirea blooms are white, some cultivars that offer pink flowers as an alternative are Pink Parasols and Double Play.



## Bluebeard

(*Caryopteris*, Zones 5 to 9)

If you long for blue flowers, this bold little shrub could provide exactly what you're looking for. Most grow to only 2 or 3 feet high in full sun, making them a natural choice for limited space. The deep blue flowers emerge in late summer and keep right on blooming through fall. This one's a favorite of butterflies, too.

**Favorites:** Petit Blue cultivar is a dramatic, compact growing plant with rich green foliage. Blue Mist is known for its long bloom season and silvery-green leaves.

## A Note About Arsenic

Arsenic is a naturally occurring mineral present in the Garber-Wellington Aquifer. In Norman's case, its presence in our groundwater results from the erosion of natural deposits accumulated during the formation of the aquifer millions of years ago. Contamination by humans is not to blame; only nature gets credit for its presence in our water.

The U.S. Environmental Protection Agency defines the maximum contaminant level (MCL) at 10 parts per billion (ppb) for arsenic. The City of Norman is in compliance with the 10 ppb MCL.

While your drinking water meets EPA's standard, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is known to cause cancer at high concentrations and is linked to other health effects, such as skin damage and circulatory problems.

Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system and may have an increased risk of getting cancer.



"The monarch butterfly as a species is *not* endangered. What is endangered is its migratory phenomenon from Canada to Mexico and back."

North American gardeners can contribute to the journey of the monarch by planting milkweed and making their land more butterfly friendly. Common Milkweed grows up to 6 feet tall. It is an important plant for the Monarch. Plant some this year. Seeds are available from the following web site. <https://www.livemonarch.com/free-milkweed-seeds.htm>



## Additional Discussion Regarding Chromium

The City of Norman has continued its efforts to stay up to date in the latest developments associated with the Environmental Protection Agency (EPA) reviewing the allowable limits of chromium in drinking water.

Chromium limits of 100 parts per billion have been the safe allowable limit since 1992. The EPA revisited the rule in 2000 and confirmed that the established limit adequately protected human consumption. Recently, EPA began another routine 10-year review of the chromium limits and this time received additional political pressure to impose a new MCL for the "hexavalent" form of chromium. There are studies that suggest the chromium level should be lowered and other studies that suggest the current limit provides the safety necessary. New research aimed at better understanding/resolving this question/filling in some of these gaps are currently underway. With such uncertainty, EPA is seeking time to allow the completion of on-going health studies so these can be included in its review of all scientific materials.

The City of Norman is ready to take action to meet all safe drinking water requirements as we always have. We continue to monitor our wells for hexavalent chromium in accordance with EPA recommendations so we can move forward with good information. We will keep you posted on this issue as new information becomes available. We continue our efforts to efficiently provide safe high quality potable water to the City of Norman.

# 2013 Water Quality Data

	WTP	Water Wells	Units
Total Hardness	68-132	53-237	mg/L as CaCO <sub>3</sub>
Calcium Hardness	36-78	12-118	mg/L as CaCO <sub>3</sub>
Magnesium Hardness	21-80	11-132	mg/L as CaCO <sub>3</sub>
Total Alkalinity	38-175	160-314	mg/L as CaCO <sub>3</sub>
Chloride	26-44	8-36	mg/L
pH	8.8-9.4	7.3-9.0	pH Units
Total dissolved Solids	190-200	204-447	mg/L
Fluoride	0.3-1.2	0.2-0.9	mg/L
Chloramine Residual	2.0-4.0	0-4.0	mg/L
Temperature	8-29	8.1-21	°C