2014 CONSUMER CONFIDENCE REPORT

Report Covers Calendar Year: January 1, 2013 - December 31, 2013

REPORTE ANUAL SOBRE LA CALIDA DEL AGUA DEL 2014*

El reporte abarca del día 1 de Enero al 31 de Diciembre del 2013

I. Public Water System (PWS) Information

PWS Name:	City of Nogales	**PWS ID #**	AZ04-12004	**Owner/Operator Name:**	City of Nogales
Utilities Director:	Elizardo (Lee) Jacobs			**Contact Person and Title:**	Eduardo Delgado, Sr. Engineering Technician
Telephone #	(520) 285-5754	**Fax #**	(520) 287-8352	**E-mail**	edelgado@nogalesaz.gov
The sources of drinking water (both tap 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.					
Our water source(s):	Ground Water				

* Este reporte contiene información muy importante sobre la calidad del agua.
Es muy importante que busque a una persona que pueda ayudarle a traducirlo al español o se puede comunicar al (520) 285-5754 para obtener ayuda sobre este reporte en español.

II. Drinking Water Contaminants

Microbial contaminants, such as viruses and bacteria that 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 that 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 also may come from gas stations, urban storm water runoff, and septic systems.
Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

III. Vulnerable Population

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. 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 of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbiological contaminants call the EPA *Safe Drinking Water Hotline* at 1-800-426-4791.

IV. Definitions

AL = Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements.
MCL = Maximum Contaminant Level - The "Maximum Allowed" is the highest level of a contaminant that is allowed in drinking water.
MCLG = Maximum Contaminant Level Goal - The "Goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health.
MFL = Million fibers per liter.
MRDL = Maximum Residual Disinfectant Level.
MRDLG = Maximum Residual Disinfectant Level Goal.
MREM = Millirems per year – a measure of radiation absorbed by the body.
NA = Not Applicable, sampling was not completed by regulation or was not required.
ND = Not Detectable, results are below the laboratory sample detection limit.
NTU = Nephelometric Turbidity Units, a measure of water clarity.

IV. Definitions (cont.)

PCi/L = Picocuries per liter - picocuries per liter is a measure of the radioactivity in water.
PPM = Parts per million or Milligrams per liter (mg/L).
PPB = Parts per billion or Micrograms per liter (µg/L).
PPT = Parts per trillion or Nanograms per liter.
PPQ = Parts per quadrillion or Picograms per liter.

ppm x 1000 = ppb
ppb x 1000 = ppt
ppt x 1000 = ppq

TT = Treatment Technique - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

V. Health Effects Language

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. "High nitrate levels in drinking water can cause blue baby syndrome". Nitrate levels may rise quickly for short periods-of-time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

If **arsenic** is less than or equal to the MCL, your drinking water meets ADEQ (Arizona Department of Environmental Quality) and EPA's standards. ADEQ and EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. ADEQ and EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Lead: 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 City of Nogales water system 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.

VI. Water Quality Data

Microbiological	**Violation Y or N**	**Number of Samples Present**	**Absent (A) or Present (P)**	**MCL**	**MCLG**	**Samples per Month or Year**	**Likely Source of Contamination**
Total Coliform Bacteria System takes ≤ 40 monthly samples 1 positive monthly sample *See Page 7 for a TIER 2 Public Notice.*	Y	2	298 samples(A) 2 samples (P)	1 positive sample/ month	0	25/month 300/year	Naturally Present in Environment
Fecal Coliform and E. Coli (TC Rule)	N	0	300 samples(A) 0 samples(P)	1 positive sample/ month	0	25/month 300/year	Human and animal fecal waste
Disinfectants	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Samples per Month or Year**	**Likely Source of Contamination**
Chlorine (mg/L)	N	0.46	0.4 - 0.5	MRDL = 4	MRDLG = 4	25/month 300/year	Water additive used to control microbes
Disinfection By-Products	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Samples per Month or Year**	**Likely Source of Contamination**
Haloacetic Acids (mg/L) (HAA5)	N	< 0.0018	< 0.0018 - < 0.0018	0.060	NA	24/year	Byproduct of drinking water disinfection
Total Trihalomethanes (mg/L) (TTHM)	N	0.00475	< 0.0005 - 0.0099	0.080	NA	24/year	Byproduct of drinking water disinfection

Lead & Copper **30 samples every 3 years** **Next set of samples on 2015**	**Violation Y or N**	**90th Percentile AND Number of Samples Over the AL**	**Range of All Samples (L-H)**	**AL**	**ALG**	**Year Sample Dates**	**Likely Source of Contamination**
Copper (mg/L)	N	0.18 0 samples	0.0031 – 0.350	AL = 1.3	ALG = 1.3	2012	Corrosion of household plumbing systems; erosion of natural deposits
Lead (mg/L)	N	0.0019 0 samples	ND - 0.0046	AL = 0.015	0	2012	Corrosion of household plumbing systems; erosion of natural deposits
Radionuclides **6 samples every 3 years** **Next set of samples on 2015**	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Beta / photon emitters (mrem/yr)	N	< 4.0	< 4.0 - < 4.0	4	0	2012	Decay of natural and man-made deposits
Alpha emitters (pCi/L)	N	1.81	< 1.0 – 4.9	15	0	2012	Erosion of natural deposits
Combined Radium 226 & 228 (pCi/L)	N	< 0.56	< 0.3 - < 0.9	5	0	2012	Erosion of natural deposits
Uranium (mg/L)	N	3.80	< 1.0 – 5.30	30	0	2012	Erosion of natural deposits
Inorganic Chemicals (IOC) **6 samples every 3 years** **Next set of samples on 2015**	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Antimony (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.006	0.006	2012	Discharge from petroleum refineries; fire retardants; ceramics, electronics and solder
Arsenic (mg/L)	N	0.0039	0.0021- 0.0084	0.01	0	2012	Erosion of natural deposits, runoff from orchards, runoff from glass and electronics production wastes
Asbestos (MFL)	N	< 0.20	< 0.20 – 0.20	7	7	2012	Decay of asbestos cement water mains; Erosion of natural deposits
Barium (mg/L)	N	< 0.050	< 0.050 - < 0.050	2	2	2012	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits
Beryllium (mg/L)	N	< 0.0020	< 0.0020 - < 0.0020	0.004	0.004	2012	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries

Inorganic Chemicals (IOC) **6 samples every 3 years** **Next set of samples on 2015**	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Cadmium (mg/L)	N	< 0.0020	< 0.0020 - < 0.0020	0.005	0.005	2012	Corrosion of galvanized pipes; natural deposits; metal refineries; runoff from waste batteries and paints
Chromium (mg/L)	N	< 0.030	< 0.030 - < 0.030	0.10	0.10	2012	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (mg/L)	N	< 0.10	< 0.10 - < 0.10	0.20	0.20	2012	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride (mg/L)	N	0.625	< 0.50 - 1.0	4	4	2012	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Mercury (mg/L)	N	< 0.0010	< 0.0010 - < 0.0010	0.002	0.002	2012	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills and cropland.
Nitrate (mg/L)	N	1.60	<1.0 - 2.2	10	10	2012	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (mg/L)	N	< 0.10	< 0.10 - < 0.10	1	1	2012	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (mg/L)	N	< 0.0025	< 0.0025 - < 0.0025	0.05	0.05	2012	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium (mg/L)	N	<0.0005	<0.0005 - <0.0005	2	0.5	2012	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Synthetic Organic Chemicals (SOC) **12 samples every 3 years** **Next set of samples on 2015**	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
2,4-D (mg/L)	N	< 0.0001	< 0.0001 - < 0.0001	0.07	0.07	2012	Runoff from herbicide used on row crops

Synthetic Organic Chemicals (SOC) 12 samples every 3 years Next set of samples on 2015	Violation Y or N	Running Annual Average (RAA)	Range of All Samples (L-H)	MCL	MCLG	Year Sample Dates	Likely Source of Contamination
2,4,5-TP (Silvex) (mg/L)	N	< 0.0002	< 0.0002 - < 0.0002	0.05	0.05	2012	Residue of banned herbicide
Alachlor (mg/L)	N	< 0.0002	< 0.0002 - < 0.0002	0.002	0	2012	Runoff from herbicide used on row crops
Atrazine (mg/L)	N	< 0.0001	< 0.0001 - < 0.0001	0.003	0.003	2012	Runoff from herbicide used on row crops
Benzo (a) pyrene (PAH) (mg/L)	N	< 0.00002	<0.00002 - <0.00002	0.0002	0	2012	Leaching from linings of water storage tanks and distribution lines
Carbofuran (mg/L)	N	< 0.0009	< 0.0009 - < 0.0009	0.04	0.04	2012	Leaching of soil fumigant used on rice and alfalfa
Chlordane (mg/L)	N	<0.0002	<0.0002 - <0.0002	0.002	0	2012	Residue of banned termiticide
Dalapon (mg/L)	N	< 0.001	< 0.001 - < 0.001	0.2	0.2	2012	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (mg/L)	N	< 0.0006	< 0.0006 - < 0.0006	0.4	0.4	2012	Discharge from chemical factories
Di (2-ethylhexyl) phthalate (mg/L)	N	< 0.0006	< 0.0006 - < 0.0006	0.006	0	2012	Discharge from rubber and chemical factories
Dibromochloropropane (mg/L)	N	< 0.00002	<0.00002 - <0.00002	0.0002	0	2012	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb (mg/L)	N	< 0.0002	< 0.0002 - < 0.0002	0.007	0.007	2012	Runoff from herbicide used on soybeans and vegetables
Diquat (mg/L)	N	< 0.0004	< 0.0004 - < 0.0004	0.02	0.02	2012	Runoff from herbicide use
Dioxin [2,3,7,8-TCDD] (mg/L)	N	< 5 x 10(-9)	<5x10(-9)-<5x10(-9)	3 x 10(-8)	0	2012	Emissions from waste incineration and other combustion; discharge from chemical factories
Endothall (mg/L)	N	< 0.009	< 0.009 - < 0.009	0.1	0.1	2012	Runoff from herbicide use
Endrin (mg/L)	N	< 0.00001	< 0.00001-< 0.00001	0.002	0.002	2012	Residue of banned insecticide
Ethylene dibromide (mg/L)	N	< 0.00001	<0.00001 - <0.00001	0.00005	0	2012	Discharge from petroleum refineries
Glyphosate (mg/L)	N	< 0.006	< 0.006 - < 0.006	0.7	0.7	2012	Runoff from herbicide use
Heptachlor (mg/L)	N	< 0.00004	< 0.00004-< 0.00004	0.0004	0	2012	Residue of banned temiticide
Heptachlor epoxide (mg/L)	N	< 0.00002	< 0.00002 -< 0.00002	0.0002	0	2012	Breakdown of heptachlor

Synthetic Organic Chemicals (SOC) 12 samples every 3 years Next set of samples on 2015	Violation Y or N	Running Annual Average (RAA)	Range of All Samples (L-H)	MCL	MCLG	Year Sample Dates	Likely Source of Contamination
Hexachlorobenzene (mg/L)	N	< 0.0001	< 0.0001 - < 0.0001	0.001	0	2012	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclo pentadiene (mg/L)	N	< 0.0001	< 0.0001 - < 0.0001	0.05	0.05	2012	Discharge from chemical factories
Lindane (mg/L)	N	< 0.00002	< 0.00002 -< 0.00002	0.0002	0.0002	2012	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor (mg/L)	N	< 0.0001	< 0.0001 - < 0.0001	0.04	0.04	2012	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate] (mg/L)	N	< 0.002	< 0.002 - < 0.002	0.2	0.2	2012	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
Pentachlorophenol (mg/L)	N	< 0.00004	<0.00004 - <0.00004	0.001	0	2012	Discharge from wood preserving factories
Picloram (mg/L)	N	< 0.0001	< 0.0001 - < 0.0001	0.5	0.5	2012	Herbicide runoff
Simazine (mg/L)	N	< 0.00007	<0.00007 - <0.00007	0.004	0.004	2012	Herbicide runoff
Toxaphene (mg/L)	N	< 0.001	<0.001 - <0.001	0.003	0	2012	Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Chemicals (VOC) **6 samples every 3 years** **Next set of samples on 2015**	**Violation Y or N**	**Running Annual Average (RAA)**	**Range of All Samples (L-H)**	**MCL**	**MCLG**	**Year Sample Dates**	**Likely Source of Contamination**
Benzene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0	2012	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0	2012	Discharge from chemical plants and other industrial activities
Chlorobenzene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.10	0.10	2012	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.60	0.60	2012	Discharge from industrial chemical factories
p-Dichlorobenzene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.075	0.075	2012	Discharge from industrial chemical factories
1,2-Dichloroethane (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0	2012	Discharge from industrial chemical factories
1,1-Dichloroethylene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.007	0.007	2012	Discharge from industrial chemical factories

Volatile Organic Chemicals (VOC) 6 samples every 3 years Next set of samples on 2015	Violation Y or N	Running Annual Average (RAA)	Range of All Samples (L-H)	MCL	MCLG	Year Sample Dates	Likely Source of Contamination
cis-1,2-Dichloroethylene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.07	0.07	2012	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.10	0.10	2012	Discharge from industrial chemical factories
Dichloromethane (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0	2012	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0	2012	Discharge from industrial chemical factories
Ethylbenzene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.70	0.70	2012	Discharge from petroleum refineries
Styrene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.10	0.10	2012	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0	2012	Discharge from factories and dry cleaners
1,2,4-Trichlorobenzene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.07	0.07	2012	Discharge from textile-finishing factories
1,1,1-Trichloroethane (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.20	0.20	2012	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.005	0.003	2012	Discharge from industrial chemical factories
Trichloroethylene (mg/L)	N	< 0.0005	< 0.0005 - 0.0018	0.005	0	2012	Discharge from metal degreasing sites and other factories
Toluene (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	1	1	2012	Discharge from petroleum factories
Vinyl Chloride (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	0.002	0	2012	Leaching from PVC piping; discharge from chemical factories
Xylenes (mg/L)	N	< 0.0005	< 0.0005 - < 0.0005	10	10	2012	Discharge from petroleum or chemical factories

TIER 2 PUBLIC NOTICES

During the month of August 2013, we took 25 routine samples to test for the presence of coliform bacteria. Two (2) of these routine samples showed the presence of total coliform bacteria (not of Fecal Coliform and E. Coli). Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or *E.coli*, are present. **We did not find any of these bacteria in our subsequent testing (9 samples taken).**

TIER 3 PUBLIC NOTICES

During October-December 2013 we did not monitor or test for Stage 2 Disinfection Byproducts (TTHM-HAA5). However, we did test for Stage 1 in that period (October-December). This error occurred due to a misinterpretation of a new water compliance monitoring program (Stage 2). Our required dates and monitoring sites were approved on November 2013, we assumed that we needed to start implementing the new requirements on the first quarter of 2014 (January – March), according to the federal/state regulation; that was an error.

We started implementing this new requirement as part of our yearly routing monitoring samples in January 22, 2014 and we obtained results lower than the Maximum Contaminant Level (MCL). We will continue working with the federal/state regulations to keep our water system in compliance.