



John Doe
1234 E. Some Place
Anywhere, AZ

RE: Well Water Quality Inspection
1234 E. Some Place
Anywhere, AZ

There is a well installed to provide the water supply to the home located at 1234 E. Some Place, Anywhere, AZ. The home appears to have been first built and occupied in the year 1999. At the request of John Doe a water quality test was completed by Ralph G. Baca, P.E. of BBaca Engineering, LLC on Thursday August 6, 2009. The report that follows has been prepared based on that inspection.

The intent of this inspection was to evaluate, through non-destructive test and visual inspection, the current water quality system of the well system for the home and to determine what, if any, significant maintenance, repairs, and/ or replacement to this system might be currently expected. Those items specifically included in the evaluation were:

- Water Quality

If the root cause of the problem could not be determined visually, steps or tests were to be outlined that would help in narrowing the potential cause(s) of a problem. As you requested, this report focuses on the water quality associated with the well system. This inspection and report does not include code compliance, municipal regulatory compliance, subsurface investigation, or records research related to this building.

Based on the lab test results, the water quality of the well does meet the FHA minimum requirements (see attached results). No further repairs or remediation is required at this time.

Respectfully Submitted,



Ralph G. Baca, P.E.
Principal Engineer
Attachment: Lab Test Results

BBACA ENGINEERING, LLC

Property Inspection Report

Well System Water Quality Test

Client: John Doe
Property Location: 1234 E. Some Place
Anywhere, AZ



Inspection Date:
Engineer: Ralph G. Baca, P.E.
AZ. License: 30637
Phone: 480-706-6222
FAX: 480-706-9330

Well Water Quality

Description: A standard FHA/ VA water quality test was conducted which consisted of analyzing the water for bacteria, lead, nitrate, nitrite, total nitrate/nitrite, iron and turbidity. The results are outlined in Attachment 1.

Issues: 1. No issues noted.

Attachment 1



Laboratories™
Analysis by EHS Laboratories, LLC

7469 Whitepine Road
Richmond, VA 23237

Toll Free: 800.604.1995 Fax: 804.275.4907

Test Address:

Client:

BBACA ENGINEERING

2401 E. Taxidea Way

Phoenix, AZ 85048

WaterSmart® Pro Standard FHA/VA Test Analysis Report

Report Number: 09080700072A
Received Date / Time: 08/07/2009 06:22 PM
Reported Date / Time: 08/11/2009 04:35 PM
Collection Technician: Ralph G. Baca
Tech. Certification #: 36037

Shipping #: 1Z5F600Y8442271039

Analysis By National Testing Laboratories, Ltd

MD Accreditation #: 205

NELAP Certified Through

Louisiana Accreditation #: LA070011

Irma Faszewski, QA/QC

Account Number: 111591
Fax Number: 480/706-9330

Laboratory Results

Parameter	Method Reporting Limit	Results	EPA Standard	Collected	Analyzed	Collection Location Narrative ID
DW - Coliform Bac	SM 9223-B	Absent	Absent	08/06/2009 02:30 PM	08/07/2009 11:10 AM	KT SK
DW - E. coli	SM 9223-B	Absent	Absent	08/06/2009 02:30 PM	08/07/2009 11:10 AM	KT SK
DW - pH(Field)		8.2 ¹	6.5-8.5 ¹	08/06/2009 02:30 PM	08/06/2009 02:30 PM	KT SK
DW - Chlorine(Field)		3.1 mg/L		08/06/2009 02:30 PM	08/06/2009 02:30 PM	KT SK
DW - Turbidity	SM 2130-B*	0.4 NTU ¹	5 NTU ¹	08/06/2009 02:30 PM	08/07/2009 01:30 PM	KT SK
DW - Nitrate	EPA 353.2 1.000 mg/L	5.0 mg/L	10 mg/L	08/06/2009 02:30 PM	08/07/2009 11:26 AM	KT SK
DW - Nitrite	EPA 353.2 0.050 mg/L	Below Reporting Limit	1 mg/L	08/06/2009 02:30 PM	08/07/2009 11:26 AM	KT SK
DW - Nitrate/Nitrite	EPA 353.2 1.000 mg/L	5.0	10 mg/L	08/06/2009 02:30 PM	08/07/2009 11:26 AM	KT SK
DW - Lead	SM 3113 B 2.000 µg/L	Below Reporting Limit	15 µg/L	08/06/2009 02:30 PM	08/10/2009 04:27 PM	KT SK

¹Secondary standards - Non-enforceable federal guidelines, however, states may choose to adopt them as enforceable standards. Please check with your local regulatory agency.

For additional information, you may contact the EPA's "Safe Drinking Water Hotline" toll free at 1-800-426-4791.

*NELAC does not offer certification for this parameter.

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Attachment 3

EPA National Primary Drinking Water Standards

	Contaminant	MCL or TT ¹ (mg/L) ²	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
OC	Acrylamide	TT ⁸	Nervous system or blood problems;	Added to water during sewage/wastewater increased risk of cancer treatment	zero
OC	Alachlor	0.002	Eye, liver, kidney or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops	zero
R	Alpha particles	15 picocuries per Liter (pCi/L)	Increased risk of cancer	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation	zero
IOC	Antimony	0.006	Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	0.006
IOC	Arsenic	0.010 as of 1/23/06	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes	0
IOC	Asbestos (fibers >10 micrometers)	7 million fibers per Liter (MFL)	Increased risk of developing benign intestinal polyps	Decay of asbestos cement in water mains; erosion of natural deposits	7 MFL
OC	Atrazine	0.003	Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops	0.003
IOC	Barium	2	Increase in blood pressure	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	2
OC	Benzene	0.005	Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills	zero
OC	Benzo(a)pyrene (PAHs)	0.0002	Reproductive difficulties; increased risk of cancer	Leaching from linings of water storage tanks and distribution lines	zero
IOC	Beryllium	0.004	Intestinal lesions	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	0.004
R	Beta particles and photon emitters	4 millirems per year	Increased risk of cancer	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation	zero
DBP	Bromate	0.010	Increased risk of cancer	Byproduct of drinking water disinfection	zero
IOC	Cadmium	0.005	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	0.005
OC	Carbofuran	0.04	Problems with blood, nervous system, or reproductive system	Leaching of soil fumigant used on rice and alfalfa	0.04
OC	Carbon tetrachloride	0.005	Liver problems; increased risk of cancer	Discharge from chemical plants and other industrial activities	zero
D	Chloramines (as Cl ₂)	MRDL=4.0 ¹	Eye/nose irritation; stomach discomfort, anemia	Water additive used to control microbes	MRDLG=4 ¹

LEGEND

D	Disinfectant
DBP	Disinfection Byproduct

IOC	Inorganic Chemical
R	Radioisotopes

OC	Organic Chemical
R	Radioisotopes

	Contaminant	MCL or TT ¹ (mg/L) ²	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
OC	Oxamyl (Vydate)	0.2	Slight nervous system effects	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	0.2
OC	Pentachlorophenol	0.001	Liver or kidney problems; increased cancer risk	Discharge from wood preserving factories	zero
OC	Picloram	0.5	Liver problems	Herbicide runoff	0.5
OC	Polychlorinated biphenyls (PCBs)	0.0005	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals	zero
R	Radium 226 and Radium 228 (combined)	5 pCi/L	Increased risk of cancer	Erosion of natural deposits	zero
IOC	Selenium	0.05	Hair or fingernail loss; numbness in fingers or toes; circulatory problems	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines	0.05
OC	Simazine	0.004	Problems with blood	Herbicide runoff	0.004
OC	Styrene	0.1	Liver, kidney, or circulatory system problems	Discharge from rubber and plastic factories; leaching from landfills	0.1
OC	Tetrachloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from factories and dry cleaners	zero
IOC	Thallium	0.002	Hair loss; changes in blood; kidney, intestine, or liver problems	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	0.0005
OC	Toluene	1	Nervous system, kidney, or liver problems	Discharge from petroleum factories	1
M	Total Coliforms (including fecal coliform and <i>E. coli</i>)	5.0% ⁴	Not a health threat in itself, it is used to indicate whether other potentially harmful bacteria may be present ⁵	Coliforms are naturally present in the environment as well as feces; fecal coliforms and <i>E. coli</i> only come from human and animal fecal waste	zero
DBP	Total Trihalomethanes (TTHMs)	0.10 0.080 after 12/31/03	Liver, kidney or central nervous system problems; increased risk of cancer	Byproduct of drinking water disinfection	n/a ⁶
OC	Toxaphene	0.003	Kidney, liver, or thyroid problems; increased risk of cancer	Runoff/leaching from insecticide used on cotton and cattle	zero
OC	2,4,5-TP (Silvex)	0.05	Liver problems	Residue of banned herbicide	0.05
OC	1,2,4-Trichlorobenzene	0.07	Changes in adrenal glands	Discharge from textile finishing factories	0.07
OC	1,1,1-Trichloroethane	0.2	Liver, nervous system, or circulatory problems	Discharge from metal degreasing sites and other factories	0.20
OC	1,1,2-Trichloroethane	0.005	Liver, kidney, or immune system problems	Discharge from industrial chemical factories	0.003
OC	Trichloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from metal degreasing sites and other factories	zero
M	Turbidity	TT ³	Turbidity is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (e.g., whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing micro-organisms such as viruses, parasites and some bacteria. These organisms can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.	Soil runoff	n/a
R	Uranium	30 ug/L as of 12/08/03	Increased risk of cancer, kidney toxicity	Erosion of natural deposits	zero

LEGEND

D Disinfectant	IOC Inorganic Chemical	OC Organic Chemical
DBP Disinfection Byproduct	M Microorganism	R Radionuclides

	Contaminant	MCL or TT ¹ (mg/L) ²	Potential health effects from exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal
OC	Vinyl chloride	0.002	Increased risk of cancer	Leaching from PVC pipes; discharge from plastic factories	zero
M	Viruses (enteric)	TT ³	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	zero
OC	Xylenes (total)	10	Nervous system damage	Discharge from petroleum factories; discharge from chemical factories	10

NOTES

1 Definitions

- Maximum Contaminant Level Goal (MCLG)—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 and are non-enforceable public health goals.
- Maximum Contaminant Level (MCL)—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
- Maximum Residual Disinfectant Level Goal (MRDLG)—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 contaminants.
- Maximum Residual Disinfectant Level (MRDL)—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.
- Treatment Technique (TT)—A required process intended to reduce the level of a contaminant in drinking water.

2 Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).

3 EPA's surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:

- Cryptosporidium (as of 1/1/02 for systems serving >10,000 and 1/14/05 for systems serving <10,000) 99% removal.
- Giardia lamblia 99.9% removal/inactivation.
- Viruses: 99.99% removal/inactivation.
- Legionella: No limit, but EPA believes that if Giardia and viruses are removed/inactivated, Legionella will also be controlled.
- Turbidity: At no time can turbidity (cloudiness of water) go above 5 nephelometric turbidity units (NTU); systems that filter must ensure that the turbidity go no higher than 1 NTU (0.5 NTU for conventional or direct filtration); in at least 95% of the daily samples in any month. As of January 1, 2002, for systems servicing >10,000, and January 14, 2005, for systems servicing <10,000, turbidity may never exceed 1 NTU, and must not exceed 0.3 NTU in 95% of daily samples in any month.
- HPC: No more than 500 bacterial colonies per milliliter.
- Long Term 1 Enhanced Surface Water Treatment (Effective Date: January 14, 2005): Surface water systems or (GWUDI) systems serving fewer than 10,000 people must comply with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, Cryptosporidium removal requirements, updated watershed control requirements for unfiltered systems).
- Filter Backwash Recycling: The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.

4 No more than 5.0% samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or E. coli if two consecutive TC-positive samples, and one is also positive for E. coli fecal coliforms, system has an acute MCL violation.

5 Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Disease-causing microbes (pathogens) in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. These pathogens may pose a special health risk for infants, young children, and people with severely compromised immune systems.

6 Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:

- Haloacetic acids: dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L)
- Trihalomethanes: bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L)

7 Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

8 Each water system must certify, in writing, to the state (using third-party or manufacturer's certification) that when it uses acrylamide and/or epichlorohydrin to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05% dosed at 1 mg/L (or equivalent); Epichlorohydrin = 0.01% dosed at 20 mg/L (or equivalent).

LEGEND



Disinfectant



Inorganic Chemical



Organic Chemical



Disinfection Byproduct



Microorganism



Radionuclides