

DOULOS ENVIRONMENTAL, INC.
GROUNDWATER/LIQUID LEVEL DATA
(measurements in feet)

Project Address: Berry Street Landfill
901 Galleria Blvd.
Roseville, CA

Date: 1-24-14
Project No.: _____

Recorded by: Jerry Gonzales

Well No.	Time	Well Elev. TOC	Depth to Groundwater	Measured Total Depth	Groundwater Elevation	Depth to Product	Product Thickness	Comments
BW-1			130.27	151.35				
BW-2			117.61	122.24				
BW-3			121.20	151.64				
BW-4			117.80	123.50				Dry
BW-5			122.20	156.88				
BW-6			128.75	167.59				

Notes:

DOULOS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Greener Globe

Sampling Date: 1-24-14

Site: Berry Street Landfill

Project No.: _____

901 Galleria Blvd.

Well Designation: 15W-1

Roseville, CA

Is setup of traffic control devices required? NO YES

Is there standing water in the well box? NO YES

Is top of casing cut level? NO YES

Is well cap sealed and locked? NO YES

Height of well casing riser (in inches): 36" Rise

time: _____ hours

Above TOC _____ Below TOC _____

If no, see remarks

If no, see remarks

Well cover type: 8" or 12" UV _____ 12" EMCO _____ 8" or 12" BK _____ 8" Christy _____

12" Christy _____ 8" M&D _____ 12" M&D _____ 12" DWP _____

12" CNI _____ 36" CNI _____ 12" Pomeco _____ Other: _____

General condition of wellhead assembly: Excellent _____ Good Fair _____ Poor _____

Purging Equipment: _____ 2" disposable bailer _____ Submersible pump

_____ 2" PVC bailer _____ Dedicated bailer

_____ 4" PVC bailer _____ Centrifugal pump

Sampled with: Disposable bailer _____ Teflon bailer _____ Disposable Tubing

Well Diameter: 2" _____ 4" 1.17 6" _____ 8" _____

Purge Vol. Multiplier: 0.16 _____ 0.65 1.47 _____ 2.61 gal/ft.

Initial Measurement

Recharge Measurement

Time: _____ Time: _____ Calculated purge: 53.9

Depth of well: 151.35 Depth to water: 131.84 Actual purge: 75.0

Depth to water: 130.24

Start purge: 1325

Sampling time: 1405

Time	Temperature	E.C.	pH	Turbidity	Volume
1330	18.87	441	7.01		
1340	18.70	424	6.79		
1350	18.72	423	6.73		

Sample appearance: Clear

Lock: _____

Equipment replaced: (check all that apply)

Note condition of replaced item(s)

2" Locking Cap: _____

Lock: _____ 7/32 Allenhead: _____

4" Locking Cap: _____

Lock-Dolphin: _____ 9/16 Bolt: _____

6" Locking Cap: _____

Pinned Allenhead (DWP): _____

Remarks: _____

Signature: [Signature]

Client: Greener Globe

Sampling Date: 1.24.14

Site: Berry Street Landfill

Project No.: _____

901 Galleria Blvd.

Well Designation: EW-3

Roseville, CA

Is setup of traffic control devices required? NO YES
 Is there standing water in the well box? NO YES
 Is top of casing cut level? NO YES
 Is well cap sealed and locked? NO YES
 Height of well casing riser (in inches): 36" riser
 Well cover type: 8" or 12" UV _____ 12" EMCO _____ 8" or 12" BK _____ 8" Christy _____
 12" Christy _____ 8" M&D _____ 12" M&D _____ 12" DWP _____
 12" CNI _____ 36" CNI _____ 12" Pomeco _____ Other: _____
 General condition of wellhead assembly: Excellent _____ Good Fair _____ Poor _____

Purging Equipment: _____ 2" disposable bailer _____ Submersible pump
 _____ 2" PVC bailer _____ Dedicated bailer
 _____ 4" PVC bailer _____ Centrifugal pump
 Sampled with: Disposable bailer _____ Teflon bailer _____ Disposable Tubing _____

Well Diameter: 2" _____ ^{5"} 1.17 6" _____ 8" _____
 Purge Vol. Multiplier: 0.16 _____ 0.65 _____ 1.47 _____ 2.61 gal/ft.
Initial Measurement Recharge Measurement
 Time: _____ Time: _____ Calculated purge: 1.05
 Depth of well: 131.64 Depth to water: _____ Actual purge: _____
 Depth to water: 121.20

Start purge: 1:25 / 236 Sampling time: 1300

Time	Temperature	E.C.	pH	Turbidity	Volume
1241	20.83	685	6.93		
1246	21.11	712	7.01		
1252	21.15	727	6.96		

Sample appearance: C/cor Lock: _____

Equipment replaced: (check all that apply) Note condition of replaced item(s)
 2" Locking Cap: _____ Lock: _____ 7/32 Allenhead: _____
 4" Locking Cap: _____ Lock-Dolphin: _____ 9/16 Bolt: _____
 6" Locking Cap: _____ Pinned Allenhead (DWP): _____

Remarks: _____

Signature: 

Client: Greener Globe

Sampling Date: 1-24-14

Site: Berry Street Landfill

Project No.: _____

901 Galleria Blvd.

Well Designation: EW-5

Roseville, CA

Is setup of traffic control devices required? NO YES time: _____ hours
 Is there standing water in the well box? NO YES Above TOC Below TOC
 Is top of casing cut level? NO YES If no, see remarks
 Is well cap sealed and locked? NO YES If no, see remarks
 Height of well casing riser (in inches): _____
 Well cover type: 8" or 12" UV _____ 12" EMCO _____ 8" or 12" BK _____ 8" Christy _____
 12" Christy _____ 8" M&D _____ 12" M&D _____ 12" DWP _____
 12" CNI _____ 36" CNI _____ 12" Pomeco _____ Other: _____
 General condition of wellhead assembly: Excellent _____ Good _____ Fair _____ Poor _____

Purging Equipment: _____ 2" disposable bailer _____ Submersible pump
 _____ 2" PVC bailer _____ Dedicated bailer
 _____ 4" PVC bailer _____ Centrifugal pump
 Sampled with: Disposable bailer Teflon bailer _____ Disposable Tubing _____

Well Diameter: 2" 4" _____ ~~6"~~ 8" _____
 Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.
Initial Measurement Recharge Measurement
 Time: _____ Time: 1548 Calculated purge: 16.6
 Depth of well: 156.88 Depth to water: 122.97 Actual purge: 122.0
 Depth to water: 122.20 19.0

Start purge: 1536 Sampling time: 1550

Time	Temperature	E.C.	pH	Turbidity	Volume
1538	21.69	912	6.78		
1540	20.98	916	6.75		
1542	20.86	919	6.74		

Sample appearance: _____ Lock: _____

Equipment replaced: (check all that apply) Note condition of replaced item(s)
 2" Locking Cap: _____ Lock: _____ 7/32 Allenhead: _____
 4" Locking Cap: _____ Lock-Dolphin: _____ 9/16 Bolt: _____
 6" Locking Cap: _____ Pinned Allenhead (DWP): _____

Remarks: _____

Signature: 

Client: Greener Globe

Sampling Date: 1-24-14

Site: Berry Street Landfill

Project No.: _____

901 Galleria Blvd.

Well Designation: EW-6

Roseville, CA

Is setup of traffic control devices required? NO YES time: _____ hours
 Is there standing water in the well box? NO YES Above TOC Below TOC
 Is top of casing cut level? NO YES If no, see remarks
 Is well cap sealed and locked? NO YES If no, see remarks
 Height of well casing riser (in inches): 36" rise
 Well cover type: 8" or 12" UV _____ 12" EMCO _____ 8" or 12" BK _____ 8" Christy _____
 12" Christy _____ 8" M&D _____ 12" M&D _____ 12" DWP _____
 12" CNI _____ 36" CNI _____ 12" Pomeco _____ Other: _____
 General condition of wellhead assembly: Excellent _____ Good Fair _____ Poor _____

Purging Equipment: _____ 2" disposable bailer Submersible pump
 _____ 2" PVC bailer _____ Dedicated bailer
 _____ 4" PVC bailer _____ Centrifugal pump
 Sampled with: Disposable bailer _____ Teflon bailer _____ Disposable Tubing _____

Well Diameter: 2" _____ 4" _____ ⁵/₈" 1.17 8" _____
 Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.
Initial Measurement Recharge Measurement
 Time: _____ Time: _____ Calculated purge: 136.3
 Depth of well: 167.59 Depth to water: _____ Actual purge: 137
 Depth to water: 128.75

Start purge: 14:22 Sampling time: 15:00

Time	Temperature	E.C.	pH	Turbidity	Volume
<u>14:34</u>	<u>19.43</u>	<u>533</u>	<u>6.81</u>		
<u>14:44</u>	<u>19.19</u>	<u>538</u>	<u>6.72</u>		
<u>14:54</u>	<u>19.24</u>	<u>441</u>	<u>6.72</u>		

Sample appearance: _____ Lock: _____

Equipment replaced: (check all that apply) Note condition of replaced item(s)
 2" Locking Cap: _____ Lock: _____ 7/32 Allenhead: _____
 4" Locking Cap: _____ Lock-Dolphin: _____ 9/16 Bolt: _____
 6" Locking Cap: _____ Pinned Allenhead (DWP): _____

Remarks: _____

Signature: 

WATER TEST WHOLESALE
“Using Only USEPA Approved Testing Methods”
www.watertestwholesale.com

Laboratory Information - 609-291-9072
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Dan Sheehan
Greener Globe
5009 Southside Ranch Rd
Apt/Suite
Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
Source: Other
Collected by: Owner
WTW Lab Sample #: WTA-5585
WTW Order #: N/A

Date Collected: 1/24/14

Report Date: 2/25/14

LABORATORY REPORT SUMMARY

Comments:

**THIS SAMPLE MEETS THE U.S. E.P.A GUIDELINES FOR THE
PRIMARY DRINKING WATER PARAMETERS TESTED**

Sample site-Berry Street Landfill-Sample ID-GW-1

**PLEASE SEE THE LAST 3 PAGES OF THIS DOCUMENT WHICH CONTAIN
AN INFORMATION FILE WITH EXPLANATIONS OF THE PARAMETERS
AND CONTAMINANTS AS WELL AS TREATMENT IF NECESSARY.**

(P-1: 79) 415020

By: Thomas Mullen
Laboratory Director

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Dan Sheehan
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 Rd
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 Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
 Source: Other
 Collected by: Owner
 WTW Lab Sample #: WTA-5585
 WTW Order #: N/A

Date Collected: 1/24/14

Analysis: **INORGANIC CHEMICALS** Report Date: 2/25/14

**HEAVY & SECONDARY METALS
 PHYSICAL PROPERTIES**

All testing performed using USEPA testing guidelines

Parameter	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
TOTAL COLIFORM BACTERIA	<1/100ml (absent)		nd
E. COLI BACTERIA	<1/100ml (absent)		nd
Alkalinity (total)	no mcl	-	134
Aluminum	0.2	.01	nd
Antimony	.006	.005	nd
Arsenic	0.01	.002	nd
Barium(total)	2.0	0.1	nd
Beryllium	.004	.002	nd
Boron	no mcl	.005	nd
Bromine	-	-	nd
Cadmium(total)	.005	.004	nd
Calcium	no mcl	0.1	.78
Cesium(total)	-	-	nd
Chloride	250	.05	18

MCL = Maximum Contaminant Level
nd = none detected at the level of the mdl
ug/L = **ppb** (parts per billion)
mg/L = **ppm** (parts per million)
ntu = Nephelometric Turbidity Unit

MDL = Minimum Detection Level
mho = Reciprocal ohm
ton = Threshold Odor Number
****** Exceeds USEPA Limits
pCi/L = Picocuries per liter

c.u. = Color Unit
> = greater than
< = less than
***** - Closet Match

Remarks:

(P-2:79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5585
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL	MDL	Result
VOC/EPA 524.2	(mg/L)	(mg/L)	(mg/L)
Chromium	0.1	.002	nd
Hexavalent Chromium	no mcl	.002	nd
Color	15.0 c.u.	-	< 1 CU
Conductivity	no mcl	-	502UMHO'S
Copper	1.0	.01	nd
Corrosivity/ Index Langlier	-5 to + 5	-	-.65
Fluoride	2.0	0.2	.75
Hardness (CaCO3)	250	0.5	200
Iodine(total)	-	-	nd
Iron	0.3	.03	nd
Lead	0.01	.002	nd
Magnesium	no mcl	.005	1.6
Manganese	0.05	.01	nd
Mercury	0.002	.002	nd
Molybdenum	no mcl	.002	nd
Nickel	no mcl	.005	nd
Nitrates	-	-	nd
Odor	3 ton	-	< 1 TON

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected at the level of the mdl **ug/L = ppb** (parts per billion) **mg/L = ppm** (parts per million)
c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **>** = greater than
ntu = Nephelometric Turbidity Unit ***** - Closest Match ****** = Exceeds USEPA Limits **<** = less than
pCi/L = Picocuries per liter

Remarks:
 Corrosivity - None

Report Date: 2/25/14
 (P-3: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5585
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
VOC/EPA 524.2			
pH	6.5-8.5	-	6.76
Potassium	no mcl	.01	7.4
Radium (total)	-	-	nd
Salinity	50	-	LOW
Selenium	.05	.002	nd
Silica	-	-	.5
Silver	1.0	.005	nd
Sodium	50	.01	43.6
Strontium(total)	-	-	nd
Sulfate	250	1.0	13
Tin	-	-	nd
Thallium	2.0	.002	nd
Titanium(total)	-	-	nd
(TDS) Total Dissolved Solids	500	-	337
Turbidity	no mcl	-	< 1 NTU
Uranium (total)	-	-	nd
Vanadium	-	-	nd
Zinc	5.0	.01	nd

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected at the level of the mdl **ug/L = ppb** (parts per billion) **mg/L = ppm** (parts per million)
c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **> = greater than**
ntu = Nephelometric Turbidity Unit *** - Closest Match** **** = Exceeds USEPA Limits** **< = less than**
pCi/L = Picocuries per liter

Remarks:

Report Date: 2/25/14
 (P-4: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5585
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
PCB 1061	0.05	nd
PCB 1221	0.79	nd
PCB 1232	0.17	nd
PCB 1242	0.14	nd
PCB 1248	0.089	nd
PCB 1254	0.11	nd
PCB 1260	0.16	nd
PCB 1262	0.19	nd
DDD	0.21	nd
4,4 - DDD	-	nd
DDE	0.13	nd
4,4 – DDE	-	nd
DDT	0.17	nd
4,4 - DDT	-	nd
DTT	-	nd
Alachlor	0.16	nd
Aldrin	0.002	nd
Atrazine	0.26	nd
a-BHC	0.001	nd
b-BHC	0.001	nd
g-BHC	0.001	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/25/14
 (P-5: 79) 415020

By: Thomas Mullen
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ADDITIONAL PARAMETERS FOR TEST #779

Greener Globe

WTW Lab Sample #: WTA-5585

WTW Order #: N/A

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
Chlordane	0.1	nd
Tech Chlordane	-	nd
a-Chlordane	-	nd
b-Chlordane	-	nd
c-Nonachlor	0.009	nd
t-Nonachlor	0.007	nd
Dieldrin	0.008	nd
Endosulfan I	0.18	nd
Endosulfan II	0.21	nd
Endosulfan Sulfate	0.26	nd
Endrin	0.027	nd
Endrin Ketone	-	nd
Endrinaldehyde	0.17	nd
Heptachlor	0.001	nd
Heptachlor Epox	0.002	nd
Hexachlorobenzene	0.001	nd
Hexachlorocyclopentadiene	0.006	nd
Lindane	0.001	nd
Methoxychlor	0.31	nd
Simazine	0.87	nd
Toxaphene	0.78	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/25/14

By: Thomas Mullen

(P-6: 79) 415020

Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5585
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)		
Parameter/Method	MCL	MDL	Results	
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)	
Acetone		0.400	nd	
Acrylontrile		0.490	nd	
Allyl Chloride		0.480	nd	
Benzene (BTEX)	1	0.220	nd	
Bromobenzene		0.300	nd	
Bromochloromethane		0.460	nd	
Bromodichloromethane (THM)		0.310	nd	
Bromoform (THM)		0.280	nd	
Bromomethane		0.250	nd	
Carbon Disulfide		0.370	nd	
Carbon Tetrachloride	2	0.340	nd	
Chloroacetone		0.380	nd	
Chlorobenzene	50	0.230	nd	
Chloroethane		0.290	nd	
Chloroform (THM)		0.240	nd	
Chloromethane		0.300	nd	
Chlorotoluene – 2		0.21	nd	
Chlorotoluene – 4		0.2	nd	
cis-1,2 Dichloroethene	70	0.24	nd	
cis-1,3 Dichloropropene		0.230	nd	
Dibromochloromethane (THM)		0.290	nd	
Dibromomethane		0.120	nd	
Dichloroflouromethane		0.360	nd	
Diethylether		0.480	nd	
Ethyl Methacrylate		0.430	nd	
Ethylbenzene (BTEX)	700	0.220	nd	
Hexachloroethane		0.390	nd	
Hexachlorobutadione		0.25	nd	

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected **ug/L = ppb** (parts per billion) ****** = Exceeds **USEPA** limits

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5585
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)	
Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
Isopropylbenzene		0.290	nd
m,p – Xylene (BTEX)		0.440	nd
Methacrylonitrile		0.320	nd
Methyl Tertiary Butyl Ether (MTBE)	70	0.290	nd
Methylacrylate		0.320	nd
Methylene Chloride	3	0.320	nd
Methyliodide		0.530	nd
Methylmethacrylate		0.430	nd
n-Butylbenzene		0.25	nd
n-Propylbenzene		0.230	nd
Naphthalene	300	0.17	nd
Nitrobenzene		0.260	nd
o-Xylene (BTEX)		0.350	nd
p-Isopropyltoluene		0.26	nd
p-Xylene		-	nd
Pentachloroethane		0.180	nd
Propionitrile		0.420	nd
sec-Butylbenzene		0.23	nd
Styrene	100	0.380	nd
tert-Butylbenzene		0.42	nd
Tetrachloroethylene (PCE)	1	0.200	nd
Tetrahydrofuran		-	nd
Toluene (BTEX)	1000	0.150	nd
Total Xylenes	1000	0.44	nd
Trans-1,2-Dichloroethane		-	nd
Trans-1,2 - Dichloroethene	100	0.330	nd
Trans-1,3 Dichloropropene		0.280	nd
Trichloroethene		-	nd
Trichloroethylene (TCE)	1	0.360	nd
Trichlorofluoromethane		0.270	nd
Vinyl chloride	2	0.250	nd
1-Chlorobutane		0.440	nd
1,1 - Dichloroethane	50	0.260	nd
1,1 - Dichloroethene	2	0.330	nd
1,1 - Dichloropropene		0.440	nd
1,1 - Dichloropropanone		0.330	nd

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5585
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water Collected by: Owner Analysis: **VOLATILE ORGANIC COMPOUNDS – (VOC)**

Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
1,1,1 Trichloroethane	30	0.210	nd
1,1,1,2 Tetrachloroethane	1	0.180	nd
1,1,2 Trichloroethane	3	0.290	nd
1,1,2,2 Tetrachloroethane	1	0.240	nd
1,2 Dibromo-3-Chloropropane		0.25	nd
1,2 Dibromoethane		0.130	nd
1,2 Dichlorobenzene	600	0.34	nd
1,2 Dichloroethane	2	0.370	nd
1,2 Dichloropropane	5	0.240	nd
1,2,3 Trichlorobenzene		0.26	nd
1,2,3 Trichloropropane		0.150	nd
1,2,4 Trichlorobenzene	9	0.25	nd
1,2,4 Trimethylbenzene		0.23	nd
1,3 Dichlorobenzene	600	0.26	nd
1,3 Dichloropropane		0.250	nd
1,3,5 Trimethylbenzene		0.240	nd
1,4 Dichlorobenzene	75	0.31	nd
2-Butanone		0.350	nd
2-Hexanone		0.380	nd
2-Nitropropane		0.350	nd
2,2 Dichloropropane		0.350	nd
4-Methyl-2-Pentanone		0.450	nd
Library Search- 70	-	-	ntic

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected **ug/L = ppb** (parts per billion) ****** = Exceeds **USEPA** limits
ntic = no tentatively identified compounds

Page 3-3

- Includes: THM's Total and 4 Individual; Chloroform, Benzene, Ethane, Methane; BTEX, and MTBE; TCE and PCE

Remarks:

Report Date: 2/25/14
(P-9: 79) 415020

By: Thomas Mullen
Laboratory Director

DESCRIPTION OF PARAMETERS AND TREATMENT IF NECESSARY:

Coliform Bacteria/E-Coli:

Bacteria such as this and many others are found in all drinking water supplies to a greater or lesser extent. If left untreated they can propagate and form large colony counts and can quickly affect health. In fact the single largest health threat associated with water supplies is infection by bacteria. Total coliform is used as an indicator for general well infection. If a well is found to contain coliform colonies greater than one colony per hundred milliliters of water, it is assumed to be possibly infected by other forms of bacteria and should be disinfected immediately. Some research suggests that certain hard to detect bacteria found in water supplies worldwide, including the US, can lead to serious gastro-intestinal diseases, including ulcers and certain cancers. (See H-pyrol) the EPA, and numerous health agencies recommend that private well water users disinfect the well at least every 2 years. The simplest and cheapest way is by chlorination of the well. Because of the above problems associated with bacterial infection, public water supplies disinfect daily, usually by chlorination, and maintain a chlorine residual of 1-2 parts per million free chlorine.

Taste and Odor:

For private well water users the most common complaint we find is poor taste and sulphur like smell. The most common cause of these problems are also certain forms of bacteria. These include sulphate reducing bacteria, iron related bacteria (IRB), and other forms of H₂S producing bacteria found in many water supplies. The treatment is once again, chlorination of the well, and disinfection of any water treatment systems used. In fact before any watertreatment system is installed; it is recommended that the well be chlorinated first, to eliminate possible contamination of the treatment equipment. For public water consumers, odor and taste complaints are ironically due to the residual chlorine or other disinfection procedures unused by the water supplier.

Iron (Fe):

Iron is a common secondary metal parameter found in many ground water supplies. Unless found in very large amounts, it poses no health risks, but can cause rust staining of fixtures, sidewalks, etc. Iron is usually present as ferrous (non staining), ferric, (rust staining), or both. The most common treatment for iron is water softening, however if large amounts of ferric iron are present, a two tank system is employed, preceded by an acid neutralizer to help precipitate the ferric component.

Manganese (Mn):

Manganese is another common secondary metal parameter found in many drinking water supplies. It also poses no health risks in small amounts, however like Iron; this can also produce brown rust like staining. In large amounts, Manganese can cause discoloration of teeth, and potential bone disorders. The Treatment of Manganese is the same as for Iron.

Lead: (Pb)

Lead is a toxic heavy metal, usually found as a result of degradation of lead based Solder joints. Lead can also be found as a result of lechate from some land fill or industrial sites, but this is less common. In general the older the plumbing system, the more likely lead will be detected. The treatment of the removal of lead can be varied, with reverse osmosis being the most common. In certain cases, depending on the form that lead is present in the water system, activated carbon can be used.

Arsenic: (As)

Arsenic is a toxic heavy metal that can be found to an extent in natural ground formations. It can also be present in water supplies as a result of agricultural runoff, industrial waste pollution, and some pharmaceutical waste pollution. Arsenic can be removed by reverse osmosis filtration, or by arsenic specific treatment systems.

Mercury: (Hg)

Mercury is a toxic heavy metal that can be found in water supplies from a variety of sources. These include industrial waste, medical waste, pesticides, and general land fill operations. Mercury in its pure form as the metal, once ingested, tends to be stored in the body. In many instances Mercury is combined with other molecules that have the effect of reducing its toxicity and making it harder for humans to absorb and store mercury. The treatment for the removal of mercury can be by reverse osmosis, activated carbon, or by specific removal systems.

Sodium,(Na) Calcium, (Ca)

Potassium,(K) Magnesium, (Mg):

All of these metals can be found in ground formations, and hence in water Supplies everywhere. All of these are considered nontoxic secondary Parameters. All can be removed by reverse osmosis, ion exchange, and in the case of Calcium and Magnesium, by water conditioning. Water Conditioners use either Sodium or Potassium to regenerate so if Water softeners aren't maintained, these can become elevated in the treated water.

Other toxic heavy metals (eg, selenium, Thallium, Beryllium, Chromium, etc.):

When any metal is analyzed the results are usually given for the concentration of the total metal in its elemental form. This therefore assumes that if the total metal is present above maximum set levels, the water supply is not safe for consumption unless treated. However it is possible to have certain metals combined in such a way with other molecules that, like Mercury render them less toxic. Luckily the chances of these metals being found in most Potable water sources in the US is low. However the most usual treatment for most of the heavy Metals is the same as above, reverse osmosis, activated carbon, or ion exchange.

Nitrates (NO₃-):

Nitrates can be found in potable water from several sources. The principal ones are, nitrogen containing fertilizers, lechate from septic systems, or run off from agricultural activity. Nitrates are mainly a concern for infants under the age of two. Nitrates can be removed by reverse osmosis or by an anion exchange resin specific for nitrate removal, which functions much like a water conditioner.

pH and Corrosivity:

The pH of potable water varies across the nation. The pH is mainly dependent on the type of geological formation that the ground water is in contact with. A low pH indicates that the water is more acidic, and in extreme cases, pH less than 5.0, can cause a shortening of the life span of metal plumbing and fixtures. (however pH is not the only factor affecting plumbing. The pH is combined with other measurements such as the total dissolved solids (TDS), the total hardness, CaCO₃, and the alkalinity of the water to determine a number called the corrosivity or langlier index. This number is used on a scale from -5 to +5, with 0 being completely non aggressive water. The more negative the number, the more aggressive the water is to Metal plumbing, boiler cores etc. On the other side the more positive the number is the more likely the water will cause scale build up in plumbing. Most waters tend to be acidic, so the corrosivity will most likely be on the - side of the scale. In order to raise the pH, and therefore lower the corrosive nature of the water, an acid neutralizer is commonly used. This consists of a tank filled with calcium carbonate, or lime which dissolves in the water and neutralizes the acid.

Fluoride (F-):

Fluoride can be found in some natural geological formations and therefore in potable water. The most usual cause for fluoride in drinking water is that added to municipal supplies. More recently fluoride has been linked to contamination from some fracking operations. The most common treatment for fluoride is reverse osmosis treatment.

Organics:

The type of contamination most closely associated with causing cancers are the Organic compounds such as Volatile Organics (VOC's) and synthetic organic compounds such as the chlorinated pesticides and poly chlorinated biphenyls (PCB's). Most of these compounds find their way into water supplies as a result of industrial wastes, or through disposal into landfills. Some also contaminate local water supplies as a result of underground tank leakage. Luckily, most chlorinated pesticides and PCB's have not been used in years and are less likely to be found in water supplies today, compared to 25 years ago. Many landfills have been cleaned as a result of the Superfund laws as well, so industrial waste contamination is down. However some industrial solvents and gasoline additives still are found due to processes used today. The Tri Halo Methane's, (THM's) are found in public water supplies due to chlorination treatment for bacteria. There are many ways to remove these from drinking water, but the most effective and cheapest for the home owner remains carbon filtration, or reverse osmosis and carbon filtration.

Remember that a single water test only provides the user with a snap shot of the water being tested. It is best used as a base line to determine changes in a water system. When a priority contaminate such as benzene is found in a public supply system for example, the system is placed on a monitoring program for that contaminant to see if it reduces, remains constant or increases. Then appropriate treatment to remove the contaminant is performed. For the private well user it is best to confirm the presence of any priority contaminant with a second analysis for it within a short period to see if it is still present, and then treat accordingly. Thereafter periodic testing to determine the effectiveness of the treatment is advised.

Keep in mind that the most common contamination is bacteriological requiring at least annual testing for presence and disinfection of private wells at least every 2 years to maintain safe bacteria levels.

Report Date: 2/25/14
(P-12: 79) 415020

By: Thomas Mullen
Laboratory Director

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Dan Sheehan
Greener Globe
Street Address
5009 Southside Ranch Rd
Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
Source: Other
Collected by: Owner
WTW Lab Sample #: WTA-5584
WTW Order #: N/A

Date Collected: 1/24/14

Report Date: 2/25/14

LABORATORY REPORT SUMMARY

Comments:

**THIS SAMPLE MEETS THE U.S. E.P.A GUIDELINES FOR THE
PRIMARY DRINKING WATER PARAMETERS TESTED.**

Sample site-Berry Street Landfill-Sample ID-GW-3

**PLEASE SEE THE LAST 3 PAGES OF THIS DOCUMENT WHICH CONTAIN
AN INFORMATION FILE WITH EXPLANATIONS OF THE PARAMETERS
AND CONTAMINANTS AS WELL AS TREATMENT IF NECESSARY.**

(P-1: 79) 415020

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Laboratory Director

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Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
Source: Other
Collected by: Owner
WTW Lab Sample #: WTA-5584
WTW Order #: N/A

Date Collected: 1/24/14

Analysis: **INORGANIC CHEMICALS** Report Date: 2/25/14

**HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES**

All testing performed using USEPA testing guidelines

Parameter	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
TOTAL COLIFORM BACTERIA	<1/100ml (absent)		nd
E. COLI BACTERIA	<1/100ml (absent)		nd
Alkalinity (total)	no mcl	-	263
Aluminum	0.2	.01	nd
Antimony	.006	.005	nd
Arsenic	0.01	.002	nd
Barium(total)	2.0	0.1	nd
Beryllium	.004	.002	nd
Boron	no mcl	.005	nd
Bromine	-	-	nd
Cadmium(total)	.005	.004	nd
Calcium	no mcl	0.1	117
Cesium(total)	-	-	nd
Chloride	250	.05	10

MCL = Maximum Contaminant Level
nd = none detected at the level of the mdl
ug/L = **ppb** (parts per billion)
mg/L = **ppm** (parts per million)
ntu = Nephelometric Turbidity Unit

MDL = Minimum Detection Level
mho = Reciprocal ohm
ton = Threshold Odor Number
** Exceeds USEPA Limits
pCi/L = Picocuries per liter

c.u. = Color Unit
> = greater than
< = less than
* - Closet Match

Remarks:

(P-2:79) 415020

By: Thomas Mullen
Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5584
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL	MDL	Result
VOC/EPA 524.2	(mg/L)	(mg/L)	(mg/L)
Chromium	0.1	.002	nd
Hexavalent Chromium	no mcl	.002	nd
Color	15.0 c.u.	-	< 1 cu
Conductivity	no mcl	-	797umho's
Copper	1.0	.01	nd
Corrosivity/ Index Langlier	-5 to + 5	-	-.41
Fluoride	2.0	0.2	1.07
Hardness (CaCO3)	250	0.5	300
Iodine(total)	-	-	nd
Iron	0.3	.03	nd
Lead	0.01	.002	nd
Magnesium	no mcl	.005	1.4
Manganese	0.05	.01	.03
Mercury	0.002	.002	nd
Molybdenum	no mcl	.002	nd
Nickel	no mcl	.005	nd
Nitrates	-	-	nd
Odor	3 ton	-	nd

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nd = none detected at the level of the mdl **ug/L = ppb** (parts per billion) **mg/L = ppm** (parts per million)
c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **> =** greater than
ntu = Nephelometric Turbidity Unit ***** - Closest Match ****** = Exceeds USEPA Limits **< =** less than
pCi/L = Picocuries per liter

Remarks:
 Corrosivity - None

Report Date: 2/25/14
 (P-3: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5584
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
VOC/EPA 524.2			
pH	6.5-8.5	-	6.90
Potassium	no mcl	.01	19.6
Radium (total)	-	-	nd
Salinity	50	-	low
Selenium	.05	.002	nd
Silica	-	-	.5
Silver	1.0	.005	nd
Sodium	50	.01	23.2
Strontium(total)	-	-	nd
Sulfate	250	1.0	40
Tin	-	-	nd
Thallium	2.0	.002	nd
Titanium(total)	-	-	nd
(TDS) Total Dissolved Solids	500	-	532
Turbidity	no mcl	-	nd
Uranium (total)	-	-	nd
Vanadium	-	-	nd
Zinc	5.0	.01	nd

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected at the level of the mdl **ug/L = ppb** (parts per billion) **mg/L = ppm** (parts per million)
c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **>** = greater than
ntu = Nephelometric Turbidity Unit ***** - Closest Match ****** = Exceeds USEPA Limits **<** = less than
pCi/L = Picocuries per liter

Remarks:

Report Date: 2/25/14
 (P-4: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5584
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
PCB 1061	0.05	nd
PCB 1221	0.79	nd
PCB 1232	0.17	nd
PCB 1242	0.14	nd
PCB 1248	0.089	nd
PCB 1254	0.11	nd
PCB 1260	0.16	nd
PCB 1262	0.19	nd
DDD	0.21	nd
4,4 - DDD	-	nd
DDE	0.13	nd
4,4 – DDE	-	nd
DDT	0.17	nd
4,4 - DDT	-	nd
DTT	-	nd
Alachlor	0.16	nd
Aldrin	0.002	nd
Atrazine	0.26	nd
a-BHC	0.001	nd
b-BHC	0.001	nd
g-BHC	0.001	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/25/14
 (P-5: 79) 415020

By: Thomas Mullen
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ADDITIONAL PARAMETERS FOR TEST #779

Greener Globe

WTW Lab Sample #: WTA-5584

WTW Order #: N/A

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
Chlordane	0.1	nd
Tech Chlordane	-	nd
a-Chlordane	-	nd
b-Chlordane	-	nd
c-Nonachlor	0.009	nd
t-Nonachlor	0.007	nd
Dieldrin	0.008	nd
Endosulfan I	0.18	nd
Endosulfan II	0.21	nd
Endosulfan Sulfate	0.26	nd
Endrin	0.027	nd
Endrin Ketone	-	nd
Endrinaldehyde	0.17	nd
Heptachlor	0.001	nd
Heptachlor Epox	0.002	nd
Hexachlorobenzene	0.001	nd
Hexachlorocyclopentadiene	0.006	nd
Lindane	0.001	nd
Methoxychlor	0.31	nd
Simazine	0.87	nd
Toxaphene	0.78	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/25/14

By: Thomas Mullen

(P-6: 79) 415020

Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5584
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)		
Parameter/Method	MCL	MDL	Results	
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)	
Acetone		0.400	nd	
Acrylontrile		0.490	nd	
Allyl Chloride		0.480	nd	
Benzene (BTEX)	1	0.220	nd	
Bromobenzene		0.300	nd	
Bromochloromethane		0.460	nd	
Bromodichloromethane (THM)		0.310	nd	
Bromoform (THM)		0.280	nd	
Bromomethane		0.250	nd	
Carbon Disulfide		0.370	nd	
Carbon Tetrachloride	2	0.340	nd	
Chloroacetone		0.380	nd	
Chlorobenzene	50	0.230	nd	
Chloroethane		0.290	nd	
Chloroform (THM)		0.240	nd	
Chloromethane		0.300	nd	
Chlorotoluene – 2		0.21	nd	
Chlorotoluene – 4		0.2	nd	
cis-1,2 Dichloroethene	70	0.24	nd	
cis-1,3 Dichloropropene		0.230	nd	
Dibromochloromethane (THM)		0.290	nd	
Dibromomethane		0.120	nd	
Dichloroflouromethane		0.360	nd	
Diethylether		0.480	nd	
Ethyl Methacrylate		0.430	nd	
Ethylbenzene (BTEX)	700	0.220	nd	
Hexachloroethane		0.390	nd	
Hexachlorobutadione		0.25	nd	

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected **ug/L = ppb** (parts per billion) ** = Exceeds **USEPA** limits

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5584
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)	
Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
Isopropylbenzene		0.290	nd
m,p – Xylene (BTEX)		0.440	nd
Methacrylonitrile		0.320	nd
Methyl Tertiary Butyl Ether (MTBE)	70	0.290	nd
Methylacrylate		0.320	nd
Methylene Chloride	3	0.320	nd
Methyliodide		0.530	nd
Methylmethacrylate		0.430	nd
n-Butylbenzene		0.25	nd
n-Propylbenzene		0.230	nd
Naphthalene	300	0.17	nd
Nitrobenzene		0.260	nd
o-Xylene (BTEX)		0.350	nd
p-Isopropyltoluene		0.26	nd
p-Xylene		-	nd
Pentachloroethane		0.180	nd
Propionitrile		0.420	nd
sec-Butylbenzene		0.23	nd
Styrene	100	0.380	nd
tert-Butylbenzene		0.42	nd
Tetrachloroethylene (PCE)	1	0.200	nd
Tetrahydrofuran		-	nd
Toluene (BTEX)	1000	0.150	nd
Total Xylenes	1000	0.44	nd
Trans-1,2-Dichloroethane		-	nd
Trans-1,2 - Dichloroethene	100	0.330	nd
Trans-1,3 Dichloropropene		0.280	nd
Trichloroethene		-	nd
Trichloroethylene (TCE)	1	0.360	nd
Trichlorofluoromethane		0.270	nd
Vinyl chloride	2	0.250	nd
1-Chlorobutane		0.440	nd
1,1 - Dichloroethane	50	0.260	nd
1,1 - Dichloroethene	2	0.330	nd
1,1 - Dichloropropene		0.440	nd
1,1 - Dichloropropanone		0.330	nd

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5584
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water Collected by: Owner Analysis: **VOLATILE ORGANIC COMPOUNDS – (VOC)**

Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
1,1,1 Trichloroethane	30	0.210	nd
1,1,1,2 Tetrachloroethane	1	0.180	nd
1,1,2 Trichloroethane	3	0.290	nd
1,1,2,2 Tetrachloroethane	1	0.240	nd
1,2 Dibromo-3-Chloropropane		0.25	nd
1,2 Dibromoethane		0.130	nd
1,2 Dichlorobenzene	600	0.34	nd
1,2 Dichloroethane	2	0.370	nd
1,2 Dichloropropane	5	0.240	nd
1,2,3 Trichlorobenzene		0.26	nd
1,2,3 Trichloropropane		0.150	nd
1,2,4 Trichlorobenzene	9	0.25	nd
1,2,4 Trimethylbenzene		0.23	nd
1,3 Dichlorobenzene	600	0.26	nd
1,3 Dichloropropane		0.250	nd
1,3,5 Trimethylbenzene		0.240	nd
1,4 Dichlorobenzene	75	0.31	nd
2-Butanone		0.350	nd
2-Hexanone		0.380	nd
2-Nitropropane		0.350	nd
2,2 Dichloropropane		0.350	nd
4-Methyl-2-Pentanone		0.450	nd
Library Search- 70	-	-	ntic

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ntic = no tentatively identified compounds

Page 3-3

- Includes: THM's Total and 4 Individual; Chloroform, Benzene, Ethane, Methane; BTEX, and MTBE; TCE and PCE

Remarks:

Report Date: 2/25/14
(P-9: 79) 415020

By: Thomas Mullen
Laboratory Director

DESCRIPTION OF PARAMETERS AND TREATMENT IF NECESSARY:

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Taste and Odor:

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Arsenic is a toxic heavy metal that can be found to an extent in natural ground formations. It can also be present in water supplies as a result of agricultural runoff, industrial waste pollution, and some pharmaceutical waste pollution. Arsenic can be removed by reverse osmosis filtration, or by arsenic specific treatment systems.

Mercury: (Hg)

Mercury is a toxic heavy metal that can be found in water supplies from a variety of sources. These include industrial waste, medical waste, pesticides, and general land fill operations. Mercury in its pure form as the metal, once ingested, tends to be stored in the body. In many instances Mercury is combined with other molecules that have the effect of reducing its toxicity and making it harder for humans to absorb and store mercury. The treatment for the removal of mercury can be by reverse osmosis, activated carbon, or by specific removal systems.

Sodium,(Na) Calcium, (Ca)

Potassium,(K) Magnesium, (Mg):

All of these metals can be found in ground formations, and hence in water Supplies everywhere. All of these are considered nontoxic secondary Parameters. All can be removed by reverse osmosis, ion exchange, and in the case of Calcium and Magnesium, by water conditioning. Water Conditioners use either Sodium or Potassium to regenerate so if Water softeners aren't maintained, these can become elevated in the treated water.

Other toxic heavy metals (eg, selenium, Thallium, Beryllium, Chromium, etc.):

When any metal is analyzed the results are usually given for the concentration of the total metal in its elemental form. This therefore assumes that if the total metal is present above maximum set levels, the water supply is not safe for consumption unless treated. However it is possible to have certain metals combined in such a way with other molecules that, like Mercury render them less toxic. Luckily the chances of these metals being found in most Potable water sources in the US is low. However the most usual treatment for most of the heavy Metals is the same as above, reverse osmosis, activated carbon, or ion exchange.

Nitrates (NO₃-):

Nitrates can be found in potable water from several sources. The principal ones are, nitrogen containing fertilizers, lechate from septic systems, or run off from agricultural activity. Nitrates are mainly a concern for infants under the age of two. Nitrates can be removed by reverse osmosis or by an anion exchange resin specific for nitrate removal, which functions much like a water conditioner.

pH and Corrosivity:

The pH of potable water varies across the nation. The pH is mainly dependent on the type of geological formation that the ground water is in contact with. A low pH indicates that the water is more acidic, and in extreme cases, pH less than 5.0, can cause a shortening of the life span of metal plumbing and fixtures. (however pH is not the only factor affecting plumbing. The pH is combined with other measurements such as the total dissolved solids (TDS), the total hardness, CaCO₃, and the alkalinity of the water to determine a number called the corrosivity or langlier index. This number is used on a scale from -5 to +5, with 0 being completely non aggressive water. The more negative the number, the more aggressive the water is to Metal plumbing, boiler cores etc. On the other side the more positive the number is the more likely the water will cause scale build up in plumbing. Most waters tend to be acidic, so the corrosivity will most likely be on the - side of the scale. In order to raise the pH, and therefore lower the corrosive nature of the water, an acid neutralizer is commonly used. This consists of a tank filled with calcium carbonate, or lime which dissolves in the water and neutralizes the acid.

Fluoride (F-):

Fluoride can be found in some natural geological formations and therefore in potable water. The most usual cause for fluoride in drinking water is that added to municipal supplies. More recently fluoride has been linked to contamination from some fracking operations. The most common treatment for fluoride is reverse osmosis treatment.

Organics:

The type of contamination most closely associated with causing cancers are the Organic compounds such as Volatile Organics (VOC's) and synthetic organic compounds such as the chlorinated pesticides and poly chlorinated biphenyls (PCB's). Most of these compounds find their way into water supplies as a result of industrial wastes, or through disposal into landfills. Some also contaminate local water supplies as a result of underground tank leakage. Luckily, most chlorinated pesticides and PCB's have not been used in years and are less likely to be found in water supplies today, compared to 25 years ago. Many landfills have been cleaned as a result of the Superfund laws as well, so industrial waste contamination is down. However some industrial solvents and gasoline additives still are found due to processes used today. The Tri Halo Methane's, (THM's) are found in public water supplies due to chlorination treatment for bacteria. There are many ways to remove these from drinking water, but the most effective and cheapest for the home owner remains carbon filtration, or reverse osmosis and carbon filtration.

Remember that a single water test only provides the user with a snap shot of the water being tested. It is best used as a base line to determine changes in a water system. When a priority contaminate such as benzene is found in a public supply system for example, the system is placed on a monitoring program for that contaminant to see if it reduces, remains constant or increases. Then appropriate treatment to remove the contaminant is performed. For the private well user it is best to confirm the presence of any priority contaminant with a second analysis for it within a short period to see if it is still present, and then treat accordingly. Thereafter periodic testing to determine the effectiveness of the treatment is advised.

Keep in mind that the most common contamination is bacteriological requiring at least annual testing for presence and disinfection of private wells at least every 2 years to maintain safe bacteria levels.

Report Date: 2/25/14
(P-12: 79) 415020

By: Thomas Mullen
Laboratory Director

WATER TEST WHOLESALE
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Dan Sheehan
Greener Globe
5009 Southside Ranch Rd
Apt/Suite
Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
Source: Other
Collected by: Owner
WTW Lab Sample #: WTA-5583
WTW Order #: N/A

Date Collected: 1/24/14

Report Date: 2/25/14

LABORATORY REPORT SUMMARY

Comments:

THIS SAMPLE MEETS THE U.S. E.P.A GUIDELINES FOR THE PRIMARY DRINKING WATER PARAMETERS TESTED.

Sample site: Berry Street Landfill-Sample ID-GW-5

PLEASE SEE THE LAST 3 PAGES OF THIS DOCUMENT WHICH CONTAIN AN INFORMATION FILE WITH EXPLANATIONS OF THE PARAMETERS AND CONTAMINANTS AS WELL AS TREATMENT IF NECESSARY.

(P-1: 79) 415020

By: Thomas Mullen
Laboratory Director

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 Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
 Source: Other
 Collected by: Owner
 WTW Lab Sample #: WTA-5583
 WTW Order #: N/A

Date Collected: 1/24/14

Analysis: **INORGANIC CHEMICALS** Report Date: 2/25/14

**HEAVY & SECONDARY METALS
 PHYSICAL PROPERTIES**

All testing performed using USEPA testing guidelines

Parameter	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
TOTAL COLIFORM BACTERIA	<1/100ml (absent)		nd
E. COLI BACTERIA	<1/100ml (absent)		nd
Alkalinity (total)	no mcl	-	350
Aluminum	0.2	.01	nd
Antimony	.006	.005	nd
Arsenic	0.01	.002	nd
Barium(total)	2.0	0.1	nd
Beryllium	.004	.002	nd
Boron	no mcl	.005	nd
Bromine	-	-	nd
Cadmium(total)	.005	.004	nd
Calcium	no mcl	0.1	98
Cesium(total)	-	-	nd
Chloride	250	.05	21

MCL = Maximum Contaminant Level
nd = none detected at the level of the mdl
ug/L = **ppb** (parts per billion)
mg/L = **ppm** (parts per million)
ntu = Nephelometric Turbidity Unit

MDL = Minimum Detection Level
mho = Reciprocal ohm
ton = Threshold Odor Number
 ** Exceeds USEPA Limits
pCi/L = Picocuries per liter

c.u. = Color Unit
 > = greater than
 < = less than
 * - Closet Match

Remarks:

(P-2:79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5583
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL	MDL	Result
VOC/EPA 524.2	(mg/L)	(mg/L)	(mg/L)
Chromium	0.1	.002	nd
Hexavalent Chromium	no mcl	.002	nd
Color	15.0 c.u.	-	< 1 CU
Conductivity	no mcl	-	988UMHO'S
Copper	1.0	.01	.02
Corrosivity/ Index Langlier	-5 to + 5	-	_.16
Fluoride	2.0	0.2	.7
Hardness (CaCO3)	250	0.5	250
Iodine(total)	-	-	nd
Iron	0.3	.03	nd
Lead	0.01	.002	nd
Magnesium	no mcl	.005	2.1
Manganese	0.05	.01	nd
Mercury	0.002	.002	nd
Molybdenum	no mcl	.002	nd
Nickel	no mcl	.005	nd
Nitrates	-	-	2
Odor	3 ton	-	< 1 TON

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected at the level of the mdl **ug/L = ppb** (parts per billion) **mg/L = ppm** (parts per million)
c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **> =** greater than
ntu = Nephelometric Turbidity Unit ***** - Closest Match ****** = Exceeds USEPA Limits **< =** less than
pCi/L = Picocuries per liter

Remarks:
 Corrosivity - None

Report Date: 2/25/14
 (P-3: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5583
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
VOC/EPA 524.2			
pH	6.5-8.5	-	6.8
Potassium	no mcl	.01	14.3
Radium (total)	-	-	nd
Salinity	50	-	LOW
Selenium	.05	.002	nd
Silica	-	-	.5
Silver	1.0	.005	nd
Sodium	50	.01	47.8
Strontium(total)	-	-	nd
Sulfate	250	1.0	46
Tin	-	-	nd
Thallium	2.0	.002	nd
Titanium(total)	-	-	nd
(TDS) Total Dissolved Solids	500	-	662
Turbidity	no mcl	-	< 1 ntu
Uranium (total)	-	-	nd
Vanadium	-	-	nd
Zinc	5.0	.01	nd

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nd = none detected at the level of the mdl **ug/L = ppb** (parts per billion) **mg/L = ppm** (parts per million)
c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **>** = greater than
ntu = Nephelometric Turbidity Unit ***** - Closest Match ****** = Exceeds USEPA Limits **<** = less than
pCi/L = Picocuries per liter

Remarks:

Report Date: 2/25/14
 (P-4: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5583
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
PCB 1061	0.05	nd
PCB 1221	0.79	nd
PCB 1232	0.17	nd
PCB 1242	0.14	nd
PCB 1248	0.089	nd
PCB 1254	0.11	nd
PCB 1260	0.16	nd
PCB 1262	0.19	nd
DDD	0.21	nd
4,4 - DDD	-	nd
DDE	0.13	nd
4,4 – DDE	-	nd
DDT	0.17	nd
4,4 - DDT	-	nd
DTT	-	nd
Alachlor	0.16	nd
Aldrin	0.002	nd
Atrazine	0.26	nd
a-BHC	0.001	nd
b-BHC	0.001	nd
g-BHC	0.001	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/25/14
 (P-5: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5583
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
Chlordane	0.1	nd
Tech Chlordane	-	nd
a-Chlordane	-	nd
b-Chlordane	-	nd
c-Nonachlor	0.009	nd
t-Nonachlor	0.007	nd
Dieldrin	0.008	nd
Endosulfan I	0.18	nd
Endosulfan II	0.21	nd
Endosulfan Sulfate	0.26	nd
Endrin	0.027	nd
Endrin Ketone	-	nd
Endrinaldehyde	0.17	nd
Heptachlor	0.001	nd
Heptachlor Epox	0.002	nd
Hexachlorobenzene	0.001	nd
Hexachlorocyclopentadiene	0.006	nd
Lindane	0.001	nd
Methoxychlor	0.31	nd
Simazine	0.87	nd
Toxaphene	0.78	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/25/14

By: Thomas Mullen

(P-6: 79) 415020

Laboratory Director

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Dan Sheehan
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 WTW Lab Sample #: WTA-5583
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)	
Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
Acetone		0.400	nd
Acrylontrile		0.490	nd
Allyl Chloride		0.480	nd
Benzene (BTEX)	1	0.220	nd
Bromobenzene		0.300	nd
Bromochloromethane		0.460	nd
Bromodichloromethane (THM)		0.310	nd
Bromoform (THM)		0.280	nd
Bromomethane		0.250	nd
Carbon Disulfide		0.370	nd
Carbon Tetrachloride	2	0.340	nd
Chloroacetone		0.380	nd
Chlorobenzene	50	0.230	nd
Chloroethane		0.290	nd
Chloroform (THM)		0.240	nd
Chloromethane		0.300	nd
Chlorotoluene – 2		0.21	nd
Chlorotoluene – 4		0.2	nd
cis-1,2 Dichloroethene	70	0.24	nd
cis-1,3 Dichloropropene		0.230	nd
Dibromochloromethane (THM)		0.290	nd
Dibromomethane		0.120	nd
Dichlorofluoromethane		0.360	1.00ppb
Diethylether		0.480	nd
Ethyl Methacrylate		0.430	nd
Ethylbenzene (BTEX)	700	0.220	nd
Hexachloroethane		0.390	nd
Hexachlorobutadione		0.25	nd

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected **ug/L = ppb** (parts per billion) ****** = Exceeds **USEPA** limits

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5583
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)	
Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
Isopropylbenzene		0.290	nd
m,p – Xylene (BTEX)		0.440	nd
Methacrylonitrile		0.320	nd
Methyl Tertiary Butyl Ether (MTBE)	70	0.290	nd
Methylacrylate		0.320	nd
Methylene Chloride	3	0.320	nd
Methyliodide		0.530	nd
Methylmethacrylate		0.430	nd
n-Butylbenzene		0.25	nd
n-Propylbenzene		0.230	nd
Naphthalene	300	0.17	nd
Nitrobenzene		0.260	nd
o-Xylene (BTEX)		0.350	nd
p-Isopropyltoluene		0.26	nd
p-Xylene		-	nd
Pentachloroethane		0.180	nd
Propionitrile		0.420	nd
sec-Butylbenzene		0.23	nd
Styrene	100	0.380	nd
tert-Butylbenzene		0.42	nd
Tetrachloroethylene (PCE)	1	0.200	nd
Tetrahydrofuran		-	nd
Toluene (BTEX)	1000	0.150	nd
Total Xylenes	1000	0.44	nd
Trans-1,2-Dichloroethane		-	nd
Trans-1,2 - Dichloroethene	100	0.330	nd
Trans-1,3 Dichloropropene		0.280	nd
Trichloroethene		-	nd
Trichloroethylene (TCE)	1	0.360	nd
Trichlorofluoromethane		0.270	nd
Vinyl chloride	2	0.250	nd
1-Chlorobutane		0.440	nd
1,1 - Dichloroethane	50	0.260	nd
1,1 - Dichloroethene	2	0.330	nd
1,1 - Dichloropropene		0.440	nd
1,1 - Dichloropropanone		0.330	nd

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5583
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water Collected by: Owner Analysis: **VOLATILE ORGANIC COMPOUNDS – (VOC)**

Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
1,1,1 Trichloroethane	30	0.210	nd
1,1,1,2 Tetrachloroethane	1	0.180	nd
1,1,2 Trichloroethane	3	0.290	nd
1,1,2,2 Tetrachloroethane	1	0.240	nd
1,2 Dibromo-3-Chloropropane		0.25	nd
1,2 Dibromoethane		0.130	nd
1,2 Dichlorobenzene	600	0.34	nd
1,2 Dichloroethane	2	0.370	nd
1,2 Dichloropropane	5	0.240	nd
1,2,3 Trichlorobenzene		0.26	nd
1,2,3 Trichloropropane		0.150	nd
1,2,4 Trichlorobenzene	9	0.25	nd
1,2,4 Trimethylbenzene		0.23	nd
1,3 Dichlorobenzene	600	0.26	nd
1,3 Dichloropropane		0.250	nd
1,3,5 Trimethylbenzene		0.240	nd
1,4 Dichlorobenzene	75	0.31	nd
2-Butanone		0.350	nd
2-Hexanone		0.380	nd
2-Nitropropane		0.350	nd
2,2 Dichloropropane		0.350	nd
4-Methyl-2-Pentanone		0.450	nd
Library Search- 70	-	-	ntic

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected **ug/L = ppb** (parts per billion) ****** = Exceeds **USEPA** limits
ntic = no tentatively identified compounds

Page 3-3

- Includes: THM's Total and 4 Individual; Chloroform, Benzene, Ethane, Methane; BTEX, and MTBE; TCE and PCE

Remarks:

Report Date: 2/25/14
(P-9: 79) 415020

By: Thomas Mullen
Laboratory Director

DESCRIPTION OF PARAMETERS AND TREATMENT IF NECESSARY:

Coliform Bacteria/E-Coli:

Bacteria such as this and many others are found in all drinking water supplies to a greater or lesser extent. If left untreated they can propagate and form large colony counts and can quickly affect health. In fact the single largest health threat associated with water supplies is infection by bacteria. Total coliform is used as an indicator for general well infection. If a well is found to contain coliform colonies greater than one colony per hundred milliliters of water, it is assumed to be possibly infected by other forms of bacteria and should be disinfected immediately. Some research suggests that certain hard to detect bacteria found in water supplies worldwide, including the US, can lead to serious gastro-intestinal diseases, including ulcers and certain cancers. (See H-pyrol) the EPA, and numerous health agencies recommend that private well water users disinfect the well at least every 2 years. The simplest and cheapest way is by chlorination of the well. Because of the above problems associated with bacterial infection, public water supplies disinfect daily, usually by chlorination, and maintain a chlorine residual of 1-2 parts per million free chlorine.

Taste and Odor:

For private well water users the most common complaint we find is poor taste and sulphur like smell. The most common cause of these problems are also certain forms of bacteria. These include sulphate reducing bacteria, iron related bacteria (IRB), and other forms of H₂S producing bacteria found in many water supplies. The treatment is once again, chlorination of the well, and disinfection of any water treatment systems used. In fact before any watertreatment system is installed; it is recommended that the well be chlorinated first, to eliminate possible contamination of the treatment equipment. For public water consumers, odor and taste complaints are ironically due to the residual chlorine or other disinfection procedures unused by the water supplier.

Iron (Fe):

Iron is a common secondary metal parameter found in many ground water supplies. Unless found in very large amounts, it poses no health risks, but can cause rust staining of fixtures, sidewalks, etc. Iron is usually present as ferrous (non staining), ferric, (rust staining), or both. The most common treatment for iron is water softening, however if large amounts of ferric iron are present, a two tank system is employed, preceded by an acid neutralizer to help precipitate the ferric component.

Manganese (Mn):

Manganese is another common secondary metal parameter found in many drinking water supplies. It also poses no health risks in small amounts, however like Iron; this can also produce brown rust like staining. In large amounts, Manganese can cause discoloration of teeth, and potential bone disorders. The Treatment of Manganese is the same as for Iron.

Lead: (Pb)

Lead is a toxic heavy metal, usually found as a result of degradation of lead based Solder joints. Lead can also be found as a result of lechate from some land fill or industrial sites, but this is less common. In general the older the plumbing system, the more likely lead will be detected. The treatment of the removal of lead can be varied, with reverse osmosis being the most common. In certain cases, depending on the form that lead is present in the water system, activated carbon can be used.

Arsenic: (As)

Arsenic is a toxic heavy metal that can be found to an extent in natural ground formations. It can also be present in water supplies as a result of agricultural runoff, industrial waste pollution, and some pharmaceutical waste pollution. Arsenic can be removed by reverse osmosis filtration, or by arsenic specific treatment systems.

Mercury: (Hg)

Mercury is a toxic heavy metal that can be found in water supplies from a variety of sources. These include industrial waste, medical waste, pesticides, and general land fill operations. Mercury in its pure form as the metal, once ingested, tends to be stored in the body. In many instances Mercury is combined with other molecules that have the effect of reducing its toxicity and making it harder for humans to absorb and store mercury. The treatment for the removal of mercury can be by reverse osmosis, activated carbon, or by specific removal systems.

Sodium,(Na) Calcium, (Ca)

Potassium,(K) Magnesium, (Mg):

All of these metals can be found in ground formations, and hence in water Supplies everywhere. All of these are considered nontoxic secondary Parameters. All can be removed by reverse osmosis, ion exchange, and in the case of Calcium and Magnesium, by water conditioning. Water Conditioners use either Sodium or Potassium to regenerate so if Water softeners aren't maintained, these can become elevated in the treated water.

Other toxic heavy metals (eg, selenium, Thallium, Beryllium, Chromium, etc.):

When any metal is analyzed the results are usually given for the concentration of the total metal in its elemental form. This therefore assumes that if the total metal is present above maximum set levels, the water supply is not safe for consumption unless treated. However it is possible to have certain metals combined in such a way with other molecules that, like Mercury render them less toxic. Luckily the chances of these metals being found in most Potable water sources in the US is low. However the most usual treatment for most of the heavy Metals is the same as above, reverse osmosis, activated carbon, or ion exchange.

Nitrates (NO₃-):

Nitrates can be found in potable water from several sources. The principal ones are, nitrogen containing fertilizers, lechate from septic systems, or run off from agricultural activity. Nitrates are mainly a concern for infants under the age of two. Nitrates can be removed by reverse osmosis or by an anion exchange resin specific for nitrate removal, which functions much like a water conditioner.

pH and Corrosivity:

The pH of potable water varies across the nation. The pH is mainly dependent on the type of geological formation that the ground water is in contact with. A low pH indicates that the water is more acidic, and in extreme cases, pH less than 5.0, can cause a shortening of the life span of metal plumbing and fixtures. (however pH is not the only factor affecting plumbing. The pH is combined with other measurements such as the total dissolved solids (TDS), the total hardness, CaCO₃, and the alkalinity of the water to determine a number called the corrosivity or langlier index. This number is used on a scale from -5 to +5, with 0 being completely non aggressive water. The more negative the number, the more aggressive the water is to Metal plumbing, boiler cores etc. On the other side the more positive the number is the more likely the water will cause scale build up in plumbing. Most waters tend to be acidic, so the corrosivity will most likely be on the - side of the scale. In order to raise the pH, and therefore lower the corrosive nature of the water, an acid neutralizer is commonly used. This consists of a tank filled with calcium carbonate, or lime which dissolves in the water and neutralizes the acid.

Fluoride (F-):

Fluoride can be found in some natural geological formations and therefore in potable water. The most usual cause for fluoride in drinking water is that added to municipal supplies. More recently fluoride has been linked to contamination from some fracking operations. The most common treatment for fluoride is reverse osmosis treatment.

Organics:

The type of contamination most closely associated with causing cancers are the Organic compounds such as Volatile Organics (VOC's) and synthetic organic compounds such as the chlorinated pesticides and poly chlorinated biphenyls (PCB's). Most of these compounds find their way into water supplies as a result of industrial wastes, or through disposal into landfills. Some also contaminate local water supplies as a result of underground tank leakage. Luckily, most chlorinated pesticides and PCB's have not been used in years and are less likely to be found in water supplies today, compared to 25 years ago. Many landfills have been cleaned as a result of the Superfund laws as well, so industrial waste contamination is down. However some industrial solvents and gasoline additives still are found due to processes used today. The Tri Halo Methane's, (THM's) are found in public water supplies due to chlorination treatment for bacteria. There are many ways to remove these from drinking water, but the most effective and cheapest for the home owner remains carbon filtration, or reverse osmosis and carbon filtration.

Remember that a single water test only provides the user with a snap shot of the water being tested. It is best used as a base line to determine changes in a water system. When a priority contaminate such as benzene is found in a public supply system for example, the system is placed on a monitoring program for that contaminant to see if it reduces, remains constant or increases. Then appropriate treatment to remove the contaminant is performed. For the private well user it is best to confirm the presence of any priority contaminant with a second analysis for it within a short period to see if it is still present, and then treat accordingly. Thereafter periodic testing to determine the effectiveness of the treatment is advised.

Keep in mind that the most common contamination is bacteriological requiring at least annual testing for presence and disinfection of private wells at least every 2 years to maintain safe bacteria levels.

Report Date: 2/25/14
(P-12: 79) 415020

By: Thomas Mullen
Laboratory Director

WATER TEST WHOLESALE
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Dan Sheehan
Greener Globe
5009 Southside Ranch Rd
Apt/Suite
Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
Source: Other
Collected by: Owner
WTW Lab Sample #: WTA-5582
WTW Order #: N/A

Date Collected: 1/24/14

Report Date: 2/21/14

LABORATORY REPORT SUMMARY

Comments:

THIS SAMPLE MEETS THE U.S. E.P.A GUIDELINES FOR THE PRIMARY DRINKING WATER PARAMETERS TESTED.

Site Location: Berry Street Landfill-sample ID GW-6

PLEASE SEE THE LAST 3 PAGES OF THIS DOCUMENT WHICH CONTAIN AN INFORMATION FILE WITH EXPLANATIONS OF THE PARAMETERS AND CONTAMINANTS AS WELL AS TREATMENT IF NECESSARY.

(P-1: 79) 415020

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Laboratory Director

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 Rocklin, CA 95677

PARAMETERS FOR TEST #779

Matrix: Water
 Source: Other
 Collected by: Owner
 WTW Lab Sample #: WTA-5582
 WTW Order #: N/A

Date Collected: 1/24/14

Analysis: **INORGANIC CHEMICALS** Report Date: 2/21/14
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

All testing performed using USEPA testing guidelines

Parameter	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
TOTAL COLIFORM BACTERIA	<1/100ml (absent)		nd
E. COLI BACTERIA	<1/100ml (absent)		nd
Alkalinity (total)	no mcl	-	19
Aluminum	0.2	.01	nd
Antimony	.006	.005	nd
Arsenic	0.01	.002	nd
Barium(total)	2.0	0.1	nd
Beryllium	.004	.002	nd
Boron	no mcl	.005	nd
Bromine	-	-	nd
Cadmium(total)	.005	.004	nd
Calcium	no mcl	0.1	98
Cesium(total)	-	-	nd
Chloride	250	.05	12

MCL = Maximum Contaminant Level
nd = none detected at the level of the mdl
ug/L = **ppb** (parts per billion)
mg/L = **ppm** (parts per million)
ntu = Nephelometric Turbidity Unit

MDL = Minimum Detection Level
mho = Reciprocal ohm
ton = Threshold Odor Number
****** Exceeds USEPA Limits
pCi/L = Picocuries per liter

c.u. = Color Unit
> = greater than
< = less than
***** - Closet Match

Remarks:

(P-2:79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5582
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL	MDL	Result
VOC/EPA 524.2	(mg/L)	(mg/L)	(mg/L)
Chromium	0.1	.002	nd
Hexavalent Chromium	no mcl	.002	nd
Color	15.0 c.u.	-	< 1 cu
Conductivity	no mcl	-	594umho's
Copper	1.0	.01	.04
Corrosivity/ Index Langlier	-5 to + 5	-	.46
Fluoride	2.0	0.2	1.15
Hardness (CaCO3)	250	0.5	250
Iodine(total)	-	-	nd
Iron	0.3	.03	nd
Lead	0.01	.002	nd
Magnesium	no mcl	.005	1.8
Manganese	0.05	.01	nd
Mercury	0.002	.002	nd
Molybdenum	no mcl	.002	nd
Nickel	no mcl	.005	nd
Nitrates	-	-	nd
Odor	3 ton	-	< 1 ton

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c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **> =** greater than
ntu = Nephelometric Turbidity Unit ***** - Closest Match ****** = Exceeds USEPA Limits **< =** less than
pCi/L = Picocuries per liter

Remarks:
 Corrosivity - None

Report Date: 2/21/14
 (P-3: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5582
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **INORGANIC CHEMICALS**
HEAVY & SECONDARY METALS
PHYSICAL PROPERTIES

Matrix: Water Collected by: Owner

Parameter/Method	MCL (mg/L)	MDL (mg/L)	Result (mg/L)
VOC/EPA 524.2			
pH	6.5-8.5	-	6.71
Potassium	no mcl	.01	8.9
Radium (total)	-	-	nd
Salinity	50	-	low
Selenium	.05	.002	nd
Silica	-	-	.5
Silver	1.0	.005	nd
Sodium	50	.01	29.7
Strontium(total)	-	-	nd
Sulfate	250	1.0	11
Tin	-	-	nd
Thallium	2.0	.002	nd
Titanium(total)	-	-	nd
(TDS) Total Dissolved Solids	500	-	395
Turbidity	no mcl	-	< 1 ntu
Uranium (total)	-	-	nd
Vanadium	-	-	nd
Zinc	5.0	.01	nd

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c.u. = Color Unit **mho** = Reciprocal ohm **ton** = Threshold Odor Number **>** = greater than
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pCi/L = Picocuries per liter

Remarks:

Report Date: 2/21/14
 (P-4: 79) 415020

By: Thomas Mullen
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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5582
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
PCB 1061	0.05	nd
PCB 1221	0.79	nd
PCB 1232	0.17	nd
PCB 1242	0.14	nd
PCB 1248	0.089	nd
PCB 1254	0.11	nd
PCB 1260	0.16	nd
PCB 1262	0.19	nd
DDD	0.21	nd
4,4 - DDD	-	nd
DDE	0.13	nd
4,4 – DDE	-	nd
DDT	0.17	nd
4,4 - DDT	-	nd
DTT	-	nd
Alachlor	0.16	nd
Aldrin	0.002	nd
Atrazine	0.26	nd
a-BHC	0.001	nd
b-BHC	0.001	nd
g-BHC	0.001	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/21/14
 (P-5: 79) 415020

By: Thomas Mullen
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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5582
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Analysis: **POLY CHLORINATED BI-PHENOLS (PCB)**
PESTICIDES

Matrix: Water Collected by:

Parameter/Method EPA 505	MDL (ug/L)	Result (ug/L)
Chlordane	0.1	nd
Tech Chlordane	-	nd
a-Chlordane	-	nd
b-Chlordane	-	nd
c-Nonachlor	0.009	nd
t-Nonachlor	0.007	nd
Dieldrin	0.008	nd
Endosulfan I	0.18	nd
Endosulfan II	0.21	nd
Endosulfan Sulfate	0.26	nd
Endrin	0.027	nd
Endrin Ketone	-	nd
Endrinaldehyde	0.17	nd
Heptachlor	0.001	nd
Heptachlor Epox	0.002	nd
Hexachlorobenzene	0.001	nd
Hexachlorocyclopentadiene	0.006	nd
Lindane	0.001	nd
Methoxychlor	0.31	nd
Simazine	0.87	nd
Toxaphene	0.78	nd

Maximum Contaminant Level

MDL = Minimum Detection Level

nd = none detected

ug/L = ppb (parts per billion)

* - Closest Match

Report Date: 2/21/14
 (P-6: 79) 415020

By: Thomas Mullen
 Laboratory Director

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Dan Sheehan
 Greener Globe
 WTW Lab Sample #: WTA-5582
 WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)		
Parameter/Method	MCL	MDL	Results	
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)	
Acetone		0.400	nd	
Acrylontrile		0.490	nd	
Allyl Chloride		0.480	nd	
Benzene (BTEX)	1	0.220	nd	
Bromobenzene		0.300	nd	
Bromochloromethane		0.460	nd	
Bromodichloromethane (THM)		0.310	nd	
Bromoform (THM)		0.280	nd	
Bromomethane		0.250	nd	
Carbon Disulfide		0.370	nd	
Carbon Tetrachloride	2	0.340	nd	
Chloroacetone		0.380	nd	
Chlorobenzene	50	0.230	nd	
Chloroethane		0.290	nd	
Chloroform (THM)		0.240	nd	
Chloromethane		0.300	nd	
Chlorotoluene – 2		0.21	nd	
Chlorotoluene – 4		0.2	nd	
cis-1,2 Dichloroethene	70	0.24	nd	
cis-1,3 Dichloropropene		0.230	nd	
Dibromochloromethane (THM)		0.290	nd	
Dibromomethane		0.120	nd	
Dichloroflouromethane		0.360	nd	
Diethylether		0.480	nd	
Ethyl Methacrylate		0.430	nd	
Ethylbenzene (BTEX)	700	0.220	nd	
Hexachloroethane		0.390	nd	
Hexachlorobutadione		0.25	nd	

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
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WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5582
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water	Collected by: Owner	Analysis: VOLATILE ORGANIC COMPOUNDS – (VOC)	
Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
Isopropylbenzene		0.290	nd
m,p – Xylene (BTEX)		0.440	nd
Methacrylonitrile		0.320	nd
Methyl Tertiary Butyl Ether (MTBE)	70	0.290	nd
Methylacrylate		0.320	nd
Methylene Chloride	3	0.320	nd
Methyliodide		0.530	nd
Methylmethacrylate		0.430	nd
n-Butylbenzene		0.25	nd
n-Propylbenzene		0.230	nd
Naphthalene	300	0.17	nd
Nitrobenzene		0.260	nd
o-Xylene (BTEX)		0.350	nd
p-Isopropyltoluene		0.26	nd
p-Xylene		-	nd
Pentachloroethane		0.180	nd
Propionitrile		0.420	nd
sec-Butylbenzene		0.23	nd
Styrene	100	0.380	nd
tert-Butylbenzene		0.42	nd
Tetrachloroethylene (PCE)	1	0.200	nd
Tetrahydrofuran		-	nd
Toluene (BTEX)	1000	0.150	nd
Total Xylenes	1000	0.44	nd
Trans-1,2-Dichloroethane		-	nd
Trans-1,2 - Dichloroethene	100	0.330	nd
Trans-1,3 Dichloropropene		0.280	nd
Trichloroethene		-	nd
Trichloroethylene (TCE)	1	0.360	nd
Trichlorofluoromethane		0.270	nd
Vinyl chloride	2	0.250	nd
1-Chlorobutane		0.440	nd
1,1 - Dichloroethane	50	0.260	nd
1,1 - Dichloroethene	2	0.330	nd
1,1 - Dichloropropene		0.440	nd
1,1 - Dichloropropanone		0.330	nd

WATER TEST WHOLESALE

Dan Sheehan
Greener Globe
WTW Lab Sample #: WTA-5582
WTW Order #: N/A

ADDITIONAL PARAMETERS FOR TEST #779

Matrix: Water Collected by: Owner Analysis: **VOLATILE ORGANIC COMPOUNDS – (VOC)**

Parameter/Method	MCL	MDL	Results
VOC/EPA 524.2	(ug/L)	(ug/L)	(ug/L)
1,1,1 Trichloroethane	30	0.210	nd
1,1,1,2 Tetrachloroethane	1	0.180	nd
1,1,2 Trichloroethane	3	0.290	nd
1,1,2,2 Tetrachloroethane	1	0.240	nd
1,2 Dibromo-3-Chloropropane		0.25	nd
1,2 Dibromoethane		0.130	nd
1,2 Dichlorobenzene	600	0.34	nd
1,2 Dichloroethane	2	0.370	nd
1,2 Dichloropropane	5	0.240	nd
1,2,3 Trichlorobenzene		0.26	nd
1,2,3 Trichloropropane		0.150	nd
1,2,4 Trichlorobenzene	9	0.25	nd
1,2,4 Trimethylbenzene		0.23	nd
1,3 Dichlorobenzene	600	0.26	nd
1,3 Dichloropropane		0.250	nd
1,3,5 Trimethylbenzene		0.240	nd
1,4 Dichlorobenzene	75	0.31	nd
2-Butanone		0.350	nd
2-Hexanone		0.380	nd
2-Nitropropane		0.350	nd
2,2 Dichloropropane		0.350	nd
4-Methyl-2-Pentanone		0.450	nd
Library Search- 70	-	-	ntic

MCL = Maximum Contaminant Level **MDL** = Minimum Detection Level
nd = none detected **ug/L = ppb** (parts per billion) ****** = Exceeds **USEPA** limits
ntic = no tentatively identified compounds

Page 3-3

- Includes: THM's Total and 4 Individual; Chloroform, Benzene, Ethane, Methane; BTEX, and MTBE; TCE and PCE

Remarks:

Report Date: 2/21/14
(P-9: 79) 415020

By: Thomas Mullen
Laboratory Director

DESCRIPTION OF PARAMETERS AND TREATMENT IF NECESSARY:

Coliform Bacteria/E-Coli:

Bacteria such as this and many others are found in all drinking water supplies to a greater or lesser extent. If left untreated they can propagate and form large colony counts and can quickly affect health. In fact the single largest health threat associated with water supplies is infection by bacteria. Total coliform is used as an indicator for general well infection. If a well is found to contain coliform colonies greater than one colony per hundred milliliters of water, it is assumed to be possibly infected by other forms of bacteria and should be disinfected immediately. Some research suggests that certain hard to detect bacteria found in water supplies worldwide, including the US, can lead to serious gastro-intestinal diseases, including ulcers and certain cancers. (See H-pyrol) the EPA, and numerous health agencies recommend that private well water users disinfect the well at least every 2 years. The simplest and cheapest way is by chlorination of the well. Because of the above problems associated with bacterial infection, public water supplies disinfect daily, usually by chlorination, and maintain a chlorine residual of 1-2 parts per million free chlorine.

Taste and Odor:

For private well water users the most common complaint we find is poor taste and sulphur like smell. The most common cause of these problems are also certain forms of bacteria. These include sulphate reducing bacteria, iron related bacteria (IRB), and other forms of H₂S producing bacteria found in many water supplies. The treatment is once again, chlorination of the well, and disinfection of any water treatment systems used. In fact before any watertreatment system is installed; it is recommended that the well be chlorinated first, to eliminate possible contamination of the treatment equipment. For public water consumers, odor and taste complaints are ironically due to the residual chlorine or other disinfection procedures unused by the water supplier.

Iron (Fe):

Iron is a common secondary metal parameter found in many ground water supplies. Unless found in very large amounts, it poses no health risks, but can cause rust staining of fixtures, sidewalks, etc. Iron is usually present as ferrous (non staining), ferric, (rust staining), or both. The most common treatment for iron is water softening, however if large amounts of ferric iron are present, a two tank system is employed, preceded by an acid neutralizer to help precipitate the ferric component.

Manganese (Mn):

Manganese is another common secondary metal parameter found in many drinking water supplies. It also poses no health risks in small amounts, however like Iron; this can also produce brown rust like staining. In large amounts, Manganese can cause discoloration of teeth, and potential bone disorders. The Treatment of Manganese is the same as for Iron.

Lead: (Pb)

Lead is a toxic heavy metal, usually found as a result of degradation of lead based Solder joints. Lead can also be found as a result of lechate from some land fill or industrial sites, but this is less common. In general the older the plumbing system, the more likely lead will be detected. The treatment of the removal of lead can be varied, with reverse osmosis being the most common. In certain cases, depending on the form that lead is present in the water system, activated carbon can be used.

Arsenic: (As)

Arsenic is a toxic heavy metal that can be found to an extent in natural ground formations. It can also be present in water supplies as a result of agricultural runoff, industrial waste pollution, and some pharmaceutical waste pollution. Arsenic can be removed by reverse osmosis filtration, or by arsenic specific treatment systems.

Mercury: (Hg)

Mercury is a toxic heavy metal that can be found in water supplies from a variety of sources. These include industrial waste, medical waste, pesticides, and general land fill operations. Mercury in its pure form as the metal, once ingested, tends to be stored in the body. In many instances Mercury is combined with other molecules that have the effect of reducing its toxicity and making it harder for humans to absorb and store mercury. The treatment for the removal of mercury can be by reverse osmosis, activated carbon, or by specific removal systems.

Sodium,(Na) Calcium, (Ca)

Potassium,(K) Magnesium, (Mg):

All of these metals can be found in ground formations, and hence in water Supplies everywhere. All of these are considered nontoxic secondary Parameters. All can be removed by reverse osmosis, ion exchange, and in the case of Calcium and Magnesium, by water conditioning. Water Conditioners use either Sodium or Potassium to regenerate so if Water softeners aren't maintained, these can become elevated in the treated water.

Other toxic heavy metals (eg, selenium, Thallium, Beryllium, Chromium, etc.):

When any metal is analyzed the results are usually given for the concentration of the total metal in its elemental form. This therefore assumes that if the total metal is present above maximum set levels, the water supply is not safe for consumption unless treated. However it is possible to have certain metals combined in such a way with other molecules that, like Mercury render them less toxic. Luckily the chances of these metals being found in most Potable water sources in the US is low. However the most usual treatment for most of the heavy Metals is the same as above, reverse osmosis, activated carbon, or ion exchange.

Nitrates (NO₃-):

Nitrates can be found in potable water from several sources. The principal ones are, nitrogen containing fertilizers, lechate from septic systems, or run off from agricultural activity. Nitrates are mainly a concern for infants under the age of two. Nitrates can be removed by reverse osmosis or by an anion exchange resin specific for nitrate removal, which functions much like a water conditioner.

pH and Corrosivity:

The pH of potable water varies across the nation. The pH is mainly dependent on the type of geological formation that the ground water is in contact with. A low pH indicates that the water is more acidic, and in extreme cases, pH less than 5.0, can cause a shortening of the life span of metal plumbing and fixtures. (however pH is not the only factor affecting plumbing. The pH is combined with other measurements such as the total dissolved solids (TDS), the total hardness, CaCO₃, and the alkalinity of the water to determine a number called the corrosivity or langlier index. This number is used on a scale from -5 to +5, with 0 being completely non aggressive water. The more negative the number, the more aggressive the water is to Metal plumbing, boiler cores etc. On the other side the more positive the number is the more likely the water will cause scale build up in plumbing. Most waters tend to be acidic, so the corrosivity will most likely be on the - side of the scale. In order to raise the pH, and therefore lower the corrosive nature of the water, an acid neutralizer is commonly used. This consists of a tank filled with calcium carbonate, or lime which dissolves in the water and neutralizes the acid.

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Fluoride can be found in some natural geological formations and therefore in potable water. The most usual cause for fluoride in drinking water is that added to municipal supplies. More recently fluoride has been linked to contamination from some fracking operations. The most common treatment for fluoride is reverse osmosis treatment.

Organics:

The type of contamination most closely associated with causing cancers are the Organic compounds such as Volatile Organics (VOC's) and synthetic organic compounds such as the chlorinated pesticides and poly chlorinated biphenyls (PCB's). Most of these compounds find their way into water supplies as a result of industrial wastes, or through disposal into landfills. Some also contaminate local water supplies as a result of underground tank leakage. Luckily, most chlorinated pesticides and PCB's have not been used in years and are less likely to be found in water supplies today, compared to 25 years ago. Many landfills have been cleaned as a result of the Superfund laws as well, so industrial waste contamination is down. However some industrial solvents and gasoline additives still are found due to processes used today. The Tri Halo Methane's, (THM's) are found in public water supplies due to chlorination treatment for bacteria. There are many ways to remove these from drinking water, but the most effective and cheapest for the home owner remains carbon filtration, or reverse osmosis and carbon filtration.

Remember that a single water test only provides the user with a snap shot of the water being tested. It is best used as a base line to determine changes in a water system. When a priority contaminate such as benzene is found in a public supply system for example, the system is placed on a monitoring program for that contaminant to see if it reduces, remains constant or increases. Then appropriate treatment to remove the contaminant is performed. For the private well user it is best to confirm the presence of any priority contaminant with a second analysis for it within a short period to see if it is still present, and then treat accordingly. Thereafter periodic testing to determine the effectiveness of the treatment is advised.

Keep in mind that the most common contamination is bacteriological requiring at least annual testing for presence and disinfection of private wells at least every 2 years to maintain safe bacteria levels.

Report Date: 2/21/14
(P-12: 79) 415020

By: Thomas Mullen
Laboratory Director