

# CITY OF MAYWOOD WATER QUALITY ASSESSMENT

## CITY OF MAYWOOD LOS ANGELES COUNTY, CALIFORNIA



*Prepared for:*

**Maywood Mutual Water Company #1**

**Maywood Mutual Water Company #2**

**Maywood Mutual Water Company #3**

*Prepared by:*



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**December 15, 2010**

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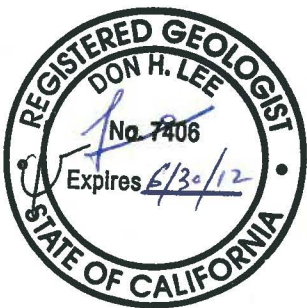
Maywood Mutual Water Company #3

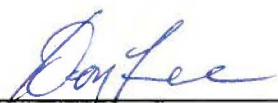
December 15, 2010


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# TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>1.0 INTRODUCTION.....</b>                           | <b>2</b>  |
| 1.1 PURPOSE OF STUDY .....                             | 2         |
| <b>2.0 CITY OF MAYWOOD WATER SOURCES.....</b>          | <b>4</b>  |
| 2.1 SOURCES OF CITY WATER .....                        | 4         |
| 2.2 MANGANESE LEVELS.....                              | 4         |
| 2.3 MANGANESE CONTRIBUTION BY SOURCE .....             | 5         |
| 2.4 SURROUNDING COMMUNITIES .....                      | 6         |
| <b>3.0 WATER QUALITY IMPROVEMENT OPTIONS.....</b>      | <b>7</b>  |
| <b>3.1 MAYWOOD MUTUAL WATER COMPANY #1 .....</b>       | <b>7</b>  |
| 3.1.1 Short Term Measure .....                         | 7         |
| 3.1.2 Long Term Approaches .....                       | 7         |
| <b>3.2 MAYWOOD MUTUAL WATER COMPANY #2 .....</b>       | <b>8</b>  |
| 3.2.1 Short Term Measure .....                         | 8         |
| 3.2.2 Long Term Approaches .....                       | 8         |
| <b>3.3 MAYWOOD MUTUAL WATER COMPANY #3 .....</b>       | <b>8</b>  |
| 3.3.1 Short Term Measure .....                         | 9         |
| 3.3.2 Long Term Approaches .....                       | 9         |
| 3.3.3 Perchlorate.....                                 | 9         |
| <b>4.0 MANGANESE AND TCE REMOVAL TECHNOLOGIES.....</b> | <b>10</b> |
| 4.1 MANGANESE REMOVAL .....                            | 10        |
| 4.2 TCE REMOVAL .....                                  | 10        |
| <b>5.0 POTENTIAL FUNDING SOURCES.....</b>              | <b>13</b> |

## TABLES

|         |   |
|---------|---|
| Table 1 | Sources and the Approximate Amount of Water Served to the City of Maywood in 2009 |
| Table 2 | Average Manganese Levels in Maywood Water Sources in 2009                         |
| Table 3 | Manganese Contribution from Maywood Water Sources in 2009                         |
| Table 4 | TCE Levels in Maywood Mutual Water Company #3 Water Sources in 2009               |
| Table 5 | Potential Funding Sources   |

## FIGURE

|          |            |
|----------|------------|
| Figure 1 | Study Area |
|----------|------------|

## APPENDICES

|            |  |
|------------|--|
| Appendix A | Water System Information   |
| Appendix B | Manganese, TCE, and Perchlorate Concentrations   |
| Appendix C | Manganese and TCE Concentrations in Public Water Supply in Communities<br>Within a 20-Mile Radius of City of Maywood |
| Appendix D | Chemical Oxidation Reaction Vessels and Pressure Filter Schematics   |

# 1.0 INTRODUCTION

This report presents the results of a City of Maywood drinking water quality study conducted by GeoTrans Inc., a Tetra Tech Company, at the request of Maywood Mutual Water Company #1, Maywood Mutual Water Company #2, and Maywood Mutual Water Company #3 (the Maywood mutuals), the three public water systems that serve the City of Maywood in Los Angeles County, California.

On October 11, 2009, the California Assembly passed a bill, Assembly Bill No. 890 (AB 890), requiring the public water systems serving the City of Maywood to conduct a study on the City of Maywood's water supply and address the impacts of manganese. The public water systems serving the City of Maywood have not been found to date to exceed federal and state primary drinking water standards, and therefore, not in violation of their permits. However, a number of Maywood's water source wells have manganese concentrations that are above the Secondary Maximum Contaminant Level (SMCL) of 50 micrograms per liter (ug/L or parts per billion). Manganese concentrations greater than this level is undesirable because it causes a rusty appearance, poor taste, and causes a discoloration of plumbing and laundry. The manganese problems have affected consumer acceptance of water resources. The goal of AB 890 is to determine the extent of manganese impact in the City of Maywood's drinking water and the potential actions needed to address the situation. AB 890 specifies that a study be conducted to identify the sources of manganese and the immediate and long term infrastructure improvements that can be considered to reduce levels of the manganese and other contaminants, and bring the water to the same standards as that of nearby neighborhoods. AB 890 also specifies information on funding that can be pursued by the public water systems to fund those improvements.

## 1.1 PURPOSE OF STUDY

The purpose of this study is to conduct a review of available data, identify potential sources of manganese, evaluate the extent of manganese impact in the City of Maywood's public drinking water supply, and present potential course of actions that the public water systems can consider to mitigate the water quality concerns. The study objectives, as set forth in AB 890, are to obtain the following:

- Testing information and results for manganese from City of Maywood drinking water sources;
- The amount of manganese being contributed by each water source that serves the city;
- Immediate and long-term steps that can be taken by the public water systems to reduce the amount of manganese in the drinking water supply to be at least as low as a level that is consistent with the average level in communities within a 20-mile radius of the City of Maywood;
- Infrastructure improvements that can be made to reach the immediate and long-term goals to reduce the level of manganese and other contaminants in the water to be consistent with the average level in communities within a 20-mile radius of the City of Maywood; and
- Actions that the public water systems can take to pursue funding in order to achieve those improvements.

This report presents a summary of the study findings and potential actions that the Maywood mutuls may consider for water quality improvement.

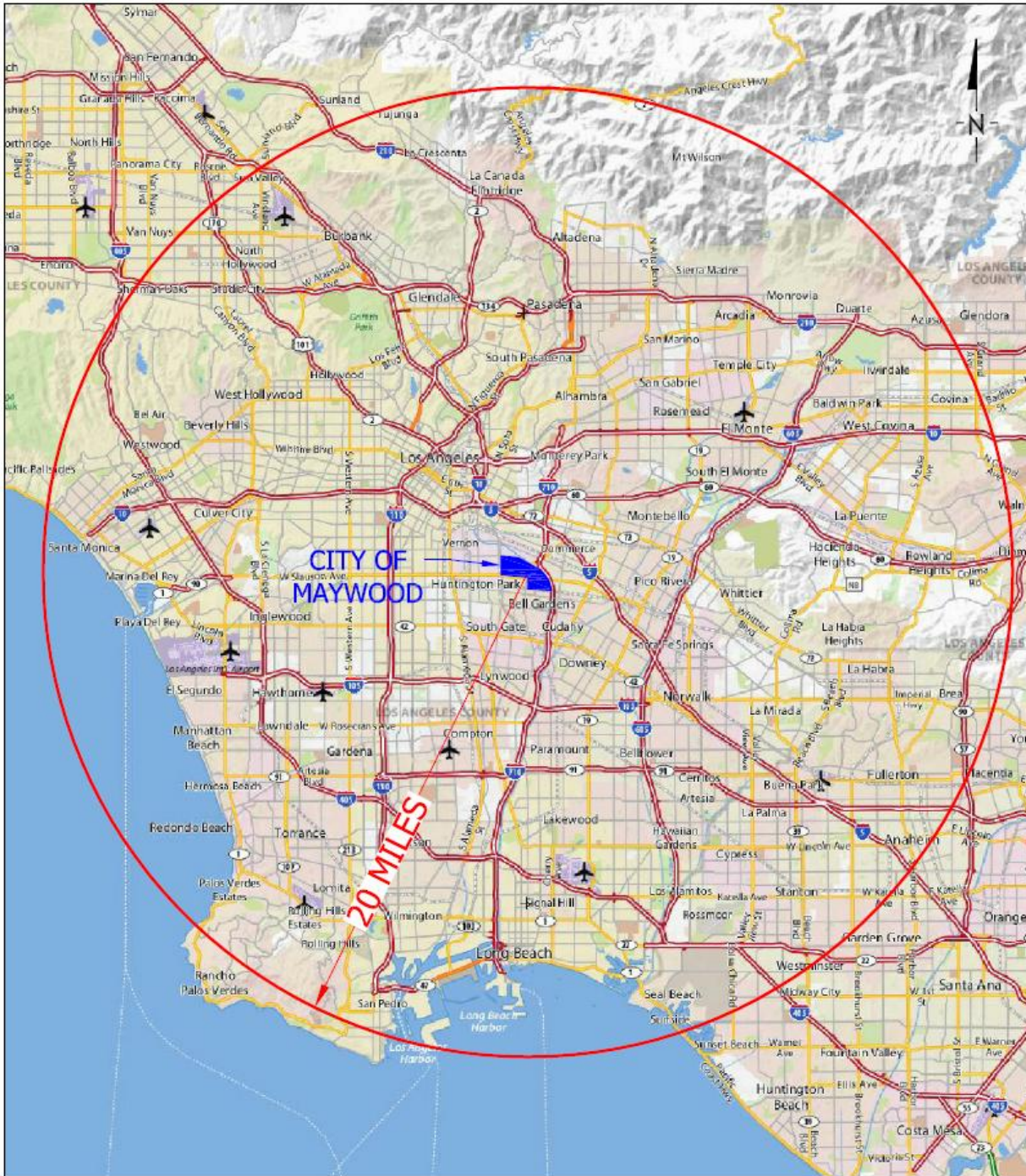


Figure 1. Study Area

## 2.0 CITY OF MAYWOOD WATER SOURCES

The sources of the City of Maywood's water, the amount of water supplied, and manganese contribution in 2009 are summarized in this section.

### 2.1 SOURCES OF CITY WATER

| Source                       |  | Amount of Water Served to the City of Maywood (Acre-Feet) | %          |
|------------------------------|--|---|------------|
| Maywood Mutual Water Co. #1* | Well #3                                | 91  | 4          |
|                              | Well #4                                | 136   | 6          |
|                              | CBMWD (imported water)                 | 12  | 1          |
| Maywood Mutual Water Co. #2  | Maywood Avenue Well (Well #1)          | 747   | 35         |
|                              | 52 <sup>nd</sup> Street Well (Well #2) | 397   | 18         |
|                              | CBMWD (imported water)                 | 0   | 0          |
| Maywood Mutual Water Co. #3  | Prospect Well (Well #1)                | 371   | 17         |
|                              | Warehouse Well (Well #7)               | 228   | 11         |
|                              | District Well (Well #4)                | 173   | 8          |
| <b>Total</b>                 |  | <b>2155</b>   | <b>100</b> |

**Table 1.** Sources and the Approximate Amount of Water Served to the City of Maywood in 2009 (January to December 2009).

Data Source: Maywood mutuals.

\* July 2009 to June 2010 period for Maywood Mutual Water Co. #1.

CBMWD – Central Basin Municipal Water District; imported surface water.

Maywood Mutual Water Company #1 produced a total of approximately 795 acre-feet of water in fiscal year 2009 (July 2009 to June 2010), of which approximately 30% (239 acre-feet) was served to the City of Maywood, according to the Maywood Mutual Water Company #1.

Maywood Mutual Water Company #2 produced a total of approximately 1,179 acre-feet of water in 2009, of which approximately 97% (1,144 acre-feet) was served to the City of Maywood, according to the Maywood Mutual Water Company #2.

Maywood Mutual Water Company #3 produced a total of approximately 1,502 acre-feet of water in 2009, of which approximately 52% (772 acre-feet) was supplied to customers in the City of Maywood, according to the Maywood Mutual Water Company #3.

A description of the three Maywood mutuals' existing water system including a copy of 2009 consumer confidence reports (CCR) are provided in Appendix A.

### 2.2 MANGANESE LEVELS

Water Replenishment District of Southern California (WRD) collected water samples from the supply wells on a monthly or quarterly basis, as required by Title 22 sampling requirements in 2009. Additional water sampling and manganese testing is conducted by the Maywood mutuals. Collected water samples are obtained directly from the well discharge prior to any treatment. Collected water samples are analyzed for manganese either by EPA Method 200.7 or 200.8 at a State of California certified laboratories. The manganese results from the California Department of Public Health (CDPH) database are included in Appendix B, and are summarized below.

|                            | Water Source                      | Number of Samples | Manganese Concentration (ug/L) |             |
|----------------------------|-----------------------------------|-------------------|--------------------------------|-------------|
|                            |                                   |                   | Average                        | Range       |
| Maywood Mutual Water Co.#1 | Well #3                           | 21                | 13.9                           | ND(20) – 70 |
|                            | Well #4                           | 17                | 82.2                           | 69 - 110    |
|                            | CBMWD (imported water)            | NA                | ND(20)                         | ND(20)      |
| Maywood Mutual Water Co.#2 | Maywood Avenue Well (#1)          | 63                | 61.7                           | 51 - 93     |
|                            | 52 <sup>nd</sup> Street Well (#2) | 64                | 73.3                           | 45 - 150    |
|                            | CBMWD (imported water)            | 0                 | -                              | -           |
| Maywood Mutual Water Co.#3 | Prospect Well                     | 1                 | ND(20)*                        | ND(20)*     |
|                            | Warehouse Well                    | 1                 | ND(20)*                        | ND(20)*     |
|                            | District Well                     | 1                 | 26*                            | 26*         |

**Table 2. Average Manganese Levels in Maywood Water Sources in 2009.**

Data Sources: CDPH water quality database. Manganese data for CBMWD water was obtained from the 2009 CCR for Maywood Mutual Water Co.#1.

ND(20) - Not detected above the reporting limit indicated

\*4/24/2008 sample results. Not sampled in 2009.

The average manganese concentration greater than the SMCL of 50 ug/L was identified in three wells (Well #4 at 82.2 ug/L, Maywood Avenue Well at 61.7 ug/L, and 52<sup>nd</sup> Street Well at 73.3 ug/L).

### 2.3 MANGANESE CONTRIBUTION BY SOURCE

The amount of manganese contributed from each source of water for the City of Maywood in 2009 was estimated using the water production and manganese concentration data. The results are presented below.

|                            | Source                       | Amount of Water Served to the City of Maywood (Acre-Feet) | Average Manganese Concentration (ug/L) | Amount of Manganese Contributed from Each Source |            |
|----------------------------|------------------------------|---|--|--|------------|
|                            |                              |   |  | (lbs/day)  | (%)        |
| Maywood Mutual Water Co.#1 | Well #3                      | 91  | 13.9                                   | 0.01   | 1          |
|                            | Well #4                      | 136   | 82.2                                   | 0.08   | 11         |
|                            | CBMWD (imported water)       | 12  | ND(20)                                 | <0.01  | <1         |
| Maywood Mutual Water Co.#2 | Maywood Avenue Well          | 747   | 61.7                                   | 0.34   | 45         |
|                            | 52 <sup>nd</sup> Street Well | 397   | 73.3                                   | 0.22   | 29         |
|                            | CBMWD (imported water)       | 0   | -                                      | 0  | 0          |
| Maywood Mutual Water Co.#3 | Prospect Well                | 371   | ND(20)*                                | 0.03   | 4          |
|                            | Warehouse Well               | 228   | ND(20)*                                | 0.02   | 3          |
|                            | District Well                | 173   | 26*                                    | 0.05   | 7          |
| <b>Total</b>               |                              | <b>2155</b>   | <b>-</b>                               | <b>0.75</b>                                      | <b>100</b> |

**Table 3. Manganese Contribution from Maywood Water Sources in 2009.**

Data Sources: CDPH water quality database. Manganese data for CBMWD water was obtained from the 2009 CCR for Maywood Mutual Water Co.#1. Production data provided by the mutuals.

ND(20) - Not detected above the reporting limit indicated.

\*4/24/2008 sample results. Not sampled in 2009.

For non-detect results, an estimated value of 10 ug/L, a half of the laboratory reporting limit, was used for calculation purposes.

In 2009, approximately 74% of the total manganese mass originated from two wells (Maywood Avenue Well at 45% and 52<sup>nd</sup> Street Well at 29%). The other water sources contributed significantly less. Manganese contribution by water providers, Maywood Mutual Water Company #1, Maywood Mutual Water Company #2, and Maywood Mutual Water Company #3 were approximately 12%, 74%, and 14%, respectively, in 2009.

## **2.4 SURROUNDING COMMUNITIES**

Manganese data published in the 2009 CCRs for the communities located within a 20-mile radius of the City of Maywood were reviewed to determine the manganese levels in their drinking water.

Based on the available data from a total of 113 water providers in 2009, the average manganese concentration for the communities within a 20-mile radius of Maywood (not including Maywood mutuels) is 13.7 µg/L (which is below the manganese reporting limit of 20 µg/L). Manganese was reported as not detected at a reporting limit of 20 µg/L in approximately 88% of the CCRs. A summary of the manganese data for the surrounding communities is included in Appendix C.



## 3.0 WATER QUALITY IMPROVEMENT OPTIONS

A description of the options that Maywood mutuals may consider to reduce the amount of manganese in the drinking water supply is presented in this section. The goal is for the manganese concentrations to be at least as low as a level consistent with the average concentration in communities within a 20-mile radius of the City of Maywood (e.g., 13.7 µg/L or less than the detection limit of 20 µg/L).

### 3.1 MAYWOOD MUTUAL WATER COMPANY #1

Well #4 in the Maywood Mutual Water Company #1 system has levels of manganese over the SMCL. The remaining Well #3 and the Central Basin Municipal Water District (CBMWD) imported surface water sources have lower manganese levels.

#### 3.1.1 Short Term Measure

A short term measure is limiting the use of Well #4 and blending Well #4 water with Well #3 and/or CBMWD water. Maywood Mutual Water Company #1 has submitted a Blending Plan (Appendix A) to CDPH for approval to blend to 80% (40 µg/L) of the manganese SMCL and has been blending Well #3 and Well #4 water since fall of 2009. The manganese concentrations in the blended water ranged from less than the detection limit of 20 µg/L to 40 µg/L (Appendix A) in the distribution pipeline within the City of Maywood. In order to meet the AB 890 requirements (13.7 µg/L or less than the laboratory reporting limit of 20 µg/L) additional blending would be required at a higher cost. However, existing facilities are adequate to meet the blending requirements.

#### 3.1.2 Long Term Approaches

Long term approaches to the system include the following:

- Modify existing wells or install new wells to produce from aquifers or water-bearing units that have low manganese levels; and/or
- Treat existing water sources.

In 2010 WRD began well profiling of Well #4 to determine whether aquifers low in manganese concentrations are present and whether the zones that have high manganese concentrations can be sealed off. The well profiling results are being reviewed by WRD for further action. Alternatively, install a replacement well completed in aquifers low in manganese concentrations, if feasible. This option requires further investigation.

The other long term approach is to install a manganese removal plant to treat the water from Well #4. Maywood Mutual Water Company #1 has applied for several grants including the Safe Drinking Water State Revolving Fund in the amount of \$2.4 million to build a treatment plant at Well #4, along with a new storage reservoir. According to CDPH, this project is on the 2010-2011 Fundable List and may receive a funding agreement by June 30, 2011. Manganese levels at Well #4 can be reduced to below the AB 890 requirements with available treatment technology such as oxidation followed by filtration.

### 3.2 MAYWOOD MUTUAL WATER COMPANY #2

Maywood Avenue Well (61.7 µg/L) and 52<sup>nd</sup> Street Well (73.3 µg/L) in the Maywood Mutual Water Company #2 system have levels of manganese over the SMCL. The CBMWD source has lower manganese levels and is available but was not used in 2009.

Maywood Mutual Water Company #2 is completing construction and testing of a manganese removal system at the 52<sup>nd</sup> Street site. Once the system is tested and permitted manganese from this well will be below the AB 890 levels. The capacity of the treatment plant is 1,100 gpm.

#### 3.2.1 Short Term Measure

The short term plan is to operate the 52<sup>nd</sup> Street treatment plant. Maywood Avenue Well water is available to blend with the treated 52<sup>nd</sup> Street water to produce water at 80% below the SMCL for manganese, if necessary. In order to meet AB 890 requirements significantly more blending will be required at an additional operational expense.

#### 3.2.2 Long Term Approaches

The long term solution to the problem is to pipe Maywood Avenue Well water to the 52<sup>nd</sup> Street site for treatment, if feasible. A dedicated pipeline of approximately 6,000 linear feet of 10-inch pipe would be required. The capacity of the existing plant would also need to be increased. Estimated cost for these improvements would be in the order of \$1 to 1.5 million. Alternatively investigate whether the Maywood Avenue Well can be modified or a new replacement well can be installed to produce from aquifers that have low manganese levels, if appropriate.

### 3.3 MAYWOOD MUTUAL WATER COMPANY #3

The manganese levels in the Maywood Mutual Water Company #3 wells were below AB 890 standards.

In addition to manganese, available water quality data were reviewed to determine whether “other contaminants” of concern were present in the City of Maywood water sources. AB 890 indicated that “other contaminants,” if present, be addressed in the water quality study.

The trichloroethene (TCE) analytical data from the CDPH database are included in Appendix A, and are summarized below.

|                                 | Water Source             | Number of Samples | TCE Concentration (ug/L) |         |
|---------------------------------|--------------------------|-------------------|--------------------------|---------|
|                                 |                          |                   | Average                  | Range   |
| Maywood Mutual Water Company #3 | Prospect Well (Well #1)  | 4                 | 2.7                      | 1.8-4.5 |
|                                 | District Well (Well #4)  | 1                 | ND(0.5)                  | ND(0.5) |
|                                 | Warehouse Well (Well #7) | 4                 | 3.5                      | 2.8-4.2 |

**Table 4.** TCE Levels in Maywood Mutual Water Company #3 Water Sources in 2009. The wells were sampled by WRD quarterly in 2009 and TCE was analyzed by EPA Method 524.2 at the State of California certified laboratories.

Trichloroethene (TCE) levels in the Prospect Well and Warehouse Well were found to be as high as approximately 80 to 90% of the Primary MCL of 5 µg/L in 2009. The water production from

Prospect Well was lowered from 48.1% of the system total in 2009 to 19.6% in 2010 due to concerns with TCE.

Additionally TCE data for communities located within a 20-mile radius of the City of Maywood were reviewed to determine the TCE levels in their drinking water. Based on data from a total of 113 water providers in 2009, the average TCE concentration for a 20-mile radius area is 0.47 µg/L (which is below the TCE laboratory reporting limit of 0.5 µg/L). TCE was reported as not detected or less than the reporting limit of 0.5 µg/L in approximately 85% of the CCRs. A summary of the manganese data for the surrounding communities is included in Appendix C.

### **3.3.1 Short Term Measure**

On a short term basis the Maywood Mutual Water Company #3 has reduced its use of the Prospect well and is blending this water with other sources. This option can reduce the TCE concentration to within 80% (4.0 µg/L) of the MCL, but not to the AB 890 level (0.47 µg/L, or less than the TCE laboratory reporting limit of 0.5 µg/L).

### **3.3.2 Long Term Approaches**

Long term approaches to the problem need to be investigated. They include the following:

- Modify existing wells by sealing off sections that are producing the TCE, if appropriate. Estimated cost for well modifications would be in the order of \$250,000;
- Install a TCE removal plant at the Prospect Well or Warehouse Well. Estimated cost to construct a treatment plant would be in the order of \$1 million; and/or
- Install new wells to produce from aquifers or water-bearing units that do not produce TCE. Estimated cost for new wells would be in the order of \$1.5 million.

### **3.3.3 Perchlorate**

Perchlorate was detected at a concentration of 4.1 µg/L in a Warehouse Well water sample on 2/11/2009; however perchlorate has not been detected since. The perchlorate level is below the perchlorate Primary MCL of 6.0 ug/L. Perchlorate was not detected in the other two Maywood Mutual Water Company #3 wells. A summary table of perchlorate analytical data is included in Appendix B.

## 4.0 MANGANESE AND TCE REMOVAL TECHNOLOGIES

### 4.1 MANGANESE REMOVAL

Manganese can be present in water in one of three basic forms: dissolved, particulate and colloidal. The predominance of one form over another is dependent on the pH of the water source. The most common treatment methods for removing manganese include:

- Chemical oxidation and pressure filtration; and
- Adsorption onto ion exchange resins.

Oxidation involves the addition of an oxidizing agent to the water which chemically reacts with the manganese to form a precipitate and insoluble particles. These particles can then be physically filtered out through pressure media. Oxidation can be accomplished by one of the following methods:

- Aeration – blowing/spraying air through the water; and
- Addition of chemical oxidants – sodium hypochlorite, chlorine dioxide, potassium permanganate or ozone.

The oxidized manganese precipitates can then be removed by sand filtration, greensand media filtration or activated carbon filtration.

The use of ion exchange resins for the removal of manganese has also been used in more limited application due to the requirement that the contaminants be in dissolved form and at very low levels. This is due to the tendency of oxygen to react with the iron and manganese and therefore, increase the potential for plugging and buildup on the resin surface. Iron fouling is a common, and sometimes, irreversible problem with ion exchange treatment.

As a result, the easiest and most common treatment processes for removal of iron and manganese from groundwater is chemical oxidation followed by filtration. For a typical well facility, the treatment facilities would consist of chemical feed pump equipment and storage tanks for sodium hypochlorite ferric chloride as oxidizing agents, reaction vessels, pressure filtration vessels, and backwash facilities. An example of the reaction vessels and pressure filter schematics from one equipment supplier, Filtronics, is provided in Appendix D.

### 4.2 TCE REMOVAL

Trichloroethene, commonly referred to as TCE, is a volatile, chlorinated hydrocarbon widely used as a solvent, paint stripper, and degreasing agent. Patterns of TCE contamination of drinking water generally parallel use patterns, with the highest levels and highest number of contaminated wells occurring in urban areas. Over 350 drinking water sources in California have reportable levels of TCE contamination (i.e., greater than 0.5 ug/L or ppb). Systems with contamination exceeding the MCL are required to provide treatment that reduces TCE concentrations to levels below 5 ug/L.

There are several commonly used unit treatment processes that can be utilized to remove volatile organic compounds (VOCs), including TCE, from groundwater. These include: adsorption, air-

stripping, oxidation/biological and reverse osmosis processes. Two treatment processes, carbon adsorption and air-stripping are considered to be the most viable, suitable and widely accepted for potable water treatment purposes. These two technologies best meet the scale, common acceptance by the public water regulatory community and provide efficient and predictable contaminant removal.

Carbon adsorption, commonly using activated carbon as the adsorbent media, is known to be an effective water treatment process for the removal of VOCs. The *adsorption process* is a physical surface phenomenon where an adsorbate (the contaminant in this case) is removed from the contaminated solution and held onto the surface of the adsorbent (activated carbon) by various types of chemical and physical forces present. The contaminant(s) to be removed is adsorbed and held onto the surface (and interspatial surfaces or pores) of the solid adsorbent until the adsorbent no longer has the ability to accumulate any additional adsorbate. Granular Activated Carbon (GAC), specifically liquid phase carbon adsorption, is what is most commonly used as an adsorbent due to its higher adsorptive capacity to achieve reduction of certain organic chemicals (semi-volatile and volatile organics) and chlorine compounds from contaminated waters. GAC is an effective adsorbent medium due to its high surface area to volume ratio.

Air stripping and aeration systems are also widely used in water treatment for the removal of volatile organic compounds (VOCs), ammonia (NH<sub>3</sub>), carbon dioxide (CO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S) and radon from drinking water. The basis for the air stripping process is the mass transfer of dissolved VOCs in water from the liquid phase to the vapor (gas/air) phase. Air strippers remove VOCs from liquid (water) by providing contact between the contaminated liquid and a gas (air). The contaminant (in the vapor phase) is then typically released to the atmosphere (or may be removed by off-gas treatment systems, typically vapor phase carbon adsorption units). Air quality standards and Regulatory permitting requirements dictate the appropriate release or treatment requirements for the off-gas generated by the air strippers.

The ease and efficiency of the mass transfer of the contaminant to be removed (VOCs) to the vapor phase is dependent upon the *Henry's law constant* for the contaminant to be removed. At equilibrium, the partial pressure of a gas above a liquid is directly proportional to the mole fraction of the gas dissolved in the liquid. This proportionality is known as the *Henry's law constant*. The value of the *Henry's law constant* (H) is an important part in determining whether the contaminant is amenable to stripping and impacts the process design and operating parameters for air strippers. Temperature and the presence of other contaminants (including inorganic components) in the water to be treated impact the value of the Henry's constant.

An important process design consideration for air strippers is the ratio of the volumetric air flow to the volumetric water flow (A/W). This is referred as the "*air to water ratio*" (i.e., CFM air to CFM water). The optimum value of the air to water ratio varies for different VOCs (based upon their respective Henry's constant) as well as the influent concentration and expected or desired effluent concentration following stripping.

Air strippers transfer contaminants from one medium to another (liquid to gas) and therefore there is no destruction of the contaminant. Consequently, consideration must be given to the off-gas generated by this technology. Typically the mass of the contaminant stripped and discharged from the unit does not pose a health risk or require further treatment to remove it from the air stream. In that instance the off-gas is discharged directly to the atmosphere. However each situation does require analysis to confirm this condition and proper compliance and coordination with appropriate

regulatory air permitting requirements. Off-gas treatment can be incorporated if the mass removed is sufficient enough to require it. Off-gas treatment can be provided by several methods, most commonly it is provided by vapor phase carbon adsorption.

Operating concerns for air strippers include pretreatment or periodic column cleaning required because of the presence of other contaminants in the influent water including inorganic compounds (including calcium hardness, iron and manganese). Other contaminants that may be produced in the stripper if not properly maintained include algae, fungi, bacteria, or fine particles deposition. The air stripping process also requires a substantial amount of power to operate. Power is required primarily for the aeration equipment (blowers) and may be required for influent and effluent pumping from the unit depending upon its location in the overall treatment process.

## 5.0 POTENTIAL FUNDING SOURCES

Funding for water supply projects is available through a variety of federal, state and local sources. Table 5 below outlines some of the currently available sources of funding.

| Sponsoring Agency                                  | Potential Funding Program  |
|--|--|
| California Department of Public Health             | <ul style="list-style-type: none"> <li>• Safe Drinking Water State Revolving Fund</li> <li>• Proposition 50 <i>Water Security, Clean Drinking Water, Coastal &amp; Beach Protection</i></li> <li>• Proposition 84 <i>Safe Drinking Water, Water Quality &amp; Supply, Flood Control, River &amp; Coastal Protection</i></li> </ul> |
| California Department of Water Resources           | <ul style="list-style-type: none"> <li>• Proposition 50 <i>Integrated Regional Water Management Program (possible future round)</i></li> <li>• Proposition 82 <i>New Local Water Supply Construction Loans</i></li> </ul>  |
| State Water Resources Control Board                | <ul style="list-style-type: none"> <li>• Proposition 50 <i>Integrated Regional Water Management Program (possible future round)</i></li> <li>• Clean Water State Revolving Fund</li> </ul>   |
| Metropolitan Water District of Southern California | <ul style="list-style-type: none"> <li>• Community Partnering Program</li> </ul>   |
| U.S. Bureau of Reclamation                         | <ul style="list-style-type: none"> <li>• Water 2025: <i>Preventing Crises and Conflict in the West – FY 2008</i></li> </ul>  |
| U.S. Army Corps of Engineers                       | <ul style="list-style-type: none"> <li>• Water Resources Development Act (WRDA)</li> </ul>   |

**Table 5.** *Potential Funding Sources*

Maywood Mutual Water Company #1 and #2 have already applied for several grants and loans for manganese removal.

Maywood Mutual Water Company #3 has applied and is on the waiting list for WRD-funded well profiling program to determine the source of TCE in one or more of the wells. Maywood Mutual Water Company #3 is also on the WRD’s waiting list for potential well modification or replacement, if MCL is exceeded.

**APPENDIX A**  
**WATER SYSTEM INFORMATION**



## APPENDIX A

### MAYWOOD MUTUAL WATER COMPANY #1

#### WATER SYSTEM INFORMATION

Maywood Mutual Water Company #1 serves approximately 5,500 residents in portions of Cities of Maywood and Huntington Park. Approximately 795 acre-feet of water was produced by the Maywood Mutual Water Company #1 in fiscal year 2009 (July 2009 to June 2010), of which approximately 30% of the total production was served to the City of Maywood, according to the Maywood Mutual Water Company #1. A single pressure zone is supplied by two groundwater wells and imported surface water sources outlined in the following table.

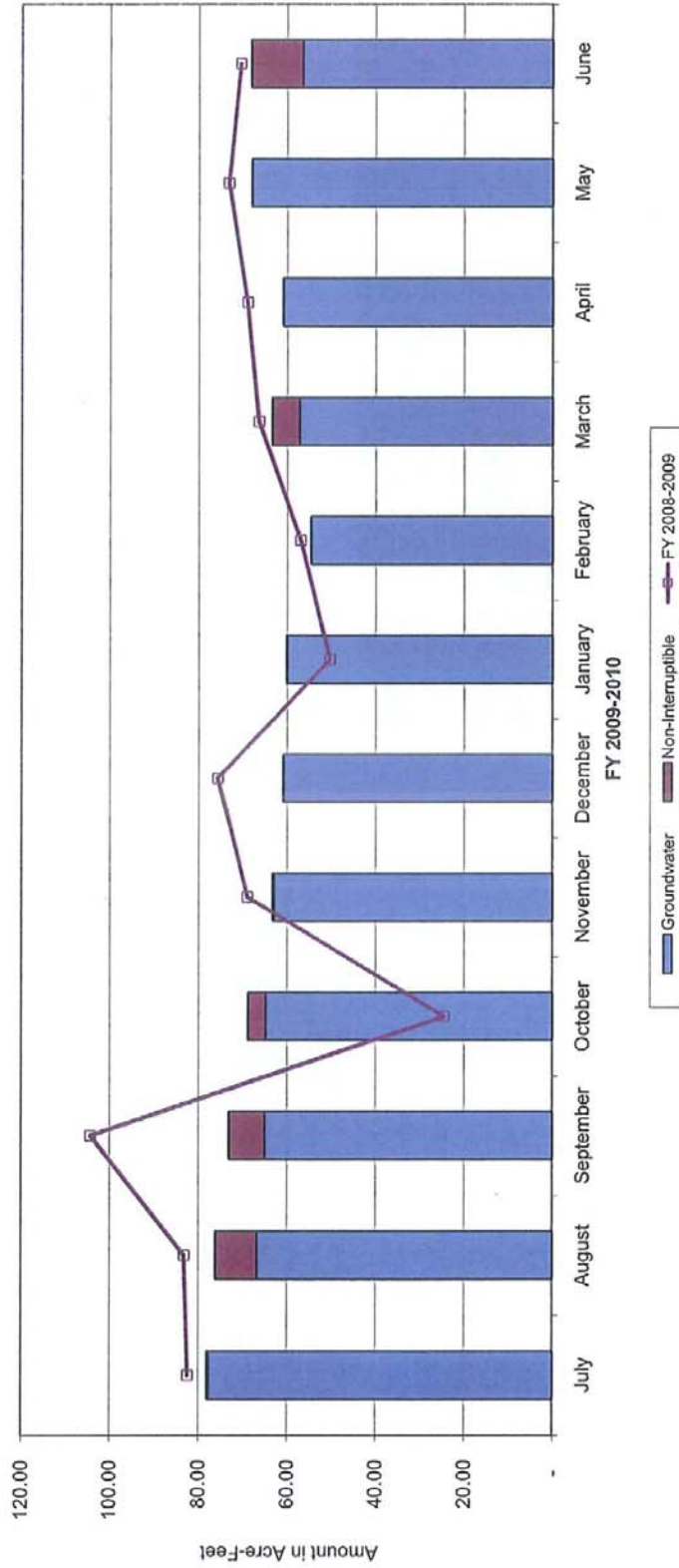
| Source   | Capacity (gpm) | Remarks   |
|--|----------------|---|
| Well #3  | 690            | Pumps directly into distribution system   |
| Well #4  | 980            | Pumps into storage reservoir and is then boosted into the distribution system   |
| Central Basin Municipal Water District (CBMWD, imported water) | 2,900          | Feeds directly into distribution system and storage tank. The capacity of this connection is currently set at 1,500 gpm |

Maywood Mutual Water Company #1 also has emergency connections to the City of Huntington Park and Maywood Mutual Water Company #2 water systems. These connections have not been used to date according to Maywood Mutual Water Company #1.

Average summer weekly water production (2007-2008) is as follows:

| Source        | Production (MG) | Percent     |
|---------------|-----------------|-------------|
| Well #3       | 2.33            | 40.24       |
| Well #4       | 2.65            | 45.70       |
| CBMWD         | 0.82            | 14.00       |
| <b>Totals</b> | <b>5.80</b>     | <b>100%</b> |

Maywood Mutual Water Company No. 1



| Maywood Mutual Water Company No. 1 | Fiscal Year 2009-2010 |              |              |              |              |              |              |              |              |              |              |              | TOTAL         |
|------------------------------------|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
|                                    | July                  | August       | September    | October      | November     | December     | January      | February     | March        | April        | May          | June         |               |
| Groundwater                        | 77.57                 | 66.71        | 65.02        | 64.79        | 62.94        | 60.73        | 59.97        | 54.55        | 57.16        | 60.86        | 67.92        | 56.43        | 754.65        |
| Non-Interruptible                  | 0.40                  | 9.40         | 8.10         | 3.90         | 0.30         | 0.10         | 0.10         | -            | 6.20         | -            | -            | 11.60        | 40.10         |
| <b>Total</b>                       | <b>77.97</b>          | <b>76.11</b> | <b>73.12</b> | <b>68.69</b> | <b>63.24</b> | <b>60.83</b> | <b>60.07</b> | <b>54.55</b> | <b>63.36</b> | <b>60.86</b> | <b>67.92</b> | <b>68.03</b> | <b>794.75</b> |

Note that Seasonal Storage Long-Term (In-Lieu) water was not available during FY 2009-10

**MANGANESE BLENDING PLAN**

**FOR**

**MAYWOOD MUTUAL WATER COMPANY #1**

Prepared by: Sergio Palos, Chief Operator

5953 Gifford Avenue  
Huntington Park, California 90255  
(323) 560-2439

## Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009

### INTRODUCTION

On April 10, 2009 Maywood Mutual Water Company #1 received a letter from California Department of Public Health (CADPH) stating that well No. 4 showed that manganese levels that consistently exceeded the secondary standard for manganese, the maximum contaminate level (MCL) is 50ug/l. CADPH is requiring that Maywood Mutual Water Company #1 either treat the water from Well #4 by removal of the excess manganese or submit a blending plan that would assure compliance of the secondary MCL rule.

#### Manganese / Black & Brown Staining

Manganese will cause a black stain and will many times be accompanied by iron and hydrogen sulfide gas odor. In combination with iron, manganese staining will sometimes be chocolate colored or brown. Evidence of manganese staining is usually most prominent in the dishwasher. The detergents used to wash the dishes raise the pH of the water high enough (>8) to allow the manganese to easily precipitate. A second place to see a manganese problem is on the top of the water in the toilet storage tank. The manganese will form a film that is sometimes mistaken for oil on the water. If you touch the surface of this water, the film will break into flakes with jagged edges. At high concentrations (>.2 ppm), the manganese will give the water what is sometimes described as a sweet taste.

Manganese generally exists in two forms

Manganous manganese - This form of manganese is invisible in the water just like dissolved sugar is. Just like sugar water, the manganese can not be mechanically filtered from the water.

Manganic manganese - This form has precipitated (formed a solid and is no longer in solution - it has turned to rust - "oxidized") and gives the water a cloudy black appearance. This form of manganese can be mechanically filtered. The reason for this is the waters have a pH above the 8 required to oxidize the manganous form into the manganic form.

Although manganese is generally not considered to be a health risk, a level of greater than 50 ppb is a cause for concern. The State of California does recommends that greater than 50 ppb be reduced.

The request for a blending plan is based on the lack of customer complains in regards to staining of laundry, plumbing fixtures or odor in the water.

This paper will try to give the reader a clear understanding of the working conditions of the water system at Maywood Mutual Water Co. #1; and propose solutions to the concerns of manganese from our well #4 to the California Department of Public Health (CADPH).

**Maywood Mutual Water Company #1**

**SYSTEM NUMBER 1910084**

**System Hydraulics and Water Movement**

**General information on Maywood Mutual Water Company #1 water system # 1910084**

Maywood Mutual Water Company #1 is a rectangular shape water distribution system; serving the cities of Huntington Park and Maywood. Maywood Mutual Water Company #1 serves about 5500 residence within our service area. We operate as (1) one zone only.

This paper will concentrate on the Iron and Manganese issues; and what Maywood Mutual Water Company has done to mitigate both iron and manganese within the distribution system that serve our customers.

**Maywood Mutual Water Company #1 operates two groundwater wells.**

- 1.) Groundwater Well #3 is located at 6026 Carmelita Avenue, Huntington Park, California 90255.  
Built in 1937
- 2.) Groundwater Well #4 is located at 5953 South Gifford Avenue, Huntington Park, California 90255.  
Built in 1950

**Maywood Mutual Water Company #1 has (2) two emergency intersystem connection points.**

- 1.) The City of Huntington Park intersystem connection located at the corner of Randolph Avenue and Maywood Avenue near the ally.
- 2.) Maywood Mutual Water Company #2 intersystem connection located near the corner of Carmelita Avenue and Slauson Avenue.

These (2) two emergency intersystem connection points have never been used yet to my knowledge.

**Groundwater Well #3**

Groundwater Well #3 built in 1937 produces 690 gallons per minute. This well pumps directly into the distribution system. It is designed to allow as much water to flow into our tanks as possible. The water should flow towards 60<sup>th</sup> Street which has a 10 inch water main leading to our plant storage tanks. As the distribution system pressure increases; a pressure reducing valve at the booster and storage tank station located at our 5953 Gifford Ave. will open and allow water to flow into the water tanks to relieve pressure build-up within the distribution system; and fill our tanks for the next days usage.

**Groundwater Well #4**

Groundwater Well #4 built in 1950 produces 980 gallons per minute. This well water is pump by the chlorinator injection point to our sand trap and then into our water reservoirs and held.

**Chlorination Pump**

We have (2) two 200 gallon tanks with sodium hypochlorite 12½%; which feed well water #4 that goes into our tanks. Our target residual is 1.0 mg/l average chlorine for tank storage. System demand is about 0.5 mg/l and remaining total chlorine in system averages 0.5 to 1.0 mg/l.

Well #3 has (2) 200 gallon tanks with sodium hypochlorite 12½%; which feed the system and tanks. We set a very low chlorine feed of about 0.4 mg/l.

Maywood Mutual Water Company #1 uses Pulsatron pump for delivery of the chlorine to the well water.

**Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009**

| <b>Well Name</b>                            | <b>Well #3</b>                                    | <b>Well #4</b>                                  |
|---|---|---|
| <b>Address</b>                              | 6026 Carmelita Ave.,<br>Huntington Park, CA 90255 | 5953 Gifford Ave.,<br>Huntington Park, CA 90255 |
| <b>Date Drilled ...</b>                     | 1946  | 1950  |
| <b>Location</b>                             | Residential                                       | Residential                                     |
| <b>Lot Size ...</b>                         | 50 X 150  | 122 X 285                                       |
| <b>Distance to Sewer</b>                    | 53 Feet   | Over 50 feet                                    |
| <b>Sewer Disposal ...</b>                   | None  | None  |
| <b>Abandon Well ...</b>                     | None  | None  |
| <b>Nearest Property Line ...</b>            | 25 Feet   | 40 Feet   |
| <b>Housing Type</b>                         |   |   |
| <b>Condition ...</b>                        | Good  | Good  |
| <b>Floor ...</b>                            | Concrete  | Concrete  |
| <b>Drainage ...</b>                         | Good  | Good  |
| <b>Well Depth</b>                           |   |   |
| <b>Depth ...</b>                            | 1200 Feet   | 1435 Feet                                       |
| <b>Diameter ...</b>                         | 16 Inches   | 16 & 14 Inches                                  |
| <b>Casing Kind ...</b>                      | 8 ga. Steel                                       | 8 ga. Steel                                     |
| <b>Height Above Floor ...</b>               | 30 Inches   | Flush   |
| <b>Distance To Highest Perforations ...</b> | 506 Feet  | 837 Feet  |
| <b>Surface Sealed ...</b>                   | Yes   | Yes   |
| <b>Gravel Pack ...</b>                      | No  | No  |
| <b>Second Casing Depth ...</b>              | None  | None  |
| <b>Second Casing Diameter ...</b>           | None  | None  |
| <b>Annular Seal - Depth ...</b>             | None  | None  |
| <b>Sampling Tap &amp; Meter ...</b>         | Yes   | Yes   |
| <b>Impervious Strata: Thickness</b>         | 28' - 33' - 25'                                   | 72' - 166' - 29' - 22'                          |
| <b>Penetrated - Depth to</b>                | 162' - 322' - 455'                                | 18' - 96' - 186' - 320'                         |
| <b>Water Levels:</b>                        |   |   |
| <b>Static ...</b>                           | 176   | 187   |
| <b>Pumping ...</b>                          | 287   | 263   |
| <b>Drawdown ...</b>                         | 111   | 76  |
| <b>Pump</b>                                 |   |   |
| <b>Make ...</b>                             | Layne & Bowler                                    | Layne & Bowler                                  |
| <b>Type ...</b>                             | Vertical Turbine 125 hp                           | Vertical Turbine 125 hp                         |
| <b>Capacity - GPM ...</b>                   | 690   | 980   |
| <b>Lubrication ...</b>                      | Oil   | Oil   |
| <b>Power ...</b>                            | Electric  | Electric  |
| <b>Auxiliary Power ...</b>                  | None  | Stand-By Generator                              |
| <b>Controls ...</b>                         | Auto & Manual - RTU                               | Auto & Manual - RTU                             |
| <b>Discharge Location ...</b>               | Below Ground                                      | Above Ground                                    |
| <b>Discharge To ...</b>                     | Water System                                      | To Water Reservoirs                             |
| <b>Frequency of Use ...</b>                 | Daily   | Daily   |
| <b>Primary Station Code ...</b>             | 02S / 13W - 24F01 S                               | 02S / 13W - 24B02 S                             |
| <b>State Well Number ...</b>                | 2S / 13W - 24F1                                   | 2S / 13W - 24B2                                 |
| <b>Flood Hazard ...</b>                     | Negligible  | Negligible                                      |

## Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009

### Central Basin Metropolitan Water District

Maywood Mutual Water Company #1 also is tied into Central Basin Metropolitan Water District (CBMWD) the entry point is located on the corner of Pine Avenue and 60<sup>th</sup> Street in the city of Maywood and the water is designed to flow west towards our plant to help fill our tanks. CBMWD is design to flow into our water system at a maximum volume of 2900 gallons per minute. However, Maywood Mutual Water Co. #1 has set the volume at 1500 gallons/minute or less to enter our distribution system.

### Standpipe Water Tanks

Maywood Mutual Water Company #1 has (2) water tanks.

- 1.) The small tank is 500,000 gallon maximum capacity; this tank measures 35 feet in diameters by 70 feet tall.
- 2.) The larger tank is 2,000,000 gallon maximum capacity; this tank measures 70 feet in diameters by 70 feet tall.
- 3.) Both tanks are interconnected and fill or drain at the same time. Any of these tanks can be isolated if the need arises. These tanks are located at the main plant at 5953 Gifford Ave., Huntington Park, CA

### Plant Booster Pump Station

Maywood Mutual Water Company #1 has (3) three 40 hp booster pumps to supply our system pressure of 60psi. Maywood Mutual Water Company #1 uses only one booster pump at a time. The other two booster pumps are for redundancy purposes only.

The booster pumps take water from both tanks to pressurize the distribution system to 60 psi and return any over pressurized water back into our tanks. The booster pumps, pumps the water from our tanks to the back of our plant to Riverside Street heading south to 60<sup>th</sup> Street; any over pressurized water in the distribution system is return to the front of our plant on Gifford Avenue and return back into our tanks.

### Typical Daily Operation – (Summer & Winter)

Maywood Mutual Water Company #1 adjusts to the water demand and makes changes accordingly. The summer demand is the highest. And we increase the level of water that the tanks hold. In the winter months or cooler periods of the year we maintain the water tank at lower levels.

Well #3 runs on a time basis only; the start time is 10:00 PM and stops at 10:00AM for a total of 12 hours. Well #3 produces 41,400 gallons per hour or 497,000 gallons per 12 hours. Well #3 pumps directly into the distribution system and water storage tanks.

Well #4 runs on time and level basis. When the desirer level is reached Well #4 will shut down. The start time is 10:00 PM and stops at 2:00AM only.

MWD may be used daily for at least 1 hour at this time to help fill and blend our water tanks.

### Average Summer: Weekly and Monthly Water Demand To Water Tanks & Distribution System

*(The following figures is based on maximum operation hours - 2007 - 2008)*

#### WEEKLY

|   |                   |       |        |
|---|-------------------|-------|--------|
| Well #3 . (720gpm)(60min/hr)(9hrs/day)(6days) = | 2,333,000 gallons | ..... | 40.24% |
| Well #4 . (920gpm)(60min/hr)(8hrs/day)(6days) = | 2,649,600 gallons | ..... | 45.70% |
| MWD .....                                       | 815,000 gallons   | ..... | 14.06% |
|   | =====             |       | =====  |
| TOTAL >   | 5,797,600 gallons |       | 100.0% |

**Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009**

**MONTHLY (4 week period)**

|  |                           |               |
|--|---------------------------|---------------|
| <b>Well #3</b> . . . . . (2.333mg/week)(4 weeks) = | <b>9,332,000 gallons</b>  | <b>40.24%</b> |
| <b>Well #4</b> . . . . . (2.649mg/week)(4 weeks) = | <b>10,598,400 gallons</b> | <b>45.70%</b> |
| <b>MWD</b> . . . . . (0.815mg/week)(4 weeks) =     | <b>3,260,000 gallons</b>  | <b>14.06%</b> |
|  | <u>=====</u>              |               |
| <b>TOTAL &gt;</b>                                  | <b>23,190,000 gallons</b> | <b>100.0%</b> |
|  | <u>=====</u>              |               |

**Testing & Monitoring the Water Distribution System for Iron and Manganese Levels**

Maywood Mutual Water Company #1 has since 2005 been monitoring the Iron and Manganese levels in the distribution system on a weekly basis. We have been monitoring the iron and manganese since 2005 on a every week. have

The Wells we monitor once every month. The other sites we monitor very week.

The following are the site that is the proposed sample locations for Iron and Manganese:

- 1.) **Sampling Station:** 4544 East 59<sup>th</sup> Street, Maywood, CA 90270 . . . . . Weekly
- 2.) **Sampling Station:** 6110 South Gifford Avenue, Huntington Park, CA 90255 . . Weekly
- 3.) **Boosters:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Weekly
- 4.) **Sampling Station:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Weekly
- 5.) **Well #4:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Monthly

- Site #1 is the far East side of our system.
- Site #2 is the Middle part of our system.
- Site #3 is our Booster (water to distribution system).
- Site #4 is at our main plant (water from distribution system into our tanks).
- Site #5 is our Well #4 (water to distribution system).

Monitoring will enabled Maywood Mutual Water Company #1 to plan as to when and where to flush our water mains to reduce increasing levels of iron, manganese or sediment from the water distribution system pipelines.

Maywood Mutual Water Company #1 has had very no complaints about orange, brown or black water coming out of the facets of customer’s homes in the past. Most complaints are about very short duration of yellowish water in the morning; usually 1 to 3 minutes and then it clears up. This has indicated to us that the problem is from old galvanized pipes in the homes; and not from the water system.

However the monitoring has indicated to us that our dead end areas do accumulate sedimentation more so than most of the other parts of our distribution system. Monitoring of the distribution system has helped us to keep the accumulate sedimentation from increasing in the distribution system by flushing that area about very 4 to 6 weeks.

We flush as close as possible to 5cfs to clean and eliminate most of the sedimentation that has accumulated in the water mains of our dead end areas and any inverted pipeline area. The other parts of are system is flush once every year or as needed.

The reduction in customer’s complaints and laboratory test records have indicated that accumulate sedimentation and manganese levels in the distribution system have been controlled to acceptable customer aesthetic levels.



**Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009**

**Public complaints in the City of Maywood**

The city of Maywood and a community group Pro-Uno has been concern about the quality of the water. However, every complaint heard at these meeting has been about another water company that serves the city of Maywood. We have had very few complaints about the water in the city of Huntington Park.

There has been at least about (6) meetings that Maywood Mutual Water Company #1 has attended and we have written minutes of these meetings; three of these meetings we have audio recordings.

**Procedures to Investigate Any Dirty Water Complaints**

Maywood Mutual Water Company #1 has discovered that many residents do not realize that old galvanize pipes or mixing the pipes with copper and galvanize do produce yellowish water problem. Many residents have never flush the water heater that can also stain the laundry.

Every complaint that comes to Maywood Mutual Water Company #1 is investigated. Most times the water is coming out clear when we arrive to investigate at the location, but we still investigate the plumbing on the outside and under their homes to see the condition and material of their pipes.

The cities of Maywood and Huntington Park are older community and many homes still have the original piping when the home was built. Many of these homes were built in 1920's to the 1940's.

Within those years scale from the hard water and rust has filled inside these pipes and yellowish water is the result every morning or evening after disuse for a few hours. Most complaints investigation has lead to this conclusion.

We do not come across orangey or brown or black water in our investigations. If we do suspect that sedimentation in our pipelines maybe the problem; we do a thorough flushing of our water mains within the area. This will take care of the problem and return things to normal conditions again.

**PROPOSE OPERATIONAL CHANGES FOR MAYWOOD MUTUAL WATER CO. #1 TO MEET THE SECONDARY MCL STANDARD FOR MANGANESE**

Maywood Mutual Water Company #1 will be changing the operations to assure that the secondary standard for manganese, with a maximum contaminate level (MCL) is 50ug/l does not exceed the standard when it is boosted out into the water distribution system.

Maywood Mutual Water Company #1 proposes to run our well #3 to produce up to 60% to 65% of the daily production of water, and run Well #4 about 35% to 40% of the daily production of water. MWD imported water will be used off and on depending on the water demand for safe operations; or to blend if well #3 should need work or is off line for any reason.

The following is the theoretical calculations for Mn from all three water sources.

**Table 1**

The following is the theoretical calculations for Mn from two water sources.

| <b>Well #3</b>         |             | <b>Well #4</b>         |              | <b>MWD</b>             |          | <b>Total</b> |
|------------------------|-------------|------------------------|--------------|------------------------|----------|--------------|
| Design Flow <b>GPM</b> | 690         | Design Flow <b>GPM</b> | 960          | Design Flow <b>GPM</b> | 0        | <b>1650</b>  |
| ug/Mn                  | 10          | ug/Mn                  | 78           | ug/Mn                  | 0        | 88           |
| <b>Total</b>           | <b>6900</b> | <b>Total</b>           | <b>74880</b> | <b>Total</b>           | <b>0</b> | <b>81780</b> |

Theoretical Calculations: 49.56 ug/l

**MCL 50 ug/L - 80% MCL for Mn = 40 ug/l - Blend Goal <40 ug/L**

## Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009

**Table 1** calculations are based on each well work at the same time, for the same amount of time. This is how we have been operating our plant plus some MWD water in past years.

However, Maywood Mutual Water Co. #1 is proposing running Well #4 only four hours a day. Well #3 will be running at least 12 hours a day. CBMWD will be used when water is needed to meet demand and 1 hour per day is anticipated as a daily use. These scenarios are calculated below in table 2, table 3 and table 4.

**Table 2**

| TABLE 2                |             |                        |              |                        |              |              |
|------------------------|-------------|------------------------|--------------|------------------------|--------------|--------------|
| Well #3                |             | Well #4                |              | MWD                    |              | Total        |
| Design Flow <b>GPM</b> | 690         | Design Flow <b>GPM</b> | 960          | Design Flow <b>GPM</b> | 1500         | <b>3150</b>  |
| Manganese ug/L         | 10          | Manganese ug/L         | 78           | Manganese ug/L         | 10           | 98           |
| <b>Total</b>           | <b>6900</b> | <b>Total</b>           | <b>74880</b> | <b>Total</b>           | <b>15000</b> | <b>96780</b> |

Theoretical Calculations:

30.72 ug/l

*MCL 50 ug/L - 80% MCL for Mn = 40 ug/l - Blend Goal <40 ug/L*

**Table 3**

| TABLE 3                           |                |                                |                 |                                 |               |                 |
|-----------------------------------|----------------|--------------------------------|-----------------|---------------------------------|---------------|-----------------|
| Well #3                           |                | Well #4                        |                 | MWD                             |               | Total           |
| Design Flow: <b>Gals / 12 hrs</b> | 496800         | Design Flow: <b>Gal./ 4hrs</b> | 230400          | Design Flow: <b>Gals./ 1 hr</b> | 90000         | <b>817200</b>   |
| Manganese ug/L                    | 10             | ug/Mn                          | 78              | ug/Mn                           | 10            | 98              |
| <b>Total</b>                      | <b>4968000</b> | <b>Total</b>                   | <b>17971200</b> | <b>Total</b>                    | <b>900000</b> | <b>23839200</b> |

Theoretical Calculations:

29.17 ug/l

*MCL 50 ug/L - 80% MCL for Mn = 40 ug/l - Blend Goal <40 ug/L*

**Table 4**

| TABLE 4                           |                |                                |                 |  |          |                 |
|-----------------------------------|----------------|--------------------------------|-----------------|--|----------|-----------------|
| Well #3                           |                | Well #4                        |                 |  |          | Total           |
| Design Flow: <b>Gals / 12 hrs</b> | 496800         | Design Flow: <b>Gal./ 4hrs</b> | 230400          |  | 0        | <b>727200</b>   |
| ug/Mn                             | 10             | ug/Mn                          | 78              |  | 0        | 88              |
| <b>Total</b>                      | <b>4968000</b> | <b>Total</b>                   | <b>17971200</b> |  | <b>0</b> | <b>22939200</b> |

Theoretical Calculations:

31.54 ug/l

*MCL 50 ug/L - 80% MCL for Mn = 40 ug/l - Blend Goal <40 ug/L*

### Contingency plan:

Maywood Mutual Water Company #1 intends to follow this blending plan as outlined in table 2, table 3 or table 4. We should be able to blend our waters to be at or below our blending goal of <40 ug/L for manganese.

Maywood Mutual Water Company #1 will be; that all times on the alert for any failure to follow the blending plan. However, in case of failure for whatever cause Maywood Mutual Water Company #1 will immediately shut

## Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009

down the offending Well #4 water supply and turn on either well #3 or MWD to dilute the distribution water system at least 48 hours or and flush the distribution system if the manganese test levels are higher than our blending goal of <40ug/L.

### Testing & Sampling procedure:

The following are the site that is the proposed sample locations for Iron and Manganese:

- 1.) **Sampling Station:** 4544 East 59<sup>th</sup> Street, Maywood, CA 90270 . . . . . Weekly
- 2.) **Sampling Station:** 6110 South Gifford Avenue, Huntington Park, CA 90255 . . Weekly
- 3.) **Boosters:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Weekly
- 4.) **Sampling Station:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Weekly
- 5.) **Well #3:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Monthly
- 6.) **Well #4:** 5953 Gifford Ave., Huntington Park, CA 90255 . . . . . Monthly

- Site #1 is the far East side of our system.
- Site #2 is the Middle part of our system.
- Site #3 is our Booster (water out to distribution system).
- Site #4 is at our main plant (water coming from distribution system into our reservoirs).
- Site #5 is our Well #3 (water to distribution system to our reservoirs).
- Site #6 is our Well #4 (water to the reservoirs).

Weekly monitoring will enabled Maywood Mutual Water Company #1 to keep the blending plan working as proposed. Should there be a failure in our blending plan and high manganese levels are detected above the blending plan goal; we will immediately shut down well #4 which is the well with high manganese and stop production for at least 48 hours, before putting the well online again.

Maywood Mutual Water Co. #1 intends to purchase a hand held HACH DR/800 Series Colorimeters with offers simple, push-button program and step-by-step instructions that prompts the users through the testing procedure. This unit will enable us to test the manganese level at the plant everyday. We will be testing the water going out to the distribution system and the water coming back into our reservoirs.

Maywood Mutual Water Company #1 will also install a flow meter to the return main pipe that goes into our pump station and reservoirs. We will be able to monitor all waters that go into our tanks from the distribution system. We will be able to calculate exactly how much of that water is our well #3 or how much MWD is purchased as well as how much water is circulated by our booster; that goes back into our reservoirs.

Maywood Mutual Water Company #1 will also calculate the daily and weekly theoretical calculations by inputting these valves on an excel program to make sure that we are keeping with the blending goal of <40 ug/L for manganese. If our calculations indicate a problem, we will be able to react quickly to correct the problem.

### System Design

Maywood Mutual Water Co. #1 basic pump and motor controls for our water distribution is as follows:

- Well #4 pumps directly into the reservoirs.
- Well #3 pumps directly into the water distribution system then to the reservoirs.
- Central Basin MWD interconnection flows directly into the water distribution system then to the reservoirs.
- Pump and motor controls and timing are made by programming our RTU unit.
- System pressure is regulated by 2 Cla-Vals at the pumping station.
- System pressure is maintain by one of three 40hp boosters or when well #3 is on.

Maywood Mutual Water Company #1 adjusts to the water demand and makes changes accordingly. The summer demand is the highest; we increase the level of water at the tanks. In the winter it will be less water in the tanks.

## Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009

Maywood Mutual Water Co. #1 will rely on well #3 and MWD as necessary to keep the blending plan at 40 ug/L Mn or below at all times.

### Water Movement

Well #3 will operate at least 12 hours each day and Well #4 will operate 4 hours.

Well #3 pumps directly into the distribution system. The distribution system was design to allow most of the water that is pump to be diverted into the water tanks the distribution system works the same with MWD connection.

When well #3 is on, the water travels north on Carmelita Ave. to 60<sup>th</sup> Street then the water will travel east on 60<sup>th</sup> Street to Gifford Ave. and turn north again to our storage tanks. We have a 10 inch water main on Carmelita Ave., 60<sup>th</sup> Street and Gifford Ave. these are the main artery of the distribution system. Any excess water that is not being used by the system will be diverted into our tanks.

The branches to the rest of the water distribution system are 6" from north and south.

We plan on operating well #3 and well #4 in the evening, nights and early morning hours. Well#3 and well #4 will be operating at the same time; and when well #4 stops; well #3 will continue to operate until the 12 hours are up.

As the water is being pump by well #3 or purchasing water from CBMWD. The distribution system was design to allow as much water as possible to go to the pump station were we have 2 Cla-Vals or pressure relief valves that is set at 60 PSI. Once water is above 60 PSI the Cla-Vals will open and allow water into the tanks.

When ether Well #3 or MWD is operating the boosters at the pump station will not be operating.

We have been testing and adjusting formulas of running our wells since January 2009; and have had positive results from the laboratory analysis that the above mention plans are feasible.

### Conclusion:

According to our calculations with a 50 / 50 blend of water from both wells we are still below the secondary MCL of 50 ug/l of manganese. However, Maywood Mutual Water Co. #1 is proposing to run are wells well below the threshold of secondary MCL level of 50 ug/l of manganese.

Maywood Mutual Water Co. #1 can meet and exceed reducing the levels of secondary MCL standard of 50 ug/L of manganese, by simply running our wells as table #2, #3 or #4 we will always be below the secondary MCL blending goal level of 40 ug/l of manganese in our water distribution system.

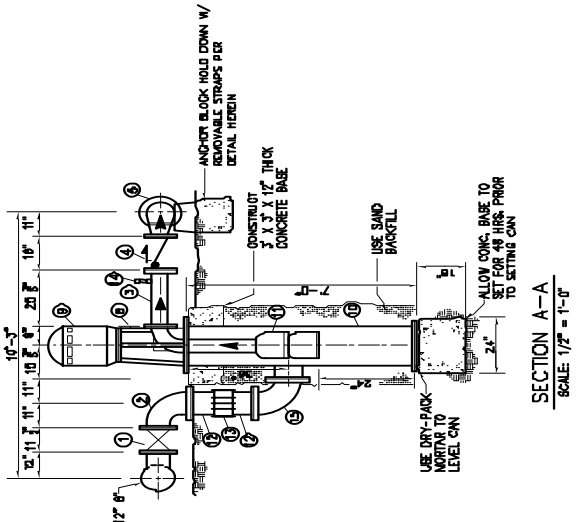
It is our desirer to provide the best potable water possible to our customers.

Maywood Mutual Water Co. #1 will continue to upgrade, repair and replace our infrastructure as we have in the past.

We hope this has satisfied the concerns of the California Department of Public Health (CADPH); and we look forward to your favorable response concerning our propose blending plan.

Sergio Palos  
General Manager  
Maywood Mutual Water Company #1

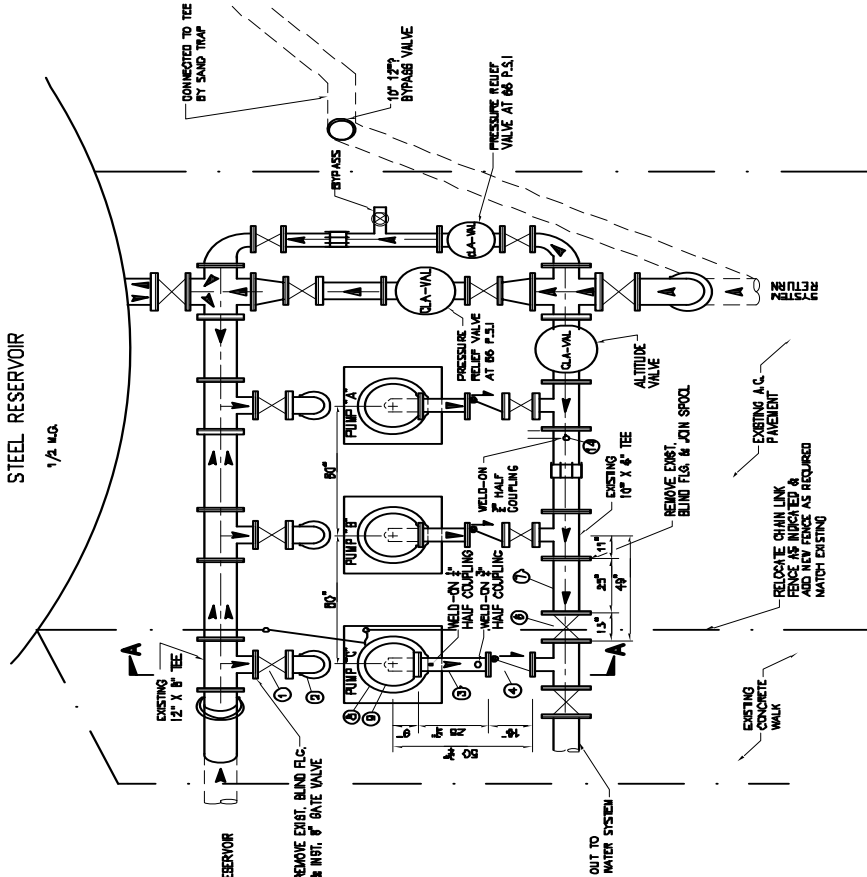
Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009



SECTION A-A  
SCALE 1/2" = 1'-0"

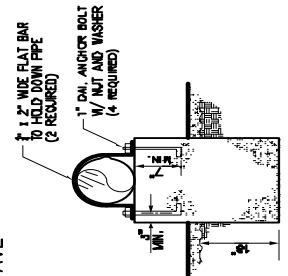
LIST OF MATERIALS

| NO. | DESCRIPTION   | SIZE      | QUANTITY |
|-----|---|-----------|----------|
| 1   | GATE VALVE FLC.   | 6"        | 1        |
| 2   | 90° REDUCING BEND FLC.  | 8" X 10"  | 1        |
| 3   | STEEL SPOOL MORTAR LINED FLC. (SIP. 1 RIG. LORNE. INT. TO INT.) | 6" X 30"  | 1        |
| 4   | CHECK VALVE FLC.  | 6"        | 1        |
| 5   | REDUCING BEND FLC.  | 10" X 6"  | 1        |
| 6   | GATE VALVE FLC.   | 10"       | 1        |
| 7   | STEEL SPOOL MORTAR LINED FLC. (SIP. 1 RIG. LORNE. INT. TO INT.) | 10" X 30" | 1        |
| 8   | DISCHARGE HEAD  | 6"        | 1        |
| 9   | MOTOR 40 H.P.   | -         | 1        |
| 10  | FABRICATED CAN WITH FLANGE BASE                                 | 16"       | 1        |
| 11  | PUMP 1200 O.P.A.L. 105' T.S.H.                                  | -         | 1        |
| 12  | STEEL SPOOL MORTAR LINED FLC. X P.E.                            | 10" X 12' | 2        |
| 13  | FLEXIBLE COUPLING   | 10"       | 1        |
| 14  | CORPORATION STOP  | 7"        | 2        |
| 15  | 90° BEND FLC.   | 10"       | 1        |



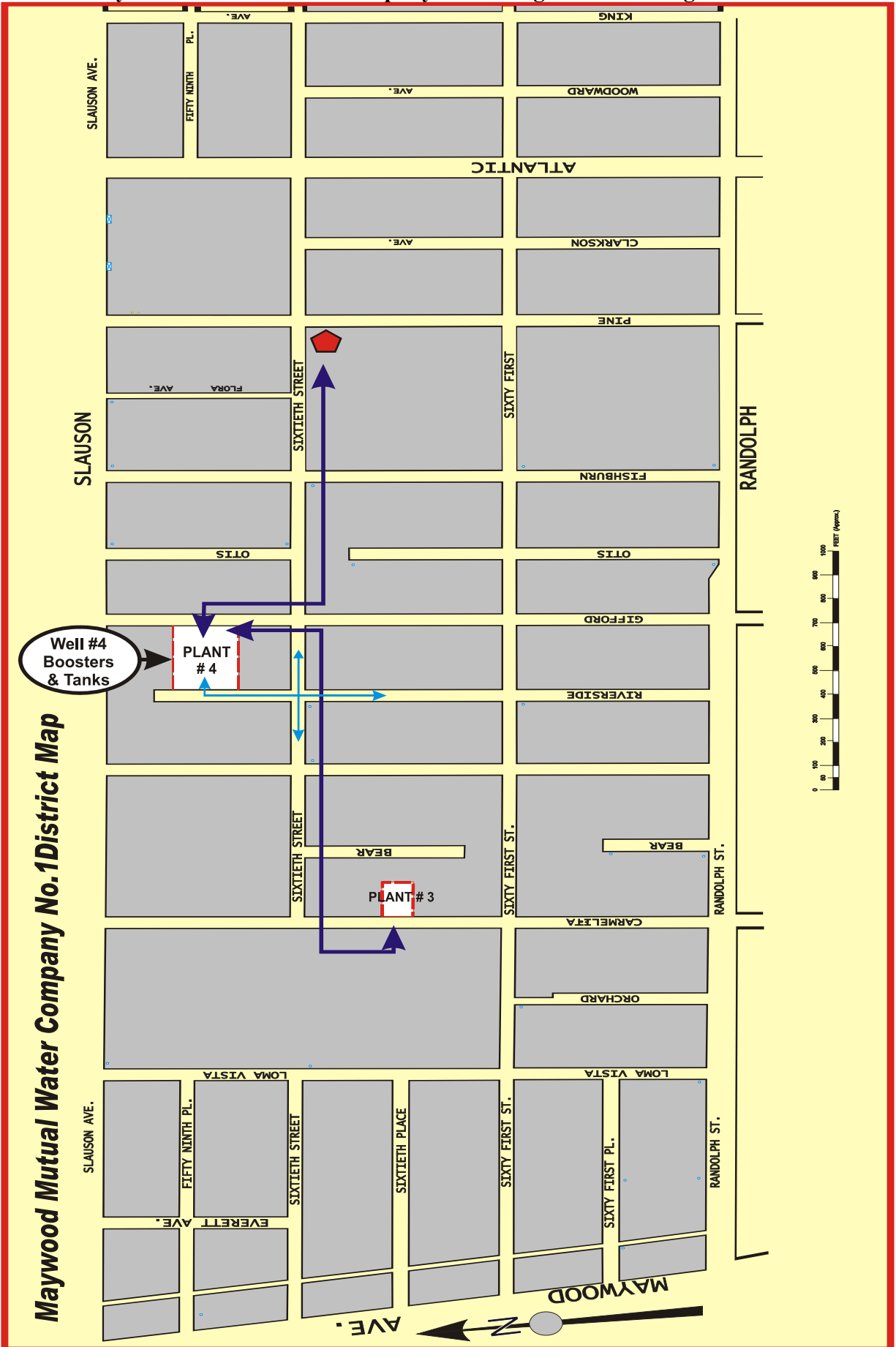
PLAN VIEW  
SCALE 1/2" = 1'-0"

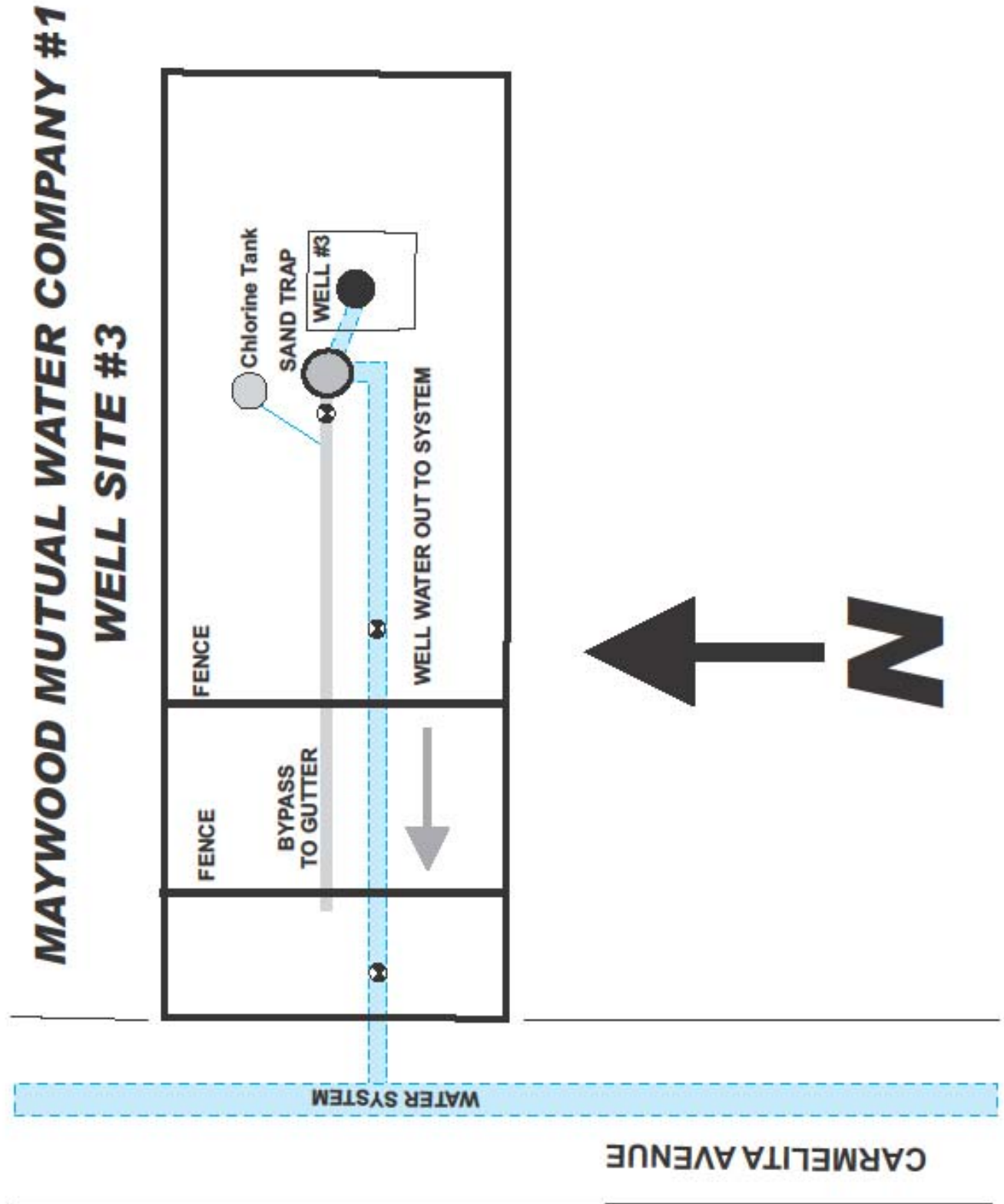
PUMP STATION AT 5953 CIFFORD AVE



PIPE STRAP DETAIL  
SCALE 1" = 1'-0"

Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009



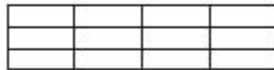


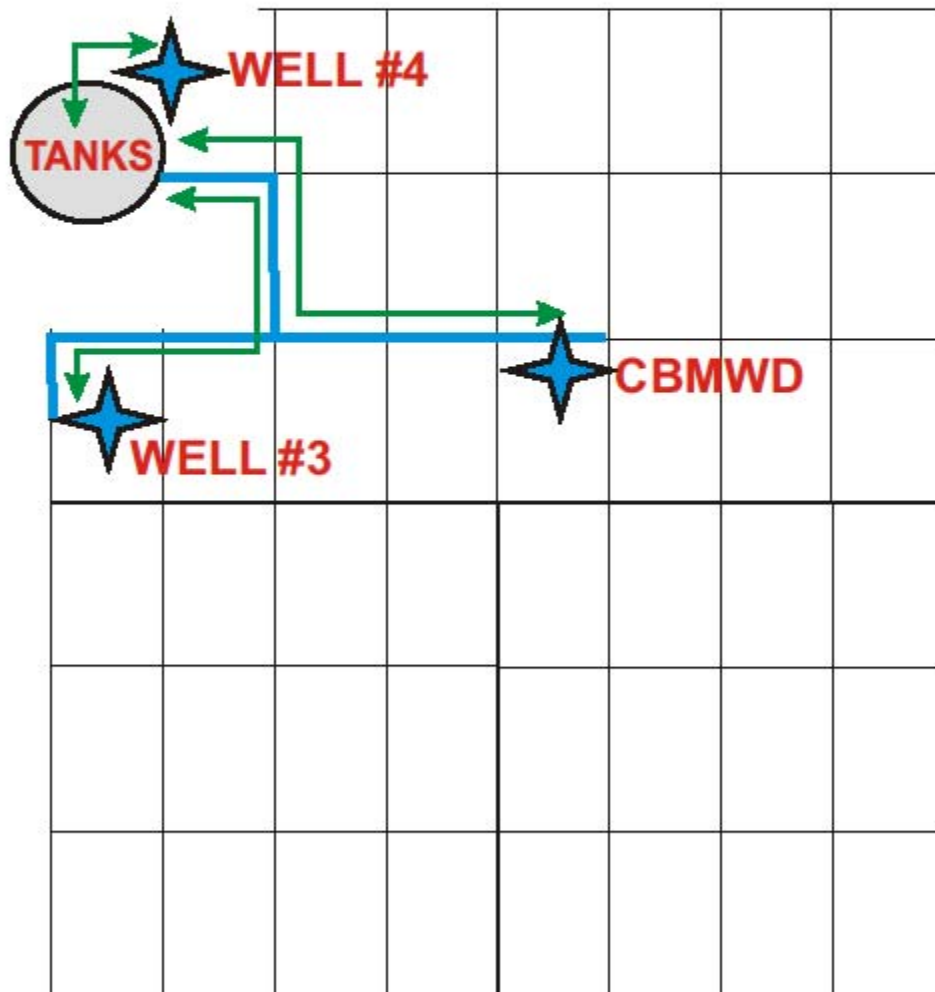
Maywood Mutual Water Company #1 – Manganese Blending Plan - 2009

**MAYWOOD MUTUAL WATER CO. #1**

 = FLOW DIRECTION FROM WELL #3 OR MWD

 = SYSTEM DESIGN FROM WELL #3 OR MWD

 = DISTRIBUTION SYSTEM





## SYSTEM MANGANESE REPORTS - MAYWOOD MUTUAL WATER COMPANY #1 Blended Water

System Name: Maywood Mutual Water Co. #1 System No.: 1910084 Year: 2009 MONTH: OCTOBER

| Year: 2009    | JANUARY |      |      |      |  | FEBRUARY |     |      |      |  | MARCH |      |      |      |      | APRIL |      |      |      |  | MAY |      |      |      |  |
|---------------|---------|------|------|------|--|----------|-----|------|------|--|-------|------|------|------|------|-------|------|------|------|--|-----|------|------|------|--|
| WEEK          | 1st     | 2nd  | 3rd  | 4th  |  | 1st      | 2nd | 3rd  | 4th  |  | 1st   | 2nd  | 3rd  | 4th  | 5th  | 1st   | 2nd  | 3rd  | 4th  |  | 1st | 2nd  | 3rd  | 4th  |  |
| (month/date): | 1/5     | 1/12 | 1/20 | 1/26 |  | 2/2      | 2/9 | 2/17 | 2/23 |  | 3/2   | 3/9  | 3/17 | 3/24 | 3/30 | 4/6   | 4/13 | 4/20 | 4/27 |  | 5/4 | 5/11 | 5/18 | 5/26 |  |
| Site #1       | 38.0    | 23.0 | 28.0 | ND   |  | 23.0     | ND  | ND   | 22.0 |  | ND    | 23.0 | ND   | 26.0 | ND   | ND    | ND   | ND   | 21.0 |  | ND  | 26.0 | ND   | 22.0 |  |

| Year: 2009    | JUNE |     |      |      |      | JULY |      |      |      |  | AUGUST |      |      |      |      | SEPTEMBER |      |      |      |  | OCTOBER |       |       |       |  |
|---------------|------|-----|------|------|------|------|------|------|------|--|--------|------|------|------|------|-----------|------|------|------|--|---------|-------|-------|-------|--|
| WEEK          | 1st  | 2nd | 3rd  | 4th  | 5th  | 1st  | 2nd  | 3rd  | 4th  |  | 1st    | 2nd  | 3rd  | 4th  |      | 1st       | 2nd  | 3rd  | 4th  |  | 1st     | 2nd   | 3rd   | 4th   |  |
| (month/date): | 6/1  | 6/8 | 6/15 | 6/22 | 6/29 | 7/6  | 7/13 | 7/20 | 7/27 |  | 8/3    | 8/10 | 8/17 | 8/20 | 8/24 | 9/8       | 9/12 | 9/21 | 9/28 |  | 10/5    | 10/12 | 10/19 | 10/26 |  |
| Site #1       | ND   | ND  | ND   | ND   | 40.0 | ND   | 25.0 | 20.0 | ND   |  | ND     | ND   | ND   | 12.0 | 1/15 | 31.0      | ND   | ND   | ND   |  | ND      | ND    | ND    | 30.0  |  |

Tested for low levels-see test sheet

| Year: 2009    | NOVEMBER |      |       |       |       | DECEMBER |      |       |       |  |
|---------------|----------|------|-------|-------|-------|----------|------|-------|-------|--|
| WEEK          | 1st      | 2nd  | 3rd   | 4th   | 5th   | 1st      | 2nd  | 3rd   | 4th   |  |
| (month/date): | 11/2     | 11/9 | 11/16 | 11/23 | 11/30 | 12/1     | 12/8 | 12/15 | 12/22 |  |
| Site #1       | ND       |      |       | 26.0  | 30.0  | 30.0     | 25.0 | 24.0  | 24.0  |  |

**MANGANESE Detection Level = 20ug/l - MANGANESE MCL = 50ug/l**

Identify the sample locations in the table below.

| Site | Sample Location  |
|------|--|
| 1    | 4544 East 59th Place, Maywood, CA 90270 - (East End of System) |

( \* ) = Test America - Irvine (Formerly Del Mar)

# Maywood Mutual Water Company #1 • Accomplishments & System Needs

The Managing Board of Directors and General Manager of Maywood Mutual Water Company #1 main concern has always been to provide sound financial management with a proactive approach to our water infrastructure needs and to always provide clean, safe, wholesome potable drinking water to our customers.

In these past few years Maywood Mutual Water Company #1 has aggressively been updating our water system. This is done for the safety and reliability of our local water supply. The General Manager and Board of Directors are committed to improving our community water system.

Through careful management and cost-saving measures Maywood Mutual Water Company #1 has been able to accomplish many necessary upgrades within existing resources despite rising energy and other production costs. Maywood Mutual Water Company #1 has also been paying increased fees this year to local, county and state water agencies.

*The following are a few of the projects Maywood Mutual Water #1 has done to improve the water system for our community.*

- Replacement of over 10,000 feet (2 miles) of old 4" pipeline at the east end (Maywood side) of our system . . . . . 2007
- Upgraded to 8 inch PVC non-corrosive pipeline as replacement pipes . . . . . 2007
- Installed over 40 new street valves . . . . . 2007
- New copper service connections for 250 customers . . . . . 2007
- 10 new fire hydrants at the east end of our system to provide excellent fire protection to the area . . . . . 2007
- Back-flow prevention program started along Atlantic Avenue . . . . . 2007
- Installed 10 - 3" and larger commercial meters . . . . . 2008
- Installed 5 large meter vaults . . . . . 2008
- Cleaned the interior of our 2 million gallon water tank . . . . . 2008
- Installed additional (2) Two additional 200 gallon chlorine tanks one at each well site . . . . . 2008
- Secured and replaced stolen fire hydrants to stop the theft . . . . . 2008
- Finish paying off all water main replacement project . . . . . 2008
- Added equipment to our inventory to include a Volvo backhoe . . . . . 2009
- Pipeline through the intersection of Slauson Ave. and Atlantic Ave. with tie-in on 10 inch water main . . . . . 2009
- Started valve replacement program 2 or 4 valves per month . . . . . 2009
- Improve security in yard by adding lights in the yard . . . . . 2009
- Booster station upgrade with new more efficient pump . . . . . 2009
- Applied for 7 Federal grants for over 10 million dollars . . . . . 2009
- Installing modern computerized controls to monitor all wells, motors for better efficiency . . . . . 2009
- (40) new customer copper water service lines on 60th Street, Fishburn Ave. and Riverside Ave. . . . . 2010
- Two (2) water tanks cleaned out . . . . . 2010
- Applied for state grant for new treatment plant . . . . . 2010

Maywood Mutual Water Company #1 has spent over 2.5 Million Dollars in improvements to our water system since 2002 when this present management took over the day to day duties of the Water Company.

Our dedication to improve your water system is not only in words, but in deeds. Even with all the work and improvements that have been done; in our aging water system, much work still remains to be completed. Merely replacing or rehabilitating our storage tanks, additional water lines and the rehabilitation of our water well #4 alone will cost in excess of six million dollars.

Maywood Mutual Water Company #1 has purchased a backhoe, with this equipment our crew will now be able to start changing out the old valves and customer service lines in our system. This will save many thousands of dollars instead of hiring pipeline contractors.

Other maintenance programs such as fire hydrant flushing, painting, meters and general maintenance of our well sites is always ongoing.

The cost of imported water has risen 20% this year and may increase more in the future, due to the drought that has struck California. Voluntary conservation of water must become necessary in order to have enough water for the remainder of the year or water levels in the reservoirs will be reduced even more.

Nonetheless, the general manager and Board of Directors is committed to providing safe, wholesome and potable drinking water with quality service to our customers, by keeping a sufficient supply of water, responding to any customers concerns at any hour or day, maintaining an aggressive preventative maintenance program, repairing valves or water mains when needed and upgrading the water system when opportunity presents itself. Maintaining and improving our system will require diligences and commitment.

# Informe De Confianza De Consumidor Del Año 2009

## 2009 Consumer Confidence Report

Huntington Park, California 90255  
5953 South Gifford Avenue

**MAYWOOD**  
**MUTUAL WATER CO. #1**

*Este informe contiene información muy importante sobre su agua potable. Para más información llame a (323) 560-2439*

### How Can I Conserve Water At Home?

Install a low-flow showerhead & save over 5 gallons of water per shower, or about 1,800 gallons per year per person!

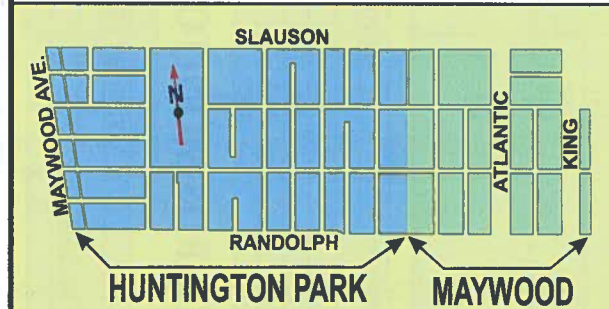
Install a low-flow toilet or displacement device in your toilet - save 3.5 to 4.5 gals on every flush!

Run full loads in your washing machine / dishwasher - save 300 - 800 gallons per month!

Sweep your sidewalks and driveways - save 250 gallons each time by sweeping instead of hosing!

Water the lawn only when it needs it - save 50 to 100 gallons per day!

### MAYWOOD MUTUAL WATER CO. #1



### SERVICE AREA

### ¿Cómo puedo conservar Agua En Casa?

¡Instale una regadera de flujo bajo y ahorre más de 5 galones cada vez que se bane, o más de 1.800 galones por año por persona!

¡Instale un inodoro de flujo bajo o reemplaze la bomba dentro del tanque de su tasa - ahorre de 3.5 galones a 4.5 galones por uso!

¡De marcha a sus lavadora/lavaplatos solo con carga llenas - ahorre de 300 - 800 galones al mes!

¡Barra las banquetas y cocheras - ahorre 250 galones de agua cada hora con la escoba en vez de regar!

¡Riegue el césped solo cuando sea necesario - ahorre 50 a 100 galones por día!

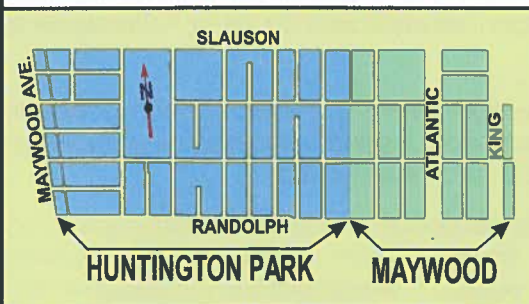
*This Report has important information about your water. Please call our office if you have any concerns at (323) 560-2439*

# Maywood Mutual Water Company No.1

## 2009 CONSUMER CONFIDENCE REPORT

Since 1991, California water utilities have been providing information on water served to its consumers. This report is a snapshot of the tap water quality that we provided last year. Included are details about where your water comes from, how it is tested, what is in it, and how it compares with state and federal limits. We strive to keep you informed about the quality of your water, and to provide a reliable and economic supply that meets all regulatory requirements.

### MAYWOOD MUTUAL WATER CO. #1



### SERVICE AREA

#### Where Does My Tap Water Come From?

Your tap water comes from 2 sources: groundwater and surface water. We pump groundwater from local, deep wells. We also use Metropolitan Water District of Southern California's (MWD) surface water from both the Colorado River and the State Water Project in northern California. These water sources supply our service area shown on the adjacent map. The quality of our groundwater and MWD's surface water supplies is presented in this report.

#### How is My Drinking Water Tested?

Your drinking water is tested regularly for unsafe levels of chemicals, radioactivity and bacteria at the source and in the distribution system. We test weekly, monthly, quarterly, annually or less often depending on the substance. State and federal laws allow us to test some substances less than once per year because their levels do not change frequently. All water quality tests are conducted by specially trained technicians in state-certified laboratories.

#### What Are Drinking Water Standards?

The U.S Environmental Protection Agency (USEPA) limits the amount of certain substances allowed in tap water. In California, the State Department of Public Health (Department) regulates tap water quality by enforcing limits that are at least as stringent as the USEPA's. Historically, California limits are more stringent than the Federal ones.

There are two types of these limits, known as standards. Primary standards protect you from substances that could potentially affect your health. Secondary standards regulate substances that affect the aesthetic qualities of water. Regulations set a Maximum Contaminant Level (MCL) for each of the primary and secondary standards. The MCL is the highest level of a substance that is allowed in your drinking water.

Public Health Goals (PHGs) are set by the California Environmental Protection Agency. PHGs provide more information on the quality of drinking water to customers, and are similar to their federal counterparts, Maximum Contaminant Level Goals (MCLGs). PHGs and MCLGs are advisory levels that are nonenforceable. Both PHGs and MCLGs are concentrations of a substance below which there are no known or expected health risks.

#### How Do I Read the Water Quality Table?

Although we test for over 100 substances, regulations require us to report only those found in your water. The first column of the water quality table lists substances detected in your water. The next columns list the average concentration and range of concentrations found in your drinking water. Following are columns that list the MCL and PHG or MCLG, if appropriate. The last column describes the likely sources of these substances in drinking water.

To review the quality of your drinking water, compare the highest concentration and the MCL. Check for substances greater than the MCL. Exceedence of a primary MCL does not usually constitute an immediate health threat. Rather, it requires testing the source water more frequently for a short duration. If test results show that the water continues to exceed the MCL, the water must be treated to remove the substance, or the source must be removed from service.

#### Why Do I See So Much Coverage in the News About the Quality Of Tap Water?

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

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

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

In order to ensure that tap water is safe to drink, the USEPA and the Department prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791). You can also get more information on tap water by logging on to these helpful web sites:

- [www.epa.gov/OGWDW](http://www.epa.gov/OGWDW) (USEPA's web site)
- [www.cdph.ca.gov](http://www.cdph.ca.gov) (Department of Public Health web site)

#### Should I Take Additional Precautions?

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

#### Source Water Assessment

MWD completed an assessment of its Colorado River and State Water Project supplies in 2002. Colorado River supplies are considered most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed, and wastewater. State Water Project supplies are considered most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment can be obtained by contacting MWD at (213) 217-6850.

Maywood Mutual Water Company No. 1 conducted an assessment of its groundwater supplies in May of 2003. Groundwater supplies are considered most vulnerable to historic gas stations, chemical/petroleum processing/storage, metal plating/finishing/fabricating, automobile body shops, automobile gas stations, and dry cleaners. A copy of the approved assessment may be obtained by contacting the main office.

#### How Can I Participate in Decisions On Water Issues That Affect Me?

All shareholders are welcome to attend Board meetings on the third Monday of each month at 11:00 a.m., and the annual shareholders meeting the third Saturday of July at 11:00 a.m. at 5953 South Gifford Ave., Huntington Park, CA 90255.

#### How Do I Contact My Water Agency If I Have Any Questions About Water Quality?

If you have specific questions about your tap water quality, please contact Sergio Palos at (323) 560-2439.

### *Maywood Mutual Water Company #1 Mission Statement*

*"Maywood Mutual Water Company No. 1, shall deliver to our shareholders a reliable supply of quality drinking water through preventative maintenance, efficient pumping and distribution methods, informing and servicing our customers, in a professional and courteous manner"*

### Maywood Mutual Board of Directors for 2009 - 2010

|  |                            |                                  |                             |                                |
|--|----------------------------|----------------------------------|-----------------------------|--------------------------------|
| Sergio Palos<br>President / Gen. Manager | Donald Jervis<br>Treasurer | Giovanni Samayoa<br>Board Member | Orley Waite<br>Board Member | Guillermo Sánchez<br>Secretary |
|--|----------------------------|----------------------------------|-----------------------------|--------------------------------|

# MAYWOOD MUTUAL WATER COMPANY No. 1 2009 CONSUMER CONFIDENCE REPORT

Results are from the most recent testing performed in accordance with state and federal drinking water regulations. The State allows the monitoring for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, are more than one year old.

## PRIMARY STANDARDS MONITORED AT THE SOURCE - MANDATED FOR PUBLIC HEALTH

| ORGANIC CHEMICALS                                | GROUNDWATER |             | MWD'S SURFACE WATER |           | PRIMARY MCL | MCLG or PHG | MAJOR SOURCES IN DRINKING WATER  |
|--|-------------|-------------|---------------------|-----------|-------------|-------------|--|
|  | AVERAGE (a) | RANGE (a)   | AVERAGE (a)         | RANGE (a) |             |             |  |
| <b>INORGANIC - Sampled from 2007 to 2009 (b)</b> |             |             |                     |           |             |             |  |
| Aluminum (mg/l)                                  | 0.01        | ND - 0.02   | 0.14                | ND - 0.24 | 1           | 0.6 (c)     | Erosion of natural deposits; residue from surface water treatment processes  |
| Arsenic (µg/l)                                   | ND          | ND          | 2.5                 | ND - 3.9  | 10          | 0.004       | Erosion of natural deposits; glass/electronics production wastes; runoff   |
| Barium (mg/l)                                    | 0.15        | 0.12 - 0.16 | 0.08                | ND - 0.14 | 1           | 2 (c)       | Oil drilling waste and metal refinery discharge; erosion of natural deposits   |
| Fluoride (mg/l) (l)                              | 0.43        | 0.42 - 0.44 | 0.80                | 0.6 - 1.0 | 2.0         | 1 (c)       | Erosion of natural deposits; water additive that promotes strong teeth   |
| Nitrate (mg/l as NO3)                            | 1.40        | ND - 2.80   | 2.30                | 0.9 - 4.2 | 45          | 45 (c)      | Runoff and leaching from fertilizer use/septic tanks/sewage; natural erosion   |
| Perchlorate (µg/l)                               | ND          | ND          | ND                  | ND        | 6           | 6           | Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store or dispose of perchlorate and its salts. |

## RADIOLOGICAL - (pCi/l) Analyzed 4 consecutive quarters every 4 years (results are from 2006 to 2009) (b)

|             |      |          |     |           |        |          |  |
|-------------|------|----------|-----|-----------|--------|----------|--|
| Gross Alpha | 0.4  | 0.4      | 4.7 | ND - 9.3  | 15 (c) | 0        | Erosion of natural deposits            |
| Gross Beta  | NA   | NA       | 2.8 | ND - 9.7  | 50 (e) | 0        | Decay of natural and man made deposits |
| Radium 226  | NA   | NA       | ND  | ND        | 5 (d)  | 0.05     | Erosion of natural deposits            |
| Radium 228  | 0.83 | ND - 1.7 | ND  | ND        | 5 (d)  | 0.019    | Erosion of natural deposits            |
| Uranium     | 0.75 | ND - 1.5 | 2.7 | 1.6 - 3.7 | 20 (e) | 0.43 (g) | Erosion of natural deposits            |

## PRIMARY STANDARDS MONITORED AT THE DISTRIBUTION SYSTEM - MANDATED FOR PUBLIC HEALTH

| MICROBIALS                          | DISTRIBUTION SYSTEM |                     | PRIMARY MCL  | MCLG or PHG |
|-------------------------------------|---------------------|---------------------|--------------|-------------|
|                                     | AVERAGE # POSITIVE  | RANGE OF # POSITIVE |              |             |
| Total Coliform Bacteria             | 0                   | 0                   | < 1 positive | 0           |
| Fecal Coliform and E. Coli Bacteria | 0                   | 0                   | 0            | 0           |
| No. of Acute Violations             | 0                   | 0                   | -            | -           |

| MICROBIALS      | DISTRIBUTION SYSTEM |             |
|-----------------|---------------------|-------------|
|                 | AVERAGE             | RANGE       |
| Turbidity (NTU) | 0.3                 | < 0.1 - 1.2 |

## DISINFECTION BY-PRODUCTS AND DISINFECTION RESIDUALS (f)

|                                      | DISTRIBUTION SYSTEM |             | PRIMARY MCL | MCLG or PHG |
|--------------------------------------|---------------------|-------------|-------------|-------------|
|                                      | AVERAGE             | RANGE       |             |             |
| Total Trihalomethanes - TTHMs (µg/l) | 46.4                | ND - 20.9   | 80          | -           |
| Haloacetic Acids (µg/l)              | 14.9                | ND - 3.6    | 60          | -           |
| Total Chlorine Residual (mg/l)       | 0.6                 | 0.57 - 0.75 | 4.0 (g)     | 4.0 (h)     |

## AT THE TAP PHYSICAL CONSTITUENTS 25 sites sampled in 2007

|               | DISTRIBUTION SYSTEM |                         | PRIMARY MCL | MCLG or PHG |
|---------------|---------------------|-------------------------|-------------|-------------|
|               | 90%ile              | # OF SITES ABOVE THE AL |             |             |
| Copper (mg/l) | ND (l)              | 0                       | 1.3 AL      | 0.17 (c)    |
| Lead (µg/l)   | ND (l)              | 0                       | 15 AL       | 2 (c)       |

Internal corrosion of household plumbing, erosion of natural deposits  
Internal corrosion of household plumbing, industrial manufacturer discharges

## SECONDARY STANDARDS MONITORED AT THE SOURCE - FOR AESTHETIC PURPOSES

Sampled from 2007 to 2009 (b)

|                                    | GROUNDWATER |             | MWD'S SURFACE WATER |             | SECONDARY MCL | MCLG or PHG |
|------------------------------------|-------------|-------------|---------------------|-------------|---------------|-------------|
|                                    | AVERAGE     | RANGE       | AVERAGE             | RANGE       |               |             |
| Aggressiveness Index (corrosivity) | 12.8        | 12.4 - 13   | 12.1                | 12.0 - 12.4 | Non-Corrosive | -           |
| Aluminum (µg/l) (j)                | 6           | ND - 18     | 135                 | ND - 240    | 200           | 600 (c)     |
| Chloride (mg/l)                    | 54.3        | 50 - 58     | 91                  | 77 - 100    | 500           | -           |
| Color (color units)                | ND          | ND          | 2                   | 1 - 2       | 15            | -           |
| Conductivity (uS/cm)               | 680         | 660 - 700   | 863.3               | 570 - 1100  | 1600          | -           |
| Iron (µg/l)                        | 74.9        | ND - 200    | ND                  | ND          | 300           | -           |
| Langlier Index (corrosivity) (SI)  | 0.46        | 0.46        | NA                  | NA          | Non-Corrosive | -           |
| Manganese (µg/l)                   | 41.1        | ND - 92 (k) | ND                  | ND          | 50            | -           |
| Odor (threshold odor number)       | 0.5         | ND - 1      | 2                   | 2.0         | 3             | -           |
| Sulfate (mg/l)                     | 106.7       | 100 - 120   | 182                 | 56 - 260    | 500           | -           |
| Total Dissolved Solids (mg/l)      | 396.7       | 370 - 420   | 520                 | 310 - 660   | 1,000         | -           |
| Turbidity (NTU)                    | 0.24        | ND - 0.85   | 0.05                | 0.04 - 0.06 | 5             | -           |

Natural/industrially-influenced balance of hydrogen/carbon/oxygen in water  
Erosion of natural deposits, surface water treatment process residue  
Runoff / leaching from natural deposit, seawater influence  
Naturally - occurring organic materials  
Substances that form ions when in water; seawater influence  
Leaching from natural deposits; industrial wastes  
Natural/industrially-influenced balance of hydrogen/carbon/oxygen in water  
Leaching from natural deposits  
Naturally - occurring organic materials  
Runoff / leaching from natural deposits, industrial wastes  
Runoff / leaching from natural deposits  
Soil runoff

## SECONDARY STANDARDS MONITORED AT THE DISTRIBUTION SYSTEM - FOR AESTHETIC PURPOSES

| GENERAL PHYSICAL CONSTITUENTS | DISTRIBUTION SYSTEM |          | SECONDARY MCL | MCLG or PHG |
|-------------------------------|---------------------|----------|---------------|-------------|
|                               | AVERAGE             | RANGE    |               |             |
| Color (color units)           | 6                   | < 3 - 10 |               |             |
| Odor (threshold odor number)  | 1                   | 1.0      |               |             |

Naturally - occurring organic materials  
Naturally - occurring organic materials

## ADDITIONAL CHEMICALS OF INTEREST

Sampled in 2007 - 2009 (b)

|                               | GROUNDWATER |           | MWD'S SURFACE WATER |           |
|-------------------------------|-------------|-----------|---------------------|-----------|
|                               | AVERAGE     | RANGE     | AVERAGE             | RANGE     |
| Alkalinity (mg/l)             | 160         | 150 - 180 | 110                 | 84 - 130  |
| Boron (µg/l)                  | 180         | 180       | 153                 | 120 - 220 |
| Bromate (µg/l)                | NA          | NA        | NA                  | NA        |
| Calcium (mg/l)                | 66.7        | 63 - 71   | 56                  | 27 - 76   |
| Magnesium (mg/l)              | 15          | 14 - 16   | 22.3                | 11 - 30   |
| N-Nitrosodimethylamine (ng/l) | NA          | NA        | 2.03                | ND - 5.1  |
| pH (standard unit)            | 7.7         | 7.5 - 7.9 | 8.0                 | 7.8 - 8.0 |
| Potassium (mg/l)              | 3.7         | 3.6 - 3.7 | 4.1                 | 2.6 - 5.3 |
| Silica (mg/l)                 | 28          | 28        | NA                  | NA        |
| Sodium (mg/l)                 | 54          | 53 - 55   | 88.3                | 66 - 100  |
| Total Hardness (mg/l)         | 230         | 210 - 240 | 230                 | 120 - 310 |
| Total Organic Carbon (mg/l)   | 1.1         | 1.1       | 2.1                 | 1.2 - 2.6 |
| Vanadium (µg/l)               | ND          | ND        | 4.2                 | ND - 6.7  |

## ABBREVIATIONS

**ABBREVIATIONS:** NA = constituent not analyzed • NTU = nephelometric turbidity  
uS/cm = Microsims per centimeter = a measure of electrical conductivity  
ND = constituent not detected at the reporting limit  
< = less than • SI = saturation index • pCi/l = picoCuries per liter  
mg/l = milligrams per liter or parts per million . . . ( equivalent to 1 drop in 42 gallons)  
µg/l = micrograms per liter or parts per billion . . . ( equivalent to 1 drop in 42,000 gallons)  
ng/l = nanograms per liter or parts per trillion . . . ( equivalent to 1 drop in 42,000,000 gallons)

## FOOTNOTES

- Over 50 regulated and unregulated organic chemicals were analyzed. None were detected at or above the reporting limit in groundwater or surface water sources.
- Indicates dates sampled for groundwater sources only.
- California Public Health Goal (PHG). Other advisory levels listed in this column are federal Maximum Contaminant Level Goals (MCLGs).
- Combined Radium 226 + Radium 228 has a Maximum Contaminant Level (MCL) of 5 pCi/L.
- MCL compliance based on 4 consecutive quarters of sampling.
- Running annual average used to calculate average, range, and MCL compliance.
- Maximum Residual Disinfectant Level (MRDL)
- Maximum Residual Disinfectant Level Goal (MRDLG)
- 90th percentile from the most recent sampling at selected customer taps.
- Aluminum has primary and secondary standards.
- The secondary MCL for manganese was exceeded in one (1) out of two (2) wells in 2009. Manganese has been detected at elevated levels since 1995 and has been monitored monthly or quarterly since. Groundwater is blended with surface water before delivery to the customer, which dilutes the amount of manganese actually reaching the tap. Manganese samples taken weekly in the distribution system averaged well below regulatory limits. The manganese MCL is set to protect against unpleasant effects such as color, taste, odor, and staining of laundry/plumbing fixtures. A manganese secondary MCL exceedance does not pose a health risk.
- MWD started adding flouride at each treatment plant in the fall of 2007. MWD was in compliance with the provisions of the State's requirements.

## DEFINITIONS

**DEFINITIONS:** Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water. 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 are set by the U.S. Environmental Protection Agency. 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. Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency. Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water. Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

## APPENDIX A

### MAYWOOD MUTUAL WATER COMPANY #2

#### WATER SYSTEM INFORMATION

Maywood Mutual Water Company #2 serves potable water to portions of Cities of Maywood and Huntington Park. Approximately 97% of the distribution system is located in Maywood and the remaining 3% is in Huntington Park. A total of approximately 1,179 acre-feet of water was produced by the Maywood Mutual Water Company #2 in 2009, of which approximately 97% (1,144 acre-feet) of the total production was served to the City of Maywood, according to the Maywood Mutual Water Company #2. The system is a grid with a single pressure zone. The following table contains the sources of supply for Maywood Mutual Water Company #2.

| Source                                 | Capacity (gpm) | Remarks  |
|--|----------------|--|
| Maywood Avenue Well (Well #1)          | 1,300          | Pumps into a storage tank and is then boosted into the district system |
| 52 <sup>nd</sup> Street Well (Well #2) | 1,000          | Pumps into a storage tank and is then boosted into the district system |
| CBMWD<br>Pine Avenue PRV               | 2,500          | Feeds directly into distribution system                                |

Maywood Mutual Water Company #2 also has interconnection with Maywood Mutual Water Company #1 and Maywood Mutual Water Company #3 that can be used during emergencies.

Maywood Mutual Water Company #2 is completing construction and testing of a manganese removal system at the 52<sup>nd</sup> Street site. Once the system is tested and permitted manganese from this well will be below the AB 890 levels. The capacity of the treatment plant is 1,100 gpm.

# Maywood Mutual Water Company #2

## -5207 Maywood Ave Pumphlot

One 70 ft. 1000K gal. tank  
Two 70 ft. 370K gal. tank  
One 150 hp. Deep Turbine Well, 1300 GPM  
Two 15 hp. Fire Booster Pumps, 1600 GPM @ 20psi.  
Three 40 hp. Boosters @ Hydropneumatic Pressure Station

## -4421 52nd St. Pumphlot

One 36 ft. 190K gal. tank  
One 50 hp. Booster Pump  
One 125 hp. Deep Turbine Well Pump, 1000 GPM

## -5315 Pine Ave. Pumphlot

Destroyed 10/2002 under LA County Health Dept. Permit

## -5915 Pine Ave. Pressure Reducing Station

One 8" Hartman Sleeve Valve  
One 12" Venturi Meter  
One Flow Control and Totalizer Cabinet on west sidewalk

## -Interconnection with Maywood Mutual Water Company # 1

Located at the Northwest Corner of Carmelita Ave. and Slauson Ave.  
Two 6" Gate Valves, north and south sides of Slauson Ave.

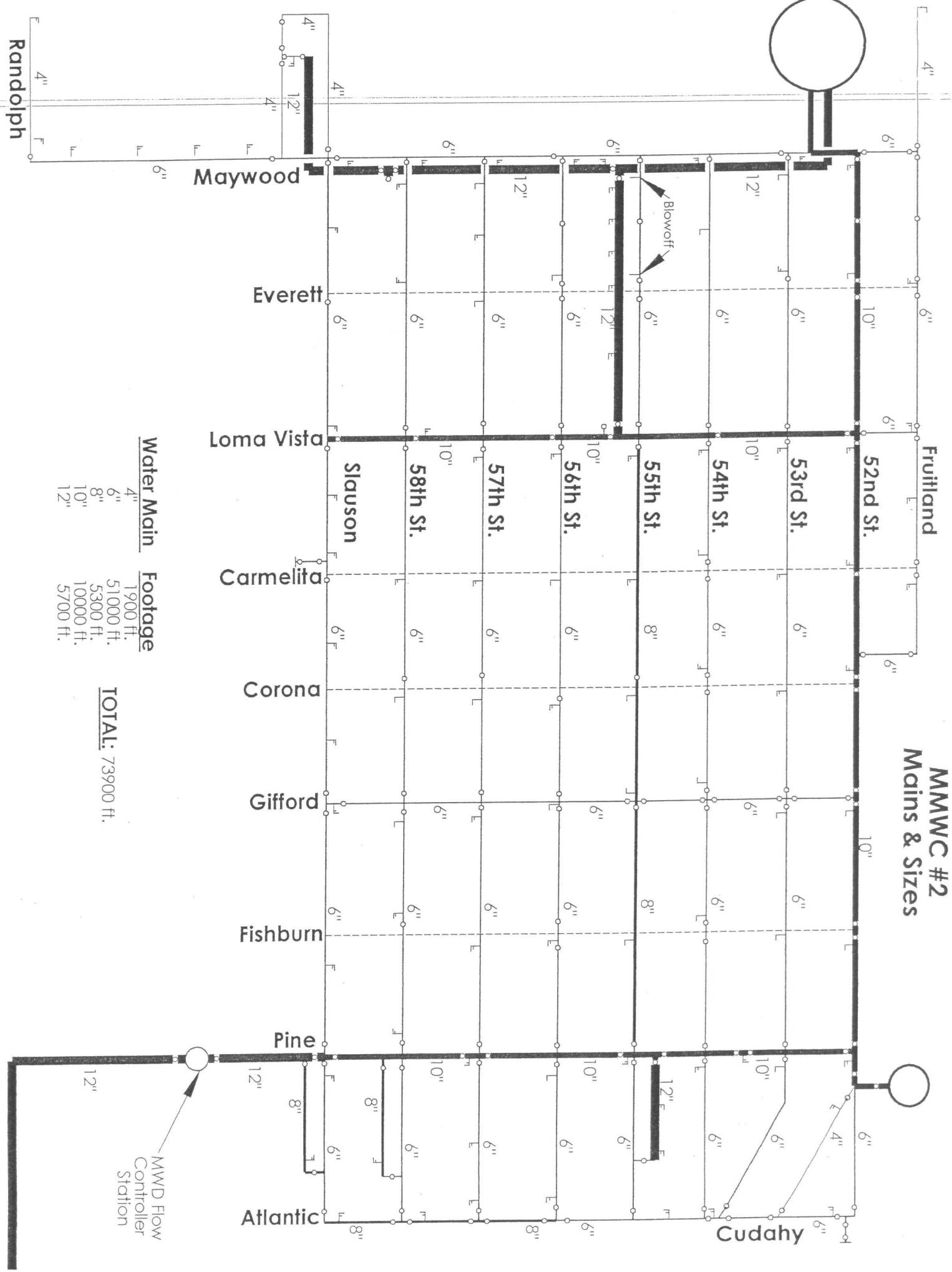
## -Interconnection with Maywood Mutual Water Company #3

Located at the Southwest Corner of 52nd St. and Cudahy  
Two 6" Gate Valves, east and west sides of Cudahy

## -Maywood Mutual Water Company # 2 Office

Located on 3521 E. Slauson Ave.

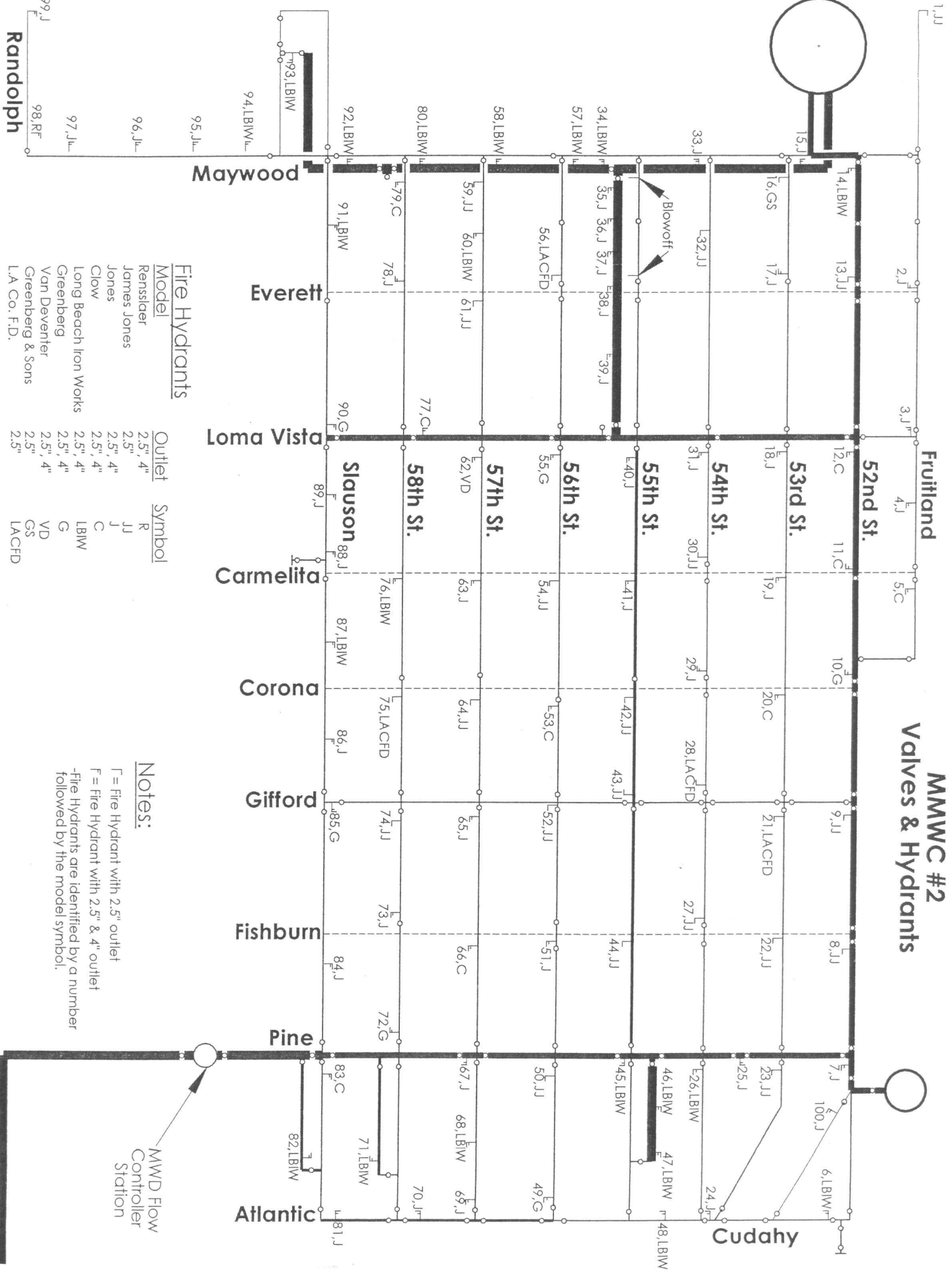
# MMWC #2 Mains & Sizes



| Water Main | Footage   |
|------------|-----------|
| 4"         | 1900 ft.  |
| 6"         | 51000 ft. |
| 8"         | 5300 ft.  |
| 10"        | 10000 ft. |
| 12"        | 5700 ft.  |

**TOTAL: 73900 ft.**

# MMWC #2 Valves & Hydrants



| Model                 | Outlet  | Symbol |
|-----------------------|---------|--------|
| Renssler              | 2.5" 4" | R      |
| James Jones           | 2.5"    | JJ     |
| Jones                 | 2.5" 4" | J      |
| Clow                  | 2.5" 4" | C      |
| Long Beach Iron Works | 2.5" 4" | LBW    |
| Greenberg             | 2.5" 4" | G      |
| Van Deventer          | 2.5" 4" | VD     |
| Greenberg & Sons      | 2.5"    | GS     |
| L.A. Co. F.D.         | 2.5"    | LACFD  |

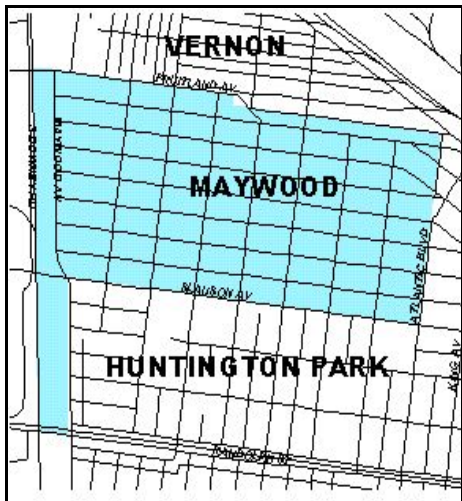
**Notes:**  
 F = Fire Hydrant with 2.5" outlet  
 J = Fire Hydrant with 2.5" & 4" outlet  
 -Fire Hydrants are identified by a number followed by the model symbol.

MWD Flow  
Controller  
Station



# MAYWOOD MUTUAL WATER COMPANY NO. 2 2009 CONSUMER CONFIDENCE REPORT

Since 1991, California water utilities have been providing information on water served to its consumers. This report is a snapshot of the tap water quality that we provided last year. Included are details about where your water comes from, how it is tested, what is in it, and how it compares with state and federal limits. We strive to keep you informed about the quality of your water, and to provide a reliable and economic supply that meets all regulatory requirements.



## **Where Does My Tap Water Come From?**

Your tap water comes from local, deep groundwater wells that supply our service area shown on the adjacent map. The quality of groundwater delivered to your home is presented in this report.

## **How is My Drinking Water Tested?**

Your drinking water is tested regularly for unsafe levels of chemicals, radioactivity and bacteria at the source and in the distribution system. We test weekly, monthly, quarterly, annually or less often depending on the substance. State and federal laws allow us to test some substances less than once per year because their levels do not change frequently. All water quality tests are conducted by specially trained technicians in state-certified laboratories.

## **What Are Drinking Water Standards?**

The U.S Environmental Protection Agency (USEPA) limits the amount of certain substances allowed in tap water. In California, the State Department of Public Health (Department) regulates tap water quality by enforcing limits that are at least as stringent as the USEPA's. Historically, California limits are more stringent than the Federal ones.

There are two types of these limits, known as standards. Primary standards protect you from substances that could potentially affect your health. Secondary standards regulate substances that affect the aesthetic qualities of water. Regulations set a Maximum Contaminant Level (MCL) for each of the primary and secondary standards. The MCL is the highest level of a substance that is allowed in your drinking water.

Public Health Goals (PHGs) are set by the California Environmental Protection Agency. PHGs provide more information on the quality of drinking water to customers, and are similar to their federal counterparts, Maximum Contaminant Level Goals (MCLGs). PHGs and MCLGs are advisory levels that are nonenforceable. Both PHGs and MCLGs are concentrations of a substance below which there are no known or expected health risks.

## **How Do I Read the Water Quality Table?**

Although we test for over 100 substances, regulations require us to report only those found in your water. The first column of the water quality table lists substances detected in your water. The next columns list the average concentration and range of concentrations found in your drinking water. Following are columns that list the MCL and PHG or MCLG, if appropriate. The last column describes the likely sources of these substances in drinking water.

To review the quality of your drinking water, compare the highest concentration and the MCL. Check for substances greater than the MCL. Exceedence of a primary MCL does not usually constitute an immediate health threat. Rather, it requires testing the source water more frequently for a short duration. If test results show that the water continues to exceed the MCL, the water must be treated to remove the substance, or the source must be removed from service.

## **Why Do I See So Much Coverage in the News About the Quality Of Tap Water?**

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

Contaminants that may be present in source water include:

- Microbial contaminants, including viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems;
- Radioactive contaminants, that can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the Department prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791). You can also get more information on tap water by logging on to these helpful web sites:

- [www.epa.gov/OGWDW](http://www.epa.gov/OGWDW) (USEPA's web site)
- [www.cdph.ca.gov](http://www.cdph.ca.gov) (Department of Public Health web site)

If present, elevated levels of lead can cause serious health problem, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with services lines and home plumbing. Maywood Mutual Water Company No. 2 is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

### **Should I Take Additional Precautions?**

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

### **Source Water Assessment**

Maywood Mutual Water Company No. 2 conducted an assessment of its groundwater supplies in 2003. Groundwater supplies are considered most vulnerable to electrical/electronic manufacturing, chemical/petroleum processing/storage, sewer collection systems, historic gas stations, military installations, metal plating/finishing/fabricating, automobile repair shops, fleet/truck/bus terminals, wood/pulp/paper processing and mills, and landfills/dumps. A copy of the approved assessment may be viewed at the water company office.

### **How Can I Participate in Decisions On Water Issues That Affect Me?**

Shareholders are welcome to attend monthly Board of Directors meetings the third or fourth Tuesday of each month at 4:00 p.m. at 3521 E. Slauson Avenue, Maywood CA 90270. Please call the office at least one day prior to the meeting to be placed on the agenda.

### **How Do I Contact My Water Agency If I Have Any Questions About Water Quality?**

If you have specific questions about your tap water quality, please contact Gustavo N. Villa at (323) 581-5816.

### **Some Helpful Water Conservation Tips**

- Fix leaky faucets in your home – save up to 20 gallons every day for every leak stopped
- Save between 15 and 50 gallons each time by only washing full loads of laundry
- Adjust your sprinklers so that water lands on your lawn/garden, not the sidewalk/driveway – save 500 gallons per month
- Use organic mulch around plants to reduce evaporation – save hundreds of gallons a year

# MAYWOOD MUTUAL WATER COMPANY No. 2 2009 CONSUMER CONFIDENCE REPORT

Results are from the most recent testing performed in accordance with state and federal drinking water regulations

## PRIMARY STANDARDS MONITORED AT THE SOURCE-MANDATED FOR PUBLIC HEALTH

| ORGANIC CHEMICALS (µg/l)  | GROUNDWATER |           | PRIMARY MCL | MCLG or PHG | MAJOR SOURCES IN DRINKING WATER   |
|---|-------------|-----------|-------------|-------------|---|
|   | AVERAGE (a) | RANGE (a) |             |             |   |
| <b>INORGANICS</b> Sampled from 2007 to 2009 (b)   |             |           |             |             |   |
| Aluminum (mg/l)   | ND          | ND        | 1           | 0.6 (c)     | Erosion of natural deposits; residue from surface water treatment processes   |
| Arsenic (µg/l)  | ND          | ND        | 10          | 0.004       | Erosion of natural deposits; glass/electronics production wastes; runoff      |
| Barium (mg/l)   | ND          | ND        | 1           | 2 (c)       | Oil drilling waste and metal refinery discharge; erosion of natural deposits  |
| Fluoride (mg/l)   | 0.37        | 0.34-0.4  | 2.0         | 1 (c)       | Erosion of natural deposits, water additive that promotes strong teeth        |
| Nitrate (mg/l as NO3)   | 1.8         | ND - 7.1  | 45          | 45 (c)      | Runoff and leaching from fertilizer user/septic tanks/sewage, natural erosion |
| Perchlorate (µg/l)  | ND          | ND        | 6           | 6           | Industrial waste discharge  |
| <b>RADIOLOGICAL - (pCi/l)</b> Analyzed 4 consecutive quarters every 4 years (results are from 2006 to 2009) (b) |             |           |             |             |   |
| Gross Alpha   | 1.5         | 1.5       | 15 (e)      | 0           | Erosion of natural deposits   |
| Radium 226  | NA          | NA        | 5 (d)       | 0.05        | Erosion of natural deposits   |
| Radium 228  | NA          | NA        |             | 0.019       | Erosion of natural deposits   |
| Uranium   | ND          | ND        | 20 (e)      | 0.43 (c)    | Erosion of natural deposits   |

## PRIMARY STANDARDS MONITORED IN THE DISTRIBUTION SYSTEM - MANDATED FOR PUBLIC HEALTH

| MICROBIALS                          | DISTRIBUTION SYSTEM |                         | PRIMARY MCL  | MCLG or PHG                                     | MAJOR SOURCES IN DRINKING WATER      |
|-------------------------------------|---------------------|-------------------------|--------------|---|--------------------------------------|
|                                     | AVERAGE # POSITIVE  | RANGE OF # POSITIVE     |              |   |                                      |
| Total Coliform Bacteria             | 0                   | 0                       | < 1 positive | 0   | Naturally present in the environment |
| Fecal Coliform and E.Coli Bacteria  | 0                   | 0                       | 0            | 0   | Human and animal fecal waste         |
| No. of Acute Violations             | 0                   | 0                       | -            | -   |                                      |
| <b>DISINFECTION BY PRODUCTS (f)</b> |                     |                         |              |   |                                      |
| AVERAGE                             |                     | RANGE                   |              |   |                                      |
| 0.7                                 |                     | 0.1 - 1.5               |              | Soil runoff                                     |                                      |
| <b>DISINFECTION RESIDUALS</b>       |                     |                         |              |   |                                      |
| HIGHEST RUNNING ANNUAL AVERAGE      |                     | RANGE                   |              |   |                                      |
| 20.7                                |                     | 17.4 - 26.9             |              | By-product of drinking water chlorination       |                                      |
| 3.6                                 |                     | 3.1 - 3.9               |              | By-product of drinking water disinfection       |                                      |
| 0.74                                |                     | 0.24 - 1.98             |              | Drinking water disinfectant added for treatment |                                      |
| <b>AT THE TAP</b>                   |                     |                         |              |   |                                      |
| 90%ile                              |                     | # OF SITES ABOVE THE AL |              |   |                                      |
| 0.17 (i)                            |                     | 0                       |              | 1.3 AL  |                                      |
| ND (i)                              |                     | 0                       |              | 15 AL   |                                      |
|                                     |                     |                         |              | 2 (c)   |                                      |

## SECONDARY STANDARDS MONITORED AT THE SOURCE-FOR AESTHETIC PURPOSES

Sampled from 2007-2009 (b)

|                                    | GROUNDWATER |                   | SECONDARY MCL | MCLG or PHG |  |
|------------------------------------|-------------|-------------------|---------------|-------------|--|
|                                    | AVERAGE     | RANGE             |               |             |  |
| Aggressiveness Index (corrosivity) | 12          | 12                | Non-corrosive | -           | Natural/industrially-influenced balance of hydrogen/carbon/oxygen in water |
| Aluminum (µg/l) (i)                | ND          | ND                | 200           | 600 (c)     | Erosion of natural deposits, surface water treatment process residue       |
| Chloride (mg/l)                    | 45.5        | 34-57             | 500           | -           | Runoff/leaching from natural deposits, seawater influence                  |
| Color (color units)                | ND          | ND                | 15            | -           | Naturally-occurring organic materials                                      |
| Conductivity (µS/cm)               | 595         | 540-650           | 1,600         | -           | Substances that form ions when in water, seawater influence                |
| Iron (µg/l)                        | 18.5        | ND - 360          | 300           | -           | Leaching from natural deposits, industrial wastes                          |
| Langelier Index (corrosivity) (SI) | NA          | NA                | Non-corrosive | -           | Natural/industrially-influenced balance of hydrogen/carbon/oxygen in water |
| <b>Manganese (µg/l)</b>            | <b>63.5</b> | <b>ND-150 (k)</b> | <b>50</b>     | <b>-</b>    | <b>Leaching from natural deposits</b>                                      |
| Odor (threshold odor number)       | ND          | ND                | 3             | -           | Naturally-occurring organic materials                                      |
| Sulfate (mg/l)                     | 74.5        | 70-79             | 500           | -           | Runoff/leaching from natural deposits, industrial wastes                   |
| Total Dissolved Solids (mg/l)      | 375         | 330-420           | 1,000         | -           | Runoff/leaching from natural deposits                                      |
| Turbidity (NTU)                    | 0.12        | ND-0.23           | 5             | -           | Soil runoff  |

## SECONDARY STANDARDS MONITORED IN THE DISTRIBUTION SYSTEM-FOR AESTHETIC PURPOSES

| GENERAL PHYSICAL CONSTITUENTS | DISTRIBUTION SYSTEM |         | SECONDARY MCL | MCLG or PHG |                                       |
|-------------------------------|---------------------|---------|---------------|-------------|---------------------------------------|
|                               | AVERAGE             | RANGE   |               |             |                                       |
| Color (color units)           | 6.4                 | <3 - 20 | 15            | -           | Naturally-occurring organic materials |
| Odor (threshold odor number)  | 1                   | 1       | 3             | -           | Naturally-occurring organic materials |

## ADDITIONAL CHEMICALS OF INTEREST

Sampled from 2007 - 2009 (b)

| GROUNDWATER                   |         |
|-------------------------------|---------|
| AVERAGE                       | RANGE   |
| Alkalinity (mg/l)             | 190.0   |
| Boron (µg/l)                  | 180-200 |
| Bromate (µg/l)                | NA      |
| Calcium (mg/l)                | NA      |
| Magnesium (mg/l)              | 53.5    |
| N-Nitrosodimethylamine (ng/l) | 13.0    |
| pH (standard unit)            | 7.9     |
| Potassium (mg/l)              | 3.6     |
| Sodium (mg/l)                 | 3.3-3.9 |
| Total Hardness (mg/l)         | 53.5    |
| Vanadium (µg/l)               | 185.0   |
| 1,4-Dioxane (ug/l)            | NA      |

## FOOTNOTES

- (a) California Public Health Goal (PHG). Other advisory levels listed in this column are federal Maximum Contaminant Level Goals (MCLGs).
- (b) Indicates dates sampled for groundwater sources only.
- (c) California Public Health Goal (PHG). Other advisory levels listed in this column are federal Maximum Contaminant Level Goals (MCLGs).
- (d) Combined Radium 226 + Radium 228 has a Maximum Contaminant Level (MCL) of 5 pCi/L.
- (e) MCL compliance based on 4 consecutive quarters of sampling.
- (f) Running annual average used to calculate average, range, and MCL compliance.
- (g) Maximum Residual Disinfectant Level (MRDL)
- (h) Maximum Residual Disinfectant Level Goal (MRDLG)
- (i) 90th percentile from the most recent sampling at selected customer taps.
- (j) Aluminum has primary and secondary standards.
- (k) The secondary MCL for manganese was exceeded in two wells in 2009. Both wells have experienced manganese at elevated levels on a regular basis since 1990. Groundwater is blended with surface water before delivery to the customer, which dilutes the amount of manganese actually reaching the tap. The manganese secondary MCL is set to protect against unpleasant effects such as color, taste, odor, and staining of laundry/plumbing fixtures. A manganese secondary MCL exceedance does not pose a health risk.

## ABBREVIATIONS

- < = less than  
 SI = saturation index  
 NA = constituent not analyzed  
 mg/l = milligrams per liter or parts per million (equivalent to 1 drop in 42 gallons)  
 ng/l = nanograms per liter or parts per trillion (equivalent to 1 drop in 42,000,000 gallons)

## DEFINITIONS

- Maximum Contaminant Level (MCL)**: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- 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 are set by the U.S. Environmental Protection Agency.
- 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. disinfectant to control microbial contaminants.
- Public Health Goal (PHG)**: The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- Treatment Technique (TT)**: A required process intended to reduce the level of a contaminant in drinking water.
- Regulatory Action Level (AL)**: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- Primary Drinking Water Standard (PDWS)**: MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- Secondary Water Standard (SDWS)**: MCLs and MRDLs for contaminants that affect the aesthetic qualities of water.

pCi/l = picoCuries per liter

NTU = nephelometric turbidity units

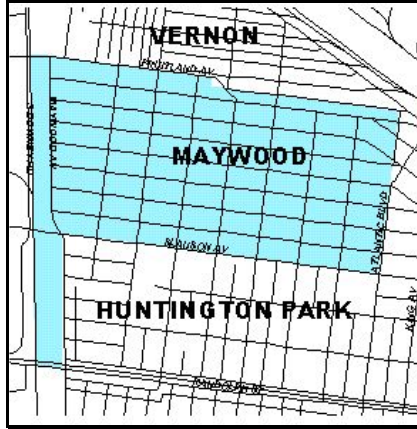
µS/cm = microSiemens per centimeter

µg/l = micrograms per liter or parts per billion (equivalent to 1 drop in 42,000 gallons)

# LA COMPAÑÍA DE AGUA DE MAYWOOD MUTUAL No. 2

## INFORME DE CONFIANZA DE CONSUMIDOR de 2009

Desde 1991, las agencias proveedoras de recursos hidráulicos de California han emitido información sobre el agua que se provee al consumidor. Este informe es una copia del informe sobre la calidad del agua potable que le proveímos el año pasado. Incluimos detalles sobre el origen del agua que toma, cómo se analiza, que contiene, y cómo se compara con los límites estatales y federales. Nos esforzamos por mantenerle informado sobre la calidad de su agua, y proveerle un abastecimiento confiable y económico que cumpla con todos los requisitos.



### **¿De Dónde Proviene el Agua que Tomo?**

Su agua del grifo viene de pozos de agua subterránea locales, profundos que suministran nuestra área de servicio mostrada en el mapa adyacente. La calidad de agua subterránea entregada a su casa es presentada en este informe.

### **¿Cómo Se Analiza Mi Agua Potable?**

El agua que toma se analiza regularmente para asegurarnos de que no halla niveles altos de sustancias químicas, de radioactividad o de bacteria en el sistema de distribución y en las tomas de servicios. Estos análisis se llevan a cabo semanal, mensual, trimestral, y anualmente o con más frecuencia, dependiendo de la sustancia analizada. Bajo las leyes estatales y federales, se nos permite analizar algunas sustancias menos frecuentemente que los periodos anuales porque los resultados no cambian.

### **¿Cuales Son Los Estándares del Agua Potable?**

La Agencia federal de Protección al Medio Ambiente (USEPA) impone los límites de las cantidades de ciertos contaminantes en el agua potable. En California, el Ministerio de Asuntos Exteriores de la Seguridad Social Pública (Departamento) regula la calidad de agua del grifo haciendo cumplir límites que son al menos tan rigurosos como el USEPA'S. Historicamente, los estándares de California han sido más estrictos que los federales.

Hay dos tipos de límites conocidos como estándares. Los estándares primarios lo protegen de sustancias que potencialmente podrían afectar su salud. Las normas establecen los Niveles Contaminantes Máximos (MCL, en inglés) que se permite del contaminante primario o secundario en el agua de beber. Los abastecedores de agua deben asegurarse de que la calidad de esta cumpla con los Niveles Contaminantes Máximos (o MCLs, en inglés). No todas las sustancias tienen un Nivel Contaminante Máximo. El plomo y el cobre, por ejemplo, son regulados, por cierto nivel de acción. Si cualquier sustancia química sobrepasa el nivel de acción, se dará la necesidad de un proceso de tratamiento para rebajar los niveles en el agua de beber. Los abastecedores de agua deben cumplir con los Niveles Contaminantes Máximos para asegurar la calidad del agua.

Las Metas para la Salud Pública (MSP [o PHGs, en inglés]) son establecidas por la agencia estatal de California-EPA. Las PHGs proveen más información con respecto a la calidad del agua, y son similares a los reglamentos federales nombrados Metas para Los Niveles de Contaminante *Maximos* (MNCM [o MCLGs, en inglés]). Las PHGs y MCLGs son metas a nivel recomendable. Las PHG y MCLG son ambas definidas como los niveles de contaminantes en el agua potable por debajo de los niveles donde no se esperan riesgos a la salud y no enforzables. Ambos niveles PHG y MCLG son concentraciones de una sustancia en las que no hay riesgos a la salud aún conocidos.

### **¿Cómo Interpreto Mi Informe de Calidad del Agua?**

Aunque analizamos más de 100 sustancias, las normas nos requirerem que reportemos solo aquellas que se encuentran en el agua. La primer columna en la tabla de la calidad de agua muestra la lista de las sustancias detectadas en el agua. La siguiente columna muestra la lista de la concentración promedio y el rango de concentraciones que se hallan encontrado en el agua que usted toma. En seguida están las listas de el MCL, el PHG y el MCLG, si estos son apropiados. La última columna describe las probables fuentes u origen de las sustancias detectadas en el agua potable.

Para revisar la calidad de su agua de beber, compare los valores por encima del promedio, mínimos y máximos y el Nivel Contaminante Máximo. Revise todos los químicos que se encuentran por encima del Nivel Contaminante Máximo. Si los químicos sobrepasan el Nivel Contaminante Máximo no significa que sea detrimental a la salud de inmediato. Más bien, se requiere que se realicen análisis más frecuentemente en el abastecimiento del agua por un corto período. Si los resultados muestran sobrepasar el MCL, el agua debe ser tratada para remover esa sustancia, o el abastecimiento de esta debe decomisionarse.

### **¿Por Qué Hay Tanta Publicidad Sobre La Calidad Del Agua Potable?**

Las fuentes del agua potable (de ambas agua de la llave y agua embotellada) incluye ríos, lagos, arroyos, lagunas, embalses, manantiales, y pozos. Al pasar el agua por la superficie de los suelos o por la tierra, se disuelven minerales que ocurren al natural, y en algunas ocasiones, material radioactivo, al igual que pueden levantar sustancias generadas por la presencia de animales o por actividades humanas.

Entre los contaminantes que pueden existir en las fuentes de agua se incluyen:

- Contaminantes microbiales como los virus y la bacteria, los que pueden venir de las plantas de tratamiento de aguas negras, de los sistemas sépticos, de las operaciones de ganadería, y de la vida salvaje;
- Contaminantes inorgánicos, como las sales y los metales, los cuales pueden ocurrir naturalmente o como resultado del desagüe pluvial, industrial, o de alcantarillado, producción de gas natural y petróleo, minas y agricultura.
- Pesticidas y herbicidas, los cuales pueden venir de varias fuentes tales como la agricultura, del desagüe pluvial, y de usos residenciales;
- Contaminantes de otras sustancias químicas orgánicas, incluyendo químicos orgánicos volátiles y sintéticos que son productos de procesos industriales y de la producción de petróleo, y que pueden provenir de las estaciones de gasolina, desagües pluviales urbanos, y agricultura aplicación y de sistemas sépticos;
- Contaminantes radioactivos, los cuales pueden ocurrir naturalmente o que pueden ser resultados de las actividades de la producción de gas natural y minería.

Para asegurarse que el agua potable sea saludable, la USEPA y el Departamento impone reglamentos que limitan las cantidades de ciertos contaminantes en el agua que los sistemas públicos de agua proveen. Los reglamentos de Departamento también establecen límites de contaminantes en el agua embotellada la cual debe proveer la misma protección a la salud pública.

Toda el agua potable, incluyendo el agua embotellada, puede contener cantidades pequeñas de ciertos contaminantes. La presencia de contaminantes no necesariamente indica que haya algún riesgo de salud. Para más información acerca de contaminantes y riesgos a la salud favor de llamar a la USEPA encargada de proteger el agua potable al teléfono (1-800-426-4791). Usted puede obtener más información sobre el agua potable al conectarse al Internet en los siguientes domicilios:

- [www.epa.gov/OGWDW](http://www.epa.gov/OGWDW) (el sitio Web del USEPA) • [www.cdph.ca.gov](http://www.cdph.ca.gov) (sitio Web de Departamento de Salud Pública)

Si presente, los niveles elevados del plomo pueden causar el problema de salud serio, sobre todo para mujeres embarazadas y chiquitos. El plomo en el agua potable es principalmente de materiales y componentes asociados con líneas de servicios y a casa fontanería. Maywood Compañía de Echar agua Mutua el No 2 es responsable de proporcionar el agua potable de alta calidad, pero no puede controlar la variedad de materiales usados en la fontanería de componentes. Cuando su echar agua ha estado sentándose durante varias horas, usted puede minimizar el potencial para la exposición de plomo limpiando con agua su grifo durante 30 segundos a 2 minutos antes de usar el echar agua para beber o cocinarse. Si usted está preocupado por el plomo en su echar agua, usted puede desear hacer probar su echar agua. La información en el plomo en el agua potable, probando métodos, y pasos que usted puede tomar para minimizar la exposición está disponible de la Línea directa de Agua Potable Segura o en <http://www.epa.gov/safewater/lead>.

#### **¿Debería Tomar Otras Precauciones?**

Algunas personas pueden ser más vulnerables a los contaminantes en el agua potable que el público en general. Las personas que tienen problemas inmunológicos, o sea esas personas que estén en tratamiento por medio de quimioterapia cancerosa; personas que tienen órganos transplantados, o personas con SIDA o desordenes inmunológicos, personas de edad avanzada, y los bebés que son particularmente susceptibles a ciertas infecciones. Estas personas deben de consultar a sus proveedores de salud médica. Las guías de la USEPA/Centros de Control de Enfermedades aconsejan cómo disminuir los riesgos para prevenir la infección de Cryptosporidium y otros contaminantes microbiales están disponibles por teléfono de la USEPA encargada de proteger el agua potable al teléfono (1-800-426-4791).

#### **Valoración de su Abastecimiento de Agua**

La compañía de agua de Maywood Mutual #2 condujo una valoración de su abastecimiento de aguas subterráneas en el 2003. El abastecimiento de aguas subterráneas es considerado mas vulnerable a la manufactura electrónica y eléctrica; a químicos, procesos petroleros, a sistemas de colección de alcantarillados; a estaciones de gasolina históricas; a instalaciones militares; al plateado, acabado, y fabricación de metal; a talleres automotrices; a flotas, camiones, y terminales de autobuses; a la elaboración y fabricación de madera, pasta, y papel; y a depósitos bajo tierra y basureros. Una copia de la valoración aprobada puede ser leer a la oficina a la 3521 E. Slauson Ave.

#### **¿Cómo Puedo Participar en las Decisiones Sobre Asuntos Acerca del Agua Que Me Puedan Afectar ?**

Los accionistas son bienvenidos asisten a reuniones de Junta directiva mensuales el tercer o cuarto martes de cada mes en 4:00 en 3521 E. Avenida de Slauson, Maywood CA 90270. Por favor llame la oficina al menos un día antes de la reunión para ser colocada por el orden del día.

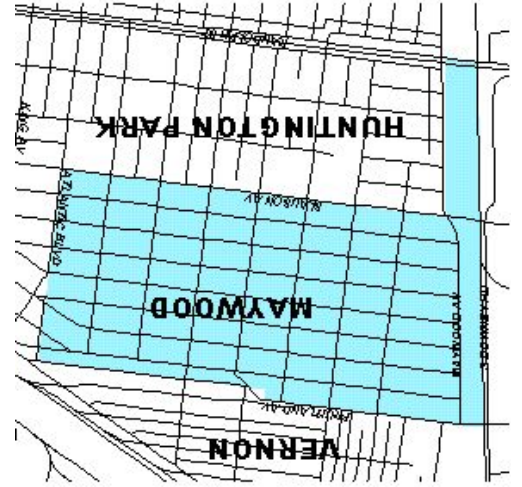
#### **¿Cómo Me Pongo En Contacto Con Mi Agencia del Agua Si Tengo Preguntas Sobre La Calidad Del Agua?**

Si usted tiene preguntas específicas sobre la calidad del agua potable, por favor llame a Gustavo N. Villa (323) 581-5816.

#### **Algunas extremidades provechosas de la conservación del agua**

- Arreglar los grifos que gotean en su hogar - excepto hasta 20 galones cada día por cada detenido de fugas
- Guardar entre 15 y 50 galones por cada vez que el lavado sólo cargas completas de ropa
- Ajuste sus regaderas de modo que el agua caiga en su césped / jardín, no la acera / calzada - excepto 500 galones por mes
- Utilice pajote orgánico alrededor de las plantas para reducir la evaporación - guardar cientos de galones por año

MAYWOOD MUTUAL WATER COMPANY NO. 2  
2009 CONSUMER CONFIDENCE REPORT



Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Para obtener una copia en Español, llame a (323) 581-5816.

MAYWOOD MUTUAL WATER COMPANY NO. 2  
3521 E. SLAUSON AVE  
MAYWOOD, CA 90270

## APPENDIX A

### MAYWOOD MUTUAL WATER COMPANY #3

#### WATER SYSTEM INFORMATION

Maywood Mutual Water Company #3 serves portions of the Cities of Maywood, Bell, and Vernon (industrial). A total of approximately 1,502 acre-feet of water was produced by the Maywood Mutual Water Company #3 in 2009, of which approximately 52% (772 acre-feet) of total water sold by Maywood Mutual Water Company #3 was supplied to customers in the City of Maywood. The following table contains information on Maywood Mutual Water Company #3 supply sources.

| Source                   | Capacity (gpm) | Remarks  |
|--------------------------|----------------|--|
| Prospect Well (Well #1)  | 750            | Pumps into a storage tank and is then boosted into the district system |
| Warehouse Well (Well #7) | 1,000          | Pumps into a storage tank and is then boosted into the district system |
| District Well (Well #4)  | 1,300          | Pumps into a storage tank and is then boosted into the district system |

Maywood Mutual Water Company #3 also has emergency connections with Maywood Mutual Water Company #2 and Southern California Water Company.



**2008/2009 Water Year**

**MAYWOOD MUTUAL WATER COMPANY No. 3**

**CITY/WATER UTILITY INFORMATION**

|  |  |                               |   |                                   |
|--|--|-------------------------------|---|-----------------------------------|
| CITY/WATER UTILITY                     | MAYWOOD MUTUAL WATER COMPANY No. 3 System # 19-086                   |                               |   |                                   |
| SERVICE AREA                           | City of Maywood, and City of Bell, small part of Vernon (industrial) |                               |   |                                   |
| AREA (SQUARE MILES)                    | <ONE Square Mile 19 miles of pipe 100,000 feet of service mains      |                               |   |                                   |
| SERVICE AREA POPULATION                | 9,500  | Average of 4.9 per household  |   | Average useage 150 gpd per person |
| NUMBER OF CONNECTIONS                  | 2023 total   | 1954 residential customers    |   |                                   |
| NUMBER OF CONNECTIONS ACTIVE           | 2004 total   | 1938 residential customers    |   |                                   |
| WATER RIGHTS                           | 1407 A/F   | Average years demand 1625 A/F |   |                                   |
| Location and State ID#                 |  | Latitude                      |   | Longitude                         |
| Well #57 State #02S/12W-19C003S(New)   | N  | 33.98876559                   | W | -118.177776981                    |
| Well #4 District State #02S/12W-19J02S | N  | 33.98028463                   | W | -118.170564025                    |
| Prospect Well State # 02S/12W-19M02S   | N  | 33.97948985                   | W | -118.183579003                    |

**FACILITY**

| WBMWD METER CONNECTIONS | NUMBER | CAPACITY (GPM) | FEEDER         |
|-------------------------|--------|----------------|----------------|
| 1. GARFIELD & RANDOLPH  | WB31a  | 3,000          | Middle (south) |
| <b>TOTAL</b>            |        | <b>3,000</b>   |                |

**INTERCONNECTIONS/EMERGENCY CONNECTIONS**

| Description/Location      | AGENCY                         | CAPACITY                |
|---------------------------|--------------------------------|-------------------------|
| 1. Atlantic & 52nd street | Maywood Mutual Water Co. No. 2 | System Pressure 6" main |
| 2. Atlantic & Gage        | So. Calif Water Company        | System Pressure 6" main |
| <b>TOTAL</b>              |                                | <b>1,000 (GPM) each</b> |

**BOOSTER STATIONS**

| Description/Location              | Capacity (GPM) | Discharge | Suction   | # of Pumps | Standby power |
|-----------------------------------|----------------|-----------|-----------|------------|---------------|
| 1. District 4-District & Randolph | 2150           | x         | Res/Well  | 3          | 250KW Gen.    |
| 2. Prospect 1-Prospect & Filmore  | 1650           | x         | Res/Well  | 3          | N             |
| 3. 57th street 3 warehouse        | 1100           | x         | Res. Only | 2          | N             |
| <b>TOTAL</b>                      | <b>4900</b>    | May-00    |           | <b>8</b>   | May-00        |

**RESERVOIRS**

| Description/Location           | Storage (MG) | Source      | Average Fill | Standby power |
|--------------------------------|--------------|-------------|--------------|---------------|
| 1. District 4                  | 4            | Well/System | 2.6          | N             |
| 2. Prospect 1                  | 0.5          | Well/System | 0.3          | N             |
| 3. 57th street 3 warehouse     | 0.175        | Well/System | 0.12         | N             |
| 4. Elevated Tank 5519 District | 0.2          | System      | 0.125        | N             |
| <b>TOTAL</b>                   | <b>4.875</b> |             | <b>3.145</b> |               |

**WELLS**

| Description/Location                | Capacity (GPM) | Previous years Prod. | Discharge  | Treatment | Standby power |
|-------------------------------------|----------------|----------------------|------------|-----------|---------------|
| 1. District 4                       | 1360           | 479 A/F              | Res/System | Hypo      | 250KW Gen.    |
| 2. Prospect 1                       | 400            | 479 A/F              | Res/System | Hypo      | N             |
| 3. 57th street 7 warehouse          | 1113           | 493 A/F              | Res. Only  | Hypo      | N             |
| 4. MWD Connection/8" pressure valve | 2000           | 0 A/F                | System/Res | Clorimine | Gravity feed  |
| <b>TOTAL</b>                        | <b>4873</b>    | <b>1451 A/F</b>      |            |           |               |

MWD Connection 80-160psi 2000 (GPM)  
 12" MWD Main to our 8" System 6" Reducing Clay Valve adjustable from 30psi-100psi

325,851 GALLONS/A/F  
 7.480509642 GALLONS/C/F  
 43,560 C/F/A/F  
 748.0509642 GALLONS/1C

**PRESSURE ZONES**

Number of Zones ONE 52-58psi

**2009-2010**

|                              | January<br>1/1/2009     | February<br>2/1/2009    | March<br>3/1/2009       | April<br>4/1/2009       | May<br>5/1/2009         | June<br>6/1/2009        | July<br>7/1/2009        | August<br>8/1/2009      | September<br>9/1/2009   | October<br>10/1/2009    | November<br>11/1/2009   | December<br>12/1/2009   |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>GALLONS</b>               |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Plant 1 Prospect             | 8480190                 | 10967050                | 13718800                | 16203520                | 18911500                | 21312940                | 23895250                | 27241890                | 30508850                | 33883210                | 37041530                | 37633320                |
|                              | 2571700                 | 2486860                 | 2751750                 | 2484720                 | 2707980                 | 2401440                 | 2582310                 | 3346640                 | 3266960                 | 3374360                 | 3158320                 | 591790                  |
| <b>ACRE FEET</b>             | 59.0381                 | 57.0904                 | 63.1715                 | 57.0413                 | 62.1667                 | 55.1295                 | 59.2817                 | 76.8283                 | 74.9991                 | 77.4646                 | 72.5051                 | 13.5856                 |
| <b>ELECTRIC USED</b>         | 6884/528                | 7394/510                | 7955/561                | 8468/513                | 9033/545                | 9536/503                | 10078/542               | 10781/543               | 11465/684               | 12172/708               | 12834/662               | 12955/121               |
| Hours per Acre Foot run/time | 8.94 HP A/F             | 8.93 HP A/F             | 8.07 HP A/F             | 8.94 HP A/F             | 8.20 HP A/F             | 9.25 HP A/F             | 8.60 HP A/F             | 6.64 HP A/F             | 6.80 HP A/F             | 9.14 HP A/F             | 9.14 HP A/F             | 9.14 HP A/F             |
|                              | 13727<br>741            | 14441<br>714            | 15230<br>789            | 15946<br>716            | 16734<br>788            | 17437<br>703            | 18191<br>754            | 19163<br>972            | 20112<br>949            | 21097<br>985            | 22021<br>924            | 22195<br>174            |
|                              | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        | <b>NEW METER</b>        |
| KWH-A/F Average 7.48         | 12.55                   | 12.51                   | 12.49                   | 12.55                   | 12.68                   | 12.75                   | 12.72                   | 12.65                   | 12.65                   | 12.72                   | 12.74                   | 12.81                   |
| Year to date amount          | 434.80 A/F              | 491.89 A/F              | 555.06 A/F              | 612.10 A/F              | 674.27 A/F              | 729.40 A/F              | 59.28 A/F               | 136.11 A/F              | 211.11 A/F              | 288.57 A/F              | 361.08 A/F              | 374.66 A/F              |
| <b>GALLONS</b>               |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Plant 3 W/House Well 7       | 16425530                | 17785940                | 19250550                | 21043440                | 22902460                | 24826560                | 26779900                | 28334860                | 29880980                | 31275410                | 32471360                | 34292990                |
|                              | 1354430                 | 1360410                 | 1464610                 | 1792890                 | 1859020                 | 1924100                 | 1953340                 | 1554960                 | 1546120                 | 1394430                 | 1195950                 | 1821630                 |
|                              | 31.0934                 | 31.2307                 | 33.6228                 | 41.1591                 | 42.6772                 | 44.1713                 | 44.8425                 | 35.6970                 | 35.4940                 | 32.0117                 | 27.4552                 | 41.8189                 |
| <b>ELECTRIC USED</b>         | 2619/186 <sup>488</sup> | 2806/187 <sup>489</sup> | 3007/201 <sup>527</sup> | 3257/250 <sup>587</sup> | 3523/266 <sup>685</sup> | 3802/279 <sup>711</sup> | 4087/285 <sup>724</sup> | 4315/228 <sup>575</sup> | 4546/231 <sup>575</sup> | 4755/209 <sup>523</sup> | 4935/180 <sup>445</sup> | 5208/273 <sup>665</sup> |
| Hours per Acre Foot run/time | 5.98 HP A/F             | 5.99 HP A/F             | 5.56 HP A/F             | 4.54 HP A/F             | 4.38 HP A/F             | 4.23 HP A/F             | 4.17 HP A/F             | 5.24 HP A/F             | 5.27 HP A/F             | 6.53 HP A/F             | 6.53 HP A/F             | 6.53 HP A/F             |
|                              |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
|                              |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| KWH-A/F Average 8.97         | 325.93 A/F              | 366.69 A/F              | 407.45 A/F              | 448.21 A/F              | 488.97 A/F              | 529.73 A/F              | 44.84 A/F               | 85.60 A/F               | 126.36 A/F              | 167.12 A/F              | 207.88 A/F              | 248.64 A/F              |
|                              |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Prospect                     | 50.16%                  | 52.19%                  | 52.13%                  | 45.48%                  | 45.40%                  | 44.43%                  | 42.52%                  | 53.48%                  | 55.41%                  | 61.04%                  | 62.11%                  | 12.85%                  |
| Warehouse                    | 26.42%                  | 28.55%                  | 27.75%                  | 32.82%                  | 31.17%                  | 35.60%                  | 32.16%                  | 24.85%                  | 26.22%                  | 25.23%                  | 23.52%                  | 39.56%                  |
| District                     | 23.41%                  | 19.25%                  | 20.13%                  | 21.70%                  | 23.42%                  | 19.96%                  | 25.32%                  | 21.67%                  | 18.37%                  | 13.74%                  | 14.35%                  | 47.59%                  |
| Warehouse & District Total   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Plant 4 District             | 102880500               | 103797700               | 104860200               | 106045600               | 107442600               | 108521600               | 110059600               | 111415400               | 112498200               | 113257500               | 113987400               | 116179100               |
|                              | 1200300                 | 917200                  | 1062500                 | 1185400                 | 1397000                 | 1079000                 | 1538000                 | 1355800                 | 1082800                 | 759300                  | 729900                  | 2191700                 |
|                              | 27.5551                 | 21.0560                 | 24.3916                 | 27.2130                 | 32.0707                 | 24.7704                 | 35.3076                 | 31.1249                 | 24.8577                 | 17.4311                 | 16.7562                 | 50.3145                 |
| <b>ELECTRIC USED</b>         | 1925/212                | 2024/99                 | 2140/116                | 2271/131                | 2427/156                | 2549/122                | 2724/175                | 2879/155                | 3004/125                | 3092/88                 | 3177/85                 | 3428/251                |
| Hours per Acre Foot run/time | 7.69 HP A/F             | 4.70 HP A/F             | 4.76 HP A/F             | 4.81 HP A/F             | 4.86 HP A/F             | 4.93 HP A/F             | 3.46 HP A/F             | 3.92 HP A/F             | 4.91 HP A/F             | 5.05 HP A/F             | 5.05 HP A/F             | 5.05 HP A/F             |
|                              | 2160                    | 2339                    | 2545                    | 2777                    | 3053                    | 3270                    | 3579                    | 3852                    | 4072                    | 4229                    | 4379                    | 4819                    |
|                              | 234                     | 179                     | 206                     | 232                     | 276                     | 217                     | 309                     | 273                     | 220                     | 157                     | 150                     | 440                     |
| KWH-A/F Average 8.18         | 8.49                    | 8.50                    | 8.45                    | 8.53                    | 8.61                    | 8.76                    | 8.75                    | 8.77                    | 8.85                    | 9.01                    | 8.95                    | 8.74                    |
| Year to date amount          | 245.77 A/F              | 266.82 A/F              | 291.21 A/F              | 318.43 A/F              | 350.50 A/F              | 375.27 A/F              | 35.31 A/F               | 66.43 A/F               | 91.29 A/F               | 108.72 A/F              | 125.48 A/F              | 175.79 A/F              |
|                              |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| <b>ALL WELLS /MONTH</b>      | 117.69 A/F              | 109.38 A/F              | 121.18 A/F              | 125.41 A/F              | 136.92 A/F              | 124.07 A/F              | 139.43 A/F              | 143.65 A/F              | 135.35 A/F              | 126.90 A/F              | 116.73 A/F              | 105.72 A/F              |
| MWD purchased                | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 | 0.0 A/F                 |

|         |        |
|---------|--------|
| 577.23% | 48.10% |
| 353.85% | 29.49% |
| 268.92% | 22.41% |

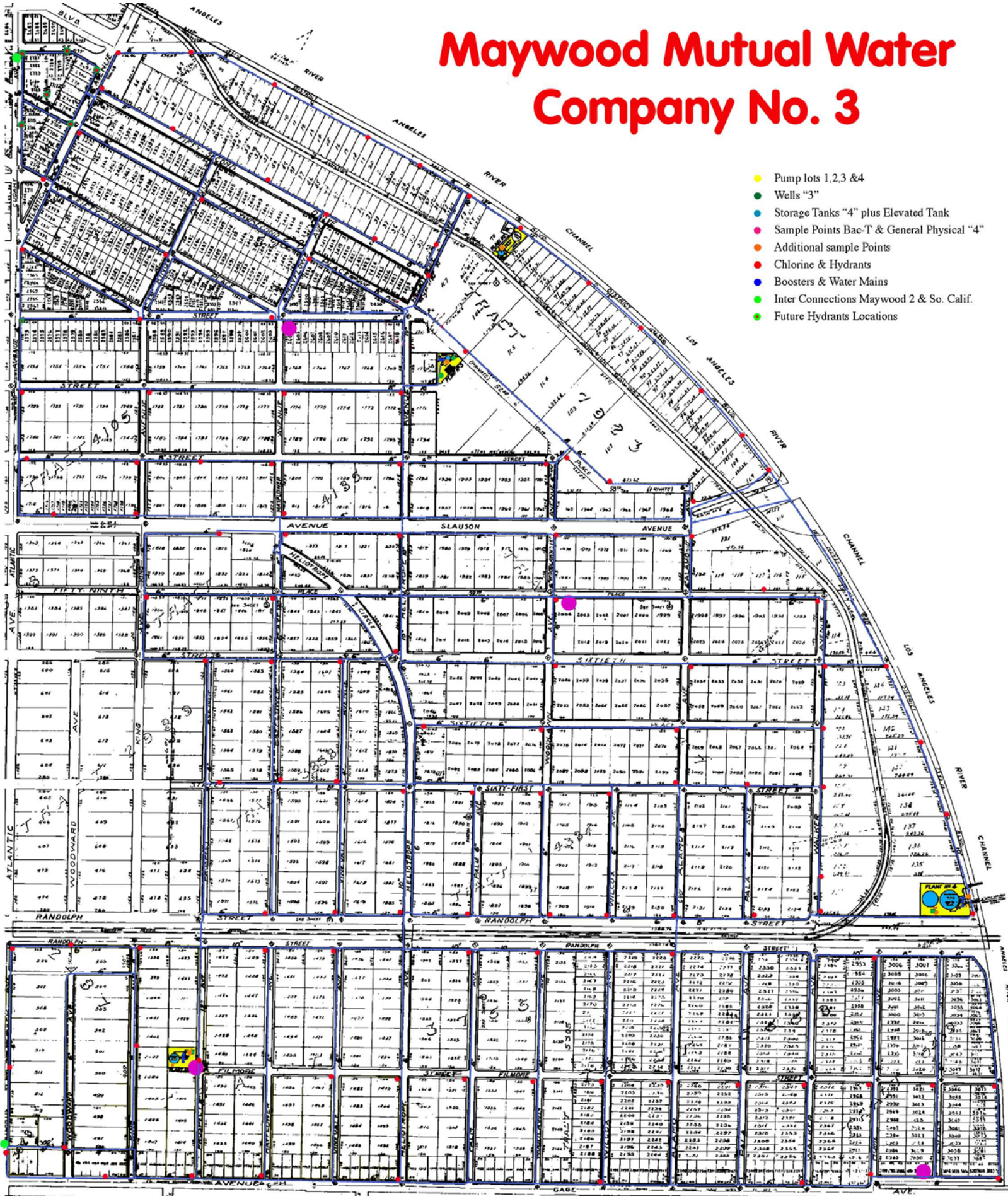
| Location and State ID#                 |   | Latitude    |   | Longitude      |
|--|---|-------------|---|----------------|
| Well #57 State #02S/12W-19C02S         | N | 33.98876559 | W | -118.177776981 |
| Well #4 District State #02S/12W-19J02S | N | 33.98028463 | W | -118.170564025 |
| Prospect Well State # 02S/12W-19M02S   | N | 33.97948985 | W | -118.183579003 |

#### WELLS

| Description/Location  | Capacity (GPM) | Previous years Prod.  | Discharge  | Treatment | Standby power |
|---|----------------|---|------------|-----------|---------------|
| 1. District 4<br>Depth 980 feet<br>Water lubricating 100HP              | 1400           | 479 A/F<br>Address: 6159 District Ave. Maywood, CA<br>Perforations start 610' | Res/System | Hypo      | 250KW Gen.    |
| 2. Prospect 1<br>Depth 1333 feet<br>Water lubricating 100HP             | 400            | 479 A/F<br>Address: 6253 Prospect Bell, CA<br>Perforations start 350"         | Res/System | Hypo      | N             |
| 3. 57th street 7 warehouse<br>Depth 800 feet<br>Water lubricating 100HP | 1200           | 493 A/F<br>Address: 4809 57th Street Maywood, CA<br>Perforations start 635"   | Res. Only  | Hypo      | N             |

# Maywood Mutual Water Company No. 3

- Pump lots 1,2,3 & 4
- Wells "3"
- Storage Tanks "4" plus Elevated Tank
- Sample Points Bac-T & General Physical "4"
- Additional sample Points
- Chlorine & Hydrants
- Boosters & Water Mains
- Inter Connections Maywood 2 & So. Calif.
- Future Hydrants Locations



**APPENDIX B**  
**MANGANESE, TCE, AND PERCHLORATE CONCENTRATIONS**

**APPENDIX B**  
**Manganese Concentrations**  
**Maywood Mutual Water Co. #1**

| SOURCE_NAM          | SAMPLE_D   | MANGANESE   | LAB_NAME                                 |
|---------------------|------------|-------------|--|
| WELL 03             | 1/5/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 1/20/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 2/2/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 2/17/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 2/20/2009  | ND(20)      | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 03             | 3/2/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 4/6/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 5/7/2009   | ND(20)      | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 03             | 6/1/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 7/6/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 8/3/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 8/20/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 8/21/2009  | ND(20)      | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 03             | 8/27/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 8/31/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 9/3/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 9/8/2009   | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 10/5/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 11/2/2009  | ND(20)      | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 03             | 11/19/2009 | 31          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 03             | 12/7/2009  | 70          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| <b>2009 AVERAGE</b> |            | <b>13.9</b> |  |
|                     |            |             |  |
| WELL 04             | 1/5/2009   | 69          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 1/20/2009  | 91          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 2/2/2009   | 80          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 2/17/2009  | 82          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 2/20/2009  | 85          | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 04             | 3/2/2009   | 78          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 4/6/2009   | 77          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 5/7/2009   | 78          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 04             | 6/1/2009   | 79          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 7/6/2009   | 74          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 8/3/2009   | 77          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 8/21/2009  | 92          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 04             | 9/8/2009   | 81          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 10/5/2009  | 76          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 11/2/2009  | 84          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 04             | 11/19/2009 | 85          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 04             | 12/7/2009  | 110         | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| <b>2009 AVERAGE</b> |            | <b>82.2</b> |  |

Data Source: California Department of Public Health, November 2010

Concentrations are in micrograms per liter (ug/L)

ND(20) - Not detected above the reporting limit, if provided

For calculation purposes, results reported as ND are assumed to have a half of the laboratory reporting limit, e.g., a value of 10 µg/L is used for ND(20).

**APPENDIX B**  
**Manganese Concentrations**  
**Maywood Mutual Water Co. #2**

| SOURCE NAME      | SAMPLE DAT | MANGANESE | LAB NAME                                 |
|------------------|------------|-----------|--|
| 52ND STREET WELL | 1/5/2009   | 58        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 1/12/2009  | 71        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 1/16/2009  | 58        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 1/19/2009  | 45        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 1/26/2009  | 55        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 2/2/2009   | 150       | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 2/9/2009   | 96        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 2/16/2009  | 55        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 2/20/2009  | 61        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 2/23/2009  | 36        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 3/2/2009   | 83        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 3/9/2009   | 84        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 3/12/2009  | 94        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 3/16/2009  | 86        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 3/23/2009  | 90        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 3/30/2009  | 86        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 4/6/2009   | 80        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 4/13/2009  | 77        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 4/20/2009  | 110       | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 4/21/2009  | 81        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 4/27/2009  | 82        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 5/4/2009   | 72        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 5/7/2009   | 77        | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| 52ND STREET WELL | 5/11/2009  | 74        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 5/18/2009  | 76        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 5/26/2009  | 69        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 6/1/2009   | 75        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 6/8/2009   | 72        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 6/12/2009  | 86        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 6/15/2009  | 68        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 6/22/2009  | 77        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 6/29/2009  | 71        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 7/6/2009   | 65        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 7/13/2009  | 62        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 7/17/2009  | 70        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 7/20/2009  | 66        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 7/27/2009  | 66        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 8/3/2009   | 59        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 8/10/2009  | 75        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 8/14/2009  | 71        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 8/17/2009  | 72        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 8/24/2009  | 72        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 8/31/2009  | 72        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 9/8/2009   | 72        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 9/14/2009  | 60        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 9/21/2009  | 68        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 9/24/2009  | 69        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 9/28/2009  | 66        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 10/5/2009  | 88        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 10/12/2009 | 67        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 10/19/2009 | 71        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 10/26/2009 | 67        | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL | 10/27/2009 | 62        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL | 11/2/2009  | 60        | CLINICAL LABORATORIES OF SAN BERNARDINO  |

**APPENDIX B**  
**Manganese Concentrations**  
**Maywood Mutual Water Co. #2**

| SOURCE NAME         | SAMPLE DAT | MANGANESE   | LAB NAME                                 |
|---------------------|------------|-------------|--|
| 52ND STREET WELL    | 11/9/2009  | 68          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 11/16/2009 | 69          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 11/19/2009 | 70          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL    | 11/23/2009 | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 11/30/2009 | 71          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 12/7/2009  | 74          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 12/14/2009 | 78          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 12/14/2009 | 72          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| 52ND STREET WELL    | 12/21/2009 | 70          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| 52ND STREET WELL    | 12/28/2009 | 100         | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| <b>2009 AVERAGE</b> |            | <b>73.3</b> |  |
|                     |            |             |  |
| MAY AVENUE WELL     | 1/5/2009   | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 1/12/2009  | 64          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 1/16/2009  | 61          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| MAY AVENUE WELL     | 1/19/2009  | 65          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 1/26/2009  | 70          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 2/2/2009   | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 2/9/2009   | 51          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 2/16/2009  | 57          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 2/20/2009  | 68          | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| MAY AVENUE WELL     | 2/23/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 3/2/2009   | 59          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 3/9/2009   | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 3/12/2009  | 64          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| MAY AVENUE WELL     | 3/16/2009  | 65          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 3/23/2009  | 64          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 3/30/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 4/6/2009   | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 4/13/2009  | 60          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 4/20/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 4/20/2009  | 65          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| MAY AVENUE WELL     | 4/27/2009  | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 5/4/2009   | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 5/7/2009   | 60          | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| MAY AVENUE WELL     | 5/11/2009  | 60          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 5/18/2009  | 61          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 5/26/2009  | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 6/1/2009   | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 6/8/2009   | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 6/12/2009  | 60          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| MAY AVENUE WELL     | 6/15/2009  | 93          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 6/22/2009  | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 6/29/2009  | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 7/6/2009   | 54          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 7/13/2009  | 52          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 7/17/2009  | 59          | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| MAY AVENUE WELL     | 7/20/2009  | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 7/27/2009  | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 8/3/2009   | 51          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 8/10/2009  | 65          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 8/14/2009  | 64          | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| MAY AVENUE WELL     | 8/17/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| MAY AVENUE WELL     | 8/24/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO  |



**APPENDIX B**  
**Manganese Concentrations**  
**Maywood Mutual Water Co. #2**

| SOURCE NAME         | SAMPLE DAT | MANGANESE   | LAB NAME                                |
|---------------------|------------|-------------|---|
| MAY AVENUE WELL     | 8/31/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 9/8/2009   | 64          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 9/14/2009  | 53          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 9/21/2009  | 63          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 9/28/2009  | 59          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 10/5/2009  | 64          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 10/12/2009 | 60          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 10/19/2009 | 64          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 10/26/2009 | 61          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 10/27/2009 | 54          | TESTAMERICA - IRVINE (FORMERLY DEL MAR) |
| MAY AVENUE WELL     | 11/2/2009  | 73          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 11/9/2009  | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 11/16/2009 | 61          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 11/19/2009 | 63          | TESTAMERICA - IRVINE (FORMERLY DEL MAR) |
| MAY AVENUE WELL     | 11/23/2009 | 58          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 11/30/2009 | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 12/7/2009  | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 12/14/2009 | 62          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 12/14/2009 | 62          | TESTAMERICA - IRVINE (FORMERLY DEL MAR) |
| MAY AVENUE WELL     | 12/21/2009 | 60          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| MAY AVENUE WELL     | 12/28/2009 | 65          | CLINICAL LABORATORIES OF SAN BERNARDINO |
| <b>2009 AVERAGE</b> |            | <b>61.7</b> |   |

Data Source: California Department of Public Health, November 2010  
Concentrations are in micrograms per liter (ug/L)

**APPENDIX B**  
**Manganese, TCE, and Perchlorate Concentrations**  
**Maywood Mutual Water Co. #3**

| SOURCE              | SAMPLE DATE | MANGANESE | PERCHLORATE  | TCE            | LAB NAME                                 |
|---------------------|-------------|-----------|--------------|----------------|--|
| PROSPECT WELL 01    | 2/22/2008   | NA        | ND(4)        | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 4/24/2008   | ND(20)    | NA           | NA             | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| PROSPECT WELL 01    | 5/23/2008   | NA        | NA           | 2              | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| PROSPECT WELL 01    | 5/23/2008   | NA        | ND(4)        | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 9/29/2008   | NA        | NA           | 1.9            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| PROSPECT WELL 01    | 9/29/2008   | NA        | NA           | 2.3            | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 11/18/2008  | NA        | NA           | 2.3            | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 2/20/2009   | NA        | NA           | 2              | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 5/11/2009   | NA        | ND(4)        | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 8/14/2009   | NA        | NA           | 1.8            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| PROSPECT WELL 01    | 8/14/2009   | NA        | NA           | 2.4            | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| PROSPECT WELL 01    | 11/20/2009  | NA        | NA           | 4.5            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| <b>2009 AVERAGE</b> |             |           | <b>ND(4)</b> | <b>2.7</b>     |  |
| WELL 04 (District)  | 4/24/2008   | 26        | NA           | NA             | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 04 (District)  | 5/23/2008   | NA        | NA           | ND(0.5)        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 04 (District)  | 5/23/2008   | NA        | ND(4)        | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 04 (District)  | 9/29/2008   | NA        | NA           | ND(0.5)        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 04 (District)  | 5/11/2009   | NA        | ND(4)        | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 04 (District)  | 9/22/2009   | NA        | NA           | ND(0.5)        | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| <b>2009 AVERAGE</b> |             |           | <b>ND(4)</b> | <b>ND(0.5)</b> |  |
| WELL 07 (Warehouse) | 4/24/2008   | NA        | NA           | 2.8            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 4/24/2008   | ND(20)    | NA           | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 07 (Warehouse) | 5/23/2008   | NA        | 5.7          | NA             | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 9/29/2008   | NA        | ND           | NA             | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 12/1/2008   | NA        | ND           | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 1/5/2009    | NA        | ND           | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 2/11/2009   | NA        | 4.1          | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 2/20/2009   | NA        | ND           | NA             | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 4/6/2009    | NA        | ND           | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 4/9/2009    | NA        | ND(4)        | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 4/9/2009    | NA        | ND           | NA             | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 5/11/2009   | NA        | ND(4)        | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 5/11/2009   | NA        | NA           | 4.2            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 5/11/2009   | NA        | ND           | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 07 (Warehouse) | 6/9/2009    | NA        | ND           | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 7/8/2009    | NA        | ND           | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 8/3/2009    | NA        | ND(4)        | NA             | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 8/14/2009   | NA        | NA           | 2.8            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| WELL 07 (Warehouse) | 8/14/2009   | NA        | ND           | NA             | TESTAMERICA - ONTARIO (FORMERLY DEL MAR) |
| WELL 07 (Warehouse) | 9/8/2009    | NA        | ND(4)        | 3.8            | CLINICAL LABORATORIES OF SAN BERNARDINO  |
| WELL 07 (Warehouse) | 11/20/2009  | NA        | ND(4)        | 3.3            | TESTAMERICA - IRVINE (FORMERLY DEL MAR)  |
| <b>2009 AVERAGE</b> |             |           | <b>ND(4)</b> | <b>3.5</b>     |  |

Data Source: California Department of Public Health, November 2010

NA - Data not available

ND(20) - Not detected above the reporting limit, if provided

TCE - Trichloroethene

Concentrations are in micrograms per liter (ug/L)

For calculation purposes, results reported as ND are assumed to have a half of the laboratory reporting limit, e.g., a value of 10 ug/L is used for ND(20).

**APPENDIX C**

**MANGANESE AND TCE CONCENTRATIONS IN PUBLIC WATER SUPPLY IN  
COMMUNITIES WITHIN A 20-MILE RADIUS OF CITY OF MAYWOOD**

**APPENDIX C**  
**Manganese and TCE Concentrations In Public Water Supply Within 20-Mile Radius of City of Maywood**

| City/Community                | Purveyor   | 2009 CCR    |      |                |             |                | Calculated Conc. Based On % of Source Used |       |      |      |
|-------------------------------|--|-------------|------|----------------|-------------|----------------|--|-------|------|------|
|                               |  | Groundwater |      | MWD Water Used | MWD Water % | Ground-water % | Mn   |       | TCE  |      |
|                               |  | Mn          | TCE  |                |             |                | Max  | Min   | Max  | Min  |
|                               |  | ug/L        | ug/L | ug/L           | ug/L        | ug/L           | ug/L                                       | ug/L  | ug/L |      |
| Alhambra                      | City of Alhambra Utilities Department                            | NA          | 0.8  | Yes            | 20          | 80             | 10.0                                       | 10.0  | 0.69 | 0.69 |
| Altadena                      | Lincoln Avenue Water Company                                     | NA          | NA   | Yes            | 38          | 62             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Anaheim                       | Anaheim Public Utilities   | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Arcadia                       | City of Arcadia  | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Artesia                       | Golden State Water Company                                       | NA          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Azusa                         | Azusa Light & Water  | NA          | NA   | Yes            | 35          | 65             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Baldwin Hills                 | California American Water  | 0.009       | 0.2  | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Baldwin Park                  | Valley County Water District                                     | NA          | 0.6  | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.60 |
| Bell                          | Golden State Water Company                                       | ND          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Bell Gardens                  | City of Bell Gardens   | ND          | NA   | Yes            | 68.6        | 31.4           | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Bell Gardens                  | Golden State Water Company                                       | ND          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Bellflower                    | Bellflower Home Gardern Water Company                            | 11.6        | NA   | Yes            | 19          | 81             | 11.3                                       | 11.3  | 0.25 | 0.25 |
| Bellflower                    | Bellflower Municipal Water System                                | 250.7       | NA   | Yes            | NA          | NA             | 10.0                                       | 250.7 | 0.25 | 0.25 |
| Bellflower Norwalk            | Park Water Company   | NA          | NA   | Yes            | 74          | 26             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Beverly Hills                 | City of Beverly Hills Public Works and Transportation Department | NA          | NA   | Yes            | 90          | 10             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Brea                          | City of Brea Water Division                                      | NA          | 1.0  | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 1.00 |
| Buena Park                    | City of Buena Park Water Department                              | <20         | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Burbank                       | Burbank Water an Power   | NA          | NA   | Yes            | 57          | 43             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Cerritos                      | City of Cerritos Department of Water and Power                   | 44          | <0.5 | Yes            | 4.14        | 95.86          | 42.6                                       | 42.6  | 0.25 | 0.25 |
| City of Industry              | Industry Public Utilities  | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Commerce                      | California Water Service Company                                 | NA          | 0.8  | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.80 |
| Compton                       | City of Compton  | 29.3        | NA   | Yes            | 21          | 79             | 25.2                                       | 25.2  | 0.25 | 0.25 |
| Compton                       | Park Water Company   | NA          | NA   | Yes            | 100         | 0              | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Compton                       | Sativa Los Angeles County Water District                         | ND          | NA   | No             | 0           | 100            | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Covina                        | City of Covina   | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Covina                        | Covina Irrigating company  | ND          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Cudahy                        | Tract 180 Mutual Water Company                                   | ND          | 2.28 | No             | 0           | 100            | 10.0                                       | 10.0  | 2.28 | 2.28 |
| Cudahy                        | Tract 349 Mutual Water Company                                   | 52          | 0.2  | No             | 0           | 100            | 52.0                                       | 52.0  | 0.25 | 0.25 |
| Cypress, Los Almitos, Stanton | Golden State Water Company                                       | ND          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Dominguez                     | California Water Service Company                                 | 5.6         | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Downey                        | City of Downey   | NA          | 0.02 | No             | 0           | 100            | 10.0                                       | 10.0  | 0.25 | 0.25 |
| Duarte                        | California American Water  | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0  | 0.25 | 0.25 |

**APPENDIX C**

**Manganese and TCE Concentrations In Public Water Supply Within 20-Mile Radius of City of Maywood**

| City/Community   | Purveyor                                    | 2009 CCR    |      |                |             |                | Calculated Conc. Based On % of Source Used |      |      |      |
|--|---|-------------|------|----------------|-------------|----------------|--|------|------|------|
|  |   | Groundwater |      | MWD Water Used | MWD Water % | Ground-water % | Mn   |      | TCE  |      |
|  |   | Mn          | TCE  |                |             |                | Max  | Min  | Max  | Min  |
|  |   | ug/L        | ug/L | ug/L           | ug/L        | ug/L           | ug/L                                       | ug/L | ug/L |      |
| East Los Angeles   | California Water Service Company            | 7.4         | 0.4  | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.40 |
| East Pasadena  | East Pasadena Water Company                 | NA          | 0.45 | No             | 0           | 100            | 10.0                                       | 10.0 | 0.45 | 0.45 |
| El Monte   | City of El Monte Water Department           | NA          | ND   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| El Monte   | Rurban Homes Mutual Co.                     | ND          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| El Monte, Montbello, Rosemead  | San Gabriel Valley Water Company            | 1           | ND   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Florence   | Golden State Water Company                  | NA          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Fountain Valley  | City of Fountain Valley Water Department    | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Fullerton  | California Water Utilities                  | NA          | 0.7  | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.70 |
| Garden Grove   | Garden Grove Water Services Division        | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Glendale   | City of Glendale Water & Power              | ND          | NA   | Yes            | 74          | 26             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Glendora   | City of Glendora                            | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Glendora, Covina, West Covina, La Puente, Industry, Hacienda Heights | Suburban Water Systems                      | NA          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Hawthorne  | California Water Service Company            | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Hemlock  | Hemlock Mutual Water Company                | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Hollydale  | Golden State Water Company                  | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Huntington Park  | City of Huntington Park                     | 20.6        | 0.37 | Yes            | 20          | 80             | 18.5                                       | 18.5 | 0.35 | 0.35 |
| Huntington Beach   | City of Huntington Beach Utilities Division | NA          | NA   | Yes            | 33          | 67             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Inglewood  | California Water Utilities                  | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| La Canada Flintridge   | La Canada Irrigation District               | NA          | 0.9  | Yes            | 90          | 10             | 10.0                                       | 10.0 | 0.32 | 0.32 |
| La Canada Flintridge   | Valley Water Company                        | NA          | NA   | Yes            | 75          | 25             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| La Crescenta, Montrose, Glendale, La Canada Flintridge               | Crescenta Valley Water District             | NA          | NA   | Yes            | 40          | 60             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| La Habra   | The City of La Habra Water Division         | NA          | 0.5  | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.50 |
| La Habra Heights   | La Habra Heights County Water District      | ND          | ND   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| La Puente  | La Puente Valley County Water District      | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| La Verne   | California Water Utilities                  | ND          | NA   | Yes            | 70          | 30             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Lakewood   | City of Lakewood                            | 12          | NA   | No             | 0           | 100            | 12.0                                       | 12.0 | 0.25 | 0.25 |
| Las Flores   | Las Flores Water Company                    | NA          | NA   | Yes            | 65          | 35             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Lomita   | City of Lomita Water System                 | NA          | NA   | Yes            | 100         | 0              | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Long Beach   | Long Beach Water Department                 | NA          | NA   | Yes            | 42          | 58             | 10.0                                       | 10.0 | 0.25 | 0.25 |

**APPENDIX C**  
**Manganese and TCE Concentrations In Public Water Supply Within 20-Mile Radius of City of Maywood**

| City/Community   | Purveyor  | 2009 CCR    |      |                |             |                | Calculated Conc. Based On % of Source Used |      |      |      |
|------------------|---|-------------|------|----------------|-------------|----------------|--|------|------|------|
|                  |   | Groundwater |      | MWD Water Used | MWD Water % | Ground-water % | Mn   |      | TCE  |      |
|                  |   | Mn          | TCE  |                |             |                | Max  | Min  | Max  | Min  |
|                  |   | ug/L        | ug/L | ug/L           | ug/L        | ug/L           | ug/L                                       | ug/L | ug/L |      |
| Los Angeles      | Los Angeles Department of Water and Power         | NA          | 1    | Yes            | 63          | 12             | 10.0                                       | 10.0 | 0.28 | 0.28 |
| Lynwood          | California Water Utilities                        | 2.8         | NA   | Yes            | 15          | 85             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Lynwood          | Park Water Company                                | NA          | NA   | Yes            | 84          | 15             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Lynwood Park     | Lynwood Park Mutual Water Company                 | ND          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Manhattan Beach  | California Water Utilities                        | 59          | NA   | Yes            | NA          | NA             | 10.0                                       | 59.0 | 0.25 | 0.25 |
| Maywood          | Maywood Mutual Water Company No.1                 | 41.1        | NA   | Yes            | 29          | 71             | 32.1                                       | 32.1 | 0.25 | 0.25 |
| Maywood          | Maywood Mutual Water Company No.2                 | 63.5        | NA   | No             | 0           | 100            | 63.5                                       | 63.5 | 0.25 | 0.25 |
| Maywood          | Maywood Mutual Water Company No.3                 | 8.7         | 2.4  | No             | 0           | 100            | 10.0                                       | 10.0 | 2.40 | 2.40 |
| Monrovia         | City of Monrovia Department of Public Works       | NA          | 3.99 | No             | 0           | 100            | 10.0                                       | 10.0 | 3.99 | 3.99 |
| Montebello       | California Water Service Company                  | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Montebello       | Montebello Land and Water Company                 | ND          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Monterey Park    | City of Monterey Park Public Works Water Division | ND          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Norwalk          | California Water Utilities                        | 44          | 0.26 | Yes            | NA          | NA             | 10.0                                       | 44.0 | 0.25 | 0.26 |
| Norwalk          | Golden State Water Company                        | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Orange           | City of Orange Water Division                     | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Palos Verdes     | California Water Utilities                        | NA          | NA   | Yes            | 100         | 0              | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Paramount        | California Water Utilities                        | 47.8        | NA   | Yes            | NA          | NA             | 10.0                                       | 47.8 | 0.25 | 0.25 |
| Pasadena         | Pasadena Water & Power                            | 1.8         | 3.33 | Yes            | 61          | 36             | 10.0                                       | 10.0 | 1.35 | 1.35 |
| Pico Rivera      | California Water Utilities                        | NA          | ND   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Pico Rivera      | California Water Utilities                        | 1.04        | 0.5  | No             | 0           | 100            | 10.0                                       | 10.0 | 0.50 | 0.50 |
| Pico Rivera      | City of Pico Rivera                               | NA          | ND   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Placentia        | Golden State Water Company                        | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Pomona           | City of Pomona Public Works                       | NA          | 2.05 | Yes            | 14          | 86             | 10.0                                       | 10.0 | 1.80 | 1.80 |
| Rancho Dominguez | California Water Service Company                  | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Rowland          | Rowland Water District                            | NA          | NA   | Yes            | 100         | 0              | 10.0                                       | 10.0 | 0.25 | 0.25 |
| San Dimas        | Golden State Water Company                        | NA          | NA   | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| San Gabriel      | Golden State Water Company                        | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| San Gabriel      | San Gabriel County Water Company                  | NA          | NA   | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| San Marino       | California American Water                         | NA          | 0.70 | Yes            | 8           | 92             | 10.0                                       | 10.0 | 0.66 | 0.66 |

**APPENDIX C**  
**Manganese and TCE Concentrations In Public Water Supply Within 20-Mile Radius of City of Maywood**

| City/Community                                    | Purveyor                             | 2009 CCR    |         |                |             |                | Calculated Conc. Based On % of Source Used |      |      |      |
|---|--------------------------------------|-------------|---------|----------------|-------------|----------------|--|------|------|------|
|   |                                      | Groundwater |         | MWD Water Used | MWD Water % | Ground-water % | Mn   |      | TCE  |      |
|   |                                      | Mn          | TCE     |                |             |                | Max  | Min  | Max  | Min  |
|   |                                      | ug/L        | ug/L    | ug/L           | ug/L        | ug/L           | ug/L                                       | ug/L | ug/L |      |
| Santa Ana   | City of Santa Public Works Agency    | NA          | NA      | Yes            | 31          | 69             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Santa Monica                                      | City of Santa Monica Water Division  | 5           | 0.7     | Yes            | 15          | 85             | 10.0                                       | 10.0 | 0.63 | 0.63 |
| Seal Beach  | City of Seal Beach Water Department  | NA          | NA      | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Sierra Madre                                      | City of Sierra Madre                 | NA          | <0.5    | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Signal Hill                                       | California Water Utilities           | ND          | NA      | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| South Arcadia                                     | Golden State Water Company           | NA          | ND      | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| South Gate  | California Water Utilities           | NA          | 0.79    | No             | 0           | 100            | 10.0                                       | 10.0 | 0.79 | 0.79 |
| South Gate  | City of South Gate Water Division    | 40          | 1.17    | No             | 0           | 100            | 40.0                                       | 40.0 | 1.17 | 1.17 |
| South Montebello                                  | South Montebello Irrigation District | No Data     | No Data | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| South Pasadena                                    | City of South Pasadena               | NA          | 0.9     | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.90 |
| Sunny Slope                                       | Sunny Slope Water Company            | NA          | NA      | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Torrance  | City of Torrance                     | ND          | NA      | Yes            | 89          | 11             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Valencia Heights                                  | Valencia Heights Water Company       | NA          | NA      | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Valley View                                       | Valley View Mutual Water Company     | NA          | NA      | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Vernon  | City of Vernon                       | 61          | NA      | Yes            | NA          | NA             | 10.0                                       | 61.0 | 0.25 | 0.25 |
| Walnut Park                                       | Walnut Park Mutual Water Company     | NA          | NA      | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Walnut, Cudhay, Huntington Park                   | Walnut Valley Water District         | NA          | NA      | Yes            | 100         | 0              | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Westminster                                       | City of Westminster Water Division   | 2.6         | NA      | Yes            | 17          | 83             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Whittier  | California Domestic Water Company    | NA          | 9.1     | No             | 0           | 100            | 10.0                                       | 10.0 | 9.10 | 9.10 |
| Whittier  | City of Whittier                     | NA          | ND      | No             | 0           | 100            | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Whittier, La Habra heights, La Mirada, Buena Park | Suburban Water Systems               | NA          | 0.5     | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.50 |
| Whittier, La Marada                               | California Water Utilities           | ND          | ND      | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Willowbrook                                       | Golden State Water Company           | NA          | NA      | Yes            | NA          | NA             | 10.0                                       | 10.0 | 0.25 | 0.25 |
| Averages  |                                      |             |         |                |             |                | 11.8                                       | 15.5 | 0.45 | 0.48 |
|   |                                      |             |         |                |             |                | 13.7                                       |      | 0.47 |      |

**Notes:**

2009 CCR - Data as reported in 2009 Consumer Confidence Reports from CDPH

Additional data were obtained from various city websites and Water Replenishment District of Southern California. The Mn and TCE values are reported as average values in the 2009 CCRs.

Mn - Manganese

MWD - Metropolitan Water District; imported surface water.

NA - not available; not detected above the laboratory reporting limit.

ND - not detected above reporting limit; reporting limit not provided.

TCE - trichloroethene

ug/L - micrograms per liter; equivalent to parts per billion

For calculation purposes, results reported as ND or NA are assumed to have a half of the laboratory reporting limit,

e.g., a value of 10 ug/L is used for ND(20). Assume reporting limits of 20 ug/L for Mn and 0.5 ug/L for TCE.

Values less than the detection limit reported in the CCR may be due to using "0" for ND values. For calculation purposes we have assumed that the lowest concentration is half of the detection limit.

**APPENDIX D**

**CHEMICAL OXIDATION REACTION VESSELS AND PRESSURE FILTER SCHEMATICS**



# FILTRONICS

Filtronics, Inc. • 4000 Leaverton Court  
Anaheim, CA 92807 (714) 630-5040 FAX (714) 630-1160  
Website: [www.filtronics.com](http://www.filtronics.com) Email: [info@filtronics.com](mailto:info@filtronics.com)

## FILTRONICS IRON, MANGANESE AND ARSENIC REMOVAL SYSTEMS

Filtronics, Inc., is a manufacturer of down flow pressure sand filters, to use general terms. It does not, however, employ sand or any silica products in its product line. This unique filtration system incorporates the latest technology for the removal of arsenic, iron, manganese, and hydrogen sulfide. The systems utilize a permanent, back washable media, chemical feed system, and oxidation system to accomplish arsenic removals to less than 5 ug/l (ppb). Filtronics **Electromedia**<sup>®</sup> permanent filtering media is capable of filter rates up to 15 gpm per square foot – with the same or better performance than other systems that filter at 3 – 5 gpm per square foot.

Filtronics full-scale arsenic removal units have been in operation since 1992 and our process has been featured in The American Water Works Association *Opflow* publication, Vol 22 No.2 "Question of the Month" as well as in the March 2001 edition of *WaterWorld*. Filtronics **Electromedia**<sup>®</sup> I systems have been shown to reduce arsenic concentrations of 69 to 100 ug/l down to 2.6 ug/l – well below the new 10 ug/l MCL. Recent pilot test results proved a reduction from 39 ug/l to non detectable levels. This data has been validated by third-party laboratory testing. Filtronics systems are designed to be operator friendly and are automated for full, unattended operation. The control panels provide a simple, clear, intuitive display panel for easy operation. The filter, chemical feed systems, well pumps and auxiliary equipment are automatically operated.



Photo 1 – Typical Filtronics filter vessel (behind blue & red piping) and reaction vessels. Note sodium hypochlorite chemical oxidant injection point (foreground right) and backwash reclamation tank (right background).

All **Electromedia**<sup>®</sup> systems have a four-minute backwash duration. Backwash rates are 17 gallons to 20 gallons per minute per square foot, depending upon the media selected. The short duration results in lower wash water requirements and thus provides a better backwash-to-filtration ratio. The high rate and media design provide complete fluidization of the working media. Thorough cleaning of the media is obtained without the requirement of filter cleaning aids such as surface wash and air scour.

## **TECHNOLOGY DESCRIPTION AND FUNCTION**

The process oxidizes soluble iron, manganese, sulfides and arsenic into insoluble forms and uses native iron in the raw water as a coagulant and/or adds an iron coagulant to attract the arsenic. The filter then removes these metals from the water.

**OXIDATION:** The prime ingredients for chemical reactions, mixing and time, are provided by the dual reaction vessels supplied with the system.

**FILTRATION:** The filter vessel contains **Electromedia**<sup>®</sup> I, a media specifically designed for iron, manganese and other heavy metal removal. Its adsorptive surface attracts iron and manganese ions and holds them in the bed. The **Electromedia**<sup>®</sup> I system does not require regeneration or media replacement. The system is so effective there is no requirement for "air scouring" or "surface wash" as is needed by other systems. At the end of the filtration cycle the iron, manganese, and arsenic are back-washed from the media and the surfaces are thoroughly scrubbed.

**PROCESS ANALYZER:** At the discharge of the filter a continuously monitoring analyzer samples the effluent. No calculations or separate analysis is required. This system has a positive response to the oxidant dosage.

## **OPERATION AND DESIGN SPECIFICATIONS:**

- Filter flux rate: 10 gpm/ft<sup>2</sup> (system available up to 15 gpm/ft<sup>2</sup>)
- Backwash duration: 4 minutes regardless of loading
- Backwash initiation: 8 to 12 hours, started automatically by a timer with a differential pressure override at 10 psi
- Purge: 1 minute, after each backwash
- Internal distribution system: Hub and lateral/manifold and lateral
- Valving: Pneumatic/butterfly

**NOTES:**

- CONCRETE 1.**
- 1.1 8K SACK MIX
  - 1.2 AGGREGATE 3/4" - 1" WASHED GRAVEL OR SUITABLE QUARRY STONE.
  - 1.3 WATER TO CEMENT RATIO: 0.35
  - 1.4 USE BOTH WATER AND HIGH RANGE WATER REDUCER.
  - 1.5 POUR CONCRETE WITHIN 2' +/- 1/4" OF LOWER LATERALS.
  - 1.6 WOODEN FLOAT FINISH SATISFACTORY.
- DO NOT USE ANY MIX CONTAINING CHLORIDE. INSURE AGGREGATE IS FREE OF ANY SALT TO PREVENT SPALLING.

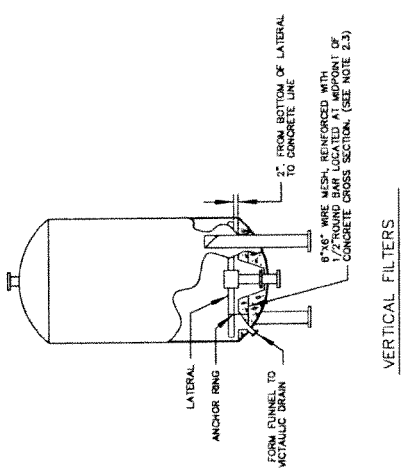
- ROUND BAR 2.**
- 2.1 #4 ROUND BAR ON 12" CENTERLINE OR AS APPROVED BY THE CONTRACTOR.
  - 2.2 #4 ROUND BAR WITHIN 1" OF SURFACE.
  - 2.3 RECOMMENDED REBAR SPACING: 6".

- SEALING 3.**
- 3.1 LAY 3/4" DIAMETER ROPE AT PERIMETER OF CONCRETE INSIDE OF VESSEL WHILE CONCRETE IS STILL WET. REMOVE AFTER CONCRETE HAS SET.
  - 3.2 CLEAN DUST AND DEBRIS FROM CHANNEL LEFT BY ROPE. CLEAN VESSEL WALL. INSTALL SUTURE AND WOODEN FLOAT FINISH SATISFACTORY. SEALER SHALL THE RESPECTOR SEALER IS PRODUCT # RC-270 FROM PRODUCT RESEARCH & CHEMICAL.

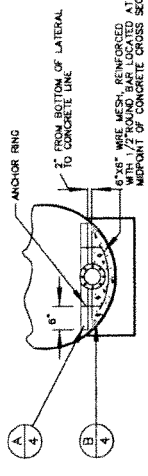
CONCRETE REQUIREMENTS ARE APPROXIMATE VALUES ONLY. CONCRETE MINIMUM 4500 PSI WITH A FINE AGGREGATE MAX. THIS DRAWING TO BE USED FOR REFERENCE ONLY. FILTRONICS INC. IS NOT RESPONSIBLE FOR CONCRETE OR CONCRETE DESIGN.

**CAUTION:**

EXTREME CARE SHOULD BE TAKEN WHEN INSTALLING WELDS TO AVOID DAMAGE TO EPOXY LINING OF VESSELS. DO NOT CUT WELDS INSIDE DATA.



**VERTICAL FILTERS**

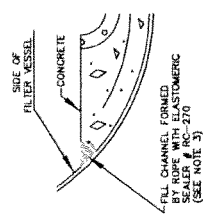


**HORIZONTAL FILTERS**

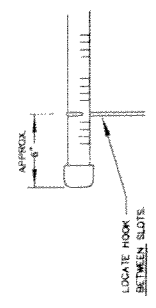
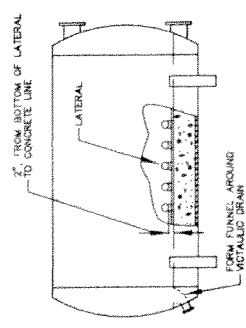
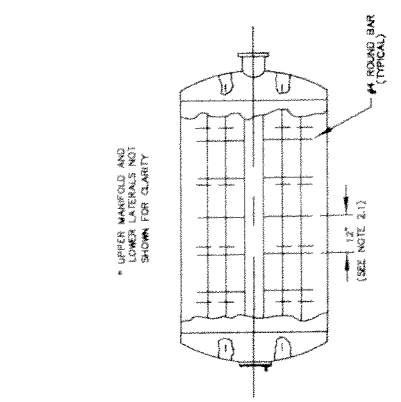
| MODEL # | CUBIC YDS. REQ. | ANCHOR RINGS |
|---------|-----------------|--------------|
| FV-7    | 0.4             | NO           |
| FV-8    | 0.5             | NO           |
| FV-9    | 0.8             | NO           |
| FV-10   | 1.1             | YES          |
| FH-11   | 0.8             | YES          |
| FH-12   | 1.0             | YES          |
| FH-13   | 1.6             | YES          |
| FH-14   | 2.2             | YES          |
| FH-15   | 3.3             | YES          |
| FH-16   | 3.9             | YES          |

**CONCRETE REQUIREMENTS**

ARE APPROXIMATE VALUES ONLY AND FLUCTUATE FROM VESSEL TO VESSEL. (SEE NOTE 1.5)



**SEALANT INSTALLATION**



**LOWER LATERAL**

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**TITLE**  
ELECTROMEDIA-1 FILTER STATION  
CONCRETE INSTALLATION FOR VESSELS

**SCALE** NONE  
**DATE** 08/09/2008  
**DESIGNED BY** W. E. WENDS  
**APPROVED BY** S. J. SLO

**FILTRONICS, INCORPORATED**  
4000 LEAVERTON CT. ANNEARON, CALIFORNIA 92008  
(714) 630-3040

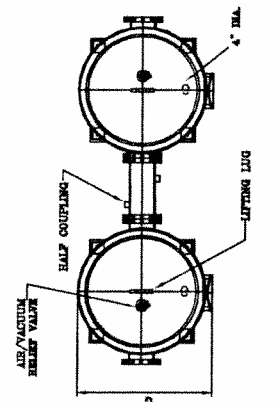
**SHEET** 1 OF 1  
**DWG. NO.** S-930  
**REV** 1

| NO. | DATE | REVISION | DESCRIPTION |
|-----|------|----------|-------------|
|     |      |          |             |
|     |      |          |             |

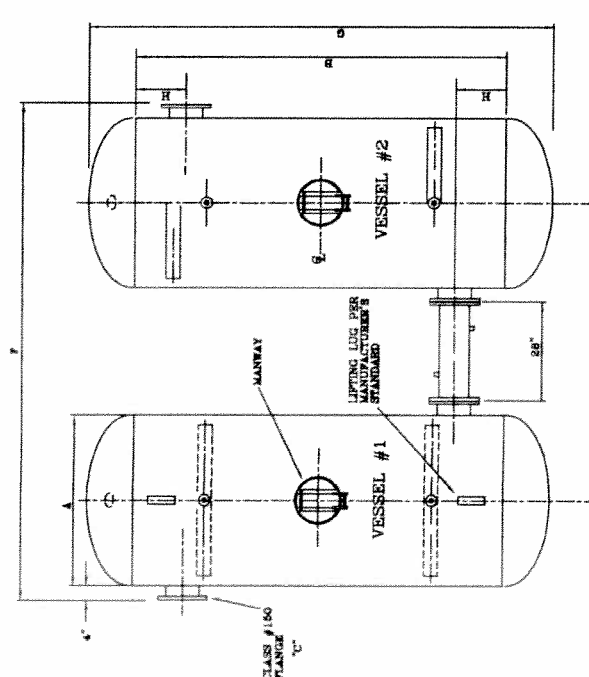
**REVISIONS**

### SIZE SCHEDULE (INCHES)

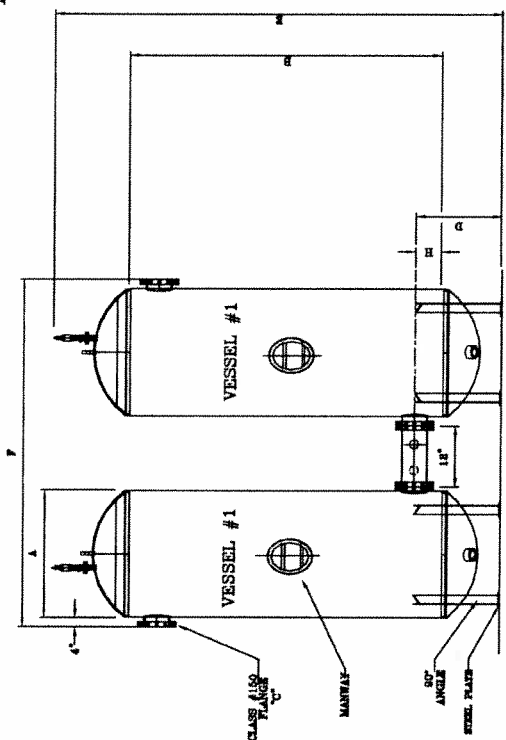
| VESSEL (GPM) | DESIGN FLOW/DIAM./LENGTH CONNECTION & OVERALL DIMENSIONS |    | VERTICAL |     |     |    |    |     |     |     |        |
|--------------|--|----|----------|-----|-----|----|----|-----|-----|-----|--------|
|              | A  | B  | C        | D   | E   | F  | G  | H   |     |     |        |
| V-45         | 10-45  | 18 | 42       | 2   | 2.5 | 3  | 24 | 70  | 84  | 19  | 9      |
| V-70         | 45-70  | 20 | 52       | 2.5 | 3   | 4  | 24 | 60  | 86  | 21  | 9      |
| V-100        | 70-100   | 24 | 62       | 3   | 4   | 6  | 24 | 61  | 78  | 25  | 13     |
| V-150        | 101-150  | 24 | 72       | 4   | 6   | 8  | 24 | 101 | 76  | 25  | 9      |
| V-200        | 151-200  | 30 | 88       | 6   | 8   | 10 | 30 | 102 | 86  | 31  | 9      |
| V-300        | 201-300  | 36 | 90       | 6   | 8   | 10 | 30 | 97  | 100 | 37  | 13-1/2 |
| V-500        | 301-500  | 42 | 90       | 8   | 10  | 12 | 36 | 130 | 112 | 43  | 9      |
| V-700        | 501-700  | 48 | 96       | 8   | 10  | 12 | 36 | 142 | 124 | 49  | 12     |
| V-1000       | 701-1000   | 54 | 108      | 10  | 12  | 16 | 36 | 156 | 136 | 55  | 12     |
| V-1500       | 1001-1500  | 54 | 132      | 10  | 12  | 16 | 36 | 180 | 138 | 55  | 12     |
| V-1500       | 1501-1800  | 60 | 132      | 10  | 12  | 16 | 36 | 181 | 148 | 61  | 12     |
| H-1000       | 701-1000   | 48 | 128      | 10  |     |    | 30 | 61  | 140 | 161 | 12     |
| H-1300       | 1001-1500  | 54 | 132      | 12  |     |    | 30 | 67  | 152 | 157 | 12     |
| H-1600       | 1501-1800  | 60 | 132      | 12  |     |    | 36 | 73  | 164 | 158 | 12     |
| H-1900       | 1801-1900  | 60 | 158      | 12  |     |    | 36 | 73  | 164 | 158 | 12     |
| H-2250       | 1901-2250  | 68 | 152      | 14  |     |    | 38 | 79  | 176 | 182 | 12     |
| H-3500       | 3000-3500  | 72 | 184      | 16  |     |    | 42 | 88  | 186 | 222 | 24     |
| H-3600       | 3500-3800  | 72 | 216      | 16  |     |    | 42 | 98  | 198 | 258 | 28     |
| H-5200       | 4800-5200  | 84 | 216      | 18  |     |    | 48 | 108 | 212 | 283 | 28     |



PLAN



ELEVATION



ELEVATION

NOTES:

1. ALL DETAILS AND DIMENSIONS INCLUDED HEREON ARE FOR PROJECT PLANNING PURPOSES ONLY AND MUST BE VERIFIED PRIOR TO CONSTRUCTION.
2. TANKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE CODES AND STANDARDS SPECIFIED, UNLESS OTHERWISE SPECIFIED. VESSEL SHALL BE DESIGNED FOR A WORKING PRESSURE OF 80 PSIG AND HYDROSTATICALLY TESTED FOR 90 PSIG.
3. ALL PIPING 2" DIAMETER AND LARGER SHALL BE FLANGED, CLASS 150.
4. MANWAYS SHALL BE OF A SIZE COMPATIBLE WITH INTERNAL ASSEMBLY PIPING AND VESSEL SIZE.
5. OTHER PIPING CONFIGURATIONS ARE AVAILABLE TO SUIT CUSTOMER REQUIREMENTS. CONSULT MANUFACTURER FOR DIMENSIONS.
6. NOT TO BE USED FOR CONSTRUCTION

| NO. | DATE       | BY     | CHK |
|-----|------------|--------|-----|
| 1   | 08-18-2000 | W.L.B. |     |
| 2   | 08-18-2000 | P.S.B. |     |
| 3   | 08-18-2000 |        |     |
| 4   | 08-18-2000 |        |     |
| 5   | 08-18-2000 |        |     |
| 6   | 08-18-2000 |        |     |
| 7   | 08-18-2000 |        |     |
| 8   | 08-18-2000 |        |     |
| 9   | 08-18-2000 |        |     |
| 10  | 08-18-2000 |        |     |
| 11  | 08-18-2000 |        |     |
| 12  | 08-18-2000 |        |     |
| 13  | 08-18-2000 |        |     |
| 14  | 08-18-2000 |        |     |
| 15  | 08-18-2000 |        |     |
| 16  | 08-18-2000 |        |     |
| 17  | 08-18-2000 |        |     |
| 18  | 08-18-2000 |        |     |
| 19  | 08-18-2000 |        |     |
| 20  | 08-18-2000 |        |     |

VERTICAL CONFIGURATION

HORIZONTAL CONFIGURATION

| ELECTROMEDIA-1 FILTER STATION REACTION VESSELS |            |
|--|------------|
| NO.  | DATE       |
| 1  | 08-18-2000 |
| 2  | 08-18-2000 |
| 3  | 08-18-2000 |
| 4  | 08-18-2000 |
| 5  | 08-18-2000 |
| 6  | 08-18-2000 |
| 7  | 08-18-2000 |
| 8  | 08-18-2000 |
| 9  | 08-18-2000 |
| 10   | 08-18-2000 |
| 11   | 08-18-2000 |
| 12   | 08-18-2000 |
| 13   | 08-18-2000 |
| 14   | 08-18-2000 |
| 15   | 08-18-2000 |
| 16   | 08-18-2000 |
| 17   | 08-18-2000 |
| 18   | 08-18-2000 |
| 19   | 08-18-2000 |
| 20   | 08-18-2000 |

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