City of California City Local Agency Management Program

For

Onsite Wastewater Treatment System

California City, California

February 2017

Submitted to:

Regional Water Quality Control Board

Lahontan Region 6

(FINAL)

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Section 1: Introduction

Introduction

This document presents the proposed Local Agency Management Program (LAMP) pertaining to the oversight of Onsite Wastewater Treatment Systems (OWTS) for the City of California City, County of Kern, and State of California.

ONSITE WASTEWATER TREATMENT SYSTEMS Policy

The Onsite Wastewater Treatment Systems Policy was created to meet the requirements of Assembly Bill (AB) 885 to promote consistent, statewide standards for the regulation of Onsite Wastewater Treatment Systems. The policy was adopted by the State Water Board in June 2012 and became effective May 13, 2013. A copy of the Onsite Wastewater Treatment Systems (OWTS) Policy is presented in Appendix 'B'. This policy categorized Onsite Wastewater Treatment Systems into the following tiers:

Tier	Description *
0	Applies to all existing systems which function properly, do not meet the conditions of a failing system, and are not contributing to pollution of any waterways.
1	Applies to all new and / or replacement OWTS which meet low risk siting and design requirements in areas which do not have an approved LAMP as specified in Tier 2.
2	Applies to any new and / or replacement OWTS which do not fall into the Tier 3 adjacent to impaired waterways, or in prohibition areas category. This tier is referred to as the LAMP and allows the City to apply standards that differ from State.
3	Describes all systems currently located within areas denoted as impaired waterways. These systems have been identified as potential sources of pollution, and need to abide by the Advanced Protection Management Program prescribed in Tier 3 of the OWTS Policy.
4	A temporary classification for all systems that have been found to be failing, and / or needing repair. Once the system has been repaired, it will be placed in either Tier 0, Tier 2, or Tier 3.

*See Appendix 'A' for definitions

With development in the City of California City continuing to increase, the requirements defined by Tier 1 of the Onsite Wastewater Treatment Systems Policy do not meet the future development needs of the City. The Local Agency Management Program specifically addresses wastewater issues, requirements, and scope of coverage for Onsite Wastewater Treatment Systems installation and maintenance. It also allows for the continued use and installation of Onsite Wastewater Treatment Systems.

Geographical Area

The City California City is located in eastern Kern County (See Figure 1). The first development of the City was constructed in 1958; and the City incorporated in 1965. With an area of approximately 203 square miles, it is geographically one of California's largest cities. The current population is approximately 13,000 people including inmates in a 2300 bed private prison. The City is developed with two main areas referred to as the First Community and the Second Community. The First Community has an area of approximately 16 square miles and houses a population of about 9500 in primarily single-family residences and the community's commercial core. The Second Community has an area of approximately 109 square miles with little population and no commercial. Other developed areas within the City includes the Rancho Tract approximately 1 square miles in area located south of the First Community and Wonder Acres approximately 0.28 square miles in area located west of the First Community at the cities western boundary (See Figure 1).

Approximately 63 percent of the existing residences in the First Community are connected to the City sewer system approximately (6,000 units) and approximately 37 percent, approximately (3,515 units) utilize onsite wastewater treatment and disposal septic tanks, leach lines and seepage pits. Multifamily and commercial developments are calculated with Equivalent Dwelling Units (EDU) for sewer effluent flows. (An equivalent dwelling unit, EDU, is a source of wastewater which is equal to that produced by a typical single-family residence). A typical single family resident is 2.5 people per residence per the City Water Master Plan.

The California Regional Water Quality Control Board, Lahontan Region 6, has in a 1989 Memorandum of Understanding with the City of California City (Appendix C), documents that development in Memorandum-mapped – Areas of the community 'A' shall not exceed two equivalent dwelling units per acre. The Memorandum-mapped areas in the study area are shown on Figure 2.

Also shown on that Figure 2 are "Specific Zones", areas that are at least partially sewered, denoted as Zones 1 through 9 that were not included in the Memorandum of Understanding – mapped two units per acre limitation. The 75 Memorandum-mapped areas occupy about 5,706 acres, the sewered "Specific Zones" occupy about 555 acres. Further denoted on Figure 2 are other areas not subject to the mapped two-units per acre restriction: Cache Creek, the golf course and park.

Depicted on Figure 3 is the City's current existing sewer density per the 1989 Memorandum of Understanding for the First Community. Comparison of that system to Figure 2 shows that all sewer assessment districts are not fully sewered; that much of the residential development in the park/golf course uncontrolled area is sewered and that some of the Memorandum of Understanding septic tank control area is sewered. The City maintains an account of residential building permits with septic tanks to monitor the 2 EDU per acre restriction. An effective sewer system construction methodology is considered and will be discussed later. The 1996 passage of Proposition 218 which, among other provisions, effectively prohibited the charging of fees or

assessments for later installation of sewer facilities which significantly reduced the City's ability to proactively plan and fund for such facilities.

Diversity

The requirements for the Onsite Wastewater Treatment Systems necessities is due to the difference in soil conditions, depth to quality groundwater, typical high desert climates, population and growth.

Onsite Wastewater Treatment Systems Regulation

The requirements for the Local Agency Management Program are derived from the former Lahontan Basin Plan criteria for private sewage disposal system. Under OWTS Policy 3.2, the existing Basin Plan OWTS criteria expire on either the LAMP effective date or May 13, 2018, whichever occurs first.

The City of California City also incorporates the Ordinance No. 89-414 (Appendix 'E') to establish California City Municipal Code and Ordinances (Appendix 'F') and adopted the most current edition of California Plumbing Code and Regulations for most technical and procedural matter pertaining to OWTS. If there is a direct conflict between the applicable minimum standards of this LAMP and City Municipal Codes and Ordinance, the more restrictive standards shall govern.

LAMP Minimum OWTS Standard

The Local Agency Management Program addresses the minimum requirements for monitoring the discharge for Onsite Wastewater Treatment System located within the City of California City. This Local Agency Management Program may include one, or more, of the following to achieve this purpose:

- Differing system requirements
- Differing siting control (i.e., system density and setback requirements)
- Requirements for owners to enter agreements regarding monitoring and maintenance.
- Creation of an onsite management district (also known as a designated maintenance area)
- Additional area as required for system expansion.

Scope of Coverage

This Local Agency Management Program (LAMP) addresses the various construction needs pertaining to OWTS within the City of California City. It includes information regarding construction requirements within the City in addition to providing an effective means to manage the Onsite Wastewater Treatment Systems on a routine basis.

This Local Agency Management Program has been prepared with respect to the requirements of the State Water Resources Control Board's (SWRCB) Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment System, dated June 19, 2012. Titled Onsite Wastewater Treatment Systems Policy, "OWTS" see Appendix 'B'.

The Onsite Wastewater Treatment Systems "OWTS" provides the multi-tiered strategy for design, construction, permitting and management of the Onsite Wastewater Treatment Systems. It is requested this Local Agency Management Program for the City of California City be approved for Onsite Wastewater Treatment Systems management under Tier 2 of the June 19, 2012 Onsite Wastewater Treatment System (OWTS) Policy.

This Local Agency Management Program will allow the City of California City to continue providing local management of OWTS by conforming to the Local Agency Management Program requirements for the City of California City. This Local Agency Management Program will ensure environmental protections and provide the best opportunity for coordinated and comprehensive management of Onsite Wastewater Treatment Systems to ensure public health and groundwater quality within the City of California City.

OWTS LAMP Coverage

This Local Agency Management Program is intended to apply to all conventional Onsite Wastewater Treatment Systems within the City of California City. Conventional System includes septic tank, dispersal system, leach field and seepage pit. Other non-conventional system was referred and submitted to Lahontan Water Board for review and approval.

OWTS outside LAMP coverage

The City of California City LAMP scope of coverage excludes any Onsite Wastewater Treatment Systems with a design flow exceeding 10,000 gallons-per day, or any OWTS that receives high-strength wastewater, unless the waste stream is from a commercial food service building, or any OWTS that receives high-strength wastewater from a commercial food service building with a BOD higher than 900 mg/l, or does not have a properly sized and functioning oil/grease interceptor and does not meet the condition and requirements set forth per this LAMP would be regulated by the Lahontan Region 6 Water Quality Control Board.

Procedures for submitting report to Regional Water Board

1. A new or replacement OWTS that does not meet the conditions and requirements set forth in this LAMP shall notify the Regional Water Board.
2. Owner of OWTS shall obtain waste discharge requirements from the Lahontan Water Board.
3. All reports of waste discharge shall be accompanied by the required application fee pursuant to California Code of Regulation, title 23, section 2200.

It is the intent of the City of California City to be responsible for permitting, oversee the installation, inspection, and regulating the Onsite Wastewater Treatment Systems within the City limits and implementing the Local Agency Management Program in accordance with Tier 2. Any OWTS that does not meet the condition and requirements set forth in this LAMP would be referred to Lahontan Region 6 Water Quality Control Board for review and recommendation.

Section 2: Hydrology

The City of California City is located in eastern Kern County North of Highway 58 and east of Highway 14. The City experiences typical high desert rain fall of the Tehachapi Mountains and typical rain fall due east of the Tehachapi Pass summit. The community of Mojave is due south with Edwards Air force Base located south and southeast of the City. The City of California City is located in Region 6 of the Lahontan Regional Water Quality Control Board. The Cities topography generally slopes from southwest to the northeast at an average gradient of 1%.

Hydrology

Hydrologic studies conducted for the City of California City Drainage Master Plan utilized the rational method as developed by the Natural Resource Conservation Service (NRCS), and the unit hydrograph methods to compute runoff. The Rational method and unit hydrograph method, and the data and criteria they incorporate, are consistent with the generally accepted methods of analyzing storm water runoff in Kern County.

The Rational method combines subarea runoff with flow from other subareas, routes the flow through the drainage system, and determines the peak flow rate in each reach. The unit hydrograph method adds the dimension of time and how runoff rates are distributed as a result of one inch of effective rainfall during a given period of time. Incorporating actual storm data and water loss due to absorption, the study developed the hydrograph for the drainage shed. The hydrograph method provides a more accurate peak flow for larger areas and storm water volume needed for analysis of retarding basins.

The basic formula for the rational method is:

Q = CIA, where:

Q = Runoff in cubic feet per second (CFS)

C = Runoff Coefficient

I = Intensity of rainfall in inches per hour

A = Land area in acres

Drainage Pattern

The prevalent pattern of drainage in the city is overland flow in a northeasterly direction to Cache Creek. The major watercourses flowing through California City are Yerba Rusche Creek and Tierra Del Sol Creek. There are 11 other drain sheds identified in California City's First Community making a total of 13. Other natural drainage channels are present within the City limits on a smaller scale.

Flood Frequency

Drainage facilities are designed to provide protection from storms of a specified recurrence interval. Events with lower recurrence intervals (higher intensity) would generate high runoff while events with higher recurrence intervals will generate lower runoff.

The levels of protection used for the City of California City are the 10 – year and the 100 – year storms or the Intermediate Storm Design Discharge (ISDD) and the Capital Storm Design Discharge (CSDD) respectively. Local storm drains are sized for the ISDD and regional facilities are sized for the CSDD. Regional facilities are generally recommended for areas in excess of one square mile or where the CSDD fills the pipe system and the resulting flow carried in the street is deeper than one foot above gutter flow line.

The relationship between the rainfall intensity and the duration of the storm is a complex inverse function. It can be characterized by stating that rainfall intensities for a given recurrence interval can be very high for short period of time regressing to lower average values as the time period increases.

Climatology

This regional climate is characterized as arid, with hot dry summers and mild to moist winter with occasional thunder showers during the winter and summer months. Snowfall can occur during the winter months, however it is generally short – lived and not severe. The mean annual precipitation for the City of California City is average 4”. The average high temperature is 80.6 degrees F with the maximum average of 103.6 degrees F in July and the minimum average high of 60 degrees in January. The areas are also subject to high prevailing winds. A review of available climatic and hydrological data was completed to define various return interval rainfall. A review of the Isohyets as published by NOAA for southern California indicates the following rainfall totals for the 2-year and 100-year return periods:

Rainfall Total for Storm Duration and Return Period

Storm Duration	2-year return	100-year return
6 hour	0.70 inches	1.7 inches
24 hour	1.00 inches	3.0 inches

Rainfall Intensity Duration (inches/hour)

Return Periods

Duration	5 year	10 year	25 year	50 year	100 year
10 min	1.7	2.1	2.6	2.9	3.4
60 min	0.6	0.7	0.9	1.0	1.2

This information is derived by the rational method to determine runoff for local areas of less than one square mile and to provide times of concentration needed for unit hydrograph analysis. The unit hydrograph method is used to determine storm water runoff from upstream contributing areas and on site areas contributing to regional drainage facilities. Runoff coefficients are taken from Soils Conservation Service (SCS). The unit hydrograph method is a computerized program developed by the US Army Corps of Engineers used for hydrological analysis.

FEMA (Special Flood Hazard Area)

The City of California City has areas of special flood hazard identified by the FEMA, flood study map(s), on file at the City of California City and of record with FEMA. These maps identify areas within the city that are subject to certain building restriction including on-site wastewater disposal systems. These requirements are documented in the City of California City Flood Plan Ordinance, Chapter 11 of the City of California City Municipal Code.

Abbreviated Stetson Ground Water Report, December 2008

In July 2008, Stetson Engineering Inc. from Covina California entered into an agreement with the City of California City to provide professional engineering services for conducting an evaluation of the City's groundwater resources to support the preparation of the City Underground Water Management Plan (UWMP). In compliance with the City direction, Stetson's work focused on availability of groundwater in the Freemont Valley Groundwater Basin, the primary source of the City's water supply.

This study documents the groundwater depth and capacity, with present and future demands.

See **Appendix 'D'** for abbreviated report documentation groundwater size, quantity, depth of ground water table, and resources.

Section 3: Water Quality Assessment Plan

Purpose

The primary purpose of the Water quality assessment plan is to provide a better understanding regarding how OWTS were affecting and/or contributing to ground water contamination. California City lies within Fremont Valley Groundwater Basin (FVGB), Antelope Valley Groundwater Basin (AVGB) and Harper Valley Groundwater Basin (HVGB) (see Figure 11). FVGB and AVGB Salt/Nutrient Management Plan were considered as part of the LAMP development and implementation.

This section provides information how water quality was analyze, that include wells sampling, establishing the water quality baseline levels, monitor pathogens and nitrogen contaminant, identify hydrogeologically vulnerable areas and use of water supply alternative (Recycled Water). It include summary of Federal Laws, States Laws, Regional and Local requirements to protect water quality and public health.

Existing Water quality condition

The City currently has 3 water sources: groundwater wells, surface water purchased from Antelope Valley-East Kern Water Agency (AVEK) and recycled wastewater. The City currently has 5 primary wells and one additional standby well (Figure 7) that has the capability to produce 4,425 gallons per minute. All wells are disinfected with sodium hypochlorite and meet all drinking water quality standard set by Federal and State health agencies.

California City's groundwater quality is fairly consistent, the City does not have arsenic contamination in their supply, the surface water delivered from Antelope Valley-East Kern (AVEK) and Mojave Public Utility District (MPUD) has not had quality problems in the past.

Wastewater recycling

One of the water sources for California City was from recycled wastewater. The City used recycled water for golf course and Central Park irrigation. The existing California City wastewater treatment facility collected domestic wastewater to approximately 30 percent of the City sewer system. The remaining area is served by onsite septic systems (Provost & Pritchard, 2010 Urban Water Management Plan).

City of California City adopted and comply with State Water Resources Control Board Recycled Water Policy and Title 22 California Code of Regulations. In addition to Chapter 4 Implementation program of Regional Board, California City will incorporate implementation measures describe in Section 6 of Antelope Valley Salt and Nutrient Management Plan (Appendix 'G').

Data Management

- **Water Evaluation**

In order to monitored and assessed the water quality, the City of California City test ground water wells and surface water source every year and filed a report to State Water Resources Control Board (SWRCB) (Figure 9).

All new and existing individual wells throughout the City are sampled for the following:

1. Total coliform bacteria
2. Lead and copper
3. Sodium and hardness
4. Contaminants with a primary and secondary drinking water standard
5. Radioactive contaminants
6. Trihalomethanes and haloacetic acids (VOC)
7. Other unregulated contaminants

To established water quality baseline levels, City of California City use data obtained from:

1. All public water systems regulated by the City.
2. Permitted individual and community drinking water wells sample data, and
3. Ground water data collected as part of the Groundwater Ambient Monitoring Assessment Program, which is available in the Geotracker database.
4. Storing and managing water quality data for pathogens and nitrate-nitrogen will be compiled from available sources.

- **Onsite Wastewater Treatment System (OWTS) Data Management**

Every five years an assessment will be completed to evaluate the water quality and determine whether OWTS within the City are affecting quality of water, the City will compile and review the following periodically.

For OWTS:

1. Septic tank pumping logs
2. Complaints and abatements of failing OWTS
3. Variances issued for new and/or repair OWTS
4. Performance inspections of existing OWTS
5. Number of permitted OWTS by zone

To identify hydrogeologically vulnerable areas, City of California City continuously updates the following;

1. Mapping sewer system (Figure 6)
2. Sewer density data base (Figure 3)
3. Community Water Wells map (Figure 7)

Siting requirement and design criteria to protect water

Federal and State Laws and Requirements

City of California City comply with the water quality standards, criteria and guidelines requires by Federal Clean Water Act laws and requirements and States Porter-Cologne Water Quality Control Act laws and requirements.

This LAMP has been prepared in respect to the State Water Resources Control Board and Regional Water Quality Control Board policy and regulations.

Regional and Local Requirements

The City of California City is responsible for all aspect of the municipal water system owned and operated by the City by ensuring that the groundwater of the City will not be polluted, contaminated, wasted or overdeveloped. City ordinance are set forth for the construction, reconstruction, maintenance, operation, use, repair, modification and destruction of water wells within the City. Appendix F presents a brief synopsis of various section of the ordinance.

In addition to City ordinance, there is various management measures, factors and regulations have been address in the OWTS requirements of City of California City LAMP for protection of water quality.

Groundwater Protection Measures

Ground water quality is maintained by the soils ability to filter the effluent from the wastewater treatment system. The process requires a depth and soil type for treatment of wastewater discharged through sub-surface dispersal systems. This is accomplished mainly through a combination of physical filtering, biological and chemical processes, and dilution. Ongoing water well testing is accomplished to ensure quality control of the ground water table is maintained.

The following information describes the condition, regulation and responsibilities the City of California City uses to address the OWTS of this LAMP to protect the water quality standards.

1. Soil Conditions

The City of California City Ordinance chapter 5, Private Sanitation System requires detailed site evaluation to document suitable soil characteristics and depth for each OWTS installation. The soils report and percolation characteristics are used to select the appropriate location, sizing, and design of the OWTS, to achieve proper effluent dispersal and groundwater protection.

A licensed Geotechnical Engineer or a registered Civil Engineer experienced in soils engineering was required to prepared a soils report and percolation test to determine the absorption rate of soil for any septic drain field or leach field. A report should determine if there is adequate vertical separation between the bottom of dispersal trench and bedrock, groundwater, or impermeable soil strata.

City of California City Type of Soils

The City of California City being very large in surface area has different hydrologic soil groups ranging from slow infiltration to very slow infiltration. See hydrologic soil groups defined as follows with area depiction map Figure 5. This information can assist the siting of Onsite Wastewater Treatment System.

Note: On site soils testing required for percolation data and type for size specific design.

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Berkley, California

May 1967

HYDROLOGIC SOIL GROUPS

Definition and Scope:

Hydrologic soil groups are used for estimating the runoff potential of soils on watersheds. Four groups are used based on soil properties that influence runoff.

Assumptions:

Classification is at the end of long-duration storms occurring after prior wetting and opportunity for swelling, and without the protective effect of vegetation.

Criteria:

Group A – Soils having high infiltration rates even when thoroughly wetted, consisting chiefly of deep, well to excessively drained sands and / or gravel. These soils have a high rate of water transmission and would result in a low runoff potential.

Group B – Soils having slow infiltration rates when thoroughly wetted, consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately course textures. These soils have a moderate rate of water transmission.

Group C – Soils having slow infiltration rates when thoroughly wetted, consisting chiefly of (1) soils with a layer that impedes the downward movement of water or (2) soils with moderately fine to fine texture and a slow infiltration rate. These soils have a slow rate of water transmission.

Group D – Soils having very slow infiltration rates when thoroughly wetted, consisting chiefly of (1) clay soils with a high swelling potential, (2) soils with a high permanent water table, (3) soils with clay pan or clay layer at or near the surface, and (4) shallow soils over nearly impervious materials. These soils have a very slow rate of water transmission.

References:

(1) United State Department of Agriculture. National Engineering Handbook, "Hydrology," Section 4. Soil Cons. Ser.

(2) General Soil Map, Kern County 7-E-18286-0-C Soil Conservation

This information provides a general assessment of the area and is not a substitute for site-specific investigation for onsite wastewater treatment systems. This provides a general indication of the management and design issues likely to be encountered in each area. It does not take into account local constraints such as setback or other conditions that may be found on flood plains proposed site.

2. Hydrogeology Conditions

According to the United States Census Bureau, the City of California City has a total area of 203.6 square miles (527 km2) of which 0.1 square miles (0.26 km2) or 0.05% is water. Based on topography and hydrogeology, City of California City overlies several groundwater basins (Figure 11). California City underlies an extensive alluvial groundwater Basins as show on Bulletin 118-03 of Department of Water Resources see Figure 10. For depth of ground water level see Figure 8 and Figure 10.

The Fremont Valley Groundwater Basin covers a surface area of first community and Harper Valley Groundwater Basin and Antelope Valley Groundwater Basin toward the northern part of second community (Plate II-2 Stetson Engineers Inc). More detailed hydrogeology was discussed in page 9 of Evaluation of Groundwater Resources in California City by Stetson Engineers Inc.

The hydrological soils group associated with the City's first community and upstream watershed is group "B". Group B soils characteristic was discussed earlier. There is a small portion of soils group "C" at the northeast portion of the watershed. Group C soils characteristic was defined earlier (2004 California City Storm Drainage Master Plan, Quad Knopf).

There are several areas in the north portion of the City, and one small area in the southeast corner of the City that cannot economically be served by gravity sewage, according to 2002 Sanitary Sewer System Master Plan for California City (Quad Knopf). Lift Station is recommended in areas like this or pressurized sewer system is used as alternative to gravity sewage.

To identify hydrogeologically vulnerable areas in City of California City, this includes;

1. A professional with a background in the field of hydrogeology that is familiar with the groundwater discharge will be required to provide sufficient information to identify vulnerable areas in California City.

2. A hydrogeologic work plan which include condition of the site, determine whether the discharge is to a usable aquifer, and identify whether the discharge will occur within a designated well head protection area.
3. Soil boring and Soil testing shall be done to characterize site earth materials, and to determine the ability of site earth materials to percolate.
4. Site map which include groundwater contours, the location of all the groundwater wells, soil boring location, surface water and drainage pattern.
5. Monitoring program to include groundwater well development, water level, soil mottling and any soil formation, and any potential geotechnical issues.

3. Groundwater Conditions

California City lies within the Freemont Valley Groundwater Basin (FVGB) and it has been the City primary source of groundwater wells. Groundwater quality of the FVGB appears to meet all drinking water standards established by the Title 22 of the California Department of Public Health (CDPH) according to Abbreviated Stetson Ground Water Report, December 2008.

The average groundwater elevation in 2010, according to the USGS groundwater field data, was 297 feet, which is decrease of approximately 29 feet from the groundwater elevation of 268 feet in 1953 (2010 Urban Water Management Plan).

In effort to protect the groundwater, the following measures were adopted by the City.

a) The City participate in Title 22 Groundwater Monitoring Program by sampling drinking water wells (Figure 9) and preparing annual water quality report as required by the State law to ensure that the water continue to be safe in the public.
b) The City works with Lahontan RWQCB to track the investigation and cleanup of various contaminated groundwater sites within the city, and provides technical assistance to expedite site cleanups.
c) The City conducts public education through public meeting every second and fourth Tuesday of the month to inform and educate the public on how they could help to protect groundwater.
d) The City enforce land use regulation, zoning ordinance and site plan review standard related to aboveground secondary containment, interior floor drains, OWTS design and other site related item that could affect the groundwater.
e) The City implements Best Management Practice to be included on all construction site planning procedures to reduce or prevent pollution of surface and groundwater.
f) Eliminate contamination source by maintaining the integrity of pipelines and storage tanks.
g) Removing conduits to groundwater by properly destroying unused water wells in accordance with State well destruction standard.

4. Areas with High Domestic Well Usage

California City historically relied on groundwater wells for a large portion of its water supply. While in some areas like the Wonder Acre, the City purchased water from Antelope Valley East Kern (AVEK) and wheeled through the Mojave Public Utility District (MPUD).

In areas with higher concentration of OWTS usage that is within the contributing watershed/recharge area, extra measure and site evaluation to groundwater and OWTS will be assessed to protect and ensure the water quality.

A. To protect the groundwater wells, the City of California City adapted the water well standard from the California Department of Water Resources Chapter II, Section 8 of Water Well Standards (Bulletins 74-81 & 74-90 combined). The following minimum setback for OWTS was adapted from OWTS Policy no. 9.4.10 – 9.4.10.5 will be applied to all OWTS of this LAMP.

- 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth.
- 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet depth.
- Where the effluent dispersal system is within 600 feet of public water well and exceed 20 feet in depth the horizontal setback required to achieve a two year travel time for microbiological contaminants shall be evaluated. A qualified professional shall conduct this evaluation. However in no case shall the setback be less than 200 feet.
- If the dispersal system is less than 1,200' from public well system's surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 400' from the high water mark of the surface water body.
- If the dispersal system is greater than 1,200' but less than 2,500 from public water system's surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 200' from high water mark of surface water body.

B. To assess the groundwater well quality, the owner should engage qualified professional having appropriate qualification to complete the water testing, analysis, and interpretation of the water quality. The owner should submit a report to the City for review and approval.

5. Domestic Water Well Data

The City currently has 5 Community water supply wells and one additional standby well. California City six Groundwater well quality report and two groundwater well at Wonder Acres was attached for reference (Figure 9). All the wells are located in the first community. Water levels in the wells range from 339 to 497 feet below ground surface according to 2010 Urban Water Management Plan report of Provost and Pritchard Consulting Group.

For graphical illustration, Figure 7 shows the location of all water wells in California City. Groundwater level for 5 primary wells in California City was taken from Department of Water Resources (DWR) water data library (http://www.water.ca.gov/waterdatalibrary/index.cfm) (Figure 8).

City of California City currently do not have a groundwater well testing report available for real estate transfer. City will consider this in the future.

6. Encroachment above Groundwater

Groundwater separation requirements to the bottom of the dispersal system and the highest anticipated level for repairs shall be as follows:

1. Bottom of OWTS dispersal systems cannot be less than 5 feet above groundwater.
2. Bottom of seepage pit cannot be less than 10 feet above groundwater.
3. Integrate Minimum depths to groundwater and Minimum Soil depth from the bottom of the dispersal system as shown on Table 2 of OWTS Policy.
4. Less than 2 feet separation cannot be allowed through this LAMP.

Surface Water Protection Measures

- Density Reductions

One of the effective methods for protecting the water quality is to consider the environmental limitation, such as the capacity of the soils to accommodate individual septic system. Proper zoning for various land use was consider for community development, particularly the availability of public water and sewer services in the area. Implementation of Ordinance no. 89-414 (Appendix E) also applies to California City first and second community and City areas consisting of the North and South Lahontan Basins, to protect the groundwater.

- Impaired Water bodies

Cache creek is now a dry creek is the only water body in California City. No Water bodies in California City are listed as impaired pursuant to Section 303(d) of the Clean Water Act. Therefore, there is no special provision related to impaired water have been adopted for OWTS in California City Ordinance.

Fractured Bedrock

Fractured bedrock aquifers are susceptible to contamination, pollutants can move readily in the general direction of groundwater flow. A qualified hydrogeologist is required to locate fractured bedrock. Fractured bedrock indicates better prospects for finding groundwater and should be protected from any OWTS.

Clay, bedrock, other material impervious to the passage of water, or fractured bedrock, shall not be less than 5 feet below the bottom of the leaching trench or less than 10 feet below the bottom of seepage pit.

Section 4: Responsibilities and Duties

Monitoring and Assessment

To track the movement of pollution plumes and monitor any natural degradation of ground water pollution. The City of California City conducts ongoing monitoring and assessment of the groundwater quality and activity of groundwater wells, and onsite wastewater treatment system in the City. The following procedures are:

1. California City Municipal Codes (CCMC) Article 5, the City make site inspection of the drilling site for new water well prior to issuance of permit, and required the applicant to provide a site inspection report prepared by a geologist or registered civil engineer to identifies all strata containing poor quality water and seals needed to prevent the entrance of poor quality water or its migration into aquifers.
2. California City Municipal Codes (CCMC) Article 7, state City's right to enter any premises to makes inspections and tests for all groundwater well.
3. Monitoring includes laboratory analysis of groundwater samples collected from the wells.
4. California City Municipal Codes (CCMC) Chapter 5, the City required a construction permit for construction of any part of private sanitation system.
5. Field investigation to define the lateral extent of groundwater pollution.

Annual Reporting

On February 1, annual report will be submitted to Region 6 Lahontan Water Quality Board with complete ground water well analysis in addition, every fifth year the City of California City will submit an evaluation of the monitoring program and an assessment of ground water quality with respect to onsite wastewater treatment system. This five year report will also address any revision that may be required. The first annual report will be required one year after approval of the Region 6 Lahontan Water Quality Board Management Program (LAMP). The report includes the summary of permitted number of OWTS issued by the City (Table 1) and Cumulative Density Calculation (Table 2).

The annual ground quality testing data will be provided in electronic deliverable format.

Permanent Records

The City of California City retains permanent records of all new maintenance, (or) abandons onsite wastewater treatment systems. These records consist of building permit applications, City inspection record and professional site evaluations. This information is available upon request to the public and government agencies within 10 working days. The City continues monitoring the quality of the groundwater by periodically testing the water supply in all existing community water well. As stated to Article 11 of California City Municipal Codes (Appendix F) annual report is submitted to California Regional Water Quality Control Board.

Data Collection and Assessment

a. Collect data from different City agency regarding OWTS and community water well current status.
b. Create groundwater quality data base.
c. Compile data and determine existing current number and status of OWTS.
d. Develop a monitoring plan for groundwater and OWTS to track impact to groundwater quality and OWTS development and density.
e. Create map(s) to monitor land use and development.
f. Choose an appropriate model for data analysis.
g. Report data to Regional Water control Board annually.

Complaints

Any complaints pertaining to OWTS will be filed electronically and retained as permanent record of the City including maps, and any related documents on how the issue was been resolve to facilitate the ongoing review of the OWTS operation and maintenance. Currently there is no complaint filed in California City pertaining to onsite wastewater treatment system.

Complying with the Local Agency Management Program reporting requirements for complaint investigations, this includes:

- Providing information to the RWQCB Lahontan Region 6 annually pertaining to Onsite Wastewater Treatment System operation and maintenance, including number, and location of the complaints.
- Identifying investigated complaints, and
- Determining how the complaints were resolved

OWTS Cleaning

Pursuant to California Health and Safety Code, Chapter 4, Article 1. The City of California City required the owner of OWTS or any person to apply for permit and registered to building department prior to engage in cleaning of septic tank, chemical toilets, cesspools or sewage seepage pits.

The application should include the following:

1. The name and address of the owner of OWTS.
2. Date of cleaning.
3. Location where the cleaning is disposed of and by whom.
4. Detailed report of waste discharge.

OWTS Permitting Record

Oversight of Onsite Wastewater Treatment System installation and maintenance is a multiple City agency effort. The following provides an overview of the primary agencies involved in The City of Californian City oversight activities.

Building and Safety Division

The Building and Safety Division is responsible for:

- Issuing permits for new construction, replacement and repair of Onsite Wastewater Treatment System.
- Reviewing plot plans for new and replacement Onsite Wastewater Treatment System.
- Retaining permit information regarding new construction, replacement systems, repairs.
- Complying with Local Agency Management Program reporting requirements regarding issued permits for new and replacement Onsite Wastewater Treatment System.

The following must be provided by the Building and Safety Division to the Lahontan Region 6 RWQCB annually for new, replacement (and/ or) repaired Onsite Wastewater Treatment System, along with information provided by other divisions:

- Location
- Number of permits issued
- Description of permits (i.e., replacement, an/or repair)
- Tier the permit was issued under (Tier 2)

Note: Obtaining a local land use / Building Permit is contingent upon obtaining an Onsite Wastewater Treatment System approval, obtaining a Land Use / Building Permit is not a substitute for an Onsite Wastewater Treatment System permit issued by the City of California City Division of Building and Safety, nor does it guarantee issuance of an Onsite Wastewater Treatment System permit.

Code Enforcement

The City of California City Building and Safety Department is responsible for:

Investigating complaints for overflowing/failed septic tanks for single family residences, and two-unit dwellings, this includes:

- Requiring property owner to obtain applicable permit from the Building and Safety Department for repairs, or replacement of failing systems.
- Retaining information regarding complaints and investigations for overflowing or failed septic system, and subsequent action taken.

Notification

Providing adequate notification to the owner(s) of public water system about OWTS installation and repair near their facilities will be accomplish by the following procedures:

1. Prior to issuance of a permit to install or replaced OWTS that is within a horizontal sanitary setback to the public well or within 1,200 feet of an intake point for a surface water treatment plant for drinking water, in the drainage area catchment in which the intake point is located, and is located such that it may impact water quality at the intake point. Notification will be done electronically or in writing by the City with a copy of the permit application to the water system owner.

2. Upon discovery of a failing OWTS as described on Section 7, the Sewer Maintenance Supervisor of City of California City will notify the owner of public well and California Department of Public Health no later than 72 hours if in the event of a failing OWTS is within 150 feet of public water wells, or 2,500 feet from a public water system.

3. In order to ensure the public that water is safe to drink, the City of California City scheduled a board meeting with public participation every second and fourth Tuesday of the month.

OWTS Owners Responsibilities and Duties

a) Owners of OWTS shall adhere to the requirements prescribed in City of California City codes and ordinances.
b) Owners of new and replacement OWTS shall meet the minimum standard contained in this LAMP.
c) Owner of OWTS shall comply with any and all permitting conditions imposed by the City of California City that do not conflict with this LAMP.
d) Owners of OWTS shall maintain their OWTS in good working condition including inspection and pumping of solids as required in this LAMP, to maintain proper function and assure adequate treatment.

Section 5: OWTS Usage

Existing Septic System Information Survey

Current City sewer density calculation (Figure 3) shows partially sewered area in first community. There have not been any new completed septic systems since 7-15-15; however there are 5 open permits for new septic systems on five new single family dwellings. The City did not account for the new septic systems until the permits have been approved. Currently it was under review by the City. In addition to sewer density calculation an existing sewer plan for City of California (Figure 6) shows the areas where existing public sewer is available. Some unsewered zones within the City limit are currently on individual septic system. Table 1 shows the current number of permitted OWTS in California City, in addition to City sewer density calculation; Table 2 shows the current cumulative density calculations for each zone.

Once the density reaches the 1/2 acre per edu, the City will propose a new lateral to serve the zone with high density of OWTS and comply with Ordinance no. 89-414.

Existing Septic System practices

The City of California City regulations for private sewer system are contained in Chapter 5, Municipal Ordinance for Private Sanitation System. These regulations set forth specific requirements related to permitting and inspection of septic system, septic tank design and construction, disposal field requirements and servicing, inspection, reporting and upgrade requirements. Standards pertaining to system sizing and construction are adapted from California (Uniform) Plumbing Code.

Groundwater Quality Impacts (Nitrate and Pathogen)

Evaluation of site conditions and monitoring high onsite wastewater treatment system density area is important factor the City of California considers in protecting the groundwater.

To monitor the potential groundwater contamination (e.g, groundwater mounding, nitrate and pathogen loading), the City will consider using Unsaturated Zone (UZ) computer model as an alternative way to monitor the groundwater. In addition to UZ monitoring, the City will implement the following measures to ensure the water quality in the City jurisdiction.

1. Implement City of California City OWTS LAMP and City Municipal Codes and Ordinances.
2. Continue to conduct field investigation, groundwater testing and monitoring of potential groundwater contamination.
3. Continue to investigate and record non-conforming OWTS on areas with limited space for future expansion.

Sewer Extension

The existing wastewater collection system of City of California City is in good condition. Sewage flows by gravity to the existing treatment plant facilities. Future, master plan for sewer line (Figure 12) by Helt Engineering was designed to forecast potential growth within the first community. Population projections were utilized to determine future sewer capacity demand.

The future master plan has been designed to serve the geographic area of central and southern part of the first community where the housing development is growing. Zone with high usage of septic system that near approaching the 2 equivalent dwelling units per acre where also considered in designing the future sewer master plan.

The City of California City is currently identifying funding source for the implementation of Waste Water Treatment Plant, the “Backbone” component of the sewer system project.

Currently the City continue to allow OWTS for new construction with the understanding that prior to exceeding the maximum 2 equivalent dwelling unit / acre density, mandated by the Regional Water Quality Control Board (RWQCB) and stated in Ordinance No. 89-414 (Appendix E), sewer would have to be constructed.

OWTS LAMP Exclusion

The OWTS Local Agency Management Program does not apply to the following:

1. Existing individual waste disposal systems, unless evidence exists that required corrective action as stated in Section 7 (Septic tank inspection, repair and maintenance report), then owner must meet the applicable requirements of this LAMP.
2. In compliance with Lahontan Basin Plan, projects that have final building permits prior to June 16, 1988, unless evidence exists that necessitate retrofit of septic systems to conform to this LAMP.

If the owner of the existing OWTS is not able to comply with corrective action requirements of this LAMP, the owner is required to submit a report of waste discharge for evaluation to Lahontan Regional Water Quality Control Board as stated on Section 1 and 6 of this LAMP.

Section 6: OWTS Siting, Design, Construction and Management

The Local Agency Management Program provides minimum standards and requirements for the treatment and disposal of sewage through the use of Onsite Wastewater Treatment System when no connection to a sewer is available to protect public health, safety and welfare. The following describes the minimum standards, and requirements for the Onsite Wastewater Treatment System under the Local Agency Management Program, as well as detailing the Onsite Wastewater Treatment System that are not covered under this Local Agency Management Program.

OWTS Criteria

Septic tanks are the most frequently causes of contamination in ground water. The placement and density of onsite wastewater treatment system is one of the important factors to consider in siting, design and construction of any OWTS. Density of septic tanks influences the potential for groundwater contamination. In accordance with the California City Ordinance no. 89-414, the City First community is divided into zones for the purposes of resolving density determination. Each zone shall be evaluated on its individual density. Where any individual zone exceeds two (2) dwelling units per acre, development shall be halted and a moratorium shall be declared in that zone until all domestic waste water discharge can be discharged into the City sewer system. Ordinance no. 89-414 also applies to California City Second community and City areas consisting of the North and South Lahontan Basins, to protect the groundwater.

The Cities aggressive water well testing program as discussed in this management program shows acceptable ground water quality that satisfied the two equivalent dwelling units (EDUs) per acre septic system program. The City will continue aggressive water well testing program to ensure any future septic system influence will be recognized.

Condition for new and replacement OWTS

When a community sewer main is not available and a new property improvement will generate onsite wastewater treatment system, the property owner must demonstrate the following to the City of California City Public Works in order to verify the lot will support conventional onsite wastewater disposal and comply with this LAMP.

- Soils are conducive to onsite wastewater disposal (Soils testing).
- Sewer is not available within 100 feet of improved property and 200 feet of unimproved property. California City Sewer Ordinance No. 89-414.
- Enough area is available to install a septic system that meets minimum distances (see Table 3 entitled, Minimum Distance for Siting Waste Disposal System), condition and requirements set forth per this Local Agency Management Program for new construction, (expansion area must be available).
- Onsite Wastewater Treatment System will not impact ground or surface water.

- Onsite Wastewater Treatment System is sized appropriately to serve the intended land use.
- Ground slope in the disposal area shall not be greater than 30 percent without a slope stability report approved by a registered professional.
- The percolation rate in the disposal area shall not be slower than 60 minutes per inch if the discharge is to a leach field or 30 minutes per inch if discharge is to a seepage pit.
- The proposed building on lots within new subdivision or parcels has a gross density of no greater than (2) single family equivalent dwelling units per acre. Equivalent dwelling units (EDUs) are defined as 250 gallons per day per EDU.
- Leaching chamber shall be sized on the bottom absorption area in square feet. The required area shall be calculated using Table 1 (Design Criteria of five typical soils) with a 0.70 multiplier.

Site/Soil Evaluation for new OWTS

Site evaluation is required to ensure performance of an Onsite Wastewater Treatment System. The site evaluation addresses horizontal clearance requirements, vertical "soils types and ground water depths" and, regulations. Site evaluation is required for all new construction and performed by a California registered Civil (and /or) Geotechnical Engineer. Site evaluation for onsite wastewater treatment system OWTS design shall be with respect to soil types as documented in the 2013 California Plumbing code as shown below in Table 1.0.

TABLE 1.0*

DESIGN CRITERIA OF FIVE TYPICAL SOILS (*)

Type	Soil	Required sq. ft. of leaching area/ 100 gal. (m^2/L)	Maximum absorption capacity in gals./sq. ft. of leaching area for a 24 hr. period (L/m^2)
1	Coarse sand or gravel	20 (0.005)	5.0 (203.7)
2	Fine Sand	25 (0.006)	4.0 (162.9)
3	Sandy loam or sandy clay	40 (0.010)	2.5 (101.8)
4	Clay with considerable sand or gravel	90 (0.022)	1.1 (44.8)
5	Clay with small amount of sand or gravel	120 (0.030)	0.8 (32.6)

*Design criteria of five typical soils. (2013 California Plumbing Code Table H2.1 (2)).

Applicability of Local Agency Management Program Standards

Local Agency Management Program standards apply to all Onsite Wastewater Treatment System which:

- Are newly constructed or replace, subject to a major repair and discharge liquid waste below ground.

- Have affected, or have the potential to affect, groundwater or other water quality or health hazards.
- Maximum flow rate is 10,000 gallons per day.

The City shall not issue construction permits for the following projects:

A. Projects that involve domestic wastewater discharge from residential, commercial or industrial development, if the cumulative development density in the specified area as defined on Map "A" Figure 2 is in excess of two EDUs/acre or 500 gallons/acre/day as determined by the Board; or
B. Projects that will have industrial wastewater discharges; or
C. Projects that do not comply with the City's standards for use of septic tank / seepage pit wastewater disposal systems per the Local Agency Management Program Onsite Wastewater Treatment System; or
D. Projects located within the existing waste discharge prohibition areas.
E. Projects utilizing package wastewater package treatment plants with on-site disposal system

Conventional OWTS Requirements

1. The on-site soil characteristics to comply with established "Minimum Criteria for Individual Waste Disposal System" per requirements of the current California Plumbing Code for private sewage disposal systems.
2. The discharge is composed of domestic wastewater only.
3. The development using OWTS will satisfy the following requirements;
    a. Comply with Memorandum of Understanding (MOU) between the California Water Quality Control Board Lahontan Region and the City of California City (Appendix C).
    b. Comply with Ordinance No. 89-414, An Ordinance of the City Council of the City of California City amending the California City Municipal Code as it relates to the limiting of on-site sewage disposal (Appendix E).
    c. Water Quality Control Plan for the Lahontan Region (Basin Plan) (Appendix J).

4. The estimated wastewater flow from non-residential or mixed occupancy developments shall be not more than 10,000 gallons per day.
5. For all locations where OWTS is proposed to be installed, a soils report, percolation test, and other test shall be conducted in accordance with standard and guidelines provided in the City Municipal Codes and Ordinance and OWTS's Policy of Regional Water Board.
6. Space shall be allowed on the lot for expansion of the original absorption facility. See Areas, (Square footages) per Table 2.0 to satisfy initial expansion area requirements for disposal fields. An expansion area capable of accommodating at least 50% of the original installation is required for soil Types 1, 2, and 3 soils; at least 87% in Type 4 soil; and 125% in Type 5 soil.

Table 2.0 minimum size of disposal site (square feet) required according to 2013 California Plumbing Code soil type in disposal area.

TABLE 2.0

Kern County Public Health Services Department, Environmental Health Division

Soil Type in Disposal Area	Required minimum size of disposal site (square feet)*
1	2,000
2	2,500
3	4,500
4	13,000
5	21,000

*Exclusive of any areas occupied by structures, setbacks, and easements on the lot and in accordance with the requirements of the 2013 California Plumbing Code and these standards.

The minimum disposal area required by the Table 2.0 above (which includes expansion area) is for standard leaching trenches which provide three (3) square feet of leaching area per lineal foot, or special leaching trenches which provide seven (7) square feet of leaching area per lineal foot.

1. The following minimum setbacks Table 3.0 are required:

TABLE 3.0
MINIMUM DISTANCE FOR SITING WASTE DISPOSAL SYSTEM (IN FEET)

FACILITY	**DOMESTIC WELL**	**PUBLIC WELL**	**PERENNIAL STREAM**	**DRAINAGE COURSE OR EPHEMERAL STREAM**
SEPTIC TANK OR SEWER LINE	50'-0"	50'-0"	50'-0"	25'-0"
LEACHING FIELD	100'-0"	100'-0"	100'-0"	50'-0"
SEEPAGE PIT	150'-0"	150'-0"	100'-0"	50'-0"
FACILITY	**FILL BANK (3)**	**CUT OR PROPERTY LINE (4)**	**LAKE OR RESERVOIR (5)**	
SEPTIC TANK OR SEWER PIT	10'-0"	25'-0"	50'-0"	
LEACHING FIELD	4H	50'-0"	200'-0"	
SEEPAGE PIT	4H(8)	75'-0"	200'-0"	

(1) As measured from the line which defines the limit of a 100 - year frequency flood

(2) As measured from the edge of the channel

(3) Distance in feet equals four times the vertical height of the cut or fill bank. Distance is measured from the top edge of the bank.

(4) Distance in feet from property line of any neighboring lot on which individual well(s) are used. (Distances are to property lines of neighboring lots, not street easements)

(5) As measured from the high water line. (Regional Board Resolution No. 82-6 defines the high water line for Eagle Lake, Eagle Drainage Hydrologic Area as 5117.5 feet, a definition used in prohibiting the discharge of wastes from subsurface disposal system on a lot with an elevation of less than 5130 feet. See Section4.1 of this Basin Plan for waste discharge prohibition for Eagle Lake).

(6) As measured from the high seepage level.

Reference:
http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/ch4_implementplans.pdf
Water Quality Control Plan for the Lahontan Region
Approved by the California Regional Water Quality control Board, Lahontan Region April 8, 2014

Percolation Testing and Requirements

Percolation testing is conducted to confirm the ground water separation requirement for the proposed site and to determine the size of the dispersal field for the project.

Percolation tests shall be in accordance with the U.S. Public Health Service test procedure (Manual of Septic Tank Practice, Part I) and the current California Plumbing Code. All percolation testing to be done by a California Registered licensed Civil Engineer or Geotechnical Engineer. Number of percolation tests to be determined by soil condition, type and project. Table 4.0 as follow presents percolation vs. soil type per current California Plumbing Code.

TABLE 4.0

Percolation rates corrected with current California Plumbing Code soil types.

Kern County Public Health Services Department, Environmental Health Division

Percolation Rate Minutes/Inch	California Plumbing Code Soil Type
Less than one	1
1 to 3	2
3+ to 10	3
10+ to 25	4
25+ to 60	5
Greater than 60	Unacceptable

Wastewater Flow Rates

Flow rates are determined using current California Plumbing Code and residential Equivalent Dwelling Units (EDUs) based on land use. Flow rates from EDU's are based on the following:

Average flow rate per capita =	100 gallons per day
Number of residents per dwelling units =	2.5
Average flow rate per EDU =	250 gallons per day

EDU's for residential land use areas are calculated by directly counting lots from current land use map(s). For non-residential land uses, EDU's per acre are determined from sewer loads per acre divided by 250 gpd. This result in EDU's per acre for each land use within the area evaluated, resulting density per acre for EDU are show in following Table 5.0.

TABLE 5.0*

LANDUSE

Land Use	Description	Practical Density (EDU's per acre)
R-1	Medium Density Residential	6
R-2	Medium Low Density Residential	4
R-3	Low Density Residential	2
RM 1/2	High Density Residential	6
C1/2/3/4/5/ and G	Commercial and Government	18
M1	Light Manufacturing	3
M2	Heavy Industrial	30
O/RA	Open Space Recreational	0

*Reference: Sanitary Sewer System Master Plan for California City by Quad Knopf September 2002.

Onsite Wastewater Treatment System Criteria

The following criteria address minimum depth of soil for system design and ground water protection.

Minimum depth of permeable soil beneath the bottom of the proposed dispersal field shall be 5 feet. Permeable soil is defined as having a percolation rate of 60 minutes per inch and shall not include rock formations that contain continuous channels, cracks or fractures. Maximum depth of soil fill covering any portion of the area proposed for installation of a dispersal system shall be 12".

Ground water separation between septic system trenches and seepage pit are shown in Table 6.0.

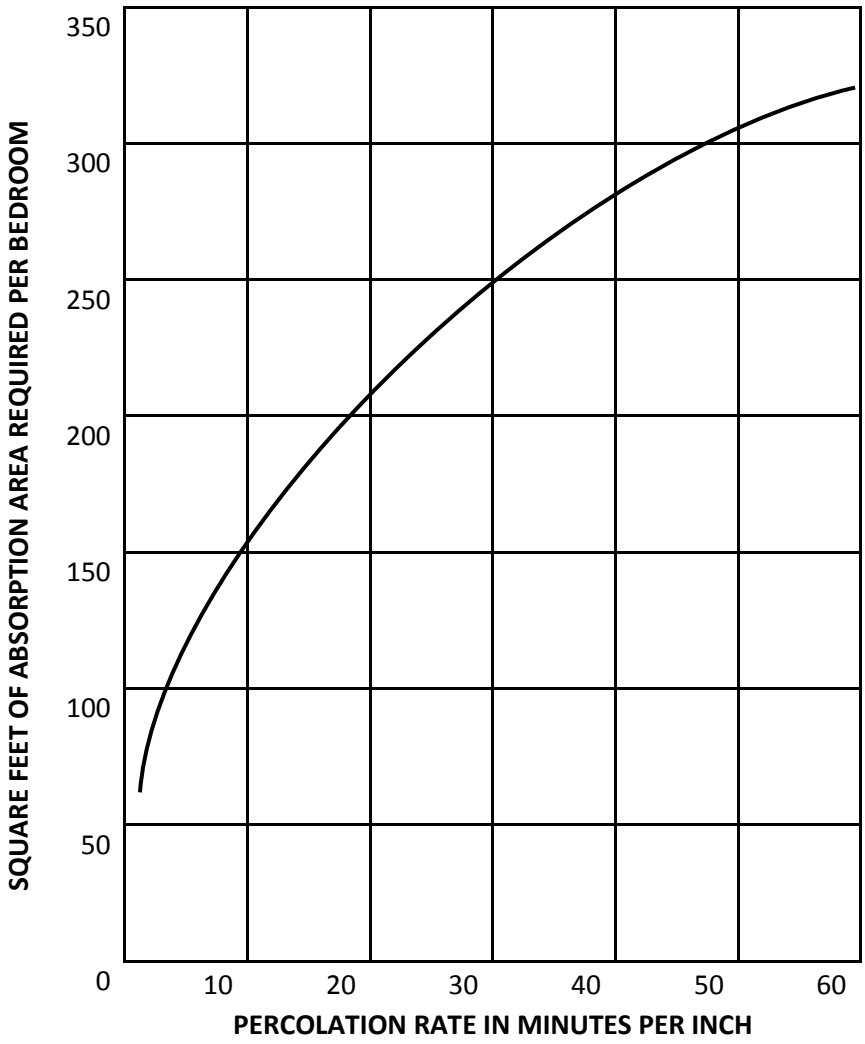
TABLE 6.0*

Minimum Depths of Groundwater below the bottom of leaching trench and seepage pit

Percolation Rate (Minutes/Inch)	Vertical Distance Leach Field (feet)	Vertical Distance Seepage Pit (feet)
Less than 1	Not Permitted	Not Permitted
1-5	20	20
6-30	8	20
31-60	5	20
More than 60	Not permitted	Not Permitted

*Manual of Septic Tank Practice, US Department of Health Education and Welfare 1967.

Percolation rates as a function of square foot of absorption area per bedroom is shown below – Manual of Septic Tank Practice, US Department of Health Education and Welfare 1967.



Septic Tank Capacity and Design

Construction and installation requirements for septic tanks are reviewed and approved by the City of California City Building Department. The City Building Department will issue building permits for the proposed septic system and perform necessary Field construction inspection.

The septic tank capacity for a single family residence is based on the number of bedrooms per single family residence. Table 7.0 below provides a summary of the septic tank capacity requirements for a single family residence (SFR).

TABLE 7.0*

CAPACITY OF SEPTIC TANK

Number of Bedrooms	Gallons of Septic Tank Capacity
1-2	750
3	1,000
4	1,200
5-6	1,500

*2013 California Plumbing Code, Table H2.1

See Table 8.0 show typical septic tank specification.

TABLE 8.0

Component	Requirement
Capacity	Minimum of 750 gallons
Two Compartments	The first compartment must be equal to two-thirds the total tank volume.
Materials	Must be: • Water-tight • Properly vented, and • Made out of durable and non-corrosive material.
Construction	All tanks must be listed and approved by: • IAPMO, or • An American National Standard Institute (ANSI) accredited testing organization.
Access Opening	Access to each tank compartment must have a manhole at least 20 inches in diameter.
Access Risers	A riser must: • Extend from each manhole opening to, or above, the surface of the ground, and • Be a size larger than the manhole opening.
Effluent Filter	The outlet of the tank must be filled with an effluent filter capable of: • Screening solids with a diameter in excess of three-sixteenths of an inch, and • Conforming to National Sanitation Foundation (NSF)/ANSI standard 46.
Tank Connections	Tank connections must comply with standards required by the Building and Safety Division.

Seepage Pit Capacity and Design

Seepage pit as with all soil absorption systems should never be used if there is a likelihood of contaminating underground water. When seepage pits are to be used, the pit excavation to terminate 20 feet minimum above ground water table.

Seepage pit capacity design is per Manual of Septic Tank Practice, US Department of Health, Education, and Welfare.

Wastewater from RV Holding Tank

Discharge from RV holding tank or portable toilets may contain chemical that can pollute groundwater quality. The following methods were implemented to prevent groundwater pollution.

1. Educate RV owners about the pollution hazard by providing an information sheet on holding tank chemicals.
2. Wastewater from RV or portable toilet shall not be discharged to a septic tank or functionally equivalent system without subsequent additional treatment prior to disposal.
3. Owner and / or operators of wastewater system that accept waste from RVs or other mobile waste system must ensure that such waste do not deleteriously affect the wastewater system or adversely affect beneficial uses of groundwater with holding tank additives that may contain, among other chemicals, formaldehyde, zinc, and/or phenol.
4. Use of holding tank chemicals shall be discouraged by the wastewater system owner/operator.

Adoption of Salt and Nutrient Management Plans

City of California City completed a draft of Freemont Basin Salt and Nutrient Management Plan (Appendix 'H') prepared by Stetson Engineer Inc. and currently under review by the Regional Board. It was included for reference only.

This LAMP incorporates the approved Salt and Nutrient Management Plan for Antelope Valley Groundwater Basin (Appendix 'G'). The following brief summary of some implementation measures contained in the AVGB SNMP was listed below to be implemented as part of this LAMP.

A. Recycled Water Irrigation

- Monitor water quality at treatment plant to ensure regulatory compliance with Title 22 and Recycled Water Policy.
- Irrigation water not to exceed the demand of the plants, with respect to water and nutrients and does not exceed the field capacity of the soil.
- Knowledgeable Site Supervisor to monitoring the recycled water system and conduct an annual self-inspection of the system.
- Minimize runoff of recycled water from irrigation

B. Groundwater Management

- Basin-wide groundwater level monitoring.
- Groundwater quality monitoring and quality analyses.
- Water recycling projects to offset groundwater pumping.
- Groundwater cleanup site programs

LAMP Variance

When there is insufficient lot area or improper soil conditions for sewage disposal for the proposed building or land use, no building permit shall be issued and no private sewage disposal shall be permitted. No variances or exceptions are permitted in this LAMP.

Supplemental treatment

At the time of the effectiveness of this LAMP, all new and replacement OWTS that does not meet the conditions and requirements set forth per this LAMP, would be regulated by the Lahontan Region 6 Water Quality Control Board.

In addition to procedures for submitting report to Regional Water Board as stated in Section 1 of this LAMP, the OWTS owner is required to comply with the following;

Permitting Process

1. Any proposed alternative onsite wastewater treatment system is required to be submitted to the California City Department of Public Works for initial review before submitting to Lahontan Region 6 Water Quality Board for review, recommendation, and approval.
2. Alternative system must be designed by a Qualified Professional in conformance with Lahontan Regional Board and State guidelines.
3. Prior to final approval, the property owner is required to record a notice stating that an alternative system has been installed on the property. This “Notice to Property Owner” shall run with the land and will act as constructive notice to any future property owner that the property is served by an alternative wastewater treatment system and is therefore subject to an operating permit with regular maintenance, monitoring and reporting requirements. A copy of the recorded document shall be provided to the City of California City. City Public Works prior to final inspection of the alternative waste disposal system.

Monitoring and Inspection

Regular inspection of the system by a Qualified Inspector will be required to ensure that the alternative onsite wastewater treatment systems are functioning properly. In addition, a report detailing the findings of the inspection must be submitted to City for review.

Evaluating Proximity to City Sewer Systems

The City of California City Sewer Municipal Code Section 6-4.01 requires improved properties located within 200 feet of a City sewer line to connect to existing sewer main systems. Property which does not front upon a City sewer shall be deemed located within 200 feet of a City sewer only if such property is also contiguous to a public right-of-way through which such City sewer line may be reached (Ordinance No. 89-414).

For properties that fall outside the mandatory sewer main system hookup, the City is implementing the following measures;

1. Grinder pump system with a pressure main to connect to existing sewer main. Sewer system using onsite grinder pump / pressure system will transport wastewater to the nearest main sewer line.
   The grinder pump / pressure system is used to certain area when the building is lower than the street and/or further away from the gravity sewer system. A grinder pump is needed when conventional gravity sewers and /or laterals cannot be used to service an area or property. It is also required when a low pressure sewer system is constructed instead of a gravity sewer system.
   The grinder pump / pressure main system is also to be employed for replacement of existing failed septic tank / seepage pit system.
   Most grinder pumps are installed on private property and therefore are the responsibility of the property owner to maintain the system. The City's responsibility for sewer service begins after the property line in the public right of way.
   The City has no grinder pump ordinance in place or sanitary sewer system management plan to address maintenance of grinder pumps and pressure sewer. Currently the City is on process to establish rules, regulations and maintenance procedure regarding grinder pump.
2. Small diameter pressurized sewers system is used as an alternative to conventional gravity sewer. The pipes can be installed at shallower depths than conventional gravity sewer. Pressurized sewer system is advantageous to use in an area where bedrock is present or if there is a high groundwater table. The City will employ a qualified knowledgeable professional that will determine the design and construction of the proposed system.

Section 7: OWTS Management

OWTS Permitting Procedure

The City of California City performs all permit issuance activity at the Building and Safety Department. Maintain City water system maps including City well locations. The plan check permit issuance activity will include review of existing water well location for proposed onsite wastewater treatment system construction / remedial work area distance requirements, (Horizontal and Vertical).

Inspection, Maintenance, and Repair for Conventional OWTS

This City of California City maintains a current log of building permit activities with onsite wastewater treatment system within California City. This log keeps a current septic tank count that evaluates the 2 dwelling units per acre requirements. This density requirement is currently in effect per the City of California City and Lahontan Region 6 1989 Memorandum of Understanding. (See Appendix 'C',Figure 3, and Figure 4).

Management issues also include onsite wastewater treatment system for building additions and remodel in addition to new construction. Size and project review occur at the application process followed up by field inspections, testing, and design as required. The onsite wastewater system(s) management also requires processing of all permits and response to any complaints received by the City of California City. Monitoring of OWTS under terms of operating permit, including flows, water levels, pump-out volumes, and water quality sampling as applicable, Maintenance (and/or) repair work may be required from time to time as a result of normal servicing. System aging and observation from field inspections, maintenance (and/or) repair work is performed by permit issued and inspected by the City of California City.

This LAMP addresses the minimum requirements and procedures for inspection, maintenance and repair of OWTS include the following;

Septic Tank Inspection, repair and maintenance Report

1. Enforce codes to repair or replace failed systems.
2. Require mandatory pumping every 2-3 years.
3. Pumpers completing inspection reports must be knowledgeable in the installation and maintenance of the system that they inspect.
4. Repair of septic tank must be performed by a licensed contractor in the State of California.
5. Leach field repairs shall be performed only by a California licensed Engineer, Plumbing or Sanitation System contractor.

6. Owner shall maintain a record of all repair activities for a minimum of five years. Record shall include date, nature of repair, service company anme and service company state contractor license number.
7. Upgrade septic system, as needed, when house is remodeled.
8. Making sure invert is properly installed in the tank.
9. Septic tanks shall be pumped when one of the following conditions exists (SWRCB Order WQ 2014-0153-DWQ)
    a. The combined thickness of sludge and scum exceeds one-third of the tank depth of the first compartment.
    b. The scum layer is within 3 inches of the outlet device.
    c. The sludge layer is within 8 inches of the outlet device.
10. Corrective action/repair/replacement for existing OWTS is required for the following condition:
    a. Any OWTS that has pooling effluent, discharge wastewater to the surface, or has wastewater backed up into plumbing fixtures.
    b. Any OWTS septic tank failure, such as a baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating is deemed to be failing.
    c. Any OWTS that has a failure of one of its components such as a distribution box or piping connection.
    d. Any OWTS that has affected, or will affect, groundwater or surface water to a degree that makes it unfit for drinking or other uses.

Qualification of Professional(s), Contractor(s), and Maintenance Service

There are various personnel involved with the Onsite Wastewater Treatment System(s) (OWTS). Minimum requirements are associated with each OWTS activity.

Site evaluation required field review, soils percolation testing, ground water evaluation, flood and topography to be done by a registered license California Civil Engineer. OWTS design must comply with City of California City standard (and/or) design by a registered license California Civil Engineer. Onsite wastewater treatment system construction and installation requires a California license contractor; Class-A (General Engineering Contractor), (or) Class-36 (Plumbing Contractor), (or) C-42 (Sanitation System Contractor). Servicing of septic tank pumping requires current permit issued and regulated by the City of California City Building and Safety Department.

The licensed professional, contractors and maintenance provider for OWTS should provide completion of an onsite wastewater certification training coarse by a third party entity, such as the California Onsite Wastewater Association (COWA), National Association of Waste Transporters (NAWT), National Sanitation foundation (NSF), or other acceptable training program as determine by the Public Works Director.

Education and Outreach

The City of California City provides education and outreach of the Onsite Wastewater Treatment System by City Council public meeting, agenda items, City website posting, and notices posted at City Hall. City of California City personnel are available to meet with the public and answer questions on a routine basis.

The primary method of education and outreach is by direct interaction between City of California City staff and the public. The City routinely receives and responds to phone calls and office visits by private property owners, consultants and contractors with questions about the regulations and or the permit process. As part of California City role in the planning process, the City staff will regularly answer questions and provide information to the applicants, consultants and contractor on how to locate operate and maintain their OWTS as well as any Water Board order regarding OWTS restriction. The City required the installer/designer of OWTS to provide owners with sufficient information to address critical maintenance, repair and parts replacements within 48 hours of failure.

The City of California City will promote on going education as new information becomes available. Also, the City of California will involve other intent group of real estate and building industry to enhance the use of Onsite Wastewater Treatment System by use of the Local Agency Management Program.

Septage Management

Septage is the partially treated waste from the Onsite Wastewater Treatment System. It generally consists of the wastes that are disposed of through a structure's plumbing system that neither drain out into the soil or are converted to gases by the bacteria in the tank. In the septic tank where primary treatment takes place, the waste separates into three district layers; the upper scum layer, the middle clarified layer and the lower sludge layer. Over time the scum and sludge layers accumulates to the point where the biologically active clarified area is minimized. When this occurs the tank should to be pumped. The liquid waste pumped from the tank is referred to as septage. Septage is essentially sewage and like sewage must disposed of in a manner that protects public health.

The City of California City does not have any septage receiving facilities in the City Wastewater Treatment Plant. The Wastewater Treatment Plant is not designed for the high bed and solids loading received from septic tank pumping. The City continues to monitor any septic tank pumping operations for any illegal dumping that may occur into the City wastewater disposal system.

Onsite Maintenance District or Zones

The City of California city maintains a district or zone(s) of onsite wastewater treatment systems. This district or zones are described per the 1989 City of California City Memorandum of Understanding with Lahontan Region 6 Water Quality Control Board (see Figure 2, 3, 4 and

Appendix 'C'). The 1989 Memorandum of Understanding criteria is the same criteria as presents in the Local Agency Management Program for future onsite wastewater treatment systems. It is anticipated that future activities may requires additional City management activities that would address proposed development within the City limits of the City of California City.

The City of California City maintains wastewater quality test data for ground water testing each year. This information evaluates a large range of water table contaminants including salts and nitrate. Current test data indicates contaminants are at acceptable levels.

Watershed Management Coordination

The City of California City obtains its water from six groundwater wells and an imported water supply from the Antelope Valley-East Kern Water District (AVEK). Groundwater wells typically produce approximately 93 percent of the City water supply. The water wells draw from the underground Freemont Valley aquifer located beneath a portion of the First Community(see Figure 11). Groundwater depth is approximately 330 to 390 feet below ground surface (bgs). The water wells produce between 800 and 1000 GPM each. There is no significant source of water supply in the second Community. All water for the Second Community originates in the First Community from wells or the Antelope Valley East Kern supply.

Antelope Valley East Kern is a state water supply contractor with an entitlement to surface water from the California Water Project. AVEK delivers water to Rosamond, Mojave, Edwards Air Force Base, Boron and other communities in the Antelope Valley, East Kern. AVEK water is delivered from the East Branch of the California Aqueduct to a raw water pipeline (West Feeder) and is treated at a 14 MGD water treatment plant located in Rosamond. Treated water is conveyed via the Central Feeder to the Mojave Reservoirs, a 32 MG tank farm. From the Mojave Reservoir, water is conveyed by gravity via the North Feeder pipeline which branches into the California City feeder, an 18 inch pipeline. The California City feeder is 43,200 feet long. AVEK water flows by gravity to the California City turnout at California City Blvd. and Randsburg-Mojave Road.

AVEK has a State Water Project entitlement of 141,400 acre-feet per year and utilizes approximately 70,000 to 80,000 acre-feet per year. State Water Project water is subject to reductions in supply based on water supply availability, particularly in northern California, the source of supply. AVEK water delivery is also subject to Aqueduct interruptions. The AVEK water supply is thus not 100 percent reliable and is considered a supplemental water supply. The City of California City is required to purchase a minimum of 0.5 acre-feet per month. Each year the City must make a request to AVEK for the amount of water desired for the year.

In addition to AVEK, the City of California City works closely with the County of Kern regarding watershed, water quality and septic tank issues.

Cesspool Status (New/Existing)

Cesspools are not allowed in the City of California City. If City staff discovers a cesspool that is in use, the owner will be notified and required to replace the cesspool with an onsite wastewater treatment system. Cesspool removal and replacement with approved onsite wastewater treatment system will be accomplished as soon as possible to protect the health, safety, and welfare of the property owner(s), public, and government.

Section 8: Prohibitions

There are specific Onsite Wastewater Treatment System which are not included in the Local Agency Management Program and are not allowed in the City of California City.

- Onsite Wastewater Treatment System having a projected wastewater flows of over 10,000 gallons per day (GPD).
- Onsite Wastewater Treatment System receiving high strength wastewater.
- Wastewater treatment plants of any kind or size.
- Cesspools. The use of cesspools for sewage disposal is not authorized or allowed per this Local Agency Management Program (LAMP).
- Onsite wastewater treatment system. Surface discharge of wastewater from an onsite wastewater treatment system is not allowed with the City of California City. The onsite wastewater treatment system must consist of a septic tank and subsurface dispersal system for absorption and leaching of the effluent into the soil or seepage pit with adequate surface area for proper effluent dispersal.
- Discharge of effluent using sprinklers, exposed drip lines, free-surface wetlands, and ponds.
- Ground slope greater than 30% without a slope stability report approved by a registered professional.
- Decreased leaching area for IAPMO certified dispersal system using a multiplier less than 0.70.
- OWTS dedicated to receiving significant amounts of waste dumped from RV holding tanks.
- Separation of the bottom of dispersal system to groundwater less than five feet, except for seepage pits, which shall not be less than 10 feet.
- Installation of new or replacement OWTS where public sewer is available.
- OWTS that does not meet the minimum horizontal setback set forth per this Local Agency Management Program.

Section 9: References

California City, “2013 California City Urban Water Management Plan” by Provost & Pritchard

California City, “2008 Evaluation of Groundwater Resources in California City” by Stetson Engineering , Inc.

California City, “2004 California City Storm Drainage Master Plan” by Quad Knopf

2013 California Plumbing Code

California City Municipal code

Lahontan Regional Water Quality Control Board, Chapter 4 Implementation

http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs

Salt and Nutrient Management Plan for the Antelope Valley

Department of Water Resources, “Water Library” http://www.water.ca.gov/waterdatalibrary/

California Department of Water Resources http://www.water.ca.gov/groundwater/bulletin118

http://www.water.ca.gov/groundwater/data_and_monitoring/levels.cfm

Appendix 'A' Definitions

Alluvium

Sediment deposited by a river.

Community water supply wells

Water well used to supply for domestic purposes. Included are wells supplying public water system.

Disposal field

The required absorption area on square feet per one hundred (100) gallons of septic tank liquid capacity.

Domestic Water

Water plumbed to a dwelling or structure which is intended to be used for, but not limited to, drinking, food preparation, dish washing and bathing. Domestic water must also be potable.

Easement

A grant of one (1) or more of the property rights by the owner to or for the use by the public, a corporation, or another person or entity.

Effluent

The liquid outflow of any facility designed to treat, convey or retain wastewater.

Expansion Area

Additional seepage pits or subsurface drain fields, equivalent to at least one hundred (100) percent of the required original system that may be installed if the original system cannot absorb all the sewage.

Floodplain

A land area adjoining a river, stream, watercourse or lake which is likely to be flooded, including alluvial cones, wherein streams may change their course.

FEMA Federal Emergency Management Agency

GPD Gallons per day

Groundwater

Water stored underground in the spaces between rocks or sediments.

LAMP Local Agency Management Program

Leach bed

The joining of leach line trenches into one large square area.

Leach line

A series of horizontal trenches that hold a level perforated pipe that is used to distribute the wastewater throughout a rock absorption system where it eventually soaks into the soil particles.

MG Million Gallons

MGD Million Gallons per Day

OWTS Onsite Wastewater Treatment System

Percolation Test

A test conducted in order to determine the proper porosity for proposed disposal systems. Test must be accomplished by registered civil engineers, certified engineering geologists, or approved registered Environmental Health Specialist.

Potable Water

Water safe for drinking, culinary and domestic purposes and meets all requirements of the health officer.

Public Entity

A local agency which is empowered to plan, design, finance, construct, operate, maintain, and to abandon, if necessary, any sewerage system, the expansion of any sewerage system and the sewage treatment facilities serving a land development.

In addition, the entity shall be empowered to provide permits and to have supervision over the location, design, construction, operation, maintenance, abandonment of individual sewage disposal systems and to conduct any monitoring or surveillance programs required for water quality control purposes.

RWQCB Regional Water Quality Control Board

Seepage Pit

A covered pit with an open-jointed or perforated lining which septic tank effluent seeps into the surrounding soil, sometimes called a leaching pit or leaching pool.

Septic Tank

A water tight, covered receptacle designed and constructed to receive the

discharge of sewage from a building sewer, to separate solids from the liquid, to digest organic matter, to store digested solids through a period of detention, and to allow the clarified anaerobic liquids to discharge for final disposal.

Setback

The required minimum distance between a proposed sewage disposal system and those items listed in the California Plumbing Code, Appendix K.

Sewage

Any combination of water-carried waste, discharged from buildings.

Sewage system

A network of wastewater collection, conveyance, treatment and disposal facilities interconnected by sewers, and owned by the districts.

Private system: a private sewerage disposal system or any part thereof, or the building sewer to the point of connection to a public sewer main which typically parallels the center line of the roadway. A private system is sometimes referred to as private disposal system.

Public system: a common sewerage system or any part thereof which is operated by the county, or by a county service area, or by any political subdivision or public entity.

Streams

Surface: a continual or seasonal flow of water in a definite channel having a bed of banks.

Non-classified: a flow of water within a well-defined course only during a period for storm.

Appendix 'B' Onsite Wastewater Treatment System (OWTS) Policy

Refer to:

https://www.waterboards.ca.gov/water_issues/programs/owts/docs/owts_policy.pdf

Appendix 'C' March 1969 Memorandum of Understanding Lahontan Region 6 and City of California City

SEPTIC TANK GUIDELINES

Memorandum of Understanding
Between the
California Water Quality Control Board
Lahontan Region
and the
City of California City

This Memorandum of Understanding is entered into by and between the California Regional Water Quality Control Board, Lahontan Region (hereinafter Board), and the City of California City (hereinafter City). Its purpose is to expedite the overall review process for proposed land developments and to provide a clear operating policy for the Board and the City on the implementation of the Board's guidelines for wastewater disposal from land developments.

Section 13260 of the California Water Code requires any person discharging waste or proposing to discharge waste that may affect waters of the State, except to a community sewer system, to file a report of waste discharge with the regional board of that region. Implementation of this code section has included regulation of individual waste systems wherever warranted.

In 1973, the Board adopted guidelines to (1) establish the conditions under which waivers of the filing requirement would be in the public interest (pursuant to California Water Code Section 13269); (2) establish minimum criteria for the use of individual systems; and (3) prevent pollution or nuisance caused by the discharges from leaching or percolating systems.

On January 14, 1988, the Regional Board adopted revisions to the "Guidelines for Waste Disposal from Land Developments". In conjunction with these revisions, the Regional Board also adopted the "Regional Board Guidelines for Implementation of Criteria for Individual Waste Disposal Systems". These implementation guidelines list general and specific provisions in considering exemptions to the maximum density criteria (2 EDUs per acre) for individual waste disposal systems in both new and existing land developments.

This requirement also applies to domestic wastewater discharges from new commercial and industrial developments with wastewater discharge volumes exceeding two EDUs per acre density (500 gal/day/acre based on 250 gal/day/EDU). On June 16, 1988, the State Water Resources Control Board approved the revisions. For purposes of this Memorandum of Understanding, gross acreage is that area which encompasses the entire net lot area plus any underlying fee title within the adjacent right(s)-of-way, if any.

Inasmuch as the City has incorporated into its review criteria the "Minimum Criteria for Subsurface Discharge of Sewage" contained in the Board's guidelines, and has consistently applied these criteria in its review of proposed developments, it is not against the public interest for the Board to reduce its oversight work by eliminating redundant review of proposed projects.

It is agreed that:

I. The City is authorized to issue construction permits for projects that utilize individual subsurface disposal systems without Regional Board approval under the following conditions:

A. All of the following:

1. The on-site soil characteristics comply with established "Minimum Criteria for Individual Waste Disposal Systems as adopted by Resolution 6-88-15; and

2. The discharge is composed of <u>domestic</u> wastewater only; and

B. One of the following:

1. The development consists of single-family residences, multiple-family residences, non-residential or of mixed occupancy and the cumulative development density in the specified area, as defined on Map "A" which is made a part of this memorandum, does not exceed two equivalent dwelling units (EDUs) per acre (500 gallons/acre/day wastewater

flow). The estimated wastewater flow from non-residential or mixed occupancy developments shall be determined using Table I-2 and I-3 in the Uniform Plumbing Code and occupant loads as determined by Table 33A in the Uniform Building Code; or

2. The development consists only of a single-family home on an individual lot, subdivided prior to January 14, 1988, which has a minimum net area of 15,000 square feet; or

3. The project is in a class that has been designated exempt from Regional Board review in writing under signature of the Regional Board Executive Officer; or

4. The project/development has been granted an exemption by the Board and complies with the City's standards for use of septic tank wastewater disposal systems.

II. The City shall <u>not</u> issue construction permits without Regional Board approval for the following projects:

A. Projects that involve domestic wastewater discharge from residential, commercial or industrial development if the cumulative development density in the specified area as defined on Map "A" is in excess of two EDUs/acre or 500 gallons/acre/day as determined by the Board (except in exempted areas); or

B. Projects that will have industrial wastewater discharges; or

C. Projects that do not comply with the City's standards for use of septic tank wastewater disposal systems; or

D. Projects located within existing waste discharge prohibition areas (unless in areas exempted in I.B. above); or

E. Projects utilizing package wastewater treatment plants with on-site disposal; or

III. The City, at its discretion, may defer consideration of projects, based on water quality impacts, to the Board for any projects even if it appears that compliance with Section I. of this Memorandum of Understanding has been achieved.

IV. The City, at its discretion, may require the formation of a public entity (as defined in the State of California Government Code Section 53090 et seq.) to maintain septic systems in residential developments of one hundred (100) lots or more.

V. The Board may review permits issued by the City at its discretion. Copies of permits will be made available upon request for review in City offices.

VI. The Board, upon reviewing permits issued by the City, may require proposals be submitted and/or waste discharge requirements (permits) be obtained for all other types of waste discharges such as stormwater runoff and solid waste leachate.

VII. The City, on its own initiative or at the request of an applicant and upon providing the information specified in the implementation guidelines, may apply for individual, large scale, or area-wide exemptions.

VIII. The applicant, for projects found in compliance with the Board's guidelines, will be notified of acceptance by issuance of a City building permit or by issuance of a Board clearance letter.

IX. The City shall maintain a record of all documents submitted and reviewed under this Memorandum of Understanding. This record shall be kept as a note on the construction permit for each project.

X. This Memorandum of Understanding shall be effective immediately after execution of this agreement and shall remain in full force until terminated by a prior thirty (30) day written notice by either party.

XI. This Memorandum of Understanding may be amended as mutually agreed to by the City and the Regional Board.

XII. All notices and communications under this Memorandum of Understanding shall be addressed to the following:

Peggy L. Rosler
City of California City
City Manager
21000 Hacienda Blvd.
California City, Ca 93505

O.R. Butterfield
California Regional Water Quality
Control Board, Lahontan Region
15371 Bonanza Road
Victorville, Ca 92392-2494

This Memorandum of Understanding is executed on the date of the most recent signature below, by the following authorized representatives of the parties.

Peggy L. Rosler
City Manager

Date 3/20/89

O.R. Butterfield
Executive Officer

Date 3-24-89

Appendix 'D' Abbreviated Stetson Evaluation Report of Groundwater Resources City of California City

Refer to:

http://www.energy.ca.gov/sitingcases/beacon/documents/other/2010-03-04_California_City_Groundwater_Data_TN-55732.PDF

Appendix ‘E’ City of California City Ordinance No. 89-414

ORDINANCE NO. 89-414

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CALIFORNIA CITY AMENDING THE CALIFORNIA CITY MUNICIPAL CODE AS IT RELATES TO THE LIMITING OF ON-SITE SEWAGE DISPOSAL

THE CITY COUNCIL OF THE CITY OF CALIFORNIA CITY ORDAINS as follows:

Section 1. Purpose

This Ordinance amends the California City Municipal Code by limiting development of real property with on-site sewage disposal to conform to the Memorandum of Understanding between the California Water Regional Water Quality Control Board and the City of California City.

The Council finds, determines and declares as follows:

(a) The California Regional Water Quality Control Board has adopted amendments to the Water Quality Control Plans for the North and South Lahontan Basins which prohibit discharge of domestic waste water to individual waste disposal systems where the density is in excess of two dwelling units per acre.

(b) The California Regional Water Quality Control Board has proposed an exemption to the above requirements which would allow an exemption to the above requirements allowing the City to develop in distinctly specified areas in accordance with the above-mentioned Memorandum of Understanding.

(c) The above-mentioned proposed exemption is within the guidelines of the public policy of the City with regard to the use of individual waste water disposal systems and the City sewer system.

Section 2. Amendment

Section 6-4.01 of the City of California City Municipal Code is hereby amended as follows:

"Section 6-4.01 Connections Required

(a) Prior to the issuance of any building permit for any building upon property which fronts upon or is located within 200 feet of a City sewer line, provisions shall be made for such building to be connected to such City sewer line. Property which does not front upon a City sewer shall be deemed located within 200 feet of a City sewer only if such property is also contiguous to a public right-of-way through which such City sewer line may be reached. (Chapter 4, Art. VII, C.C.M.C., as amended by Section 1, Ord. 9-69-14)

(b) On-site sewage disposal systems shall be limited to two (2) dwelling units per acre pursuant to the above-mentioned Memorandum of Understanding. Where the density has exceeded the standards of the Memorandum of Understanding, all domestic waste water discharge shall discharge to the community sewer system.

(c) The City is divided into zones for the purposes of resolving density determination. Each zone shall be evaluated on its individual density. Where any individual zone exceeds two (2) dwelling units per acre, development shall be halted and a moratorium shall be declared in that zone until all domestic waste water discharge can be discharged into the City sewer system."

Section 3. Other

Except as provided herein, the California City Municipal Code is reaffirmed and readopted.

PASSED, APPROVED and ADOPTED this 7th day of March, 1989.

Mayor

ATTEST:

City Clerk

(SEAL)

Appendix ‘F’ City of California City Municipal Code

APPENDIX "F"

CALIFORNIA CITY MUNICIPAL CODE

TITLE 6 - SANITATION AND HEALTH

CHAPTER 1 Animal

This chapter deals with the care and control of animals

CHAPTER 2 Waste Management

This chapter refers to proper handling of solid waste and recyclable materials, prohibited acts, collection system and fees.

CHAPTER 3 Health and Sanitation Code

Refer to the adoption of part 3 of the ordinance of the County Health and Sanitation Code as part of this chapter.

CHAPTER 4 Wells and Private Water Systems

Section 6-4.101 Intent

Section 6-4.102 Definitions

This section defined the term use for the purposes of this chapter:

Section 6-4.103 Interpretations

Section headings, when contained in this chapter, shall not be deemed to govern, limit, modify, or in any manner affect the scope, meaning, or intent of the provisions of any section.

Section 6-4.201 Water Well and Geothermal Heat Exchange Well Drilling

State that a private and/or commercial property owners shall not be allowed to drill water wells unless a permit is first obtained pursuant to this chapter and dedicated to the city once it meets its standard set forth in this chapter.

Section 6-4.202 Permit Applications

States that construction permit is required and if any person who commences any work without having first obtained permit unless it is an emergency shall pay double the standard permit fee.

Section 6-4.203 Application Procedure

Applications for permits shall be made to the Director on forms approved by the Director and shall contain all such information the Director requires to accomplish the purposes of this chapter.

Section 6-4.204 Filing Fee/Permit Fee

Filing fees and permit fees shall be set by the city council from time to time by resolution.

Section 6-4.205 Permit Conditions

When the Director approves a permit pursuant to this chapter, in addition to the conditions expressly authorized herein, the Director may impose such conditions of approval as are necessary to carry out the purposes of this chapter.

Section 6-4.208 Suspension and Revocation

States that the Director may suspend or revoke any permit issued pursuant to this chapter, whenever he or she finds that the permit has violated any of the provisions of this chapter or any condition of approval, or has misrepresented any material fact in the application for the permit, or any supporting documents for the permit.

Section 6-4.301 Well Standards

All water wells, geothermal heat exchange wells, monitoring wells and cathodic protection wells shall be constructed, reconstructed, repaired, destroyed and inactivated or converted in accordance with the standards set by law, including those regulations and standards issued by the California Department of Water resources and in accord with adopted city standards.

Section 6-4.401 Designated Areas

States that the Director may designate areas where groundwater quality problems are known to exist and where a well will penetrate more than one aquifer.

Section 6-4.501 When Made

States that the Director shall make an inspection of the annular seal construction work, and may make an initial inspection of each drilling site, and inspection at the completion of the work, and inspections at such other times as the Director deems appropriate.

Section 6-4.502 Site Inspection

States that the Director may make an inspection of the drilling site prior to issuance of a well permit.

Section 6-4.503 Inspection of Well Seal

States that the Director shall inspect the annular space grout depth prior to the sealing.

Section 6-4.504 Final Inspection

States that the Director may make a final inspection after completion of the work to determine whether the well was completed in accordance with this chapter.

Section 6-4.505 Waiver of Inspection

Stares that inspections may be waived where the work will be inspected by the staff of the California Regional Water Quality Control Board or the California Department of Health Services if these designated agencies will inspect and report to the Director on all drilling features required by the Standards.

Section 6-4.601 When Provided

States that the driller shall provide the Director a completion report within thirty days of the completion of any well construction, reconstruction, or destruction job.

Section 6-4.602 Submittal of State Report of Completion

A copy of the report of completion (Water Well Driller's Report, Department of Water Resources Form 188) required by California Water Code Section 13751 shall be submitted by the permit to the Director within thirty days of construction, alteration, or destruction of any well.

Section 6-4.603 Confidentiality

States that in accordance with California Water Code Section 13752, reports shall not be made available for inspection by the public but shall be made available for inspection by governmental agencies for use in making studies.

Section 6-4.604 Other Agency Requirements

States that nothing in this chapter shall be deemed to excuse any person from compliance with the provisions of California Water Code Sections 13750 through 13755 relating to notices and reports of completion or any other federal, state, or local reporting regulations.

Section 6-4.701 Right of Entry and Inspection

Representatives of the Director shall have the right to enter upon any premises at all reasonable times to make inspections and tests for the purpose of such enforcement and administration.

Section 6-4.801 Abatement of Abandoned Wells

Except as provided under state law, all persons owning an abandoned well as defined in the well standards must destroy it.

Section 6-4.901 Violation - Misdemeanor

Refer to any person who violates any of the provisions of this chapter is guilty of a misdemeanor.

Section 6-4.902 Notice of Violation Recorded

The Director may record a notice of violation with the office of the county recorder for any violation by the owner determines by the Director in accordance with this chapter.

Section 6-4.903 Removal of Violation Notices

A removal of notice of violation is determined by the Director or by the City Council after review that no violation of this chapter exists; or All required and corrective work has been completed and approved by the Director.

Section 6-4.904 Civil Enforcement - Nuisance

Violations of this chapter are expressly declared to be a nuisance. In addition to being subject to criminal prosecution, any person who violates any of the provisions of this chapter may be made the subject of a civil action.

Section 6-4.905 Remedies Cumulative

The remedies available to the City to enforce this chapter are in addition to any other remedies available under ordinance or statute, and do not replace or supplant any other remedy but are cumulative thereto.

Section6-4.1001 Appeal to City Council

Any person whose application for permit has been denied, or granted conditionally, or whose permit has been suspended or revoked, or against whose property a notice of violation has been recorded, may appeal to the City Council pursuant to Chapter 4 of Title 1 of the California City Municipal Code.

Section 6-4.1101 Contents

The Director shall submit a report, not less than annually, to the California Regional Water Quality Control Board(s) having jurisdiction in the city in compliance with the requirements of the California Water Code.

CHAPTER 5 Private Sanitation System

Section 6-5.101	Scope This chapter governs the construction, operation and maintenance of private sanitation systems.
Sec. 6-5.102	Definitions This section defined the term use for the purposes of this chapter:
Sec. 6-5.103	General Rule A. States that a person shall not construct operate or maintain a private water sanitation system without first securing a permit as required by this chapter. b. The permit shall not allow a private sewage disposal system to service property within Building Code Occupancy Groups Assembly (A), except A2, Educational (E), Institutional (I), or multi-family residential (R) without the consent of the Regional Water Quality Control Board. (Ord. No. 09-675, 5-19-2009)
Sec. 6-5.104	Construction Permits A construction permit is required for the construction of any part of a private sanitation system. The council shall approve the criteria for the operation of private sanitation systems upon the recommendation of the Public Works Director. The criteria shall include compliance with the Sanitation Code.
Sec. 6-5.105	Operations Permit An operations permit is required before any part of a private water system is operated or maintained.
Sec. 6-5.106	Revocation of Permits A construction or operations permit may be revoked if the permit holder fails to comply with this chapter or fails to satisfy permit conditions.
Sec. 6-5.107	Abandonment of System A permit shall be obtained before any part of a private sanitation system is abandoned.

Appendix 'G' AVGB Salt and Nutrient Management Plan

Refer to:

http://www.ladpw.org/wwd/avirwmp/docs/saltplan/Salt%20and%20Nutrient%20Management%20Plan%20for%20Antelope%20Valley_May%202014.pdf

Appendix 'H' FVGB Salt and Nutrient Management Plan (Draft)

Copy is available at HELT Engineering, Inc. upon request.

HELT Engineering, Inc.
2930 Union Ave.
Bakersfield, CA 93305
Telephone no: (661) 323 – 6045
Fax no: (661) 323 - 0799

Appendix 'I' Completeness Checklist for LAMP

LAMP Completeness Checklist

GENERAL REQUIREMENTS FOR LAMP

OWTS Policy Section	OWTS Policy Section Summary	Relevant LAMP Section, Appendix and Figures	Page no.
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3.3.2	OWTS Cleaning	Section 4 - OWTS Cleaning	23
3.3.3	Permits for New and Replacement OWTS	Section 4 - OWTS Permitting Record	24
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3.4	Permanent Record	Section 4 - Permanent Records	22
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9.1	Considerations for LAMPs	Section 3 - Water Quality Assessment plan	14
		Section 4 - Responsibilities and duties	22
9.1.1	Degree of vulnerability due to local hydrogeology	Section 3 - Hydrogeology Condition	18
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9.1.2	High quality waters and other environmental conditions requiring enhanced protection	Section 3 - Groundwater condition	16
9.1.3	Shallow soils requiring non-standard dispersal systems	Section 3 - Soil Conditions	16
		Section 3 - Encroachment above Groundwater	21
		Section 6 - Percolation Testing Requirements	32
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9.1.7	Vulnerable surface water	Section 3 - Surface water protection measures	21
9.1.8	Impaired water bodies	Section 3 - Surface water protection measures	21

9.1.9	High OWTS density areas	Section 5 - OWTS Usage	26
		Figure 6	67
9.1.10	Limits to parcel size	Section 5 - OWTS Usage	26
9.1.11	Area with OWTS that predate adopted standards	Section 5 - OWTS Usage	26
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9.3.2.6	Receiving Water Sampling Related to NPDES Permits	N/A	
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Appendix 'J' Water Quality Control Plan for the Lahontan Region (Basin Plan) (Chapter 4.4)

Refer to:

https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/docs/ch4_implementplans.pdf#page=67

FIGURE 1: Map of City of California City, Kern County

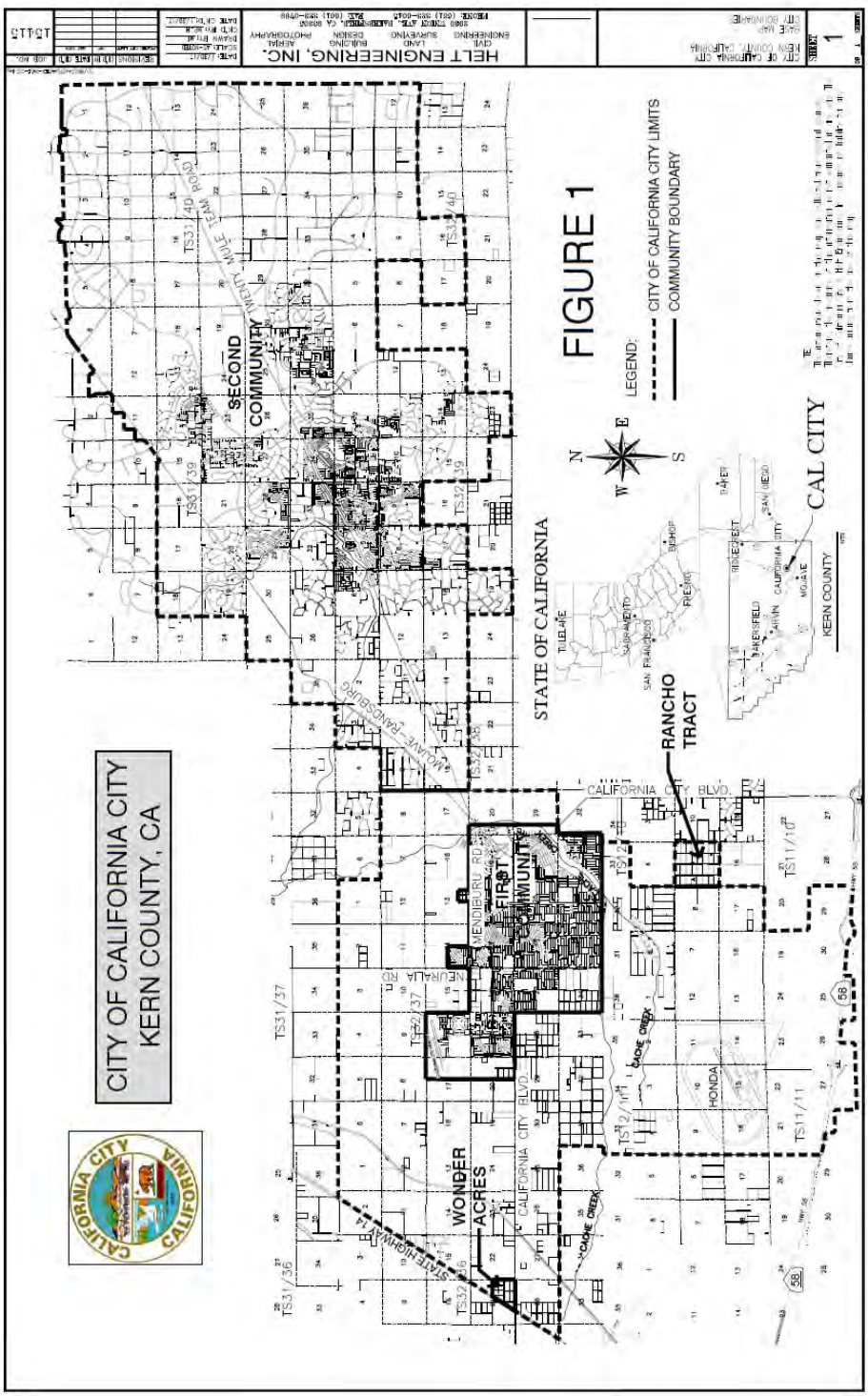


FIGURE 2: Lahontan Memorandum Map (Map 'A')

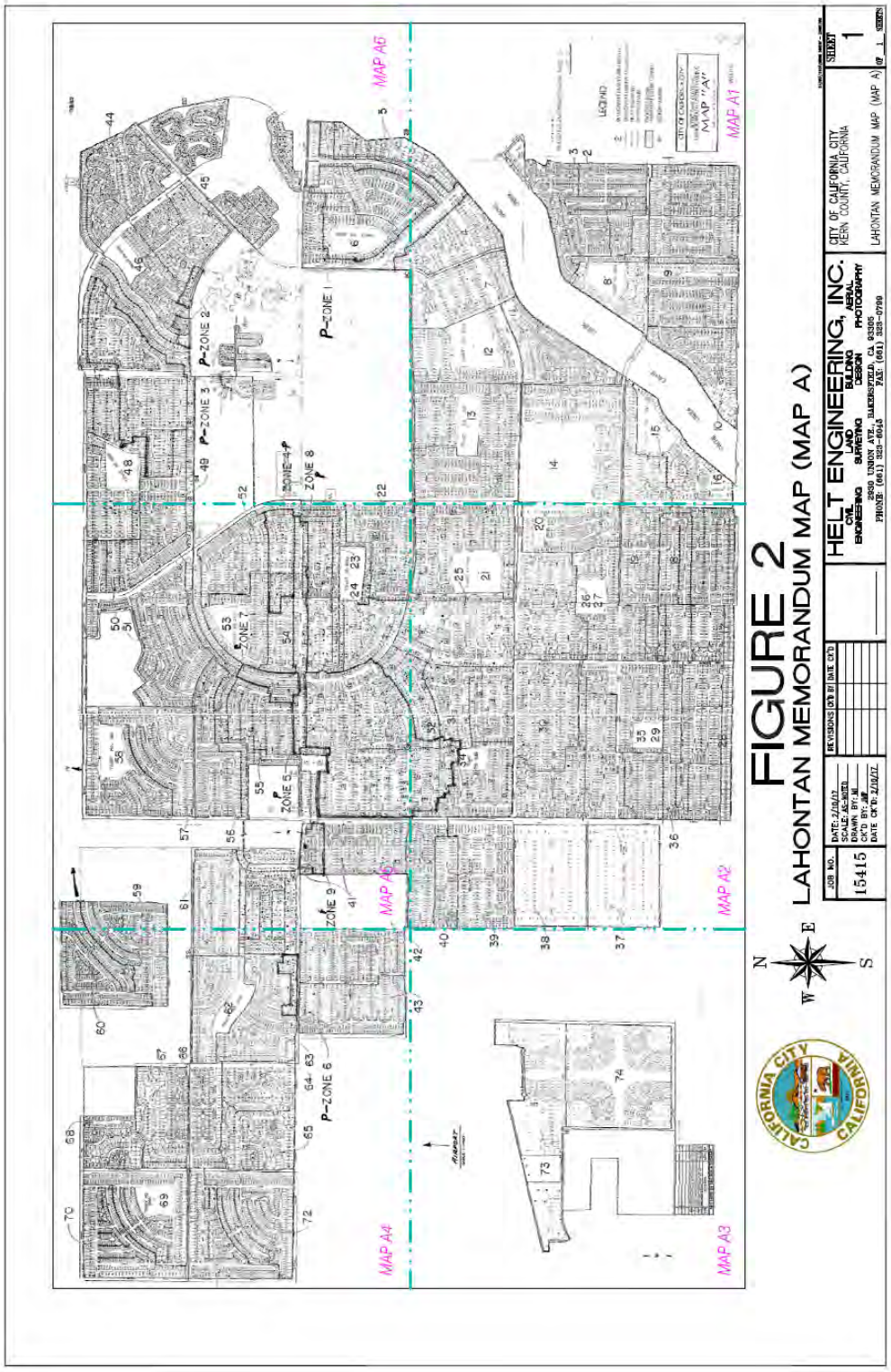


FIGURE 3: City Sewer Density Calculations

CITY OF CALIFORNIA CITY

SEWER DENSITY CALCULATIONS BASED ON TWO (2) DWELLING UNITS PER ACRE

SEWER DENSITY AS OF: 07/14/15

DENSITY ZONE	TRACT #'S IN EACH ZONE	LOTS PER TRACT	ZONE ACRES	# OF D.U. ALLOWED (2 d.u./ac)	PERMITS ISSUED TO DATE	TOTAL # OF LOTS	# OF UNDEVELOPED LOTS to CAP	CURRENT % USED	% CAP at Total Buildout	COMMENTS
D01	2404	153	107.36	215	1	359	214	0.5%	167.0%	
	2461	206								
D02	2404	22	60.83	122	0	230	122	0.0%	188.5%	
	2630	208								
D03	2630	309	84.02	168	8	330	160	4.8%	196.4%	
	2860	20								
	2223	1								
D04	2226	164	60.65	121	23	164	98	19.0%	135.2%	
D05	2226	302	101.35	203	31	302	172	15.3%	149.0%	
D06	2226	92	45.34	91	31	92	60	34.2%	101.5%	
D07	2225	212	74.10	148	32	212	116	21.6%	143.0%	
D08	2223	48	54.96	110	0	73	110.00	0.0%	66.4%	
	2630	20								
	2404	5								
D09	2223	222	82.58	165	1	249	164	0.6%	150.9%	
	2404	27								
D10	2223	205	61.82	124	1	200	123	0.8%	161.8%	
D11	2225	205	65.77	132	2	208	130	1.5%	157.6%	
	2223	3								
D12	2225	205	92.56	185	7	162	178	3.8%	87.5%	
D13	2161	222	89.31	179	38	222	141	21.3%	124.3%	
D14	2163	260	162.28	325	38	260	287	11.7%	80.1%	
D15	2191	132	43.31	87	21	134	66	24.1%	154.0%	
	2223	2								
D16	2191	132	71.55	143	8	132	135	5.6%	92.2%	
D17	2530	299	87.85	176	0	381	176	0.0%	216.5%	
	2122	82								
D18	2530	72	67.78	136	4	239	132	2.9%	175.7%	
	2122	69								
	2119	15								
	2117	2								

	2164	81								
D19	2119	28	60.94	122	16	196	106	13.1%	160.7%	
	2117	3								
	2164	165								
D20	2115	150	67.91	136	1	150	135	0.7%	110.4%	
D21	2159	318	206.83	414	164	543	250	39.6%	131.2%	
	2160	225								
D22	2069	205	72.79	146	64	208	82	44.0%	142.9%	
D23	2067	82	50.06	100	60	173	40	60.0%	173.0%	
	2069	91								
D24	2067	140	44.90	90	67	140	23	74.6%	155.9%	
D25	2116	223	103.37	207	158	328	49	76.3%	158.5%	
	2159	25								
	2120	30								
	2067	50								
D26	2115	130	103.49	207	79	300	128	38.2%	144.9%	
	2119	152								
	2117	1								
	2068	17								
D27	2115	68	78.14	156	29	211	127	18.6%	135.3%	
	2119	125								
	2117	18								
D28	2122	77	77.14	154	0	271	154	0.0%	175.7%	
	2118	115								
	2530	79								
D29	2122	43	108.91	218	14	302	204	6.4%	138.5%	
	2118	39								
	2117	216								
	2068	4								
D30	2068	292	95.74	191	166	292	25	86.7%	152.5%	
D31	2116	135	76.71	153	127	259	26	83.0%	169.3%	
	2120	124								
D32	2067	121	36.41	73	67	121	6	92.0%	166.2%	
D33			80.03	160	112	REPLACED WITH P5				
D34	2120	185	64.77	130	56	193	74	43.1%	148.5%	
	2066	8								
D35	2068	183	111.18	222	109	352	113	49.1%	158.6%	

	2117	169								
D36	2118	118	75.99	152	3	269	149	2.0%	177.0%	
	2117	109								
	2530	42								
D37	2123	84	97.02	194	27	85	167	13.9%	43.8%	
D38	2121	85	101.2	202	1	84	201	0.5%	41.5%	
D39	2317	261	81.25	163	13	261	150	8.0%	160.6%	
D40	2310	122	72.43	145	24	224	121	16.6%	154.5%	
	2317	102								
D41	2310	190	63.66	127	58	194	69	45.6%	152.4%	
D42	2725	301	159.4	319	54	295	265	16.9%	92.5%	
D43	2725	315	72.14	144	59	317	85	40.9%	219.7%	
D44	2436	250	79.59	159	51	250	108	32.0%	157.1%	
D45	2435	150	74.61	149	99	224	50	66.4%	150.3%	
	2436	74								
D46	2436	23	70.42	141	94	153	47	66.7%	108.5%	
	2435	99								
	2252	31								
D47	2227	92	37.16	74	54	126	20	73.0%	170.3%	
	2252	34								
D48	2228	154	73.54	147	84	175	63	57.1%	119.0%	
	2227	11								
	2791	10								
D49	2228	78	51.71	103	24	187	79	23.3%	181.6%	
	2791	109								
D50	2791	180	46.13	92	60	180	32	65.0%	195.1%	
D51	2967	467	119.77	240	0	467	240	0.0%	195.0%	
D52	2305	170	58.08	116	54	173	62	46.5%	148.9%	
D53	2447	123	53.37	107	68	129	39	63.6%	120.6%	
	2305	6								
D54	2447	4	24.08	48	18	80	30	37.4%	166.1%	
D55	2629	214	50.60	101	56	213	45	55.3%	210.5%	
D56	2629	266	70.89	142	45	266	97	31.7%	187.6%	
D57	2811	257	73.57	147	1	257	146	0.7%	174.7%	
D58	2811	242	78.18	156	9	337	147	5.8%	216.0%	
	5179	95								
D59	2812	324	76.92	154	0	321	154	0.0%	208.7%	
D60	2812	300	69.45	139	0	300	139	0.0%	216.0%	
D61	2778	265	67.69	135	52	265	83	38.4%	195.7%	
D62	2779	172	63.72	127	34	173	93	26.7%	135.8%	

D63	2779	263	75.22	150	49	262	101	32.6%	174.2%	
D64	2726	130	50.90	102	20	131	82	19.6%	128.7%	
D65	2726	205	59.41	119	15	204	104	12.6%	171.7%	
D66	2726	165	50.36	101	9	165	92	8.9%	163.8%	
D67	2727	243	68.96	138	1	243	137	0.7%	176.2%	
D68	2727	141	75.62	151	0	249	151	0.0%	164.9%	
	5527-1	108								
D69	2898	262	86.91	174	0	291	174	0.0%	167.4%	
D70	2898	288	65.00	130	0	288	130	0.0%	221.5%	
D71	2887	235	64.68	129	1	234	128	0.8%	180.9%	
D72	2887	408	92.60	185	2	419	183	1.1%	226.2%	
D73	2528	162	130.36	261	5	373	256	1.9%	143.1%	
D74	2528	274	145.54	291	8	160	283	2.7%	55.0%	
TOTAL:			**5780.9**	**11563**	**2688**	**17012**	**8828**	**23.2%**	**147.1%**	

PRIORITY DENSITY ZONES										
P1	2226	199	81.93	164	62	198	102	37.8%	120.7%	
P2	2435	21	12.27	25	16	24	9	64.0%	96.0%	
	2252	3								
P3	2252	174	125.47	251	202	391	49	80.5%	155.8%	
	2227	160								
	2228	57								
P4	2305 2447	109	33.21	66	54	109	SEWERED			
P5	2120	36	229.04	458	443	611	15	96.7%	133.4%	
	2067	241								
	2066	334								
P6	2779		10.65	21	19	31	SEWERED			
P7	2629	45	18.65	37	23	60	14	62.2%	162.2%	
	2447	15								
P8	2069	21	52.93	106	38	124	68	35.8%	117.0%	
	2305	17								
	2447	28								
	2067	41								
	2629	17								
P9	2310	50	15.70	31	13	46	18	41.9%	148.4%	
TOTAL-P			**579.85**	**1159**	**870**	**1594**	**275**	**75.1%**	**137.5%**	
TOTAL ALL			**6360.7**	**12722**	**3558**	**18606**	**9103**	**28.0%**	**146.3%**	

FIGURE 4: City Density Zone Map

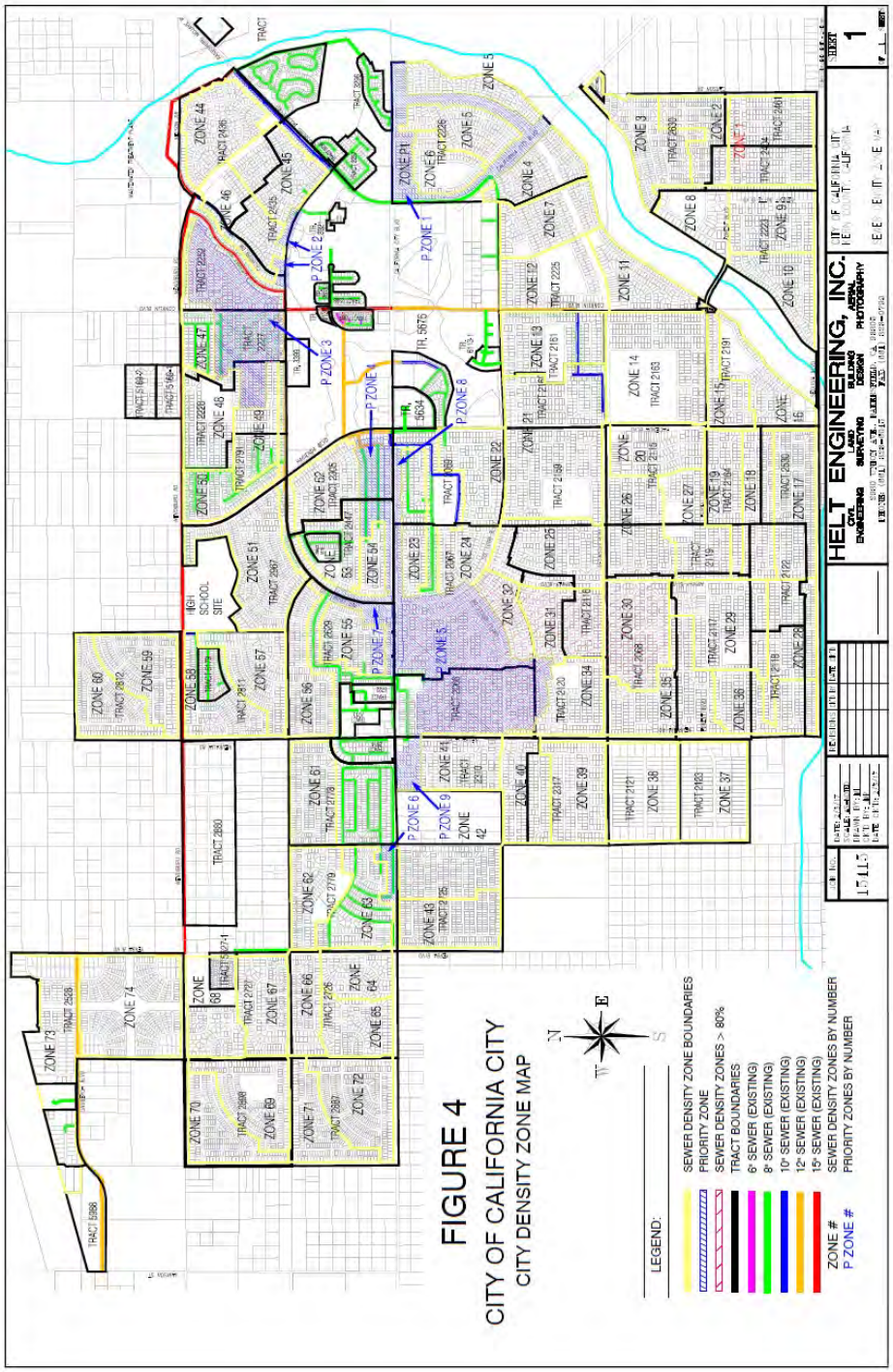


FIGURE 5: California City, Soil Group Area of Depiction Map

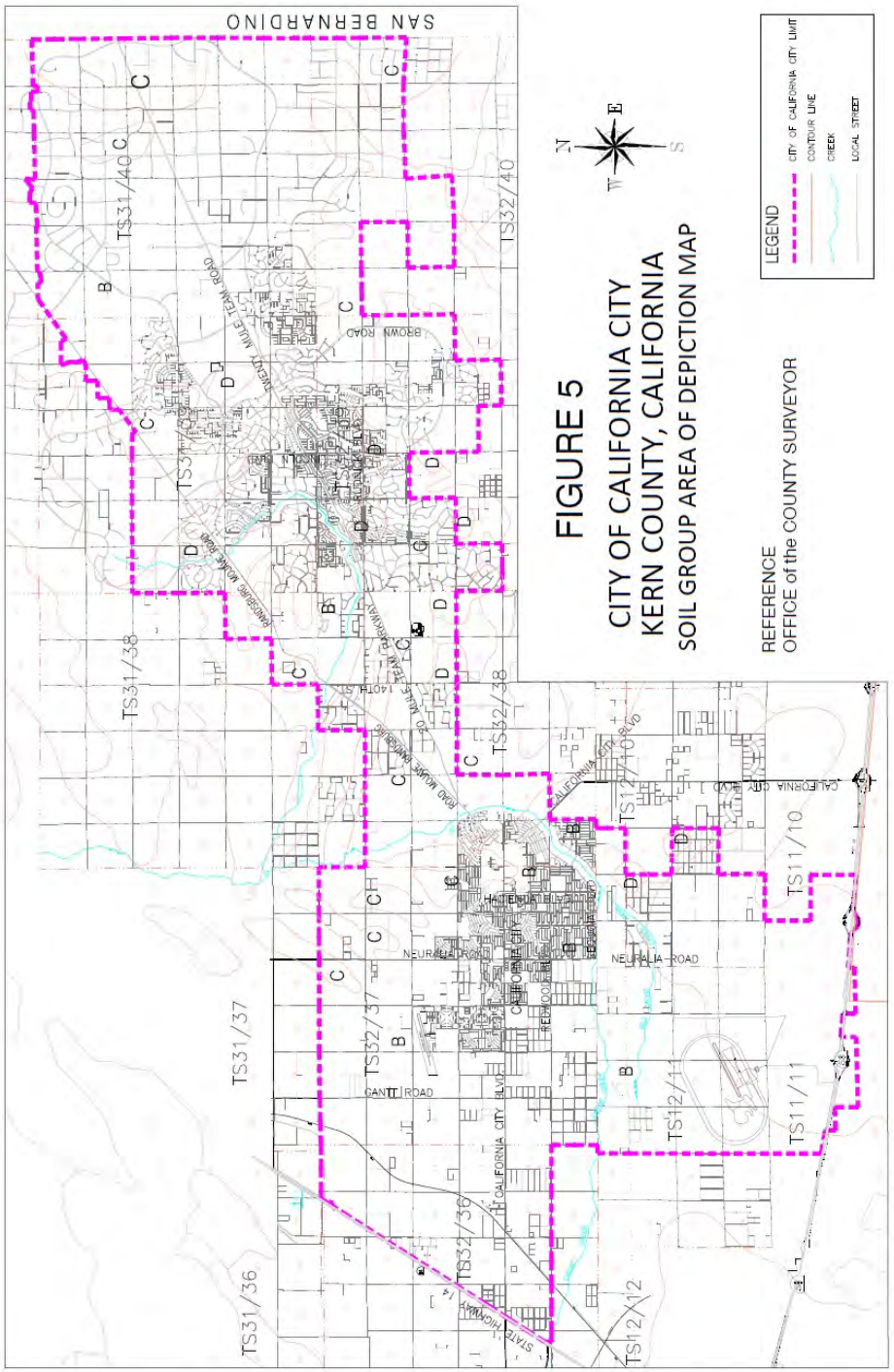


FIGURE 6: California City, Sewer Plan

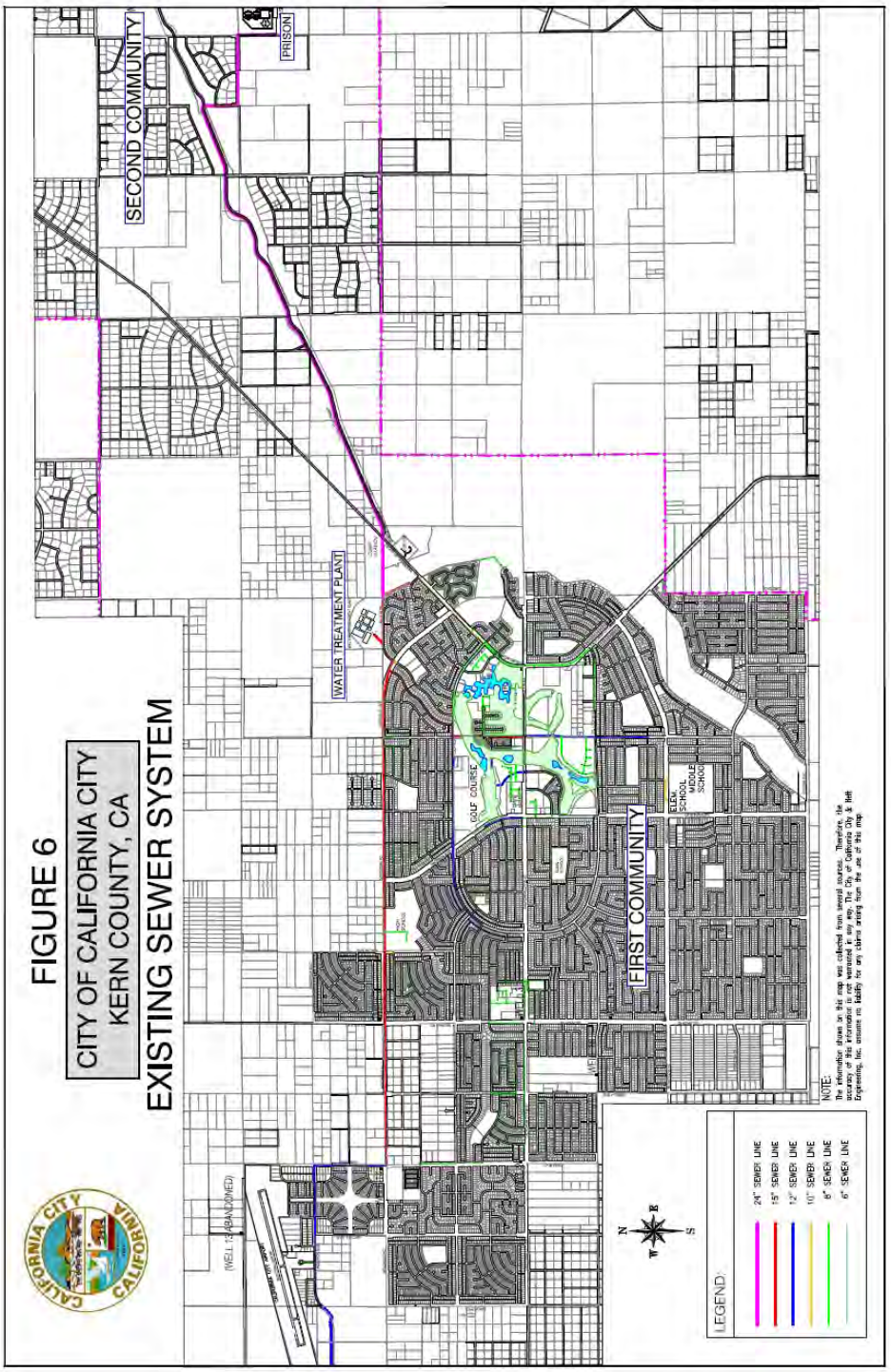


FIGURE 7: California City, Groundwater Wells Location Plan

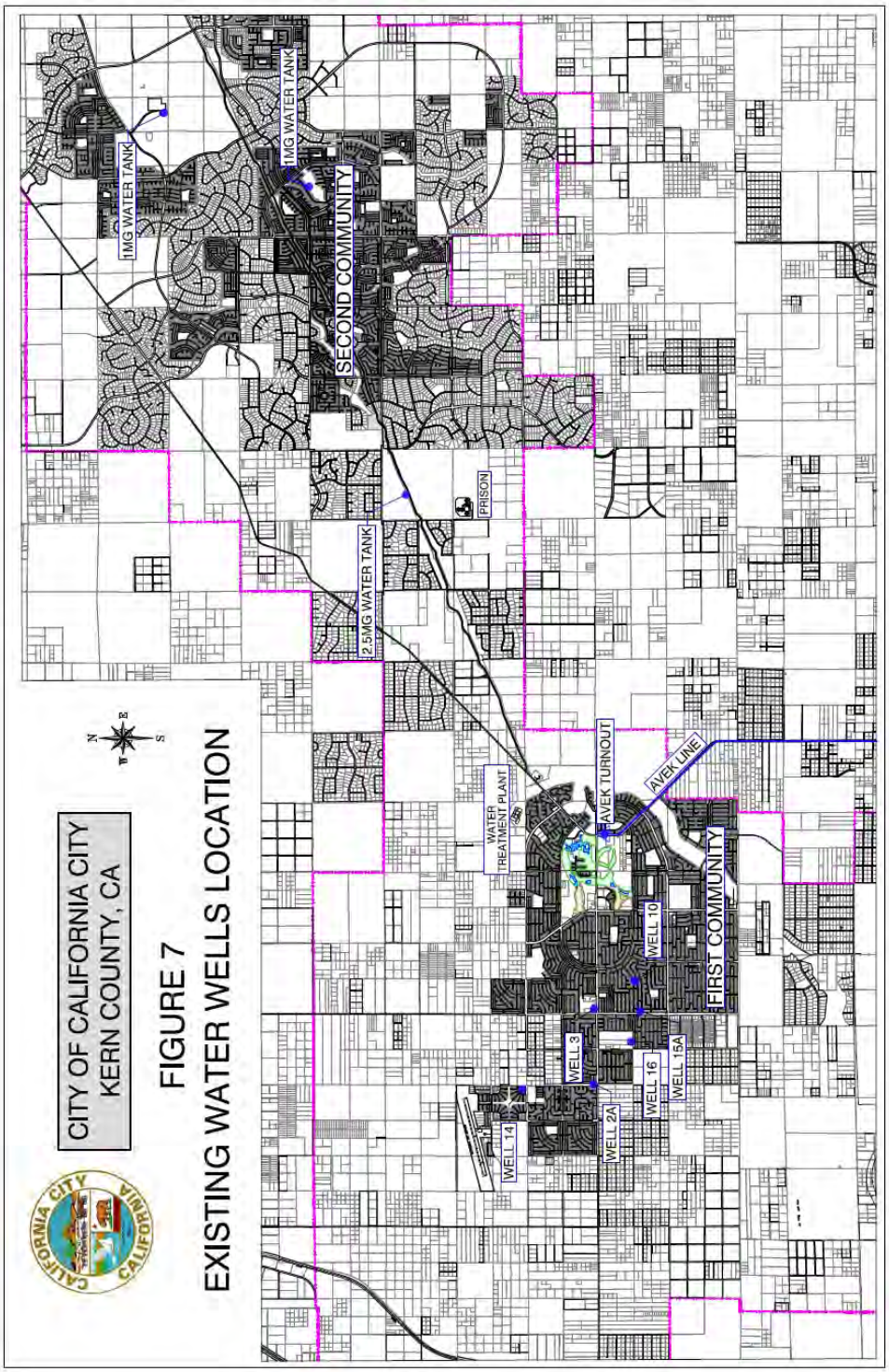
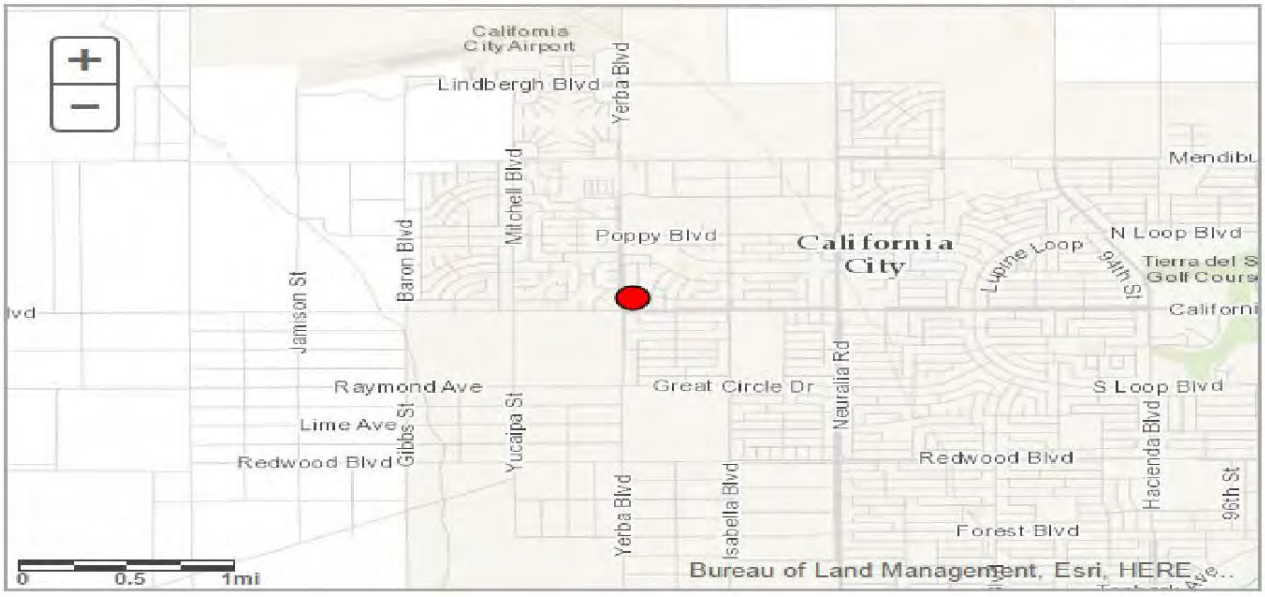


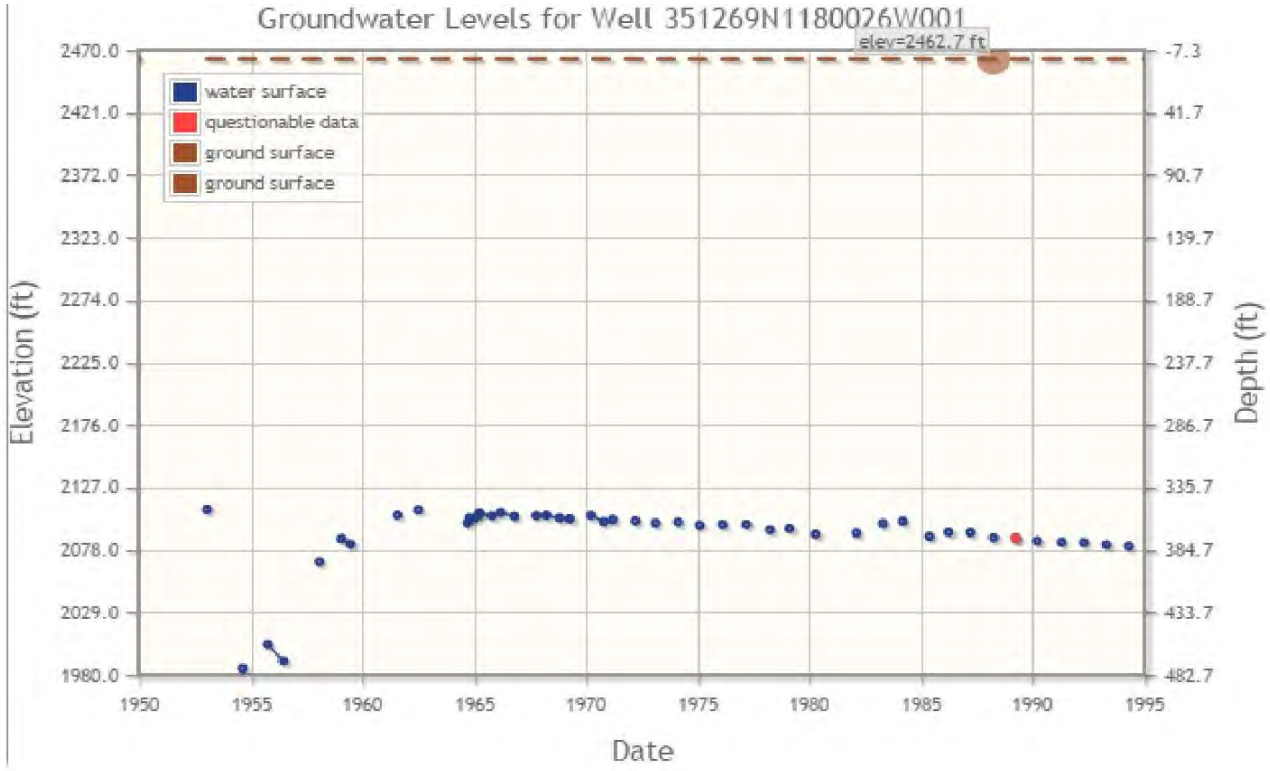
FIGURE 8: California City Groundwater Wells Level

FIGURE 8 - GROUNDWATER WELL 2A

State Well Number: 32S37E22N001M
Local Well ID:
Site Code: 351269N1180026W001
Latitude (NAD83): 35.126900
Longitude (NAD83): -118.0026
Groundwater Basin (code): Fremont Valley (6-46)

Well Use: Unknown
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 2462.740
Ground Surface Elevation (NAVD88 ft): 2462.740
Total Depth (ft):
Perforated Interval Depths (ft):



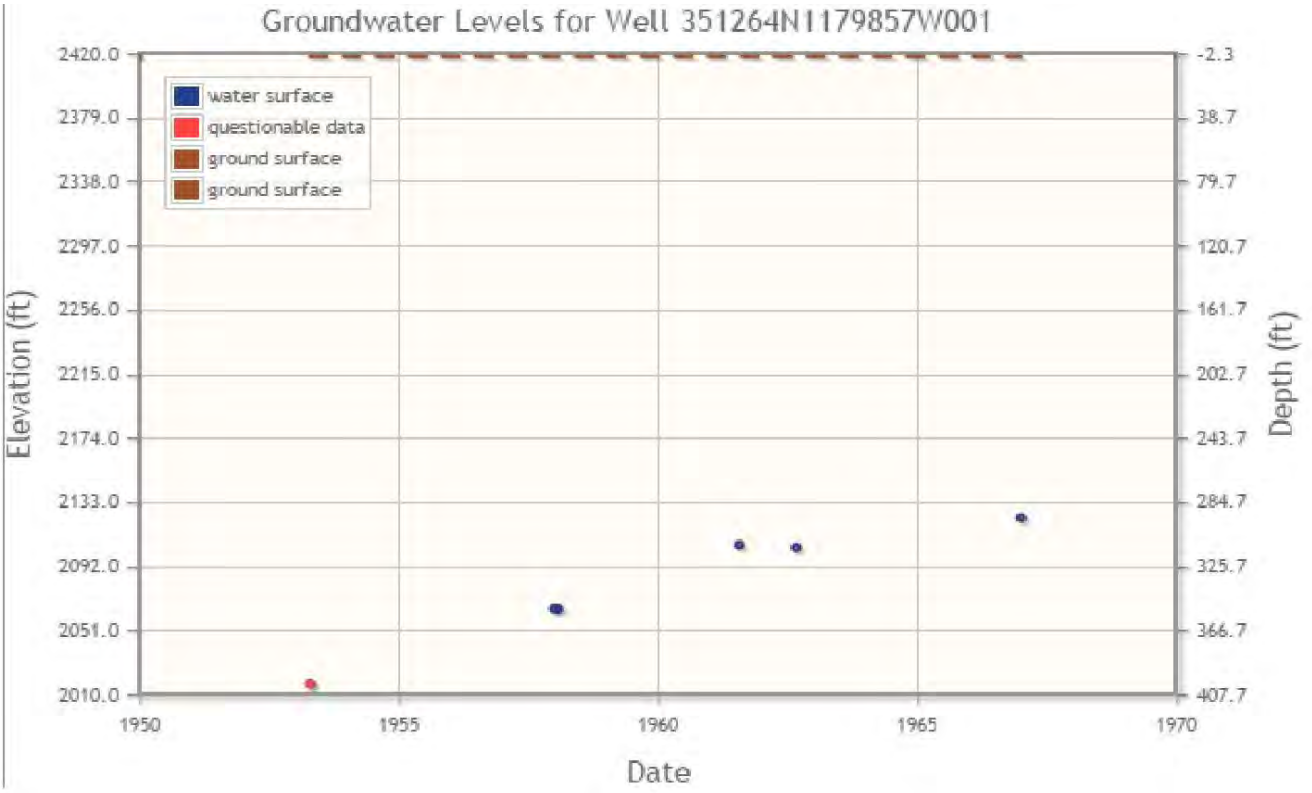


http://www.water.ca.gov/groundwater/data_and_monitoring/levels.cfm

FIGURE 8 - GROUNDWATER WELL 3

State Well Number: 32S37E23N001M
Local Well ID:
Site Code: 351264N1179857W001
Latitude (NAD83): 35.126400
Longitude (NAD83): -117.9857
Groundwater Basin (code): Fremont Valley (6-46)

Well Use: Unknown
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 2417.720
Ground Surface Elevation (NAVD88 ft): 2417.720
Total Depth (ft):
Perforated Interval Depths (ft):

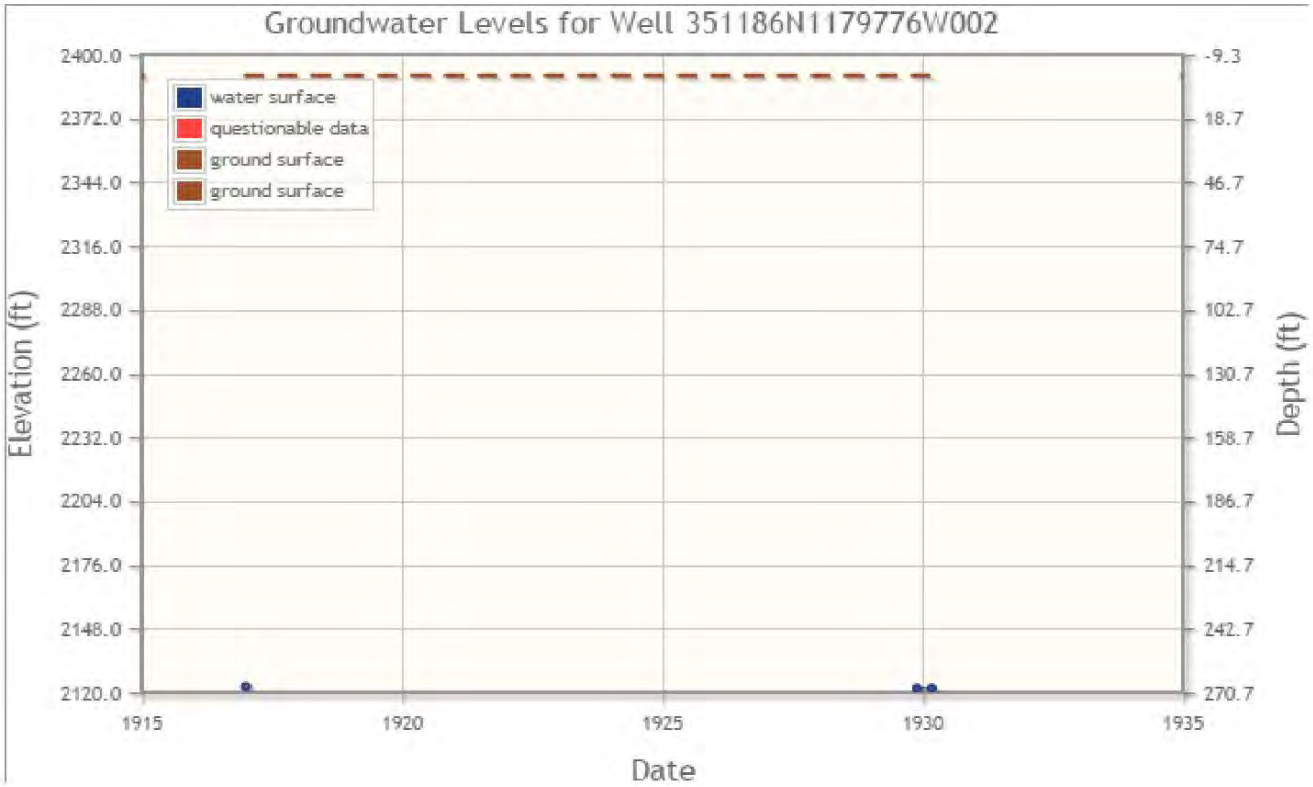


http://www.water.ca.gov/groundwater/data_and_monitoring/levels.cfm

FIGURE 8 - GROUNDWATER WELL 10

State Well Number: 32S37E26G002M
Local Well ID:
Site Code: 351186N1179776W002
Latitude (NAD83): 35.118600
Longitude (NAD83): -117.9776
Groundwater Basin (code): Fremont Valley (6-46)

Well Use: Unknown
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 2390.710
Ground Surface Elevation (NAVD88 ft): 2390.710
Total Depth (ft):
Perforated Interval Depths (ft):

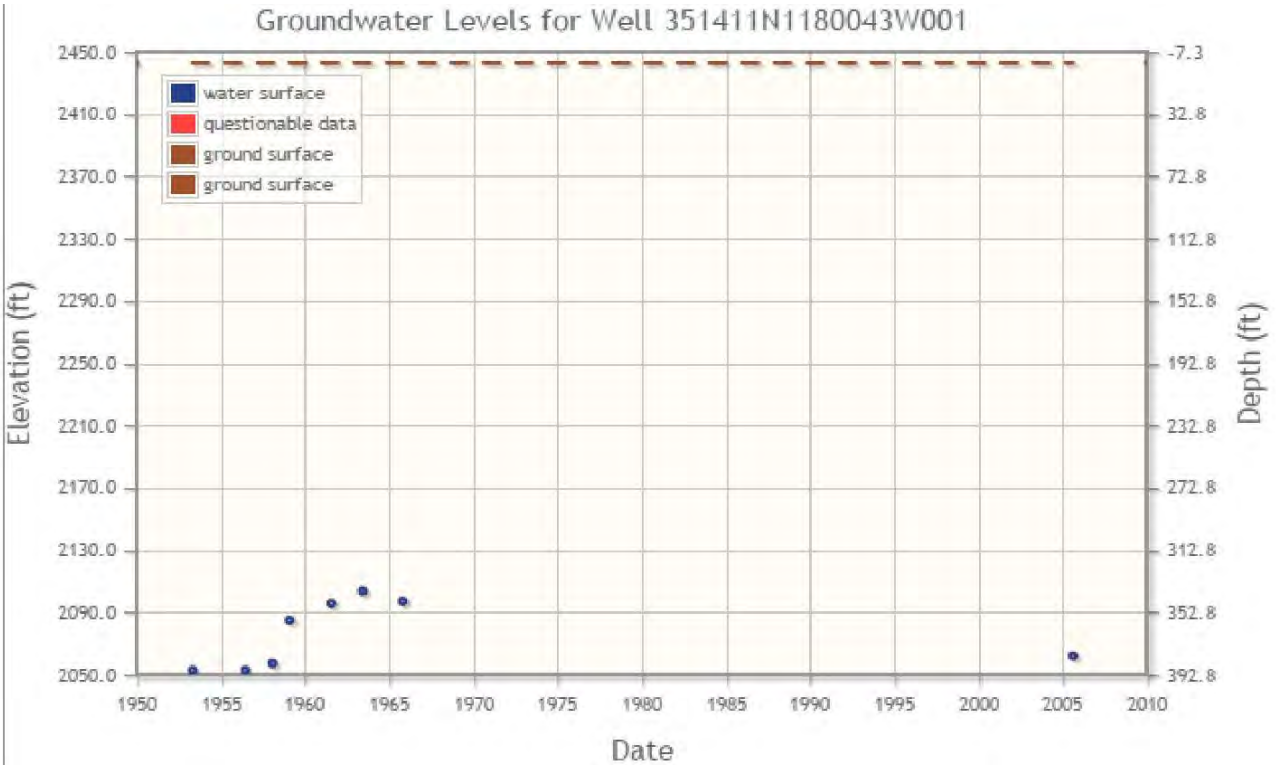


http://www.water.ca.gov/groundwater/data_and_monitoring/levels.cfm

FIGURE 8 - GROUNDWATER WELL 14

State Well Number: 32S37E16R001M
Local Well ID:
Site Code: 351411N1180043W001
Latitude (NAD83): 35.141100
Longitude (NAD83): -118.0043
Groundwater Basin (code): Fremont Valley (6-46)

Well Use: Unknown
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 2442.750
Ground Surface Elevation (NAVD88 ft): 2442.750
Total Depth (ft):
Perforated Interval Depths (ft):

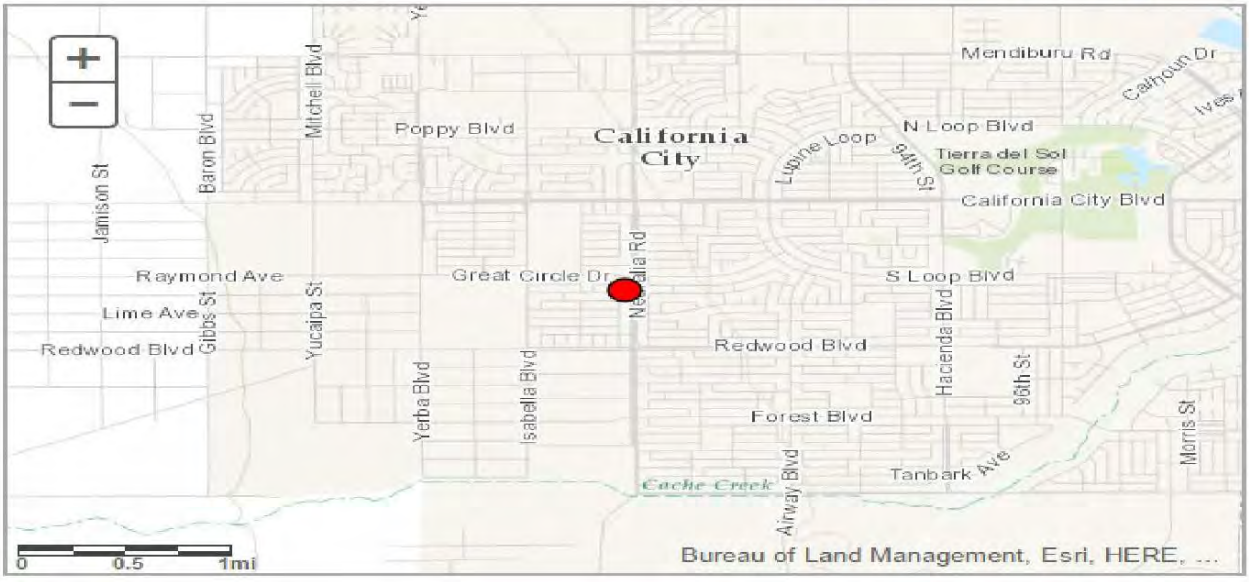


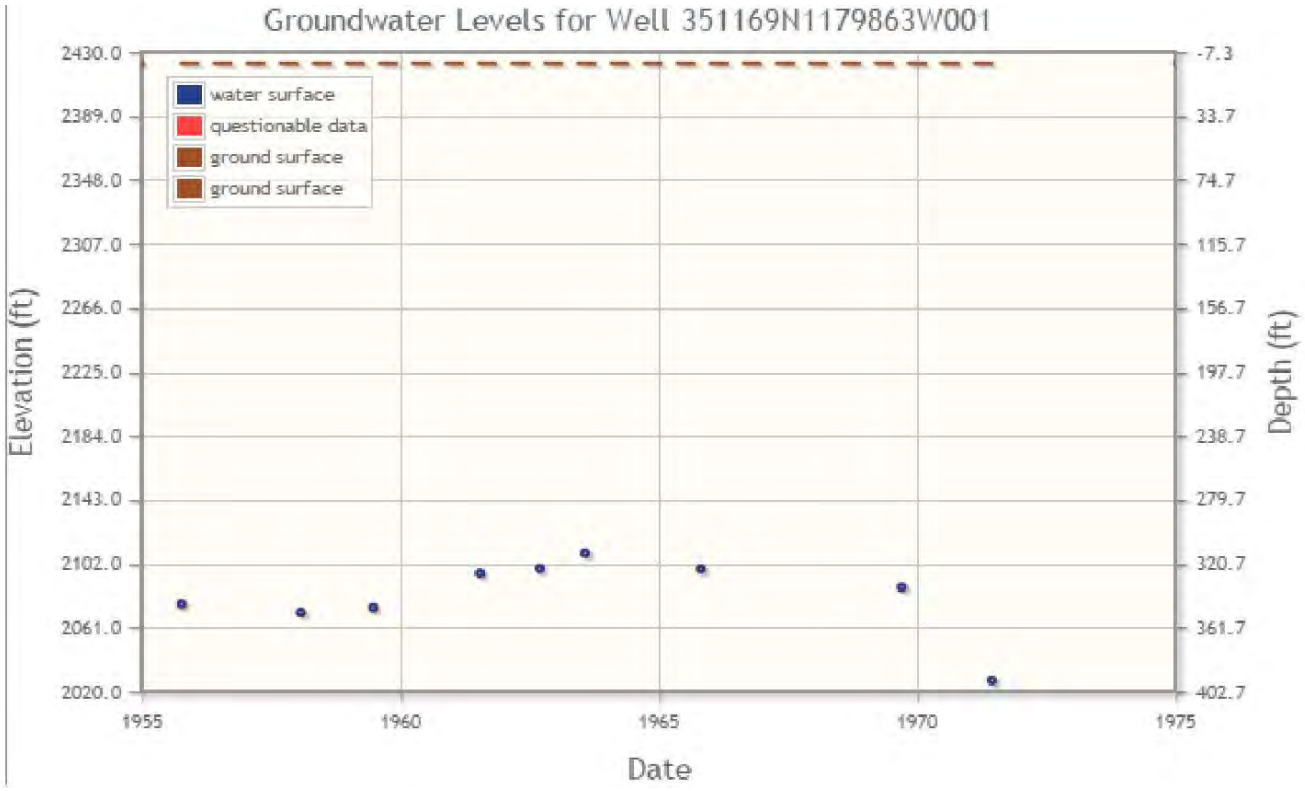
http://www.water.ca.gov/groundwater/data_and_monitoring/levels.cfm

FIGURE 8 - GROUNDWATER WELL 15A

State Well Number: 32S37E26M001M
Local Well ID:
Site Code: 351169N1179863W001
Latitude (NAD83): 35.116900
Longitude (NAD83): -117.9863
Groundwater Basin (code): Fremont Valley (6-46)

Well Use: Unknown
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 2422.720
Ground Surface Elevation (NAVD88 ft): 2422.720
Total Depth (ft):
Perforated Interval Depths (ft):





http://www.water.ca.gov/groundwater/data_and_monitoring/levels.cfm

FIGURE 9: California City, 2015 Groundwater Wells Sampling Report

FIGURE 9

2015 Consumer Confidence Report

Water System Name:	CITY OF CALIFORNIA CITY	Report Date:	July 1, 2016

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2015 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

Type of water source(s) in use:	Six Ground Water Wells And One Surface Water Source
Name & general location of source(s):	Well #2a, Well #10, Well#14, Well #15a and Well #16 are located in the First Community and Surface Water Source Trunk is located on California City Boulevard at Randsburg-Mojave Road.
Drinking Water Source Assessment information:	Available at: 21000 Hacienda Boulevard California City, CA 93505
Time and place of regularly scheduled board meetings for public participation:	Second and Fourth Tuesday of the month at 6:00 pm California City City Hall, 21000 Hacienda Boulevard, California City, CA 93505
For more information, contact:	Craig C. Platt, Public Works Director Phone: (760) 373-7297

TERMS USED IN THIS REPORT

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 (USEPA).

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.

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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)

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

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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*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, 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 by-products 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 California Department of Public Health (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 provide the same protection for public health.

Tables 1, 2, 3, 4, 5, 7, and 8 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or *E. coli*	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	Sample Date	No. of samples collected	90th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (ppb)	2015	19	0.074	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	2015	20	0.020	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	2014	146	140-160	none	none	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2014	91.8	79-110	none	none	Sum of polyvalent cations present in the water, generally magnesium

						and calcium, and are usually naturally occurring

**Any violation of an MCL or AL is asterisked. Additional information regarding the violation is provided later in this report.*

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
Arsenic (ppm)	2014	.0059	.0044-.0067	0.10	0.04	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.
Barium (ppm)	2014	.0272	.021-.031	1.0	2	Discharge of oil drilling wastes and from metal refineries; erosion of national deposits
Fluoride (ppm)	2014	1.5	1.3-1.7	2.0	1	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Selenium (ppm)	2014	.00199	.00199-.00199	1.050	0.050	Discharge from petroleum, glass and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additives)
Nitrate	2015	2.86	1.9-4.6	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Aluminum (ppb)	2014	77.2	49-190	200	n/a	Erosion of natural deposits; residual from some surface water treatment process
Bicarbonate (ppm)	2014	222.0	200-230	n/a	n/a	n/a
Calcium (ppm)	2014	25.2	21-28	n/a	n/a	n/a
Alkalinity (ppm)	2014	182	170-190	n/a	n/a	n/a
Chloride (ppm)	2014	79.0	69-94	500	n/a	Substance that form ions when in water, seawater influence
Foaming Agents [MBAS] (ppm)	2014	.1118	.09-.19	5.0	n/a	n/a
Iron (ppb)	2014	239.2	49-1000	300	n/a	Leaching from natural deposits
Magnesium (ppm)	2014	7.02	6.1-8.6	n/a	n/a	n/a
Manganese (ppb)	2014	10.32	9.9-12	50	n/a	Leaching from natural deposits
PH	2014	8.218	8.18-8.26	n/a	n/a	n/a
Specific Conductance (uS/cm)	2014	804.8	780-836	1600	n/a	Substance that form ions when in water; seawater influence

Sulfate (ppm)	2014	93	89-96	500	n/a	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids [TDS]	2014	608.6	530-803	1,000	n/a	Runoff/leaching from natural deposits
Turbidity (NTU)	2014	.1052	.09-.13		n/a	Soil runoff
Potassium (ppm)	2014	2.78	2.5-3.1	n/a	n/a	n/a
Zinc (ppm)	2014	.049	.049-.049	5.0	n/a	Runoff/leaching from natural deposits; industrial wastes

TABLE 6 – DETECTION OF RADIOACTIVE CONTAMINANTS

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**Notification Level**	**Health Effects Language**
Alpha Emitters (pCi/L)	2014	6.294	4.42-8.83	15	Erosion of natural deposits
Uranium	2015	5.78	5.1-6.9	30	Erosion of natural deposits

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

TABLE 7 - DETECTION OF TRIHALOMETHANES AND HALOACETIC ACIDS (VOC)

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Range**	**Notification Level**	**Typical Source of Contaminant**
Total Trihalomethanes [TTHM] (ppb) (LRAA)	2015	0.0-16.2	80	By-product of drinking water Chlorination
Haloacetic Acids [HAA5] (ppb) (LRAA)	2015	0.0-4.18	60	By-product of drinking water Chlorination

Violation

NONE

TABLE 8 – DETECTION OF UNREGULATED CONTAMINANTS MONITORING RULE (UCMR3)

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**Notification Level**	**Health Effects Language**
Chromium (ppb)	2014	10.74	9.9-14	n/a	
Molybdenum (ppb)	2013	80.1	1.9-150	n/a	
Strontium (ppb)	2013	286.5	210-390	n/a	
Vanadium (ppb)	2013	13.2	2.8-23	n/a	
Chromium-6 (ppb)	2015	6.28	2.5-9.0	n/a	
Chlorate (ppb)	2013	262.2	30-420	n/a	

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the 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).

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

Arsenic: Some people who drink water containing arsenic in excess of the MCL over many years may experience skin damage or circulatory system problems, and may have an increased risk of getting cancer.
Barium; Some people who drink water containing barium in excess of the MCL over many years may experience an increase in blood pressure.
Flouride; Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the state MCL of 2 mg/L may get mottled teeth
Selenium; Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years may experience hair or fingernail losses, numbness in fingers or toes, or circulation system problems.
Nitrates; Infants below the age of six months who drink water containing nitrite in excess of the MCL may become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blueness of the skin
Gross Alpha; Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer
Uranium; Some people who drink water containing uranium in excess of the MCL over many years may have kidney problems or an increased risk of getting cancer.
Lead; Infants and children who drink water containing lead in excess of the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure
Copper; Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

A source water assessment was conducted for Wells 2a, 10, 14, 15 and 16.

The sources are most vulnerable to the following activities associated with contaminants detected in the water supply: Sewer collection systems; Hardware/lumber/parts store and Housing-high density.

The sources are considered most vulnerable to the following activities not associated with any detected contaminants: Parking lots/malls; Office buildings/complexes and Transportation corridors – Roads/Streets

FIGURE 9

2015 Consumer Confidence Report

Water System Name: **Wonder Acres-City of California City** Report Date: July 1, 2016

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2015 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

Type of water source(s) in use: Two ground water wells

Name & general location of source(s): Well #21A & Well #22

Drinking Water Source Assessment information: 21000 Hacienda Blvd.
California City, Ca 93505

Time and place of regularly scheduled board meetings for public participation:
Second and Fourth Tuesday of the month at 6:00 pm public participation California City, CA 93505

For more information, contact: Craig Platt, Public Works Director Phone: (760-373-7297)

TERMS USED IN THIS REPORT

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 (USEPA).

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.

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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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.

Variances and Exemptions: State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)

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.

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Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, 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 by-products 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 State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1, 2, 3, 4, 5, 7, and 8 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or *E. coli*	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	Sample Date	No. of samples collected	90th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (ppb)	2015	25	0.0043	0	0.015	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	2015	25	0.-0.120	0	1.3	N/A	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	2015	117	N/A	none	none	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2015	315	N/A	none	none	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

**Any violation of an MCL or AL is asterisked. Additional information regarding the violation is provided later in this report.*

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
Arsenic (ppm)	2015	0.008	.002-0.008	0.10	N/A	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.
Barium (ppm)	2015	28	20-28	1.0	2	Discharge of oil drilling wastes and from metal refineries; erosion of national deposits
Fluoride (ppm)	2015	.61	0.21-0.61	2.0	1	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Selenium (ppm)	2015	3.8	0.0-3.8	50	50	Discharge from petroleum, glass and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additives)
Nitrate (ppm)	2015	15.3	8.1-15.3	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Aluminum (ppb)	2015	0.005	0-5	200	n/a	Erosion of natural deposits; residual from some surface water treatment process
Calcium (ppm)	2015	80	0-80	n/a	n/a	n/a
Chloride (ppm)	2015	39	0-39	500	n/a	Substance that form ions when in water, seawater influence
Foaming Agents [MBAS] (ppm)	2015	ND	ND	0.5	n/a	n/a
Iron (ppb)	2015	0.185	0-5	300	n/a	Leaching from natural deposits
Magnesium (ppm)	2015	28	0-28	n/a	n/a	n/a
Manganese (ppb)	2015	0.009	0-9	50	n/a	Leaching from natural deposits
PH	2015	7.83	0-7.83	n/a	n/a	n/a
Sulfate (ppm)	2015	223	0-223	500	n/a	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids [TDS]	2015	678	0-678	1,000	n/a	Runoff/leaching from natural deposits
Turbidity (NTU)	2015	.42	.01-.42	5TT	n/a	Soil runoff
Potassium (ppm)	2015	N/A	0-5	n/a	n/a	n/a
Zinc (ppm)	2015	0.05	0 – 0.05	5.0	n/a	Runoff/leaching from natural deposits; industrial wastes

TABLE 6 – DETECTION OF UNREGULATED CONTAMINANTS					
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**Notification Level**	**Health Effects Language**
Alpha Emitters (pCi/L)	2015	6.78	3.0-6.78	15	Erosion of natural deposits
Uranium	2015	7.2	0 – 7.2	20	Erosion of natural deposits

TABLE 7 – DETECTION OF TRIHALOMETHANES AND HALOACETIC ACIDS (VOC)					
Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**Notification Level**	**Health Effects Language**
TotalTrihalomethanes[TTHM] (ppb) (LRAA)	2015	10.9	0-48	By-product of drinking water Chlorination	Erosion of natural deposits
Haloacetic Acids [HAA5] (ppb) (LRAA)	2015	2.97	0-60	By-product of drinking water Chlorination	Erosion of natural deposits

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

Additional General Information on Drinking Water

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

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

Nitrate: For systems which detected nitrates at levels above 23mg/L, but below the MCL, the following language is REQUIRED. Nitrate in drinking water at levels above 45 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can interfere with the capacity or the infant's blood to carry oxygen, resulting in serious illness; symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with specific enzyme deficiencies. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider or choose to use bottled water for mixing formula and juice for your baby. If you are pregnant, you should drink bottled water. Some people may be more vulnerable to contaminants in drinking water than the general.

Lead-Specific Language for Community Water Systems: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of California City 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.

Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement

VIOLATION OF A MCL, MRDL, AL, TT, OR MONITORING AND REPORTING REQUIREMENT				
Violation	Explanation	Duration	Actions Taken to Correct the Violation	Health Effects Language
0				
0				

For Water Systems Providing Ground Water as a Source of Drinking Water

TABLE 7 – SAMPLING RESULTS SHOWING FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLES					
Microbiological Contaminants (complete if fecal-indicator detected)	**Total No. of Detections**	**Sample Dates**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
E. coli	(0)	2015	0	(0)	Human and animal fecal waste
Enterococci	(0)	2015	TT	n/a	Human and animal fecal waste
Coliphage	(0)	2015	TT	n/a	Human and animal fecal waste

Summary Information for Fecal Indicator-Positive Ground Water Source Samples, Uncorrected Significant Deficiencies, or Ground Water TT

SPECIAL NOTICE OF FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLE				
SPECIAL NOTICE FOR UNCORRECTED SIGNIFICANT DEFICIENCIES				
VIOLATION OF GROUND WATER TT				
TT Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**

0				
0				

For Systems Providing Surface Water as a Source of Drinking Water

TABLE 8 - SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES	
Treatment Technique [a] (Type of approved filtration technology used)	
Turbidity Performance Standards [b] (that must be met through the water treatment process)	Turbidity of the filtered water must: 1 – Be less than or equal to _____ NTU in 95% of measurements in a month. 2 – Not exceed _____ NTU for more than eight consecutive hours. 3 – Not exceed ____ NTU at any time.
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	
Highest single turbidity measurement during the year	
Number of violations of any surface water treatment requirements	

(a) A required process intended to reduce the level of a contaminant in drinking water.

(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

** Any violation of a TT is marked with an asterisk. Additional information regarding the violation is provided below.*

Summary Information for Violation of a Surface Water TT

VIOLATION OF A SURFACE WATER TT				
TT Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**
0				
0				
0				

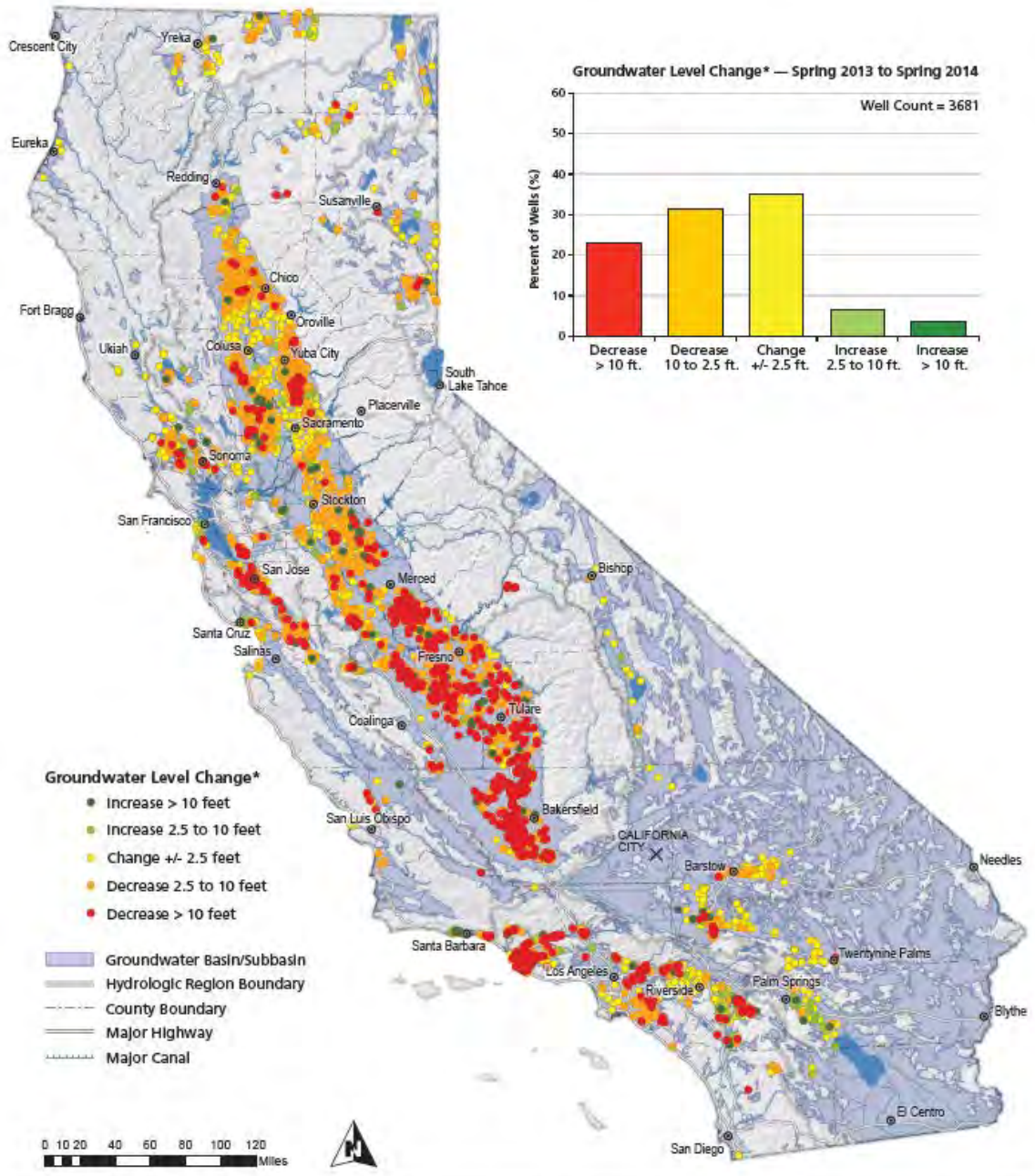
Summary Information for Operating Under a Variance or Exemption

Figure 10: Groundwater Condition
Alluvial Groundwater Basin

Map based on groundwater basin boundaries established in Bulletin 118 Update 2003, Department of Water Resources

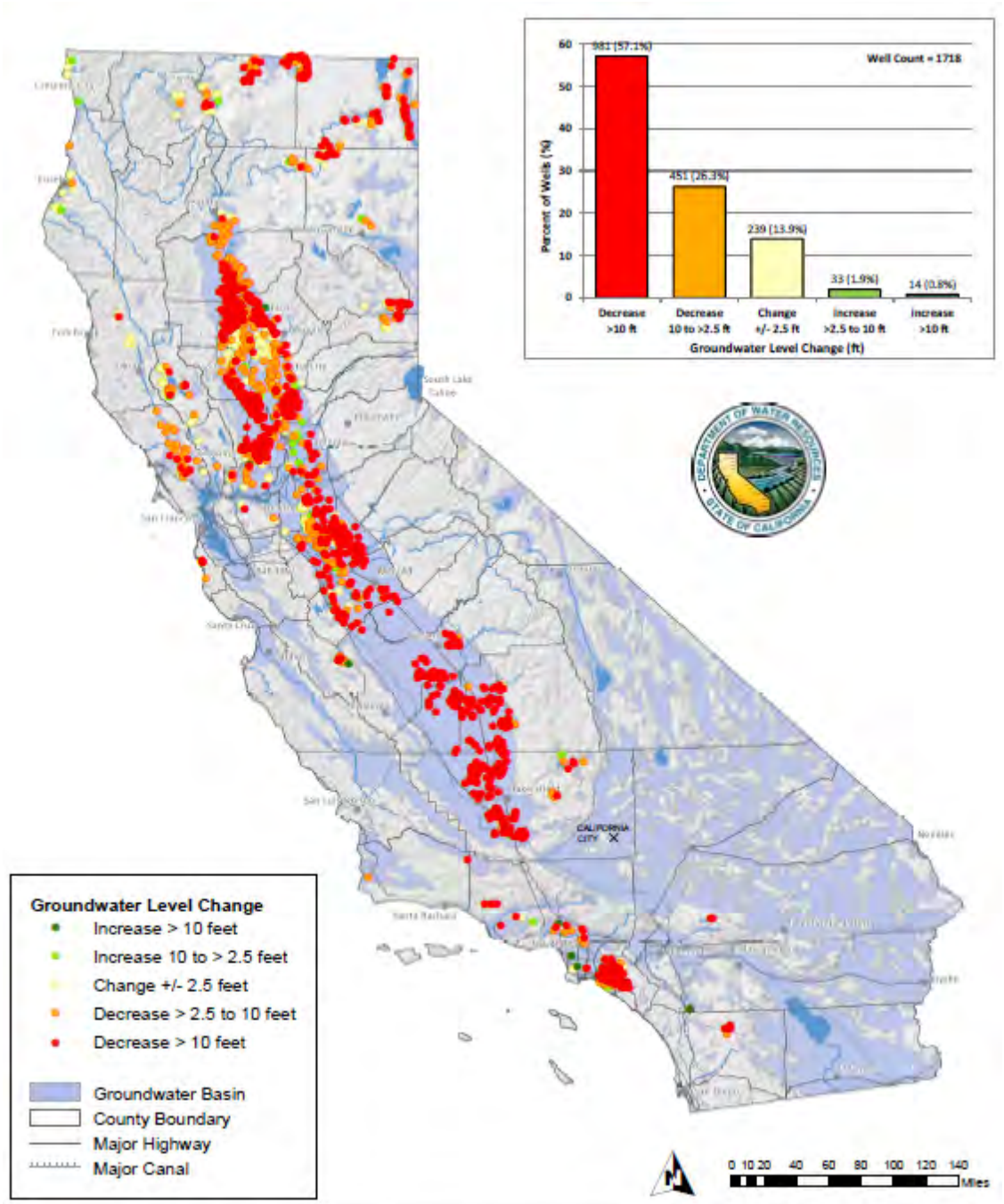
Change in Groundwater Levels in Wells – Spring 2013 to Spring 2014

Figure 5: Change in Groundwater Levels in Wells - Spring 2013 to Spring 2014



*Groundwater level change determined from water level measurements in wells. Map and chart based on available data from the DWR Water Data Library as of 11/08/2014. Data subject to change without notice.

Groundwater Level Change – Spring 2006 to Spring 2016



*Groundwater level change determined from water level measurements in wells. Map and chart based on available data from the DWR Water Data Library as of 04/26/2016. Document Name: DOTMAP_DRAFT_S1606 Updated: 4/27/2016 Data subject to change without notice.

FIGURE 11: California City Watershed Boundaries

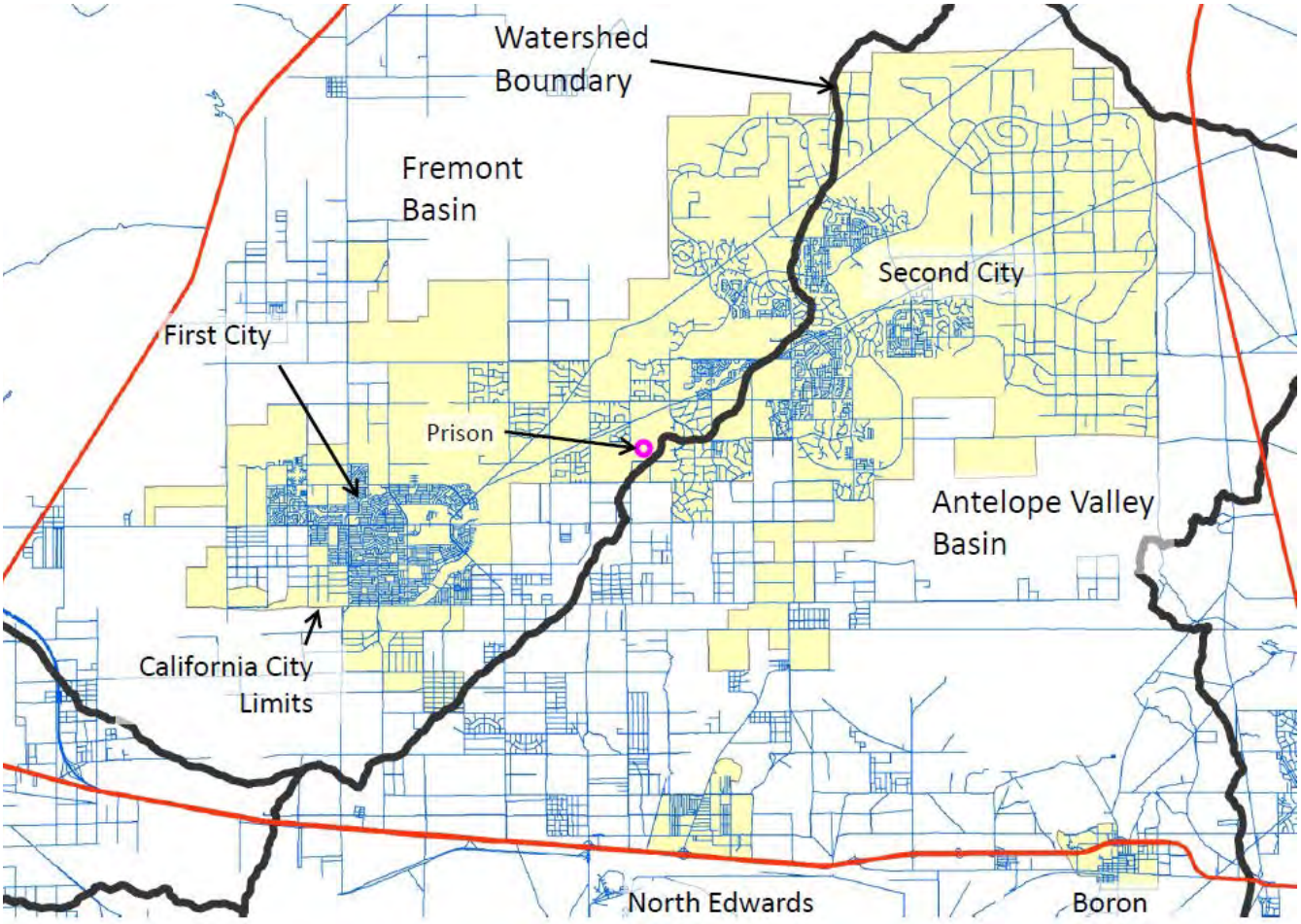


FIGURE 12: Future Master Sewer Plan

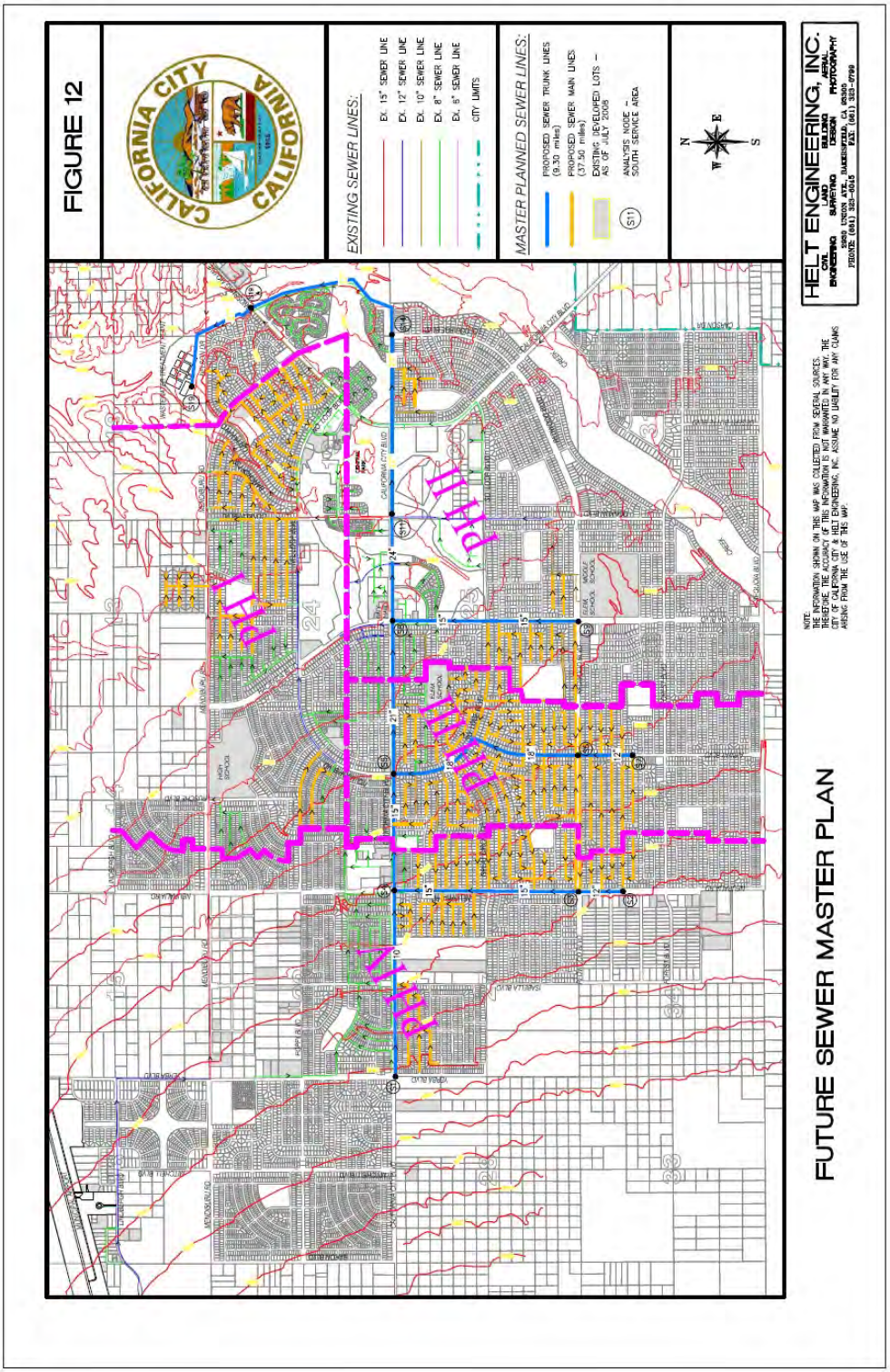


Table 1: Number of Permitted OWTS by Zone

CITY OF CALIFORNIA CITY

NUMBER OF PERMITTED OWTS BY ZONE

DENSITY ZONE		PERMITTED OWTS AS OF 07/14/15	NEW PERMITTED OWTS FROM 07/15/15 TO 02/15/17	REVISION / CORRECTION PERMITTED OWTS FROM 07/15/15 TO 02/15/17	REPLACEMENT PERMITTED OWTS FROM 07/15/15 TO 02/15/17	TOTAL PERMITTED OWTS PER ZONE
ZONE	1	1	0	0	0	1
ZONE	2	0	0	0	0	0
ZONE	3	8	0	0	0	8
ZONE	4	23	0	0	0	23
ZONE	5	31	0	0	0	31
ZONE	6	31	0	0	0	31
ZONE	7	32	0	0	0	32
ZONE	8	0	0	0	0	0
ZONE	9	1	0	0	0	1
ZONE	10	1	0	0	0	1
ZONE	11	2	0	0	0	2
ZONE	12	7	0	0	0	7
ZONE	13	38	0	0	0	38
ZONE	14	21	0	0	0	21
ZONE	15	21	0	0	0	21
ZONE	16	8	0	0	0	8
ZONE	17	0	0	0	0	0
ZONE	18	4	0	0	0	4
ZONE	19	16	0	0	0	16
ZONE	20	1	0	0	0	1
ZONE	21	164	0	0	0	164
ZONE	22	64	0	0	0	64
ZONE	23	60	0	0	0	60
ZONE	24	67	0	0	0	67
ZONE	25	158	0	0	0	158
ZONE	26	79	0	0	0	79
ZONE	27	29	0	0	0	29
ZONE	28	0	0	0	0	0
ZONE	29	14	0	0	0	14

ZONE	30	166	0	0	0	166
ZONE	31	127	0	0	0	127
ZONE	32	67	0	0	0	67
ZONE	33	112	0	0	0	112
ZONE	34	56	0	0	0	56
ZONE	35	109	0	0	0	109
ZONE	36	3	0	0	0	3
ZONE	37	27	0	0	0	27
ZONE	38	1	0	0	0	1
ZONE	39	13	0	0	0	13
ZONE	40	24	0	0	0	24
ZONE	41	58	0	0	0	58
ZONE	42	54	0	0	0	54
ZONE	43	59	0	0	0	59
ZONE	44	51	0	0	0	51
ZONE	45	99	0	0	0	99
ZONE	46	94	0	0	0	94
ZONE	47	54	0	0	0	54
ZONE	48	84	0	0	0	84
ZONE	49	24	0	0	0	24
ZONE	50	60	0	0	0	60
ZONE	51	0	0	0	0	0
ZONE	52	54	0	0	0	54
ZONE	53	68	0	0	0	68
ZONE	54	18	0	0	0	18
ZONE	55	56	0	0	0	56
ZONE	56	45	0	0	0	45
ZONE	57	1	0	0	0	1
ZONE	58	9	0	0	0	9
ZONE	59	0	0	0	0	0
ZONE	60	0	0	0	0	0
ZONE	61	52	0	0	0	52
ZONE	62	34	0	0	0	34
ZONE	63	49	0	0	0	49
ZONE	64	20	0	0	0	20
ZONE	65	15	0	0	0	15
ZONE	66	9	0	0	0	9
ZONE	67	1	0	0	0	1
ZONE	68	0	0	0	0	0
ZONE	69	0	0	0	0	0
ZONE	70	0	0	0	0	0

ZONE	71	1	0	0	0	1
ZONE	72	2	0	0	0	2
ZONE	73	5	0	0	0	5
ZONE	74	8	0	0	0	8
SUBTOTAL:		**2670**	**0**	**0**	**0**	**2670**

PRIORITY DENSITY ZONES

ZONE	P1	62	0	0	0	62
ZONE	P2	16	0	0	0	16
ZONE	P3	202	0	0	0	202
ZONE	P4	54	0	0	0	54
ZONE	P5	443	0	0	0	443
ZONE	P6	19	0	0	0	19
ZONE	P7	23	0	0	0	23
ZONE	P8	38	0	0	0	38
ZONE	P9	13	0	0	0	13
SUBTOTAL:		**870**	**0**	**0**	**0**	**870**

TOTAL:	**3540**	**0**	**0**	**0**	**3540**

Table 2: Cumulative Density Calculation

CITY OF CALIFORNIA CITY

SEWER DENSITY CALCULATIONS BASED ON TWO (2) DWELLING UNITS PER ACRE

SEWER DENSITY AS OF: 07/14/15 TO 02/15/17

DENSITY ZONE	TRACT #'S IN EACH ZONE	LOTS PER TRACT	ZONE ACRES	# OF D.U. ALLOWED (2 d.u./ac)	PERMITS ISSUED AS OF 7/14/15	NEW/ REPLACEMENT/ REPAIR PERMIT ISSUED AS OF 7/15/15 TO 2/15/17	TOTAL # OF LOTS	# OF UNDEVELOPED LOTS to CAP	CURRENT % USED	% CAP at Total Build out	COMMENTS
D01	2404	153	107.36	215	1	0	359	214	0.5%	167.0%	
	2461	206									
D02	2404	22	60.83	122	0	0	230	122	0.0%	188.5%	
	2630	208									
D03	2630	309	84.02	168	8	0	330	160	4.8%	196.4%	
	2860	20									
	2223	1									
D04	2226	164	60.65	121	23	0	164	98	19.0%	135.2%	
D05	2226	302	101.35	203	31	0	302	172	15.3%	149.0%	
D06	2226	92	45.34	91	31	0	92	60	34.2%	101.5%	
D07	2225	212	74.10	148	32	0	212	116	21.6%	143.0%	
D08	2223	48	54.96	110	0	0	73	110.00	0.0%	66.4%	
	2630	20									
	2404	5									
D09	2223	222	82.58	165	1	0	249	164	0.6%	150.9%	
	2404	27									
D10	2223	205	61.82	124	1	0	200	123	0.8%	161.8%	
D11	2225	205	65.77	132	2	0	208	130	1.5%	157.6%	
	2223	3									
D12	2225	205	92.56	185	7	0	162	178	3.8%	87.5%	
D13	2161	222	89.31	179	38	0	222	141	21.3%	124.3%	
D14	2163	260	162.28	325	38	0	260	287	11.7%	80.1%	
D15	2191	132	43.31	87	21	0	134	66	24.1%	154.0%	
	2223	2									
D16	2191	132	71.55	143	8	0	132	135	5.6%	92.2%	
D17	2530	299	87.85	176	0	0	381	176	0.0%	216.5%	
	2122	82									
D18	2530	72	67.78	136	4	0	239	132	2.9%	175.7%	

	2122	69									
	2119	15									
	2117	2									
	2164	81									
D19	2119	28	60.94	122	16	0	196	106	13.1%	160.7%	
	2117	3									
	2164	165									
D20	2115	150	67.91	136	1	0	150	135	0.7%	110.4%	
D21	2159	318	206.83	414	164	0	543	250	39.6%	131.2%	
	2160	225									
D22	2069	205	72.79	146	64	0	208	82	44.0%	142.9%	
D23	2067	82	50.06	100	60	0	173	40	60.0%	173.0%	
	2069	91									
D24	2067	140	44.90	90	67	0	140	23	74.6%	155.9%	
D25	2116	223	103.37	207	158	0	328	49	76.3%	158.5%	
	2159	25									
	2120	30									
	2067	50									
D26	2115	130	103.49	207	79	0	300	128	38.2%	144.9%	
	2119	152									
	2117	1									
	2068	17									
D27	2115	68	78.14	156	29	0	211	127	18.6%	135.3%	
	2119	125									
	2117	18									
D28	2122	77	77.14	154	0	0	271	154	0.0%	175.7%	
	2118	115									
	2530	79									
D29	2122	43	108.91	218	15	0	302	203	6.9%	138.5%	
	2118	39									
	2117	216									
	2068	4									
D30	2068	292	95.74	191	166	0	292	25	86.7%	152.5%	
D31	2116	135	76.71	153	127	0	259	26	83.0%	169.3%	
	2120	124									
D32	2067	121	36.41	73	67	0	121	6	92.0%	166.2%	
D33			80.03	160	112	0	REPLACED WITH P5				
D34	2120	185	64.77	130	56	0	193	74	43.1%	148.5%	
	2066	8									

D35	2068	183	111.18	222	109	0	352	113	49.1%	158.6%	
	2117	169									
D36	2118	118	75.99	152	3	0	269	149	2.0%	177.0%	
	2117	109									
	2530	42									
D37	2123	84	97.02	194	27	0	85	167	13.9%	43.8%	
D38	2121	85	101.2	202	1	0	84	201	0.5%	41.5%	
D39	2317	261	81.25	163	13	0	261	150	8.0%	160.6%	
D40	2310	122	72.43	145	24	0	224	121	16.6%	154.5%	
	2317	102									
D41	2310	190	63.66	127	58	0	194	69	45.6%	152.4%	
D42	2725	301	159.4	319	54	0	295	265	16.9%	92.5%	
D43	2725	315	72.14	144	59	0	317	85	40.9%	219.7%	
D44	2436	250	79.59	159	51	0	250	108	32.0%	157.1%	
D45	2435	150	74.61	149	99	0	224	50	66.4%	150.3%	
	2436	74									
D46	2436	23	70.42	141	94	0	153	47	66.7%	108.5%	
	2435	99									
	2252	31									
D47	2227	92	37.16	74	54	0	126	20	73.0%	170.3%	
	2252	34									
D48	2228	154	73.54	147	84	0	175	63	57.1%	119.0%	
	2227	11									
	2791	10									
D49	2228	78	51.71	103	24	0	187	79	23.3%	181.6%	
	2791	109									
D50	2791	180	46.13	92	60	0	180	32	65.0%	195.1%	
D51	2967	467	119.77	240	0	0	467	240	0.0%	195.0%	
D52	2305	170	58.08	116	54	0	173	62	46.5%	148.9%	
D53	2447	123	53.37	107	68	0	129	39	63.6%	120.6%	
	2305	6									
D54	2447	4	24.08	48	18	0	80	30	37.4%	166.1%	
D55	2629	214	50.60	101	56	0	213	45	55.3%	210.5%	
D56	2629	266	70.89	142	45	0	266	97	31.7%	187.6%	
D57	2811	257	73.57	147	1	0	257	146	0.7%	174.7%	
D58	2811	242	78.18	156	9	0	337	147	5.8%	216.0%	
	5179	95									
D59	2812	324	76.92	154	0	0	321	154	0.0%	208.7%	
D60	2812	300	69.45	139	0	0	300	139	0.0%	216.0%	
D61	2778	265	67.69	135	52	0	265	83	38.4%	195.7%	
D62	2779	172	63.72	127	34	0	173	93	26.7%	135.8%	

D63	2779	263	75.22	150	49	0	262	101	32.6%	174.2%	
D64	2726	130	50.90	102	20	0	131	82	19.6%	128.7%	
D65	2726	205	59.41	119	15	0	204	104	12.6%	171.7%	
D66	2726	165	50.36	101	9	0	165	92	8.9%	163.8%	
D67	2727	243	68.96	138	1	0	243	137	0.7%	176.2%	
D68	2727	141	75.62	151	0	0	249	151	0.0%	164.9%	
	5527-1	108									
D69	2898	262	86.91	174	0	0	291	174	0.0%	167.4%	
D70	2898	288	65.00	130	0	0	288	130	0.0%	221.5%	
D71	2887	235	64.68	129	1	0	234	128	0.8%	180.9%	
D72	2887	408	92.60	185	2	0	419	183	1.1%	226.2%	
D73	2528	162	130.36	261	5	0	373	256	1.9%	143.1%	
D74	2528	274	145.54	291	8	0	160	283	2.7%	55.0%	
TOTAL:			**5780.9**	**11563**	**2688**	**0**	**17012**	**8827**	**23.2%**	**147.1%**	
PRIORITY DENSITY ZONES											
P1	2226	199	81.93	164	62	0	198	102	37.8%	120.7%	
P2	2435	21	12.27	25	16	0	24	9	64.0%	96.0%	
	2252	3									
P3	2252	174	125.47	251	202	0	391	49	80.5%	155.8%	
	2227	160									
	2228	57									
P4	2305 2447	109	33.21	66	54	0	109	SEWERED			
P5	2120	36	229.04	458	443	0	611	15	96.7%	133.4%	
	2067	241									
	2066	334									
P6	2779		10.65	21	19	0	31	SEWERED			
P7	2629	45	18.65	37	23	0	60	14	62.2%	162.2%	
	2447	15									
P8	2069	21	52.93	106	38	0	124	68	35.8%	117.0%	
	2305	17									
	2447	28									
	2067	41									
	2629	17									
P9	2310	50	15.70	31	13	0	46	18	41.9%	148.4%	
TOTAL-P			**579.85**	**1159**	**870**	**0**	**1594**	**275**	**75.1%**	**137.5%**	
TOTAL ALL			**6360.7**	**12722**	**3558**	**0**	**18606**	**9102**	**28.0%**	**146.3%**	