



**City of Chowchilla**  
**Public Works Department:**  
***Interrupted Flow***  
**2018-2019**  
**Madera County Grand Jury**  
**Final Report 1819-06**

**Published June 28, 2019**

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10 **SUMMARY**

11 The economic downturn that severely reduced adequate full-time licensed and qualified staff  
12 levels caused Chowchilla’s water delivery system to be reduced to a trickle. Combined with a  
13 lack of established and uniform practice procedures for testing, and no long-term plan to address  
14 the water needs of the community, the wells were failing. The city experienced a significant loss  
15 of producing wells and loss of water system pressure required to serve the needs of the  
16 community.

17 **GLOSSARY**

- 18 Chlorine residual: The measurement of the amount of chlorine in water  
19 Corporation Yard: City of Chowchilla’s Water Division headquarters  
20 Forced Test: Altered test results in order to achieve desired results  
21 Logs: Records that provides a diary of observations of variations at a specific  
22 site and any actions taken  
23 PPM: Parts Per Million  
24 Residual test: A test that is performed at a specific site  
25 Standard Operating Procedure (SOP): Directions for how to conduct various operations

26  
27 **BACKGROUND**

28 The Madera County Grand Jury (MCGJ) chose to investigate the City of Chowchilla’s Public  
29 Works Water Division. Because of the lack of an established oversight program, the wells  
30 failed. The failure of wells caused a system-wide reduction of water pressure within the city,  
31 frustration for the residents, a potential public safety hazard, and a breach of trust between the  
32 residents and the city.

33 Between 2008 and 2017, a turnover occurred approximately every two-years in the Public Works  
34 Director position. Up until 2017, no evidence of a long-range water development plan was  
35 provided to prove that one existed. A slow recovery from the fiscal downturn in the economy  
36 that reduced staffing levels, a four-year statewide drought, and imposed water restrictions during  
37 the summer of 2018 had a devastating impact on the residents of Chowchilla.

38 The restricted water-use within the City of Chowchilla, additionally was caused by fewer  
39 functioning wells. This caused significant system wide pressure loss, and reduced delivery for  
40 domestic water use down to a trickle. Also, outdoor watering was restricted to “one-day-a-week-  
41 only” with water warnings, the water patrol, and imposed water fines.

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43 **METHODOLOGY**

- 44 • Toured the Public Works Corporation Yard  
45 • Viewed a 750,000 gallon above-ground water storage tank, which was currently under  
46 construction

- 47 • Inspected well site #14
- 48 • Observed the chlorine residual test procedure
- 49 • Visited sample site #14
- 50 • Interviewed water division employees
- 51 • Studied the 2013-2017 monthly, and quarterly well reports, and the annual report to the
- 52 Drinking Water Program filed with the State of CA Water Resource Board
- 53 • Surveyed water system maps indicating well and sample site locations
- 54 • Reviewed the monthly well logs between 2013-2017, which showed the same results

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## 56 **DISCUSSION**

57 Currently, the City of Chowchilla owns seven domestic water wells; five of which are  
58 operational. The Water Division personnel do not have a Standard Operating Procedure (SOP),  
59 knowledge, or field experience. This contributes to well maintenance failures. There are no  
60 established and consistent testing, security, or maintenance procedures in place. Employees  
61 indicated that when they were hired, they did not have any type of formal training of the  
62 procedures. According to the Safe Water Drinking Act, only trained, certified operators, or  
63 persons trained by a certified operator are permitted to sample collections or test samples.  
64 Employees reported that they were shown how to test samples by other employees currently  
65 performing the job.

66 The MCGJ interviewed the City of Chowchilla Public Works director, and was provided  
67 testimony and documents regarding the wells. After the interview, the MCGJ reviewed the  
68 provided documents and observed that testing logs indicated that chlorine residual tests were at a  
69 level of 0.3ppm every day for the past several years. This is statistically impossible. Chlorine  
70 levels vary depending upon well depths, ambient temperature, and flow. This false representation  
71 of the integrity of the chlorine residual tests can result in a public safety hazard.

72 While at the Corporation Yard, the MCGJ requested to observe a chlorine residual test. City staff  
73 suggested to observe the test at well #14. Upon arrival at the site, the MCGJ observed that none  
74 of the employees present were prepared with a chlorine residual test kit. Prior to this visit, the  
75 MCGJ was told, during interviews, that all of the service trucks are equipped with a chlorine  
76 residual testing kit. While at well #14, the staff discovered that only one of the three trucks  
77 present that day had a chlorine residual test kit. This was confusing, as it was reported this is a  
78 required daily test, which is part of their job duties. These chlorine residual test kits are simple  
79 and readily available. Despite claims of each vehicle carrying chlorine residual testing kits, the  
80 operators were not prepared to conduct the chlorine residual test.

81 The MCGJ witnessed the chlorine residual testing of the sample site at well #14. The sample  
82 valve was leaking, dirty, and the line was not flushed prior to the start of testing. Operators use a  
83 reagent, which is included in the test kit and is a chemical used during the test, which reacts with  
84 the chlorine to give the results of the chlorine residual test. During testing, the operator poured  
85 out half of the sample and refilled the test vial from the sample valve, forcing the results to a 0.3  
86 ppm reading. Adding more water diluted the sample and changed the outcome. If the test had not  
87 been diluted, the result of chlorine would have been higher. This dilution placed the results  
88 within the range of 0.2 ppm to 4.0 ppm as required by the State's Safe Drinking Water Act.

89 Security for the water system should include the following: locked perimeter fencing, locked  
90 doors to pump houses where applicable, and locked test sites. Wells which are not housed are  
91 only secured by perimeter fencing. Another security risk concerns the sample sites. These sites  
92 can easily be secured with simple padlocks, but are not. Boxes are designed with a ring to  
93 accommodate a lock.

94 During the investigation by the MCGJ, only one box was secured with a rusted lock.  
95 Additionally, MCGJ observed one site's equipment door was open, not locked, or secured. Since  
96 October's high temperatures could damage the pump motor and motor control center, staff cited  
97 a non-functioning air conditioner as one of the reasons for an opened door. The Grand Jury  
98 returned on March 4, 2019, when temperatures were significantly less intense, the door was  
99 again open and no staff was on site. The lack of proper training, policy, procedures, and security  
100 practices were viewed at multiple well and sample sites. These issues pose an unacceptable  
101 safety risk to public health. This is a liability for the City.

102 The MCGJ received information from the City of Chowchilla, through its Policy and Procedure  
103 manual, how operators are required to exercise and maintain valves. This information was  
104 accompanied by an individual valve condition report form and a cumulative records form. The  
105 MCGJ also received the Annual Water report filed with the State of California Water Board.

106 The purpose of exercising a valve is to make sure that valves can fully open and fully close for  
107 proper operation. The number of rotations is recorded to determine and document the conditions  
108 of the valve. A portion of *The Large Water Systems' Annual report to the Drinking Water*  
109 *Program (Annual Water Report)* is indicated in the table below. During a three-year period, from  
110 2013-2015, no valves were exercised. In 2016, one-third of the valves intended to be exercised  
111 were reported as exercised. In 2017, after lowering the number of intended valves to be exercised  
112 by more than 50 percent less than the prior year, only 80 valves were reported as having been  
113 exercised. This means that by lowering the number of intended valves to be exercised, they still  
114 did not complete the program:

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<b>Valve Exercise Program</b>		<b>Intended</b>	<b>Actual</b>
Year Ending in December	Total Number in System	Frequency of Valve Exercising-Intended	Number of Actual Valves Exercised
2013	930	20 a month/240 per yr.	0
2014	930	20 a month/240 per yr.	0
2015	930	20 a month/240 per yr.	0
2016	930	15 a month/180 per yr.	60
2017	930	7 a month/84 per yr.	80

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117 A two page document, known as the "Valve Record Sheet," was provided to the MCGJ and is  
118 the current recording document to be used by operators. The purpose of this sheet is to record  
119 information of individual valves throughout the City. Page two of the Valve Record Sheet is a  
120 cumulative record of multiple valves exercised by individual operators and used to record the  
121 results. The Valve Record Sheet is used to compile the *Annual Water Report*. An incomplete and  
122 inaccurate report was given to the MCGJ. The MCGJ originally requested supporting  
123 documentation used to populate the cells in the *Annual Water Report* in January 2019. The  
124 information was not received until April 2, 2019. When this information was received, it was  
125 incomplete and inaccurate. Based on the original form identified as "Valve Record Sheet" in the  
126 Policy and Procedure manual, the form received by the MCGJ did not look like the original

127 form. There were omissions in the recording year, the number of valve rotations were missing,  
128 and there was no operator identification. Operators are required to be certified in order to  
129 complete the exercise, and the information recorded on this the form is what is used to compile  
130 the *Annual Water Report*, and for maintenance management. These omissions and inaccuracies  
131 will misrepresent what is actually happening within this agency, and will be reflected as  
132 misrepresentation in the *Annual Water Report* to the California State Water Resources Board.

133 In addition, the MCGJ interviewed water department staff members who expressed no  
134 knowledge or familiarity with valve reporting forms and procedure. Only one certified operator  
135 knew about the valve exercise program. This same operator admitted avoiding dealing with old  
136 valves because the valves could become damaged by being exercised. This same certified  
137 operator admitted to not exercising any valves during the prior 18 months. The other operators  
138 and supervisor lacked knowledge about the program.

139 At well site #14, there was a line (pipe) from the well that flows into drains. The only purpose of  
140 this line is to flush the well. This line does not touch anything because there has to be an air gap  
141 between the flush line and the contents of the drain. This air gap prevents the flush line from  
142 siphoning the contaminants from the drain into an off line well. The purpose of the air gap is to  
143 prevent contamination of the aquifer.

144 At well site #14, the MCGJ found maintenance of operational equipment failing. The support  
145 bracket, which holds the flush line in place, was broken. The broken bracket caused the line to  
146 drop six inches below the drain opening, thus losing the air gap and potentially contaminating the  
147 water supply system including the aquifer. Furthermore, no evidence of labeling of equipment  
148 was found at the viewed well site. Labeling is important because it identifies to the operator the  
149 purpose of the equipment. Two operators at site #14 were not aware of the function of the line,  
150 which had fallen into the drain.

151 The MCGJ looked into customer complaints and the policies and procedures for responding to  
152 customer complaints by the City operators. Customer complaints generate a work order. Once a  
153 work order has been generated, operators are not leaving documentation with the customer that  
154 they have addressed the issue. Customers should know the complaint was addressed, and who  
155 replied to the problem.

156 The MCGJ found no guidelines in the Policy and Procedures manual instructing operators to not  
157 enter homes and give advice. The MCGJ was told that operators responding to customer  
158 complaints try to go above and beyond their duties. Operators have documented responding to  
159 customers by entering homes and providing advice for homeowners. Because entering a home  
160 and offering customer service is beyond the scope of the operator's training, they should not be  
161 providing advice to homeowners. Beyond the curbside meter, the responsibility lies with the  
162 homeowner. As a courtesy, pressure is checked at the homeowner's hose bib. Touching or  
163 working on customer's fixtures carry a liability for the City.

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168 **FINDINGS**

- 169 F1. The MCGJ finds there are no established and consistent testing, security, or maintenance  
170 procedures in place.
- 171 F2. The MCGJ reports the chlorine residual tests results filed with the state of California Water  
172 Resource Board were at a level of 0.3 ppm every day, for four years.
- 173 F3. The MCGJ observed chlorine residual testing kits are not readily available in each vehicle for  
174 daily testing.
- 175 F4. The MCGJ found the chlorine residual testing at sample site #14 was leaking, dirty, and not  
176 secured.
- 177 F5. The MCGJ observed during the chlorine testing procedure, the outcome was forced to  
178 produce the consistent 0.3 ppm test result.
- 179 F6. The MCGJ observed the equipment door was open, not locked or secured at well site #14.
- 180 F7. The MCGJ observed sample test site #14 was not secured despite a designated mesh ring  
181 feature to accommodate a lock.
- 182 F8. The MCGJ found from 2013-2017, the valve exercise program was not completed on a  
183 regular basis.
- 184 F9. The MCGJ found the supporting documentation used to populate the state of California  
185 Water Resource Board report was incomplete and inaccurate including omissions of the year,  
186 number of valve rotations, and the operator's identification.
- 187 F10. The MCGJ found the flush line bracket leading to the catch basin at well site #14 was  
188 damaged, thus eliminating the existence of an air gap deemed necessary to prevent water supply  
189 system contamination.
- 190 F11. The MCGJ found no labeling of water supply or drain lines to equipment at well site #14.
- 191 F12. The City of Chowchilla's Personnel Rules and Regulations as well as the Public Works  
192 Policy and Procedure Manual do not provide direction for employees dealing with water related  
193 complaints and entering private dwellings.

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195 **RECOMMENDATIONS**

- 196 R1. The MCGJ recommends that, by September 1, 2019, the Public Works Director implement  
197 testing, security, and maintenance procedures and training be established, practiced, and  
198 documented consistent with regulatory standards.
- 199 R2. The MCGJ recommends that, by September 1, 2019, the Public Works Director implement a  
200 procedure, which accurately tests and records the daily outcome of chlorine residual tests at each  
201 sample site.
- 202 R3. The MCGJ recommends that, by September 1, 2019, the Public Works Director be  
203 responsible for providing each vehicle and well site with a chlorine residual testing kit.

- 204 R4. The MCGJ recommends that, by September 1, 2019, the Public Works Director will assure  
205 all well and sample sites are clean, repaired, and secure.
- 206 R5. The MCGJ recommends the Public Works Director immediately adopt and implement a  
207 Standard Operating Procedure for chlorine residual testing.
- 208 R6. The MCGJ recommends the Public Works Director immediately secure all equipment room  
209 doors at all well sites where applicable.
- 210 R7. The MCGJ recommends the Public Works Director immediately secure all sample sites to  
211 eliminate any opportunities for tampering or intrusion of the water system throughout the City.
- 212 R8. The MCGJ recommends, by September 1, 2019, the Public Works Director implement and  
213 supervise monthly goals for operators who are actually performing the exercise program  
214 including logs with complete and accurate records.
- 215 R9. The MCGJ recommends, by September 1, 2019, the Public Works Director implement and  
216 provide all employees with training and orientation for the adopted valve exercise form from  
217 1999 and contained in the April 31, 2017 Public Works Policy and Procedures Manual.
- 218 R10. The MCGJ recommends the Public Works Director immediately direct staff to address the  
219 flush line support brackets at well site #14 to be repaired and secured, and inspect all other well  
220 sites with flush lines.
- 221 R11. The MCGJ recommends, by September 1, 2019, the Public Works Director implement a  
222 standard color code line identification system, including labels, on all appropriate equipment and  
223 lines at all well sites.
- 224 R12. The MCGJ recommends, by September 1, 2019, the Public Works Director develop, adopt,  
225 and implement a policy dealing with water related complaints and entering private dwellings.

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227 **REQUIRED RESPONSES**

228 Pursuant to Penal Code sections 933 and 933.05, the grand jury requests responses as follows:

229 Director of Public Works  
230 City of Chowchilla  
231 130 S. Second Street  
232 Chowchilla, CA 93610

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234 City Council  
235 City of Chowchilla  
236 130 S. Second Street  
237 Chowchilla, CA 93610

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241 **INVITED RESPONSES**

242 State Water Resources Control Board

243 State of California

244 P. O. BOX 100

245 Sacramento CA 95812-0100

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Reports issued by the Grand Jury do not identify individuals interviewed. Penal Code section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Grand Jury.
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