



Sierrita Operations  
Environment, Land & Water Department  
6200 W Duval Mine Road  
PO Box 527  
Green Valley, AZ 85622-0527

May 13, 2020

**Via Certified Mail # 7017 3380 0000 0803 5205**  
**Return Receipt Requested**

Mr. Oliver Navo  
Arizona Department of Environmental Quality  
Water Quality Compliance Section  
1110 West Washington Street  
Phoenix, Arizona 85007-2935

Arturo R. Gabaldon  
President  
Community Water Company of Green Valley  
1501 S La Canada Dr  
Green Valley, AZ 85622-1600

**Re: Results of Monthly Sulfate Monitoring at MO-2009-1  
Mitigation Order on Consent Docket No. P-50-06**

Dear Messrs. Navo and Gabaldon,

This letter summarizes the results of monthly groundwater sampling at sentinel well MO-2009-1 from September 2019 through April 2020. Freeport-McMoRan Sierrita Inc. (Sierrita) conducted the monthly sampling of MO-2009-1 to verify the sulfate concentration at the well after groundwater samples collected in April and July of 2019 had sulfate concentrations slightly in excess of 135 milligrams per liter (mg/L).

Well MO-2009-1 is not a drinking water supply well, but is monitored as a sentinel well for drinking water supply well CW-10 (Figure 1). Sierrita notified<sup>1</sup> Arizona Department of Environmental Quality (ADEQ) and Community Water Company of Green Valley, the owner and operator of CW-10, of the April and July 2019 results for MO-2009-1 and the plan to collect additional samples on a monthly basis to verify the sulfate concentration pursuant to the Mitigation Plan<sup>2</sup> implemented under Mitigation Order on Consent Docket No. P-50-06.

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<sup>1</sup> Correspondence, 2019. From: William S. Hart, Sierrita, to Oliver Navo, Arizona Department of Environmental Quality, and Arturo R. Gabaldon, Community Water Company of Green Valley, Re: Sulfate Concentration at MO-2009-1 Mitigation Order on Consent Docket No. P-50-06. September 24, 2019.

<sup>2</sup> Clear Creek Associates. 2013. Mitigation Plan for Sulfate with Respect to Drinking Water Supplies in the Vicinity of the Freeport-McMoRan Sierrita Inc. Tailing Impoundment, Mitigation Order on Consent Docket No. P-50-06. December 18, 2013.

Sulfate concentration data<sup>3</sup> for MO-2009-1 during 2019 and 2020 are listed on Table 1. The sulfate concentration at MO-2009-1 exceeded 135 mg/L two times in 2019 as follows: 138 mg/L in April and 136 mg/L in July. Monthly sampling to verify the sulfate concentration in MO-2009-1 began in September 2019, with nine samples collected in the eight months from September 2019 to April 2020. The sulfate concentration measured in the monthly samples declined over time, ranging from 128 mg/L in October 2019 to 91.1 mg/L in January 2020, and averaged 103 mg/L. The sulfate concentration at MO-2009-1 has been between 90 mg/L and 100 mg/L in the six monthly samples collected from November 2019 to April 2020.

Figure 2 is a graph of historical sulfate concentration data for MO-2009-1 and CW-10, the drinking water supply well monitored by MO-2009-1. The sulfate concentration at CW-10 has been less than 60 mg/L since sampling under the Mitigation Order began in 2006 and shows no correspondence to the concentration at MO-2009-1. The sulfate concentrations measured in samples of MO-2009-1 from November 2019 through April 2020 are in the range of historical data for MO-2009-1 from 2009 to 2014.

The sulfate concentration in MO-2009-1 is less than 135 mg/L based on the results of monthly sampling from September 2019 through April 2020. This conclusion is based on the following observations: 1) the sulfate concentration was less than 135 mg/L and averaged 103 mg/L in the eight consecutive monthly samplings from September 2019 to April 2020, 2) sulfate concentration data display a decreasing trend from April 2019 to April 2020, and 3) the sulfate concentration has been steady in the range of 90 mg/L to 100 mg/L in the six monthly samplings between November 2019 and April 2020. Inasmuch as the data indicate that the sulfate concentration at MO-2009-1 is less than 135 mg/L, Sierrita recommends resuming a quarterly sampling frequency at MO-2009-1 as identified in the Sampling Schedule for Post-Implementation Groundwater Monitoring<sup>4</sup>.

Sierrita appreciates the cooperation of ADEQ and Community Water Company of Green Valley in this matter. Please do not hesitate to contact me at (520) 393-2014 if you have questions regarding the Mitigation Order project.

Sincerely,

William S. Hart  
Senior Environmental Scientist  
Freeport-McMoRan Sierrita Inc.

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<sup>3</sup> Data tables and laboratory reports for the groundwater monitoring data described herein are contained in the semiannual groundwater monitoring reports submitted to ADEQ and posted on the Sierrita Operations Internet Document Repository for the Mitigation Order on Consent at <http://www.fcx.com/sierrita>.

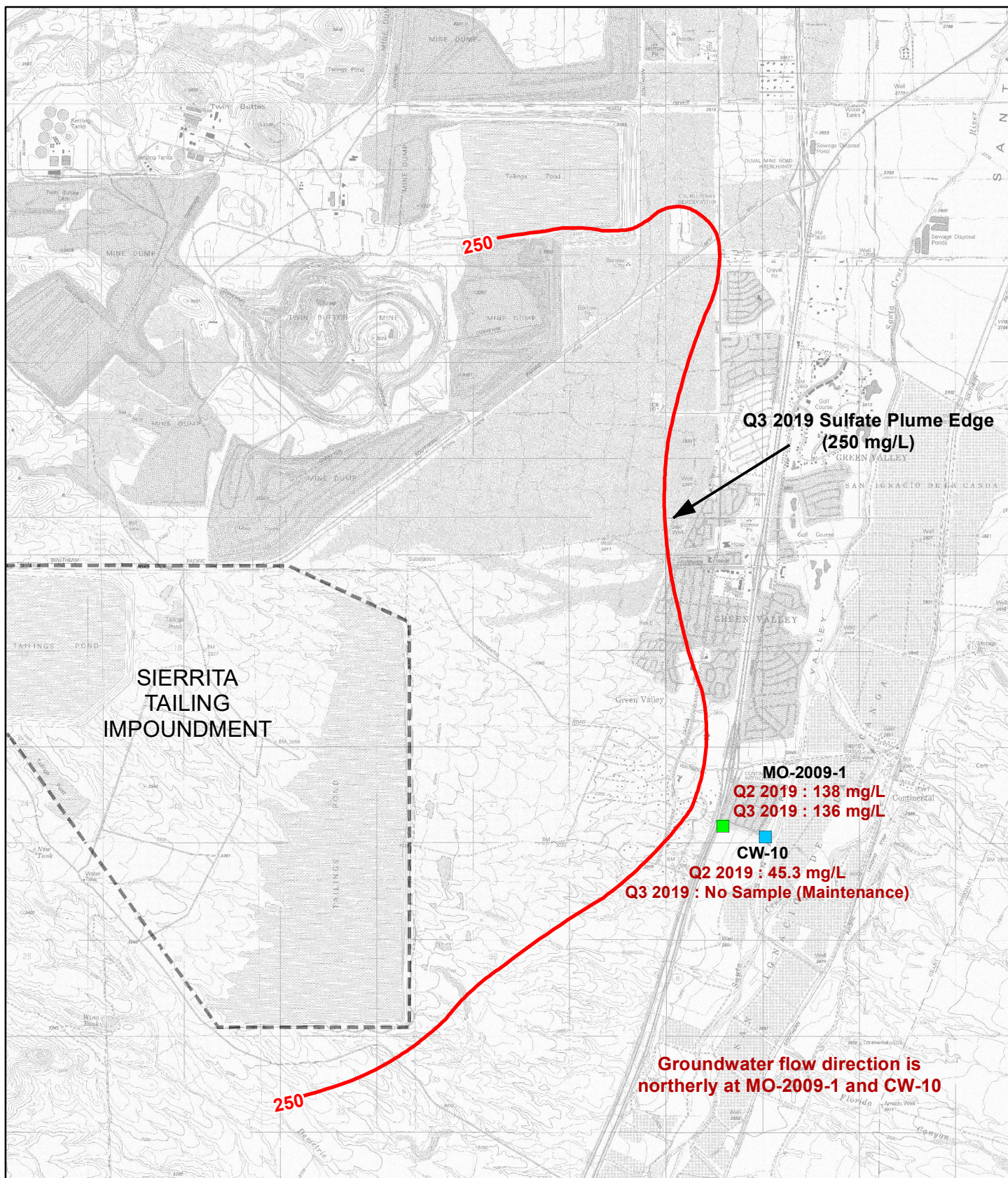
<sup>4</sup> Clear Creek Associates. 2019. Semiannual Groundwater Monitoring Report for Samples Collected During the Second and Third Quarters 2019, Mitigation Order on Consent Docket No. P-50-06, Pima County, Arizona. October 7, 2019.

3 Enclosures: Table 1 and Figures 1 and 2

cc: Sheila Deely, Freeport-McMoRan Inc.  
Bryce Romig, Freeport-McMoRan Inc.  
David Gosen, Freeport-McMoRan Inc.  
Edward Hall, Freeport-McMoRan Inc.  
Dalva Moelenberg, Gallagher & Kennedy  
James Norris, Clear Creek Associates

DTN: 20200513\_001





### Legend

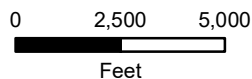
- Q3 2019 Sulfate Concentration Contour
- **CW-10** Well ID
- 45.3 Sulfate Concentration (mg/L)

### Well Symbols

- Sentinel Well
- Drinking Water Supply Well

### Notes

Projection: UTM Zone 12N NAD83  
mg/L = milligrams per liter



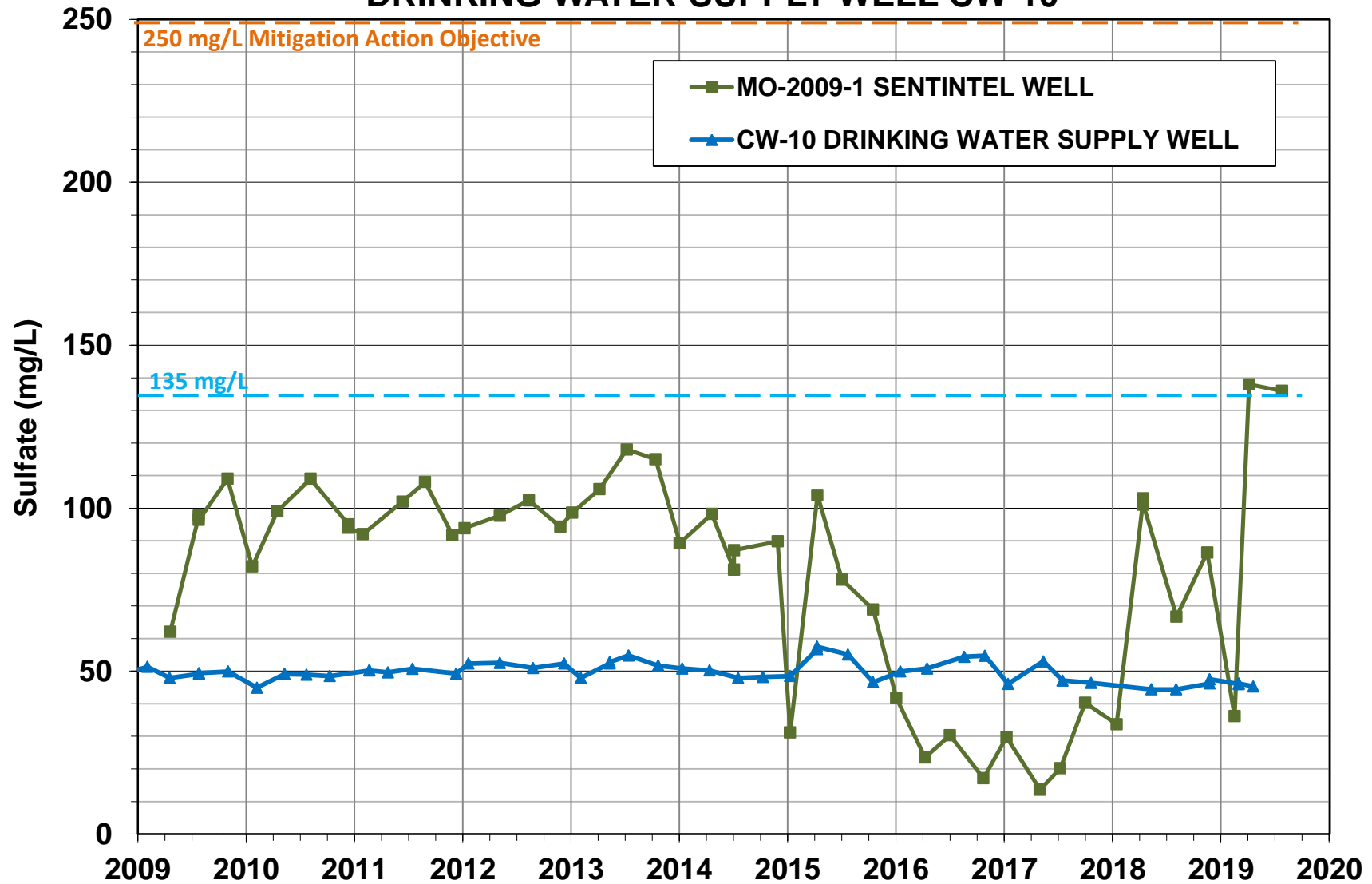
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Date  
9/3/19



**FIGURE 1**  
**Sulfate Concentrations**  
**in MO-2009-1 and CW-10**

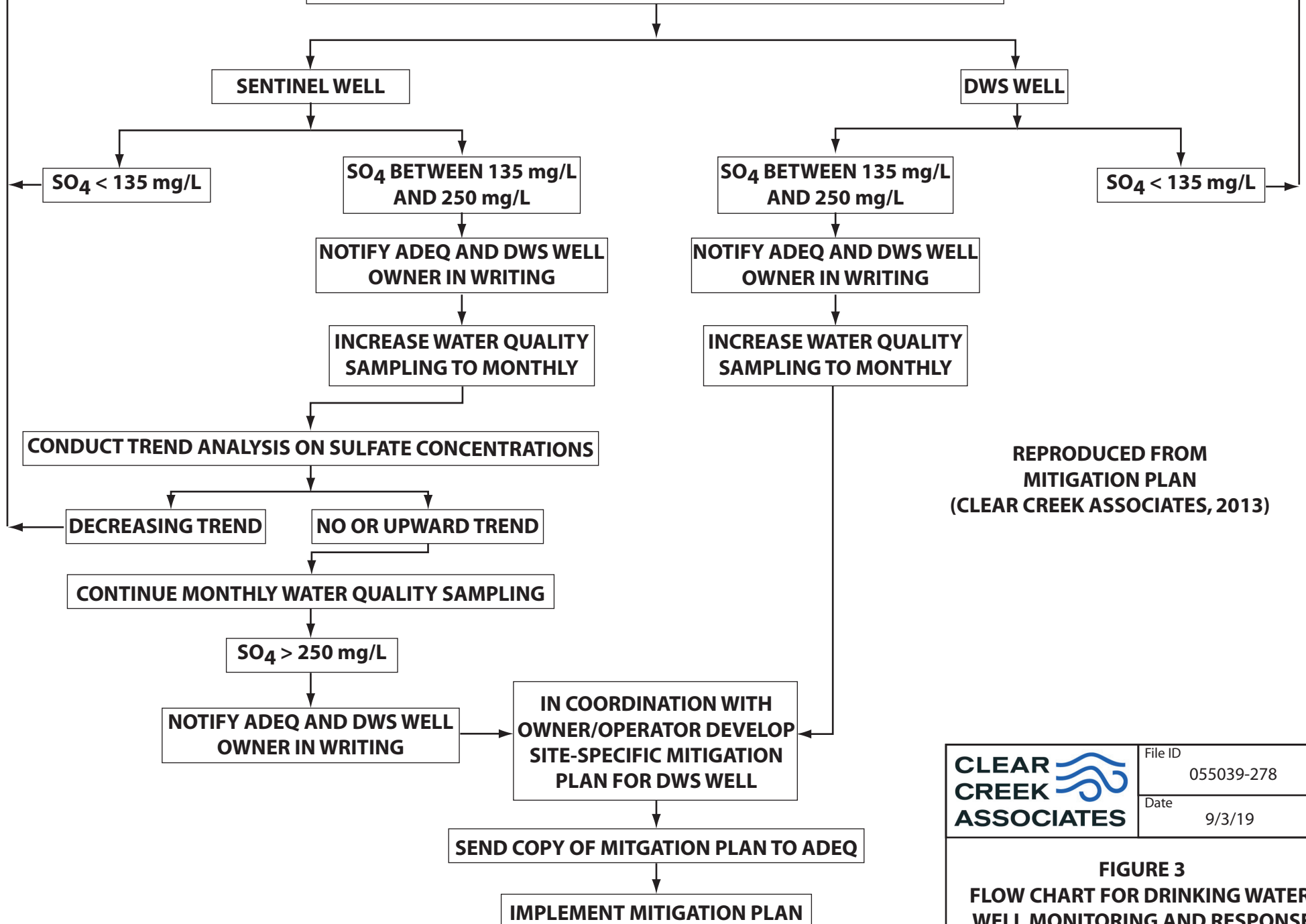


**FIGURE 2**  
**SULFATE CONCENTRATIONS AT SENTINEL WELL MO-2009-1 AND**  
**DRINKING WATER SUPPLY WELL CW-10**



Note: mg/L = milligrams per Liter

**QUARTERLY MONITORING OF DRINKING WATER SUPPLY (DWS)  
AND SENTINEL WELLS FOR MITIGATION ORDER ON CONSENT No. P-50-06**



REPRODUCED FROM  
MITIGATION PLAN  
(CLEAR CREEK ASSOCIATES, 2013)

**CLEAR  
CREEK  
ASSOCIATES**

File ID	055039-278
Date	9/3/19

**FIGURE 3  
FLOW CHART FOR DRINKING WATER  
WELL MONITORING AND RESPONSE**