



Carter - DNR, Jocelyn <jocelyn.carter@state.co.us>

M-2002-004 GCC Pueblo - Notification of GW Discharge Exceedance 3Q 2025

1 message

Meghan Way <meghanway@gcc.com>

Mon, 10/13/25, 10:18 AM

To: Jocelyn Carter - DNR <jocelyn.carter@state.co.us>

Cc: Landon Beck <lbeck@slrconsulting.com>, Amy Rodrigues <aveek@gcc.com>

Hi Jocelyn,

Pursuant to Rule 3.1.7(9), this email provides the notification of concentrations above Colorado state ag standards in groundwater samples collected as part of the recent 3rd groundwater sampling event at GCC's Pueblo Facility. On October 9th GCC received the final laboratory reports from ACZ Laboratories indicating concentrations above for the samples collected on September 3rd, September 8th and September 9th from MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-18, MW-21, MW-23 and MW-2B (duplicate of MW-6) and MW-3B (field blank). The report provided the following results with exceedances noted in bold red text:

Parameter	State Ag Standard (µg/L)	Results MW-6 (µg/L)	Results MW-7 (µg/L)	Results MW-8 (µg/L)	Results MW-9 (µg/L)	Results MW-10 (µg/L)	Results MW-11 (µg/L)	Results MW-12 (µg/L)	Results MW-13 (µg/L)	Results MW-14 (µg/L)	Results MW-18 (µg/L)	Results MW-19 (µg/L)	Results MW-20 (µg/L)	Results MW-21 (µg/L)	Results MW-23 (µg/L)
Boron	750	284	333	789	1400	1160	428	897	1010	2030	804	427	804	608	436
Fluoride	2000	530	500	970	400	1400	750	1680	5960	3030	1350	1480	2320	1370	560
Manganese	200	470	108	103	386	16	<10	24	<20	<50	45	<10	16	<10	19
Selenium	20	<0.5	<0.5	<0.5	<0.5	<0.5	44.1	6.88	<1.0	<2.0	<1.0	<1.0	<0.5	0.94	18.9

1. As noted in [Water Quality Control Commission, Regulation 41 - The Basic Standards for Groundwater](#), the manganese standard of 200 µg/L is only appropriate for water applied to soils with pH values lower than 6.0, which is not the case for areas potentially receiving waters from this facility.

2. As noted in [Water Quality Control Commission, Regulation 41 - The Basic Standards for Groundwater](#), the boron standard of 750 µg/L is set to protect the following ascending order of sensitivity: Pecan, Black Walnut, Persian (English) Walnut, Jerusalem Artichoke, Navy Bean, American Elm, Plum, Pear, Apple, Grape (Sultanina and Fig), Persimmon, Cherry, Peach, Apricot, Thornless Blackberry, Orange, Avocado, Grapefruit, Lemon. As there are no known growing operations with crop use of groundwater from this facility, the applicable standard for boron is 5000 µg/L.

3. Selenium groundwater concentrations in excess of the Colorado state ag groundwater standard documented at the Pueblo Facility are natural and explained by the distal quality impacts from the Niobrara Formation in the Arkansas River basin in the reach above Pueblo, which includes the Fort Hayes Limestone Member. The specific concern here as significantly impacting water quality from Niobrara-influenced inflows is selenium. As stated in the reference cited below, page 193, "The greater association of Se with the Niobrara Formation, apparently in combination with the more permeable and calcareous nature of the Niobrara Formation, appear to be driving factors for Se mobility in the aqueous system."

1. Bern, C.R., and Stogner, R.W. Sr., 2017. The Niobrara Formation as a Challenge to Water Quality in the Arkansas River, Colorado, USA. *Journal of Hydrology: Regional* Volume 12, pp. 181-195. August.

4. Fluoride is a naturally occurring constituent, usually present in ionic form in groundwater, and the solubility of fluoride-bearing minerals can be increased in waters that are low in calcium (Nordstrom and Smedley, 2022; Hem, 2005). It is likely that groundwater in the wells with elevated fluoride concentrations is saturated with respect to calcium. Dissolved concentrations of calcium remain low as calcite precipitates, increasing the solubility of the fluoride ion in solution (Nordstrom and Smedley, 2022).

1. Nordstrom, D.K., and P.L. Smedley, 2022. Fluoride in Groundwater. The Groundwater Project. Guelph, Ontario, Canada. Available at: <https://books.gw-project.org/in-groundwater/>

2. Hem, J.D., 2005. Study and Interpretation of the Chemical Characteristics of Natural Waters. U.S. Geological Survey Water-Supply Paper 1473. Available at: <https://pubs.er.usgs.gov/publication/wsp1473>

Thank you,



Meghan Way

Environmental Engineer- Pueblo Plant

O: 719-647-6861

C: 719-750-7245

[GCC.com](https://www.gcc.com)