

# Lake 4, West Lake and A-Frame Dam Rehabilitation Project

## Weekly Construction Update Report

4/13/2020 to 4/17/2020

**Date:** 4/22/2020

**Location:** Boulder County Open Space west of Hygiene, CO

**Project Owners:** Boulder County and St. Vrain & Left Hand Water Conservancy District

### Design Engineers:

Lake 4 - Engineering Analytics (EA)

West Lake and A-Frame - Applegate Group (AG);

Lake 4 Outlet Pipeline - Deere & Ault (DA)

### Construction Contractors:

Kirkland Construction (Prime Contractor)

Lobato Construction (Sub-contractor)

**Weather & Site Conditions:** Two large snow events at the beginning and end of the week limited work. Snow covered and/or muddy conditions.

**Update by:** Obadiah Broughton, Boulder County

### Work in Progress/Completed

1. Lake 4 sediment removal area - continued ripping, crushing, and stockpiling of claystone to use as embankment fill. Finished screening deposited sediment to 3" minus. Hauled and stockpiled to West Lake Dam for embankment reconstruction.
2. West Lake Dam - stripped the formworks from the Foothills Outlet Ditch and Clough and True Ditch inverted siphon inlet and outlet structures. Finished concrete surfaces and installed trash racks on the structures.
3. A-Frame Pond - stripped the formworks from the four A-Frame Pond outlet cutoff walls.
4. Kirkland took delivery of approximately 309 tons of rip rap and staged near Lake 4/Lake 3 embankment.
5. As necessary to facilitate the work dewatering operations occurred to remove nuisance water in work areas, Lake 3, Lake 4, West Lake and A-Frame Pond.



4/13: A-Frame Pond - looking east at the A-Frame Pond outlet structure and cutoff walls.



4/13: A-Frame Pond - looking west from the inlet of the A-Frame outlet structure across A-frame Pond towards the West Lake Dam embankment.

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### Upcoming Work *(One week look ahead. Week of 4/13/2020 to 4/17/2020)*

1. Lake 4 Dam – start installation of formworks and rebar at outlet tower #1.
2. Lake 4 sediment removal area - continue ripping, crushing, and stockpiling of claystone to process it for embankment fill in the Lake 4 sediment removal area. Finish hauling screened 3” minus embankment fill to West Lake Dam.
3. West Lake Dam - finish concrete finishing and backfill around the Foothills Outlet Ditch and Clough and True Ditch inverted siphon structures. Install riprap bedding and riprap at the inlets and outlets of the siphon structures. Rebuild the South Branch ditch profile from crossing structure through Foothills Outlet Ditch overflow and work area. Perform inspections on ADS siphon pipes in anticipation to complete work on all ditch infrastructure by April 25<sup>th</sup>.
4. West Lake Dam - continue zoned embankment reconstruction and work on final grades for the embankment. Continue placement of downstream embankment protection; riprap bedding and riprap.
5. As necessary to facilitate the work dewatering operations occurred to remove nuisance water in work areas, Lake 3, Lake 4, West Lake and A-Frame Pond.

### Additional Notes

1. April 7<sup>th</sup> Weekly construction process meeting was held remotely via a conference call.
2. Two large snow events at the beginning and end of the week limited work. Snow covered and muddy conditions lasted all week. Kirkland and Lobato had one crew onsite
3. Project website for additional updates and information:  
<https://www.bouldercounty.org/open-space/management/lake-4-west-lake-a-frame-pond/>



4/15: A-Frame Pond – looking northeast at outlet structure and cutoff walls after formworks have been stripped.



4/15: A-Frame Pond – looking north at outlet structure and eastern cutoff wall after formworks have been stripped.



4/15: West Lake Dam - Foothills Outlet Ditch inlet structure and wingwall after formworks have been removed.



4/8: West Lake Dam –Foothills Outlet Ditch inlet structure and trash rack.



4/9: West Lake Dam - Foothills Outlet Ditch outlet structure and trash rack.



4/9: West Lake Dam –Clough and True Ditch inlet structure and trash rack.



4/15: Lake 4 – claystone/bedrock crushing operation to make ¾" minus embankment fill in the Lake 4 sediment removal area.



4/15: Lake 4 – crushed and stockpiled ¾" minus claystone embankment fill in the Lake 4 sediment removal area.



4/15: Lake 4 – overview of claystone/bedrock crushing operation to make ¾" minus embankment fill in the Lake 4 sediment removal area.



4/15: Lake 4 – claystone/bedrock crushing operation to make ¾" minus embankment fill in the Lake 4 sediment removal area.



4/16: West Lake Dam – looking north across the embankment during the snowstorm.



4/17: Lake 4 - snow covered access road along the northside of Lake 4.



4/17: Lake 4 – stockpile in the Lake 4 sediment removal area covered in snow.



Longmont, CO  
55 °F Cloudy

Recent Cities

Revelstoke, British Columbia, Canada (weather/ca/revelstoke/50.99,-118.19) Crested Butte, CO (weather/us/co/crested-butte/38.91,-106.97)

40.17 °N, 105.16 °W

# Longmont, CO Weather History

**55°** **VANCE BRAND STATION** ([/WEATHER/US/CO/LONGMONT/KLMO?CM\\_VEN=LOCALWX\\_PWSDASH](/WEATHER/US/CO/LONGMONT/KLMO?CM_VEN=LOCALWX_PWSDASH)) | [CHANGE](#)

[HISTORY](/HISTORY/DAILY/US/CO/LONGMONT/KLMO) (</HISTORY/DAILY/US/CO/LONGMONT/KLMO>)

- [TODAY](/WEATHER/US/CO/LONGMONT/KLMO) (</WEATHER/US/CO/LONGMONT/KLMO>)
- [HOURLY](/HOURLY/US/CO/LONGMONT/KLMO) (</HOURLY/US/CO/LONGMONT/KLMO>)
- [10-DAY](/FORECAST/US/CO/LONGMONT/KLMO) (</FORECAST/US/CO/LONGMONT/KLMO>)
- [CALENDAR](/CALENDAR/US/CO/LONGMONT/KLMO) (</CALENDAR/US/CO/LONGMONT/KLMO>)
- [HISTORY](/HISTORY/DAILY/US/CO/LONGMONT/KLMO) (</HISTORY/DAILY/US/CO/LONGMONT/KLMO>)
- [WUNDERMAP](/WUNDERMAP?LAT=40.17&LON=-105.16) (</WUNDERMAP?LAT=40.17&LON=-105.16>)

[Daily](#) **[Weekly](#)** [Monthly](#)

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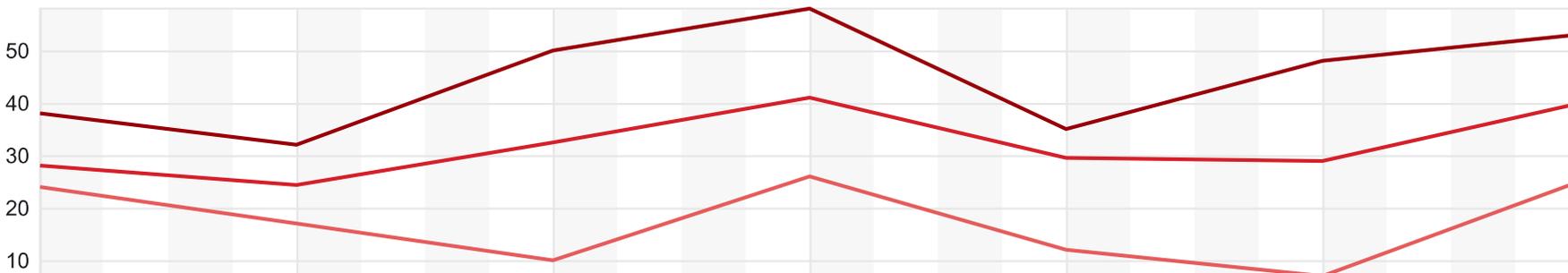
April

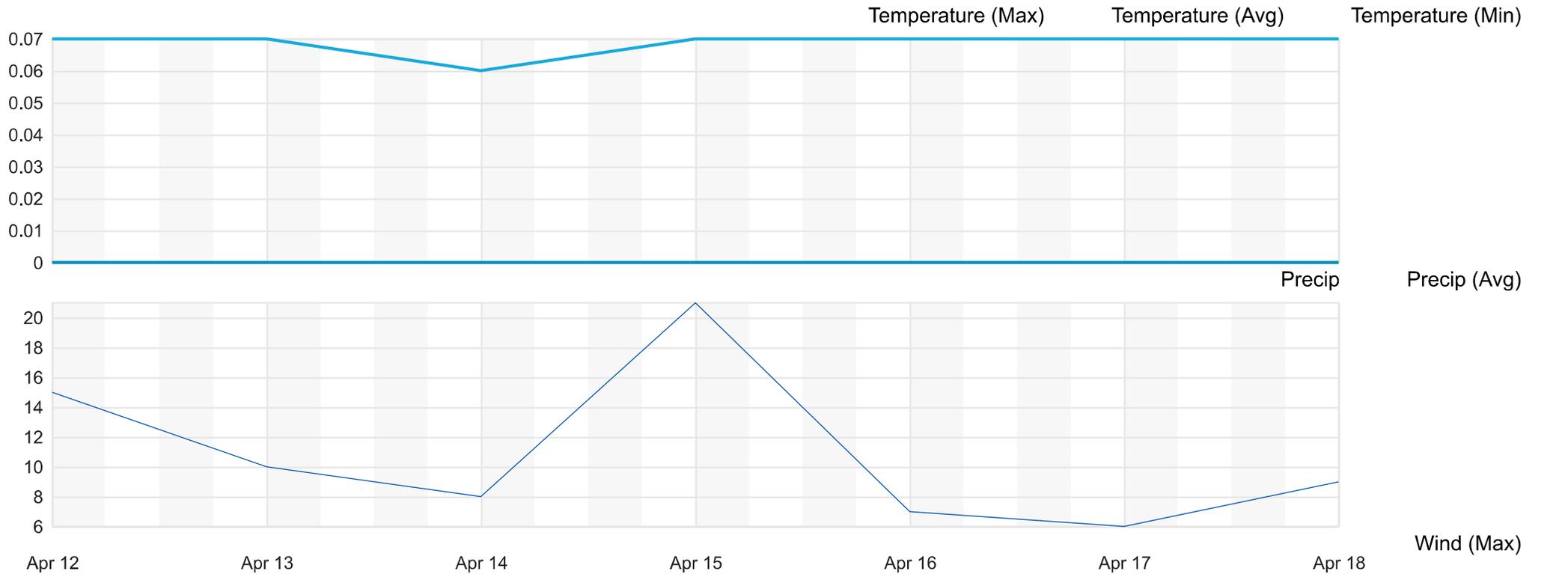
13

2020

[View](#)

Apr 12      Apr 13      Apr 14      Apr 15      Apr 16      Apr 17      Apr 18





# Summary

Temperature (° F)	Max	Average	Min	▲
Max Temperature	58	44.86	32	
Avg Temperature	40.99	32.03	24.36	
Min Temperature	26	17.29	7	
Dew Point (° F)	Max	Average	Min	▲
Dew Point	34	20.99	2	
Precipitation (Inches)	Max	Average	Min	Sum ▲

Temperature (° F)				Max			Average			Min			▲
Precipitation				0.00			0.00			0.00			0.00
Snowdepth				0.00			0.00			0.00			0.00
Wind				Max			Average			Min			▲
Wind				21			3.2			0			
Gust Wind				32			0.84			0			
Sea Level Pressure				Max			Average			Min			▲
Sea Level Pressure				25.12			24.95			24.71			

# Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation (in)
	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
Apr 12	38	28.1	24	27	21.0	16	87	75.8	49	15	5.6	0	25.0	24.9	24.7	0.00
13	32	24.4	17	22	16.8	11	87	73.7	51	10	3.2	0	25.1	25.0	25.0	0.00
14	50	32.5	10	22	11.6	4	82	48.9	17	8	2.5	0	25.1	25.0	24.9	0.00
15	58	41.0	26	33	26.2	20	92	60.2	24	21	5.1	0	25.0	24.9	24.8	0.00
16	35	29.5	12	33	25.7	9	96	85.8	76	7	2.1	0	25.1	25.0	24.9	0.00
17	48	28.9	7	27	18.3	2	88	68.3	36	6	0.8	0	25.1	25.0	24.9	0.00
18	53	39.9	25	34	27.3	21	88	63.4	37	9	3.1	0	24.9	24.8	24.8	0.00