

Suphur Creek Dam

Monitoring Survey

Legend

- ▲ Control Stations
- Benchmarks
- Monitoring Stations

0249 (SC-1)

M-1

M-2

0251 (M-3)

M-4

C-5

C-8

0259 (C-7)

3XX-4-84

3XX-5-84

Google earth

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Image Landsat / Copernicus

Data LDEO-Columbia, NSF, NOAA

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200 ft

Sulphur Creek Dam (J03D01) Monitoring Survey

This earthen dam was built in 1966. The first vertical monitoring survey was performed in 1979. The first horizontal survey was performed in 1981.

Horizontal displacement is compared to dam survey line. Vertical displacement is compared to 1968 elevations from 1984 Subsidence Report.

Chart Details

Control Station Checks - Horizontal

Due to the instability of the dam control stations which are measured using GPS, this chart will be included to help in identifying actual dam movement or perceived movement caused from "C-7" moving in a southwesterly direction.

Horizontal Movement Perpendicular to Dam Axis - shows all data from each year.

Control points "SC-1" and "SC-2" are held for *Out From Line* calculations until 1993. In 1993, "SC-2" was found disturbed and replaced by "C-7" for line. Negative numbers represent stations right of line (downstream), positive numbers represent stations left of line (upstream).

Horizontal Movement Along Dam Axis (difference from 1985 survey) - shows all data from each year.

GPS 0249 (SC-1) Control point is held for stationing calculations.

Positive numbers mean that the distances measured to each station are greater than 1985 survey, negative number means less than 1985 survey.

Vertical Movement - shows all data from each year.

Vertical differences are calculated comparing the elevation to the "1968 survey" elevation.

Control Checks - shows all data from each year.

Horizontal movement of control stations in a cardinal direction relative to the initial 1995 GPS survey.

Detailed information pertaining to monument descriptions and survey information can be found at OC Survey Division, Geodetic Control Unit.

All values are shown in U.S. Survey feet.

Horizontal Datum = CCS83, zone VI, 1991.35 Epoch Adjustment

Vertical Datum = NGVD29, OCS 1976 Adjustment

Sulphur Creek Dam (J03D01) Monitoring Survey

Report Summary

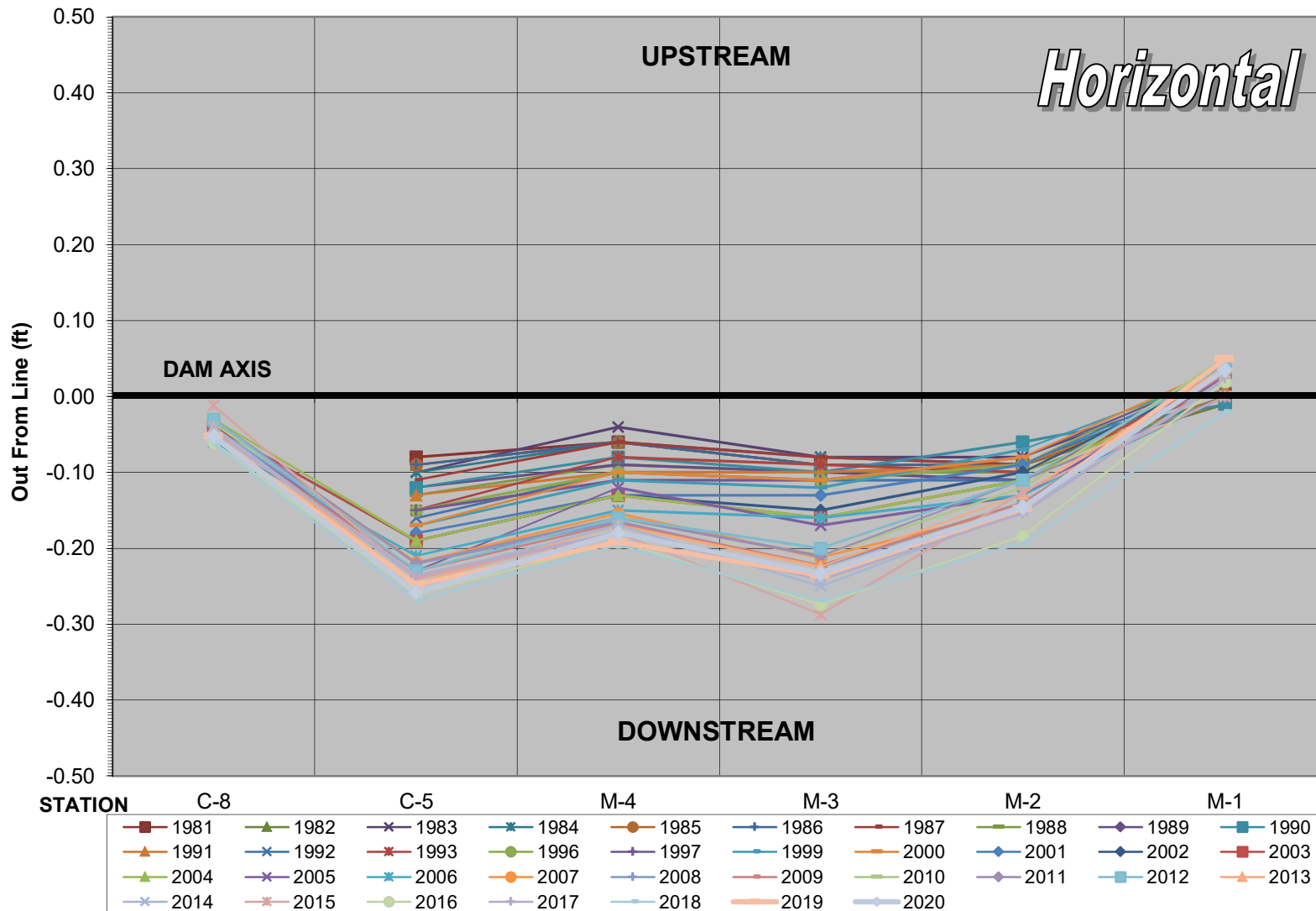
1981-1990	Downstream horizontal movement measured on all stations located on top of dam. Vertical uplift is found on all stations.
1990-2000	Downstream horizontal movement continues with the greatest amount at station C-5. Vertical uplift also continues with the greatest amount at both end stations, M-1 and C-7.
2001	Same horizontal and vertical trends continue
2002	Same horizontal trend continues. Vertical appears stable. C-6 was destroyed due to spillway construction and has been replaced by C-8.
2003	Same horizontal trend continues. Vertical appears stable.
2004	No significant movement found.
2005	C-5 shows downstream horizontal movement. Vertical uplift also continues with the greatest amount at both end stations, M-1 and C-7.
2006	All stations except M-3 show vertical uplift. M-3 shows settling.
2007	M-3 shows vertical settlement for past 7 years.
2008	M-3 continues to settle, all other monuments show uplift with the greatest amount on M-1 and C-7. All stations show slight downstream movement.
2009	M-3 continues to settle, all other monuments show uplift with the greatest amount on M-1 and C-7. All stations show slight downstream movement.
2010	M-3 appears to have vertically stabilized. C-7 shows horizontal movement in a southwest direction based on "Control Checks" chart.
2011	C-7 shows horizontal movement in a southwest direction based on "Control Checks" chart.
2012	No significant movement found.
2013	No significant movement found.
2014	M-3 continues to settle, all other monuments show uplift with the greatest amount on M-1 and C-7. All stations show slight downstream movement.
2015	All stations continue to show slight downstream movement with the greatest being M-3. See note below.
2016	No significant movement found.
2017	No significant movement found.
2018	No significant movement found.
2019	No significant movement found.
2020	No significant movement found.
2021	

Note: "Out From Line" chart shows downstream movement. Some of this movement may be related to the instability of control station C-7 that has appears to be moving southwesterly at a small rate.

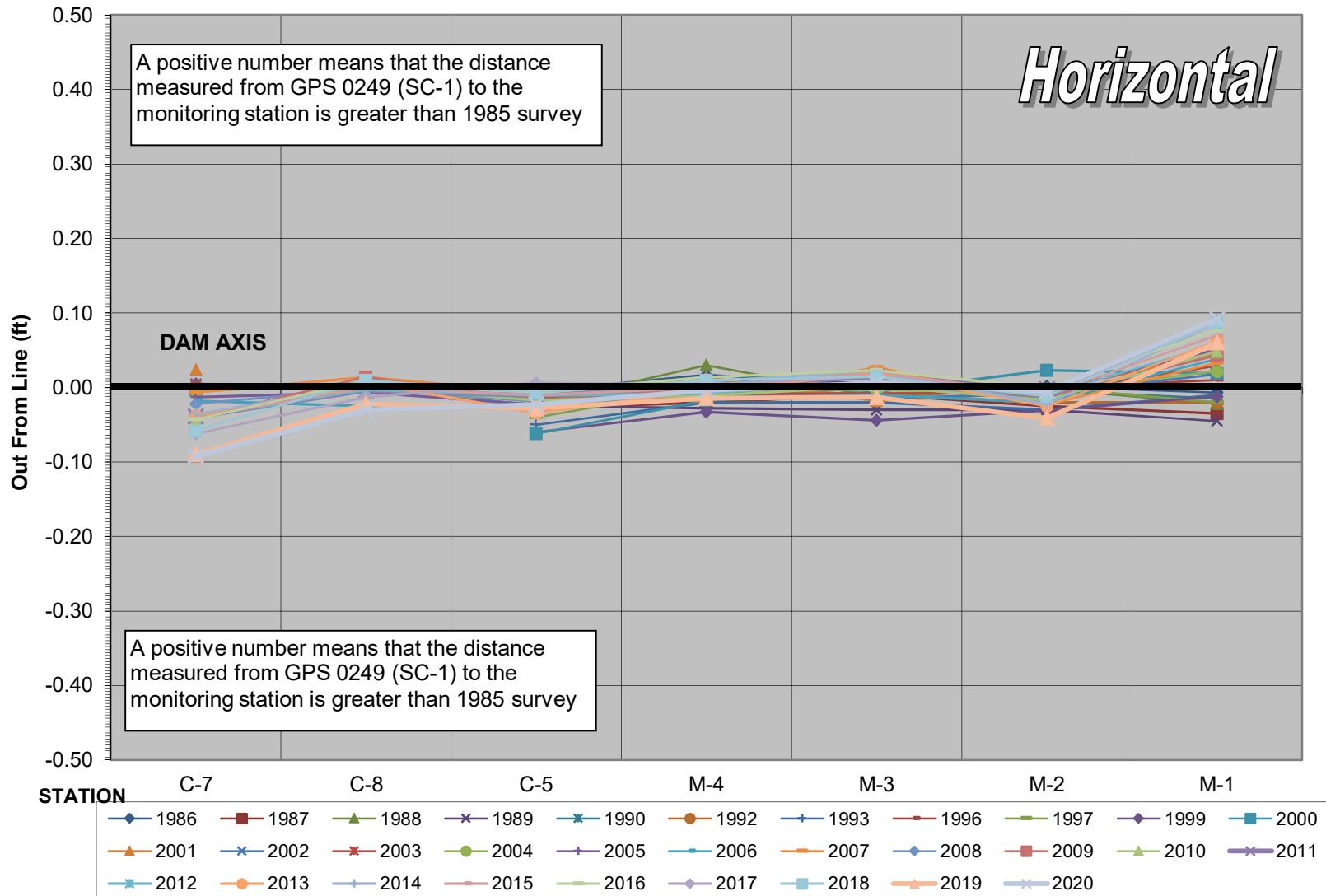
Horizontal Datum = CCS83, zone VI, 1991.35 Epoch Adjustment

Vertical Datum = NGVD29, OCS 1976 Adjustment

Horizontal



Sulphur Creek Dam **Horizontal Movement Along Dam Axis (Difference from 1985 Survey)**



Sulphur Creek Dam **Horizontal Movement Perpendicular to Dam Axis (Out From Line) Plan View**

