Santos, Steven A

From: HumboldtSanctuary@gmail.com
Sent: Wednesday, January 22, 2025 7:26 PM
To: Johnson, Cliff
Cc: Santos, Steven A; Fuller Dave & Karen
Subject: Fwd: Rainwater analysis
Attachments: HSF - Reservoir Rainwater Catchment Area Calcs - 1-2025 PRISM_ppt_stable_4km_1994_2023_40.2263_-123.9339 2.xlsx; HSF - Reservoir Area via Satillite Image.png

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Hello Cliff.

Here are the rainwater analysis calculations for my reservoir. I believe this should put to rest any further question of the source of the water used exclusively for HSF.

Using satellite imagery clearly showing the reservoir, the catchment area (a hillside rising up) immediately to the west, combined with the reservoir surface area, was calculated to be 43,750 square feet. The water flows in unchannelized sheeting and infiltrates off the adjacent hillside to the reservoir. The catchment area is bounded to the north and west sides of the reservoir. In the northern part of the west side, an engineered drain, recognized by CDFW and included in the LSAA, allows for sufficient water overflow from the reservoir.

The Prism website results for precipitation from 1994 to 2023 averaged 77.47 inches.
The Prism website results for the minimum precipitation year, in 2013, is 27.58 inches

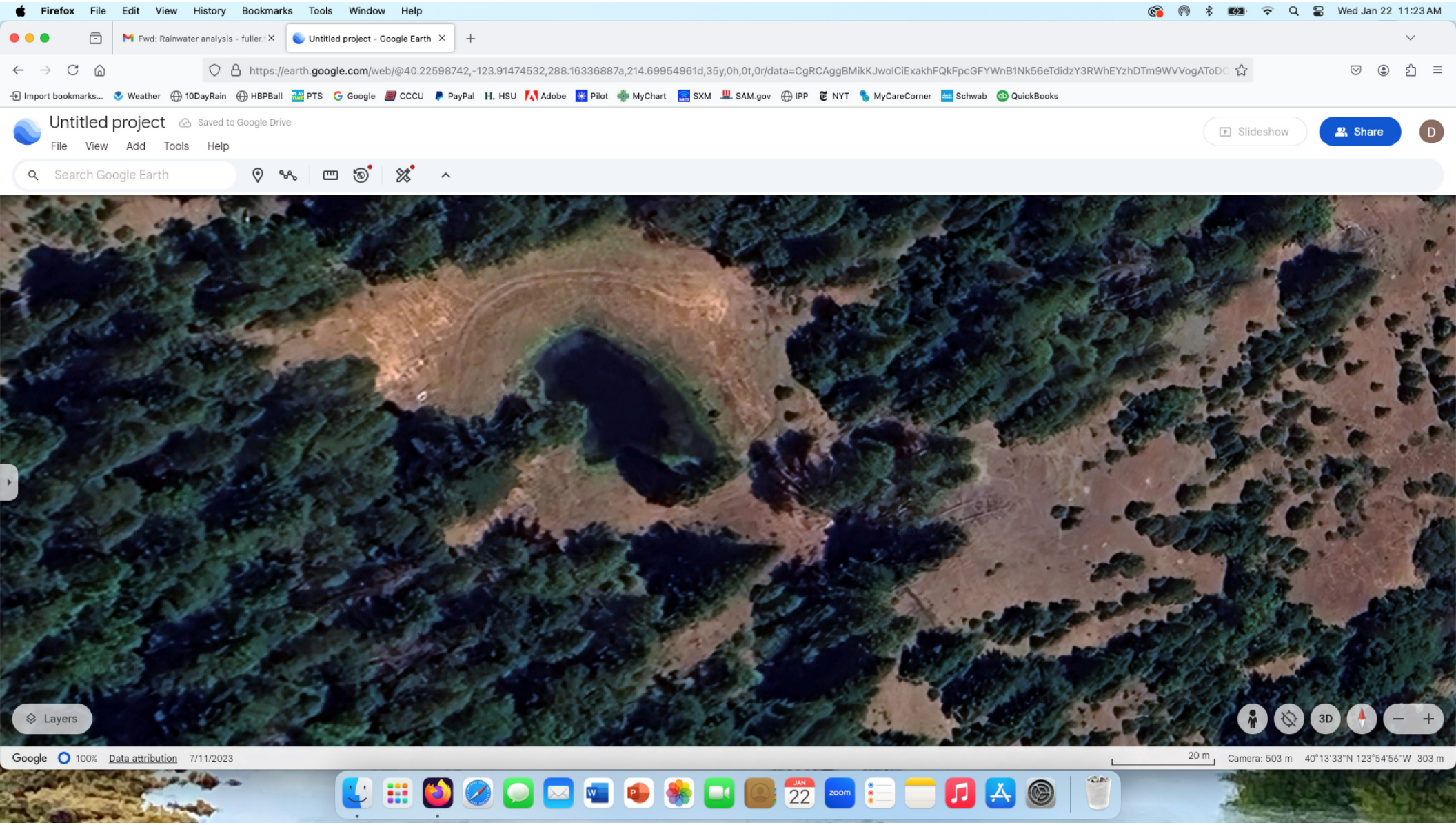
Thus, the calculation for average (1994-2023) amount of precipitation that passes through the reservoir is 43,750 X 77.47 X 0.6234 = 2,112,897 gallons
The minimum based in 2013 is 43,750 X 27.58 X 0.6234 = 752,210 gallons

Please contact me if you have questions. (And it will be welcome, though uncommon, to receive a message that, 'This is sufficient for our needs. Thank you (for enduring and spending money on yet another of the Planning Department's requirements...'). I won't hold my breath.

My Best.
- Rick C.

PRISM_ppt_stable_4km_1994_2023_40.2263_-123.9339

PRISM Time Series Data	
Location: Lat: 40.2263 Lon: -123.9339 Elev: 1447ft	
Climate variable: ppt	
Spatial resolution: 4km	
Period: 1994 - 2023	
Dataset: AN91m	
PRISM day definition: 24 hours ending at 1200 UTC on the day shown	
Grid Cell Interpolation: Off	
Time series generated: 2024-Nov-06	
Details: http://www.prism.oregonstate.edu/documents/PRISM_datasets.pdf	
Date	ppt (inches)
1994	58.61
1995	126.89
1996	117.58
1997	79.29
1998	122.34
1999	80.11
2000	72.39
2001	78.92
2002	91.46
2003	89.93
2004	72.85
2005	103.71
2006	99.69
2007	61.55
2008	61.89
2009	74.24
2010	126.01
2011	75.49
2012	123.51
2013	27.58
2014	84.31
2015	58.45
2016	119.71
2017	109.69
2018	70.83
2019	100.71
2020	42.91
2021	72.54
2022	48.61
2023	90.92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Wed Jan 22 11:23 AM
Fwd: Rainwater analysis - fuller:
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Camera: 503 m 40°13'33"N 123°54'56"W 303 m