

AGENDA
REPUBLICAN RIVER COMPACT
COMMISSIONERS' ANNUAL MEETING
July 26-27, 2005
Burlington, Colorado

July 26, 2005, 1:00 – 5:00 p.m.

Work Session

July 27, 2005, 9:00 a.m.

1. Introduction
2. Adoption of Agenda
3. Approval of Previous Annual Meeting Minutes
4. Report of Chairman
5. Commissioners' Reports
 - Kansas
 - Nebraska
6. Federal Reports
 - Bureau of Reclamation
 - Corps of Engineers
 - Geological Survey
7. Engineering Committee Report
8. Unfinished Business
9. New Business and Assignments to the Compact's Committees
10. Remarks from the Public
11. Future Meeting Arrangements
12. Adjournment

July 27, 2005

RRCA Commissioners' Annual Meeting

① ✓

② ✓

③ Approval of Minutes ✓✓

④ Chairman Report - Hal Simpson

Legislation - not much new

New Rep. River staff member + 1/2 FTE added

for checking field ops.

\$5.50/acre gw irrigated tax for reduction of C.V. programs

3000 acres reduced so far

CREP filed

Pioneer + Laird Ditch petition regarding designation status
& potential admin. for their senior rights

⑤ Kansas Commissioner's Report

No major water legislation affecting RRC

Looking to implement incentives to reduce water use
or implement stricter legal controls

Regional GW complaints are being developed + planned for
GMD 4 will implement a metering program over 4 years

Almena second year of no deliveries - paid by Parks Dept.

→ Prairie Dog Creek
KS Bostwick - northern water releases

Nebraska Commissioner's Report

Drought problems continue

1 of 11 canals got storage water

Dam Safety Program updated

LB962 was implemented, Task Force authorized - 2009

Need to study funding sources
Integrated Management Plans adopted

Meters required

Allocations 13.5, 13, 12/11

Over use penalties

Incentive programs - CREP + EQIP

31,600 acres

applied for
50 Par

10,000 acres

by 2006 we should have another 10,000 acres in EQIP

Brad Edgerton - Water Admin. Report

69,428 acres irrigated by districts

Ann Bleed will be Commissioner

Mike T. " " E.C. Member

} due to Roger's
resignation

Comment by D. Pope - We are hopeful you
can turn plans into action so
you don't overuse your allocation
so water distribution will be equitable

⑥ Federal Reports

USBR - Mark Swanda

New McCook Office

Mike Ryan has returned to G.P. region

See Handout

Jack Wengin - Lower Rep. Appraisal Study report

↳ Looked at irrigation benefits

Frenchman Valley Appraisal Study

Water 2025 challenge grant Program

Hal Simpson encouraged more cooperation with Pioneer Ditch

Patterson appreciated drought assistance money

Gordon Aycock - conservation committee report
non-bed res. + land tenure
(see notes from yesterday's meeting)

Corps of Engineers

Chris Lurzer

- ① KS River Basin Comprehensive Study -
Reconnaissance Level Study
Draft Authorization Language given to congress
- ② KS River Model - ongoing project by K.C. District
to evaluate hydro, operational & environmental + economic
impacts to + from lake system -
says this similar to the Missouri R. Model
18-24 months
- ③ Harlan County Lake - historic low at end of last year
Dam Safety Assurance Study - Tainter Gate + spillway
potential risks (similar gates to failed CA
Folsom Dam)

Flood Control Pool volume concerns - white caps blowing
against dam is a concern in "rare flood event" circumstances
Corps has (1960.5) a plan of operation that begins
+ will be different than in the past - public
meetings will be held

USGS Report -

Phil Soenkse

Gage to web presentation (NWIS)

Simpson -

North Fork should be up for gage control update if USGS is able too.

⑦ Eng. Cntr. Rpt. - see report - approved w/ complications
recommant 4 tasks to be assigned

① Users Manual for Compact Accounting

② 2005 acctg. April 15 - preliminary July Final

③ Scope of work related to recharge study

④ Draft rules/reg/procudure related to ~~the~~
interstate water transfers + compact accounting

Reports will be posted on Principia Mathematica site
www.republicanrivercompact.org

⑧ Unfinished Business

⑨ New Business

(a) 4 tasks assigned to Eng. Cntr.

(b) Principia Mathematica will continue support
up to \$12,000

(c) Letter to State Conservationist of each state
requesting assistance on the field study
of terraces as part of conservation study.

(d) Resolution to honor Roger Patterson

⑩ Public - no comment

⑪ Future Meeting Arrangement (Concordia
or Clay Center) July ? 2006

⑫ Adjourned

Republican River Basin streamflow gaging stations with records published by USGS for water year (WY) 2004

Station ID	Station Name	Telemetry	Annual mean flow (ft ³ /s) WY 2004	Period of record	Percent of long-term mean	Record high/low	WYs used for period of record	Remarks
USGS Compact stations supported by the National Streamflow Information Program (NSIP)								
06821500	Arikaree River at Haigler, Nebr	Satellite	0.49	18.3	2.7%		1932 - 2004	2nd lowest
06823000	N Fk Republican River at Colo-Nebr State Line	Satellite	25.6	43.2	59.3%		1935 - 2004	3rd lowest
06823500	Buffalo Creek near Haigler, Nebr	Satellite	2.81	6.51	43.2%		1941 - 2004	3rd lowest
06824000	Rock Creek at Parks, Nebr	Satellite	6.57	12.5	52.6%	Record low	1941 - 2004	
06827500	S Fk Republican River near Benkelman, Nebr	Satellite	0	38.5	0.0%	Record low	1938 - 2004	
06835500	Frenchman Creek at Culbertson, Nebr	Satellite	21.4	70.5	30.4%		1951 - 2004	2nd lowest; since Enders Reservoir
06836500	Driftwood Creek near McCook, Nebr	Satellite	1.61	9.02	17.8%		1947 - 2004	4th lowest
06838000	Red Willow Creek near Red Willow, Nebr	Satellite	4.75	12.7	37.4%	Record low	1962 - 2004	since Hugh Butler Lake
06847500	Sappa Creek near Stamford, Nebr (USACE funds DCP)	Satellite	0.12	42.8	0.3%	Record low	1946 - 2004	
06852500	Courtland Canal at Nebr-Kans State Line (USBR DCP)	Satellite	35.9	78.4	45.8%		1950 - 2004	6th lowest
USGS stations supported by USACE								
06837000	Republican River at McCook, Nebr	Satellite	19.0	137	13.9%		1955 - 2004	2nd lowest
06844500	Republican River near Orleans, Nebr	Satellite	9.44	242	3.9%	Record low	1948 - 2004	
06849500	Republican River below Harlan County Dam	Satellite	1.42	210	0.7%	Record low	1953 - 2004	
Nebr DNR stations with USGS/USACE support for DCP, review, and publishing								
06834000	Frenchman Creek at Pallsade, Nebr	Satellite	19.6	66.4	29.5%		1951 - 2004	2nd lowest; since Enders Reservoir
06843500	Republican River at Cambridge, Nebr	Satellite	41.0	225	18.2%	Record low	1950 - 2004	since Harry Strunk Lake
06853020	Republican River at Guide Rock, Nebr	Satellite	20.9	280	7.5%	Record low	1951 - 2004	
USGS stations with support from USACE and Nebr DNR								
06828500	Republican River at Stratton, Nebr	Satellite	12.1	104	11.6%	Record low	1951 - 2004	

Indicates less than previous WY

RECLAMATION

Managing Water in the West

**OPERATION
AND
MAINTENANCE
REPORT**

**REPUBLICAN RIVER
COMPACT MEETING**

BURLINGTON, COLORADO



**U.S. Department of the Interior
Bureau of Reclamation
Great Plains Region
Nebraska-Kansas Area Office**

July 27, 2005

REPUBLICAN RIVER COMPACT MEETING

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2004 Operations

As shown on the attached Table 1, precipitation in the Republican River Basin varied from 90 percent of normal at Bonny Dam to 142 percent of normal at Trenton Dam. Total precipitation at Reclamation dams ranged from 15.60 inches at Bonny Dam to 30.73 inches at Lovewell Dam.

Inflows varied from 18 percent of the most probable forecast at Harlan County Lake to 81 percent of the most probable forecast at Harry Strunk Lake. Inflows into Harlan County Lake totaled 25,099 AF while inflows at Lovewell Reservoir totaled 30,821 AF.

Average farm delivery values for each irrigated acre were as follows:

<u>District</u>	<u>Farm Delivery</u>
Frenchman Valley	3.2 inches
H&RW	0.0 inches
Frenchman-Cambridge	
- Meeker-Driftwood, Bartley, Red Willow	0.0 inches
- Cambridge Canal	7.8 inches
Almena	0.0 inches
Bostwick in NE	
- Franklin, Franklin Pump, Naponee, Courtland	0.0 inches
- Superior Canal	2.9 inches
Kansas-Bostwick	
- Above Lovewell	0.1 inches
- Below Lovewell	6.4 inches

2004 Operation Notes

Bonny Reservoir--Started the year 15.1 feet below the top of conservation. Annual computed inflow of 5,390 AF was the lowest ever recorded at this site. Below normal inflows were recorded during every month of the year. Due to the low water supply, releases were not made to Hale Ditch (third consecutive year). The end of year storage was at an historical low, 17.6 feet below the top of active conservation.

Enders Reservoir--Started the year 26.5 feet below the top of conservation. Annual computed inflow of 4,876 AF was the lowest ever recorded. Seven of the twelve months recorded record low inflows. Storage water was not released from Enders Reservoir for either Frenchman Valley or H&RW irrigation districts. This was the third consecutive year that H&RW Irrigation District did not divert water due to the extremely low water supply. Frenchman Valley Irrigation District diverted water under their natural flow water right. The end of the year storage was 26.0 feet below the top of conservation.

Swanson, Hugh Butler, and Harry Strunk Lakes—Swanson, Hugh Butler and Harry Strunk lakes started the year 24.2 feet, 15.9 feet and 9.5 feet below the top of conservation. Annual computed inflows were the lowest ever recorded at Swanson and Harry Strunk lakes and the second lowest at Hugh Butler Lake. Harry Strunk Lake did not fill for only the fourth time in 54 years. Due to the low water supply, releases were not made from Swanson or Hugh Butler lakes for diversion into Meeker-Driftwood, Bartley and Red Willow canals (second consecutive year). At the end of the year, Swanson Lake was 22.5 feet below the top of conservation, Hugh Butler Lake was 13.2 feet below and Harry Strunk Lake was 9.8 feet below.

Keith Sebelius Lake—The lake elevation at the first of the year was 2287.46 feet (16.9 feet below full). The annual inflow of 3,704 AF was between the dry and normal-year forecasts. The reservoir level peaked at elevation 2287.99 feet on April 15th. Due to the low water supply, irrigation releases were not made from the lake. In May of 2004, the Kansas Department of Wildlife and Parks and the Almena Irrigation District entered into a Memorandum of Agreement (MOA) that provided for no irrigation releases during 2004 and 2005 when the reservoir level was below 2288.0 feet. The reservoir ended the year 17.9 feet below conservation.

Harlan County Lake—The lake elevation at the beginning of 2004 was at an historical low level, 19.4 feet below the top of conservation. Inflow for the year totaled 25,099 AF, the lowest ever recorded. There was no available irrigation supply from Harlan County Lake in 2004 as the lake level never exceeded the 1927.00 shutoff elevation. “Water-Short Year Administration” was in effect. This was the first time since deliveries began in the early 50’s that irrigation releases were not made from the lake. The lake level at the end of the year reached a new historical low level of 1925.44 feet (20.3 feet below full).

Lovewell Reservoir—The reservoir level was only 2.6 feet below the top of conservation at the beginning of the year. Inflows from White Rock Creek and diversion of Republican River flows via Courtland Canal combined to fill the reservoir conservation pool (elevation 1582.6 feet) on March 29th. Following approval from the Corps of Engineers, the reservoir was allowed to fill to elevation 1584.20 feet on May 17th. Runoff from storms in early July resulted in a peak elevation of 1584.7 feet on July 10th. Irrigation demands reduced the pool elevation to 1573.0 feet on August 29th. The reservoir level was maintained below the spillway crest (elevation 1573.0 feet) until mid December while a construction contract to rehabilitate the spillway and outlet works gates was completed. Diversions of Republican River flows into Lovewell Reservoir resumed after completion of the contract. The water surface elevation at the end of the year was 8.3 feet below the top of conservation at 1574.30 feet.

Current Operations

Table 2 shows a summary of data for the first six months of 2005.

Bonny Reservoir – Currently 17.3 feet from full. Reservoir level is 1.6 feet below last year at this

time. Reservoir storage continues to decline despite no releases being made since 2001.

Swanson Lake – Currently 19.1 feet from full. Inflows for 2005 are only 39% of most probable. Lake level is 2.8 feet above last year at this time. Frenchman-Cambridge Irrigation District is not irrigating from Swanson Lake for the third consecutive year due to the low water supply.

Enders Reservoir - Currently 24.9 feet from full. Inflows for 2005 are only 39% of most probable. Reservoir level is only .9 foot above last year at this time. Due to the water supply shortage, H&RW Irrigation District is not irrigating for the fourth year in a row. This is second consecutive year that Frenchman-Valley Irrigation District has not received storage water for irrigation.

Hugh Butler Lake – Currently 11.0 feet from full. Lake level is 2.1 feet above last year at this time. Frenchman-Cambridge Irrigation District is not irrigating from Hugh Butler Lake for the third consecutive year due to the low water supply.

Harry Strunk Lake – Currently 3.7 feet below the top of conservation. Lake filled on June 7th (elevation 2366.1 feet). Irrigation releases began on June 27th. Frenchman-Cambridge Irrigation District expects to deliver 8 inches to acres served by Cambridge Canal.

Keith Sebelius Lake – Currently 17.4 feet below full. Lake level is .3 foot below last year at this time. This is second consecutive year that Almena Irrigation District has not requested release for irrigation due to the short water supply.

Harlan County Lake – Currently 16.1 feet below full. Lake level is 3.0 feet above last year at this time. Inflow for first six months of 2005 is greater than 2003 and 2004 annual inflow, but still only 54% of most probable. The available irrigation supply from Harlan County Lake on June 30th was only 14,100 acre-feet, indicating that “Water-Short Year Administration” would be in effect. At this time, neither Bostwick Irrigation District in Nebraska or Kansas Bostwick Irrigation District anticipates a release of irrigation water from Harlan County Lake. This would be the second consecutive year that irrigation releases have not been made from Harlan County Lake.

Lovewell Reservoir – Currently 3.6 feet below the top of conservation pool. Lake was filled on May 13th by diverting Republican River flows via Courtland Canal. Corps of Engineers allowed storing 10 percent in flood pool (elevation 1584.2 feet) just prior to irrigation season. Irrigation releases began on June 20th. Kansas Bostwick Irrigation District expects to deliver 6 inches below Lovewell.

Other Items

Inspections

Comprehensive Facility Reviews (CFR) were conducted at Enders, Trenton, Lovewell, Box Butte and Glen Elder dams in 2004. Annual inspections were conducted at the remaining project dams in 2004.

Safety of Dams

Virginia Smith Dam—In 2002 the drain system under the river outlet works structure was determined to have failed. This system was grouted shut in the spring of 2003. A

- similar drainage system is located beneath the spillway outlet structure. A risk analysis completed in September 2003 recommended that the drain system under the spillway basin be grouted. Grouting of the drains is expected to begin this September.

Norton Dam—At the present time there are concerns related to seepage through the left abutment foundation. A final issue evaluation report of findings in 2003 concluded that action should be taken to reduce risk. Topographic surveys and additional instrumentation were installed near the outlet works in 2004. Plans and specifications are scheduled to be completed in 2005.

Enders Dam – A small depression was discovered near the outlet works stilling basin in August of 2004. Reclamation has installed instrumentation in the area to collect additional data. Investigations and additional analysis are scheduled in 2005.

Emergency Management Operations

Orientation Meetings are held annually to discuss the Emergency Action Plan (EAP) for all NKAO dams. Federal, state, county and local organizations that would be impacted by an emergency at NKAO dams are invited to attend. Radios which contact the downstream 24-hour warning points are tested monthly.

Tabletop exercises were held for the Emergency Action Plans (EAP) of Bonny, Enders, Lovewell, Kirwin and Webster dams in 2004.

Standing Operating Procedures

The Standing Operating Procedures (SOP) for Box Butte, Red Willow, Medicine Creek and Webster dams were republished in 2004. All the SOP's for the 15 dams are scheduled to be republished by the end of 2005.

Sedimentation

A sedimentation re-survey was done for Merritt Reservoir in 2003 with new area-capacity data available in January 2005.

Water Conservation

Increased emphasis is being placed on water conservation by Reclamation. A full time employee is available in the Area Office to work with the irrigation districts on their water conservation efforts.

Security

Security at all Reclamation dams has increased since September 11, 2001. We have installed or are installing security fencing around the critical facilities at nearly all of the NKAO dams and maintaining close communication with local law enforcement at all sites. A threat assessment leading to a risk analysis is underway on project dams. Once the risk analyses are complete, we will make structural and non-structural changes to ensure a proper level of security and safety.

Hydromet

Data collection equipment (DCPs) has been installed at all canal sites in the basin. In cooperation with Nebraska Department of Natural Resources, five DCPs were installed

in 2002 at key locations between Harlan County Dam and the Superior-Courtland Diversion Dam to improve stream flow monitoring and enhance project operations. Additional instrumentation equipment was added at the Superior-Courtland Diversion Dam in the spring of 2003 to monitor river flows passing through the sluice gates as well as the river flows passing over the control weir. Remote monitoring equipment has also been installed at several canal wasteways within the Basin.

Historical data collected by the DCPs as well as real time data during the operation season are available by accessing Reclamation Hydromet Data System through the Internet site (www.usbr.gov/gp).

TABLE 1
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows
CALENDAR YEAR 2004

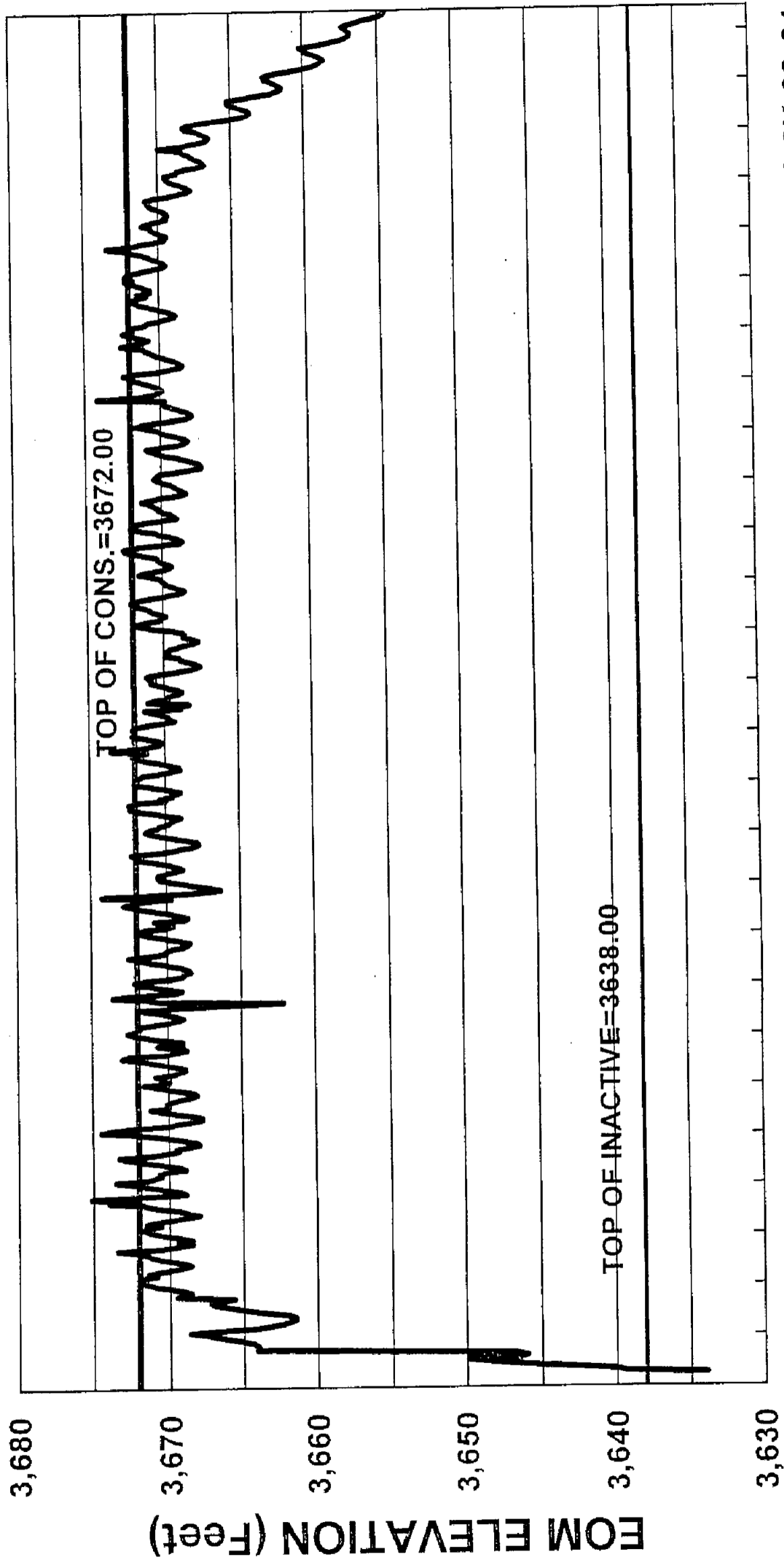
Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-03		Gain or Loss AF	Maximum Storage		Minimum Storage		Total Inflow AF	Percent Of Most Probable %
			AF	AF		Content	Date	Content	Date		
Box Butte	16.15	94	6,895	7,768	873	11,893	MAY 19	3,423	AUG 31	12,527	75
Merritt	24.21	120	68,831	69,110	279	74,781	JUN 21	29,330	SEP 15	180,572	96
Calamus	20.86	88	87,654	100,649	12,995	129,667	MAY 23	67,235	SEP 21	249,768	94
Davis Creek	20.58	87	10,111	9,345	-766	31,123	JUN 28	7,423	SEP 10	51,783	107
Bonny	15.60	90	16,726	13,754	-2,972	17,318	MAY 6	13,719	DEC 23	5,390	39
Enders	22.77	120	11,267	11,632	365	12,175	MAY 1	11,210	SEP 21	4,876	28
Swanson	28.43	142	26,599	30,489	3,890	32,168	JUL 26	26,577	JAN 2	12,714	27
Hugh Butler	21.70	110	15,587	18,387	2,800	18,571	AUG 2	15,607	JAN 1	9,632	61
Harry Strunk	24.66	120	21,540	21,177	-363	31,860	JUN 20	13,755	SEP 3	28,707	81
Keith Sebelius	23.11	93	9,172	8,247	-925	9,649	APR 15	8,107	NOV 8	3,704	49
Harlan County	22.83	100	113,346	107,050	-6,296	117,883	MAY 23	107,050	DEC 26	25,099	18
Lovewell	30.73	113	28,358	15,904	-12,454	42,173	JUL 10	12,512	NOV 15	30,821	54
Kirwin	21.51	92	24,575	14,414	-10,161	25,264	MAR 9	14,400	NOV 10	4,009	18
Webster	21.47	91	19,143	10,153	-8,990	19,437	MAR 5	10,113	OCT 6	4,033	22
Waconda	24.41	95	168,625	159,801	-8,824	179,256	JUL 31	159,504	DEC 25	49,217	33
Cedar Bluff	19.51	92	130,225	117,211	-13,014	130,282	MAR 1	117,211	DEC 27	10,496	81

TABLE 2
NEBRASKA-KANSAS AREA OFFICE
Summary of Precipitation, Reservoir Storage and Inflows

JANUARY - JUNE 2005

Reservoir	Precip.	Percent Of Average %	Storage	Storage	Gain or Loss	Inflow	Percent Of Most Probable %
	Inches		6/30/2004 AF	6/30/2005 AF		AF	
Bonny	9.13	100	16,171	14,746	(1,425)	5,183	58
Enders	14.64	145	11,868	12,918	1,050	3,414	39
Swanson	9.88	94	29,908	39,770	9,862	13,748	39
Hugh Butler	12.24	123	17,191	21,440	4,249	6,345	72
Harry Strunk	11.47	106	29,099	36,056	6,957	19,139	96
Keith Sebelius	13.89	110	8,953	9,023	70	2,709	60
Harlan County	13.42	116	114,139	141,112	26,973	44,431	54
Lovewell	11.86	90	39,138	36,965	(2,173)	29,292	76
Kirwin	16.30	135	23,775	18,141	(5,634)	6,154	45
Webster	11.72	98	17,937	12,033	(5,904)	4,411	37
Waconda	12.49	98	163,809	172,497	8,688	38,984	46
Cedar Bluff	9.96	94	125,727	112,731	(12,996)	5,130	77

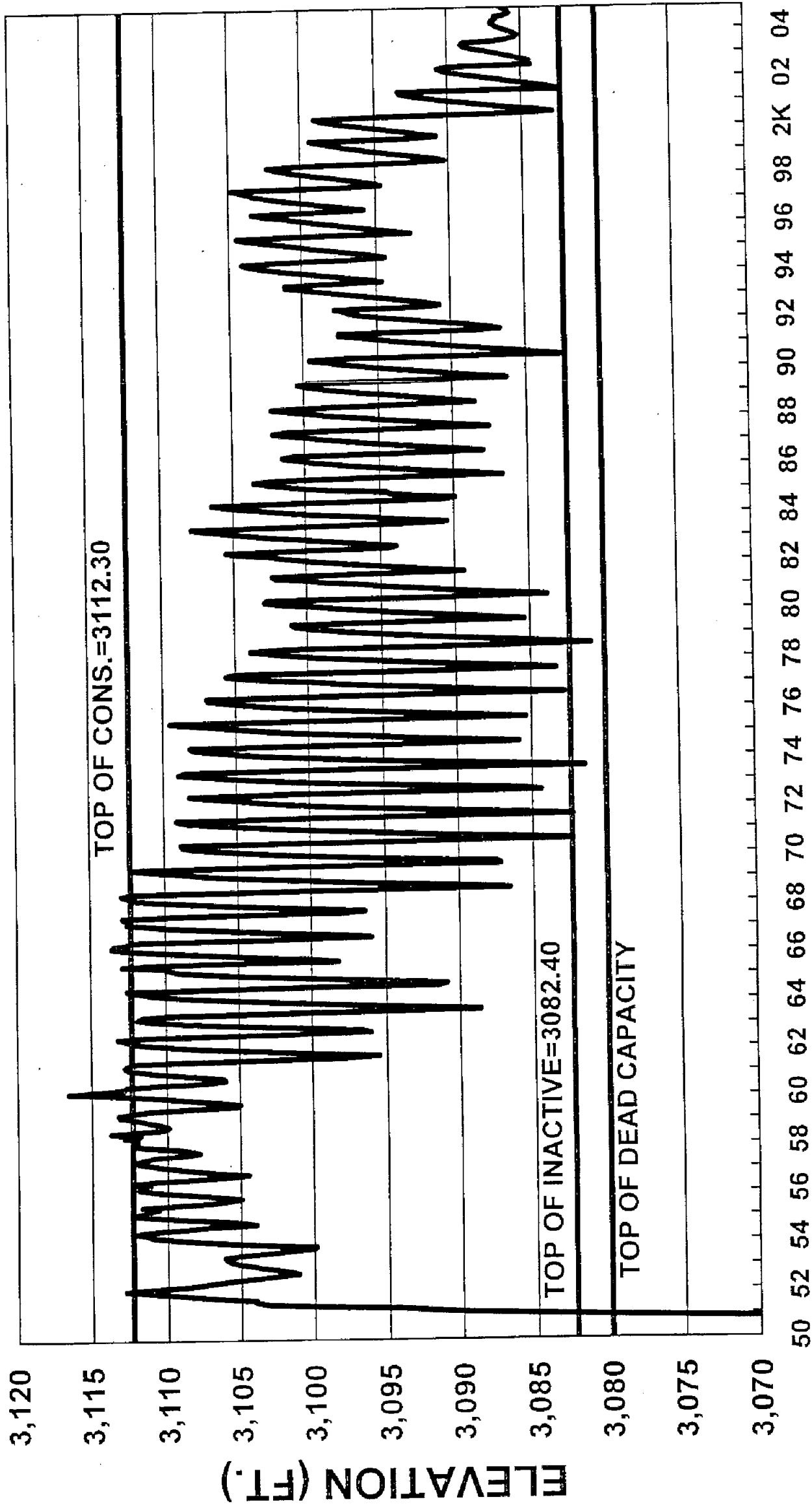
**BONNY RESERVOIR
END OF MONTH ELEVATION**



50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 2K 02 04

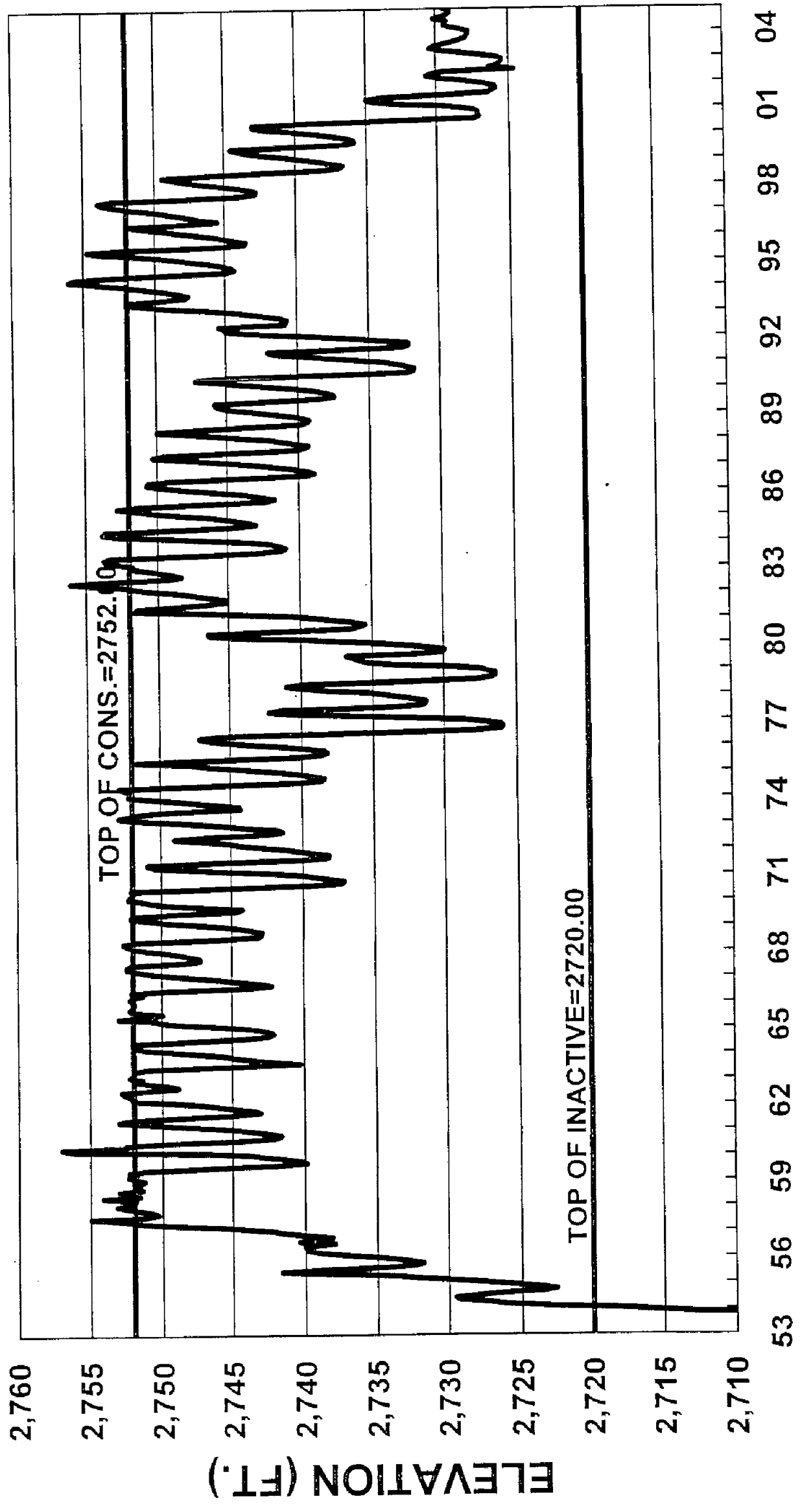
JUL 1950 THROUGH DEC 2004

**ENDERS RESERVOIR
END OF MONTH ELEVATION**



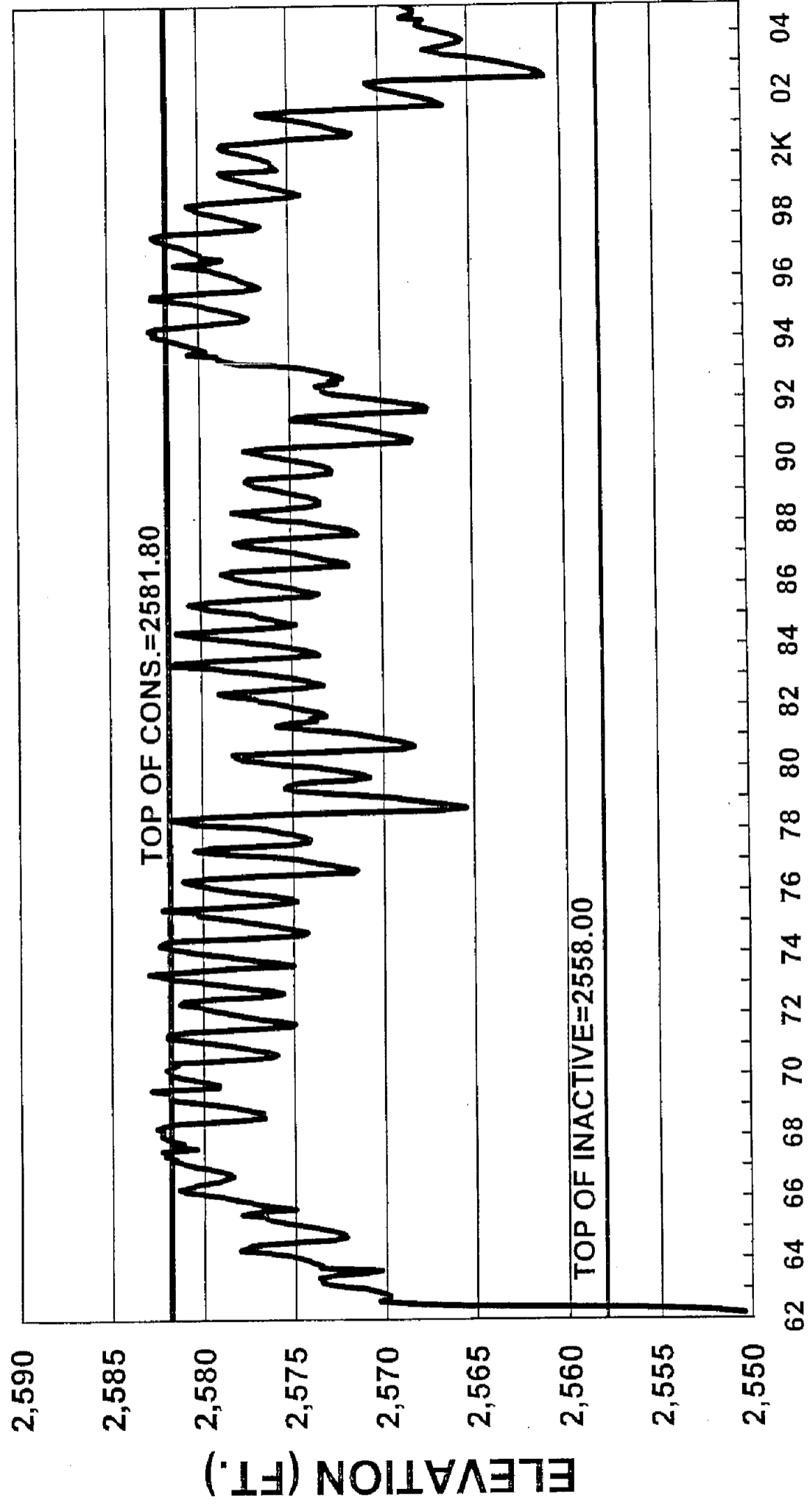
OCT 1950 THROUGH DEC 2004

**SWANSON LAKE
END OF MONTH ELEVATION**



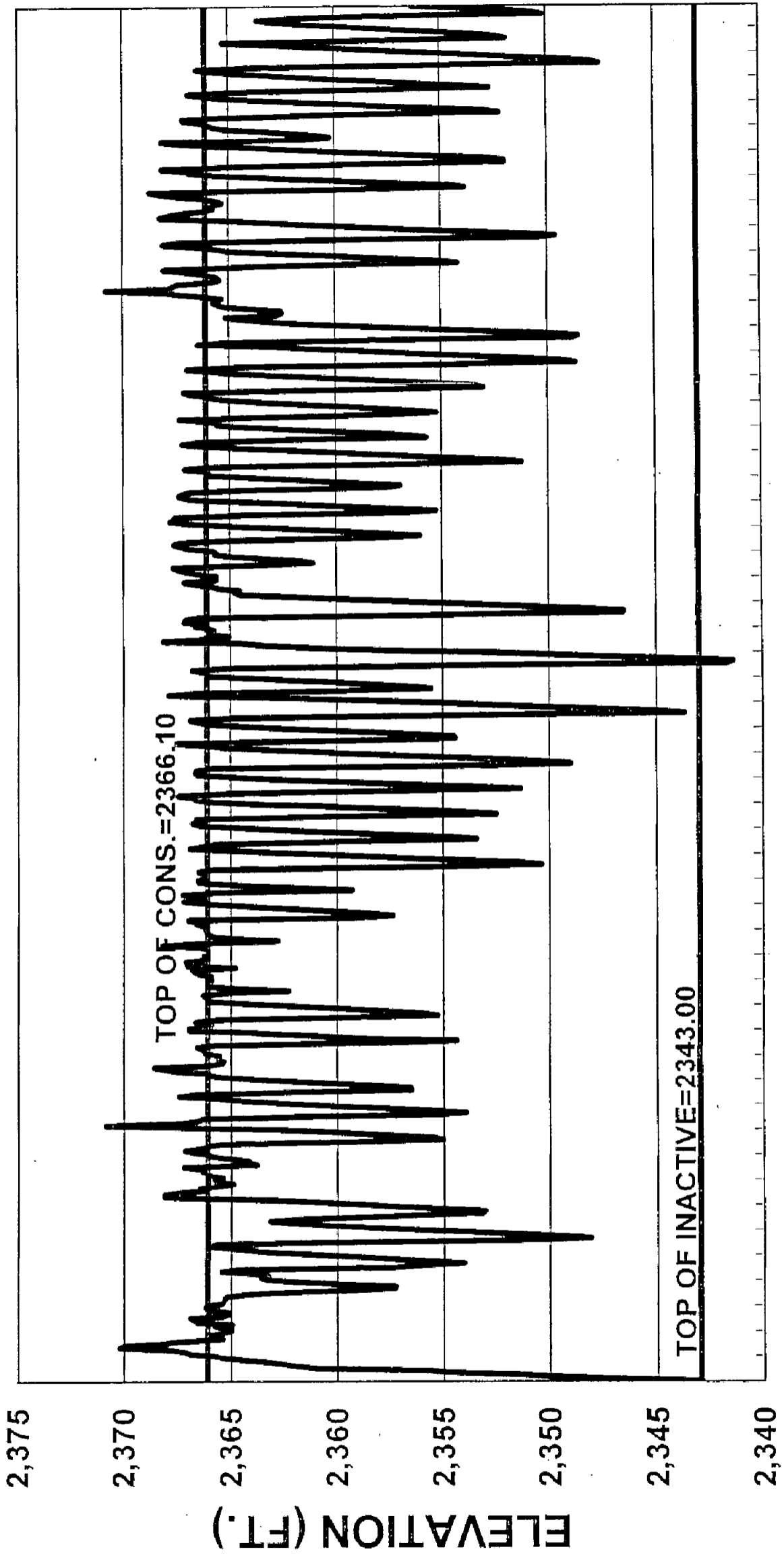
NOV 1953 THROUGH DEC 2004

**HUGH BUTLER LAKE
END OF MONTH ELEVATION**



MAR 1962 THROUGH DEC 2004

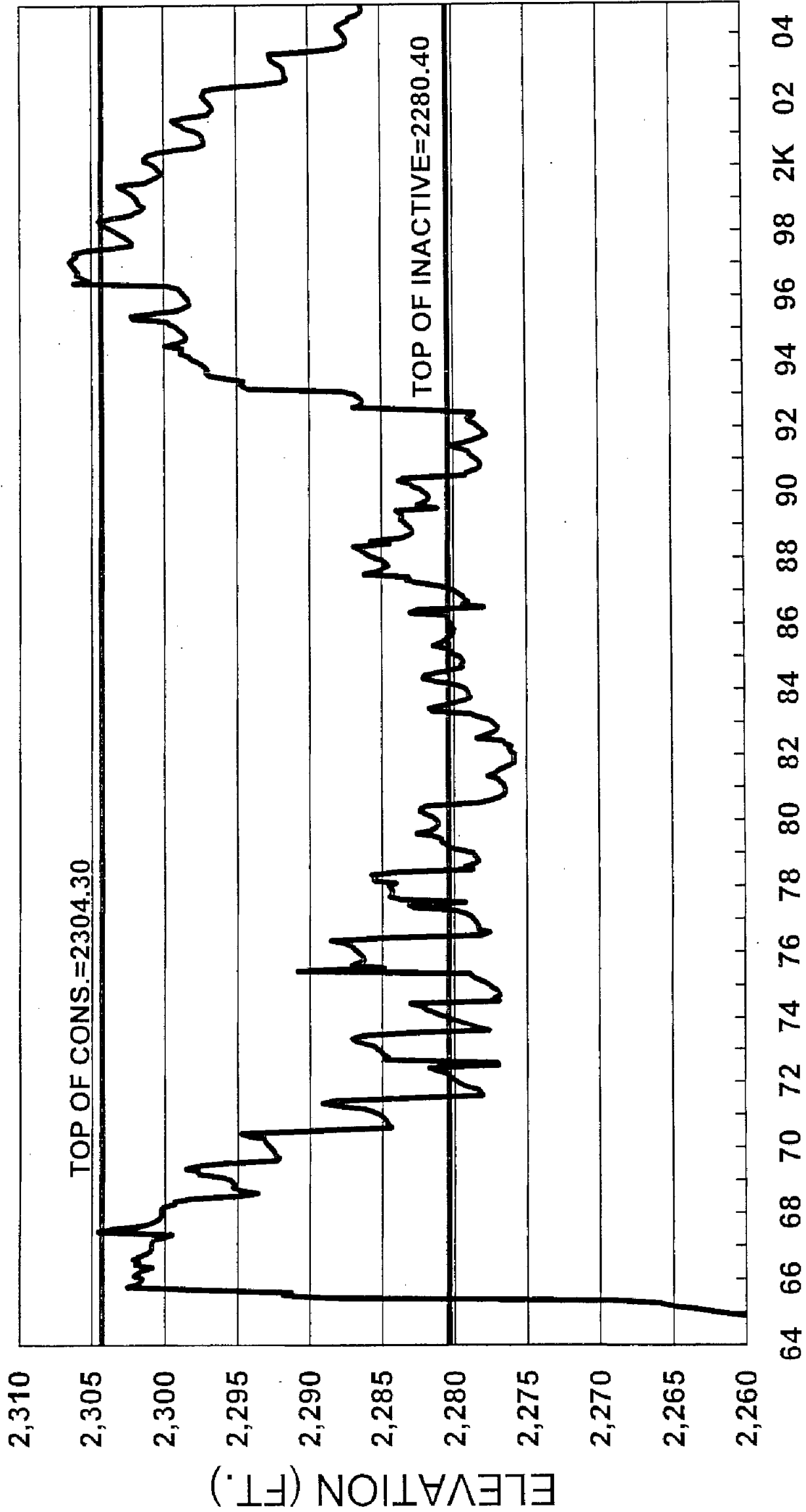
**HARRY STRUNK LAKE
END OF MONTH ELEVATION**



50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 2K 02 04

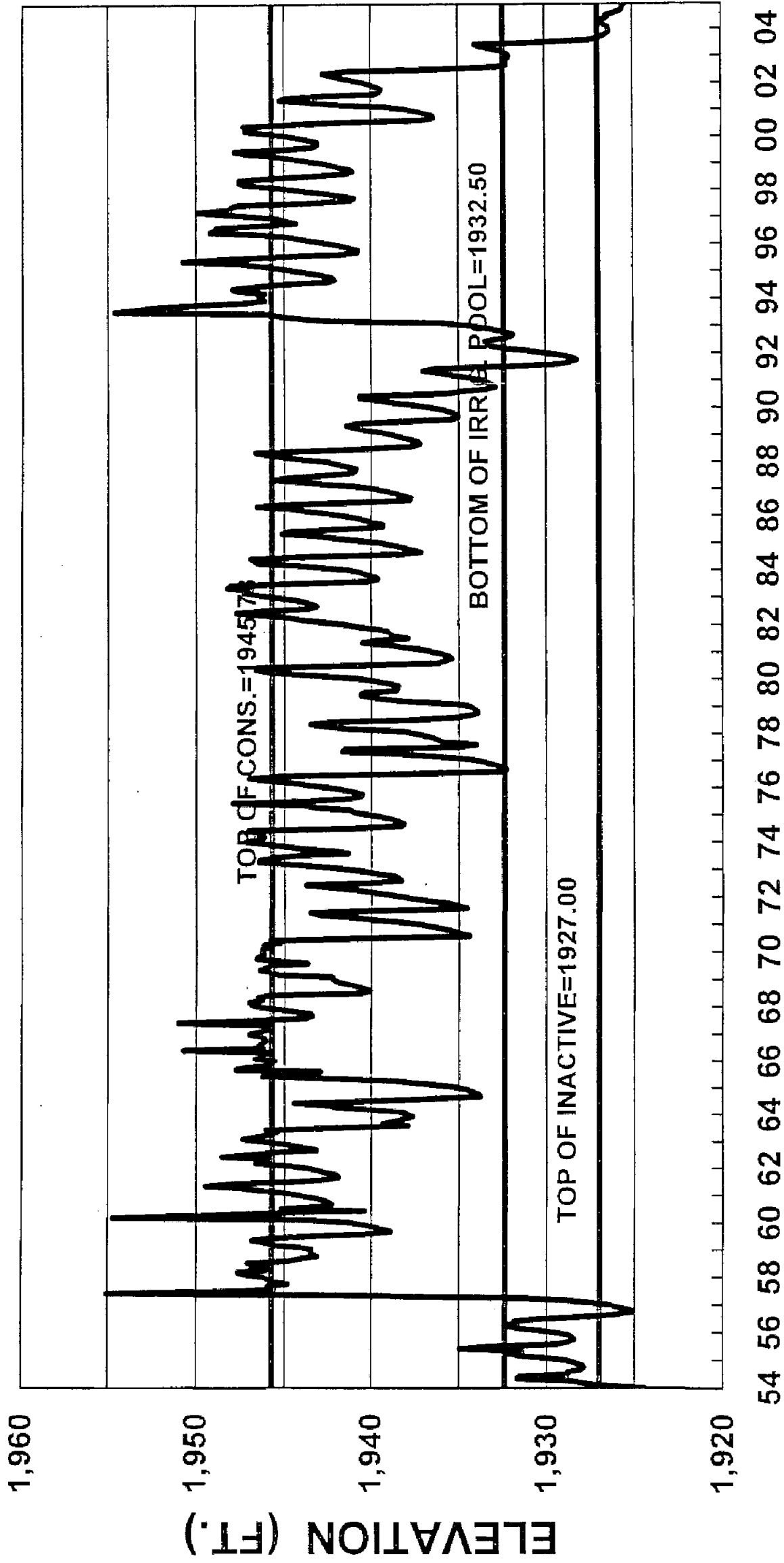
JAN 1950 THROUGH DEC 2004

**KEITH SEBELIUS LAKE
END OF MONTH ELEVATION**



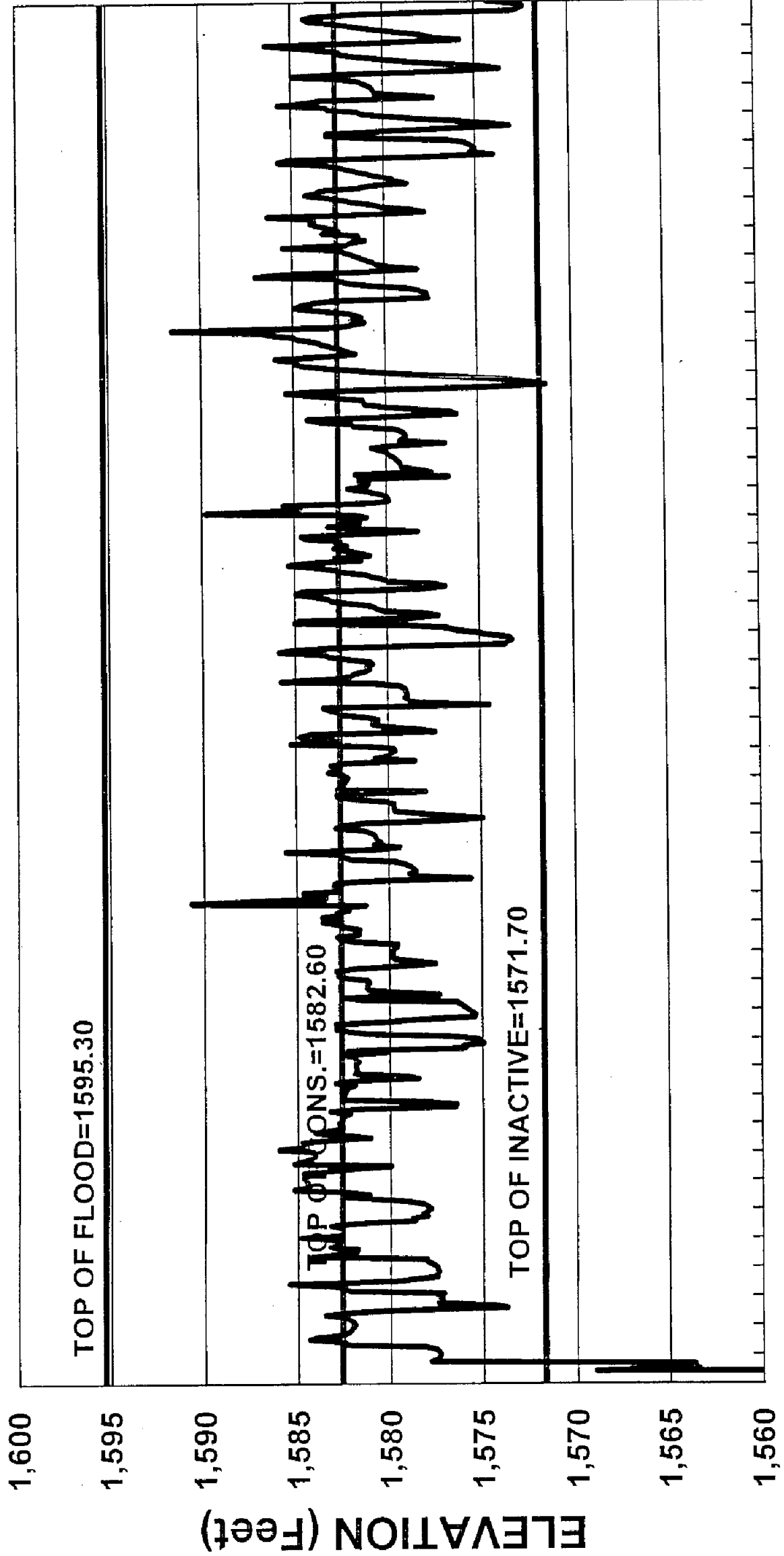
OCT 1964 THROUGH DEC 2004

**HARLAN COUNTY LAKE
END OF MONTH ELEVATION**



JAN 1954 - DEC 2004

**LOVEWELL RESERVOIR
END OF MONTH ELEVATION**



57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 01 03

JUN 1957 THROUGH DEC 2004