ASSESSMENT AND RECOMMENDATIONS

General Assessment of Vigor, Trends, and Status: My assessment of the Idaho populations is similar to the last couple of years, that is, all Idaho populations have existing and potential threats and are vulnerable. Flow regime alteration by Palisades Dam represents the most significant long-term threat to species viability in the Snake River metapopulation. Impacts from cattle grazing are much reduced this year. Management actions implemented by the BLM and Forest Service in 1997 and 1998 have greatly reduced the threat of cattle grazing.

Recommendation to the U.S. Fish and Wildlife Service: No change from previous report.

Recommendations to the Other Federal Agencies: No change from previous report.

Recommendations to the Heritage Network: No change from previous report.

Recommendations Regarding Present or Anticipated Activities: No change from previous report.

CONSERVATION WORK FOR 2000

For the fifth year, surveys and research oriented toward Ute ladies tresses conservation will continue along the Snake River in 2000, funded by the BLM and Targhee National Forest. We will continue our collaboration with Mike Merigliano from the University of Montana (UM). Following is a list of tasks that will be accomplished, along with the party primarily responsible for carrying out the task (CDC or UM).

1. **CDC**. Continue to monitor population levels and habitat conditions of all known populations and compare with 1996-1999 data. Compile 2000 population and habitat data into the centralized databases at the CDC. Produce and distribute an annual report of occurrences soon after the field season.

2. **CDC**. Pay special attention to the *Spiranthes* at the Squaw Creek Islands occurrence. Hopefully, make decision on whether to continue tracking this population as *S. diluvialis*.

3. **CDC**. Request Colter's Hayden survey specimen of *S. romanzoffiana* from the Snake River and verify identification.

4. **CDC**. Dig soil pits at the two man-made sites, Annis Island (006) and Warm Springs Bottom (003), and compare with the soils at the natural flood plain sites described in this report. The ages of the disturbances that created these sites is known (see Moseley 1998b).

5. **CDC**. Reread the permanent monitoring transect and retake photos at the upper end of the Warm Springs Bottom occurrence.

6. **UM**. Determine the age of the alluvial substrate supporting occupied Ute ladies tresses habitat. This will be inferred from the flood plain mapping conducted by Merigliano (1996) above Heise, supplemented with additional air photo interpretation below Heise, and measurements directly from ladies tresses habitat using decay rates for an isotope of lead. Approximately $3,000 will be available for Pb^{210} analysis of the habitat substrate cores.

7. **UM**. Summarize the physical characteristics of the river and its flood plain in relation to the primary succession of habitats now occupied by Ute ladies tresses. Make recommendations as to whether the model developed for the cottonwood forest under current river operations is applicable to the long-term conservation of Ute ladies tresses. That is, will post-Palisades changes in flood plain morphology support suitable habitat patches for the Snake River metapopulation in space in time?

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Merigliano, M.F. 1994. A natural history of the South Fork Snake River, eastern Idaho, emphasizing geomorphology, hydrology, and vegetation. M.S. Thesis. University of Montana, Missoula, MT. 278 p.

_____. 1996. Ecology and management of the South Fork Snake River cottonwood forest. Technical Bulletin 96-9. Idaho State Office, Bureau of Land Management, Boise, ID. 79 p., plus plates.

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Moseley, R.K. 1997. Ute ladies tresses (*Spiranthes diluvialis*): preliminary status in Idaho. Unpublished report on file at the Conservation Data Center, Idaho Department of Fish and Game, Boise, ID. 33 p., plus appendices.

_____. 1998a. Ute ladies tresses (*Spiranthes diluvialis*) in Idaho: 1997 status report. Unpublished report on file at the Conservation Data Center, Idaho Department of Fish and Game, Boise, ID. 35 p.

_____.1998b. Ute ladies tresses (*Spiranthes diluvialis*) in Idaho: 1998 status report. Unpublished report on file at the Conservation Data Center, Idaho Department of Fish and Game, Boise, ID. 23 p., plus appendix.

_____.1999. 1999 Ute ladies tresses occurrences in Idaho. On file at the Conservation Data Center, Idaho Department of Fish and Game, Boise, ID.

APPENDIX 1

Soil pit information from Ute ladies tresses populations
at 18 occurrences along the Snake River

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Notes on the tables:

Soil Pit - "Surveyed" pits refer to those in Appendix 2, where flood plain cross-sections have been surveyed and diagramed. These are arranged by occurrence from downstream to upstream. "Waiting for data" pits refer to those that have had the cross-section surveyed, but still waiting for survey data from Mike Williamson, University of Montana. "Unsurveyed" means that a soil pit was dug, but no flood plain cross-section was surveyed.

Numbered columns 1-6 - These represent the visible strata in the pit, i.e., layers. Each layer has a dominant textural class and depth. Depth is in centimeters, and textural class codes are as follows:

o = organic
ns = 1997 sand deposition
s = sand
ls = loamy sand (darker; some organic matter)
c = cobble/pebble/sand mix (mostly cobbles)
m = mottles (used as modifier for above classes)

Community Type - Community type containing Ute ladies tresses where pit was dug. Codes as follows:

Eqva - *Equisetum variegatum*
Cala - *Carex lanuginosa*
Elro - *Eleocharis rostellata*
Elco - *Elaeagnus commutata*
Saex/MG - *Salix exigua*/Mesic graminoid

Plot Number - If applicable, number of plot used to collect plant composition and structure information in 1998 (Moseley 1998b) and 1999 (see text).

Soil Pit	1		2		3		4		5		6		Community Type	Plot #
	test.	depth	test.	depth	test.	depth	test.	depth	test.	depth	test.	depth		
surveyed														
007 #1	Is-m	5	o	7	c	47+							Eqva	98SD07A
007 #2	ns	3	ls	7	c	71+							Elco	
005	ns	4	ls	9	s-m	36	c	72+					Eqva	98SD05A
001 #1	ls	10	c	45+									Cala	99SD01A
001 #2	ls	27	s	41	c	46+							Elro	99SD01B
009	s	19	c	69+									Elco	
002 outer	ns	4	ls	30	c	77+							Saex/MG	98SD02B
002 inner	s	102	c	110+									Elco	98SD02A
010 outer	ls	32	c	67+									Elco	
010 inner	s	60	c	85+									Elco	
003 #1	ns	4	ls	14	c-m	44+							Eqva	98SD03B
003 #2	s	28	c	80+									Elco	
003	ns	18	ls	30	c	80+							Elco	98SD03C
011	ns	8	ls	14	s	22	c	68+					Elco	
013	ls	11	c	61+									Saex/MG	
021	ns	6	ls	19	c	38+							Elco	
016 #1	s	40	s-m	62	c	67+							Eqva	
016 #2	ns	6	ls	52	c	104+							Elco	98SD16A
019	o	7	s	17	c	52+							Elco	
004	ns	5	ls	19	s	45	c	55	s-m	74	c	75+	Elco	
020	ls	15	c	45+									Saex/MG	98SD20A
waiting for data														
022	c-m	25+											Eqva	99SD22A
014	ns	7	ls	20	c	77+							Elco	
017	ls	10	c	75+									Elco	98SD17A
unsurveyed														
018	ls	17	s	23	c	63+							Elco	

Soil Pit	Water Table Depth (cm)	River Discharge at Heise Gage (cfs)	Date (1999)
surveyed			
007 #1	40	9,400	8-27
007 #2	64	9,400	8-27
005	?	5,100	10-12
001 #1	40	9,400	8-27
001 #2	13	9,400	8-27
009	?	8,400	9-16
002 outer	87	8,400	9-16
002 inner	110	8,400	9-16
010 outer	?	8,400	9-13
010 inner	?	8,400	9-13
003 #1	41	8,400	9-16
003 #2	87	8,400	9-16
003	?	8,400	9-16
011	?	9,700	8-30
013	69	9,700	8-30
021	36	7,500	9-29
016 #1	67	9,700	8-30
016 #2	?	4,800	10-13
019	43	8,400	9-14
004	81	8,400	9-27
020	?	8,400	9-14
waiting for data			
022	25	9,700	8-30
014	75	9,700	8-30
017	75	9,700	8-30
unsurveyed			
018	60	8,400	9-13

APPENDIX 2

Diagrams for 17 flood plain cross-sections through Ute ladies tresses habitat along the Snake River. Location of ladies tresses populations is indicated by the soil pit(s) in each diagram.

Notes on the diagrams:

Soil Pits - Visible strata in the pit, i.e., layers, are delineated. See Appendix 1 for further information. Textural class codes are as follows:

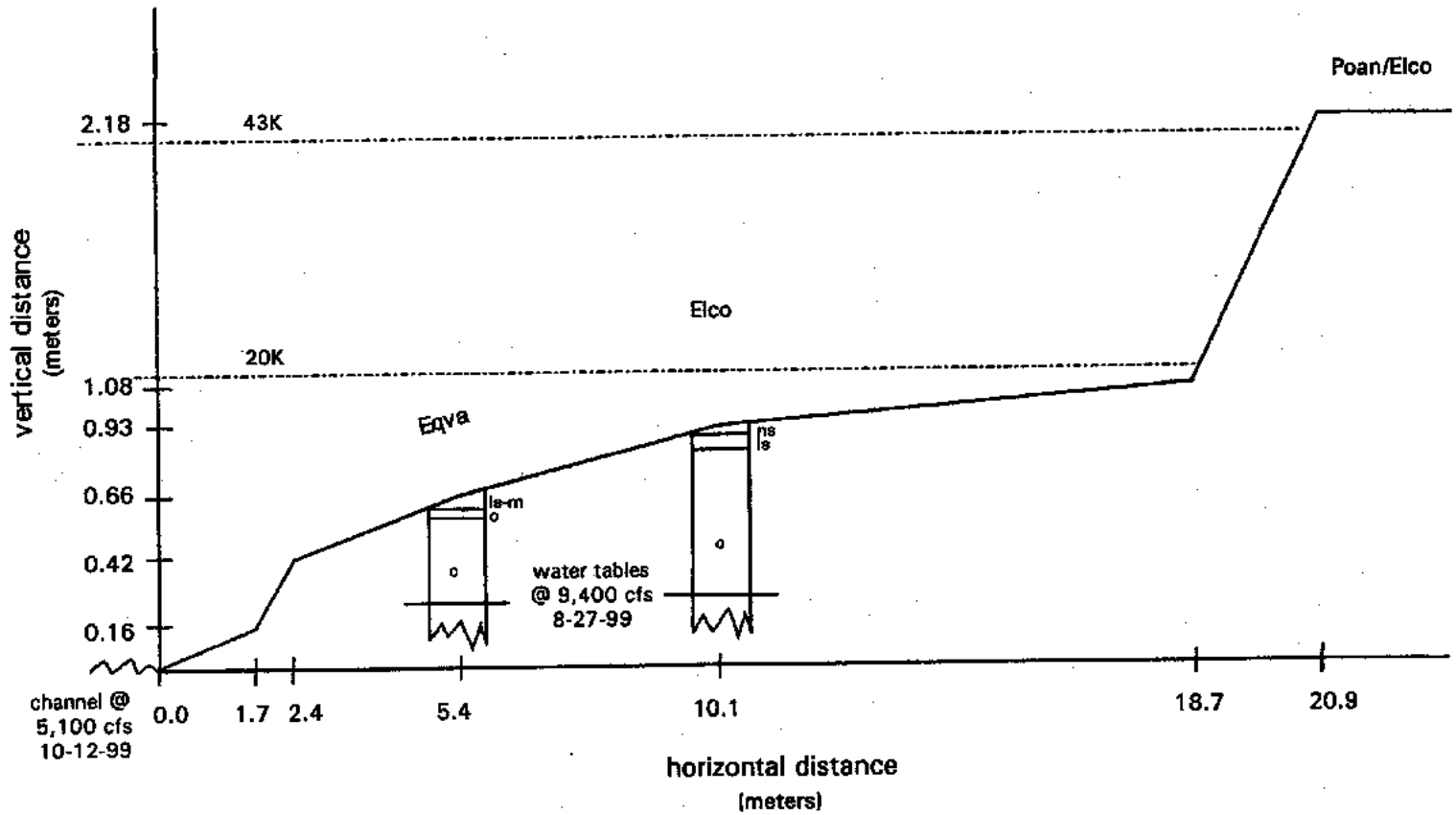
o = organic
ns = 1997 sand deposition
s = sand
ls = loamy sand (darker; some organic matter)
c = cobble/pebble/sand mix (mostly cobbles)
m = mottles (used as modifier for above classes)

Community Type - Important community types along the cross-sections (see Jankovsky-Jones et al. 1999 for classification references). Codes as follows:

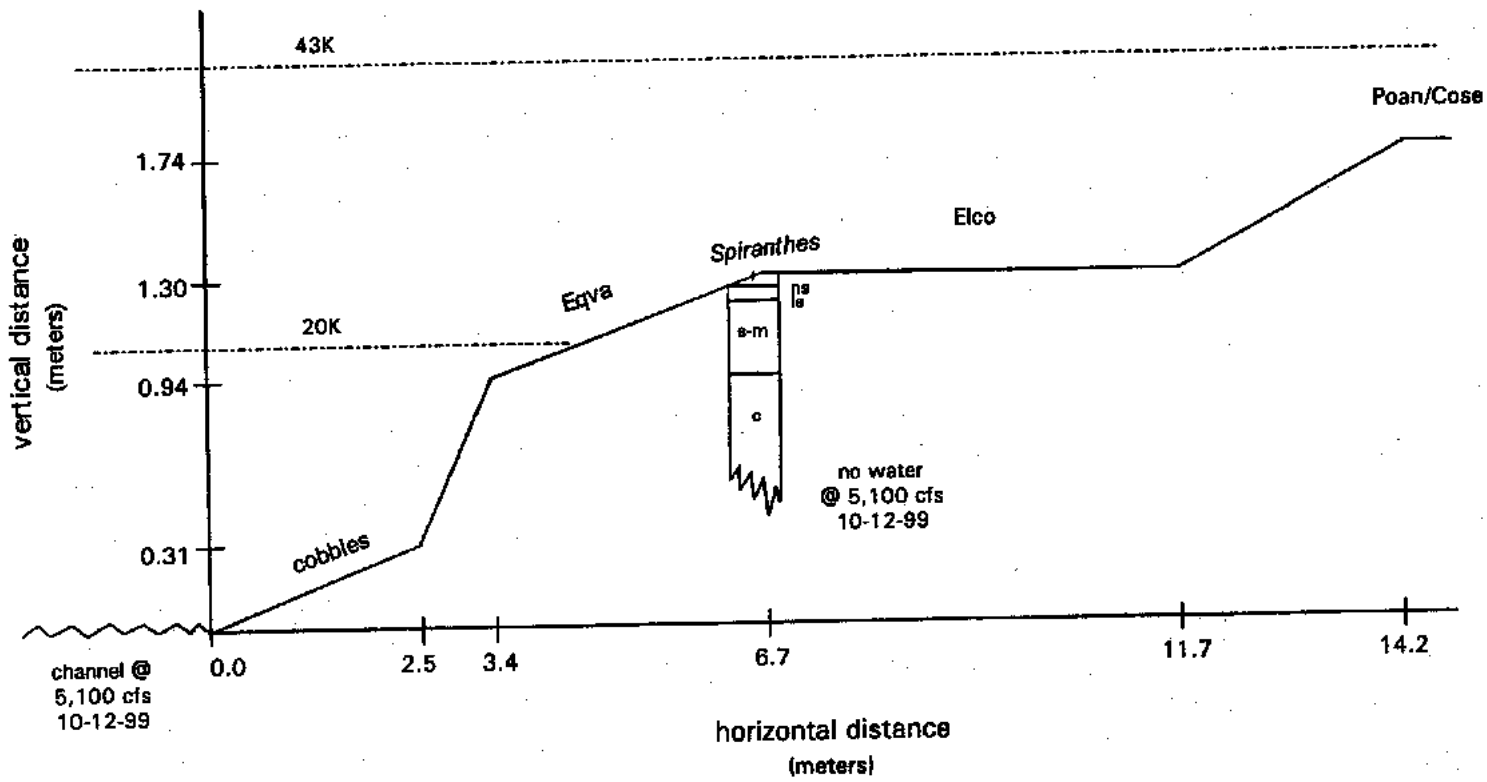
Eqva - *Equisetum variegatum*
Cala - *Carex lanuginosa*
Elro - *Eleocharis rostellata*
Elco - *Elaeagnus commutata*
Saex/MG - *Salix exigua*/Mesic graminoid
Poan/Elco - *Populus angustifolia/Elaeagnus commutata*
Poan/Cose - *Populus angustifolia/Cornus sericea*
Poan/Rhar - *Populus angustifolia/Rhus trilobata*
Poan/Chvi - *Populus angustifolia/Chrysopsis villosa*
Salu - *Salix lutea*
Beoc/MG - *Betula occidentalis*/Mesic graminoid
Beoc - *Betula occidentalis*
Phar - *Phalaris arundinacea*
Potr & Crdo - *Populus tremuloides* and *Crataegus douglasii*

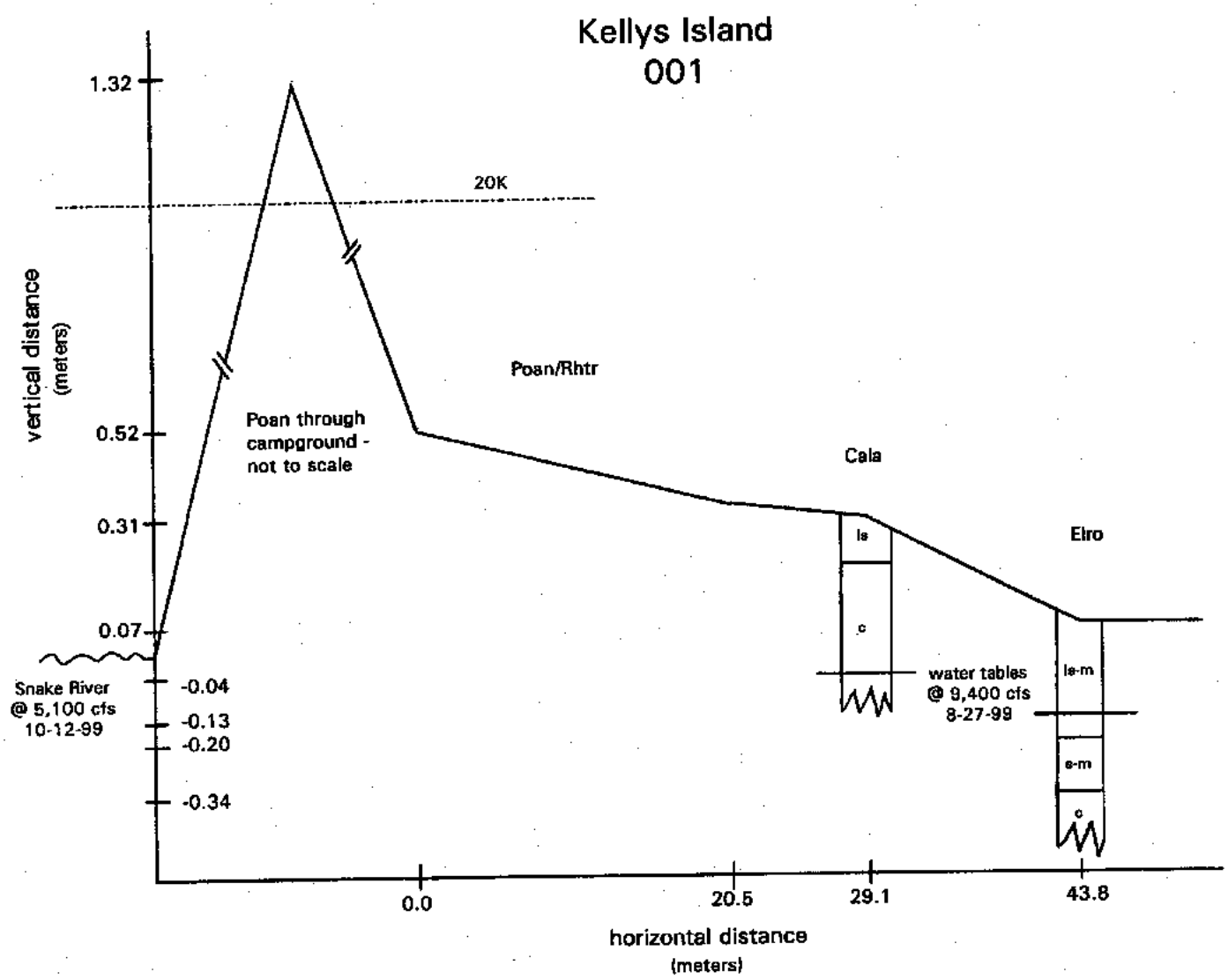
River Height - Two depths indicated: 43K = 43,000 cfs; 20K = 20,000 cfs. See text for explanation.

Twin Bridges Island
007

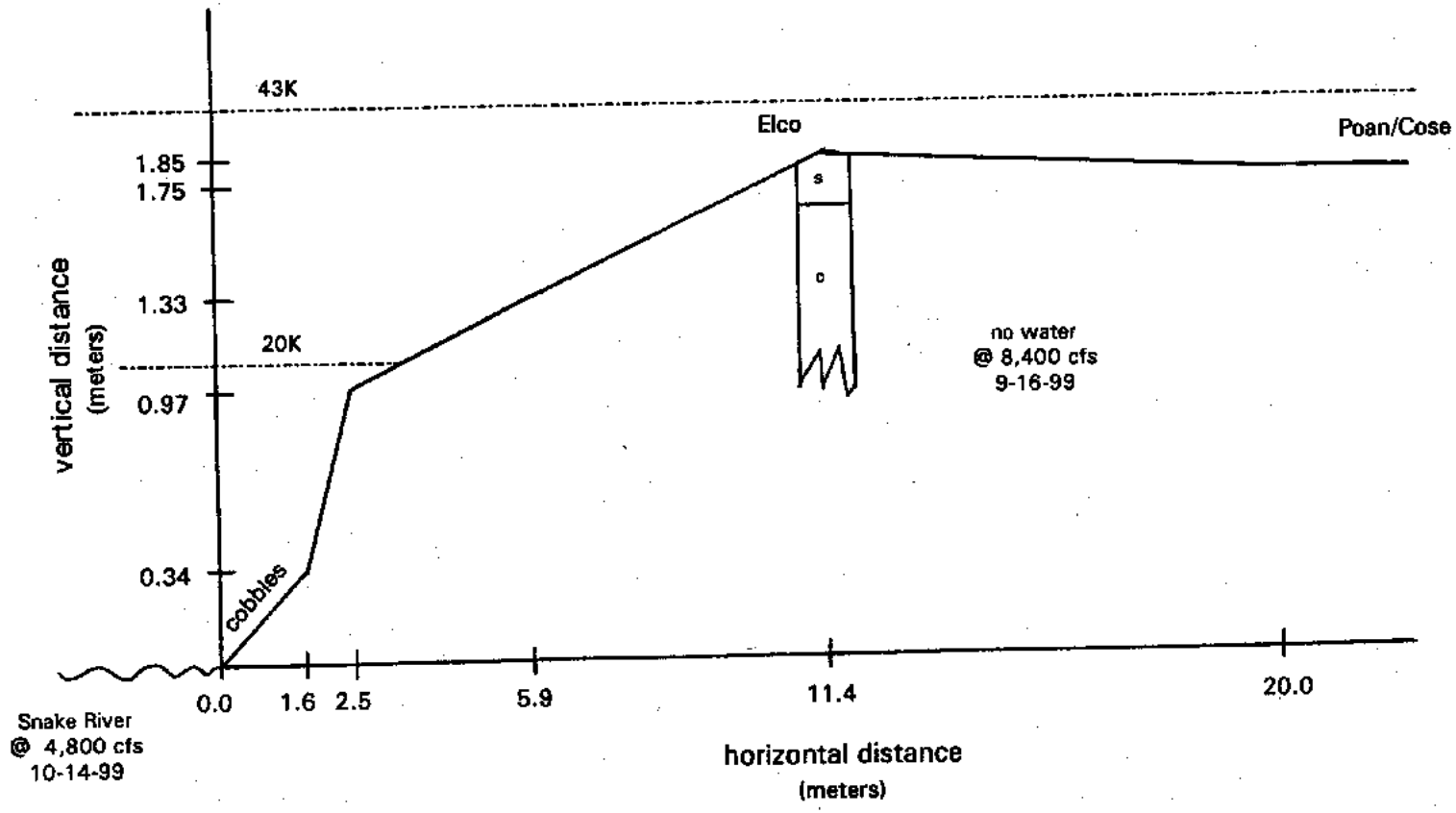


Railroad Island
005

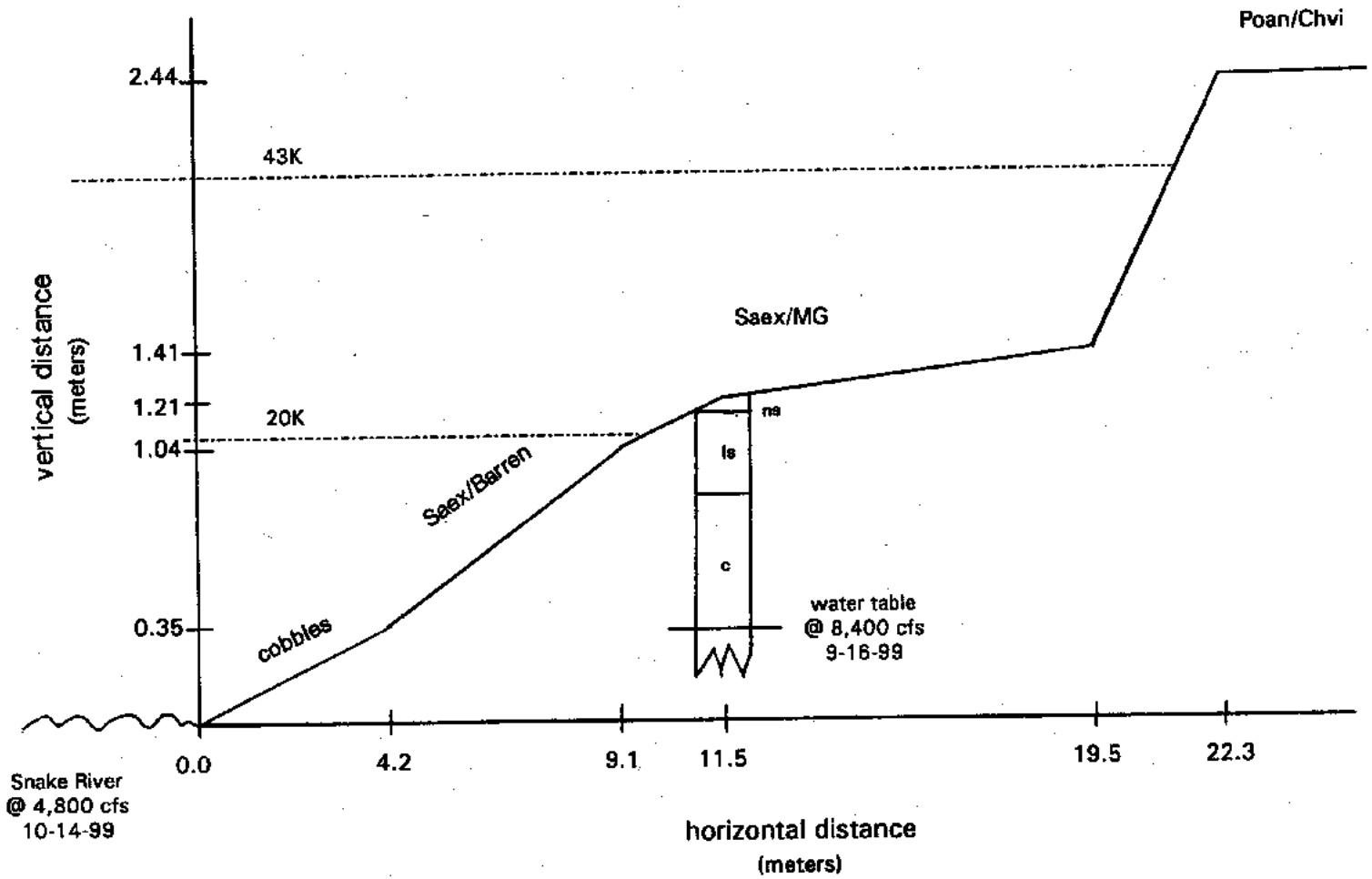



Kellys Island
001
1.32
20K
vertical distance
(meters)
Poan/Rhtr
0.52
Poan through
campground -
not to scale
Cala
0.31
ls
Elro
0.07
c
Snake River
@ 5,100 cfs
10-12-99
-0.04
-0.13
-0.20
-0.34
water tables
@ 9,400 cfs
8-27-99
le-m
e-m
c
0.0
20.5
29.1
43.8
horizontal distance
(meters)

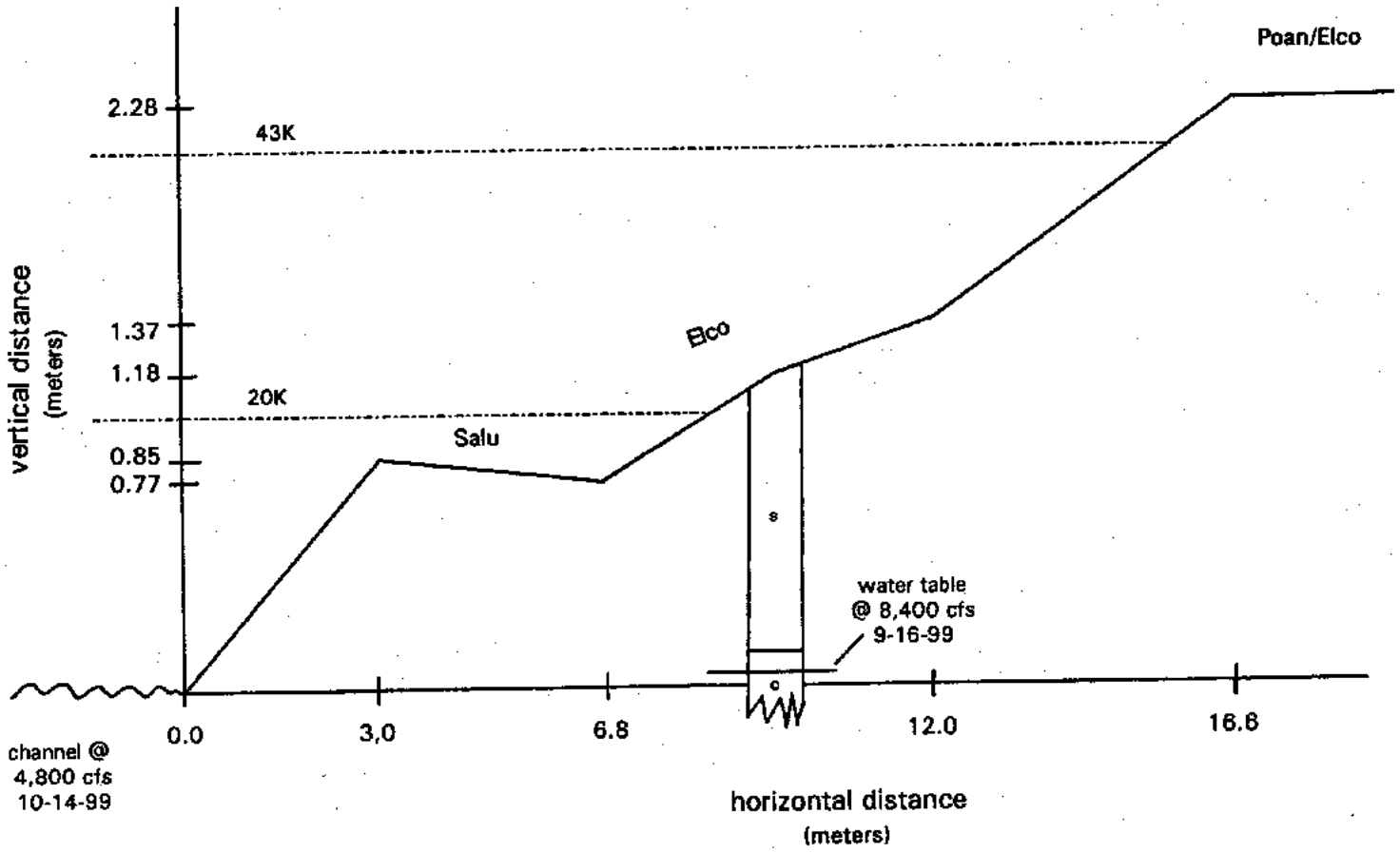
Mud Creek Bar
009



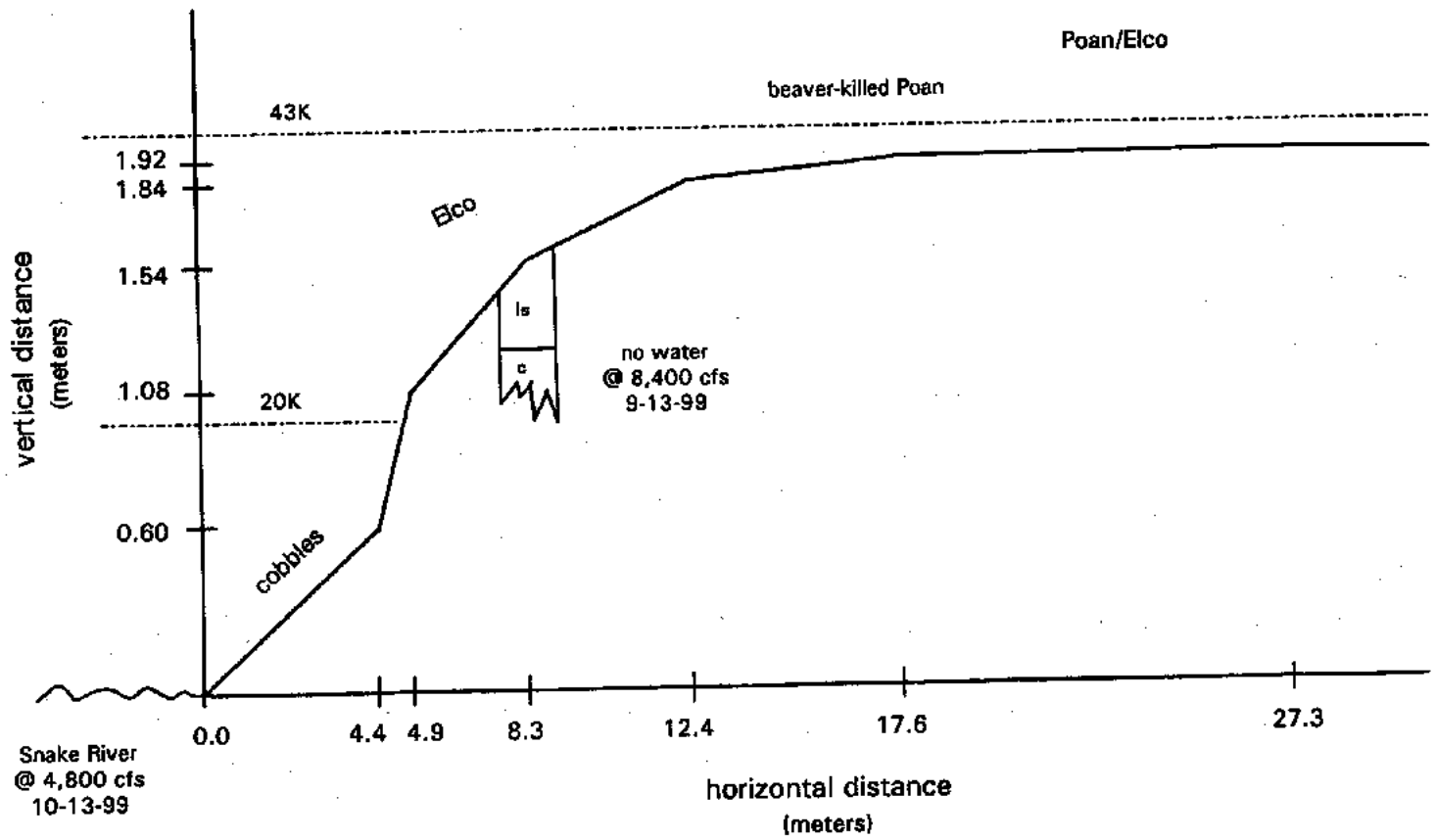
Rattlesnake Point
002 - Outer Channel



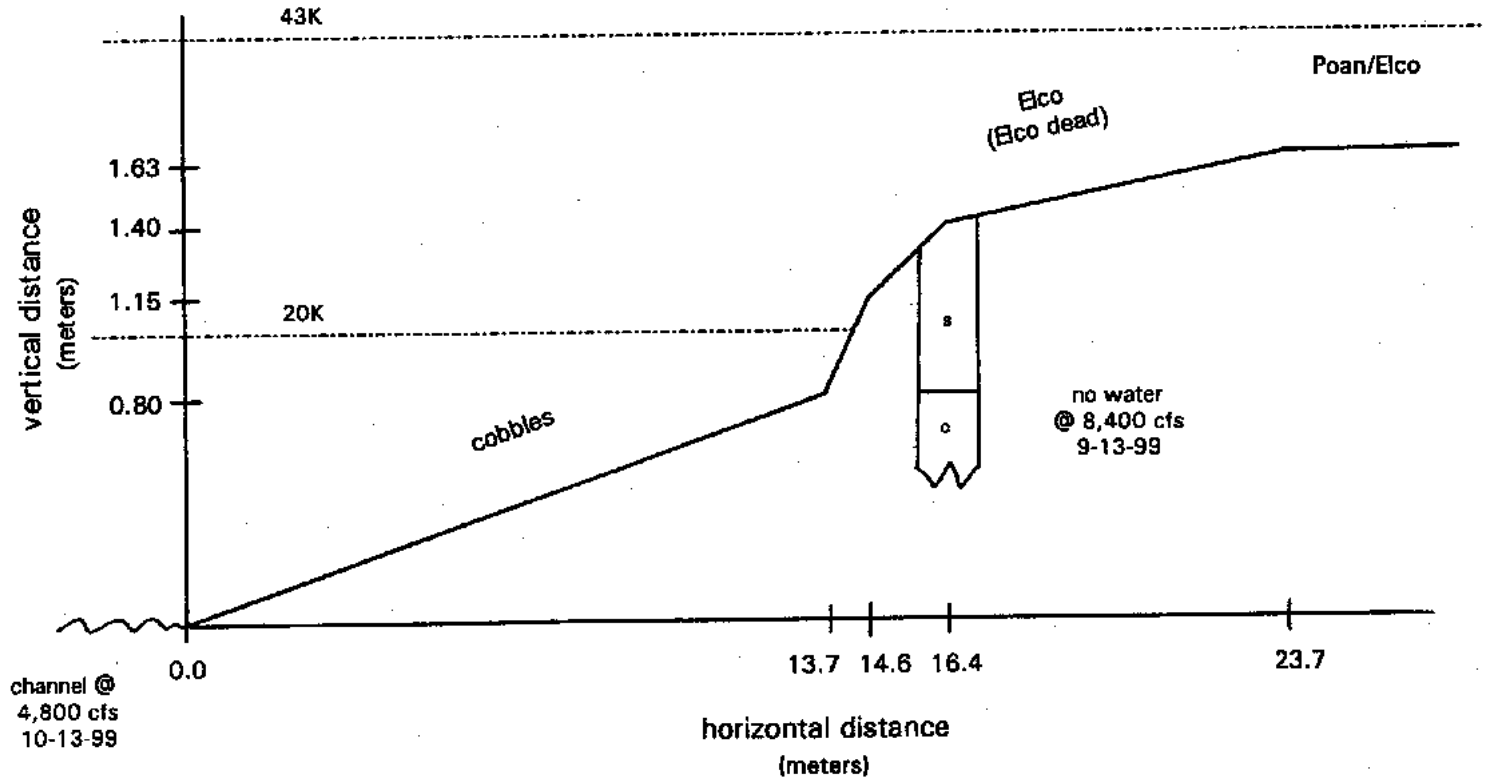
Rattlesnake Point
002 - Inner Channel



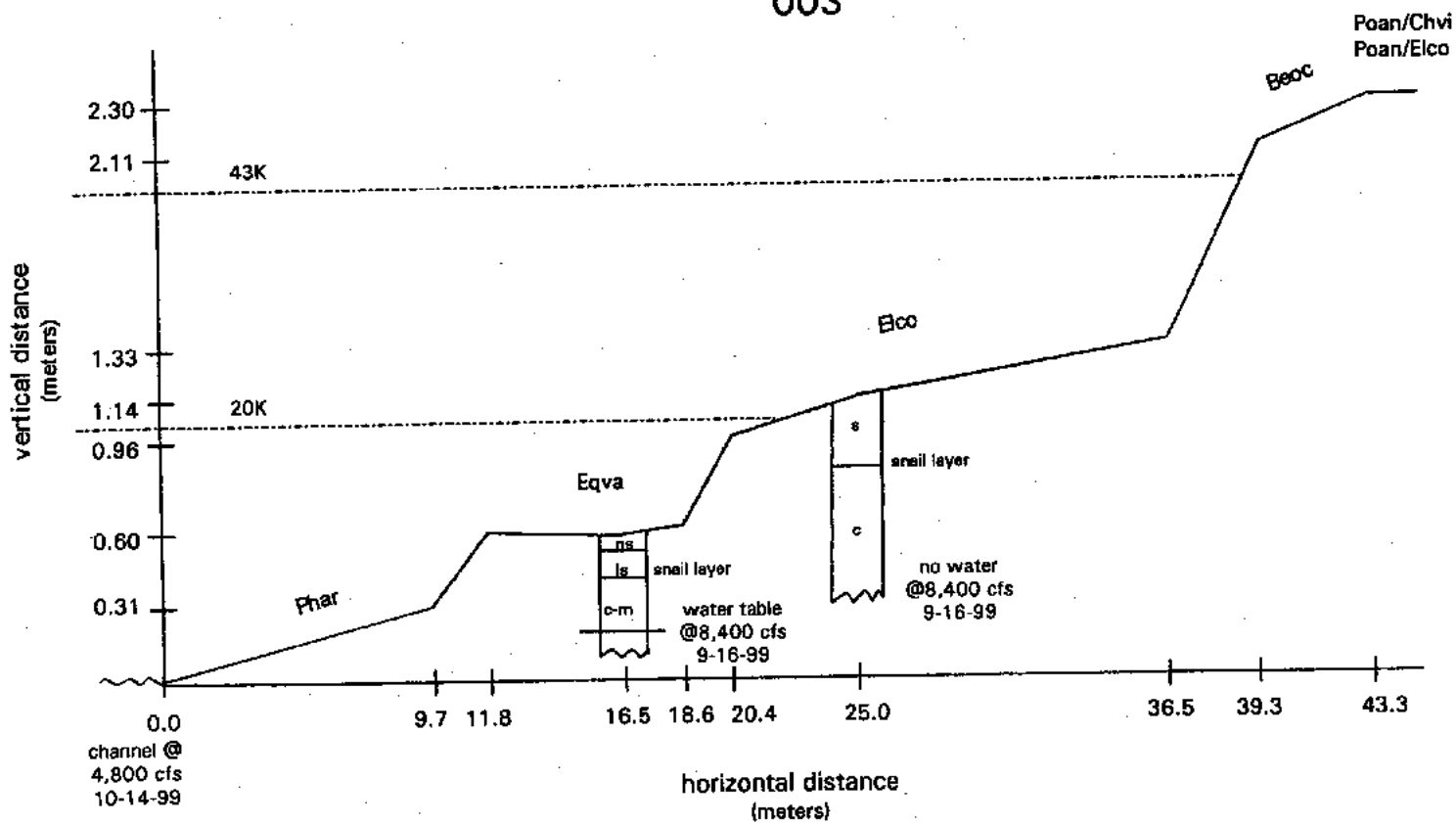
TNC Island
010 - Outside Channel



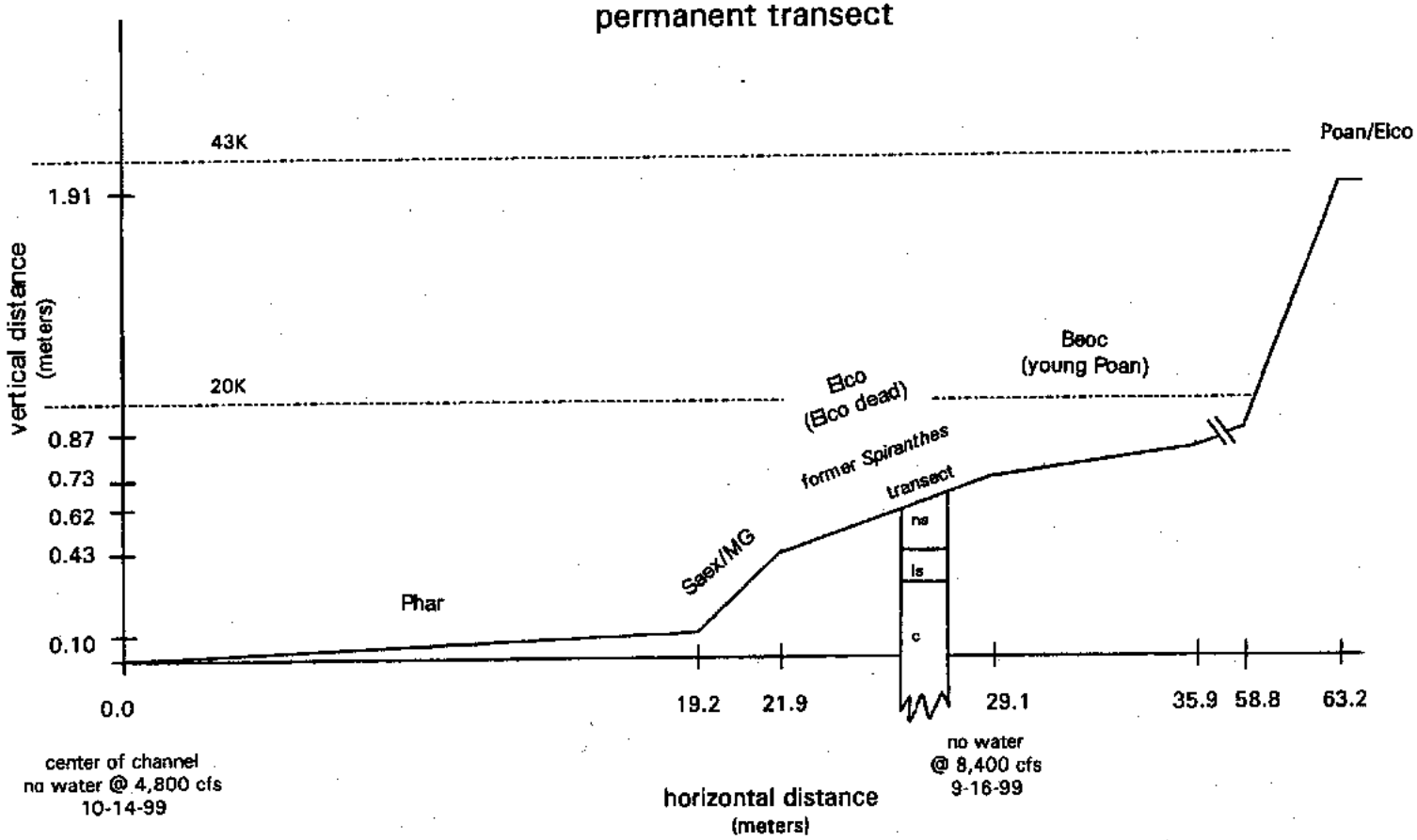
TNC Island
010 - Inside Channel



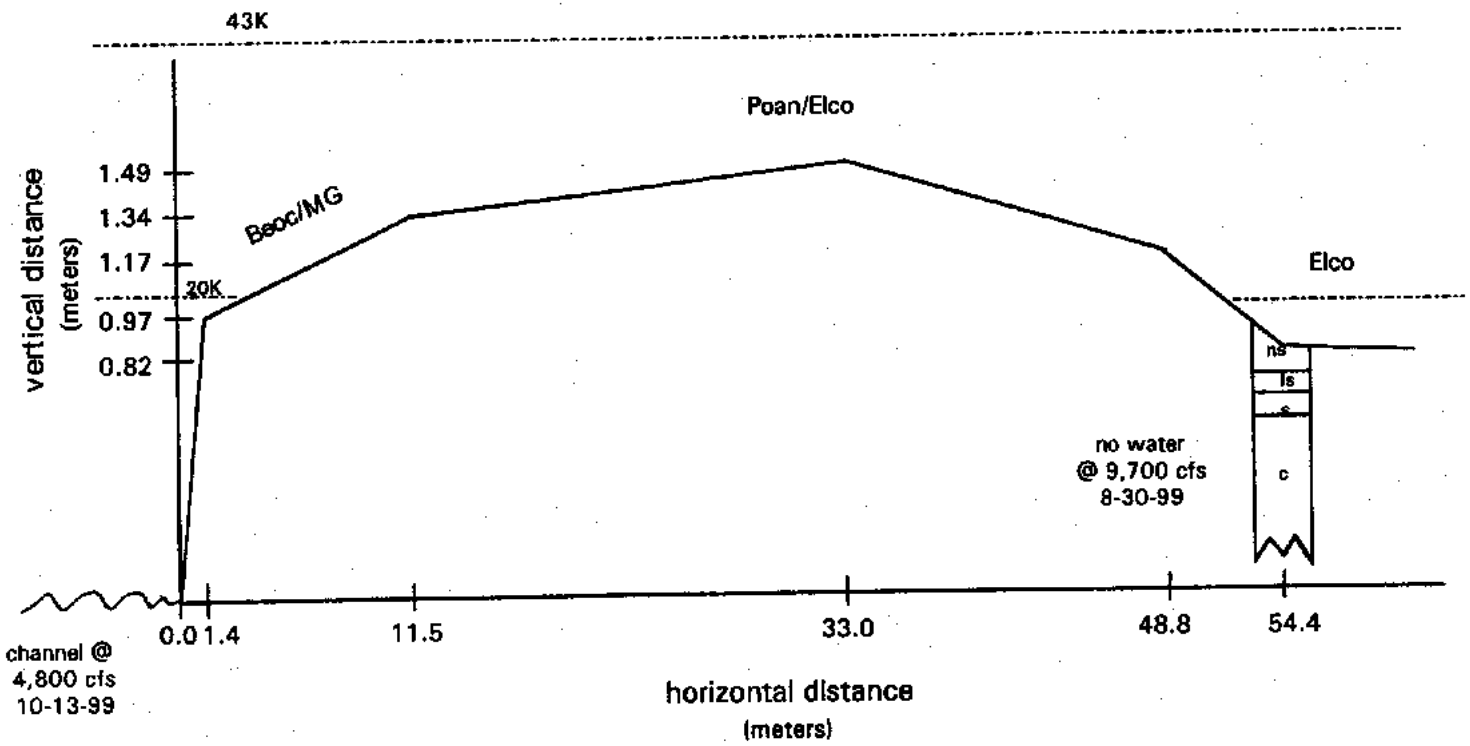
Warm Springs Bottom
003

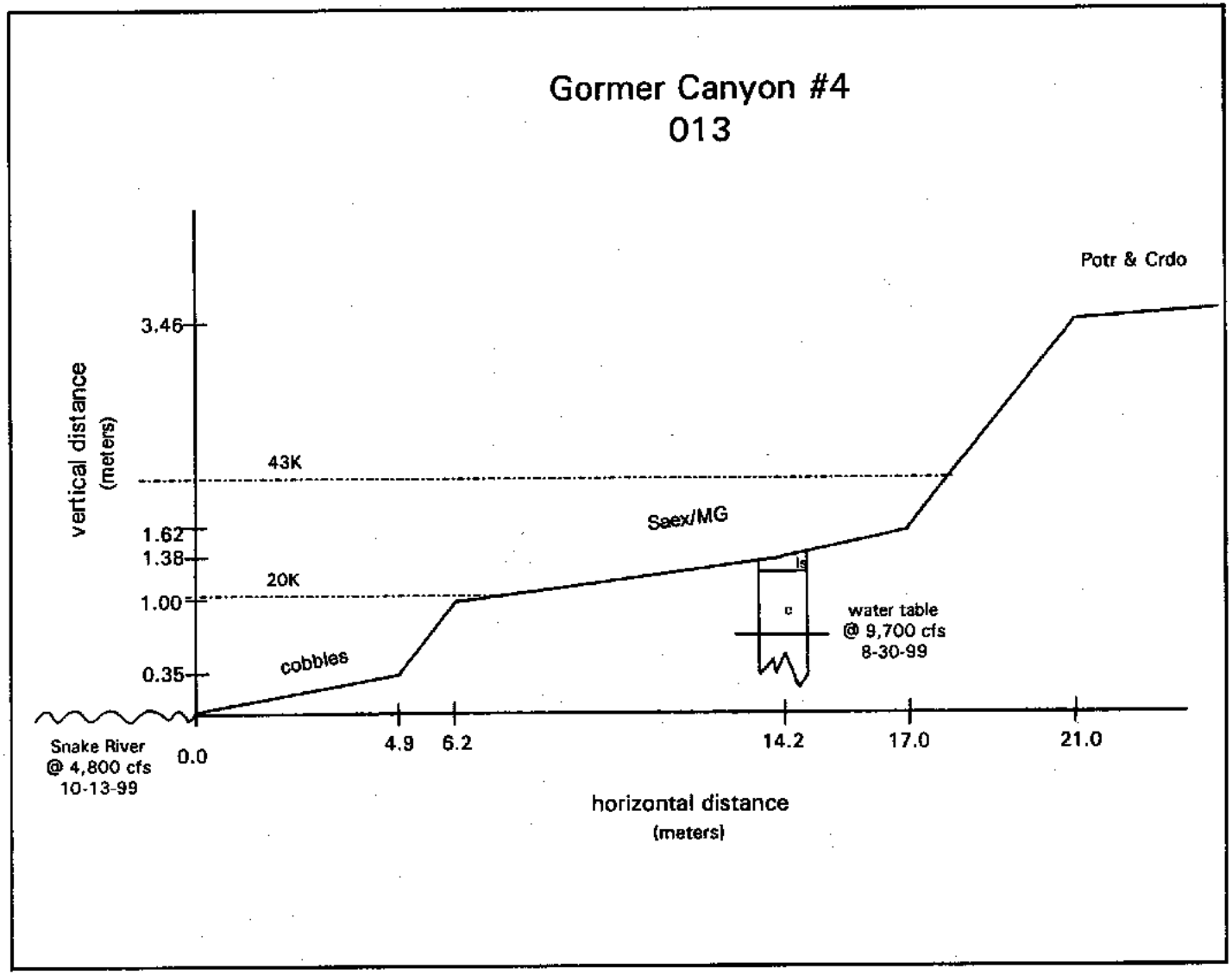


Warm Springs Bottom
003 - Extirpated Site
permanent transect

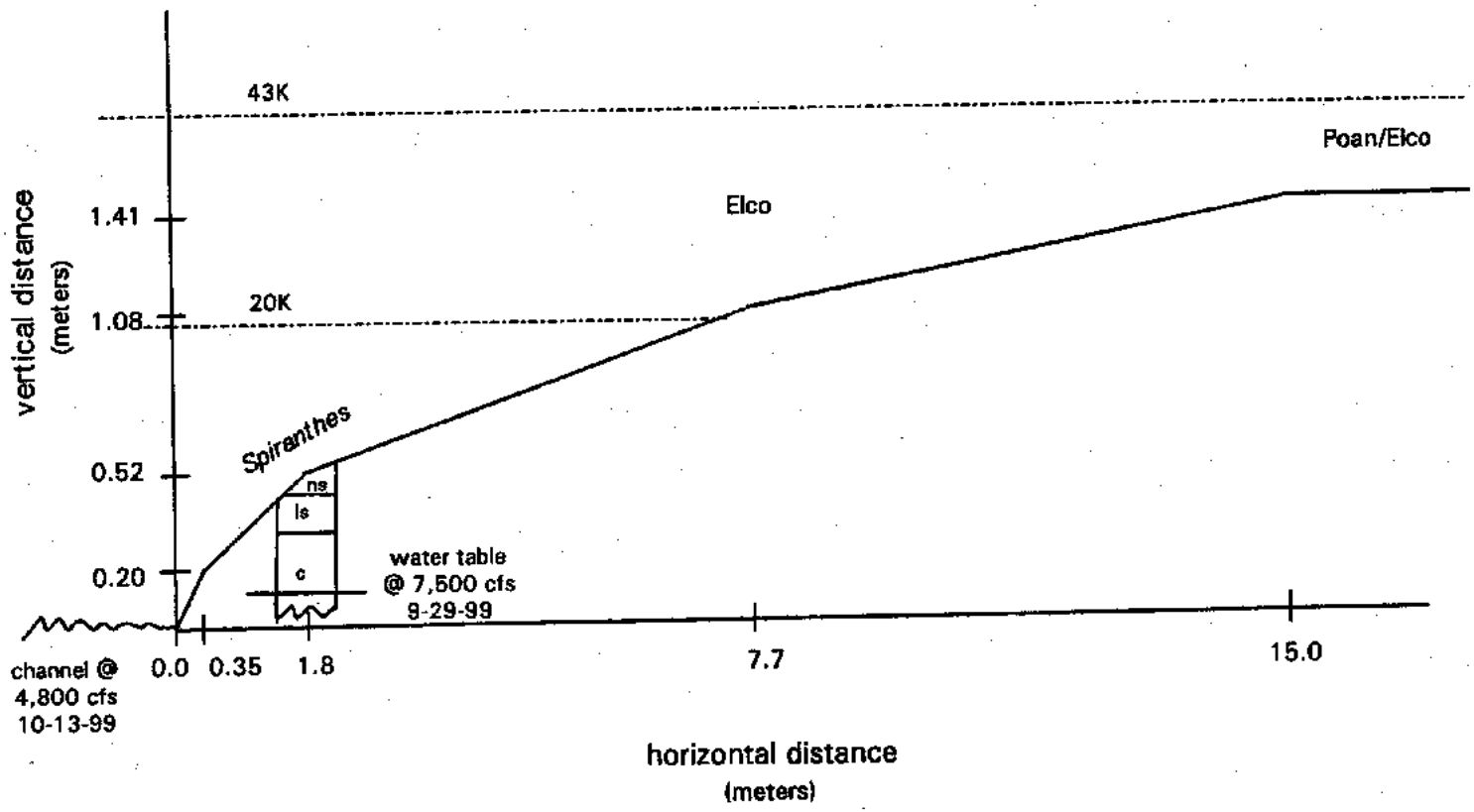


Lufkin Bottom
011

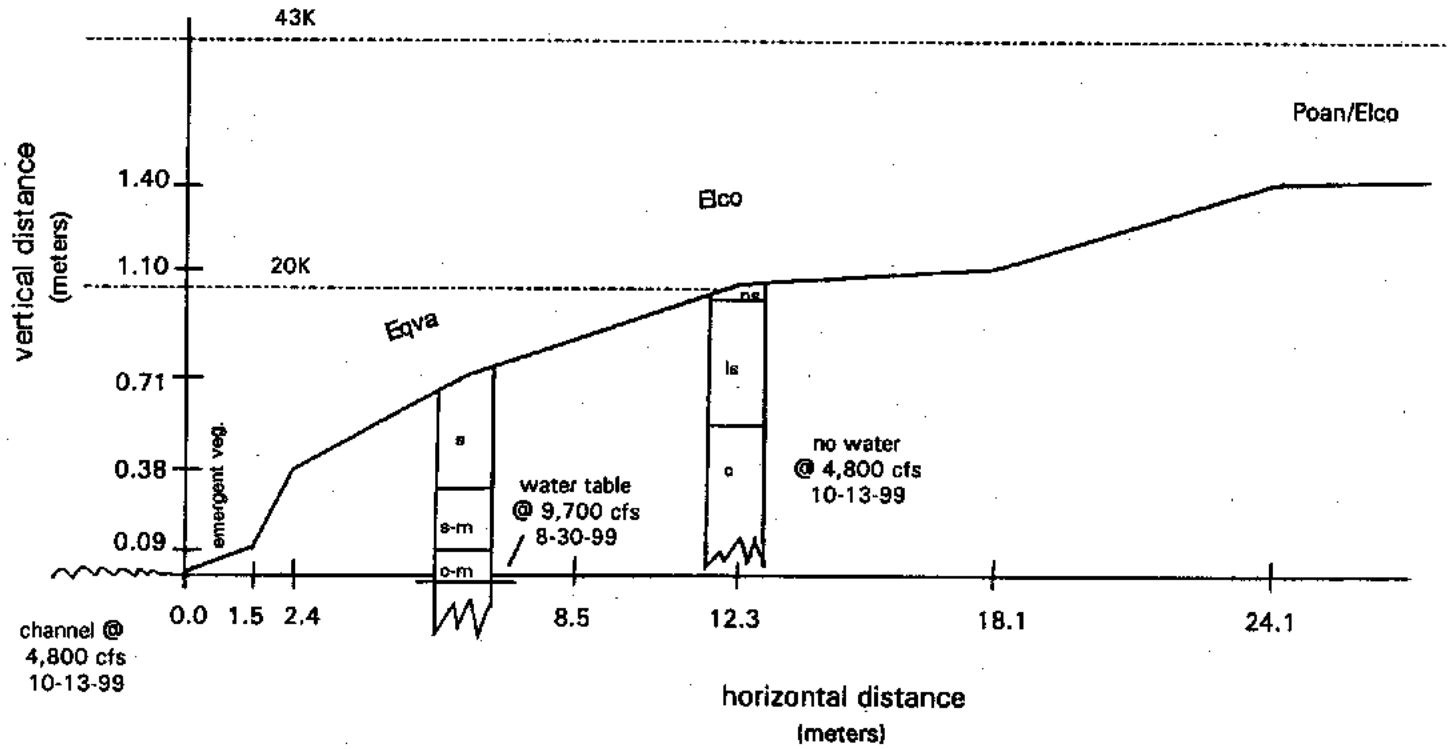



Gormer Canyon #4
013
Potr & Crdo
3.46
vertical distance
(meters)
43K
Saex/MG
1.62
1.38
20K
1.00
cobbles
0.35
water table
@ 9,700 cfs
8-30-99
Snake River
@ 4,800 cfs
10-13-99
0.0
4.9
6.2
14.2
17.0
21.0
horizontal distance
(meters)

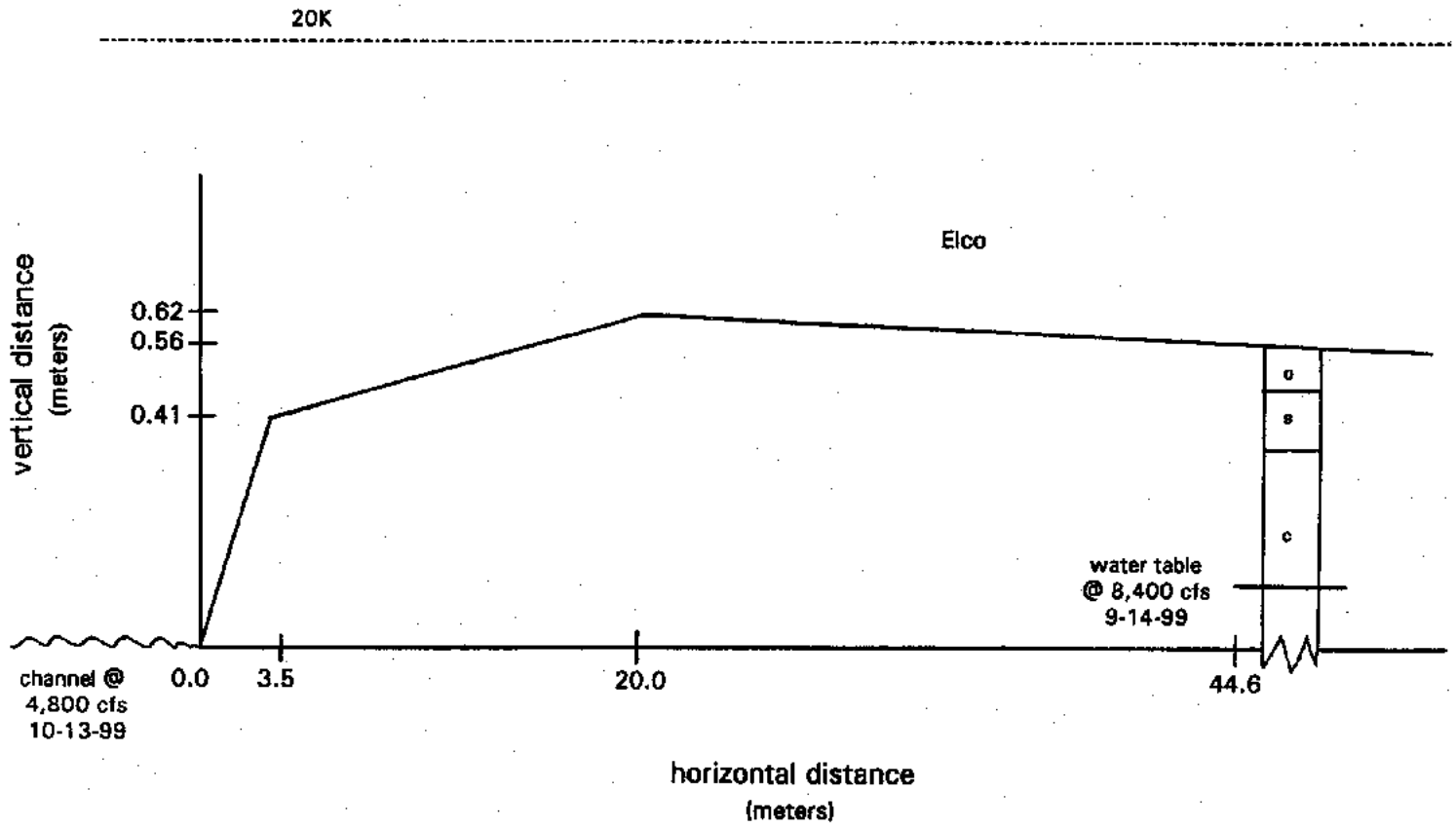
Gormer Canyon #3
021



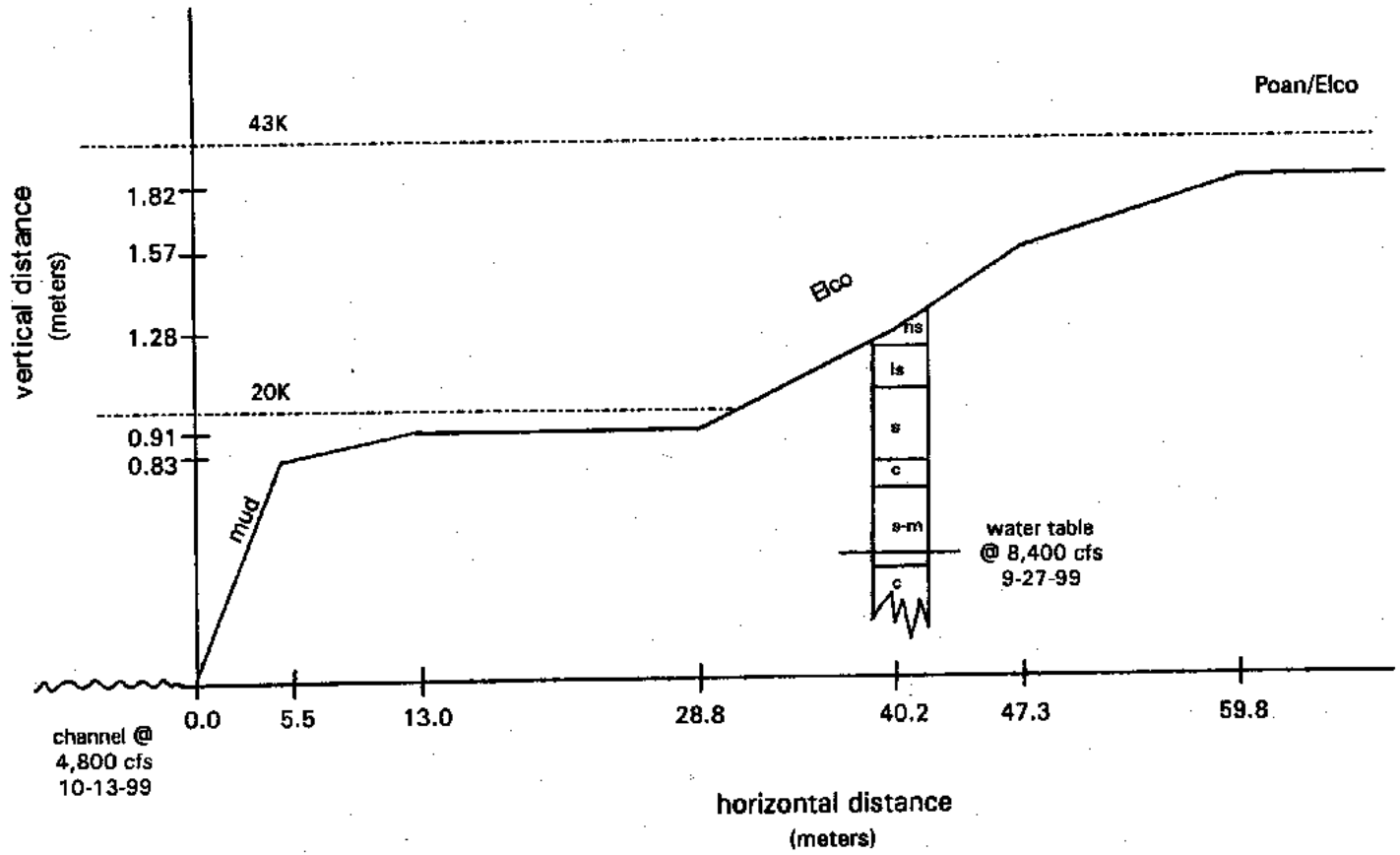
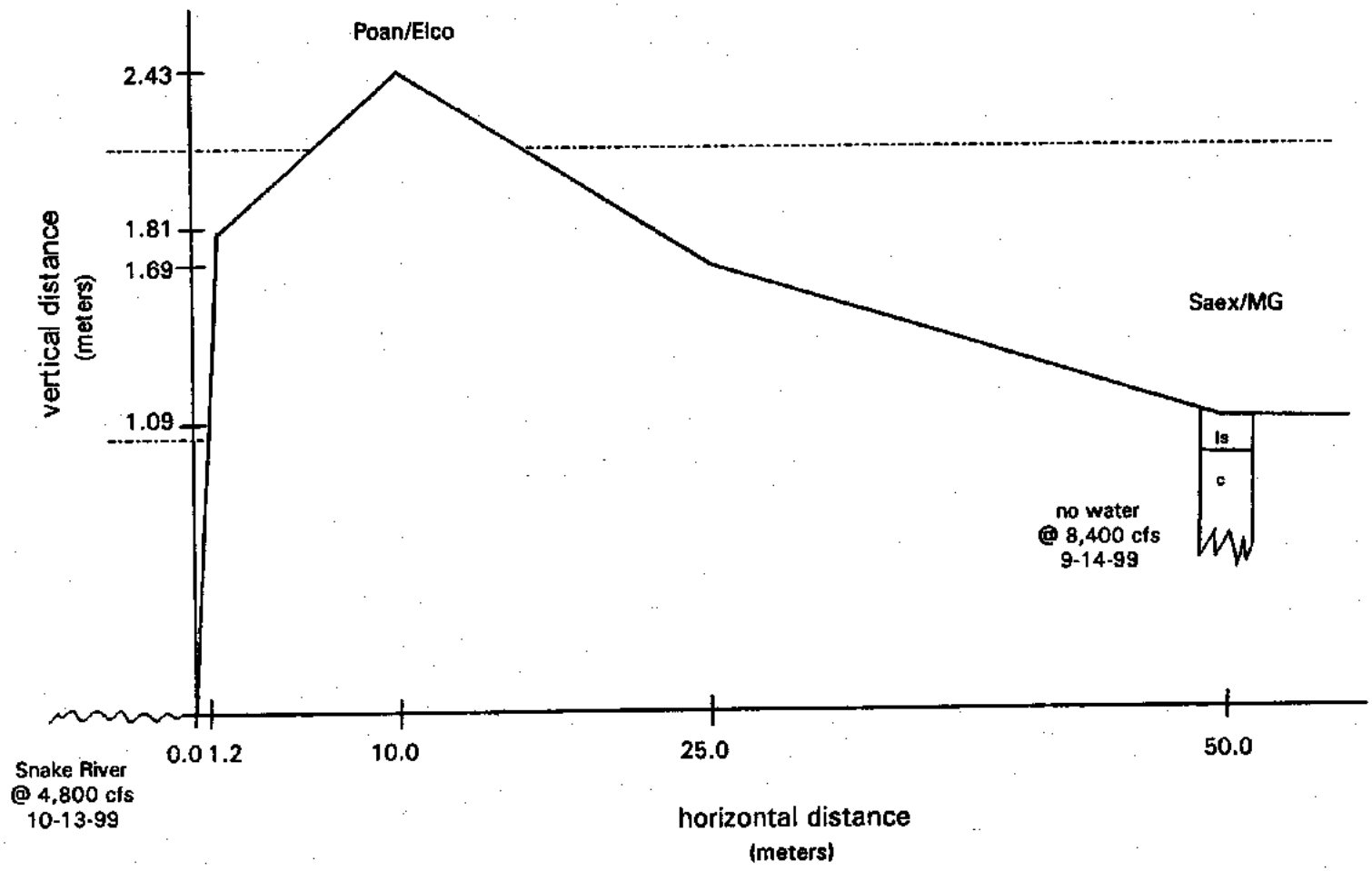
Pine Creek #3
016



Lower Swan Valley
019



Falls Campground
004



Squaw Creek Islands
020