

8. ANEXOS.

8.1. Anexo 1: Tabla, número más probable IDEXX Quanti-Tray*/2000.

IDEXX Quanti-Tray*12000 Tabla, número más probable																									
# Pocillos Grandes Positivos		# Pocillos pequeños positivos																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	<1	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.1	15.1	16.1	17.1	18.1	19.1	20.2	21.2	22.2	23.3	24.3
1	1.0	2.0	3.0	4.0	5.0	6.0	7.1	8.1	9.1	10.1	11.1	12.1	13.2	14.2	15.2	16.2	17.3	18.3	19.3	20.4	21.4	22.4	23.5	24.5	25.6
2	2.0	3.0	4.1	5.1	6.1	7.1	8.1	9.2	10.2	11.2	12.2	13.3	14.3	15.4	16.4	17.4	18.5	19.5	20.6	21.6	22.7	23.7	24.8	25.8	26.9
3	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.3	11.3	12.4	13.4	14.5	15.5	16.5	17.6	18.6	19.7	20.8	21.8	22.9	23.9	25.0	26.1	27.1	28.2
4	4.1	5.2	6.2	7.2	8.3	9.3	10.4	11.4	12.5	13.5	14.6	15.6	16.7	17.8	18.8	19.9	21.0	22.0	23.1	24.2	25.3	26.3	27.4	28.5	29.6
5	5.2	6.3	7.3	8.4	9.4	10.5	11.5	12.6	13.7	14.7	15.8	16.9	17.9	19.0	20.1	21.2	22.2	23.3	24.4	25.5	26.6	27.7	28.8	29.9	31.0
6	6.3	7.4	8.4	9.5	10.6	11.6	12.7	13.8	14.9	16.0	17.0	18.1	19.2	20.3	21.4	22.5	23.6	24.7	25.8	26.9	28.0	29.1	30.2	31.3	32.4
7	7.5	8.5	9.6	10.7	11.8	12.8	13.9	15.0	16.1	17.2	18.3	19.4	20.5	21.6	22.7	23.8	24.9	26.0	27.1	28.3	29.4	30.5	31.6	32.8	33.9
8	8.6	9.7	10.8	11.9	13.0	14.1	15.2	16.3	17.4	18.5	19.6	20.7	21.8	22.9	24.1	25.2	26.3	27.4	28.6	29.7	30.8	32.0	33.1	34.3	35.4
9	9.8	10.9	12.0	13.1	14.2	15.3	16.4	17.6	18.7	19.8	20.9	22.0	23.2	24.3	25.4	26.6	27.7	28.9	30.0	31.2	32.3	33.5	34.6	35.8	37.0
10	11.0	12.1	13.2	14.4	15.5	16.6	17.7	18.9	20.0	21.1	22.3	23.4	24.6	25.7	26.9	28.0	29.2	30.3	31.5	32.7	33.8	35.0	36.2	37.4	38.6
11	12.2	13.4	14.5	15.6	16.8	17.9	19.1	20.2	21.4	22.5	23.7	24.8	26.0	27.2	28.3	29.5	30.7	31.9	33.0	34.2	35.4	36.6	37.8	39.0	40.2
12	13.5	14.8	15.8	16.9	18.1	19.3	20.4	21.6	22.8	23.9	25.1	26.3	27.5	28.6	29.8	31.0	32.2	33.4	34.6	35.8	37.0	38.2	39.5	40.7	41.9
13	14.8	16.0	17.1	18.3	19.5	20.6	21.8	23.0	24.2	25.4	26.6	27.8	29.0	30.2	31.4	32.6	33.8	35.0	36.2	37.5	38.7	39.9	41.2	42.4	43.6
14	16.1	17.3	18.5	19.7	20.9	22.1	23.3	24.5	25.7	26.9	28.1	29.3	30.5	31.7	33.0	34.2	35.4	36.7	37.9	39.1	40.4	41.6	42.9	44.2	45.4
15	17.5	18.7	19.9	21.1	22.3	23.5	24.7	25.9	27.2	28.4	29.6	30.9	32.1	33.3	34.6	35.8	37.1	38.4	39.6	40.9	42.2	43.4	44.7	46.0	47.3
16	18.9	20.1	21.3	22.6	23.8	25.0	26.2	27.5	28.7	30.0	31.2	32.5	33.7	35.0	36.3	37.5	38.8	40.1	41.4	42.7	44.0	45.3	46.6	47.9	49.2
17	20.3	21.6	22.8	24.1	25.3	26.6	27.8	29.1	30.3	31.6	32.9	34.1	35.4	36.7	38.0	39.3	40.6	41.9	43.2	44.5	45.8	47.2	48.5	49.8	51.2
18	21.8	23.1	24.3	25.6	26.9	28.1	29.4	30.7	32.0	33.3	34.6	35.9	37.2	38.5	39.8	41.1	42.4	43.8	45.1	46.5	47.8	49.2	50.5	51.9	53.2
19	23.3	24.6	25.9	27.2	28.5	29.8	31.1	32.4	33.7	35.0	36.3	37.6	39.0	40.3	41.6	43.0	44.3	45.7	47.1	48.4	49.8	51.2	52.6	54.0	55.4
20	24.9	26.2	27.5	28.8	30.1	31.5	32.8	34.1	35.4	36.8	38.1	39.5	40.8	42.2	43.6	44.9	46.3	47.7	49.1	50.5	51.9	53.3	54.7	56.1	57.6
21	26.5	27.9	29.2	30.5	31.8	33.2	34.5	35.9	37.3	38.6	40.0	41.4	42.8	44.1	45.5	46.9	48.4	49.8	51.2	52.6	54.1	55.5	56.9	58.4	59.9
22	28.2	29.5	30.9	32.3	33.6	35.0	36.4	37.7	39.1	40.5	41.9	43.3	44.8	46.2	47.6	49.0	50.5	51.9	53.4	54.8	56.3	57.8	59.3	60.8	62.3
23	29.9	31.3	32.7	34.1	35.5	36.8	38.3	39.7	41.1	42.5	43.9	45.4	46.8	48.3	49.7	51.2	52.7	54.2	55.6	57.1	58.6	60.2	61.7	63.2	64.7
24	31.7	33.1	34.5	35.9	37.3	38.8	40.2	41.7	43.1	44.6	46.0	47.5	49.0	50.5	52.0	53.5	55.0	56.5	58.0	59.5	61.1	62.6	64.2	65.8	67.3
25	33.6	35.0	36.4	37.9	39.3	40.8	42.2	43.7	45.2	46.7	48.2	49.7	51.2	52.7	54.3	55.8	57.3	58.9	60.5	62.0	63.6	65.2	66.8	68.4	70.0
26	35.5	36.9	38.4	39.9	41.4	42.8	44.3	45.9	47.4	48.9	50.4	52.0	53.5	55.1	56.7	58.2	59.8	61.4	63.0	64.7	66.3	67.9	69.6	71.2	72.9
27	37.4	38.9	40.4	42.0	43.5	45.0	46.5	48.1	49.6	51.2	52.8	54.4	56.0	57.6	59.2	60.8	62.4	64.1	65.7	67.4	69.1	70.8	72.5	74.2	75.9
28	39.5	41.0	42.6	44.1	45.7	47.3	48.8	50.4	52.0	53.6	55.2	56.8	58.5	60.2	61.8	63.5	65.2	66.9	68.6	70.3	72.0	73.7	75.5	77.3	79.0
29	41.7	43.2	44.8	46.4	48.0	49.6	51.2	52.8	54.5	56.1	57.8	59.5	61.2	62.9	64.6	66.3	68.0	69.8	71.5	73.3	75.1	76.9	78.7	80.5	82.4
30	43.9	45.5	47.1	48.7	50.4	52.0	53.7	55.4	57.1	58.8	60.5	62.2	64.0	65.7	67.5	69.3	71.0	72.9	74.7	76.5	78.3	80.2	82.1	84.0	85.9
31	46.2	47.9	49.5	51.2	52.9	54.6	56.3	58.1	59.8	61.6	63.3	65.1	66.9	68.7	70.5	72.4	74.2	76.1	78.0	79.9	81.8	83.7	85.7	87.6	89.6
32	48.7	50.4	52.1	53.8	55.6	57.3	59.1	60.9	62.7	64.5	66.3	68.2	70.0	71.9	73.8	75.7	77.6	79.5	81.5	83.5	85.4	87.5	89.5	91.5	93.6
33	51.2	53.0	54.8	56.5	58.3	60.2	62.0	63.8	65.7	67.6	69.5	71.4	73.3	75.2	77.2	79.2	81.2	83.2	85.2	87.3	89.3	91.4	93.6	95.7	97.8
34	53.9	55.7	57.6	59.4	61.3	63.1	65.0	67.0	68.9	70.8	72.8	74.8	76.8	78.8	80.8	82.9	85.0	87.1	89.2	91.4	93.5	95.7	97.9	100.2	102.4
35	56.8	58.6	60.5	62.4	64.4	66.3	68.3	70.3	72.3	74.3	76.3	78.4	80.5	82.6	84.7	86.9	89.1	91.3	93.5	95.7	98.0	100.3	102.6	105.0	107.3
36	59.8	61.7	63.7	65.7	67.7	69.7	71.7	73.8	75.9	78.0	80.1	82.3	84.5	86.7	88.9	91.2	93.5	95.8	98.1	100.5	102.9	105.3	107.7	110.2	112.7
37	62.9	65.0	67.0	69.1	71.2	73.3	75.4	77.6	79.8	82.0	84.2	86.5	88.8	91.1	93.4	95.8	98.2	100.6	103.1	105.6	108.1	110.7	113.3	115.9	118.6
38	66.3	68.4	70.6	72.7	74.9	77.1	79.4	81.6	83.9	86.2	88.6	91.0	93.4	95.8	98.3	100.8	103.4	106.0	108.6	111.2	113.9	116.6	119.4	122.2	125.0
39	70.0	72.2	74.4	76.7	78.9	81.3	83.6	86.0	88.4	90.9	93.4	95.9	98.4	101.0	103.6	106.3	109.0	111.8	114.6	117.4	120.3	123.2	126.1	129.2	132.2
40	73.8	76.2	78.5	80.9	83.3	85.7	88.2	90.8	93.3	95.9	98.5	101.2	103.9	106.7	109.5	112.4	115.3	118.2	121.2	124.3	127.4	130.5	133.7	137.0	140.3
41	78.0	80.5	83.0	85.5	88.0	90.6	93.3	95.9	98.7	101.4	104.3	107.1	110.0	113.0	116.0	119.1	122.2	125.4	128.7	132.0	135.4	138.8	142.3	145.9	149.5
42	82.6	85.2	87.8	90.5	93.2	96.0	98.8	101.7	104.6	107.6	110.6	113.7	116.9	120.1	123.4	126.7	130.1	133.6	137.2	140.8	144.5	148.3	152.2	156.1	160.2
43	87.6	90.4	93.2	96.0	99.0	101.9	105.0	108.1	111.2	114.5	117.8	121.1	124.6	128.1	131.7	135.4	139.1	143.0	147.0	151.0	155.2	159.4	163.8	168.2	172.8
44	93.1	96.1	99.1	102.2	105.4	108.6	111.9	115.3	118.7	122.3	125.9	129.6	133.4	137.4	141.4	145.5	149.7	154.1	1						

# Pocillos Grandes		# Pocillos pequeños positivos																																															
Positivos		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																								
0		25.3	26.4	27.4	28.4	29.5	30.5	31.5	32.6	33.6	34.7	35.7	36.8	37.8	38.9	40.0	41.0	42.1	43.1	44.2	45.3	46.3	47.4	48.5	49.5																								
1		26.6	27.7	28.7	29.8	30.8	31.9	32.9	34.0	35.0	36.1	37.2	38.2	39.3	40.4	41.4	42.5	43.6	44.7	45.7	46.8	47.9	49.0	50.1	51.2																								
2		27.9	29.0	30.0	31.1	32.2	33.2	34.3	35.4	36.5	37.5	38.6	39.7	40.8	41.9	43.0	44.0	45.1	46.2	47.3	48.4	49.5	50.6	51.7	52.8																								
3		29.3	30.4	31.4	32.5	33.6	34.7	35.8	36.9	38.0	40.1	41.2	42.3	43.4	44.5	45.6	46.7	47.8	48.9	50.0	51.2	52.3	53.4	54.5																									
4		30.7	31.8	32.8	33.9	35.0	36.1	37.2	38.3	39.4	40.5	41.6	42.8	43.9	45.0	46.1	47.2	48.3	49.5	50.6	51.7	52.9	54.0	55.1	56.3																								
5		32.1	33.2	34.3	35.4	36.5	37.6	38.7	39.9	41.0	42.1	43.2	44.4	45.5	46.6	47.7	48.9	50.0	51.2	52.3	53.5	54.6	55.8	56.9	58.1																								
6		33.5	34.7	35.8	36.9	38.0	39.2	40.3	41.4	42.6	43.7	44.8	46.0	47.1	48.3	49.4	50.6	51.7	52.9	54.1	55.2	56.4	57.6	58.7	59.9																								
7		35.0	36.2	37.3	38.4	39.6	40.7	41.9	43.0	44.2	45.3	46.5	47.7	48.8	50.0	51.2	52.3	53.5	54.7	55.9	57.1	58.3	59.4	60.6	61.8																								
8		36.6	37.7	38.9	40.0	41.2	42.3	43.5	44.7	45.9	47.0	48.2	49.4	50.6	51.8	53.0	54.1	55.3	56.5	57.7	59.0	60.2	61.4	62.6	63.8																								
9		38.1	39.3	40.5	41.6	42.8	44.0	45.2	46.4	47.6	48.8	50.0	51.2	52.4	53.6	54.8	56.0	57.2	58.4	59.7	60.9	62.1	63.4	64.6	65.8																								
10		39.7	40.9	42.1	43.3	44.5	45.7	46.9	48.1	49.3	50.6	51.8	53.0	54.2	55.5	56.7	57.9	59.2	60.4	61.7	62.9	64.2	65.4	66.7	67.9																								
11		41.4	42.6	43.8	45.0	46.3	47.5	48.7	49.9	51.2	52.4	53.7	54.9	56.1	57.4	58.6	59.9	61.2	62.4	63.7	65.0	66.3	67.5	68.8	70.1																								
12		43.1	44.3	45.6	46.8	48.1	49.3	50.6	51.8	53.1	54.3	55.6	56.8	58.1	59.4	60.7	62.0	63.2	64.5	65.8	67.1	68.4	69.7	71.0	72.4																								
13		44.9	46.1	47.4	48.6	49.9	51.2	52.5	53.7	55.0	56.3	57.6	58.9	60.2	61.5	62.8	64.1	65.4	66.7	68.0	69.3	70.7	72.0	73.3	74.7																								
14		46.7	48.0	49.3	50.5	51.8	53.1	54.4	55.7	57.0	58.3	59.6	60.9	62.3	63.6	64.9	66.3	67.6	68.9	70.3	71.6	73.0	74.4	75.7	77.1																								
15		48.6	49.9	51.2	52.5	53.8	55.1	56.4	57.8	59.1	60.4	61.8	63.1	64.5	65.8	67.2	68.5	69.9	71.3	72.6	74.0	75.4	76.8	78.2	79.6																								
16		50.5	51.8	53.2	54.5	55.8	57.2	58.5	59.9	61.2	62.6	64.0	65.3	66.7	68.1	69.5	70.9	72.3	73.7	75.1	76.5	77.9	79.3	80.8	82.2																								
17		52.5	53.9	55.2	56.6	58.0	59.3	60.7	62.1	63.5	64.9	66.3	67.7	69.1	70.5	71.9	73.3	74.8	76.2	77.6	79.1	80.5	82.0	83.5	84.9																								
18		54.6	56.0	57.4	58.8	60.2	61.6	63.0	64.4	65.8	67.2	68.6	70.1	71.5	73.0	74.4	75.9	77.3	78.8	80.3	81.8	83.3	84.8	86.3	87.8																								
19		56.8	58.2	59.6	61.0	62.4	63.9	65.3	66.8	68.2	69.7	71.1	72.6	74.1	75.5	77.0	78.5	80.0	81.5	83.1	84.6	86.1	87.6	89.2	90.7																								
20		59.0	60.4	61.9	63.3	64.8	66.3	67.7	69.2	70.7	72.2	73.7	75.2	76.7	78.2	79.8	81.3	82.8	84.4	85.9	87.5	89.1	90.7	92.2	93.8																								
21		61.3	62.8	64.3	65.8	67.3	68.8	70.3	71.8	73.3	74.9	76.4	77.9	79.5	81.1	82.6	84.2	85.8	87.4	89.0	90.6	92.2	93.8	95.4	97.1																								
22		63.8	65.3	66.8	68.3	69.8	71.4	72.9	74.5	76.1	77.6	79.2	80.8	82.4	84.0	85.6	87.2	88.9	90.5	92.1	93.8	95.5	97.1	98.8	100.5																								
23		66.3	67.8	69.4	71.0	72.5	74.1	75.7	77.3	78.9	80.5	82.2	83.8	85.4	87.1	88.7	90.4	92.1	93.8	95.5	97.2	98.9	100.6	102.4	104.1																								
24		68.9	70.5	72.1	73.7	75.3	77.0	78.6	80.3	81.9	83.6	85.2	86.9	88.6	90.3	92.0	93.8	95.5	97.2	99.0	100.7	102.5	104.3	106.1	107.9																								
25		71.7	73.3	75.0	76.6	78.3	80.0	81.7	83.3	85.1	86.8	88.5	90.2	92.0	93.7	95.5	97.3	99.1	100.9	102.7	104.5	106.3	108.2	110.0	111.9																								
26		74.6	76.3	78.0	79.7	81.4	83.1	84.8	86.6	88.4	90.1	91.9	93.7	95.5	97.3	99.2	101.0	102.9	104.7	106.6	108.5	110.4	112.3	114.2	116.2																								
27		77.6	79.4	81.1	82.9	84.6	86.4	88.2	90.0	91.9	93.7	95.5	97.4	99.3	101.2	103.1	105.0	106.9	108.8	110.8	112.7	114.7	116.7	118.7	120.7																								
28		80.8	82.6	84.4	86.3	88.1	89.9	91.8	93.7	95.6	97.5	99.4	101.3	103.3	105.2	107.2	109.2	111.2	113.2	115.2	117.3	119.3	121.4	123.5	125.6																								
29		84.2	86.1	87.9	89.8	91.7	93.7	95.6	97.5	99.5	101.5	103.5	105.5	107.5	109.5	111.6	113.7	115.7	117.8	120.0	122.1	124.2	126.4	128.6	130.8																								
30		87.8	89.7	91.7	93.6	95.6	97.6	99.6	101.6	103.7	105.7	107.8	109.9	112.0	114.2	116.3	118.5	120.6	122.8	125.1	127.3	129.5	131.8	134.1	136.4																								
31		91.6	93.6	95.6	97.7	99.7	101.8	103.9	106.0	108.2	110.3	112.5	114.7	116.9	119.1	121.4	123.6	125.9	128.2	130.5	132.9	135.3	137.7	140.1	142.5																								
32		95.7	97.8	99.9	102.0	104.2	106.3	108.5	110.7	113.0	115.2	117.5	119.8	122.1	124.5	126.8	129.2	131.6	134.0	136.5	139.0	141.5	144.0	146.6	149.1																								
33		100.0	102.2	104.4	106.6	108.9	111.2	113.5	115.8	118.2	120.5	122.9	125.4	127.8	130.3	132.8	135.3	137.8	140.4	143.0	145.6	148.3	150.9	153.7	156.4																								
34		104.7	107.0	109.3	111.7	114.0	116.4	118.9	121.3	123.8	126.3	128.8	131.4	134.0	136.6	139.2	141.9	144.6	147.4	150.1	152.9	155.7	158.6	161.5	164.4																								
35		109.7	112.2	114.6	117.1	119.6	122.2	124.7	127.3	129.9	132.6	135.3	138.0	140.8	143.6	146.4	149.2	152.1	155.0	158.0	161.0	164.0	167.1	170.2	173.3																								
36		115.2	117.8	120.4	123.0	125.7	128.4	131.1	133.9	136.7	139.5	142.4	145.3	148.3	151.3	154.3	157.3	160.3	163.3	166.8	170.0	173.3	176.8	179.9	183.3																								
37		121.3	124.0	126.8	129.6	132.4	135.3	138.2	141.2	144.2	147.3	150.3	153.3	156.7	159.9	163.1	166.5	169.8	173.2	176.7	180.2	183.7	187.3	191.0	194.7																								
38		127.9	130.8	133.8	136.8	139.9	143.0	146.2	149.4	152.6	155.9	159.2	162.6	166.1	169.6	173.2	176.8	180.4	184.2	188.0	191.8	195.9	200.7	203.7	207.7																								
39		135.3	138.5	141.7	145.0	148.3	151.7	155.1	158.6	162.1	165.7	169.4	173.1	176.9	180.7	184.7	188.7	192.7	196.8	201.0	205.3	209.6	214.0	218.5	223.0																								
40		143.7	147.1	150.6	154.2	157.8	161.5	165.3	169.1	173.0	177.0	181.1	185.2	189.4	193.7	198.1	202.5	207.1	211.7	216.4	221.1	226.0	231.0	236.0	241.1																								
41		153.2	157.0	160.9	164.8	168.9	173.0	177.2	181.5	185.8	190.3	194.8	199.5	204.2	209.1	214.0	219.1	224.2	229.4	234.8	240.2	245.8	251.5	257.2	263.1																								
42		164.3	168.6	172.9	177.3	181.9	186.5	191.3	196.1	201.1	206.2	211.4	216.7	222.2	227.7	233.4	239.2	245.2	251.3	257.5	263.8	270.3	276.9	283.6	290.5																								
43		177.5	182.3	187.3	192.4	197.6	202.9	208.4	214.0	219.8	225.8	231.8	238.1	244.5	251.0	257.7	264.6	271.7	278.9	286.3	293.8	301.5	309.4	317.4	325.7																								
44		193.6	1																																														

8.2. Anexo 2: Gráfica de absorbancia para los tres estratos de ambos humedales (L1 y L2).

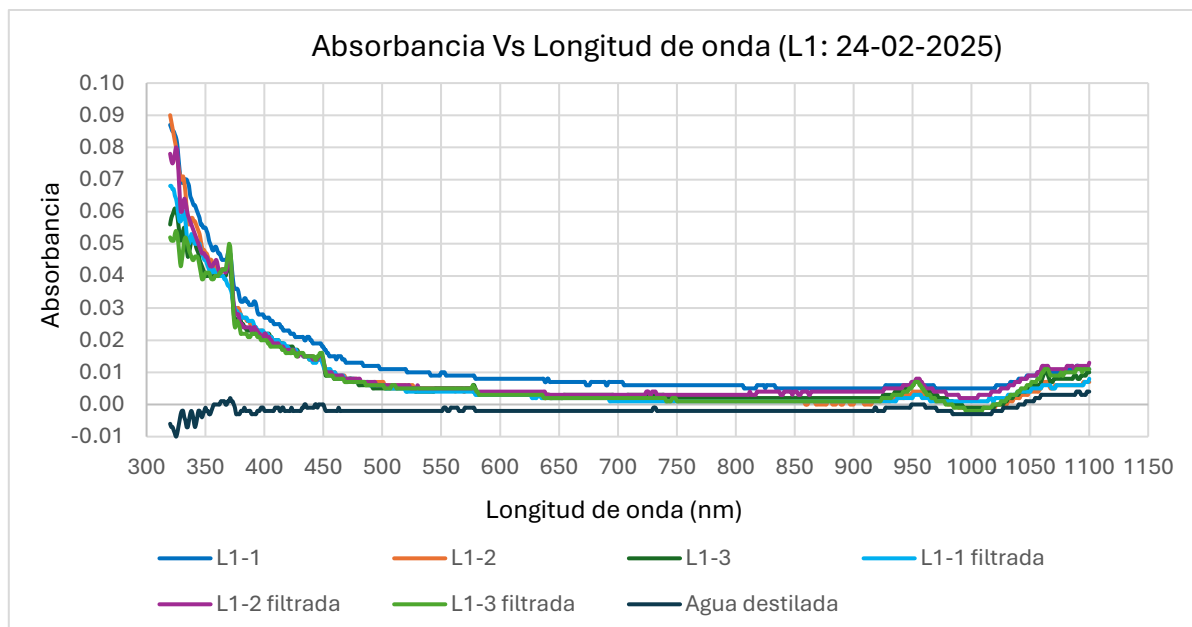


Figura 8.3. Gráfica de absorbancia para muestras sin filtrar y filtradas del humedal L1 y la absorbancia del agua destilada. Muestreo: 24-02-2025.

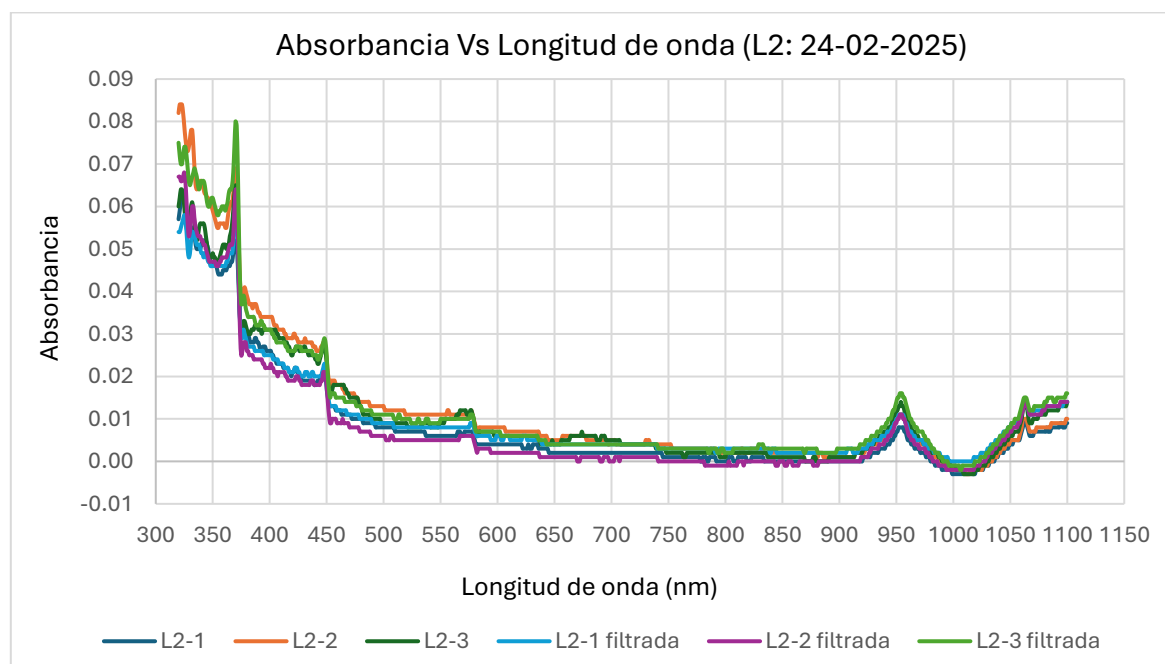


Figura 8.4 Gráfica de absorbancia para muestras sin filtrar y filtradas del humedal L2. Muestreo: 24-02-2025.

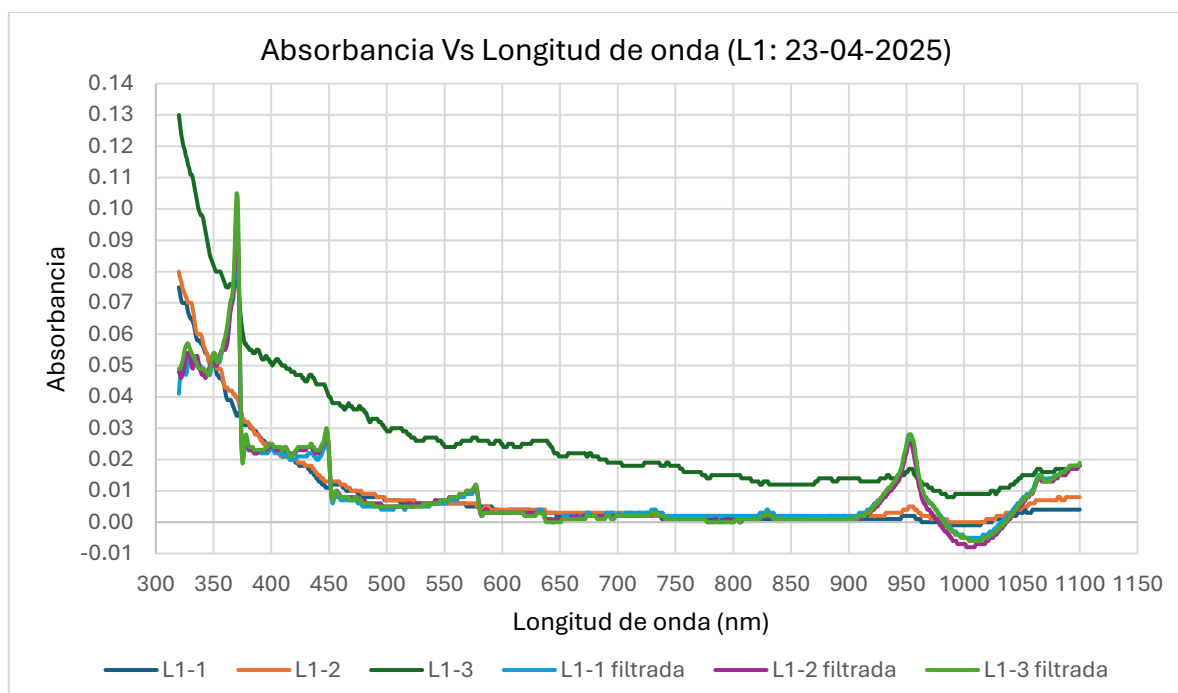


Figura 8.5. Gráfica de absorbancia para muestras sin filtrar y filtradas del humedal L1.
Muestreo: 23-04-2025.

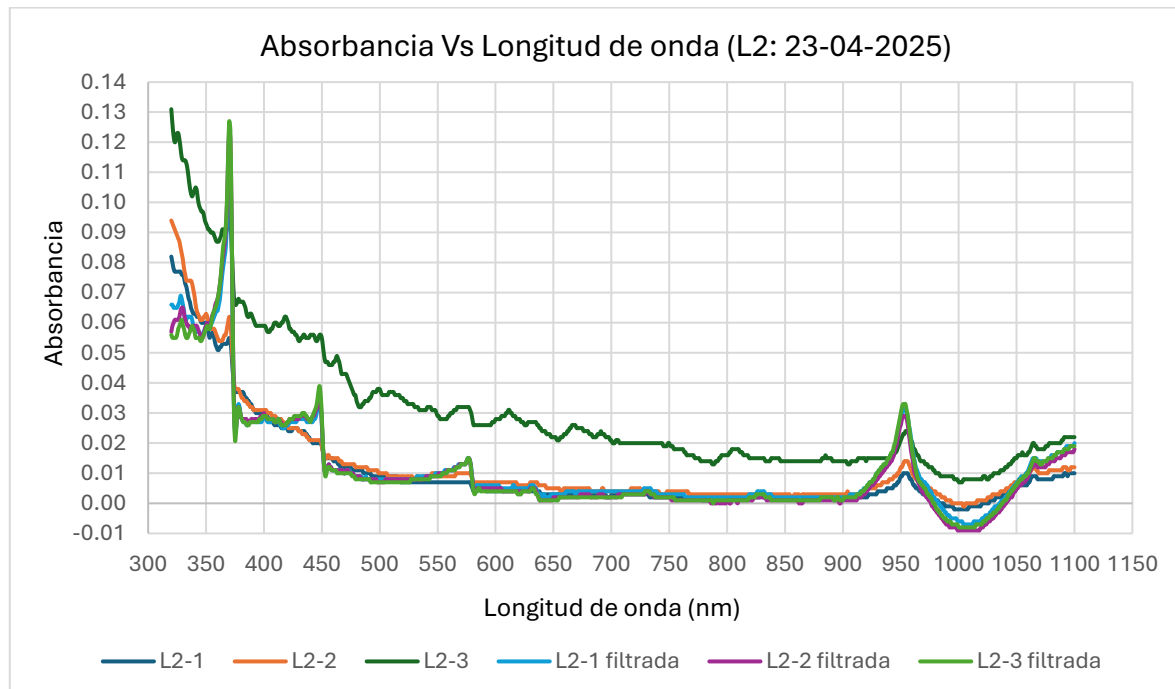


Figura 8.6. Gráfica de absorbancia para muestras sin filtrar y filtradas del humedal L2.
Muestreo: 23-04-2025.

8.3. Anexo 3: Tabla de valores de DQO_T, registrados en ambos humedales durante las cuatro campañas.

Tabla 8-1. Demanda química de oxígeno total en L1 y L2, durante las cuatro campañas de muestreo.

Parámetro	FWS CW	Muestra	Campañas - Fechas			
			17-12-2024	24-02-2025	31-03-2025	23-04-2025
Demanda Química de Oxígeno (mg/L)	L1	L1-1	11.45	12.90	15.75	16.70
		L1-2	15.30	13.95	15.50	10.40
		L1-3	10.70	11.80	20.10	37.85
		Promedio	12.48	12.88	17.12	21.65
		s	2.47	1.08	2.59	14.38
	L2	L2-1	11.45	15.35	15.90	14.10
		L2-2	16.70	12.50	14.90	13.35
		L2-3	57.20	20.00	75.50	45.00
		Promedio	28.45	15.95	35.43	24.15
		s	25.04	3.79	34.70	18.06

Nota: FWS CW – Humedal artificial de flujo superficial libre.

“s” es la desviación estándar muestral.

Fuente: Elaboración propia – 2025.

8.4. Anexo 4: Tabla de valores de Nitrógeno total y sus especies químicas, registrados en L1 y L2 durante las cuatro campañas.

Tabla 8-2. Nitrógeno total (TN) en L1 y L2, durante las cuatro campañas de muestreo.

Parámetro	FWS CW	Muestra	Campañas - Fechas			
			17-12-2024	24-02-2025	31-03-2025	23-04-2025
Nitrógeno total (mg/L)	L1	L1-1	14.193	8.10	10.30	21.38
		L1-2	13.435	8.85	10.35	20.78
		L1-3	14.325	9.05	11.75	21.13
		Promedio	13.98	8.67	10.80	21.09
		s	0.48	0.50	0.82	0.30
	L2	L2-1	13.795	13.25	15.08	24.35
		L2-2	13.98	13.30	15.23	23.38
		L2-3	14.285	13.40	15.23	24.05
		Promedio	14.02	13.32	15.18	23.93
		s	0.25	0.08	0.09	0.50

Nota: FWS CW – Humedal artificial de flujo superficial libre.

“s” es la desviación estándar muestral.

Fuente: Elaboración propia – 2025.

Tabla 8-3. Compuestos nitrogenados en L1 y L2, durante las cuatro campañas de muestreo.

Parámetro	FWS CW	Muestra	Campañas - Fechas			
			17-12-2024	24-02-2025	31-03-2025	23-04-2025
Nitratos NO₃⁻- N (mg/L)	L1	L1-1	14.98	8.70	10.25	19.75
		L1-2	15.08	8.90	9.95	20.23
		L1-3	14.98	9.00	11.40	19.38
		Promedio	15.01	8.87	10.53	19.78
		s	0.06	0.15	0.77	0.43
	L2	L2-1	14.03	13.05	15.45	23.18
		L2-2	13.60	13.15	15.40	22.98
		L2-3	14.05	12.90	12.15	22.23
		Promedio	13.89	13.03	14.33	22.79
		s	0.25	0.13	1.89	0.50
Nitritos NO₂⁻- N (mg/L)	L1	L1-1	0.04	0.08	0.138	0.08
		L1-2	0.05	0.07	0.16	0.08
		L1-3	0.04	0.055	0.145	0.08
		Promedio	0.04	0.07	0.15	0.08
		s	0.00	0.01	0.01	0.00
	L2	L2-1	0.07	0.07	0.07	0.11
		L2-2	0.08	0.075	0.08	0.113
		L2-3	0.08	0.065	0.08	0.105
		Promedio	0.07	0.07	0.08	0.11
		s	0.01	0.01	0.01	0.00
Amonio NH₄⁺- N (mg/L)	L1	L1-1	0.09	0.09	0.05	0.05
		L1-2	0.10	0.10	0.04	0.04
		L1-3	0.09	0.07	0.03	0.05
		Promedio	0.09	0.09	0.04	0.05
		s	0.01	0.01	0.01	0.01
	L2	L2-1	0.09	0.12	0.03	0.04
		L2-2	0.11	0.08	0.06	0.05
		L2-3	0.12	0.05	1.02	0.05
		Promedio	0.10	0.08	0.37	0.05
		s	0.02	0.04	0.56	0.00

Nota: FWS CW – Humedal artificial de flujo superficial libre.

“s” es la desviación estándar muestral.

Fuente: Elaboración propia – 2025.

8.5. Anexo 5: Tabla de valores de fósforo total y ortofosfatos registrados en L1 y L2 durante las cuatro campañas.

Tabla 8-4. Fósforo total y ortofosfatos en L1 y L2, durante las cuatro campañas de muestreo.

Parámetro	FWS CW	Muestra	Campañas - Fechas			
			17-12-2024	24-02-2025	31-03-2025	23-04-2025
Fósforo total (mg/L)	L1	L1-1	0.87	0.40	0.38	0.56
		L1-2	0.918	0.41	0.36	0.56
		L1-3	0.928	0.43	0.44	0.72
		Promedio	0.91	0.41	0.39	0.61
		s	0.03	0.01	0.04	0.09
	L2	L2-1	2.735	2.75	1.97	2.56
		L2-2	2.76	2.70	1.96	2.62
		L2-3	2.76	2.73	2.77	2.87
		Promedio	2.75	2.73	2.23	2.68
		s	0.01	0.02	0.47	0.17
Ortofosfatos $\text{PO}_4^{3-}\text{-P}$ (mg/L)	L1	L1-1	0.82	0.36	0.35	0.46
		L1-2	0.83	0.37	0.33	0.47
		L1-3	0.83	0.39	0.37	0.43
		Promedio	0.82	0.37	0.35	0.45
		s	0.00	0.01	0.02	0.02
	L2	L2-1	2.68	2.66	1.92	2.48
		L2-2	2.64	2.66	1.92	2.56
		L2-3	2.65	2.65	2.31	2.59
		Promedio	2.65	2.65	2.05	2.54
		s	0.02	0.00	0.22	0.06

Nota: FWS CW – Humedal artificial de flujo superficial libre.

“s” es la desviación estándar muestral.

Fuente: Elaboración propia – 2025.

8.6. Anexo 6: Gráfica de CT registrados en L1 y L2 durante las cuatro campañas.

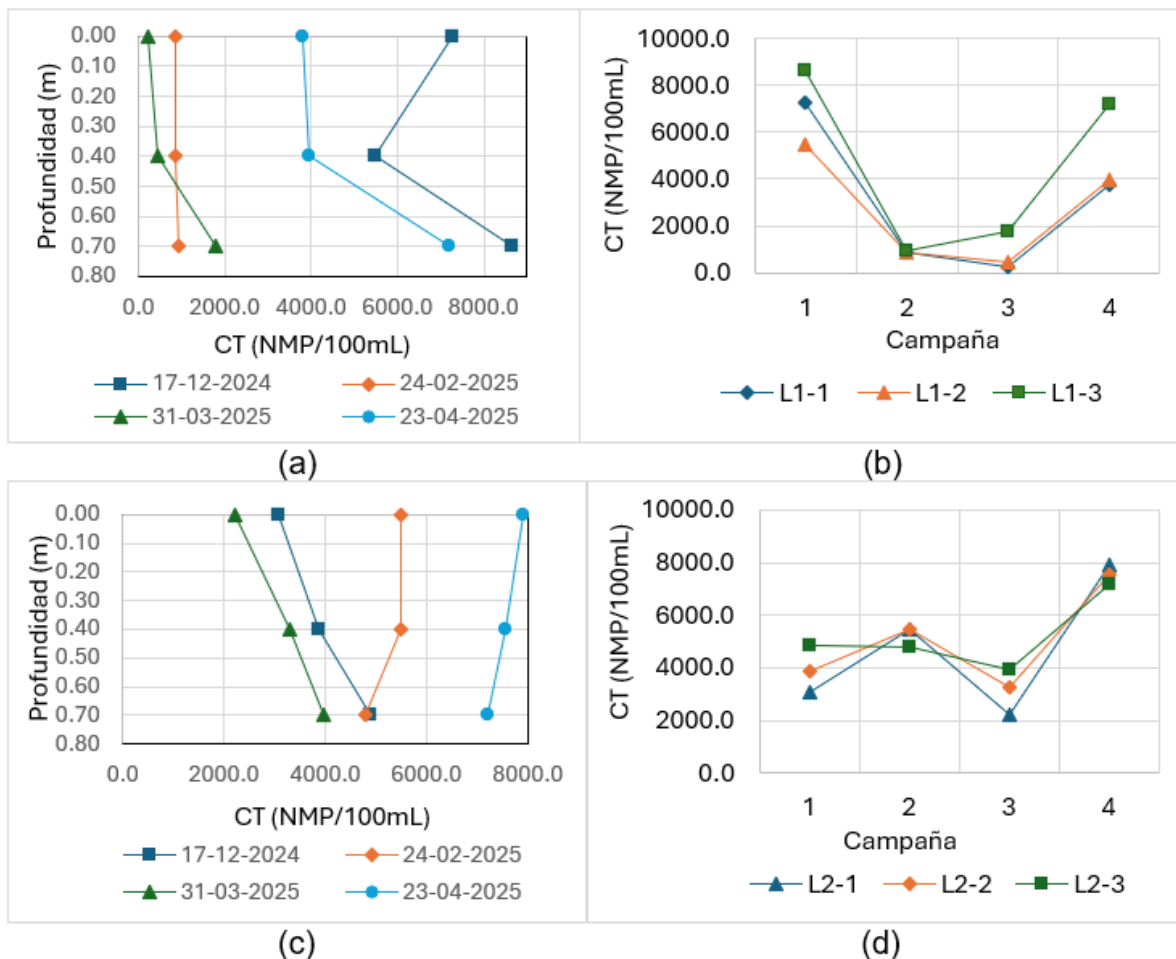


Figura 8.7. (a) Variación en profundidad de CT en L1. (b) Variación de CT por campaña en L1. (c) Variación en profundidad de CT en L2. (d) Variación de CT por campaña en L2.

8.7. Anexo 7: Tabla de profundidades evaluadas en la columna de agua y sus respectivas relaciones E_z/E_0 registrados en L1 y L2 durante las cuatro campañas.

Tabla 8-5. Profundidades evaluadas en la columna de agua y sus respectivas relaciones E_z/E_0 para la primera campaña.

Campaña Fecha	Humedal	Hora	Profundidad "z" (m)	E_z/E_0 promedio	s	Profundidad estimada "Z" (m)
17-12-2024	L1	11:42	0.03	0.059	0.006	-0.03
		11:45	0.13	0.039	0.000	0.11
		11:50	0.23	0.022	0.002	0.32
		11:56	0.33	0.020	0.001	0.35
		12:00	0.43	0.020	0.000	0.35
		12:05	0.53	0.014	0.001	0.48
		12:10	0.60	0.006	0.000	0.79
		12:17	0.69	0.008	0.001	0.68
		12:22	0.77	0.008	0.000	0.69
	L2	10:22	0.08	0.291	0.101	-0.01
		10:26	0.18	0.162	0.041	0.17
		10:32	0.28	0.094	0.057	0.33
		10:36	0.38	0.050	0.003	0.52
		10:41	0.48	0.051	0.010	0.51
		10:49	0.58	0.047	0.004	0.54
		10:52	0.68	0.038	0.008	0.60
		10:57	0.78	0.020	0.001	0.80

Nota: El signo negativo (-) en algunos valores de la profundidad estimada (Z) indica que el valor estimado está por encima del nivel libre de agua.

"s" es la desviación estándar muestral de la relación l_z/l_0 .

Fuente: Elaboración propia - 2025.

Tabla 8-6. Profundidades evaluadas en la columna de agua y sus respectivas relaciones E_z/E_0 para la segunda campaña.

Campaña Fecha	Humedal	Hora	Profundidad "z" (m)	E_z/E_0 promedio	s	Profundidad estimada "Z" (m)
24-02-2025	L1	11:29	0.00	0.609	0.011	-0.12
		11:33	0.09	0.339	0.010	0.16
		11:36	0.19	0.303	0.008	0.21
		11:39	0.29	0.241	0.004	0.32
		11:42	0.39	0.190	0.002	0.43
		11:45	0.49	0.140	0.002	0.57
		11:48	0.59	0.129	0.002	0.61
		11:54	0.69	0.137	0.003	0.58
	L2	10:41	0.01	0.537	0.022	0.01
		10:44	0.12	0.313	0.009	0.11
		10:46	0.21	0.143	0.001	0.26
		10:49	0.31	0.094	0.004	0.34
		10:55	0.41	0.067	0.007	0.40
		10:57	0.51	0.076	0.000	0.37
		11:00	0.61	0.018	0.000	0.64
		11:03	0.71	0.009	0.003	0.77

Nota: El signo negativo (-) en algunos valores de la profundidad estimada (Z) indica que el valor estimado está por encima del nivel libre de agua.

"s" es la desviación estándar muestral de la relación I_z/I_0 .

Fuente: Elaboración propia - 2025.

Tabla 8-7. Profundidades evaluadas en la columna de agua y sus respectivas relaciones E_z/E_0 para la tercera campaña.

Campaña Fecha	Humedal	Hora	Profundidad "z" (m)	E_z/E_0 promedio	s	Profundidad estimada "Z" (m)
31-03-2025	L1	11:25	0.00	0.520	0.002	-0.10
		11:28	0.10	0.228	0.007	0.12
		11:32	0.20	0.151	0.031	0.23
		11:35	0.30	0.080	0.002	0.40
		11:38	0.40	0.071	0.001	0.43
		11:42	0.50	0.044	0.000	0.56
		11:45	0.60	0.070	0.002	0.44
		11:48	0.70	0.024	0.000	0.72
		11:51	0.80	0.017	0.000	0.81
	L2	10:39	0.00	0.450	0.017	-0.13
		10:42	0.10	0.079	0.005	0.11
		10:45	0.20	0.022	0.000	0.28
		10:48	0.30	0.010	0.000	0.39
		10:52	0.40	0.006	0.000	0.46
		10:55	0.50	0.004	0.000	0.52
		10:58	0.60	0.003	0.000	0.55
		11:03	0.70	0.002	0.000	0.64

Nota: El signo negativo (-) en algunos valores de la profundidad estimada (Z) indica que el valor estimado está por encima del nivel libre de agua.

“s” es la desviación estándar muestral de la relación I_z/I_0 .

Fuente: Elaboración propia - 2025.

Tabla 8-8. Profundidades evaluadas en la columna de agua y sus respectivas relaciones E_z/E_0 para la cuarta campaña.

Campaña Fecha	Humedal	Hora	Profundidad “z” (m)	E_z/E_0 promedio	s	Profundidad estimada “Z” (m)
23-04-2025	L1	14:25	0.00	0.204	0.002	-0.15
		14:30	0.10	0.088	0.001	0.11
		14:33	0.20	0.054	0.000	0.26
		14:36	0.30	0.041	0.000	0.35
		14:39	0.40	0.030	0.000	0.45
		14:42	0.50	0.016	0.000	0.64
		14:45	0.60	0.017	0.000	0.61
		14:48	0.70	0.024	0.000	0.52
	L2	13:46	0.00	0.229	0.003	-0.11
		13:51	0.10	0.091	0.001	
		13:53	0.20	0.189	0.006	0.00
		13:56	0.30	0.103	0.004	0.32
		13:59	0.40	0.100	0.001	0.34
		14:03	0.50	0.069	0.002	0.54
		14:05	0.60	0.056	0.001	0.66
		14:09	0.70	0.055	0.003	0.67

Nota: El signo negativo (-) en algunos valores de la profundidad estimada (Z) indica que el valor estimado está por encima del nivel libre de agua.

“s” es la desviación estándar muestral de la relación I_z/I_0 .

Fuente: Elaboración propia - 2025.