

Anlage 8.3: Statistische Auswertung der Altdaten aus dem Messprogramm der BfUL

		OBF08391Tiefer Hilfe Gottes Stolln						OBF08380Tiefer Bünaustolln					
		n	MIN	MAX	MW	MEDIAN	P90	n	MIN	MAX	MW	MEDIAN	P90
Parameter	Einheit												
Vor-Ort-Untersuchung													
Durchfluss	l/s												
Beschreibung													
Sauerstoffgehalt	mg/l	29	10.00	11.20	10.71	10.80	11.00	14	10.30	11.90	11.04	10.95	11.50
Sauerstoffsättigung	%	29	97.00	104.00	100.45	100.00	102.20	14	97.00	105.00	100.00	99.50	102.70
el. Leitfähigkeit	µS/cm	29	246.00	291.00	269.59	271.00	282.20	14	183.00	507.00	400.86	412.50	477.00
pH (Feld)		29	6.40	7.30	6.94	6.90	7.20	14	6.50	7.50	7.08	7.15	7.30
Lufttemperatur	°C	29	-4.00	24.00	9.14	10.00	18.20	14	-4.00	17.00	6.86	7.50	15.00
Wassertemperatur	°C	29	7.50	9.00	8.58	8.70	9.00	14	5.30	9.70	7.30	7.30	8.77
Redoxpotenzial	mV												
Eh	mV												
Farbe	-												
Geruch	-												
Trübung	-												
Bemerkung													
Allgemeines Grundprogramm - gelöste Gehalte													
pH-Wert Labor	ohne	29	6.80	7.30	6.93	6.90	7.10	14	6.60	7.60	7.13	7.20	7.51
Chlorid	mg/l	29	48.00	65.00	55.86	56.00	60.00	15	31.00	120.00	91.27	98.00	110.00
Nitrat	mg/l	29	4.90	9.70	7.18	7.10	8.50	15	3.90	13.00	10.05	10.00	12.00
Sulfat	mg/l	29	15.00	21.00	17.86	18.00	19.00	15	18.00	33.00	24.27	24.00	29.80
Ammonium	mg/l	29	0.01	0.08	0.02	0.01	0.03	14	0.01	0.04	0.02	0.01	0.03
Fluorid	mg/l	29	2.30	3.00	2.60	2.60	2.82	15	0.50	3.00	1.73	1.50	2.48
Allgemeines Grundprogramm - Gesamtgehalte													
abfiltrierbare Stoffe	mg/l	29	5.00	30.00	5.86	5.00	5.00	15	5.00	220.00	19.33	5.00	5.00
o-Phosphat	mg/l	29	0.02	0.02	0.02	0.02	0.02	14	0.02	0.02	0.02	0.02	0.02
Metalle - gelöste Gehalte (im Prüfb. "aus der Originalprobe")													
Arsen	mg/l	6	3.40	4.50	3.97	4.00	4.35	14	2.80	6.60	4.57	4.55	6.17
Barium	µg/l	9	230.00	280.00	254.44	250.00	272.00	15	83.00	450.00	296.87	290.00	382.00
Beryllium (Be)	µg/l	7	5.80	9.60	7.97	8.20	9.12	15	0.60	8.70	2.27	1.60	3.34
Blei	µg/l	9	0.10	1.50	0.46	0.40	0.70	15	0.10	6.70	1.52	1.10	3.28
Bor	µg/l	6	22.00	26.00	23.83	23.50	26.00	15	14.00	41.00	30.13	30.00	38.00
Cadmium	µg/l	9	2.60	3.30	2.94	3.00	3.14	14	0.20	2.80	1.92	1.85	2.67
Calcium (Ca)	mg/l	9	22.00	26.00	24.22	25.00	26.00	15	12.00	31.00	25.40	26.00	29.60
Cobalt (Co)	µg/l	7	0.20	0.30	0.24	0.20	0.30	15	0.05	13.00	0.98	0.10	0.26
Eisen	mg/l	8	< 0.03	0.07	0.03	< 0.03	0.06	15	< 0.03	0.07	< 0.03	< 0.03	0.05
Kalium (K)	mg/l	29	2.90	5.20	4.30	4.40	4.92	15	2.70	7.50	4.63	4.60	5.20
Kupfer	µg/l	29	20.00	47.00	28.69	27.00	37.00	15	3.90	42.00	21.26	19.00	31.40
Lithium (Li)	µg/l	29	15.00	28.00	22.55	23.00	27.00	15	2.60	27.00	11.84	11.00	18.40
Mangan (Mn)	µg/l	29	23.00	37.00	29.21	28.00	34.00	15	7.20	48.00	18.68	16.00	28.80
Molybdän (Mo)	µg/l	29	9.80	22.00	17.44	17.00	20.20	14	2.40	18.00	7.23	5.95	10.37
Natrium (Na)	mg/l	29	22.00	27.00	24.34	24.00	26.00	15	23.00	68.00	52.87	56.00	65.00
Nickel	µg/l	29	< 0.5	1.90	0.92	1.00	1.32	15	< 0.5	3.80	1.30	1.30	1.66
Quecksilber	µg/l	5	< 0.02	0.05	0.02	0.02	0.04						
Thallium (Tl)	µg/l	29	0.20	0.30	0.30	0.30	0.30	15	< 0.1	0.40	0.28	0.30	0.36
Uran (U)	µg/l	29	13.00	24.00	17.79	17.00	20.60	15	1.20	20.00	7.44	6.40	12.92
Zink (Zn)	µg/l	29	110.00	360.00	163.10	160.00	180.00	15	7.00	160.00	96.27	110.00	120.00
Zinn	µg/l												
Metalle - Gesamtgehalte (im Prüfb. "Elemente aus dem oxidativen Säure-Aufschluss gemäß AbwV")													
Arsen	µg/l	11	6.20	12.00	7.44	6.70	9.10	3	6.90	59.00	24.47	7.50	48.70
Barium	µg/l	11	180.00	280.00	234.55	240.00	260.00	3	210.00	470.00	363.33	410.00	458.00
Beryllium (Be)	µg/l	11	5.40	10.00	8.05	7.90	10.00	3	1.70	8.00	4.67	4.30	7.26
Blei	µg/l	11	1.80	4.00	2.45	2.00	3.30	3	2.30	72.00	26.77	6.00	58.80
Bor	µg/l	11	16.00	27.00	21.36	22.00	26.00	3	26.00	45.00	33.00	28.00	41.60
Cadmium	µg/l	11	2.60	3.00	2.82	2.80	3.00	3	2.10	3.30	2.53	2.20	3.08
Cobalt	µg/l	11	0.20	0.40	0.25	0.20	0.30	3	0.10	19.00	6.47	0.30	15.26
Eisen	mg/l	11	0.05	0.10	0.07	0.07	0.09	3	0.06	5.60	1.92	0.10	4.50
Kupfer	µg/l	11	27.00	61.00	37.27	35.00	46.00	3	29.00	160.00	79.33	49.00	137.80
Molybdän	µg/l	11	14.00	31.00	19.00	19.00	21.00	3	5.60	19.00	10.23	6.10	16.42
Nickel	µg/l	11	< 0.5	1.20	0.87	0.90	1.20	3	1.50	5.30	2.93	2.00	4.64
Quecksilber	µg/l												
Thallium (Tl)	µg/l	11	0.20	0.40	0.30	0.30	0.30	3	0.30	2.20	0.97	0.40	1.84
Uran	µg/l	11	15.00	24.00	19.82	19.00	24.00	3	7.70	49.00	21.87	8.90	40.98
Zink	µg/l	11	140.00	170.00	157.27	160.00	170.00	3	110.00	220.00	150.00	120.00	200.00
Zinn	µg/l												
Organische Summenparameter													
TOC	mg/l	29	1.10	2.70	1.77	1.70	2.32	14	1.90	6.10	2.85	2.65	3.10
DOC	mg/l	29	1.10	2.60	1.64	1.50	2.22	14	1.70	5.80	2.70	2.50	3.00

Anlage 8.3: Statistische Auswertung der Altdaten aus dem Messprogramm der BfUL

		OBF08350    Neuer Bielastolln						OBF08440    Zwitterstocks Tiefer Erbstolln					
		n	MIN	MAX	MW	MEDIAN	P90	n	MIN	MAX	MW	MEDIAN	P90
Parameter	Einheit												
Vor-Ort-Untersuchung													
Durchfluss	l/s												
Beschreibung													
Sauerstoffgehalt	mg/l	17	10.30	12.20	10.84	10.60	11.48	16	8.90	13.10	11.04	11.00	11.60
Sauerstoffsättigung	%	17	96.00	114.00	102.06	101.00	107.80	16	92.00	102.00	97.69	98.00	101.50
el. Leitfähigkeit	µS/cm	17	289.00	874.00	340.88	306.00	327.60	16	73.00	190.00	117.44	111.00	170.00
pH (Feld)		17	6.90	11.90	8.31	8.00	9.52	16	6.50	7.40	7.18	7.20	7.40
Lufttemperatur	°C	17	-2.00	23.00	8.71	8.00	18.80	16	-22.00	18.00	4.81	9.00	15.00
Wassertemperatur	°C	17	7.70	12.10	10.32	10.50	11.64	16	1.40	13.30	7.16	7.40	8.70
Redoxpotenzial	mV												
Eh	mV												
Farbe	-												
Geruch	-												
Trübung	-												
Bemerkung													
Allgemeines Grundprogram													
pH-Wert Labor	ohne	17	6.90	12.00	8.36	8.00	9.48	16	6.90	7.30	7.12	7.10	7.20
Chlorid	mg/l	18	11.00	19.00	13.56	13.00	14.80	17	3.00	35.00	13.18	12.00	25.00
Nitrat	mg/l	18	5.30	11.00	7.11	6.85	8.27	16	1.40	6.20	4.53	4.60	5.80
Sulfat	mg/l	18	49.00	100.00	69.44	69.00	85.60	17	13.00	20.00	16.53	17.00	20.00
Ammonium	mg/l	13	< 0.03	0.05	0.04	0.05	0.05	16	0.01	0.10	0.02	0.01	0.03
Fluorid	mg/l	18	5.70	11.00	8.27	8.15	10.30	17	0.30	0.80	0.56	0.60	0.70
Allgemeines Grundprogram													
abfiltrierbare Stoffe	mg/l	18	5.00	72.00	13.44	5.00	30.80	17	0.50	13.00	4.88	5.00	5.00
o-Phosphat	mg/l	17	< 0.03	0.03	0.02	0.02	0.02	16	0.02	0.05	0.02	0.02	0.02
Metalle - gelöste Gehalte (in													
Arsen	mg/l	18	< 0.5	2.00	0.80	0.80	1.16	6	1.00	2.50	1.65	1.45	2.40
Barium	µg/l	18	83.00	150.00	109.44	110.00	130.00	5	81.00	140.00	106.60	100.00	136.00
Beryllium (Be)	µg/l	18	0.10	13.00	4.27	3.40	10.02	4	0.05	0.80	0.44	0.45	0.71
Blei	µg/l	18	< 0.2	0.40	0.12	0.10	0.10	3	0.10	0.10	0.10	0.10	0.10
Bor	µg/l	18	6.40	13.00	9.18	8.75	11.30	6	9.40	12.00	10.82	11.00	12.00
Cadmium	µg/l	18	0.10	3.20	1.48	1.35	2.48	5	0.08	0.20	0.11	0.10	0.16
Calcium (Ca)	mg/l	18	40.00	110.00	47.28	43.00	49.30	3	9.70	16.00	12.23	11.00	15.00
Cobalt (Co)	µg/l	18	0.20	7.30	3.51	3.60	5.13	4	0.05	0.05	0.05	0.05	0.05
Eisen	mg/l	18	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	6	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Kalium (K)	mg/l	18	4.90	11.00	6.54	6.00	7.79	4	1.60	1.80	1.73	1.75	1.80
Kupfer	µg/l	18	5.60	230.00	52.70	32.50	123.30	4	2.50	12.00	7.35	7.45	10.83
Lithium (Li)	µg/l	18	64.00	130.00	94.17	93.50	120.00	4	0.50	3.60	1.70	1.35	3.18
Mangan (Mn)	µg/l	18	2.20	1400.00	860.68	915.00	1200.00						
Molybdän (Mo)	µg/l	18	63.00	120.00	82.72	81.00	93.90						
Natrium (Na)	mg/l	18	8.00	11.00	9.01	8.70	9.93	6	2.60	17.00	8.43	7.65	14.50
Nickel	µg/l	18	< 0.5	2.40	1.32	1.50	2.33	5	< 0.5	0.90	0.69	0.80	0.86
Quecksilber	µg/l	5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02						
Thallium (Tl)	µg/l	18	< 0.1	0.20	0.14	0.10	0.20	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Uran (U)	µg/l	18	0.20	34.00	17.62	17.00	23.90	4	0.30	0.40	0.33	0.30	0.37
Zink (Zn)	µg/l	18	6.70	610.00	116.56	73.50	259.00	3	1.50	6.00	3.00	1.50	5.10
Zinn	µg/l												
Metalle - Gesamtgehalte (im													
Arsen	µg/l	12	3.00	9.60	6.05	5.65	8.38	6.00	1.50	4.00	2.47	2.35	3.50
Barium	µg/l	12	96.00	180.00	122.17	120.00	130.00	6.00	23.00	82.00	59.00	67.00	77.50
Beryllium (Be)	µg/l	12	5.70	14.00	9.63	9.80	13.70	6.00	0.05	0.90	0.51	0.60	0.80
Blei	µg/l	12	< 0.2	1.20	0.43	0.30	1.04	6.00	0.20	2.20	0.85	0.45	1.85
Bor	µg/l	12	6.40	13.00	9.60	9.15	12.00	6.00	6.70	12.00	10.62	11.00	12.00
Cadmium	µg/l	12	1.00	3.20	1.94	2.05	2.87	6.00	0.02	0.10	0.08	0.09	0.10
Cobalt	µg/l	12	2.30	7.50	4.31	4.40	5.47	6.00	< 0.1	0.10	< 0.1	< 0.1	< 0.1
Eisen	mg/l	12	0.03	0.30	0.10	0.07	0.20	6.00	0.03	0.30	0.11	0.09	0.20
Kupfer	µg/l	12	190.00	890.00	454.17	445.00	727.00	6.00	2.10	18.00	10.10	11.50	16.50
Molybdän	µg/l	12	69.00	140.00	88.17	83.50	97.90	6.00	0.50	1.00	0.73	0.75	0.95
Nickel	µg/l	12	8.00	11.00	9.20	9.15	9.89	6.00	< 0.5	1.00	0.52	0.50	0.80
Quecksilber	µg/l	12	0.25	2.80	1.44	1.55	2.68						
Thallium (Tl)	µg/l	12	0.10	0.20	0.17	0.20	0.20	6.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Uran	µg/l	12	16.00	54.00	33.67	30.50	47.50	6.00	< 0.1	0.80	0.41	0.45	0.70
Zink	µg/l	12	89.00	300.00	175.25	175.00	250.00	6.00	3.10	12.00	7.07	7.15	10.65
Zinn	µg/l												
Organische Summenparamete													
TOC	mg/l	17	0.25	2.20	0.59	0.50	0.92	16	0.80	4.20	1.85	1.80	2.35
DOC	mg/l	17	0.25	0.90	0.39	0.25	0.60	16	0.80	3.30	1.63	1.60	2.15