

**Figure C1-39. Total nickel (mg/L).**

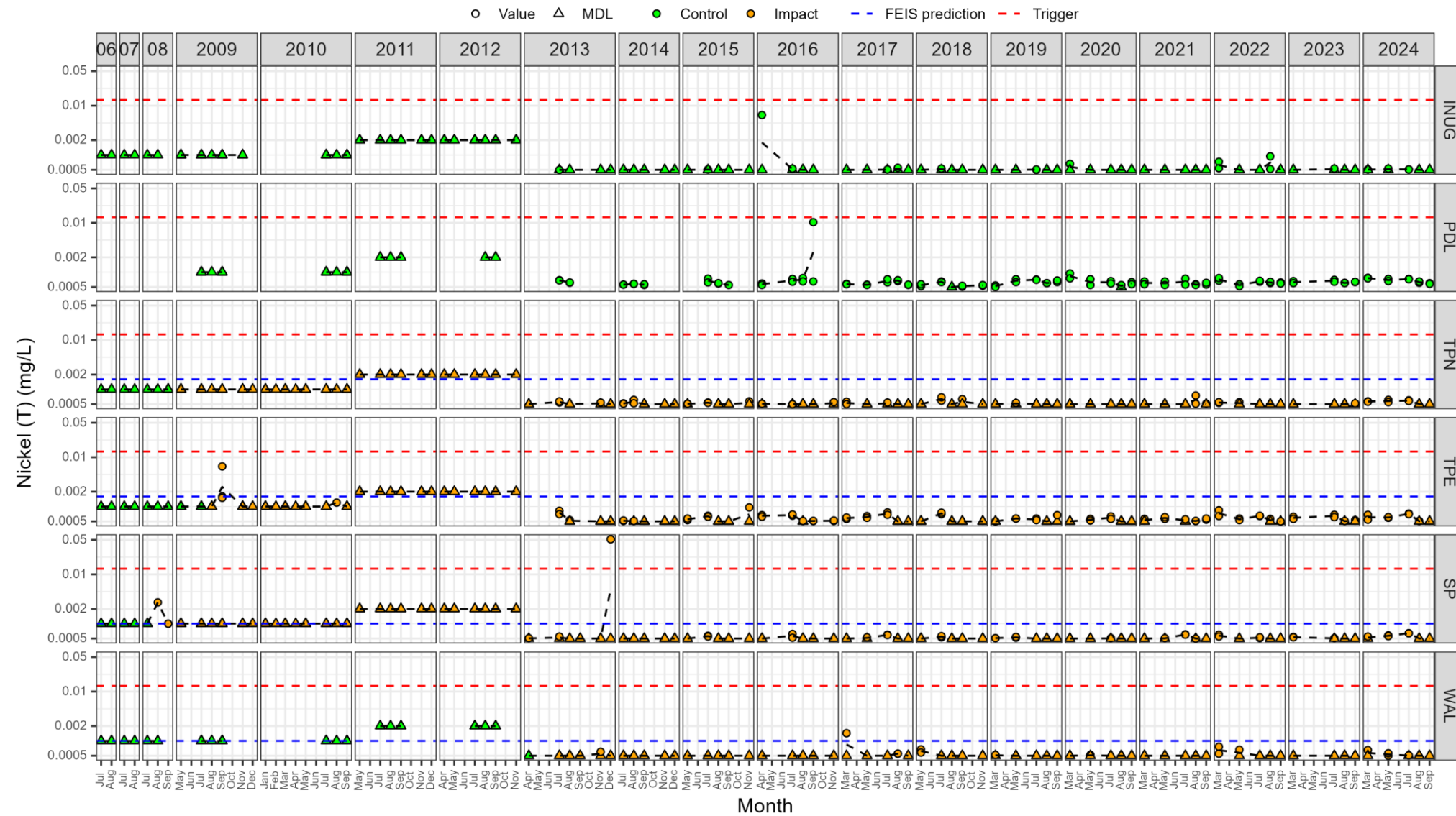




Figure C1-40. Total potassium (mg/L).





Figure C1-41. Total selenium (mg/L).

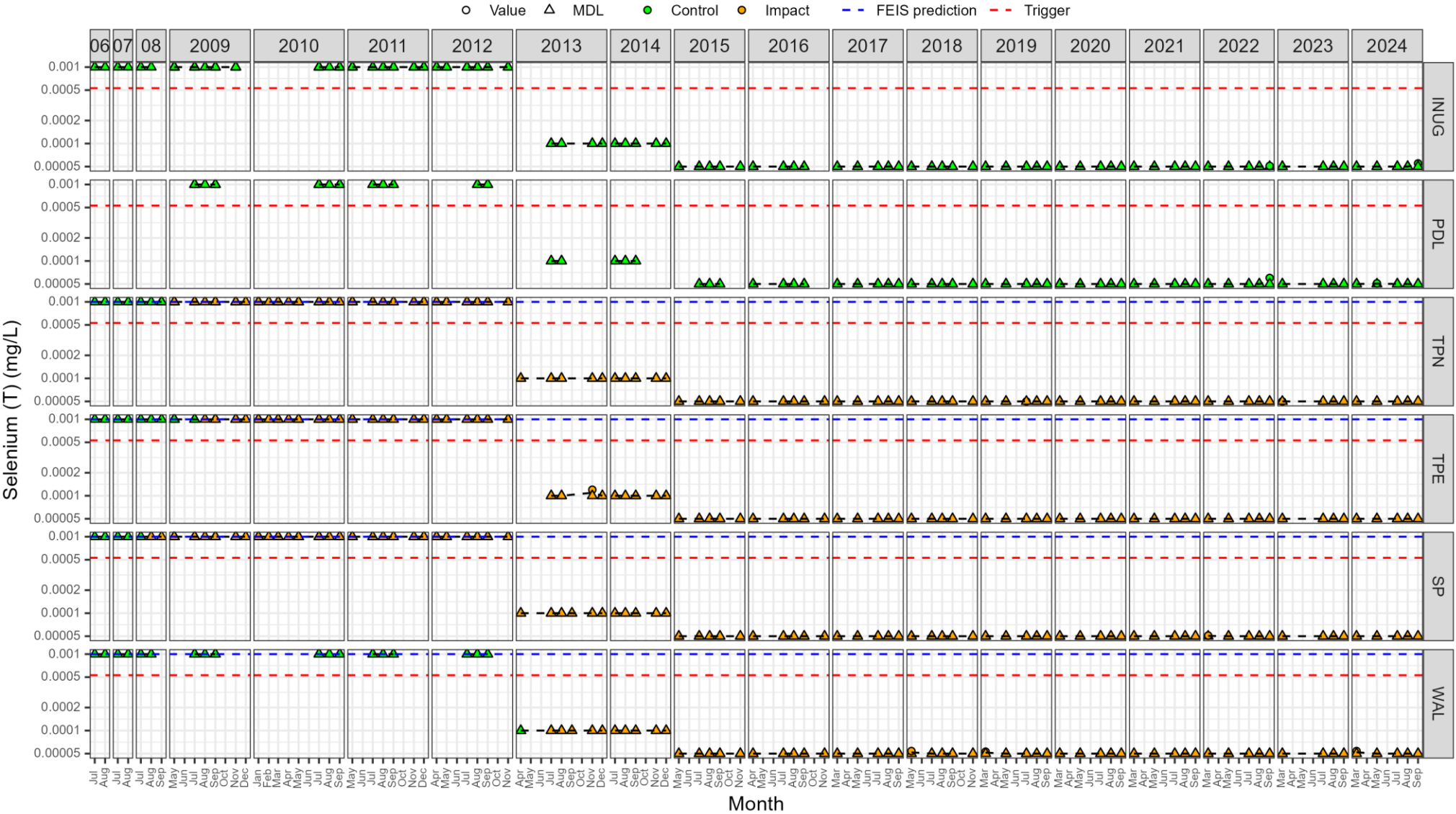




Figure C1-42. Total silicon (mg/L).

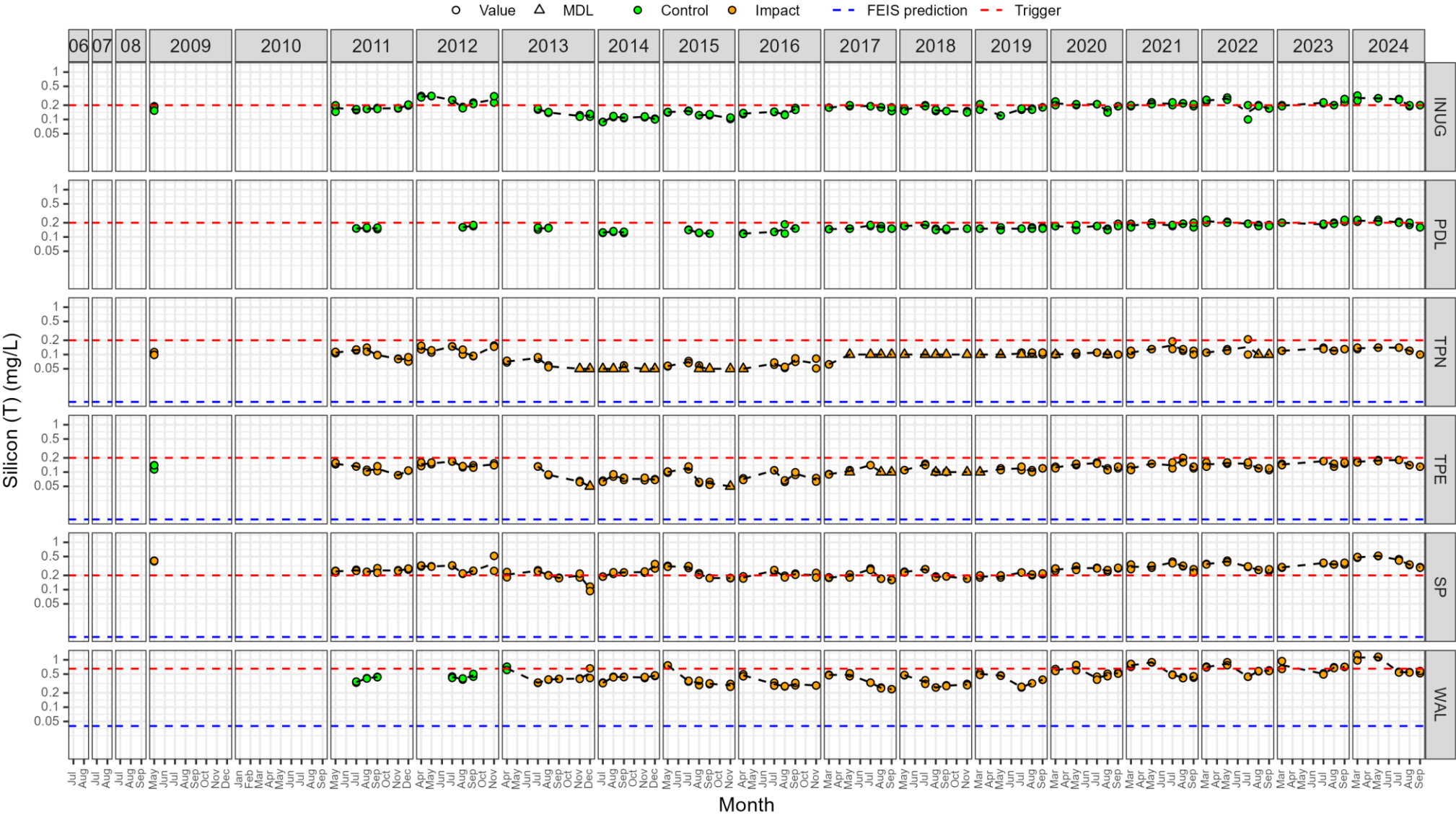




Figure C1-43. Total silver (mg/L).

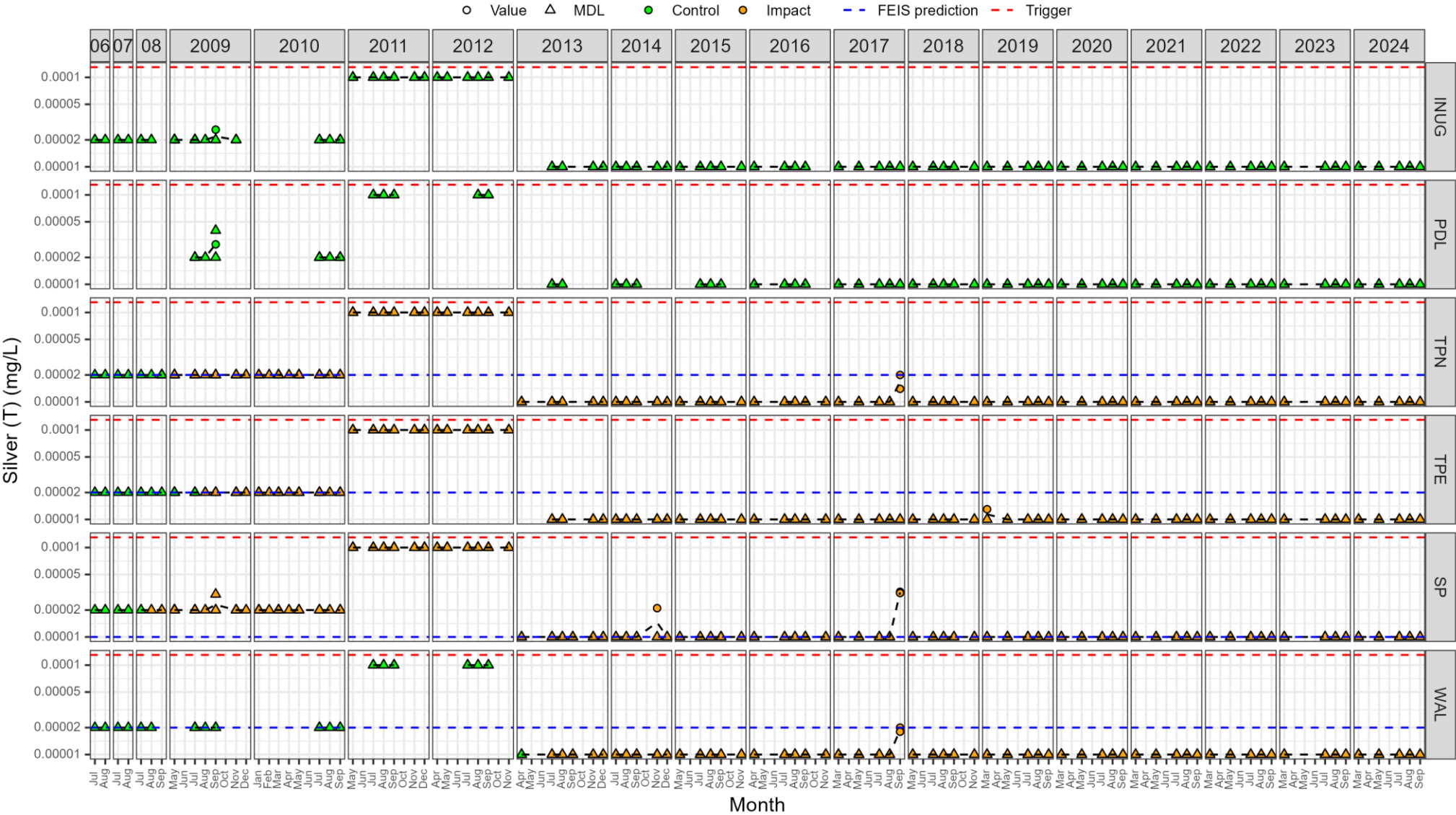




Figure C1-44. Total sodium (mg/L).

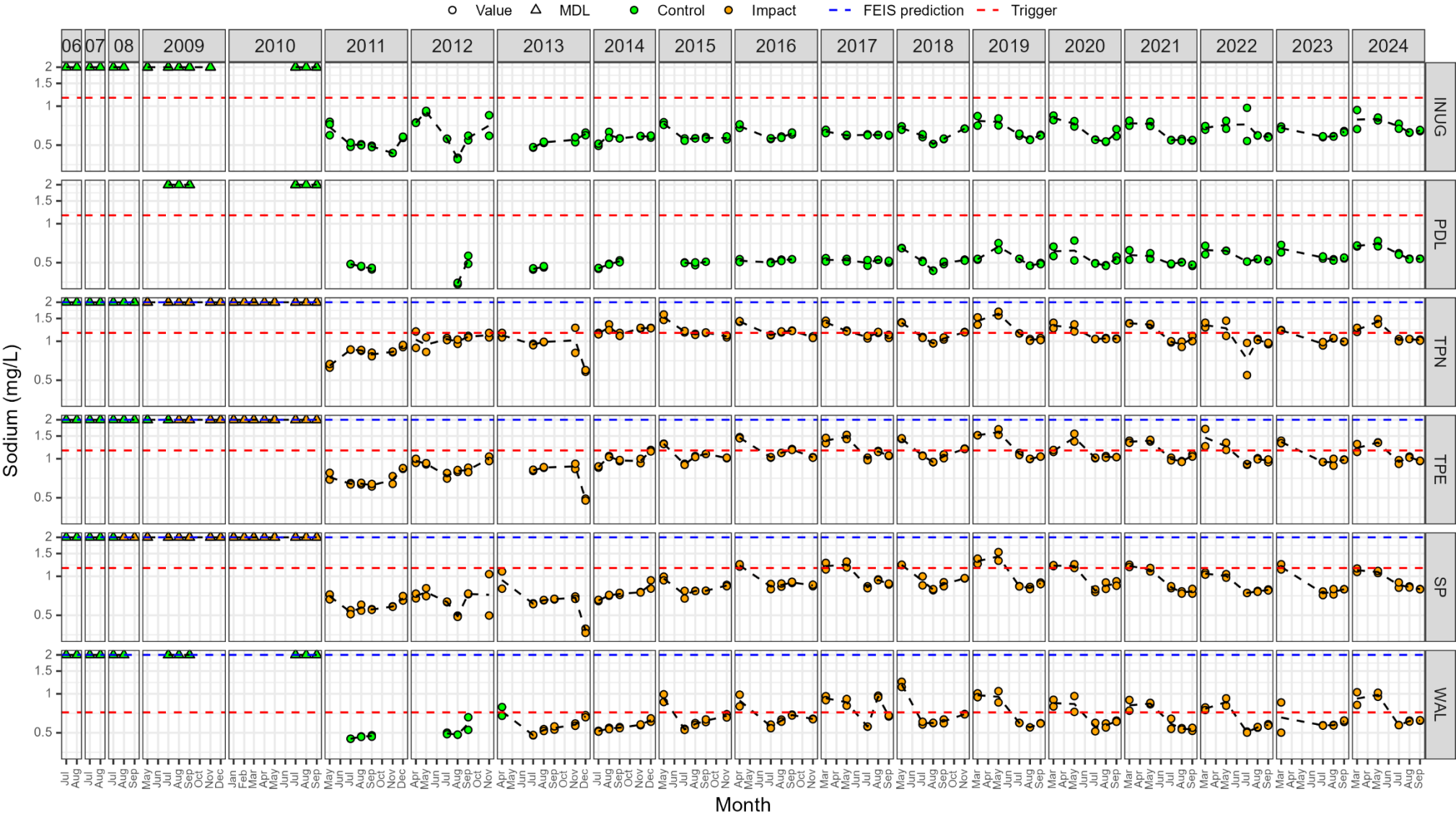




Figure C1-45. Total strontium (mg/L).

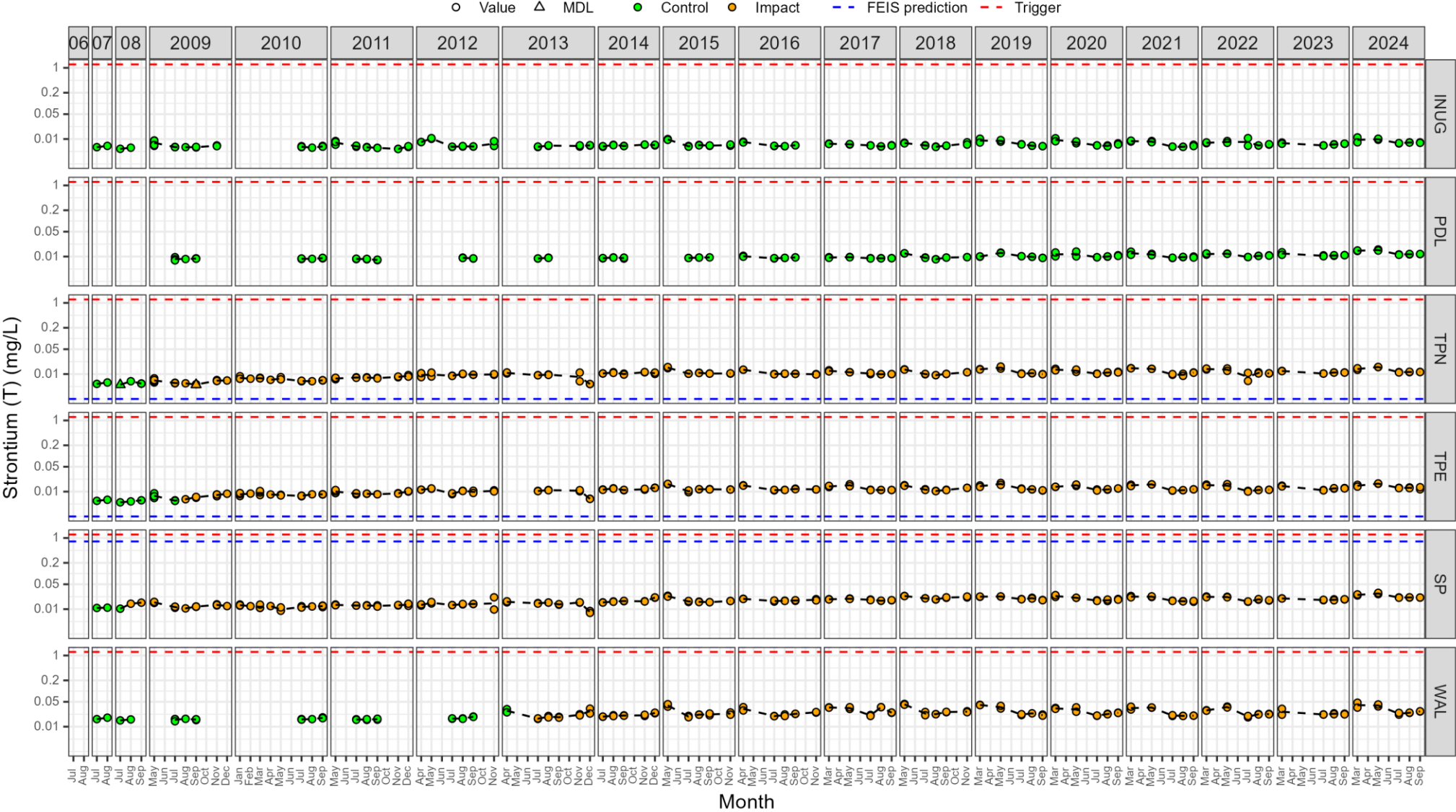




Figure C1-46. Total thallium (mg/L).

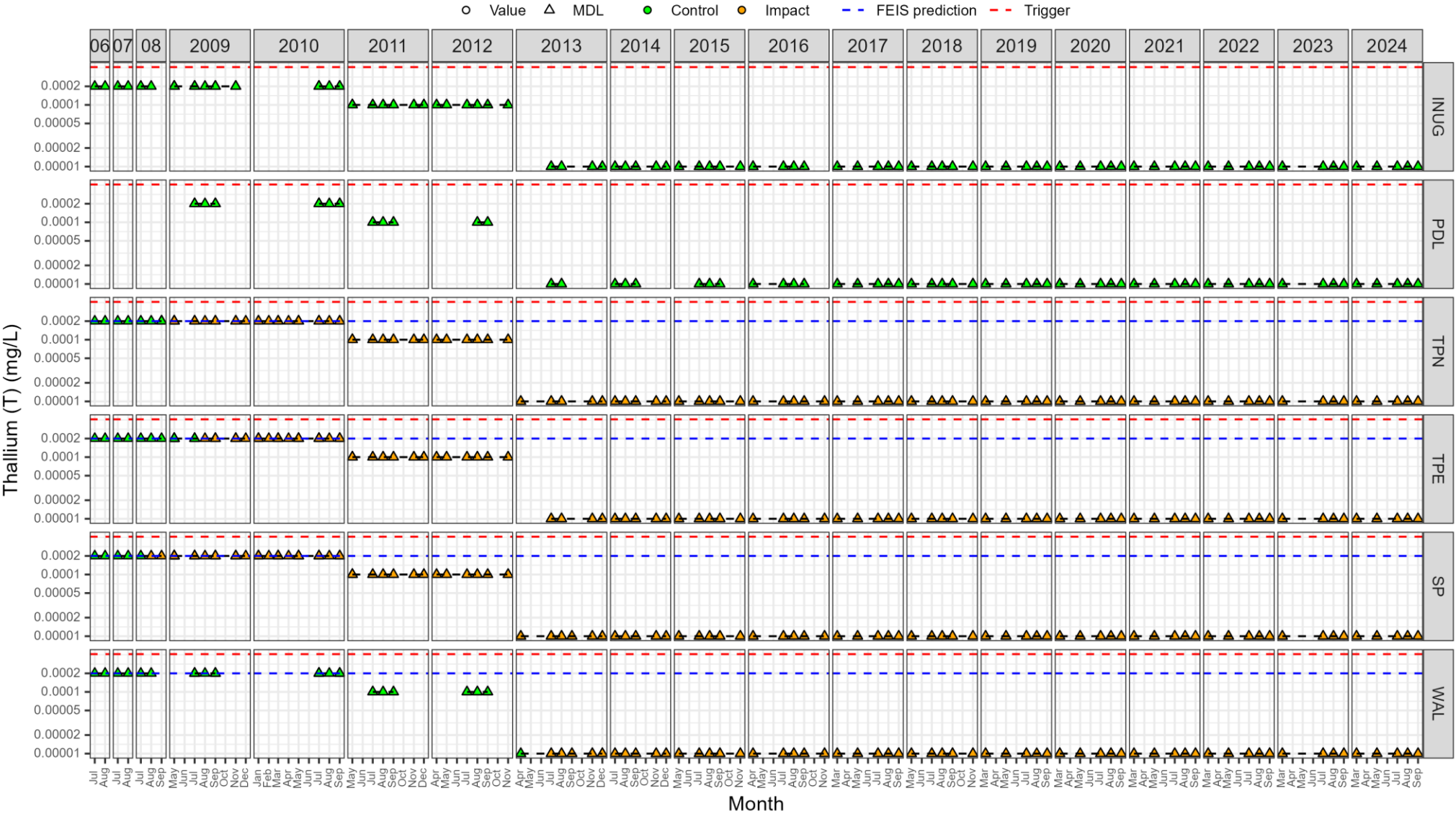




Figure C1-47. Total tin (mg/L).

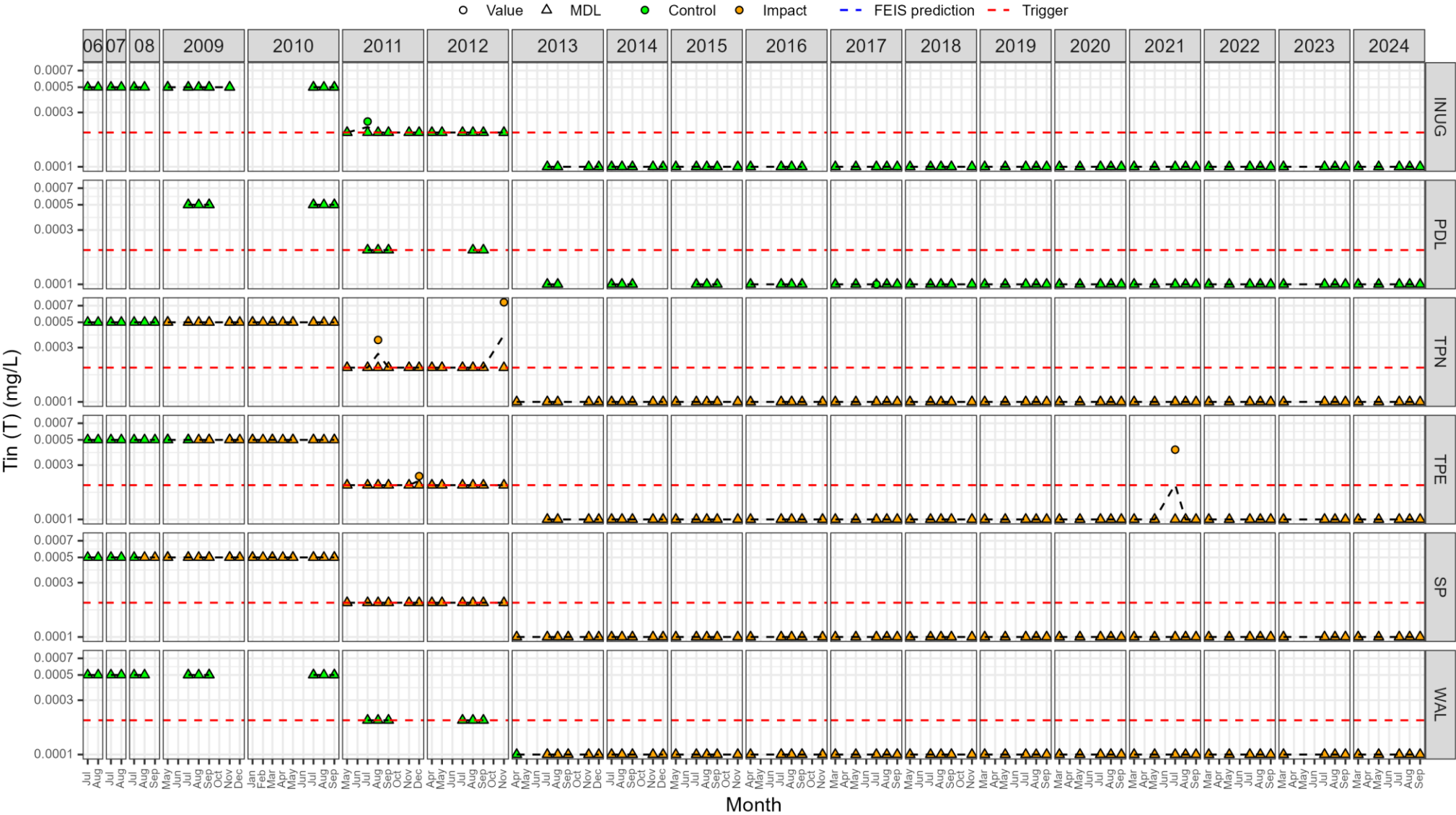




Figure C1-48. Total titanium (mg/L).

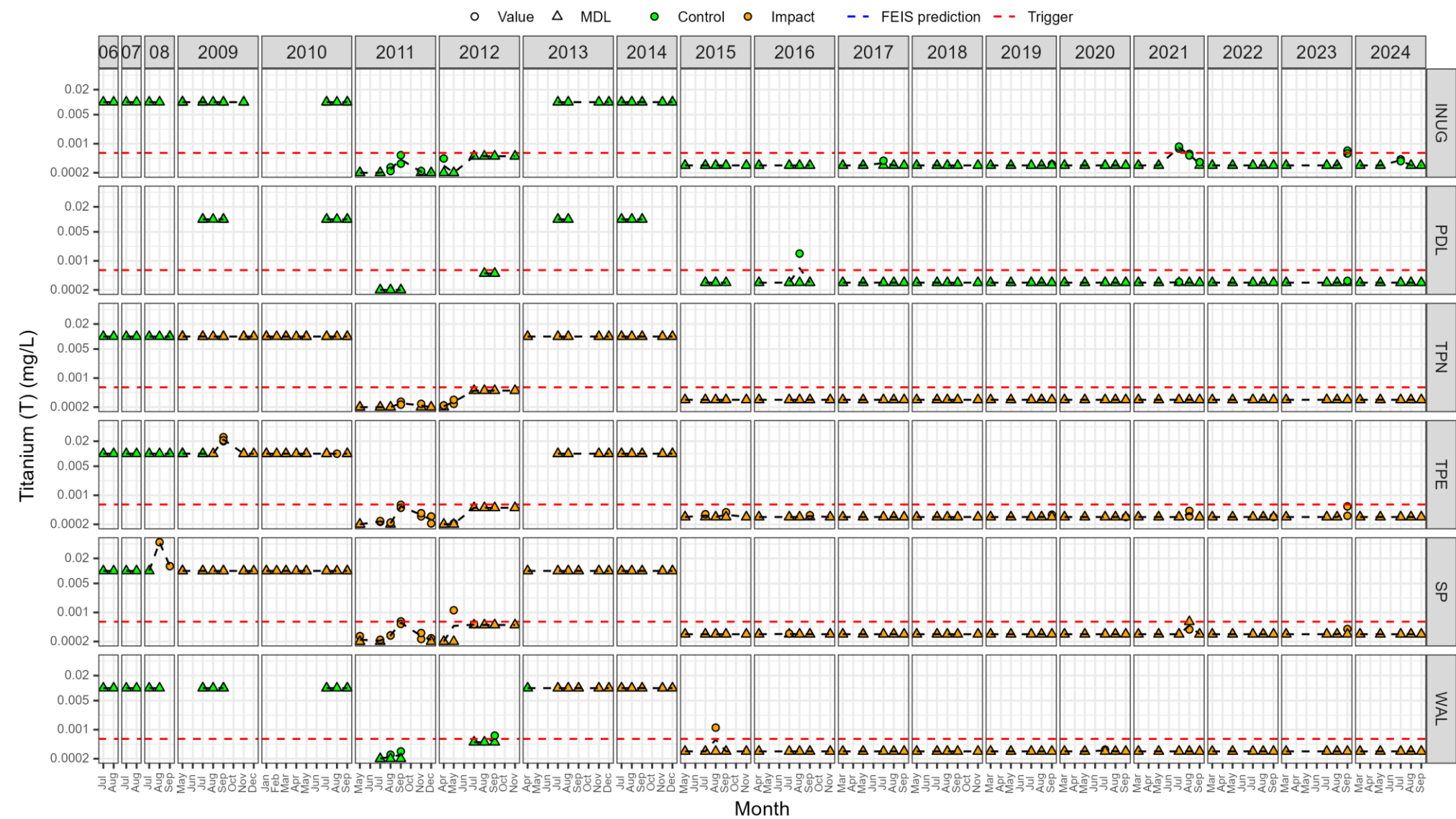




Figure C1-49. Total uranium (mg/L).

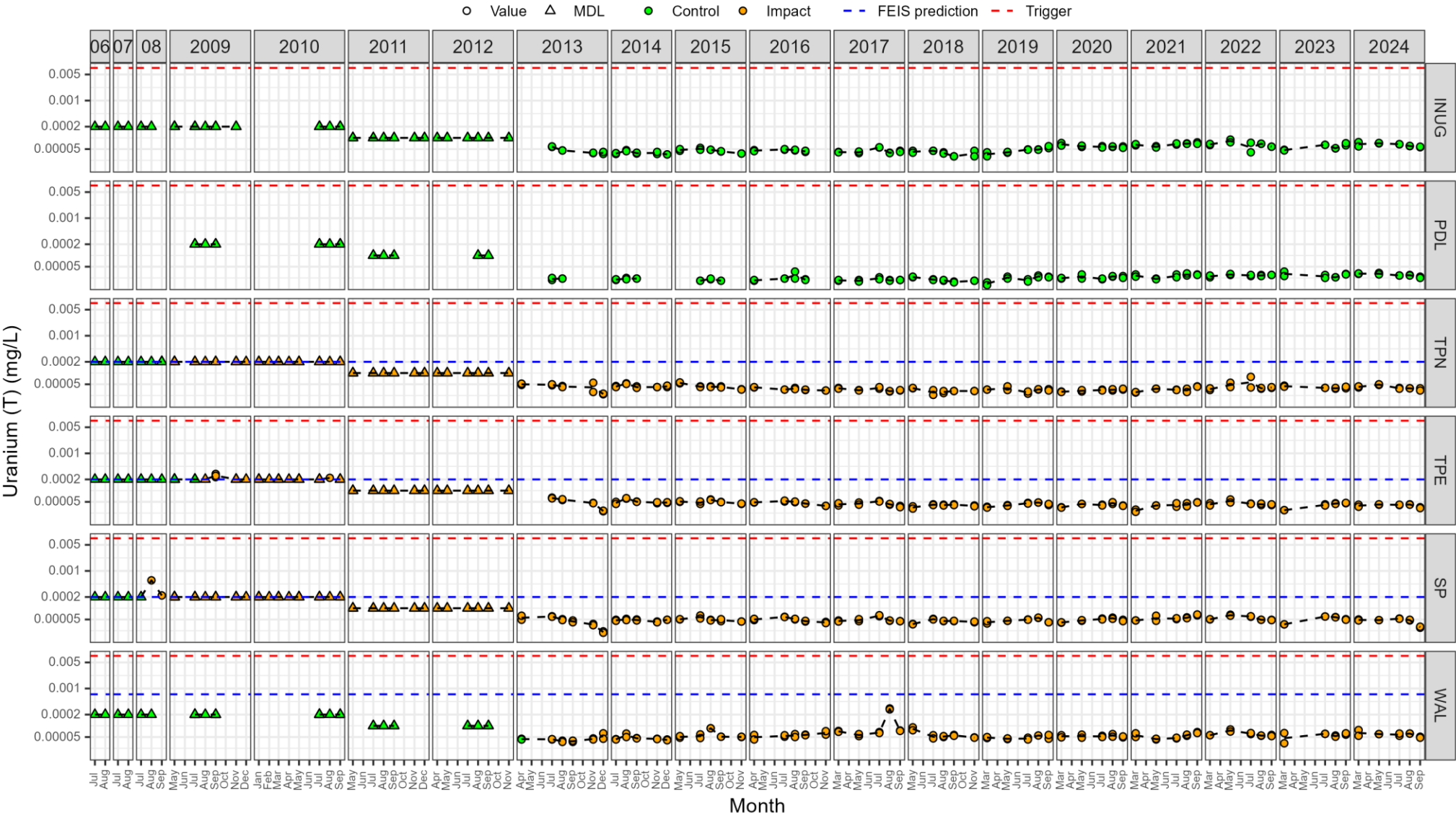




Figure C1-50. Total vanadium (mg/L).

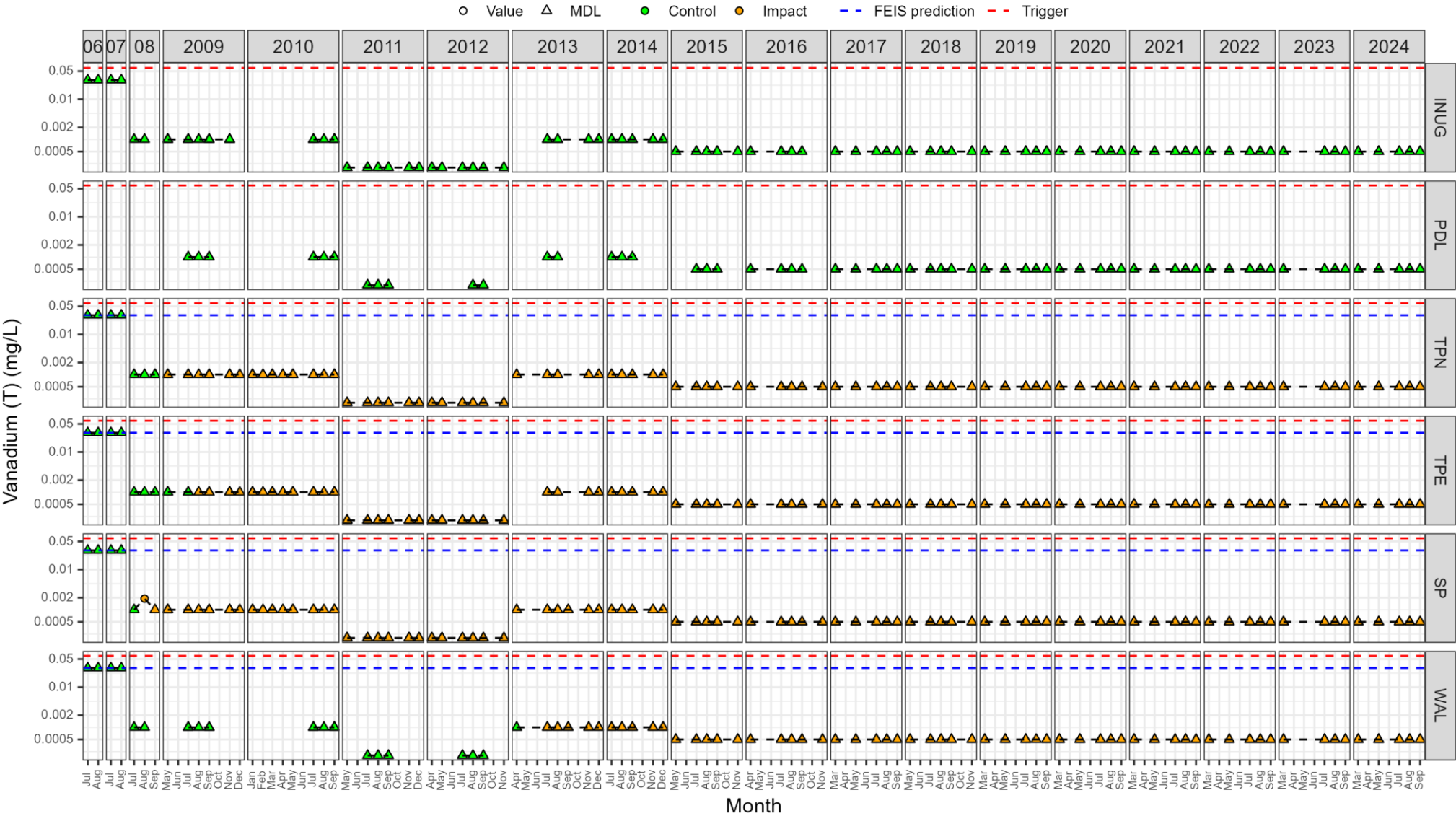




Figure C1-51. Total zinc (mg/L).

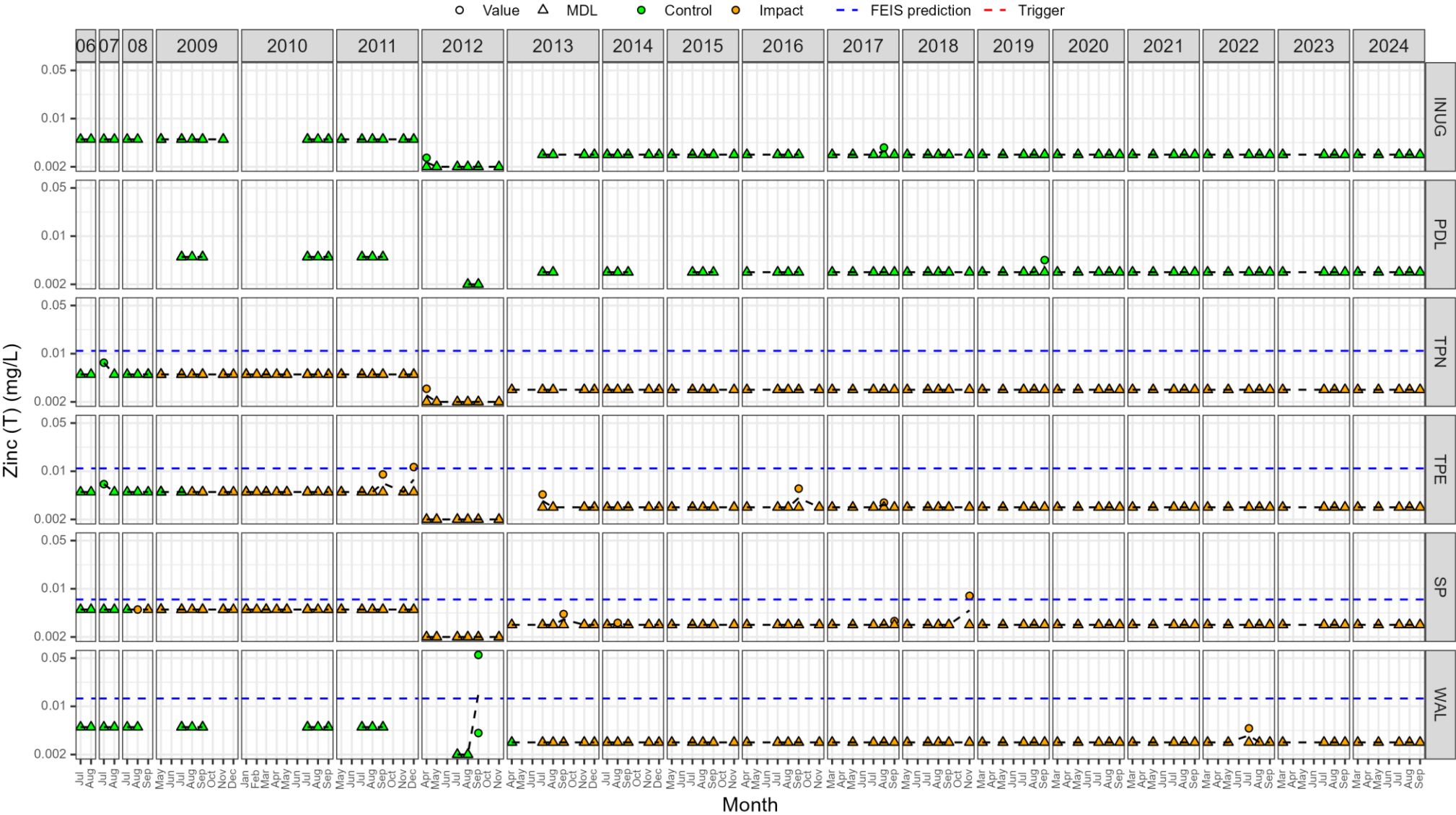




Figure C1-52. Total cyanide (mg/L).

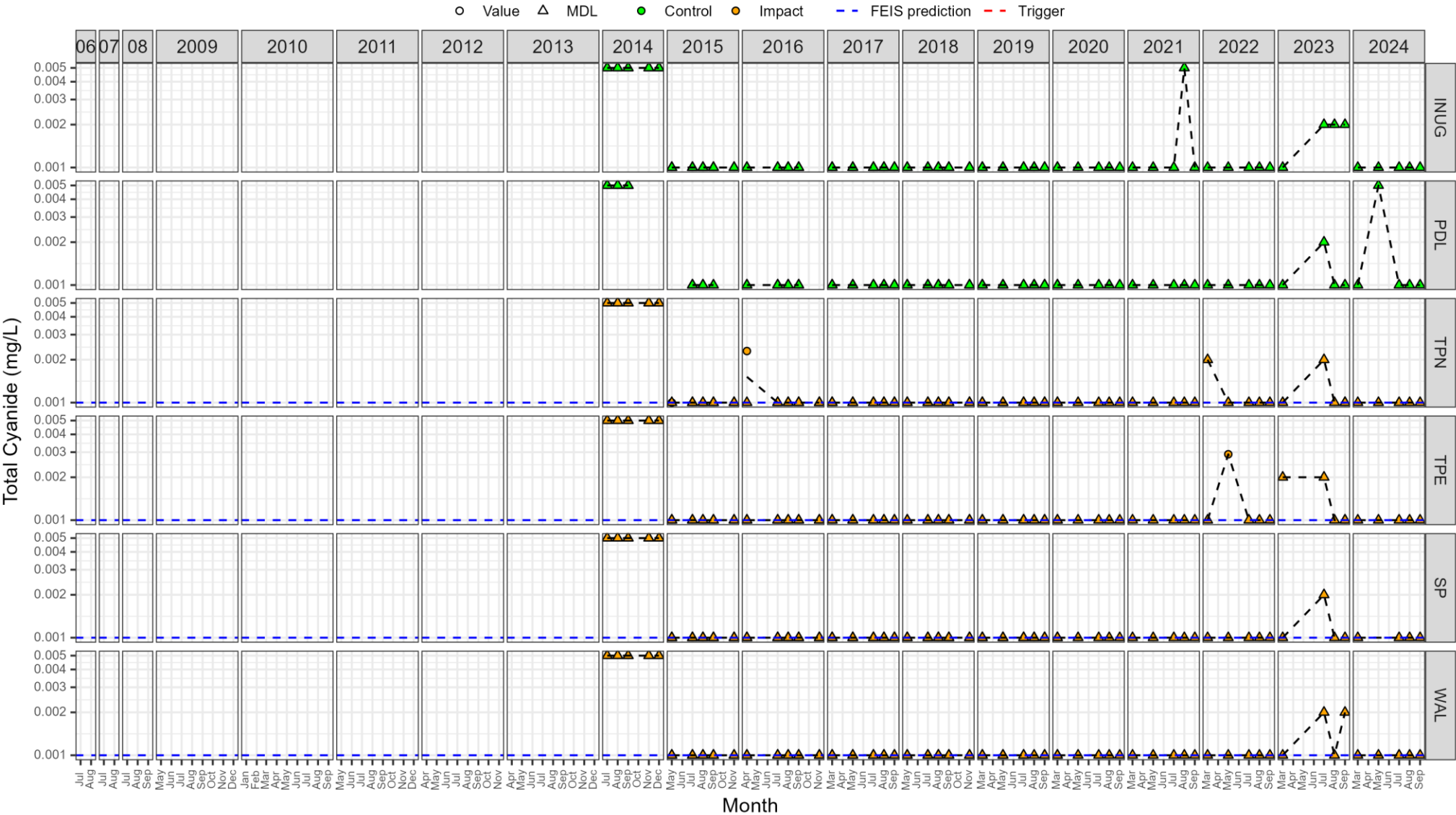




Figure C1-53. Free cyanide (mg/L).

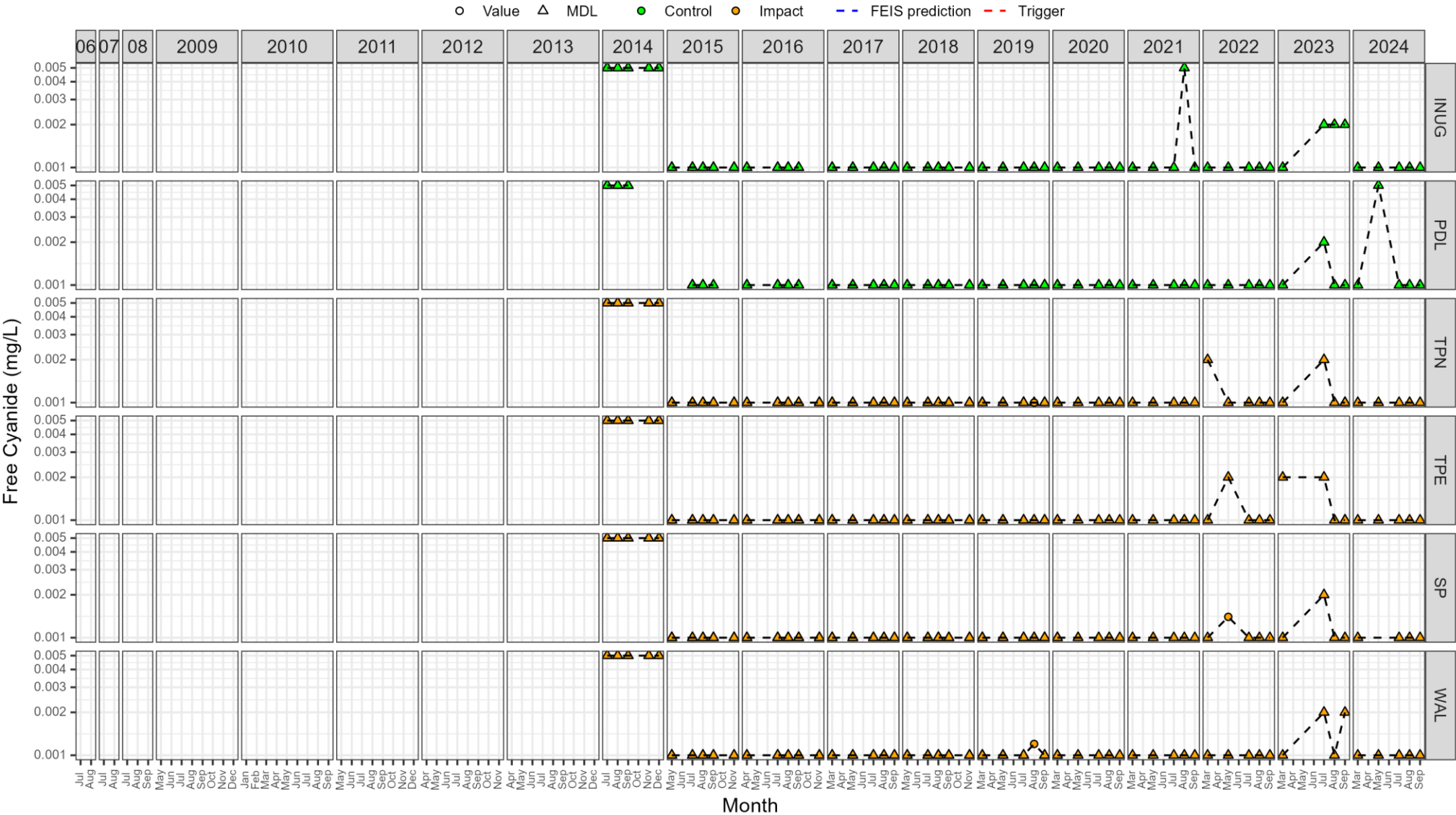




Figure C1-54. Dissolved aluminum (mg/L).

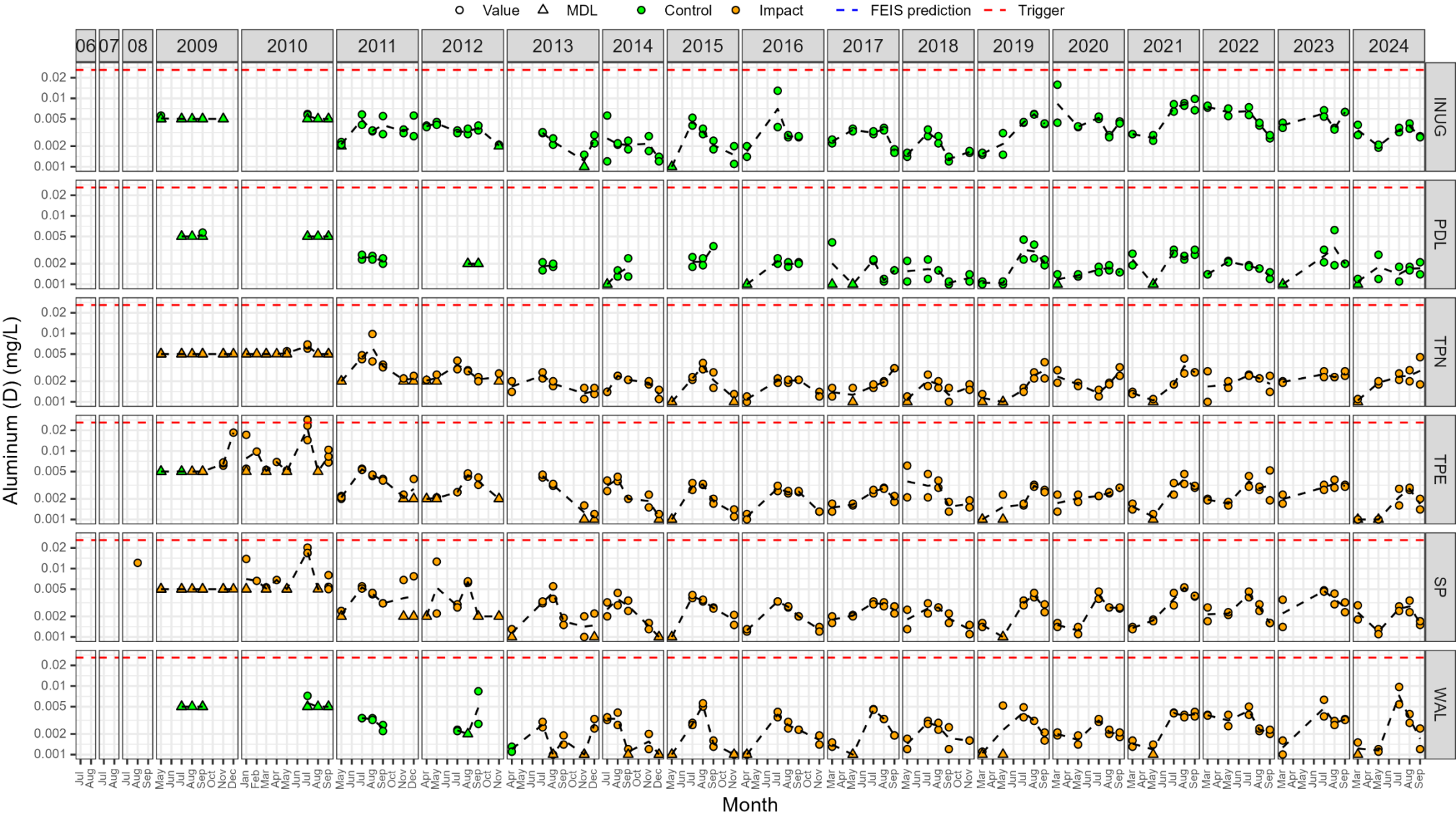




Figure C1-55. Dissolved antimony (mg/L).

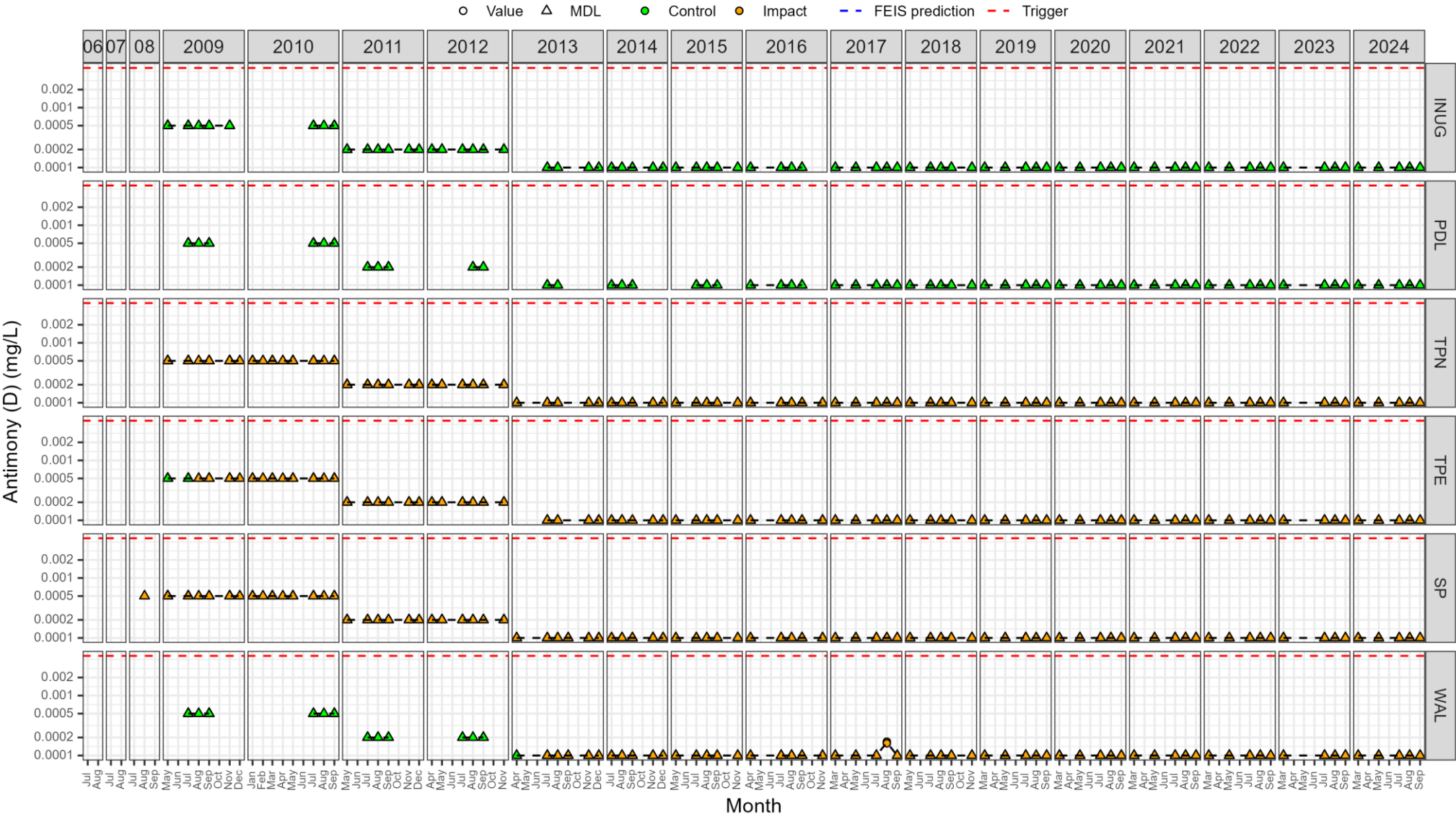




Figure C1-56. Dissolved arsenic (mg/L).

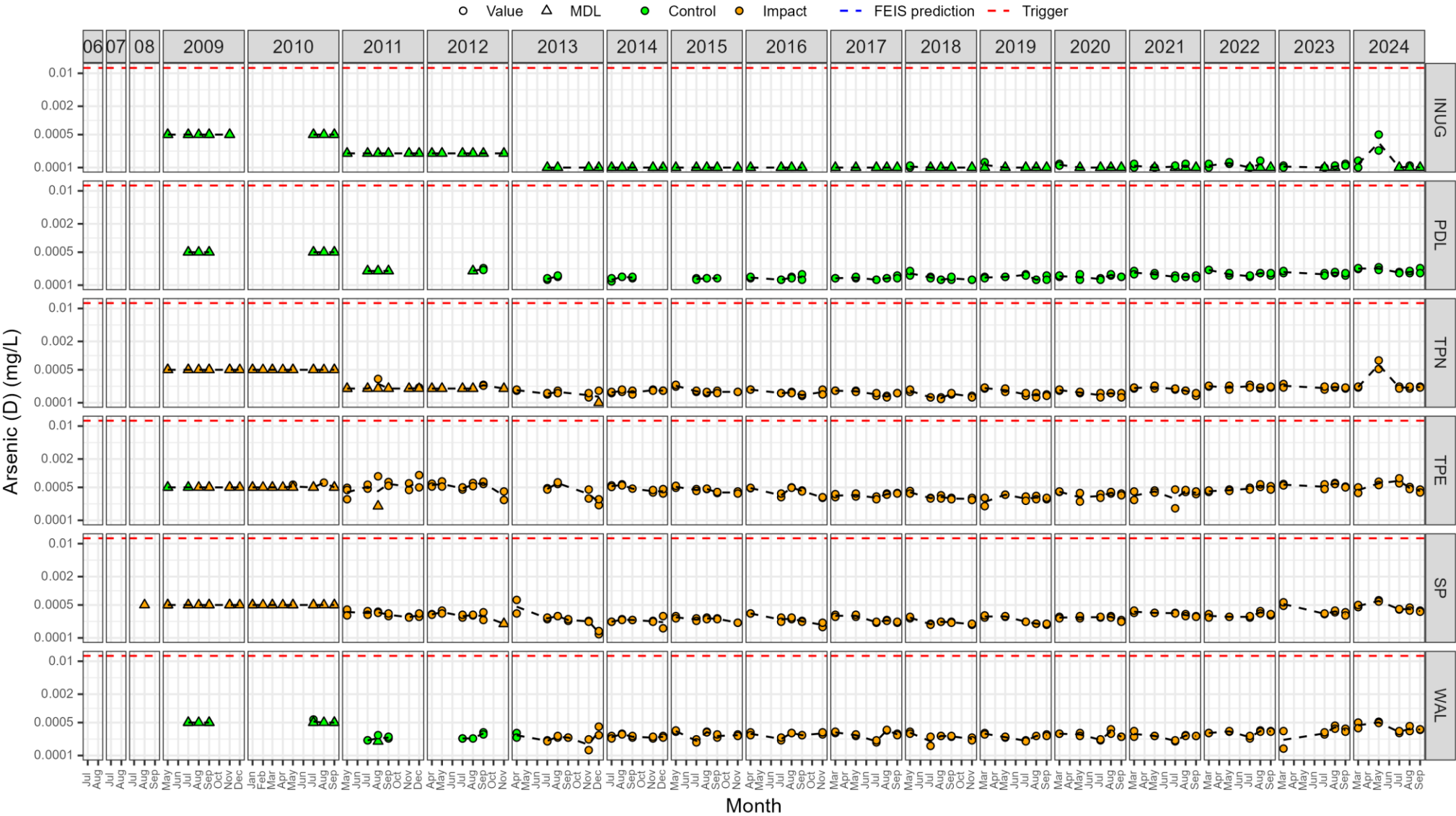




Figure C1-57. Dissolved barium (mg/L).

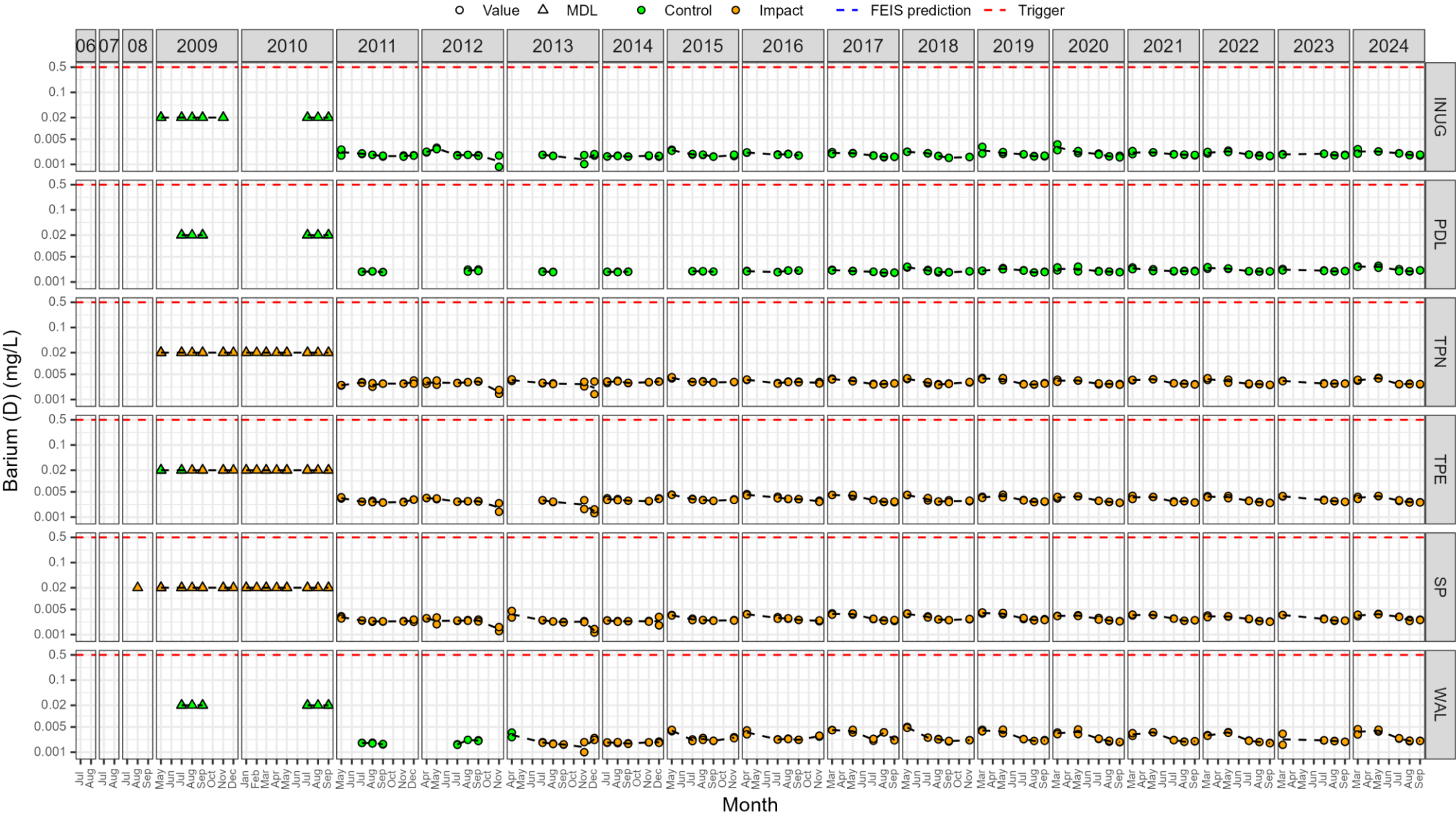




Figure C1-58. Dissolved beryllium (mg/L).

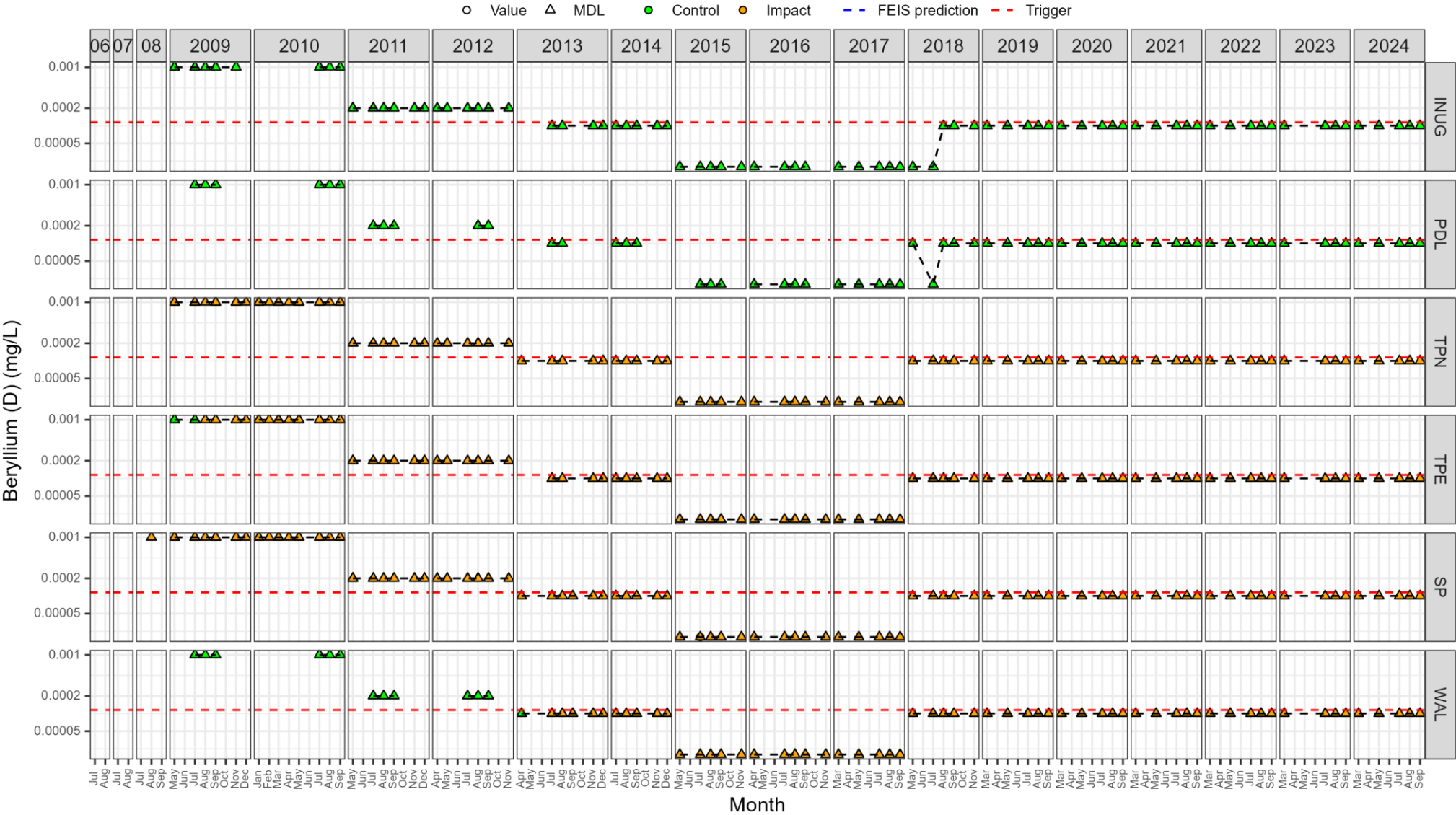




Figure C1-59. Dissolved boron (mg/L).

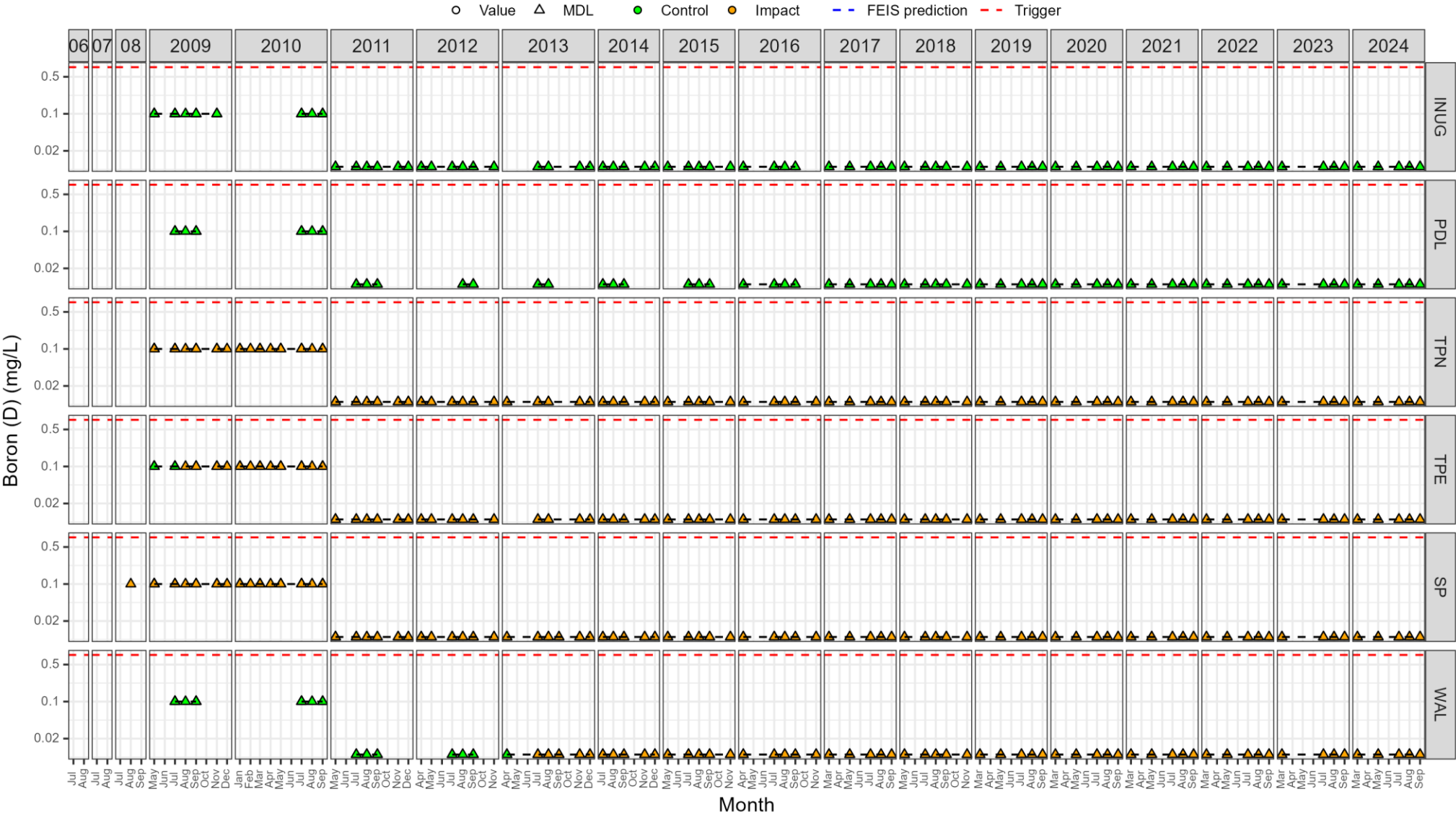




Figure C1-60. Dissolved cadmium (mg/L).

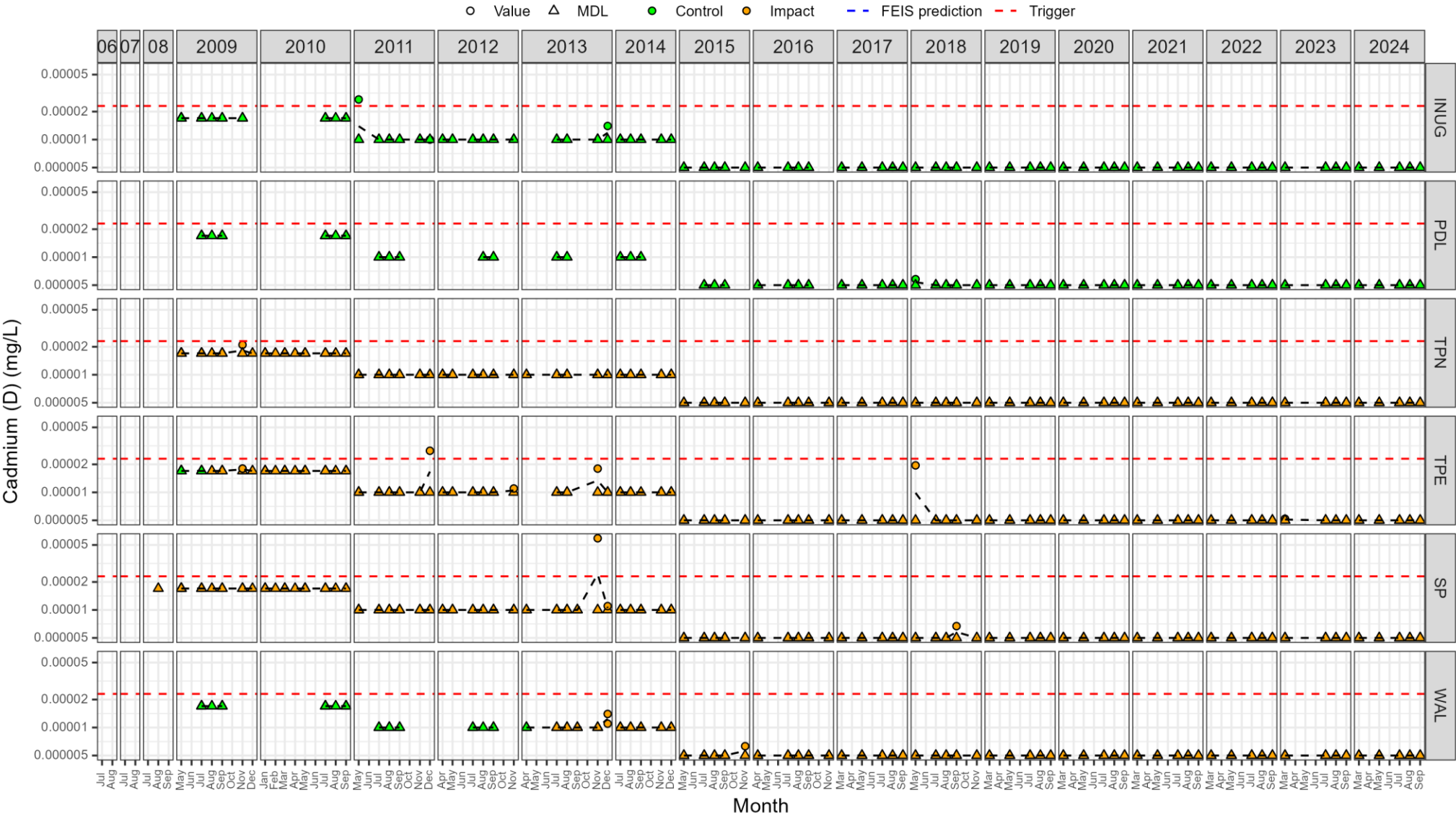




Figure C1-61. Dissolved copper (mg/L).

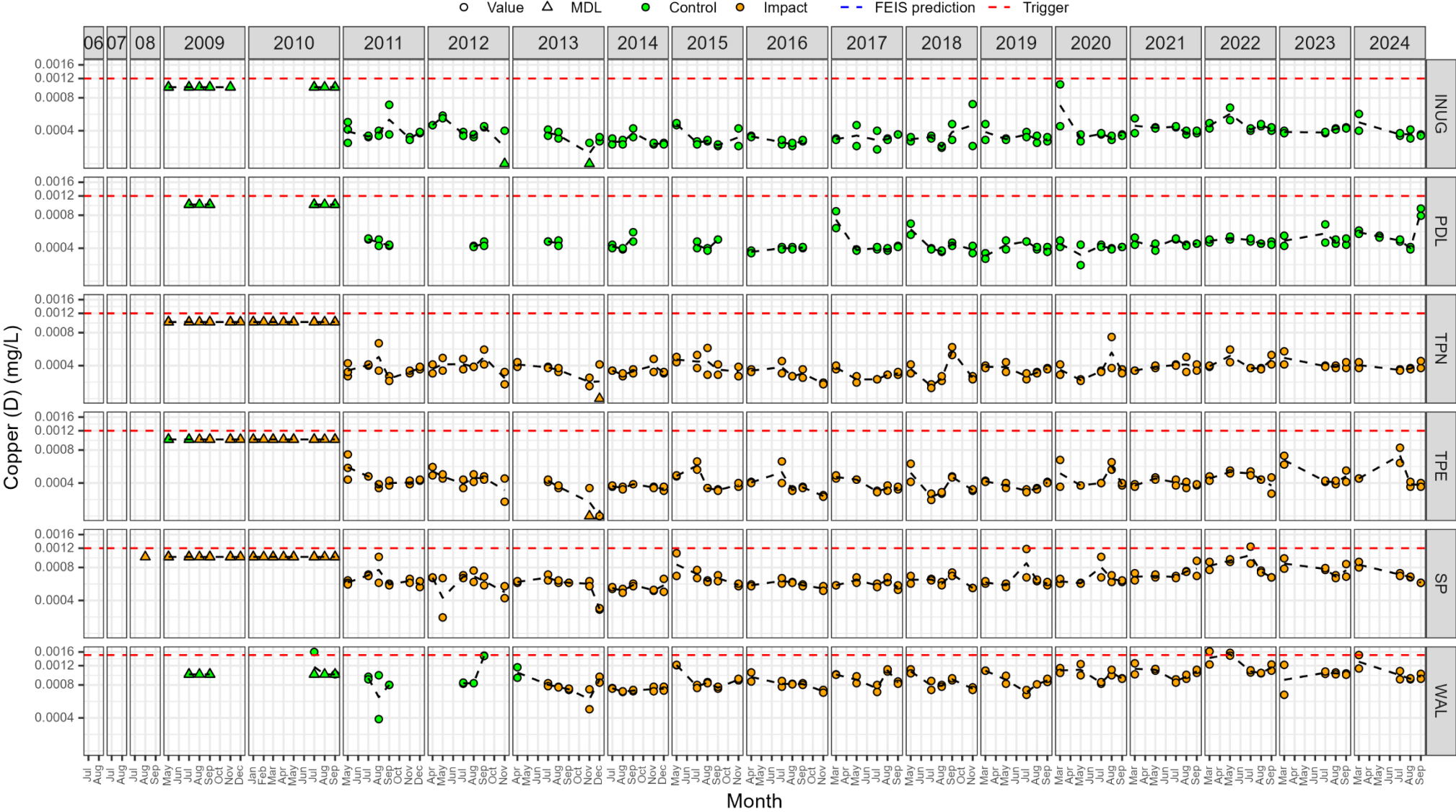




Figure C1-62.     Dissolved chromium (mg/L).

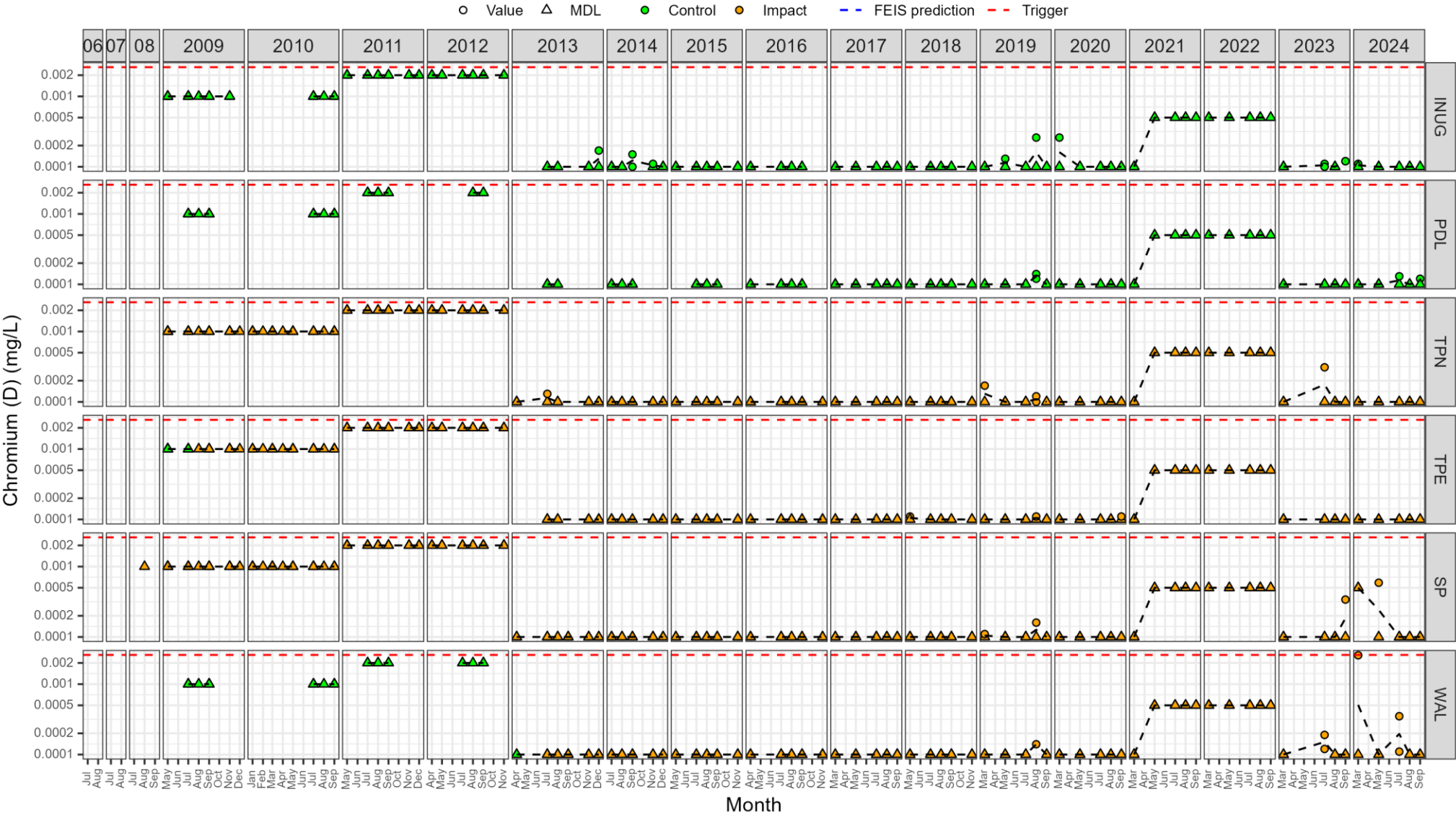




Figure C1-63. Dissolved iron (mg/L).

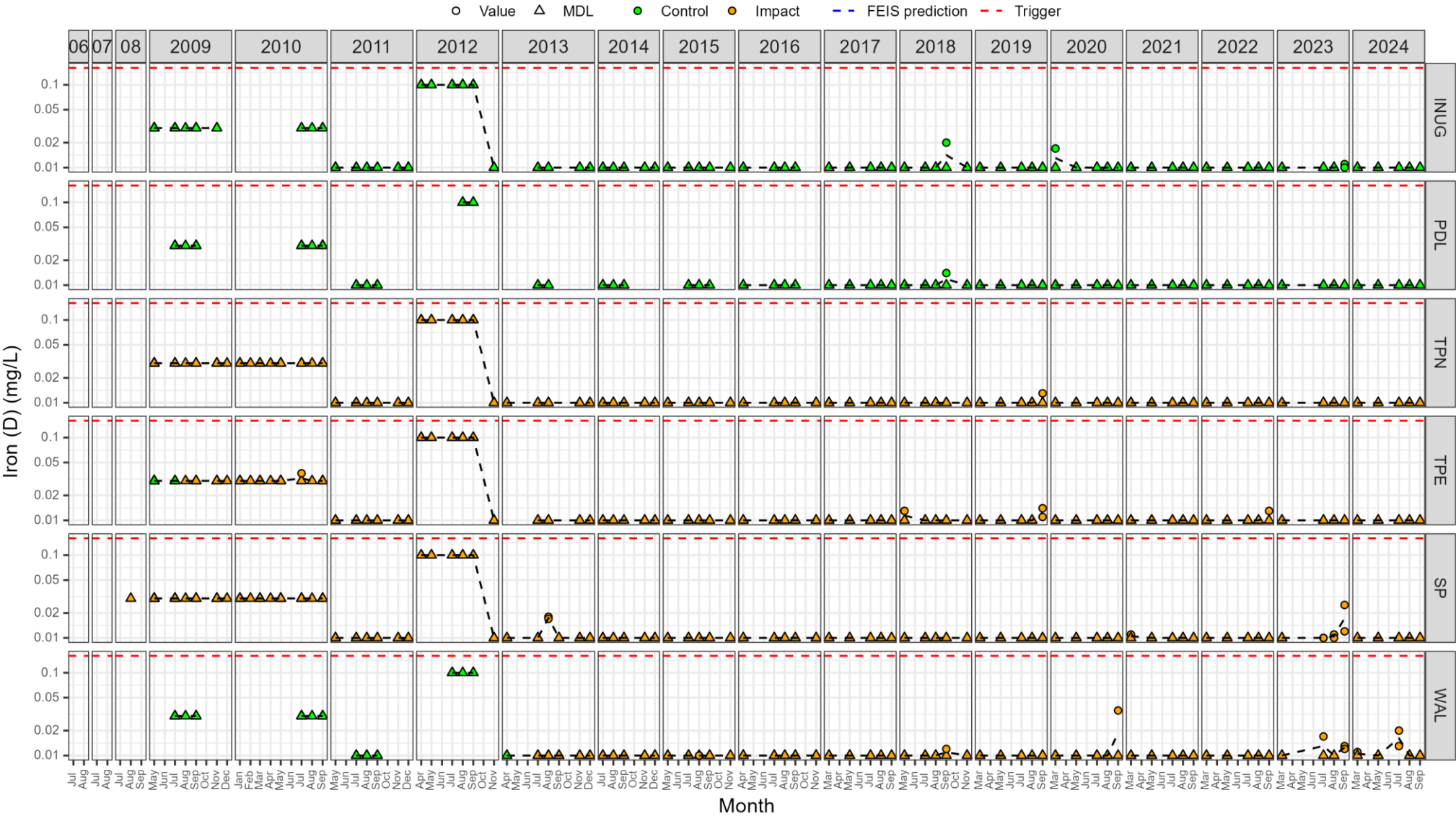




Figure C1-64. Dissolved lead (mg/L).

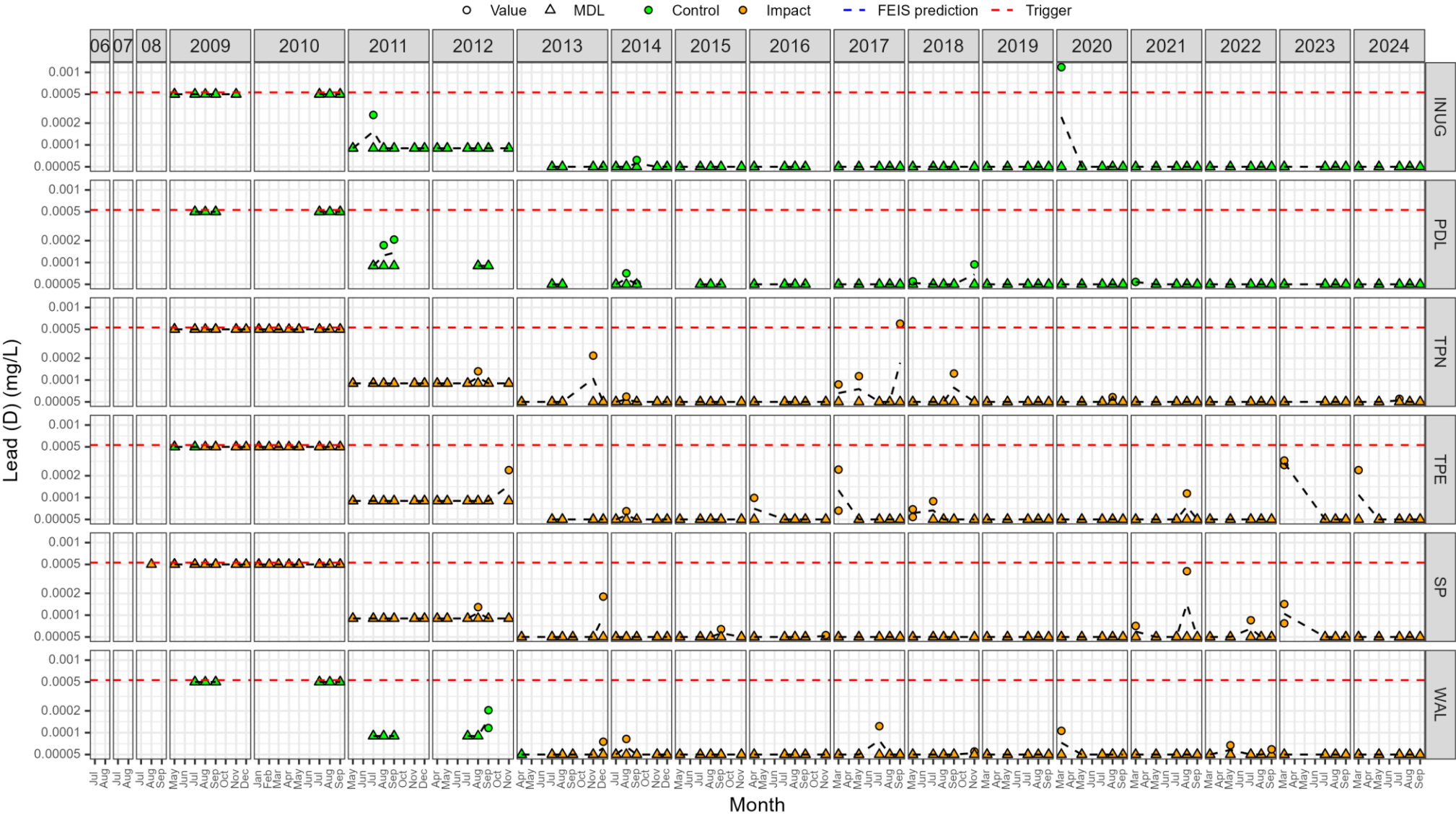




Figure C1-65. Dissolved lithium (mg/L).

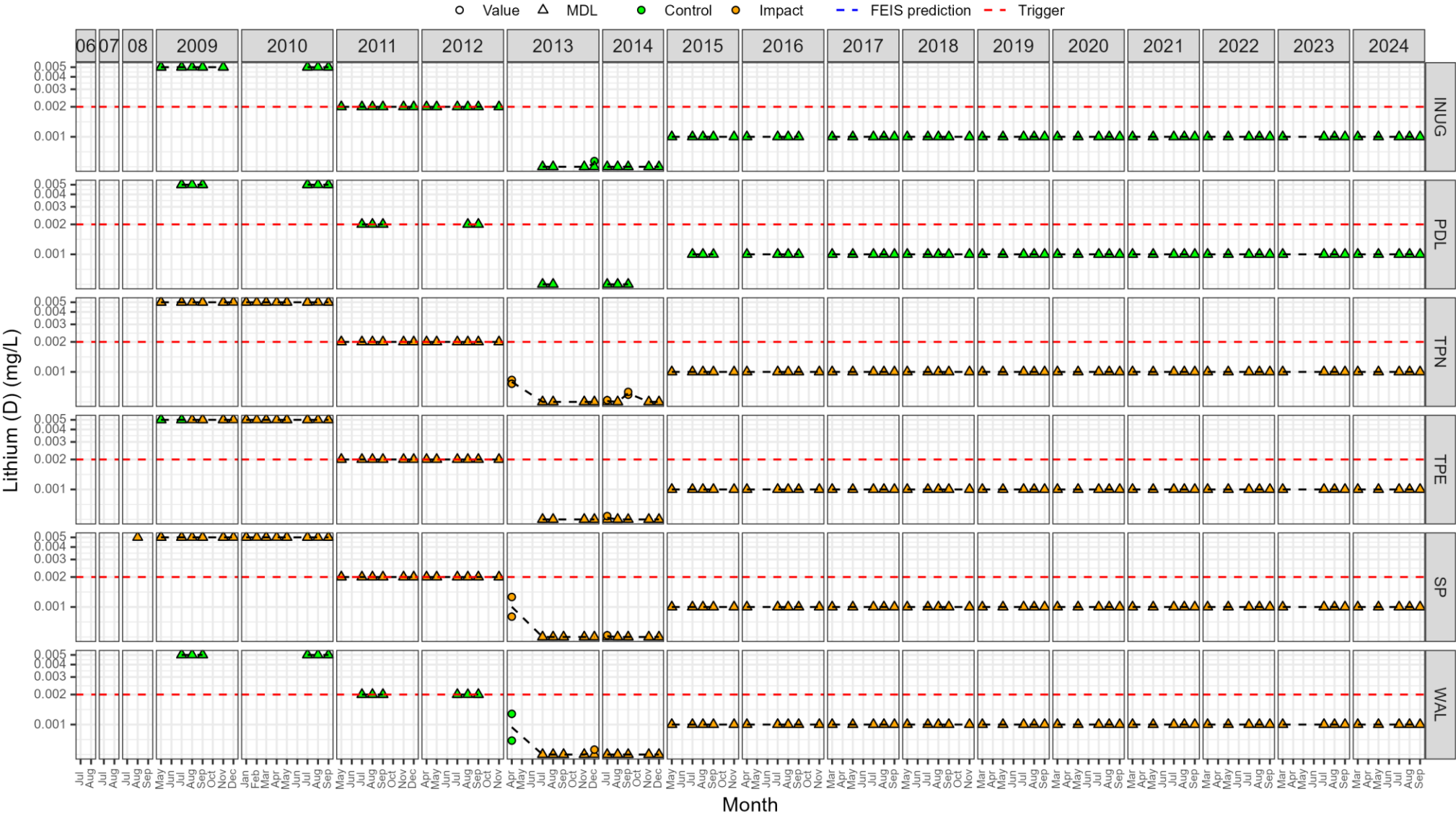
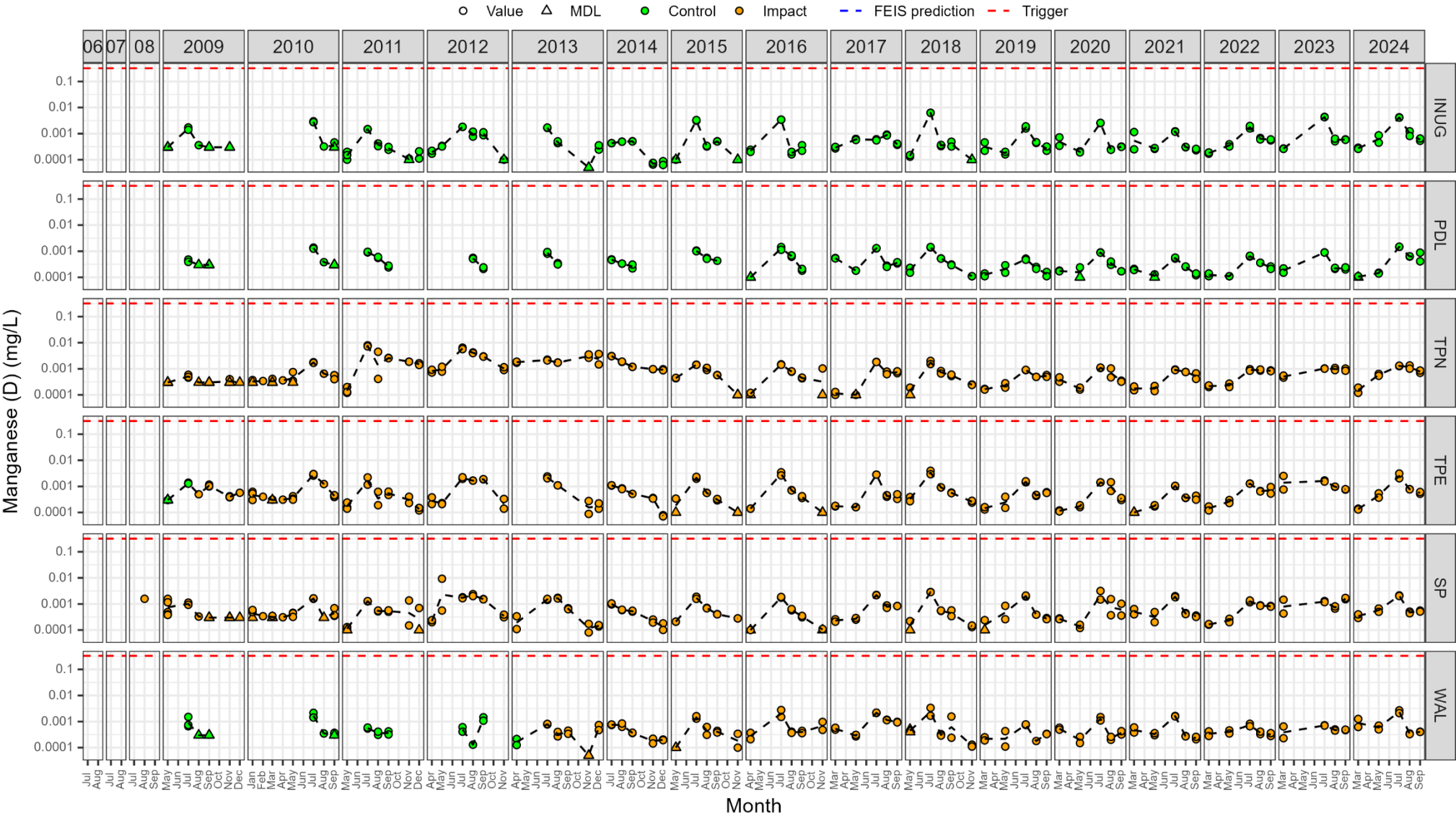




Figure C1-66. Dissolved manganese (mg/L).





**Figure C1-67. Dissolved molybdenum (mg/L).**

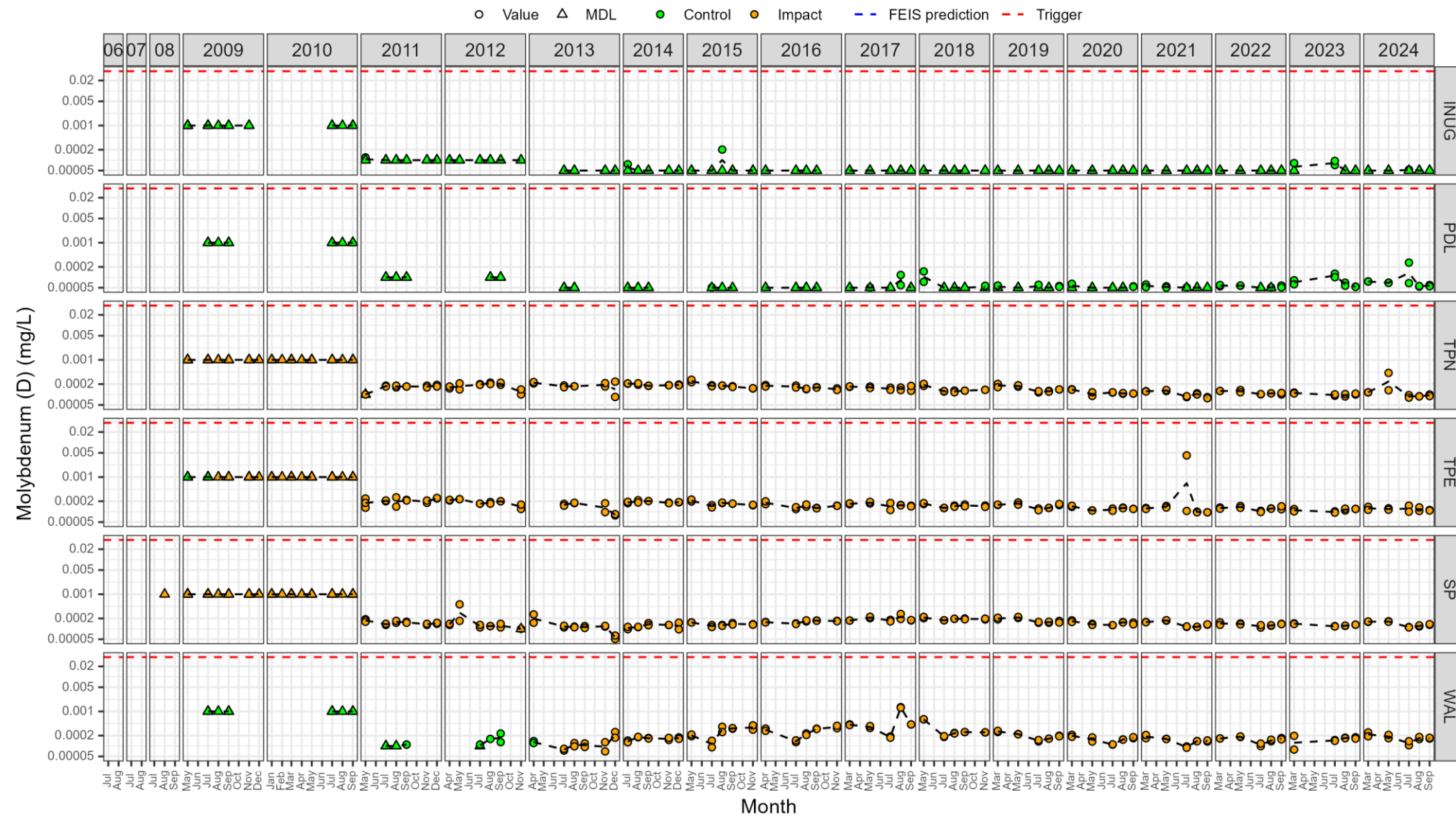




Figure C1-68. Dissolved mercury (mg/L).





Figure C1-69. Dissolved nickel (mg/L).

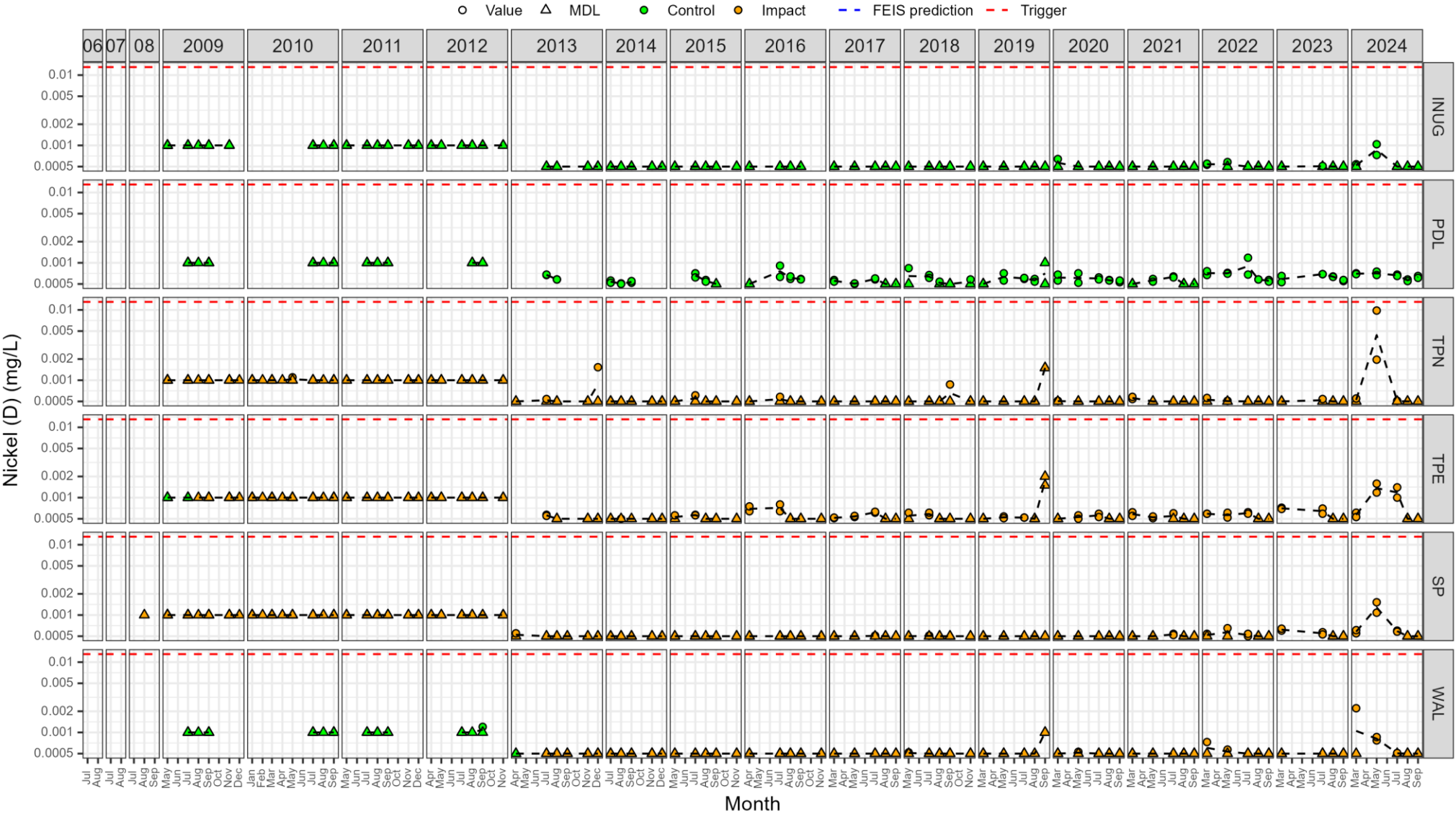




Figure C1-70. Dissolved selenium (mg/L).

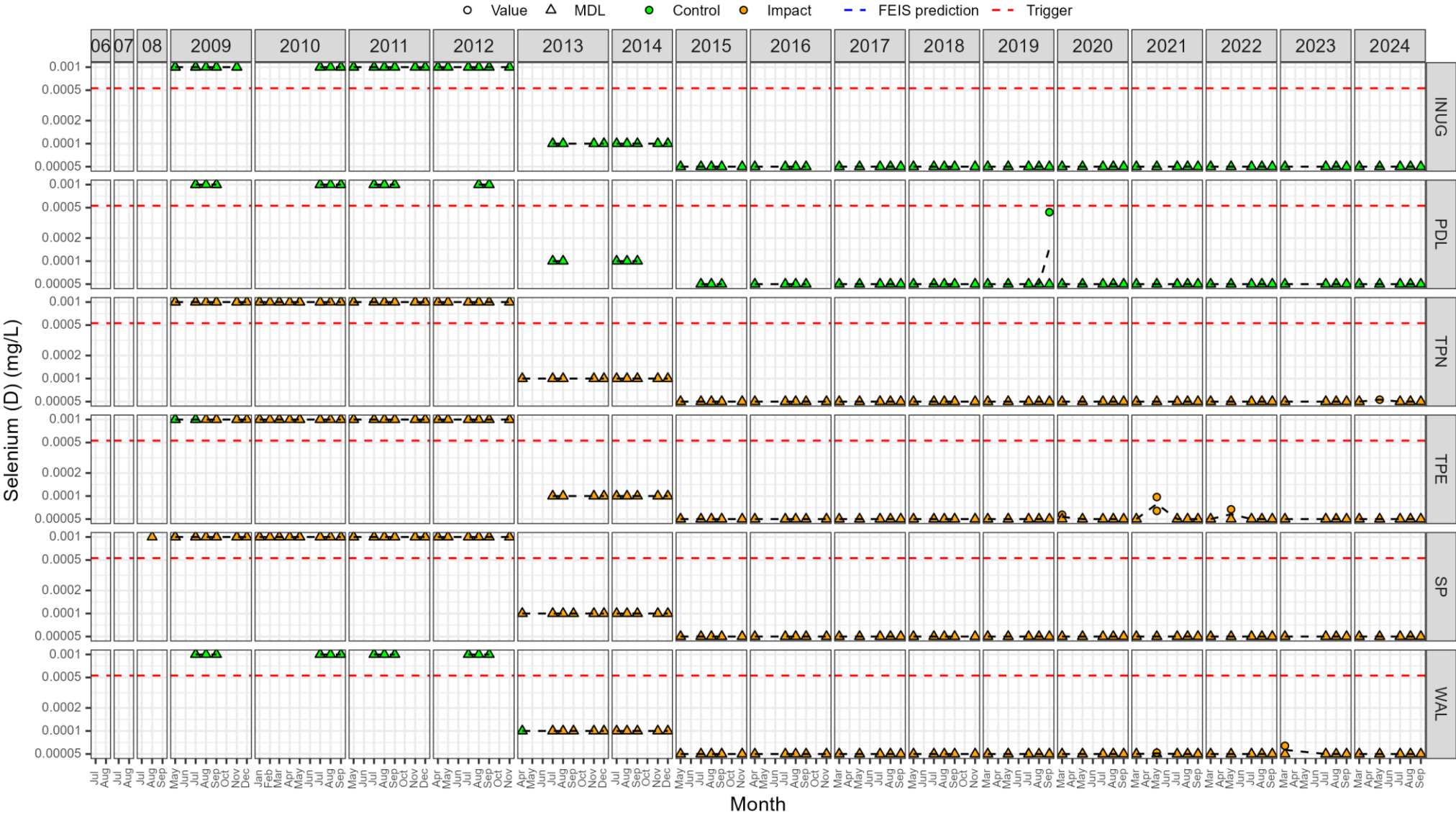




Figure C1-71. Dissolved silicon (mg/L).

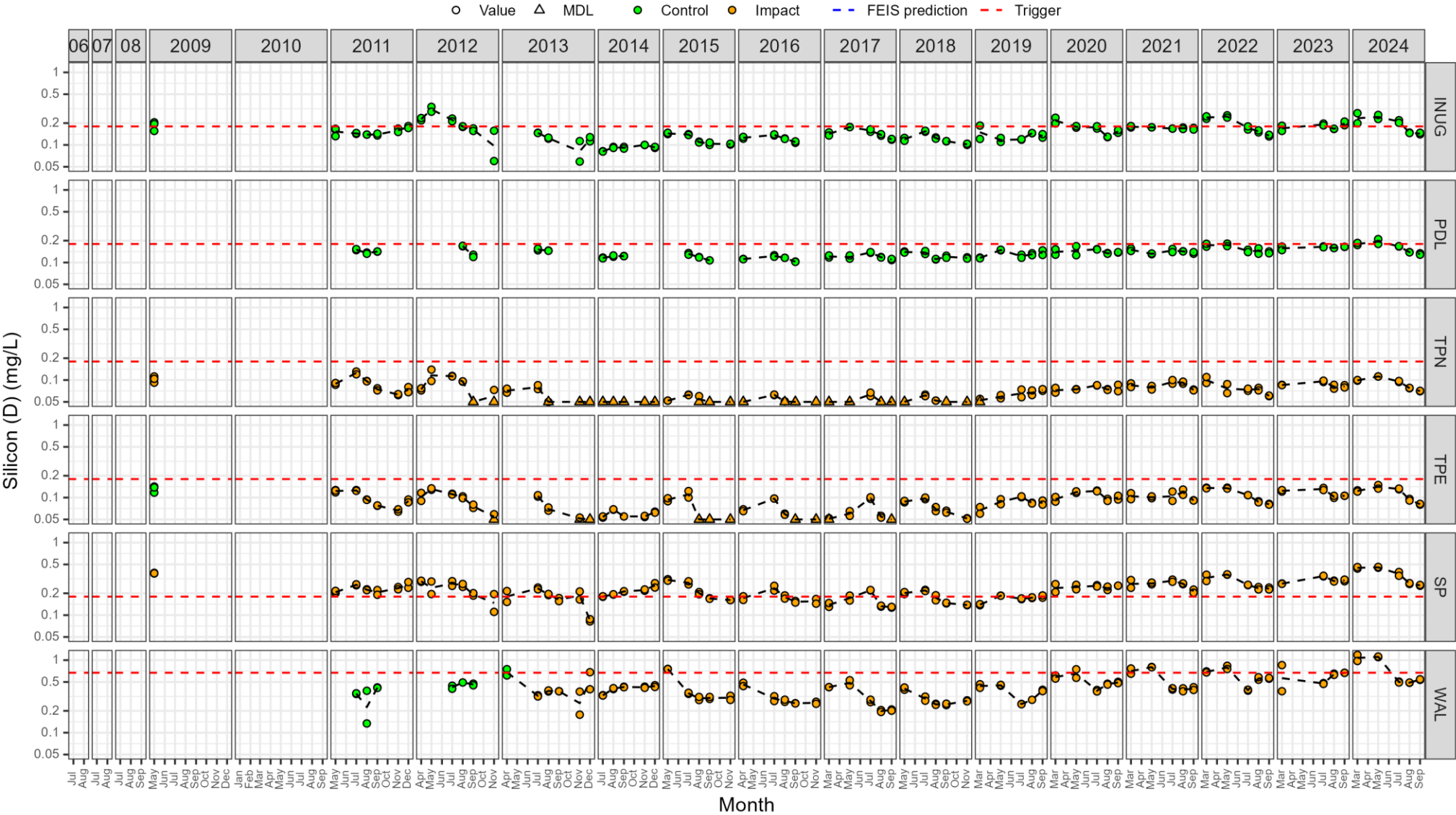




Figure C1-72. Dissolved silver (mg/L).

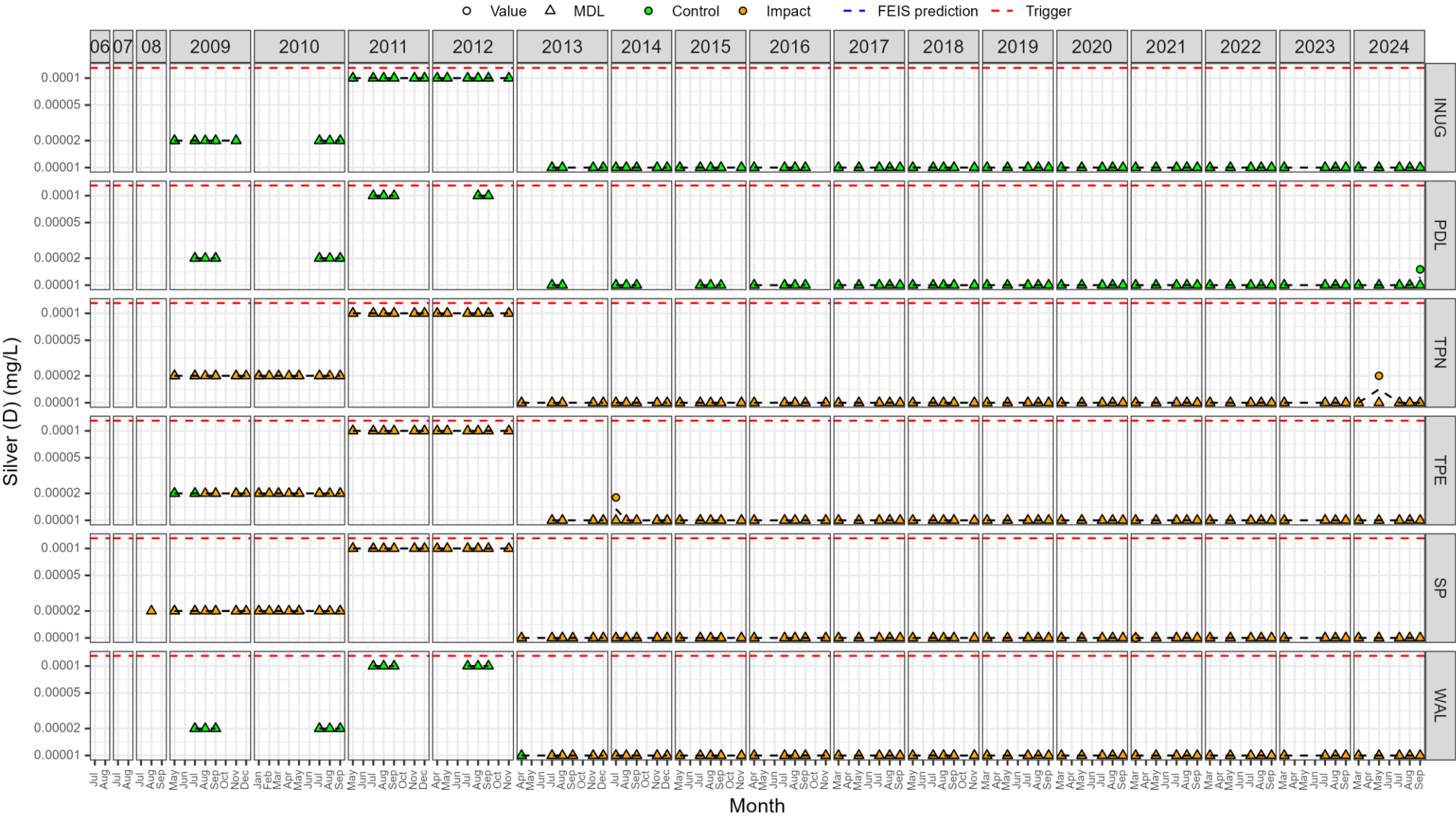




Figure C1-73. Dissolved strontium (mg/L).

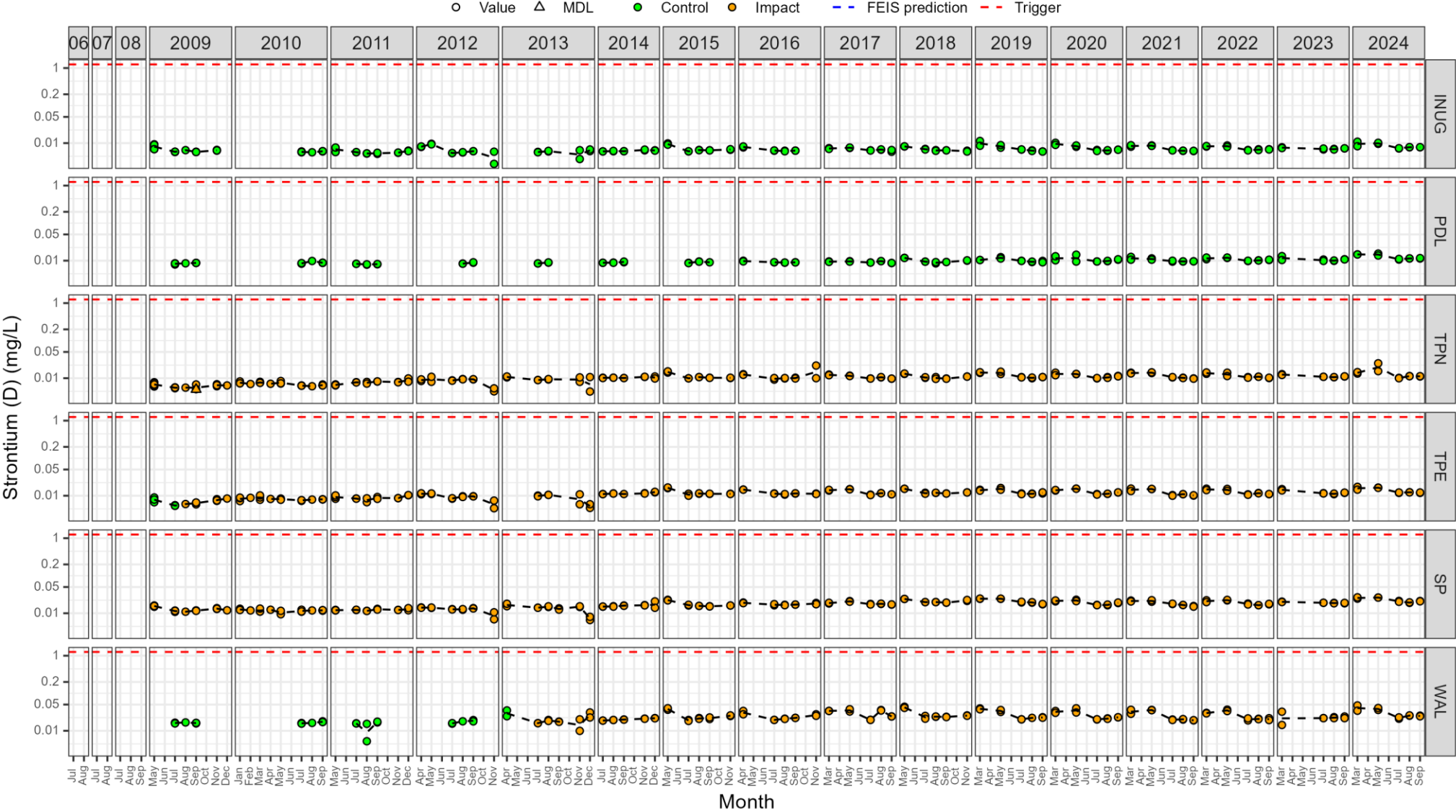




Figure C1-74. Dissolved thallium (mg/L).

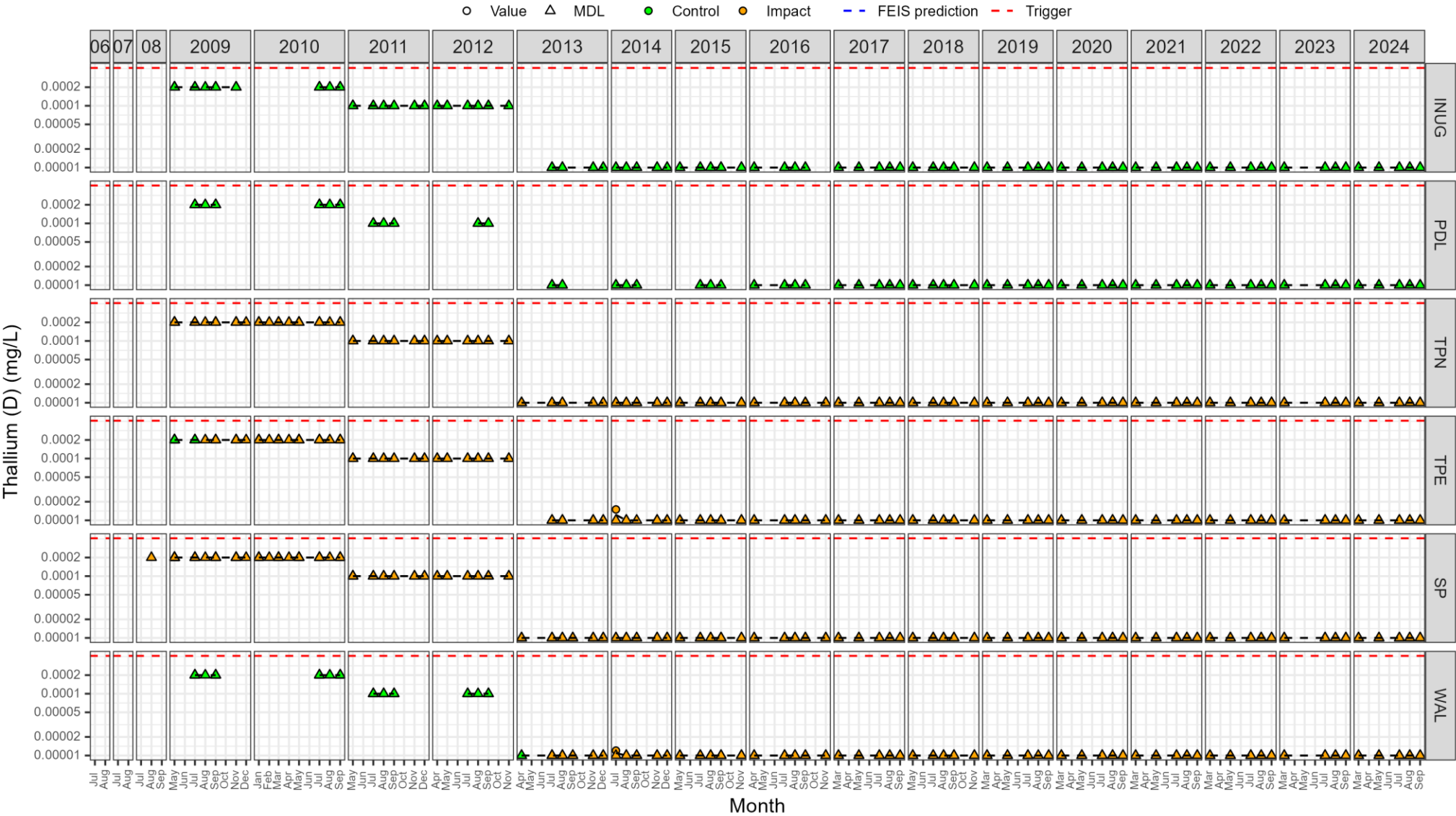




Figure C1-75. Dissolved tin (mg/L).

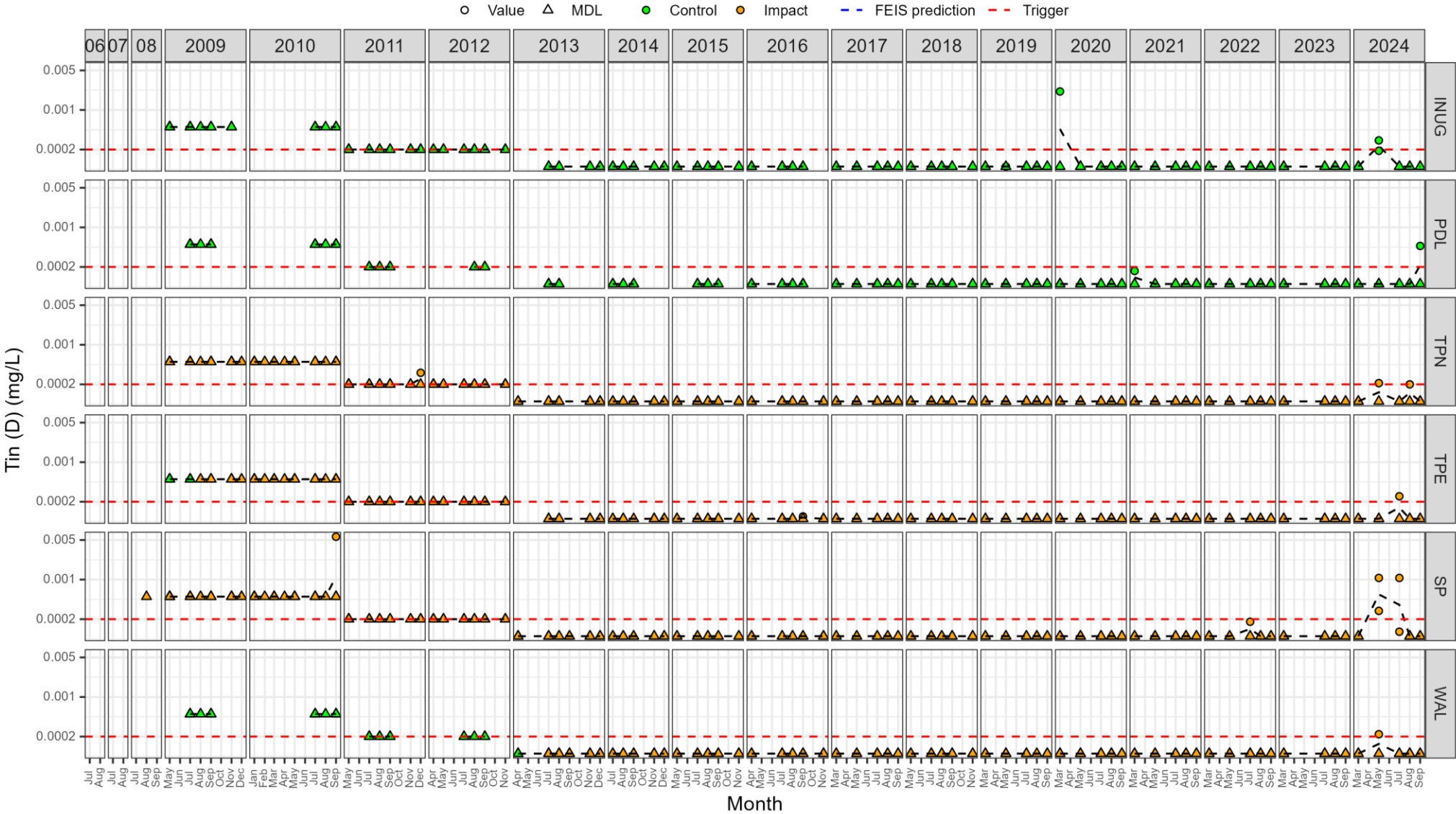




Figure C1-76. Dissolved titanium (mg/L).

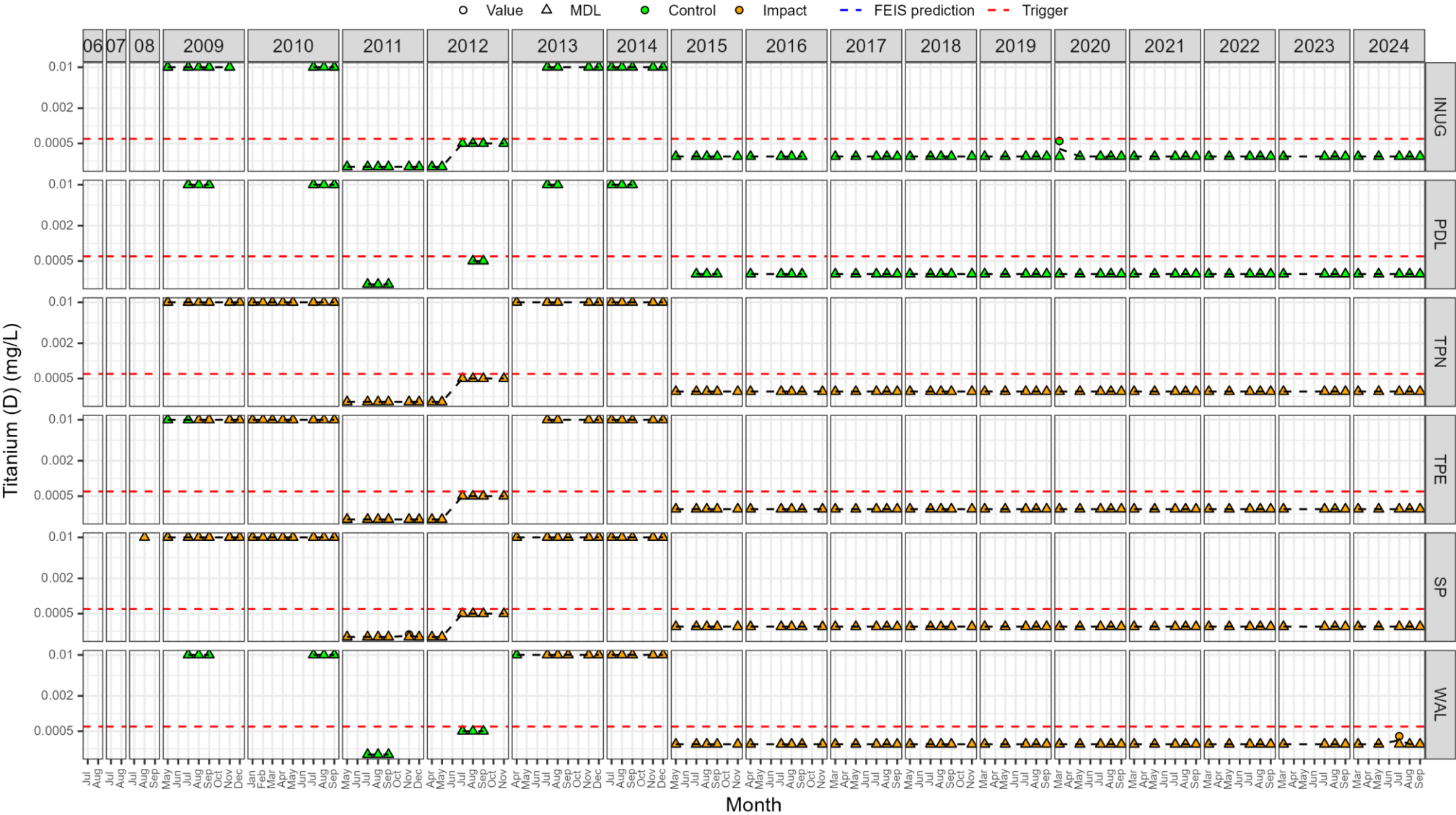




Figure C1-77. Dissolved uranium (mg/L).

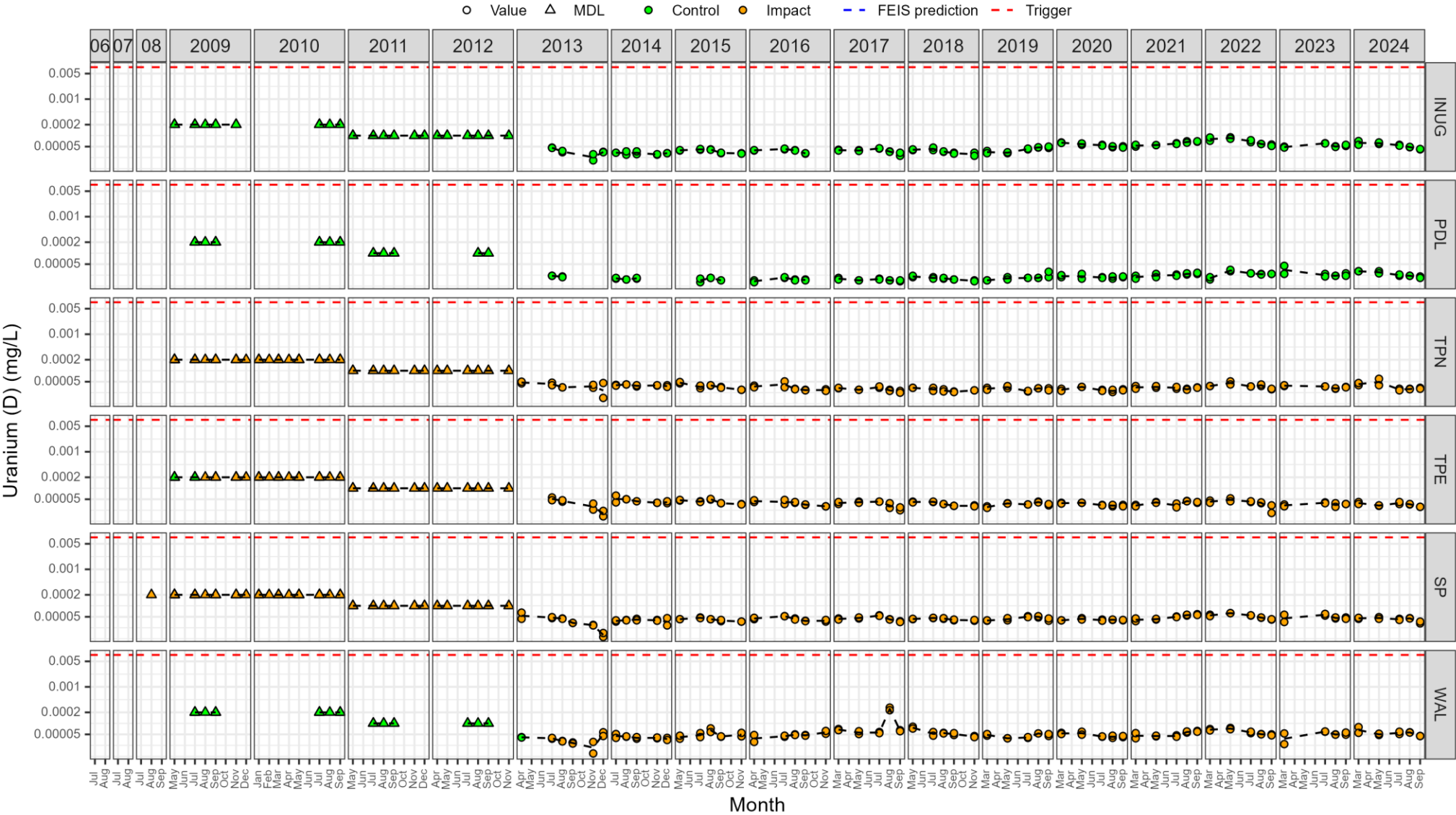




Figure C1-78. Dissolved vanadium (mg/L).

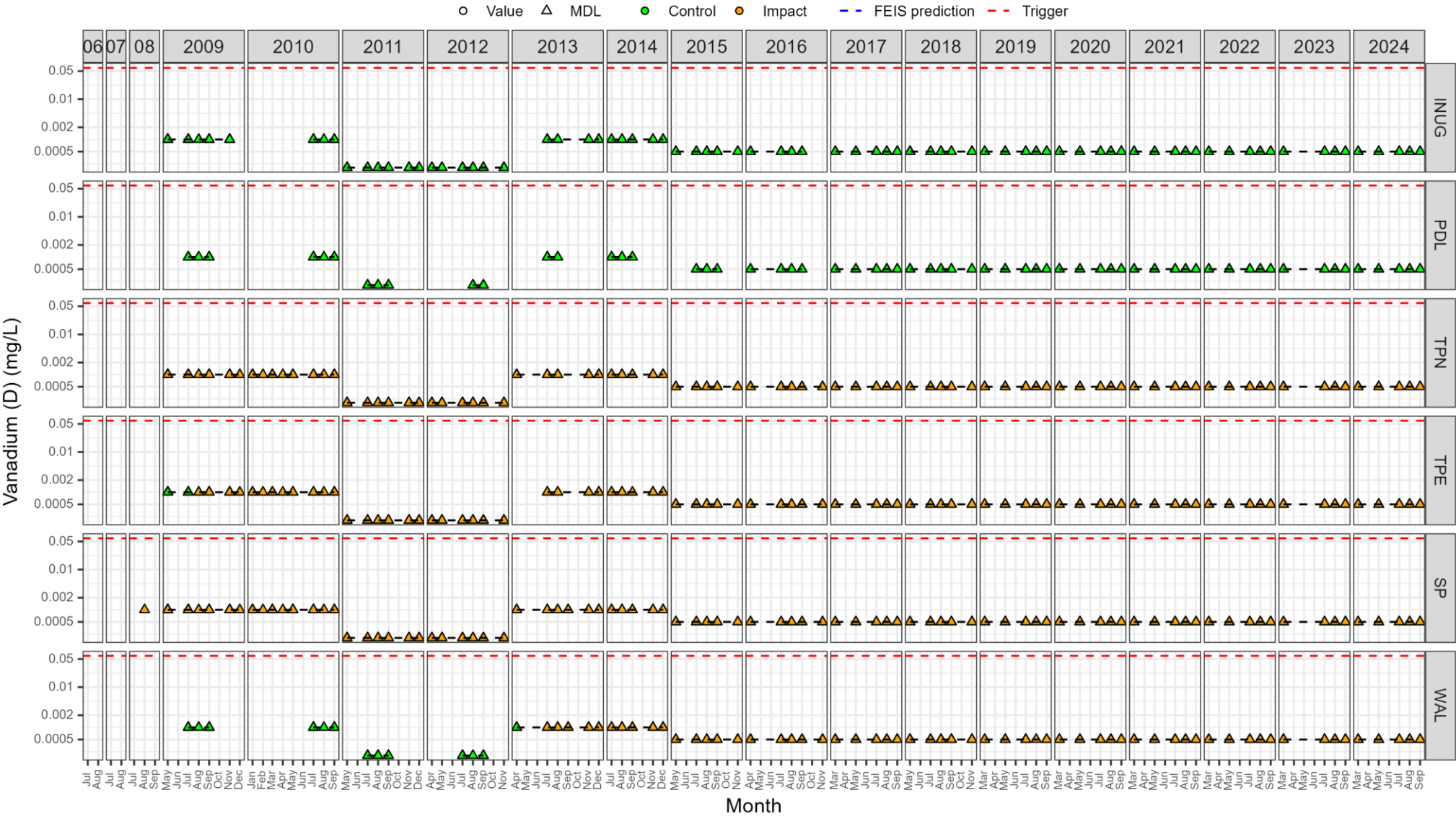
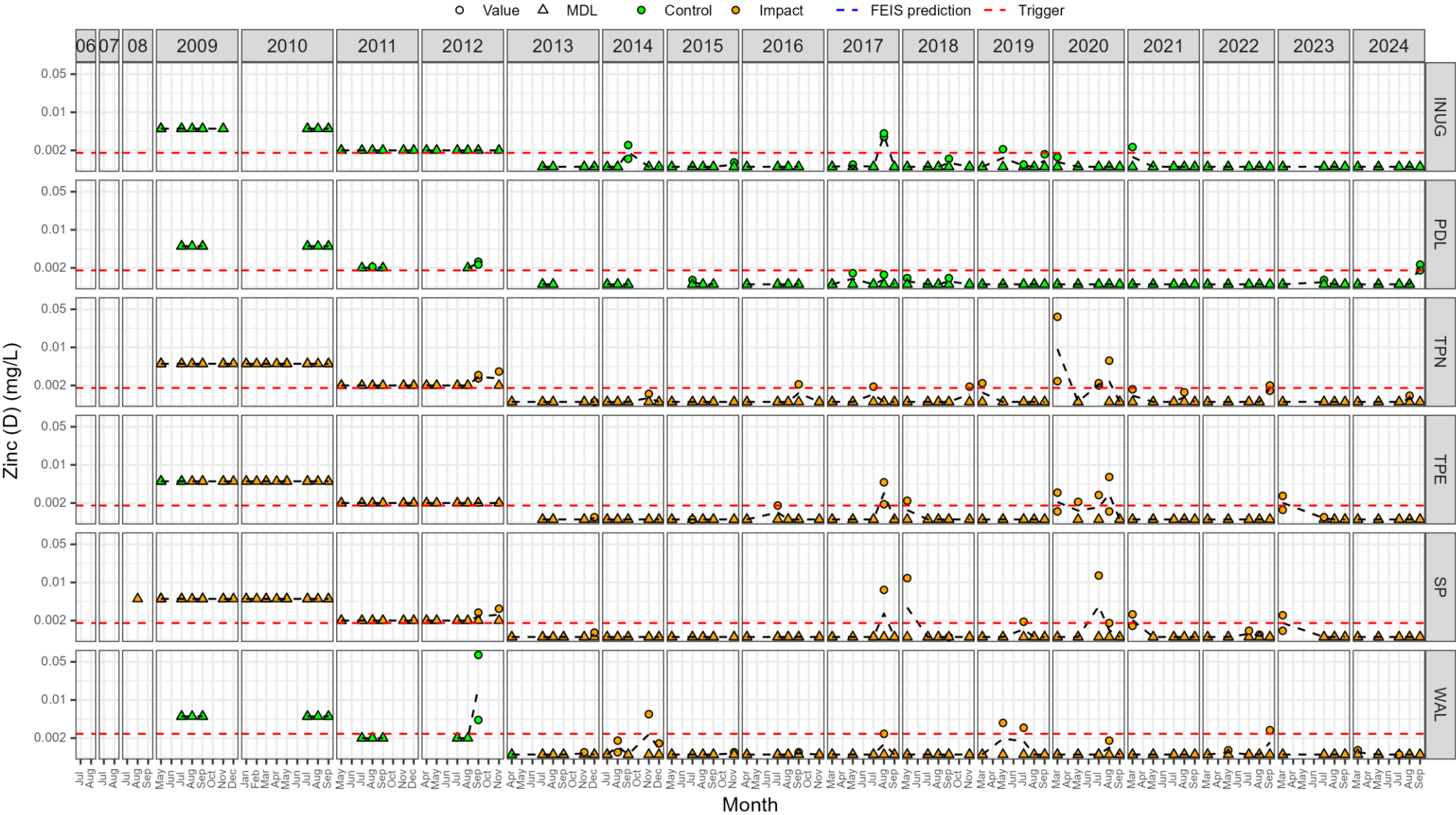




Figure C1-79. Dissolved zinc (mg/L).





## REFERENCES

Azimuth. 2015. Core Receiving Environment Monitoring Program (CREMP) 2014, Meadowbank Mine. Report prepared by Azimuth Consulting Group, Vancouver, BC for Agnico Eagle Mines Ltd., Baker Lake, NU. March, 2015.



## Appendix C2

### Water Chemistry – Whale Tail Study Area Lakes

---



## LIST OF TABLES

Table C2-1.	Water quality results from the Whale Tail study area lakes, 2024. ....	1
Table C2-2.	Water quality results screened against FEIS predicted concentrations for Whale Tail Lake – South Basin, 2024. ....	7
Table C2-3.	Water quality results screened against FEIS predicted concentrations for Kangislulik Lake, 2024. ....	9
Table C2-4.	Water and phytoplankton sampling location coordinates (GPS, UTM, NAD83) for the Whale Tail CREMP, 2024. ....	10

## LIST OF FIGURES

**Notes:** Water quality results in Whale Tail study area lakes since baseline sampling in 2014 are shown. No cyanide (free or total) has been collected in Whale Tail study area lakes since 2019.

Figure C2-1.	Laboratory-measured conductivity ( $\mu\text{S}/\text{cm}$ ).....	13
Figure C2-2.	Laboratory-measured hardness (mg/L). ....	14
Figure C2-3.	Field-measured pH.....	15
Figure C2-4.	Laboratory-measured pH.....	16
Figure C2-5.	Total suspended solids (TSS; mg/L). ....	17
Figure C2-6.	Total dissolved solids (TDS; mg/L). ....	18
Figure C2-7.	Carbonate alkalinity (mg/L). ....	19
Figure C2-8.	Bicarbonate alkalinity (mg/L).....	20
Figure C2-9.	Total alkalinity (mg/L). ....	21
Figure C2-10.	Ammonia-N (mg/L). ....	22
Figure C2-11.	Chloride (mg/L). ....	23
Figure C2-12.	Fluoride (mg/L). ....	24
Figure C2-13.	Nitrate-N (mg/L).....	25
Figure C2-14.	Nitrite-N (mg/L).....	26
Figure C2-15.	Total Kjeldahl Nitrogen (TKN; mg/L).....	27
Figure C2-16.	Total phosphorous (mg/L). ....	28
Figure C2-17.	Ortho-phosphate (mg/L).....	29
Figure C2-18.	Reactive silica (mg/L). ....	30



Figure C2-19.	Sulphate (mg/L). .....	31
Figure C2-20.	Dissolved organic carbon (DOC; mg/L). .....	32
Figure C2-21.	Total organic carbon (TOC; mg/L). .....	33
Figure C2-22.	Total aluminum (mg/L). .....	34
Figure C2-23.	Total antimony (mg/L). .....	35
Figure C2-24.	Total arsenic (mg/L). .....	36
Figure C2-25.	Total barium (mg/L). .....	37
Figure C2-26.	Total beryllium (mg/L). .....	38
Figure C2-27.	Total boron (mg/L). .....	39
Figure C2-28.	Total cadmium (mg/L). .....	40
Figure C2-29.	Total calcium (mg/L). .....	41
Figure C2-30.	Total chromium (mg/L). .....	42
Figure C2-31.	Total copper (mg/L). .....	43
Figure C2-32.	Total iron (mg/L). .....	44
Figure C2-33.	Total lead (mg/L). .....	45
Figure C2-34.	Total lithium (mg/L). .....	46
Figure C2-35.	Total manganese (mg/L). .....	47
Figure C2-36.	Total magnesium (mg/L). .....	48
Figure C2-37.	Total mercury (mg/L). .....	49
Figure C2-38.	Total molybdenum (mg/L). .....	50
Figure C2-39.	Total nickel (mg/L). .....	51
Figure C2-40.	Total potassium (mg/L). .....	52
Figure C2-41.	Total selenium (mg/L). .....	53
Figure C2-42.	Total silicon (mg/L). .....	54
Figure C2-43.	Total silver (mg/L). .....	55
Figure C2-44.	Total sodium (mg/L). .....	56
Figure C2-45.	Total strontium (mg/L). .....	57
Figure C2-46.	Total thallium (mg/L). .....	58
Figure C2-47.	Total tin (mg/L). .....	59
Figure C2-48.	Total titanium (mg/L). .....	60
Figure C2-49.	Total uranium (mg/L). .....	61



Figure C2-50.	Total vanadium (mg/L).....	62
Figure C2-51.	Total zinc (mg/L). ....	63
Figure C2-52.	Dissolved aluminum (mg/L). ....	64
Figure C2-53.	Dissolved antimony (mg/L). ....	65
Figure C2-54.	Dissolved arsenic (mg/L). ....	66
Figure C2-55.	Dissolved barium (mg/L). ....	67
Figure C2-56.	Dissolved beryllium (mg/L). ....	68
Figure C2-57.	Dissolved boron (mg/L). ....	69
Figure C2-58.	Dissolved cadmium (mg/L). ....	70
Figure C2-59.	Dissolved chromium (mg/L). ....	71
Figure C2-60.	Dissolved copper (mg/L). ....	72
Figure C2-61.	Dissolved iron (mg/L). ....	73
Figure C2-62.	Dissolved lead (mg/L). ....	74
Figure C2-63.	Dissolved lithium (mg/L). ....	75
Figure C2-64.	Dissolved manganese (mg/L). ....	76
Figure C2-65.	Dissolved mercury (mg/L). ....	77
Figure C2-66.	Dissolved molybdenum (mg/L). ....	78
Figure C2-67.	Dissolved nickel (mg/L). ....	79
Figure C2-68.	Dissolved selenium (mg/L). ....	80
Figure C2-69.	Dissolved silicon (mg/L). ....	81
Figure C2-70.	Dissolved silver (mg/L). ....	82
Figure C2-71.	Dissolved strontium (mg/L). ....	83
Figure C2-72.	Dissolved thallium (mg/L). ....	84
Figure C2-73.	Dissolved tin (mg/L). ....	85
Figure C2-74.	Dissolved titanium (mg/L). ....	86
Figure C2-75.	Dissolved uranium (mg/L). ....	87
Figure C2-76.	Dissolved vanadium (mg/L). ....	88
Figure C2-77.	Dissolved zinc (mg/L). ....	89



## TABLES

---



Table C2-1. Water quality results from the Whale Tail study area lakes, 2024.

Lake & Area		Aquatic Life Guideline <sup>1</sup>	WTP Screening Values <sup>2</sup>		Whale Tail Lake South Basin (WTS; Impoundment)									
Month	Area-Replicate ID				March	March	May	May	July	July	August	August	September	September
Date					WTS-87	WTS-88	WTS-89	WTS-90	WTS-91	WTS-92	WTS-93	WTS-94	WTS-95	WTS-96
Time					04-Mar-2024	04-Mar-2024	04-May-2024	04-May-2024	01-Jul-2024	01-Jul-2024	14-Aug-2024	14-Aug-2024	19-Sep-2024	19-Sep-2024
ALS Sample ID					14:00	13:30	16:05	16:37	16:25	16:05	12:50	12:05	13:35	14:10
		VA24A5006-003	VA24A5006-003	VA24B0323-007	VA24B0323-008	VA24B6821-003	VA24B6821-004	VA24C1467-009	VA24C1467-010	VA24C4068-001	VA24C4068-002			
		VA24A6012-003	VA24A6012-003							VA24C6403-007	VA24C6403-008			
Field Measurements (3 m)														
Dissolved Oxygen (mg/L)				14.1	14.0	11.8	12.9	12.5	12.6	9.9	9.8	10.5	10.5	
Specific Conductivity (µS/cm)				152	146	150	149	125	125	118	118	126	126	
pH	6.5 - 9.0			7.4	7.7	6.8	6.8	7.5	7.7	7.6	7.5	7.4	7.5	
Temperature (°C)				0.52	0.61	0.87	0.74	7.4	7.5	14.2	14.2	10.5	10.5	
Physical Tests (mg/L)														
Conductivity (µS/cm)		48.6		152	145	155	160	130	129	120	120	120	120	
Alkalinity - Bicarbonate		9.60		26	25	27	27	18.7	19.0	18.8	19.0	19.2	19.1	
Alkalinity - Carbonate		2.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity - Hydroxide				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity - Total (as CaCO <sub>3</sub> )		9.61		26	25	27	27	18.7	19.0	18.8	19.0	19.2	19.1	
Hardness (as CaCO <sub>3</sub> ), dissolved		17.4		57	55	56	56	44	44	42	43	45	45	
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg				54	51	57	59	45	45	43	44	46	48	
Total Dissolved Solids		38.5		86	85	87	104	93	91	100	96	77	80	
Total Suspended Solids		3	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	1.3	<1.0	<1.0	
Turbidity (NTU)				0.12	<0.10	0.13	<0.10	0.70	0.60	0.25	0.29	0.28	0.17	
pH (Laboratory)	6.5 - 9.0	6.57-7.97	6.5-9.0	7.6	7.6	7.6	7.6	7.6	7.6	7.5	7.5	7.6	7.6	
Anions and Nutrients (mg/L)														
Ammonia (as N) <sup>3</sup>	equation	0.065	0.126	0.055	0.056	0.026	0.039	0.035	0.020	0.041	0.045	0.052	0.082	
Bromide				0.17	0.17	0.20	0.20	0.17	0.17	0.14	0.14	0.15	0.16	
Chloride	120	60.4	120	16.9	16.2	17.6	18.2	14.6	14.5	14.1	14.2	13.7	13.8	
Fluoride	0.12	0.077	0.12	0.072	0.070	0.058	0.060	0.056	0.054	0.060	0.063	0.066	0.067	
Total Kjeldahl Nitrogen		0.17		0.29	0.29	0.26	0.27	0.23	0.22	0.29	0.26	0.25	0.28	
Nitrate (as N)	3	1.5	3	0.46	0.44	0.56	0.57	0.45	0.44	0.27	0.27	0.23	0.23	
Nitrite (as N)	0.06	0.031	0.06	0.0025	0.0023	0.0044	0.0067	0.0035	0.0033	0.0012	0.0012	<0.0010	0.0011	
Ortho Phosphate (as P)		0.0022		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0021	0.0013	<0.0010	<0.0010	
Phosphorus (P)-Total	0.01	0.0045	0.01	0.0067	0.0065	0.0034	0.0037	0.0057	0.0070	0.0046	0.0047	0.0036	0.0037	
Phosphorus (P)-Total Diss.				0.0031	0.0028	0.0026	0.0029	0.0026	0.0036	<0.0020	0.0020	<0.0020	<0.0020	
Reactive Silica (as SiO <sub>2</sub> )		1.33		0.51	<0.50	0.67	0.60	0.61	0.64	<0.50	<0.50	<0.50	<0.50	
Sulphate (SO <sub>4</sub> )		64.8	128	16.7	16.1	17.7	18.2	14.2	14.1	13.8	13.8	13.2	13.3	
Organic / Inorganic Carbon (mg/L)														
Dissolved Organic Carbon		2.43		3.8	4.4	3.5	3.7	3.2	2.9	2.9	3.0	2.7	3.0	
Total Organic Carbon		2.42		3.6	3.7	3.8	3.8	2.9	2.8	3.0	2.9	2.9	3.1	
Total Metals (mg/L)														
Aluminum <sup>3</sup>	equation	0.052	0.1	0.0035	0.0032	<0.0030	<0.0030	0.0020	0.017	0.0080	0.0062	0.0091	0.010	
Antimony		0.0046	0.009	0.00058	0.00058	0.00058	0.00057	0.00049	0.00051	0.00043	0.00043	0.00042	0.00041	
Arsenic	0.005	0.013	0.025	0.00060	0.00062	0.00058	0.00059	0.0012	0.0012	0.00086	0.00077	0.00097	0.00072	
Barium		0.5	1	0.023	0.021	0.025	0.025	0.020	0.020	0.017	0.017	0.017	0.017	
Beryllium		0.000115	0.00013	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	
Bismuth				<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron	1.5	0.76	1.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium <sup>3</sup>	equation	0.000023	0.00004	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Calcium		4.6		14.0	13.2	15.2	15.7	12.6	12.6	11.8	12.0	12.3	12.9	
Cesium				0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	
Chromium <sup>3</sup>	0.001	0.0025	0.005	0.00012	0.00012	<0.00050	<0.00050	0.00043	0.00038	0.00018	0.00094	0.00017	0.00015	
Cobalt				<0.00010	<0.00010	<0.00010	<0.00010	0.00011	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper <sup>3</sup>	equation	0.0013	0.002	0.00058	0.00056	0.00056	0.00056	<0.00050	0.00056	<0.00050	<0.00050	<0.00050	<0.00050	
Iron	0.3	0.16	0.3	0.016	0.010	0.012	0.011	0.073	0.069	0.035	0.038	0.041	0.042	
Lead <sup>3</sup>	equation	0.00053	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium		0.002		0.0023	0.0022	0.0024	0.0025	0.0022	0.0022	0.0021	0.0021	0.0020	0.0020	
Magnesium		1.41		4.5	4.5	4.6	4.7	3.2	3.3	3.4	3.4	3.7	3.7	
Manganese <sup>3</sup>		0.32	See note 3	0.0014	0.00072	0.0032	0.0017	0.021	0.020	0.0056	0.0076	0.0072	0.0078	
Mercury	0.000026	0.000016	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Molybdenum	0.073	0.037	0.073	0.00077	0.00081	0.00080	0.00078	0.00089	0.00093	0.00082	0.00081	0.00080	0.00075	
Nickel <sup>3</sup>	equation	0.013	0.025	0.0017	0.0017	0.0018	0.0018	0.0026	0.0024	0.0014	0.0013	0.0015	0.0013	
Phosphorus		0.0045	0.004	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium		0.84		3.5	3.5	3.8	3.9	3.2	3.2	3.1	3.0	3.0	3.0	
Rubidium				0.0057	0.0055	0.0057	0.0060	0.0044	0.0045	0.0047	0.0048	0.0046	0.0045	
Selenium	0.001	0.00053	0.001	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	0.00006	<0.000050	<0.000050	<0.000050	<0.000050	
Silicon		0.61		0.25	0.21	0.32	0.29	0.44	0.43	0.11	0.10	0.12	0.12	
Silver	0.00025	0.00013	0.00025	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010</				











Table C2-1. Water quality results from the Whale Tail study area lakes, 2024.

Lake & Area		Aquatic Life Guideline <sup>1</sup>	WTP Screening Values <sup>2</sup>		Lake A76 (A76)									
Month	Area-Replicate ID				March	March	May	May	July	July	August	August	September	September
Date					A76-77	A76-78	A76-79	A76-80	A76-81	A76-82	A76-83	A76-84	A76-85	A76-86
Time					15-Mar-2024	15-Mar-2024	05-May-2024	05-May-2024	09-Jul-2024	09-Jul-2024	12-Aug-2024	12-Aug-2024	19-Sep-2024	19-Sep-2024
					15:10	14:07	14:30	14:05	16:08	15:40	13:30	14:00	12:15	12:45
ALS Sample ID				VA24A6012-013	VA24A6012-014	VA24B0323-009	VA24B0323-010	VA24B7135-010	VA24B7135-011	VA24C1018-007	VA24C1018-008	VA24C5721-001 VA24C6403-003	VA24C5721-002 VA24C6403-004	
Field Measurements (3 m)														
Dissolved Oxygen (mg/L)				15.4	16.1	14.6	14.4	11.4	11.3	9.3	9.2	11.3	11.3	
Specific Conductivity (µS/cm)				67	126	125	122	97	98	99	99	102	102	
pH	6.5 - 9.0			7.1	6.8	6.7	6.7	7.2	7.0	7.3	7.4	7.3	7.4	
Temperature (°C)				0.85	0.97	1.0	0.99	9.7	10.2	15.4	15.3	8.4	8.3	
Physical Tests (mg/L)														
Conductivity (µS/cm)		48.6		122	122	132	128	97	100	101	101	102	103	
Alkalinity - Bicarbonate		9.60		18.7	18.4	22	19.5	14.5	14.7	15.6	15.2	15.2	15.8	
Alkalinity - Carbonate		2.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity - Hydroxide				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity - Total (as CaCO <sub>3</sub> )		9.61		18.7	18.4	22	19.5	14.5	14.7	15.6	15.2	15.2	15.8	
Hardness (as CaCO <sub>3</sub> ), dissolved		17.4		46	46	47	45	35	37	37	37	36	37	
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg				46	46	48	48	35	36	38	37	38	38	
Total Dissolved Solids		38.5		72	73	84	76	75	71	96	88	68	64	
Total Suspended Solids		3	5	<1.0	<1.0	<1.0	<1.0	1.4	4.7	<1.0	<1.0	<1.0	<1.0	
Turbidity (NTU)				<0.10	<0.10	<0.10	<0.10	0.23	0.17	0.31	0.23	0.43	0.38	
pH (Laboratory)	6.5 - 9.0	6.57-7.97	6.5-9.0	7.5	7.5	7.5	7.5	7.4	7.4	7.5	7.5	7.4	7.4	
Anions and Nutrients (mg/L)														
Ammonia (as N) <sup>3</sup>	equation	0.065	0.126	0.022	0.024	0.033	0.038	0.018	<0.0050	0.015	0.0068	0.057	0.017	
Bromide				0.14	0.14	0.15	0.16	0.11	0.11	0.12	0.12	0.11	0.11	
Chloride	120	60.4	120	13.8	13.9	15.1	14.5	10.1	10.4	11.1	11.1	10.8	10.8	
Fluoride	0.12	0.077	0.12	0.051	0.050	0.041	0.040	0.036	0.037	0.044	0.043	0.045	0.045	
Total Kjeldahl Nitrogen		0.17		0.15	0.15	0.16	0.17	0.16	0.13	0.17	0.16	0.21	0.16	
Nitrate (as N)	3	1.5	3	0.087	0.078	0.094	0.092	0.038	0.054	<0.0050	<0.0050	<0.0050	<0.0050	
Nitrite (as N)	0.06	0.031	0.06	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Ortho Phosphate (as P)		0.0022		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	0.0019	<0.0010	<0.0010	
Phosphorus (P)-Total	0.01	0.0045	0.01	<0.0020	0.0025	<0.0020	<0.0020	0.0027	0.0021	0.0027	0.0028	0.0034	0.0030	
Phosphorus (P)-Total Diss.				<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	<0.0020	<0.0020	<0.0020	
Reactive Silica (as SiO <sub>2</sub> )		1.33		1.1	1.1	1.2	1.2	0.91	0.82	0.62	0.67	0.62	0.61	
Sulphate (SO <sub>4</sub> )		64.8	128	15.8	15.7	17.0	16.6	12.0	12.5	13.1	13.1	13.1	13.0	
Organic / Inorganic Carbon (mg/L)														
Dissolved Organic Carbon		2.43		1.9	2.0	2.2	2.0	2.2	1.6	3.3	2.1	1.8	2.4	
Total Organic Carbon		2.42		2.1	2.1	2.1	1.9	2.1	1.7	1.7	2.0	2.0	2.1	
Total Metals (mg/L)														
Aluminum <sup>3</sup>	equation	0.052	0.1	<0.0030	<0.0030	<0.0030	<0.0030	0.0052	0.0050	0.0032	0.0036	0.0060	0.0049	
Antimony		0.0046	0.009	0.00029	0.00029	0.00027	0.00026	0.00022	0.00025	0.00023	0.00023	0.00023	0.00024	
Arsenic	0.005	0.013	0.025	0.00034	0.00033	0.00034	0.00030	0.00033	0.00037	0.00040	0.00037	0.00037	0.00036	
Barium		0.5	1	0.020	0.019	0.022	0.020	0.015	0.015	0.014	0.014	0.015	0.015	
Beryllium		0.000115	0.00013	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	
Bismuth				<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron	1.5	0.76	1.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium <sup>3</sup>	equation	0.000023	0.00004	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Calcium		4.6		12.4	12.6	13.2	13.4	9.6	9.6	10.0	10.0	10.6	10.5	
Cesium				<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.00001	0.00001	<0.000010	<0.000010	
Chromium <sup>4</sup>	0.001	0.0025	0.005	<0.00010	<0.00010	<0.00010	<0.00010	0.00030	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt				<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper <sup>3</sup>	equation	0.0013	0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Iron	0.3	0.16	0.3	<0.010	<0.010	<0.010	<0.010	0.018	0.016	0.018	0.018	0.020	0.019	
Lead <sup>3</sup>	equation	0.00053	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium		0.002		0.0011	0.0011	0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Magnesium		1.41		3.6	3.6	3.7	3.6	2.7	2.8	3.1	3.0	2.9	2.9	
Manganese <sup>3</sup>		0.32	See note 3	0.00073	0.00079	0.00084	0.00070	0.0050	0.0041	0.0034	0.0036	0.0033	0.0032	
Mercury	0.000026	0.000016	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Molybdenum	0.073	0.037	0.073	0.00016	0.00016	0.00016	0.00016	0.00014	0.00015	0.00017	0.00016	0.00015	0.00016	
Nickel <sup>3</sup>	equation	0.013	0.025	0.00092	0.00090	0.00095	0.00091	0.00093	0.00095	0.00070	0.00073	0.00066	0.00066	
Phosphorus		0.0045	0.004	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium		0.84		2.9	2.9	2.9	2.8	2.0	2.1	2.2	2.2	2.3	2.3	
Rubidium				0.0031	0.0029	0.0032	0.0031	0.0024	0.0025	0.0024	0.0025	0.0025	0.0024	
Selenium	0.001	0.00053	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.00007	<0.000050	
Silicon		0.61		0.57	0.55	0.59	0.57	0.47	0.44	0.32	0.31	0.35	0.33	



Table C2-1. Water quality results from the Whale Tail study area lakes, 2024.

Lake & Area		Aquatic Life Guideline <sup>1</sup>		WTP Screening Values <sup>2</sup>		Lake DS1											
Month	Area-Replicate ID					March	March	May	May	July	July	August	August	September	September		
Date						DS1-75	DS1-76	DS1-77	DS1-78	DS1-79	DS1-80	DS1-81	DS1-82	DS1-83	DS1-84		
Time						15-Mar-2024	15-Mar-2024	05-May-2024	05-May-2024	09-Jul-2024	09-Jul-2024	17-Aug-2024	17-Aug-2024	19-Sep-2024	19-Sep-2024		
ALS Sample ID						13:00	12:30	09:55	12:25	14:00	14:30	17:40	17:00	11:15	10:25		
		Triggers	Thresholds			VA24A6012-011	VA24A6012-012	VA24B0323-011	VA24B0323-012	VA24B7134-001	VA24B7134-002	VA24C1467-007	VA24C1467-008	VA24C5721-003	VA24C6403-001	VA24C5721-004	VA24C6403-002
Field Measurements (3 m)																	
Dissolved Oxygen (mg/L)				16.6	16.9	15.3	16.0	10.8	11.1	10.0	9.8	11.2	11.5				
Specific Conductivity (µS/cm)				39	64	39	64	31	24	28	37	32	47				
pH	6.5 - 9.0			6.9	7.0	7.3	6.7	7.2	6.9	7.4	7.5	7.3	7.6				
Temperature (°C)				0.53	0.79	0.72	0.86	11.8	11.1	13.5	13.2	8.4	8.1				
Physical Tests (mg/L)																	
Conductivity (µS/cm)		48.6		45	62	41	67	31	25	36	27	32	47				
Alkalinity - Bicarbonate		9.60		12.2	12.9	10.9	13.6	6.7	5.6	7.4	6.5	7.4	8.9				
Alkalinity - Carbonate		2.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
Alkalinity - Hydroxide				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
Alkalinity - Total (as CaCO <sub>3</sub> )		9.61		12.2	12.9	10.9	13.6	6.7	5.6	7.4	6.5	7.4	8.9				
Hardness (as CaCO <sub>3</sub> ), dissolved		17.4		14.3	22	15.7	23	10.6	8.3	11.8	9.1	10.7	15.5				
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg				14.0	22	15.8	23	10.6	8.7	12.4	9.3	10.8	15.7				
Total Dissolved Solids		38.5		24	37	26	47	22	18.7	26	21	19.4	26				
Total Suspended Solids		3	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0				
Turbidity (NTU)				0.10	0.18	0.17	0.16	0.38	0.36	0.30	0.35	0.48	0.82				
pH (Laboratory)	6.5 - 9.0	6.57-7.97	6.5-9.0	7.3	7.2	7.3	7.3	7.0	7.0	7.2	7.1	7.1	7.1				
Anions and Nutrients (mg/L)																	
Ammonia (as N) <sup>3</sup>	equation	0.065	0.126	0.019	0.029	0.0095	0.015	<0.0050	<0.0050	0.0053	<0.0050	0.011	0.024				
Bromide				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050				
Chloride	120	60.4	120	3.1	5.6	2.6	6.1	2.7	1.9	3.4	2.0	2.7	4.8				
Fluoride	0.12	0.077	0.12	0.063	0.057	0.050	0.061	0.035	0.050	0.045	0.059	0.048	0.042				
Total Kjeldahl Nitrogen		0.17		0.14	0.18	0.29	0.18	0.18	0.13	0.16	0.15	0.17	0.18				
Nitrate (as N)	3	1.5	3	0.021	0.039	0.052	0.048	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050				
Nitrite (as N)	0.06	0.031	0.06	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010				
Ortho Phosphate (as P)		0.0022		<0.0010	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	0.0023	0.0021	<0.0010	<0.0010				
Phosphorus (P)-Total	0.01	0.0045	0.01	0.0024	0.0031	0.0051	0.0027	0.0038	0.0031	0.0040	0.0032	0.0043	0.0049				
Phosphorus (P)-Total Diss.				0.0021	0.0024	<0.0020	<0.0020	<0.0020	0.0020	0.0021	<0.0020	0.0026	0.0026				
Reactive Silica (as SiO <sub>2</sub> )		1.33		1.4	2.7	1.3	2.9	0.72	0.63	0.74	0.60	0.65	1.2				
Sulphate (SO <sub>4</sub> )		64.8	128	3.5	6.3	3.2	6.8	2.8	2.4	3.6	2.5	2.7	4.5				
Organic / Inorganic Carbon (mg/L)																	
Dissolved Organic Carbon		2.43		2.6	3.2	3.0	4.0	2.2	2.9	2.2	2.3	2.2	2.7				
Total Organic Carbon		2.42		2.7	3.3	3.7	3.5	2.4	3.0	2.2	2.2	2.3	2.8				
Total Metals (mg/L)																	
Aluminum <sup>3</sup>	equation	0.052	0.1	0.0064	0.0053	0.0069	0.0060	0.017	0.015	0.0078	0.0078	0.014	0.023				
Antimony		0.0046	0.009	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010				
Arsenic	0.005	0.013	0.025	0.00015	0.00014	0.00021	0.00020	0.00014	0.00014	0.00013	0.00014	0.00016	0.00016				
Barium		0.5	1	0.0066	0.0098	0.0061	0.011	0.0050	0.0053	0.0055	0.0048	0.0053	0.0068				
Beryllium		0.000115	0.00013	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100				
Bismuth				<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050				
Boron	1.5	0.76	1.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010				
Cadmium <sup>3</sup>	equation	0.000023	0.00004	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050				
Calcium		4.6		3.5	5.8	3.8	6.2	2.8	2.2	3.3	2.4	2.8	4.2				
Cesium				<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010				
Chromium <sup>3</sup>	0.001	0.0025	0.005	0.00014	<0.00010	<0.00050	<0.00050	0.00024	<0.00010	<0.00010	<0.00010	<0.00010	0.00012				
Cobalt				<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010				
Copper <sup>3</sup>	equation	0.0013	0.002	<0.00050	<0.00050	0.00052	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050				
Iron	0.3	0.16	0.3	0.012	0.021	0.016	0.024	0.076	0.044	0.054	0.036	0.050	0.087				
Lead <sup>3</sup>	equation	0.00053	0.001	<0.000050	<0.000050	<0.000050	<0.000050	0.00006	0.000050	<0.000050	<0.000050	<0.000050	<0.000050				
Lithium		0.002		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010				
Magnesium		1.41		1.3	1.8	1.5	1.9	0.88	0.76	0.99	0.84	0.95	1.3				
Manganese <sup>3</sup>		0.32	See note 3	0.00092	0.0014	0.0012	0.0020	0.0026	0.0028	0.0029	0.0024	0.0028	0.0033				
Mercury	0.000026	0.000016	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050				
Molybdenum	0.073	0.037	0.073	0.00006	0.00009	0.00007	0.00007	0.00006	<0.000050	<0.000050	<0.000050	0.00005	0.00007				
Nickel <sup>3</sup>	equation	0.013	0.025	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050				
Phosphorus		0.0045	0.004	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050				
Potassium		0.84		0.68	1.1	0.58	1.1	0.56	0.49	0.73	0.51	0.54	0.84				
Rubidium				0.00079	0.0012	0.00087	0.0012	0.00070	0.00066	0.00090	0.00077	0.00079	0.0010				
Selenium	0.001	0.000															



Table C2-1. Water quality results from the Whale Tail study area lakes, 2024.

Lake & Area		Aquatic Life Guideline <sup>1</sup>	WTP Screening Values <sup>2</sup>		Nemo Lake (NEM)									
Month	Area-Replicate ID				March	March	May	May	July	July	August	August	September	September
Date					NEM-85	NEM-86	NEM-87	NEM-88	NEM-89	NEM-90	NEM-91	NEM-92	NEM-93	NEM-94
Time					04-Mar-2024	04-Mar-2024	04-May-2024	04-May-2024	04-Jul-2024	04-Jul-2024	16-Aug-2024	16-Aug-2024	19-Sep-2024	19-Sep-2024
ALS Sample ID				10:00	09:20	13:50	14:20	11:15	11:45	14:20	14:35	15:29	15:01	
				VA24A5006-001	VA24A5006-002	VA24B0323-005	VA24B0323-006	VA24B6821-007	VA24B6821-008	VA24C1467-003	VA24C1467-004	VA24C4068-003	VA24C4068-004	
				VA24A6012-001	VA24A6012-002							VA24C6403-011	VA24C6403-012	
Field Measurements (3 m)														
Dissolved Oxygen (mg/L)				15.0	17.6	1.4	14.5	11.8	12.1	9.7	9.7	10.6	10.7	
Specific Conductivity (µS/cm)				106	119	103	101	86	86	89	89	90	90	
pH	6.5 - 9.0			7.7	7.3	7.1	7.0	7.9	7.8	7.8	7.6	7.2	7.3	
Temperature (°C)				0.65	0.49	0.81	0.78	8.7	8.6	13.6	13.5	10.9	10.5	
Physical Tests (mg/L)														
Conductivity (µS/cm)		48.6		105	118	108	107	89	88	85	85	87	86	
Alkalinity - Bicarbonate		9.60		16.2	17.6	16.1	15.8	13.8	13.4	13.4	13.8	13.8	13.8	
Alkalinity - Carbonate		2.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity - Hydroxide				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity - Total (as CaCO <sub>3</sub> )		9.61		16.2	17.6	16.1	15.8	13.8	13.4	13.4	13.8	13.8	13.8	
Hardness (as CaCO <sub>3</sub> ), dissolved		17.4		41	47	40	39	33	33	32	33	34	34	
Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg				38	44	42	42	34	33	33	33	35	34	
Total Dissolved Solids		38.5		68	74	75	66	70	66	84	93	61	64	
Total Suspended Solids		3	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Turbidity (NTU)				<0.10	<0.10	<0.10	0.11	0.38	0.34	0.16	0.17	0.17	0.30	
pH (Laboratory)	6.5 - 9.0	6.57-7.97	6.5-9.0	7.4	7.5	7.5	7.5	7.4	7.4	7.4	7.4	7.4	7.4	
Anions and Nutrients (mg/L)														
Ammonia (as N) <sup>3</sup>	equation	0.065	0.126	0.020	0.019	0.022	0.023	0.0091	0.010	0.0092	<0.0050	0.043	0.045	
Bromide				0.11	0.12	0.11	0.11	0.087	0.086	0.077	0.077	0.089	0.091	
Chloride	120	60.4	120	16.3	18.3	16.6	16.3	12.9	12.8	12.7	12.7	12.4	12.4	
Fluoride	0.12	0.077	0.12	0.035	0.041	0.026	0.026	0.026	0.024	0.030	0.029	0.035	0.034	
Total Kjeldahl Nitrogen		0.17		0.13	0.16	0.14	0.14	0.13	0.13	0.13	0.14	0.17	0.17	
Nitrate (as N)	3	1.5	3	0.0074	0.0086	0.024	0.011	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Nitrite (as N)	0.06	0.031	0.06	<0.0010	<0.0010	0.0018	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Ortho Phosphate (as P)		0.0022		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus (P)-Total	0.01	0.0045	0.01	0.0033	0.0030	<0.0020	0.0025	0.0036	0.0033	0.0029	0.0027	<0.0020	<0.0020	
Phosphorus (P)-Total Diss.				<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	0.0028	<0.0020	<0.0020	<0.0020	
Reactive Silica (as SiO <sub>2</sub> )		1.33		<0.50	<0.50	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Sulphate (SO <sub>4</sub> )		64.8	128	6.7	7.5	7.0	6.7	5.6	5.6	6.0	6.0	5.9	5.9	
Organic / Inorganic Carbon (mg/L)														
Dissolved Organic Carbon		2.43		2.1	2.2	1.9	1.8	2.0	2.5	2.1	1.9	2.0	2.1	
Total Organic Carbon		2.42		1.9	2.2	2.2	1.9	2.0	2.4	2.0	1.9	1.8	1.9	
Total Metals (mg/L)														
Aluminum <sup>3</sup>	equation	0.052	0.1	<0.0030	<0.0030	<0.0030	<0.0030	0.012	0.010	0.0078	0.0037	0.0052	0.0047	
Antimony		0.0046	0.009	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic	0.005	0.013	0.025	0.00080	0.00090	0.00078	0.00076	0.0011	0.0011	0.00098	0.0010	0.0010	0.0010	
Barium		0.5	1	0.018	0.020	0.020	0.020	0.018	0.017	0.015	0.014	0.014	0.014	
Beryllium		0.000115	0.00013	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	
Bismuth				<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron	1.5	0.76	1.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium <sup>3</sup>	equation	0.000023	0.00004	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Calcium		4.6		10.6	12.4	12.1	12.0	9.6	9.6	9.4	9.3	10.1	9.8	
Cesium				0.00001	0.00002	0.00002	0.00001	0.00002	0.00002	0.00002	0.00001	0.00002	0.00002	
Chromium <sup>4</sup>	0.001	0.0025	0.005	0.00014	0.00013	<0.00050	<0.00050	0.00034	0.00026	0.00013	<0.00010	0.00011	<0.00010	
Cobalt				<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper <sup>3</sup>	equation	0.0013	0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Iron	0.3	0.16	0.3	<0.010	<0.010	<0.010	<0.010	0.031	0.030	<0.010	<0.010	0.012	0.012	
Lead <sup>3</sup>	equation	0.00053	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium		0.002		0.0014	0.0016	0.0014	0.0014	0.0011	0.0011	0.0011	0.0011	<0.0010	0.0010	
Magnesium		1.41		2.9	3.2	2.9	2.9	2.4	2.3	2.3	2.3	2.4	2.4	
Manganese <sup>3</sup>		0.32	See note 3	0.0012	0.0014	0.00054	0.00069	0.0078	0.0077	0.0016	0.0015	0.0037	0.0033	
Mercury	0.000026	0.000016	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Molybdenum	0.073	0.037	0.073	0.00009	0.00011	0.00009	0.00010	0.00008	0.00007	0.00008	0.00007	0.00010	0.00009	
Nickel <sup>3</sup>	equation	0.013	0.025	0.0014	0.0015	0.0013	0.0013	0.0016	0.0015	0.0011	0.0010	0.0011	0.0012	
Phosphorus		0.0045	0.004	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium		0.84		1.8	2.0	2.0	2.0	1.9	1.8	1.7	1.7	1.7	1.7	
Rubidium				0.0031	0.0036	0.0032	0.0033	0.0029	0.0027	0.0028	0.0029	0.0028	0.0028	
Selenium	0.001	0.00053	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Silicon		0.61		0.22	0.24	0.24	0.24	0.20	0.2					



Table C2-2. Water quality results screened against FEIS predicted concentrations for Whale Tail Lake – South Basin, 2024.

Lake & Area		WTS FEIS Predictions					Whale Tail Lake South Basin (Impoundment)								
Month							March	March	July	July	August	August	September	September	
Area-Replicate ID							WTS-87	WTS-88	WTS-91	WTS-92	WTS-93	WTS-94	WTS-95	WTS-96	
Date							04-Mar-2024	04-Mar-2024	01-Jul-2024	01-Jul-2024	14-Aug-2024	14-Aug-2024	19-Sep-2024	19-Sep-2024	
Time							14:00	13:30	16:25	16:05	12:50	12:05	13:35	14:10	
ALS Sample ID			March	May	July	August	September	VA24A5006-003 VA24A6012-003	VA24A5006-003 VA24A6012-003	VA24B6821-003	VA24B6821-004	VA24C1467-009	VA24C1467-010	VA24C4068-001 VA24C6403-007	VA24C4068-002 VA24C6403-008
Physical Tests (mg/L)															
Alkalinity - Total (as CaCO3)	10.0	10.0	9.7	10.0	11.0	26	25	18.7	19.0	18.8	19.0	19.2	19.1		
Total Dissolved Solids	36	36	38	41	43	86	85	93	91	100	96	77	80		
Anions and Nutrients (mg/L)															
Ammonia (as N)	0.17	0.18	0.19	0.22	0.25	0.055	0.056	0.035	0.020	0.041	0.045	0.052	0.082		
Chloride	7.9	7.9	8.3	8.9	9.3	16.9	16.2	14.6	14.5	14.1	14.2	13.7	13.8		
Fluoride	0.051	0.051	0.050	0.053	0.055	0.072	0.070	0.056	0.054	0.060	0.063	0.066	0.067		
Nitrate (as N)	1.6	1.6	1.9	2.0	2.1	0.46	0.44	0.45	0.44	0.27	0.27	0.23	0.23		
Phosphorus (P)-Total	0.011	0.011	0.012	0.012	0.012	0.0067	0.0065	0.0057	0.0070	0.0046	0.0047	0.0036	0.0037		
Sulphate (SO <sub>4</sub> )	5.0	5.0	4.9	5.4	5.7	16.7	16.1	14.2	14.1	13.8	13.8	13.2	13.3		
Total Metals (mg/L)															
Aluminum	0.0040	0.0041	0.0038	0.0039	0.0039	0.0035	0.0032	0.020	0.017	0.0080	0.0062	0.0091	0.010		
Antimony	0.00058	0.00058	0.00056	0.00063	0.00067	0.00058	0.00058	0.00049	0.00051	0.00043	0.00043	0.00042	0.00041		
Arsenic	0.013	0.013	0.014	0.015	0.016	0.00060	0.00062	0.0012	0.0012	0.00086	0.00077	0.00097	0.00072		
Barium	0.0085	0.0085	0.0083	0.0088	0.0091	0.023	0.021	0.020	0.020	0.017	0.017	0.017	0.017		
Beryllium	0.00002	0.00002	0.00002	0.00002	0.00003	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100		
Bismuth	0.00005	0.00005	0.00005	0.00005	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		
Boron	0.046	0.046	0.044	0.049	0.052	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Cadmium	0.00001	0.00001	0.00001	0.00001	0.00001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		
Calcium	4.8	4.8	4.9	5.3	5.6	14.0	13.2	12.6	12.6	11.8	12.0	12.3	12.9		
Chromium	0.00049	0.00049	0.00047	0.00052	0.00055	0.00012	0.00012	0.00043	0.00038	0.00018	0.00094	0.00017	0.00015		
Cobalt	0.00035	0.00035	0.00034	0.00037	0.00040	<0.00010	<0.00010	0.00011	0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Copper	0.0010	0.0011	0.0010	0.0011	0.0011	0.00058	0.00056	<0.00050	0.00056	<0.00050	<0.00050	<0.00050	<0.00050		
Iron	0.059	0.059	0.059	0.061	0.063	0.016	0.010	0.073	0.069	0.035	0.038	0.041	0.042		
Lead	0.00018	0.00018	0.00017	0.00019	0.00020	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		
Lithium	0.0017	0.0017	0.0017	0.0018	0.0018	0.0023	0.0022	0.0022	0.0022	0.0021	0.0021	0.0020	0.0020		
Magnesium	1.3	1.3	1.3	1.4	1.4	4.5	4.5	3.2	3.3	3.4	3.4	3.7	3.7		
Manganese	0.037	0.037	0.036	0.040	0.044	0.0014	0.00072	0.021	0.020	0.0056	0.0076	0.0072	0.0078		
Mercury	0.00001	0.00001	0.00001	0.00001	0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		
Molybdenum	0.00070	0.00070	0.00070	0.00076	0.00080	0.00077	0.00081	0.00089	0.00093	0.00082	0.00081	0.00080	0.00075		
Nickel	0.0036	0.0036	0.0035	0.0041	0.0045	0.0017	0.0017	0.0026	0.0024	0.0014	0.0013	0.0015	0.0013		
Potassium	1.3	1.3	1.3	1.4	1.5	3.5	3.5	3.2	3.2	3.1	3.0	3.0	3.0		
Selenium	0.00023	0.00023	0.00022	0.00025	0.00028	0.00005	<0.000050	<0.000050	0.00006	<0.000050	<0.000050	<0.000050	<0.000050		
Silver	0.00002	0.00002	0.00002	0.00002	0.00002	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Sodium	2.9	2.9	2.9	3.2	3.3	3.4	3.2	2.7	2.7	2.9	2.8	2.8	2.8		
Strontium	0.032	0.032	0.032	0.035	0.037	0.11	0.11	0.100	0.10	0.093	0.092	0.100	0.094		
Thallium	0.00001	0.00001	0.00001	0.00001	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Tin	0.00012	0.00012	0.00012	0.00012	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Uranium	0.00027	0.00027	0.00027	0.00029	0.00030	0.00007	0.00007	0.00010	0.00010	0.00007	0.00007	0.00006	0.00006		
Vanadium	0.00080	0.00080	0.00076	0.00082	0.00085	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Zinc	0.0021	0.0021	0.0021	0.0023	0.0024	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.023	<0.0030	<0.0030		

Notes:

Formatting for indicating the parameters that exceed the model predictions in the FEIS:

**123**      Bolded values exce: Bolded values exceed FEIS by < 10X.

**123**      Bold and shaded va Bold and shaded values exceed the FEIS by ≥ 10X.

*Italicized numbers are below detection limits.*

"-" not analyzed/not sampled.



Table C2-3. Water quality results screened against FEIS predicted concentrations for Kangislulik Lake, 2023.

Lake & Area	MAM/KAN FEIS Predictions					Kangisuluk Lake*									
Month						March	March	May	May	July	July	August	August	September	September
Area-Replicate ID						MAM-87	MAM-88	MAM-89	MAM-90	MAM-91	MAM-92	MAM-93	MAM-94	MAM-95	MAM-96
Date	March	May	July	August	September	05-Mar-2024	05-Mar-2024	04-May-2024	04-May-2024	30-Jun-2024	30-Jun-2024	15-Aug-2024	15-Aug-2024	19-Sep-2024	19-Sep-2024
Time						14:00	13:30	10:20	10:50	16:05	14:35	14:50	15:50	14:30	14:00
ALS Sample ID						VA24A5006-005 VA24A6012-005	VA24A5006-006 VA24A6012-006	VA24B0323-003	VA24B0323-004	VA24B6821-005	VA24B6821-006	VA24C1467-005	VA24C1467-006	VA24C6403-009 VA24C3430-001	VA24C6403-010 VA24C3430-002
Physical Tests (mg/L)															
Alkalinity - Total (as CaCO <sub>3</sub> )	8.5	8.5	8.6	8.7	8.8	33	28	29	35	19.6	18.0	19.8	24	23	25
Total Dissolved Solids	33	33	33	33	33	162	132	163	208	119	97	122	151	124	141
Anions and Nutrients (mg/L)															
Ammonia (as N)	0.064	0.064	0.097	0.098	0.10	0.056	0.048	0.060	0.058	0.015	0.012	0.029	0.032	0.049	0.068
Chloride	10.0	10.0	8.9	8.9	8.9	32	26	28	35	18.1	15.3	17.1	19.9	18.4	22
Fluoride	0.043	0.043	0.044	0.044	0.045	0.072	0.067	0.057	0.063	0.046	0.044	0.057	0.063	0.057	0.063
Nitrate (as N)	0.84	0.84	1.1	1.1	1.1	1.1	0.85	0.92	1.2	0.44	0.34	0.27	0.49	0.33	0.65
Phosphorus (P)-Total	0.0077	0.0077	0.0083	0.0084	0.0085	0.0041	0.0032	<0.0020	<0.0020	0.0039	0.0047	0.0041	0.0041	0.0055	0.0038
Sulphate (SO <sub>4</sub> )	3.8	3.8	4.0	4.1	4.1	35	29	31	39	20	16.5	19.1	22	19.6	23
Total Metals (mg/L)															
Aluminum	0.0037	0.0037	0.0037	0.0038	0.0038	<0.0030	<0.0030	<0.0030	<0.0030	0.015	0.011	0.0045	0.0056	0.0040	0.0048
Antimony	0.00035	0.00035	0.00039	0.00039	0.00040	0.0013	0.0010	0.0011	0.0014	0.00069	0.00050	0.00082	0.0013	0.00093	0.0015
Arsenic	0.0074	0.0074	0.0086	0.0087	0.0089	0.0010	0.00092	0.00094	0.0010	0.0010	0.00076	0.0012	0.0017	0.0012	0.0020
Barium	0.0079	0.0079	0.0079	0.0079	0.0080	0.036	0.031	0.035	0.046	0.024	0.020	0.018	0.021	0.020	0.023
Beryllium	0.00002	0.00002	0.00002	0.00002	0.00002	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
Bismuth	0.00005	0.00005	0.00005	0.00005	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	0.035	0.035	0.036	0.036	0.036	0.011	<0.010	0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.00001	0.00001	0.00001	0.00001	0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	5.8	5.8	5.2	5.2	5.2	25	21	25	32	15.9	13.6	15.0	17.9	17.1	19.6
Chromium	0.00035	0.00035	0.00037	0.00037	0.00037	<0.00010	0.00042	<0.00050	<0.00050	0.00035	0.00024	<0.00010	0.00014	0.00012	0.00017
Cobalt	0.00025	0.00025	0.00027	0.00027	0.00027	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	0.00082	0.00082	0.00084	0.00085	0.00086	0.00061	0.00058	0.00053	0.00062	0.00051	<0.00050	<0.00050	<0.00050	<0.00050	0.00054
Iron	0.042	0.042	0.044	0.044	0.045	<0.010	<0.010	<0.010	<0.010	0.030	0.029	0.011	0.016	0.017	0.026
Lead	0.00014	0.00014	0.00015	0.00015	0.00015	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	0.0015	0.0015	0.0015	0.0015	0.0015	0.0038	0.0030	0.0036	0.0044	0.0022	0.0018	0.0022	0.0028	0.0026	0.0031
Magnesium	1.3	1.3	1.3	1.3	1.3	6.8	5.8	5.8	7.2	3.8	3.2	3.9	4.3	3.9	4.5
Manganese	0.023	0.023	0.025	0.025	0.026	0.0049	0.0038	0.0025	0.0043	0.0062	0.0056	0.0037	0.0040	0.0060	0.0079
Mercury	0.00001	0.00001	0.00001	0.00001	0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	0.00058	0.00058	0.00057	0.00057	0.00058	0.0012	0.00097	0.00093	0.0011	0.00055	0.00040	0.00084	0.0013	0.00098	0.0016
Nickel	0.0023	0.0023	0.0025	0.0026	0.0026	0.0022	0.0016	0.0017	0.0024	0.0014	0.0012	0.00089	0.0014	0.0011	0.0017
Potassium	0.96	0.96	1.0	1.0	1.1	5.5	4.6	5.1	6.2	3.7	3.1	3.5	4.1	3.6	4.4
Selenium	0.00014	0.00014	0.00016	0.00016	0.00016	0.00009	0.00008	0.00007	0.00009	0.00007	<0.000050	<0.000050	0.00007	0.00006	<0.000050
Silver	0.00001	0.00001	0.00002	0.00002	0.00002	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	2.2	2.2	2.3	2.3	2.3	4.8	4.0	4.3	5.1	2.8	2.5	3.2	3.6	3.2	3.5
Strontium	0.028	0.028	0.028	0.029	0.029	0.20	0.16	0.19	0.23	0.12	0.099	0.11	0.14	0.12	0.16
Thallium	0.00001	0.00001	0.00001	0.00001	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	0.00011	0.00011	0.00011	0.00012	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.00021	0.00021	0.00021	0.00021	0.00021	0.00017	0.00013	0.00014	0.00016	0.00013	0.00010	0.00017	0.00025	0.00016	0.00026
Vanadium	0.00067	0.00067	0.00068	0.00069	0.00070	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	0.0017	0.0017	0.0017	0.0018	0.0018	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Notes:

Formatting for indicating the parameters that exceed the model predictions in the FEIS:

- 123

Bolded values exce

Bolded values exceed FEIS by < 10X.
- 123

Bold and shaded v

Bold and shaded values exceed the FEIS by ≥ 10X.

*Italicized numbers are below detection limits.*

"-" not analyzed/not sampled.

\* Previously referred to as Mammoth Lake (MAM). Acronyms MAM or KAN used interchangeably.



**Table C2-4. Water and phytoplankton sampling location coordinates (GPS, UTM, NAD83) for the Whale Tail CREMP, 2024.**

Area <sup>1</sup>	Area Type <sup>2</sup>	Area-Replicate	Water & Phytoplankton (Monthly)				
			Month	Depth (m)	Zone	Easting	Northing
WTS	NF	WTS-87	March	18.3	14W	607376	7253849
		WTS-88	March	6.2	14W	607607	7254422
		WTS-89	May	10.85	14W	607274	7253485
		WTS-90	May	7.45	14W	607638	7254078
		WTS-91	July	11.2	14W	607518	7254258
		WTS-92	July	10.5	14W	607173	7253550
		WTS-93	August	7.5	14W	607607	7254438
		WTS-94	August	10.5	14W	607154	7253611
		WTS-95	September	6.25	14W	607696	7254008
		WTS-96	September	7.99	14W	607203	7253553
KAN	NF	MAM-87	March	7.8	14W	605393	7255097
		MAM-88	March	6.8	14W	604137	7254410
		MAM-89	May	7.4	14W	604273	7254244
		MAM-90	May	5.4	14W	605403	7254983
		MAM-91	July	8.45	14W	605359	7255129
		MAM-92	July	5.6	14W	604145	7253925
		MAM-93	August	10.03	14W	604110	7254513
		MAM-94	August	5.63	14W	605394	7254910
		MAM-95	September	5.02	14W	604145	7253925
		MAM-96	September	5.98	14W	605285	7254940
A20	MF	A20-79	March	5.35	14W	604697	7252460
		A20-80	March	5.28	14W	605251	7252790
		A20-81	May	5.6	14W	605157	7252791
		A20-82	May	16.5	14W	604546	7252645
		A20-83	July	6.52	14W	604605	7252513
		A20-84	July	5.2	14W	605205	7252748
		A20-85	August	6.11	14W	604685	7252485
		A20-86	August	6.4	14W	605210	7252762
		A20-87	September	5.5	14W	605183	7252601
		A20-88	September	13.88	14W	604484	7252480
A76	MF	A76-77	March	6.64	14W	602420	7257014
		A76-78	March	7.69	14W	601901	7256915
		A76-79	May	11.15	14W	601732	7256880
		A76-80	May	13.8	14W	602555	7257139
		A76-81	July	5.38	14W	601938	7256930
		A76-82	July	12.42	14W	602572	7257236
		A76-83	August	14.4	14W	602561	7257130



**Appendix C2:**

Water Chemistry – Whale Tail Study Area Lakes

March 2025

Area <sup>1</sup>	Area Type <sup>2</sup>	Area-Replicate	Water & Phytoplankton (Monthly)				
			Month	Depth (m)	Zone	Easting	Northing
		A76-84	August	14.9	14W	602548	7257133
		A76-85	September	7.6	14W	602711	7256966
		A76-86	September	7.1	14W	601682	7256840
DS1	FF	DS1-75	March	17.51	14W	597525	7260738
		DS1-76	March	8.5	14W	598023	7258281
		DS1-77	May	18.65	14W	597176	7262183
		DS1-78	May	9.1	14W	598028	7258274
		DS1-79	July	7.67	14W	598016	7258278
		DS1-80	July	8.91	14W	597796	7260913
		DS1-81	August	9.2	14W	597771	7260969
		DS1-82	August	6	14W	597579	7259142
		DS1-83	September	11.2	14W	597627	7260888
		DS1-84	September	6.5	14W	598024	7258285
NEM	NF	NEM-85	March	12.76	14W	606152	7257527
		NEM-86	March	8.3	14W	606401	7257018
		NEM-87	May	10.45	14W	606229	7257414
		NEM-88	May	14.4	14W	607018	7257843
		NEM-89	July	8.65	14W	606408	7257020
		NEM-90	July	13.83	14W	606992	7257819
		NEM-91	August	18	14W	606561	7257985
		NEM-92	August	9.7	14W	606146	7257387
		NEM-93	September	15.03	14W	607005	7257707
		NEM-94	September	6.04	14W	606133	7257405

**Notes:**

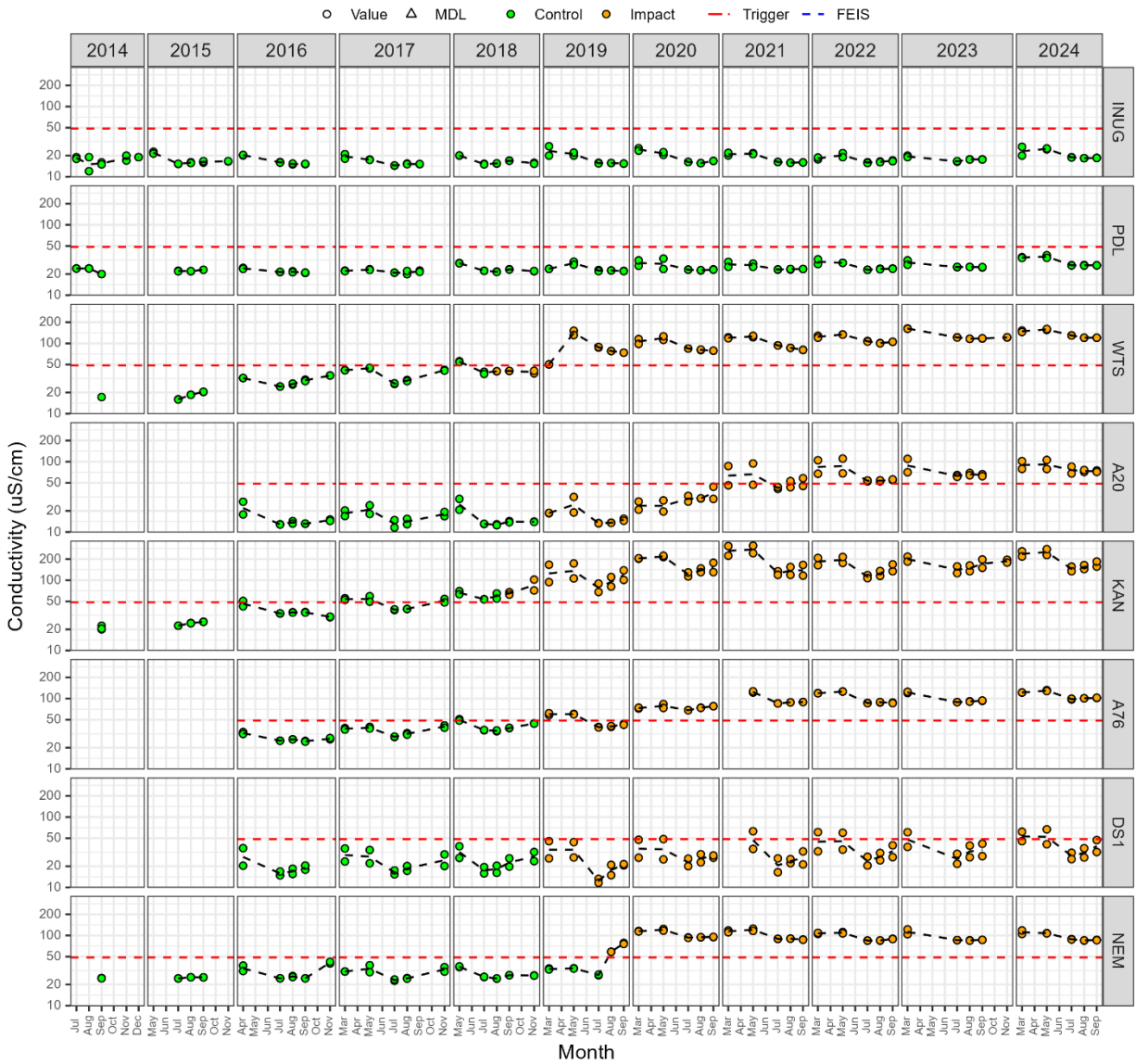
1. Area IDs are as follows: WTS =Whale Tail South; KAN = Kangislulik Lake ([KAN]; formerly Mammoth Lake [MAM]; referred to as KAN); A20 = Lake A20; A76= Lake A76; DS1= Lake DS1, NEM = Nemo Lake
2. Area types: NF=near-field; MF=mid-field; FF=far-field; Ref=reference.



## FIGURES

---



**Figure C2-1. Laboratory-measured conductivity ( $\mu\text{S}/\text{cm}$ ).**



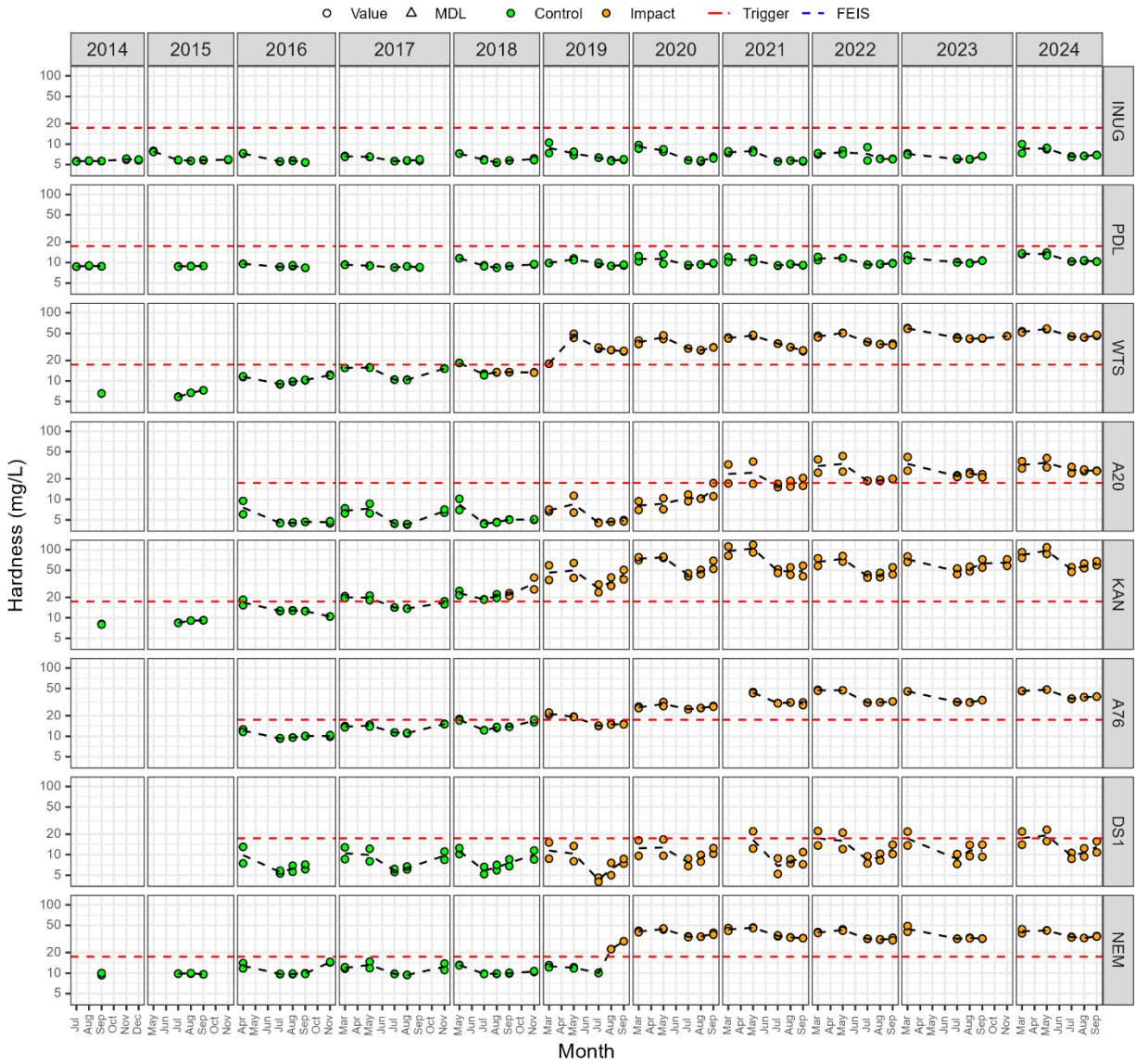
**Figure C2-2. Laboratory-measured hardness (mg/L).**



Figure C2-3. Field-measured pH.

