Appendix E

Groundwater Results

te Groundwater Monitoring Database 2023

Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW1 Q1-2023	AGW1 Q2-2023	AGW1 Q3-2023	AGW1 Q4-2023		AGW2 Q1-2023	AGW2 Q2-2023	AGW2 Q3-2023	AGW2 Q4-2023		AGW3 Q1-2023	AGW3 Q2-2023	AGW3 Q3-2023	AGW3 Q4-2023	
	GTV	GTV	IGV			22-Feb-23	22-May-23	12-Sep-23	30-Nov-23		22-Feb-23	22-May-23	12-Sep-23	30-Nov-23		22-Feb-23	23-May-23	12-Sep-23	30-Nov-23	
Metals																				
Dissolved Arsenic	7.5	7.5	10	ug/l	<0.9	<0.9	<0.9	<0.9	<0.9		<0.9	<0.9	<0.9	<0.9		<0.9	<0.9	<0.9	<0.9	
Dissolved Cadmium	-	3.75	5	ug/l	<0.03	0.09	0.04	<0.03	0.04		1.15	1.12	1.07	1.14		0.07	0.07	0.08	0.07	
Dissolved Calcium	-	-	200	mg/l	<0.2	253.5$_{AA}$	247.1	196.0	285.6		250.8	296.2	233.4	292.7		156	169.4	156.0	167.9	
Total Dissolved Chromium	37.5	37.5	30	ug/l	<1.5	<0.2	<0.2	0.3	<0.2		<0.2	0.4	0.3	<0.2		0.4	0.3	0.4	0.3	
Dissolved Copper	-	1500	30	ug/l	<1	<1	<1	<1	<1		2	4	4	2		<1	<1	<1	<1	
Dissolved Lead	7.5	18.75	10	ug/l	<0.4	<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4	
Dissolved Magnesium	-	-	50	mg/l	<0.1	24.1	25.2	28.1	26.0		35.6	44.5	38.5	32.9		8.3	8.6	8.2	8.1	
Dissolved Mercury	0.75	0.75	1	ug/l	<1	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Dissolved Nickel	-	15	20	ug/l	<0.2	7.4	7.2	7.5	9.2		74.8	67.4	49.2	78.6		0.4	0.4	9.9	0.5	
Dissolved Potassium	-	-	5	mg/l	<0.1	7.5	7.7	7.0	8.1		21.3	31.2	26.3	24.3		0.2	0.2	0.3	0.2	
Dissolved Sodium	-	150	150	mg/l	<0.1	18.3	20.6	20.5	20.1		25.9	32.1	31.3	25.4		10.6	11.7	10.1	11.0	
Dissolved Zinc	75	-	100	ug/l	<1.5	8	-	7.7	9.9		11.7	-	8.4	12.6		3.6	-	4.2	4.6	
Total Arsenic	-	-	-	ug/l	<0.9	<0.9	<0.9	<0.9	<0.9		0.9	1.2	<0.9	1.0		3	<0.9	2.0	1.3	
Total Cadmium	-	-	-	ug/l	<0.03	0.6	0.98	1.35	0.50		1.2	1.36	1.16	1.19		0.24	0.26	0.16	0.10	
Total Chromium	-	-	-	ug/l	<0.2	1.1	2.3	1.8	0.8		0.9	1.1	0.7	0.7		8.3	9.1	5.1	1.9	
Total Copper	-	-	-	ug/l	<3	2	3	2	<1		4	7	4	3		10	10	7	3	
Total Lead	-	-	-	ug/l	<0.4	<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4		5.9	7.4	3.3	1.8	
Total Mercury	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Total Nickel	-	-	-	ug/l	<0.2	10	14.6	12.4	16.8		80	80.0	57.5	87.3		15.2	16.5	9.9	4.1	
Total Zinc	-	-	-	ug/l	<1.5	17	21.2	24.4	14.3		14.9	15.5	10.3	12.6		34.1	34.2	22.0	10.1	
VOC MS																				
Dichlorodifluoromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Methyl Tertiary Butyl Ether	10	-	30	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	
Chloromethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Vinyl Chloride	0.375	-	-	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	
Bromomethane	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Chloroethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Trichlorofluoromethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,1-Dichloroethene (1,1 DCE)	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Dichloromethane (DCM)	15	-	10	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
trans-1-2-Dichloroethene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,1-Dichloroethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
cis-1-2-Dichloroethene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
2,2-Dichloropropane	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Bromochloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Chloroform	-	-	12	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1,1-Trichloroethane	-	-	500	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1-Dichloropropene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Carbon tetrachloride	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2-Dichloroethane	225	-	3	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Benzene	0.75	0.75	1	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Trichloroethene (TCE)	-	-	70	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2-Dichloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Dibromomethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Bromodichloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
cis-1-3-Dichloropropene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Toluene	525	-	10	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
trans-1-3-Dichloropropene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1,2-Trichloroethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Tetrachloroethene (PCE)	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,3-Dichloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Dibromochloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2-Dibromoethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Chlorobenzene	-	-	1	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1,1,2-Tetrachloroethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Ethylbenzene	-	-	300	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
m/p-Xylene	-	-	10	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
o-Xylene	-	-	10	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Styrene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Bromoform	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Isopropylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,1,2,2-Tetrachloroethane	-	-	-	ug/l	<4	<4	<4	<4	<4		<4	<4	<4	<4		<4	<4	<4	<4	
Bromobenzene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2,3-Trichloropropane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Propylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
2-Chlorotoluene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,3,5-Trimethylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
4-Chlorotoluene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
tert-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2,4-Trimethylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
sec-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
4-Isopropyltoluene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,3-Dichlorobenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,4-Dichlorobenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
n-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2-Dichlorobenzene	-	-	10	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2-Dibromo-3-chloropropane	-	-	-	ug/l	<2	<2	<2	<2	<3		<2	<2	<2	<2		<2	<2	<2	<2	
1,2,4-Trichlorobenzene	-	-	0.4	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Hexachlorobutadiene	-	-	0.1	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Naphthalene	-	-	1	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2,3-Trichlorobenzene	-	-	0.4	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Surrogate Recovery Toluene D8	-	-	-	%	<0	87	103	92	104		87	96	101	104		86	98	105	107	
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	%	<0	99	111	94	104		95	104	97	104		92	103	106	105	

Methyl Tertiary Butyl Ether (MTBE)	10	-	30	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	
Benzene	0.75	-	1	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Toluene	525	-	10	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
Ethylbenzene	-	-	300	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
m/p-Xylene	-	-	10	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
o-Xylene	-	-	10	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Surrogate Recovery Toluene D8	-	-	-	%	<0	87	103	92	104		87	96	101	104		86	98	105	107	
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	%	<0	99	111	94	104		95	104	97	104		92	103	106	105	

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Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW1 Q1-2023 22-Feb-23	AGW1 Q2-2023 22-May-23	AGW1 Q3-2023 12-Sep-23	AGW1 Q4-2023 30-Nov-23	AGW2 Q1-2023 22-Feb-23	AGW2 Q2-2023 22-May-23	AGW2 Q3-2023 12-Sep-23	AGW2 Q4-2023 30-Nov-23	AGW3 Q1-2023 22-Feb-23	AGW3 Q2-2023 23-May-23	AGW3 Q3-2023 12-Sep-23	AGW3 Q4-2023 30-Nov-23
	GTV	GTV	IGV														
SVOC MS																	
Phenols																	
2-Chlorophenol	-	-	**200**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Methylphenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	-	-	**200**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Methylphenol	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Nitrophenol	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	-	-	**2**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	-	-	**0.5**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PAHs																	
2-Chloronaphthalene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Methylnaphthalene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	-	-	**1**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	-	-	**10,000**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	-	-	**1**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(bk)fluoranthene	-	-	**0.05**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a)pyrene	**0.0075**	**0.0075**	**0.001**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(123cd)pyrene	-	-	**0.05**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzo(ah)anthracene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(ghi)perylene	-	-	**0.05**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phthalates																	
Bis(2-ethylhexyl) phthalate	**6**	-	-	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Butylbenzyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	-	-	**2**	ug/l	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Di-n-Octyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Other SVOCs																	
1,2-Dichlorobenzene	-	-	**10**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Nitroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-Dinitrotoluene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-Nitroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Bromophenylphenylether	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chloroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Nitroaniline	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Azobenzene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy)methane	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethyl)ether	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbazole	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	-	-	**0.03**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	-	-	**0.1**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isophorone	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrobenzene	-	-	**10**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Surrogate Recovery 2-Fluorobiphenyl	-	-	-	%	<0	125	110	116	119	111	120	109	121	127	60	125	117
Surrogate Recovery p-Terphenyl-d14	-	-	-	%	<0	129	111	131	126	115	125	122	128	129	61	137	121
Mineral Oil (C10-C40)	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Petroleum Hydrocarbon Combined Working Group (TPH-CWG)																	
Aliphatics																	
>C5-C6	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C6-C8	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C8-C10	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C10-C12	-	-	-	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>C12-C16	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C16-C21	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C21-C35	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C35-C44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total aliphatics C5-44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics																	
>C5-EC7	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC7-EC8	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC8-EC10	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC10-EC12	-	-	-	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>EC12-EC16	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC16-EC21	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC21-EC35	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC35-EC44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total aromatics C5-44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total aliphatics and aromatics(C5-44)	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Resorcinol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Catechol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenol	-	-	**0.5**	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW1 Q1-2023	AGW1 Q2-2023	AGW1 Q3-2023	AGW1 Q4-2023	AGW2 Q1-2023	AGW2 Q2-2023	AGW2 Q3-2023	AGW2 Q4-2023	AGW3 Q1-2023	AGW3 Q2-2023	AGW3 Q3-2023	AGW3 Q4-2023
	GTV	GTV	IGV			22-Feb-23	22-May-23	12-Sep-23	30-Nov-23	22-Feb-23	22-May-23	12-Sep-23	30-Nov-23	22-Feb-23	23-May-23	12-Sep-23	30-Nov-23
m/p-cresol	-	-	-	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o-cresol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total cresols	-	-	-	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenols	-	-	-	mg/l	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
1-naphthol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,3,5-trimethyl phenol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-isopropylphenol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Speciated Phenols HPLC	-	-	-	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate as SO4	187.5	187.5	200	mg/l	<0.5	21.5	22.2	16.7	13.6	42.5	50.8	36.3	25.1	8.1	9.9	8.4	6.9
Chloride	24 - 187.5	24 - 187.5	30	mg/l	<0.3	34.2	36.7	36.4	35.0	42.8	43.6	52.3	35.6	21.8	23.0	22.0	22.3
Bromide	-	-	-	mg/l	<0.05	0.1	0.17	0.27	1.02	0.39	0.45	0.36	0.94	<0.05	<0.05	<0.05	0.21
Fluoride	-	-	1	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate as NO3	37.5	37.5	25	mg/l	<0.2	<0.2	<0.2	<0.2	0.8	21.5	46.0	20.6	3.7	29.5	30.3	28.7	30.6
Nitrite as NO2	0.375	0.357	0.1	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ortho Phosphate as PO4	0.107	-	0.09	mg/l	<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	0.06	0.05	0.05
Ortho Phosphate as P	0.035	-	0.03	mg/l	<0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.02	0.02
Nitrate as N	8.5	-	5.6	mg/l	<0.05	<0.05	<0.05	<0.05	0.18	4.85	10.39	4.66	0.84	6.65	6.85	6.47	6.92
Nitrite as N	0.11	-	0.03	mg/l	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	<0.006	<0.006	<0.006	<0.006
Ammoniacal Nitrogen as N	0.065	0.175	0.12	mg/l	<0.03	0.12	0.08	0.05	0.07	2.66	2.84	1.14	2.16	<0.03	0.19	<0.03	<0.03
Ammoniacal Nitrogen as NH4	0.084	0.175	0.15	mg/l	<0.03	0.15	0.10	0.06	0.09	3.42	3.66	1.47	2.78	<0.03	0.24	<0.03	<0.03
Total Alkalinity as CaCO3	-	-	No abnormal change	mg/l	<1	655	628	642	610	719	736	742	738	415	400	416	414
Bicarbonate Alkalinity as CaCO3 (water soluble)	-	-	-	mg/l	<1	655	628	642	610	719	736	742	738	415	400	416	414
Electrical Conductivity @25C	800-1875	1875	1000	uS/cm	<2	1226	1198	1245	1146	1427	1654	1476	1322	840	857	870	833
Formaldehyde	-	-	-	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH	-	-	≥ 6.5 and ≤ 9.5	pH units	<0.01	7.41	7.48	7.39	7.57	7.43	7.45	7.22	7.15	7.63	7.37	7.28	7.25
Total Organic Carbon	-	-	No abnormal change	mg/l	<2	15	17	4	17	20	30	6	21	6	<2	<2	<2

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Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW4 Q1-2023 22-Feb-23	AGW4 Q2-2023 22-May-23	AGW4 Q3-2023 11-Sep-23	AGW4 Q4-2023 29-Nov-23		AGW5 Q1-2023 21-Feb-23	AGW5 Q2-2023 22-May-23	AGW5 Q3-2023 11-Sep-23	AGW5 Q4-2023 29-Nov-23		AGW6 Q1-2023 21-Feb-23	AGW6 Q2-2023 22-May-23	AGW6 Q3-2023 11-Sep-23	AGW6 Q4-2023 29-Nov-23	
	GTV	GTV	IGV																	
Metals																				
Dissolved Arsenic	7.5	7.5	10	ug/l	<0.9	<0.9	<0.9	<0.9	<0.9		<0.9	<0.9	<0.9	<0.9		<0.9	<0,9	<0.9	<0.9	
Dissolved Cadmium	-	3.75	5	ug/l	<0.03	0.04	0.04	0.04	0.04		<0.03	<0.03	<0.03	<0.03		<0.03	<0.03	<0.03	<0.03	
Dissolved Calcium	-	-	200	mg/l	<0.2	112.9	119.4	113.9	115.7		105.4	110.5	102.2	106.3		100.5	105.8	100.2	101.9	
Total Dissolved Chromium	37.5	37.5	30	ug/l	<1.5	0.5	0.4	0.5	0.5		0.4	0.4	0.5	0.5		0.3	0.4	0.4	0.4	
Dissolved Copper	-	1500	30	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Dissolved Lead	7.5	18.75	10	ug/l	<0.4	<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4	
Dissolved Magnesium	-	-	50	mg/l	<0.1	27.1	28.1	27.1	26.5		23	25.7	24.2	22.6		23.3	24.1	23.3	22.3	
Dissolved Mercury	0.75	0.75	1	ug/l	<1	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Dissolved Nickel	-	15	20	ug/l	<0.2	0.3	0.3	0.3	0.3		0.3	<0.2	0.4	<0.2		<0.2	<0.2	<0.2	<0.2	
Dissolved Potassium	-	-	5	mg/l	<0.1	1.4	1.5	1.6	1.5		1.6	1.6	1.5	1.5		1.2	1.3	1.4	1.2	
Dissolved Sodium	-	150	150	mg/l	<0.1	10.4	11.3	10.8	10.8		16.9	13.3	11.1	17.3		9	9.8	9.6	9.1	
Dissolved Zinc	75	-	100	ug/l	<1.5	2.7	3.3	3.2	2.6		5.8	-	1.6	-		1.8	2.3	1.8	<1.5	
Total Arsenic	-	-	-	ug/l	<0.9	<0.9	<0.9	<0.9	<0.9		<0.9	<0.9	<0.9	<0.9		<0.9	<0.9	<0.9	<0.9	
Total Cadmium	-	-	-	ug/l	<0.03	0.04	0.04	0.04	0.04		<0.03	<0.03	<0.03	<0.03		<0.03	<0.03	<0.03	<0.03	
Total Chromium	-	-	-	ug/l	<0.2	0.7	0.5	0.8	0.5		1	0.5	1.0	0.6		0.5	0.7	0.5	0.4	
Total Copper	-	-	-	ug/l	<3	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Total Lead	-	-	-	ug/l	<0.4	<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4		<0.4	<0.4	<0.4	<0.4	
Total Mercury	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Total Nickel	-	-	-	ug/l	<0.2	0.4	0.5	0.4	0.3		0.3	0.3	0.4	0.3		<0.2	0.4	<0.2	<0.2	
Total Zinc	-	-	-	ug/l	<1.5	3.4	<1.5	2.5	1.8		2.9	<1.5	1.6	-		2.8	<1.5	<1.5	<1.5	
VOC MS																				
Dichlorodifluoromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Methyl Tertiary Butyl Ether	10	-	30	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	
Chloromethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Vinyl Chloride	0.375	-	-	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	
Bromomethane	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Chloroethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Trichlorofluoromethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,1-Dichloroethene (1,1 DCE)	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Dichloromethane (DCM)	15	-	10	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
trans-1-2-Dichloroethene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,1-Dichloroethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
cis-1-2-Dichloroethene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
2,2-Dichloropropane	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Bromochloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Chloroform	-	-	12	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1,1-Trichloroethane	-	-	500	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1-Dichloropropene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Carbon tetrachloride	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2-Dichloroethane	225	-	3	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Benzene	0.75	0.75	1	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Trichloroethene (TCE)	-	-	70	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2-Dichloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Dibromomethane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Bromodichloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
cis-1-3-Dichloropropene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Toluene	525	-	10	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
trans-1-3-Dichloropropene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1,2-Trichloroethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Tetrachloroethene (PCE)	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,3-Dichloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Dibromochloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2-Dibromoethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Chlorobenzene	-	-	1	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,1,1,2-Tetrachloroethane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Ethylbenzene	-	-	300	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
m/p-Xylene	-	-	10	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
o-Xylene	-	-	10	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Styrene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Bromoform	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
Isopropylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,1,2,2-Tetrachloroethane	-	-	-	ug/l	<4	<4	<4	<4	<4		<4	<4	<4	<4		<4	<4	<4	<4	
Bromobenzene	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2,3-Trichloropropane	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Propylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
2-Chlorotoluene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,3,5-Trimethylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
4-Chlorotoluene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
tert-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2,4-Trimethylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
sec-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
4-Isopropyltoluene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,3-Dichlorobenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,4-Dichlorobenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
n-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2-Dichlorobenzene	-	-	10	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
1,2-Dibromo-3-chloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2,4-Trichlorobenzene	-	-	0.4	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Hexachlorobutadiene	-	-	0.1	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Naphthalene	-	-	1	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
1,2,3-Trichlorobenzene	-	-	0.4	ug/l	<3	<3	<3	<3	<3		<3	<3	<3	<3		<3	<3	<3	<3	
Surrogate Recovery Toluene D8	-	-	-	%	<0	91	99	98	101		84	95	102	103		81	97	104	103	
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	%	<0	94	105	99	99		90	102	99	100		86	105	105	102	

Methyl Tertiary Butyl Ether (MTBE)	10	-	30	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	
Benzene	0.75	-	1	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Toluene	525	-	10	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
Ethylbenzene	-	-	300	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
m/p-Xylene	-	-	10	ug/l	<2	<2	<2	<2	<2		<2	<2	<2	<2		<2	<2	<2	<2	
o-Xylene	-	-	10	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Surrogate Recovery Toluene D8	-	-	-	%	<0	91	99	98	101		84	95	102	103		81	97	104	103	
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	%	<0	94	105	99	99		90	102	99	100		86	105	105	102	

te Groundwater Monitoring Database 2023

Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW4 Q1-2023	AGW4 Q2-2023	AGW4 Q3-2023	AGW4 Q4-2023		AGW5 Q1-2023	AGW5 Q2-2023	AGW5 Q3-2023	AGW5 Q4-2023		AGW6 Q1-2023	AGW6 Q2-2023	AGW6 Q3-2023	AGW6 Q4-2023	
	GTV	GTV	IGV			22-Feb-23	22-May-23	11-Sep-23	29-Nov-23		21-Feb-23	22-May-23	11-Sep-23	29-Nov-23		21-Feb-23	22-May-23	11-Sep-23	29-Nov-23	
SVOC MS																				
Phenols																				
2-Chlorophenol	-	-	**200**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
2-Methylphenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
2-Nitrophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
2,4-Dichlorophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
2,4-Dimethylphenol	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
2,4,5-Trichlorophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
2,4,6-Trichlorophenol	-	-	**200**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
4-Chloro-3-methylphenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
4-Methylphenol	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
4-Nitrophenol	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Pentachlorophenol	-	-	**2**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Phenol	-	-	**0.5**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
PAHs																				
2-Chloronaphthalene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
2-Methylnaphthalene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Naphthalene	-	-	**1**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Acenaphthylene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Acenaphthene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Fluorene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Phenanthrene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Anthracene	-	-	**10,000**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Fluoranthene	-	-	**1**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Pyrene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Benzo(a)anthracene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Chrysene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Benzo(bk)fluoranthene	-	-	**0.05**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Benzo(a)pyrene	**0.0075**	**0.0075**	**0.001**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Indeno(123cd)pyrene	-	-	**0.05**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Dibenzo(ah)anthracene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Benzo(ghi)perylene	-	-	**0.05**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Phthalates																				
Bis(2-ethylhexyl) phthalate	**6**	-	-	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
Butylbenzyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Di-n-butyl phthalate	-	-	**2**	ug/l	<1.5	<1.5	<1.5	<1.5	<1.5		<1.5	<1.5	<1.5	<1.5		<1.5	<1.5	<1.5	<1.5	
Di-n-Octyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Diethyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Dimethyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Other SVOCs																				
1,2-Dichlorobenzene	-	-	**10**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
1,2,4-Trichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
1,3-Dichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
1,4-Dichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
2-Nitroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
2,4-Dinitrotoluene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
2,6-Dinitrotoluene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
3-Nitroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
4-Bromophenylphenylether	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
4-Chloroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
4-Chlorophenylphenylether	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
4-Nitroaniline	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Azobenzene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Bis(2-chloroethoxy)methane	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Bis(2-chloroethyl)ether	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Carbazole	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Dibenzofuran	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Hexachlorobenzene	-	-	**0.03**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Hexachlorobutadiene	-	-	**0.1**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Hexachlorocyclopentadiene	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Hexachloroethane	-	-	-	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Isophorone	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
N-nitrosodi-n-propylamine	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	
Nitrobenzene	-	-	**10**	ug/l	<1	<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1	<1	
Surrogate Recovery 2-Fluorobiphenyl	-	-	-	%	<0	114	119	124	114		117	91	137	120		107	98	129	118	
Surrogate Recovery p-Terphenyl-d14	-	-	-	%	<0	116	120	138	118		120	98	149	121		109	100	140	123	
Mineral Oil (C10-C40)	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Total Petroleum Hydrocarbon Combined Working Group (TPH-CWG)																				
Aliphatics																				
>C5-C6	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>C6-C8	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>C8-C10	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>C10-C12	-	-	-	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
>C12-C16	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>C16-C21	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>C21-C35	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>C35-C44	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Total aliphatics C5-44	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Aromatics																				
>C5-EC7	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>EC7-EC8	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>EC8-EC10	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>EC10-EC12	-	-	-	ug/l	<5	<5	<5	<5	<5		<5	<5	<5	<5		<5	<5	<5	<5	
>EC12-EC16	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>EC16-EC21	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>EC21-EC35	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
>EC35-EC44	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Total aromatics C5-44	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Total aliphatics and aromatics(C5-44)	-	-	-	ug/l	<10	<10	<10	<10	<10		<10	<10	<10	<10		<10	<10	<10	<10	
Resorcinol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	
Catechol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	
Phenol	-	-	**0.5**	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	

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Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW4 Q1-2023	AGW4 Q2-2023	AGW4 Q3-2023	AGW4 Q4-2023	AGW5 Q1-2023	AGW5 Q2-2023	AGW5 Q3-2023	AGW5 Q4-2023	AGW6 Q1-2023	AGW6 Q2-2023	AGW6 Q3-2023	AGW6 Q4-2023
	GTV	GTV	IGV			22-Feb-23	22-May-23	11-Sep-23	29-Nov-23	21-Feb-23	22-May-23	11-Sep-23	29-Nov-23	21-Feb-23	22-May-23	11-Sep-23	29-Nov-23
m/p-cresol	-	-	-	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o-cresol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total cresols	-	-	-	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenols	-	-	-	mg/l	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
1-naphthol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,3,5-trimethyl phenol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-isopropylphenol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Speciated Phenols HPLC	-	-	-	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate as SO4	187.5	187.5	200	mg/l	<0.5	19.4	19.6	19.3	19.6	19.8	18.0	18.2	19.4	19	18.1	19.4	19.4
Chloride	24 - 187.5	24 - 187.5	30	mg/l	<0.3	20.1	21.2	21.1	20.9	31.7	24.9	22.2	30.5	18.9	19.6	19.5	18.7
Bromide	-	-	-	mg/l	<0.05	<0.05	0.08	0.07	0.14	<0.05	<0.05	0.08	0.13	<0.05	<0.05	<0.05	0.11
Fluoride	-	-	1	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate as NO3	37.5	37.5	25	mg/l	<0.2	16.5	17.6	16.7	17.7	29.2	17.3	13.6	24.7	11.6	12.2	11.4	11.6
Nitrite as NO2	0.375	0.357	0.1	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ortho Phosphate as PO4	0.107	-	0.09	mg/l	<0.06	<0.03	0.03	<0.03	0.03	0.09	0.13	0.10	0.08	<0.03	0.04	<0.03	0.04
Ortho Phosphate as P	0.035	-	0.03	mg/l	<0.03	<0.01	<0.01	<0.01	<0.01	0.03	0.04	0.03	0.03	<0.01	0.01	<0.01	0.01
Nitrate as N	8.5	-	5.6	mg/l	<0.05	3.73	3.98	3.77	3.99	6.6	3.90	3.06	5.57	2.63	2.76	2.57	2.61
Nitrite as N	0.11	-	0.03	mg/l	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Ammoniacal Nitrogen as N	0.065	0.175	0.12	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Ammoniacal Nitrogen as NH4	0.084	0.175	0.15	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Alkalinity as CaCO3	-	-	No abnormal change	mg/l	<1	390	360	374	378	346	322	340	319	335	328	332	345
Bicarbonate Alkalinity as CaCO3 (water soluble)	-	-	-	mg/l	<1	390	360	374	378	346	322	340	319	335	328	332	345
Electrical Conductivity @25C	800-1875	1875	1000	uS/cm	<2	756	768	774	751	750	735	719	740	664	684	688	667
Formaldehyde	-	-	-	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH	-	-	≥ 6.5 and ≤ 9.5	pH units	<0.01	7.89	7.75	7.79	7.51	7.94	7.73	7.68	7.53	7.95	7.75	7.77	7.47
Total Organic Carbon	-	-	No abnormal change	mg/l	<2	6	<2	<2	<2	5	<2	<2	<2	3	<2	<2	<2

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Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW7 Q1-2023	AGW7 Q2-2023	AGW7 Q3-2023	AGW7 Q4-2023	AGW8 Q1-2023	AGW8 Q2-2023	AGW8 Q3-2023	AGW8 Q4-2023	AGW9 Q1-2023	AGW9 Q2-2023	AGW9 Q3-2023	AGW9 Q4-2023	AGW10 Q1-2023	AGW10 Q2-2023	AGW10 Q3-2023	AGW10 Q4-2023
	GTV	GTV	IGV			21-Feb-23	23-May-23	11-Sep-23	29-Nov-23	21-Feb-23	22-May-23	11-Sep-23	29-Nov-23	21-Feb-23	23-May-23	11-Sep-23	29-Nov-23	21-Feb-23	23-May-23	11-Sep-23	29-Nov-23
Metals																					
Dissolved Arsenic	7.5	7.5	10	ug/l	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	0.9	1	1.0	<0.9	1.0
Dissolved Cadmium	-	3.75	5	ug/l	<0.03	0.11	0.09	0.10	<0.03	<0.03	<0.03	<0.03	<0.03	0.11	0.12	0.12	0.12	0.14	0.16	0.19	0.18
Dissolved Calcium	-	-	200	mg/l	<0.2	141.8	151.5	152.2	365.1	96.1	101.7	89.1	99.8	109.7	121.6	114.0	117.1	122.6	129.7	119.7	126.7
Total Dissolved Chromium	37.5	37.5	30	ug/l	<1.5	0.3	NDP	<0.2	<0.2	0.3	0.3	0.3	0.5	<0.2	<0.2	<0.2	0.3	<0.2	0.3	<0.2	0.3
Dissolved Copper	-	1500	30	ug/l	<1	<1	<1	<1	<3	<1	<1	<1	<1	1	<1	1	1	<1	<1	1	1
Dissolved Lead	7.5	18.75	10	ug/l	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Dissolved Magnesium	-	-	50	mg/l	<0.1	25.5	27.7	28.4	37.6	24.7	25.3	21.9	25.2	15.6	17.0	16.3	16.4	17.9	18.4	16.2	15.7
Dissolved Mercury	0.75	0.75	1	ug/l	<1	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Nickel	-	15	20	ug/l	<0.2	4.5	0.8	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	19	17.2	19.7	17.8	6.5	5.5	8.5	8.0
Dissolved Potassium	-	-	5	mg/l	<0.1	14.5	6.7	7.0	12.2	1	1.4	1.2	1.1	10.5	11.3	11.6	11.1	5.9	7.0	7.3	7.4
Dissolved Sodium	-	150	150	mg/l	<0.1	80.1	46.3	38.9	122.6	9.5	11.9	20.8	11.0	27.7	48.7	49.7	43.0	12.3	30.3	16.9	15.1
Dissolved Zinc	75	-	100	ug/l	<1.5	4.5	NDP	3.1	2.1	2.5	2.1	1.8	2.4	5.4	3.9	4.7	5.1	3.3	3.1	3.7	3.7
Total Arsenic	-	-	-	ug/l	<0.9	<0.9	<0.9	<0.9	<2.5	<0.9	<0.9	<0.9	<0.9	0.9	0.9	<0.9	1.1	1.2	1.2	<0.9	1.3
Total Cadmium	-	-	-	ug/l	<0.03	0.1	0.09	0.10	<0.5	<0.03	<0.03	<0.03	<0.03	0.11	0.12	0.11	0.12	0.15	0.15	0.18	0.19
Total Chromium	-	-	-	ug/l	<0.2	0.4	NDP	0.3	<1.5	0.6	0.5	1.1	0.6	<0.2	0.4	<0.2	0.3	0.3	0.4	0.3	0.4
Total Copper	-	-	-	ug/l	<3	<1	<1	<1	<7	<1	<1	<1	<1	1	<1	1	1	1	<1	2	2
Total Lead	-	-	-	ug/l	<0.4	<0.4	<0.4	<0.4	<5	0.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Total Mercury	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Nickel	-	-	-	ug/l	<0.2	0.8	0.9	0.8	<2	0.6	0.3	0.3	0.3	20.8	18.6	20.9	19.0	7.5	6.0	9.2	8.9
Total Zinc	-	-	-	ug/l	<1.5	3.3	NDP	<1.5	3	2.7	1.9	<1.5	<1.5	4.1	3.1	2.9	4.4	3.3	2.3	2.6	2.0
VOC MS																					
Dichlorodifluoromethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl Tertiary Butyl Ether	10	-	30	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloromethane	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Vinyl Chloride	0.375	-	-	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Trichlorofluoromethane	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1-Dichloroethene (1,1 DCE)	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Dichloromethane (DCM)	15	-	10	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
trans-1-2-Dichloroethene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1-Dichloroethane	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
cis-1-2-Dichloroethene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
2,2-Dichloropropane	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	-	-	12	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	-	-	500	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloropropene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	225	-	3	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	0.75	0.75	1	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene (TCE)	-	-	70	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-Dichloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dibromomethane	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bromodichloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1-3-Dichloropropene	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	525	-	10	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1-3-Dichloropropene	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2-Trichloroethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene (PCE)	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,3-Dichloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dibromochloromethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chlorobenzene	-	-	1	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1,2-Tetrachloroethane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	-	-	300	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m/p-Xylene	-	-	10	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	-	-	10	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromoform	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Isopropylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1,2,2-Tetrachloroethane	-	-	-	ug/l	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bromobenzene	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trichloropropane	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Propylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
2-Chlorotoluene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,3,5-Trimethylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
4-Chlorotoluene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
tert-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2,4-Trimethylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
sec-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
4-Isopropyltoluene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,3-Dichlorobenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,4-Dichlorobenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
n-Butylbenzene	-	-	-	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-Dichlorobenzene	-	-	10	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-Dibromo-3-chloropropane	-	-	-	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	-	-	0.4	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Hexachlorobutadiene	-	-	0.1	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Naphthalene	-	-	1	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,3-Trichlorobenzene	-	-	0.4	ug/l	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Surrogate Recovery Toluene D8	-	-	-	%	<0	78	101	95	99	88	98	100	98	75	101	105	102	81	100	100	102
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	%	<0	84	108	96	100	95	104	99	96	85	107	102	99	86	107	103	101

Methyl Tertiary Butyl Ether (MTBE)	10	-	30	ug/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	0.75	-	1	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	525	-	10	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	-	-	300	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m/p-Xylene	-	-	10	ug/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene	-	-	10	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Surrogate Recovery Toluene D8	-	-	-	%	<0	78	101	95	99	88	98	100	98	75	101	105	102	81	100	100	102
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	%	<0	84	108	96	100	95	104	99	96	85	107	102	99	86	107	103	101

te Groundwater Monitoring Database 2023

Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW7 Q1-2023	AGW7 Q2-2023	AGW7 Q3-2023	AGW7 Q4-2023	AGW8 Q1-2023	AGW8 Q2-2023	AGW8 Q3-2023	AGW8 Q4-2023	AGW9 Q1-2023	AGW9 Q2-2023	AGW9 Q3-2023	AGW9 Q4-2023	AGW10 Q1-2023	AGW10 Q2-2023	AGW10 Q3-2023	AGW10 Q4-2023
	GTV	GTV	IGV			21-Feb-23	23-May-23	11-Sep-23	29-Nov-23	21-Feb-23	22-May-23	11-Sep-23	29-Nov-23	21-Feb-23	23-May-23	11-Sep-23	29-Nov-23	21-Feb-23	23-May-23	11-Sep-23	29-Nov-23
SVOC MS																					
Phenols																					
2-Chlorophenol	-	-	**200**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Methylphenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	-	-	**200**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Methylphenol	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Nitrophenol	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	-	-	**2**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	-	-	**0.5**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PAHs																					
2-Chloronaphthalene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Methylnaphthalene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	-	-	**1**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	-	-	**10,000**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	-	-	**1**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)anthracene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(bk)fluoranthene	-	-	**0.05**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a)pyrene	**0.0075**	**0.0075**	**0.001**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(123cd)pyrene	-	-	**0.05**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzo(ah)anthracene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(ghi)perylene	-	-	**0.05**	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phthalates																					
Bis(2-ethylhexyl) phthalate	**6**	-	-	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Butylbenzyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	-	-	**2**	ug/l	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Di-n-Octyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Other SVOCs																					
1,2-Dichlorobenzene	-	-	**10**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Nitroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-Dinitrotoluene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dinitrotoluene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-Nitroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Bromophenylphenylether	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chloroaniline	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Nitroaniline	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Azobenzene	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy)methane	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethyl)ether	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbazole	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzofuran	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	-	-	**0.03**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	-	-	**0.1**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	-	-	-	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isophorone	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	-	-	-	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrobenzene	-	-	**10**	ug/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Surrogate Recovery 2-Fluorobiphenyl	-	-	-	%	<0	119	70	128	119	111	114	121	120	127	60	121	118	118	115	95	120
Surrogate Recovery p-Terphenyl-d14	-	-	-	%	<0	123	71	140	119	114	114	132	117	130	61	139	121	122	119	104	118
Mineral Oil (C10-C40)	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Petroleum Hydrocarbon Combined Working Group (TPH-CWG)																					
Aliphatics																					
>C5-C6	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C6-C8	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C8-C10	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C10-C12	-	-	-	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>C12-C16	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C16-C21	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C21-C35	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C35-C44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total aliphatics C5-44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics																					
>C5-EC7	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC7-EC8	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC8-EC10	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC10-EC12	-	-	-	ug/l	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>EC12-EC16	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC16-EC21	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC21-EC35	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC35-EC44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total aromatics C5-44	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total aliphatics and aromatics(C5-44)	-	-	-	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Resorcinol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Catechol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenol	-	-	**0.5**	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

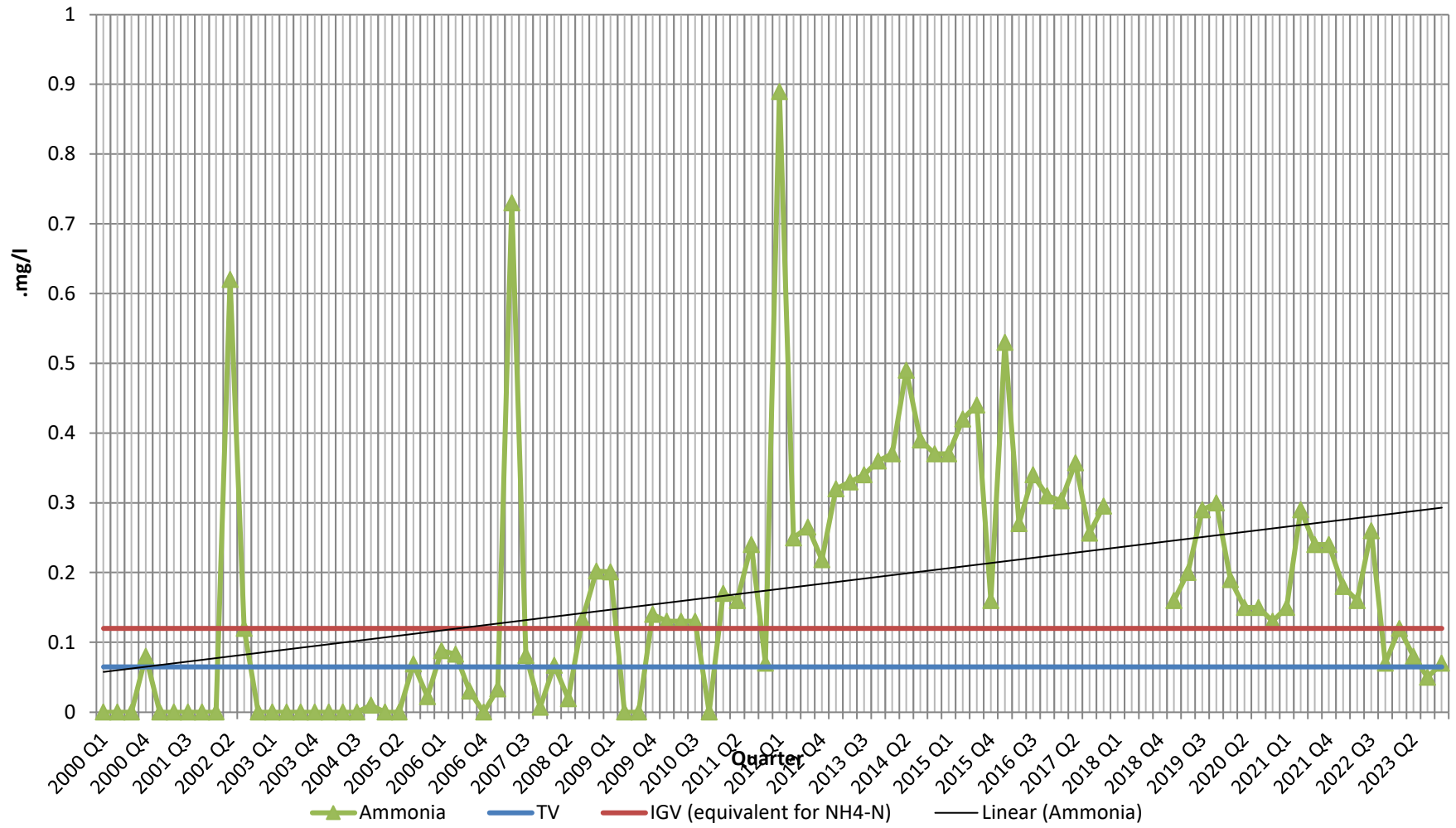
te Groundwater Monitoring Database 2023

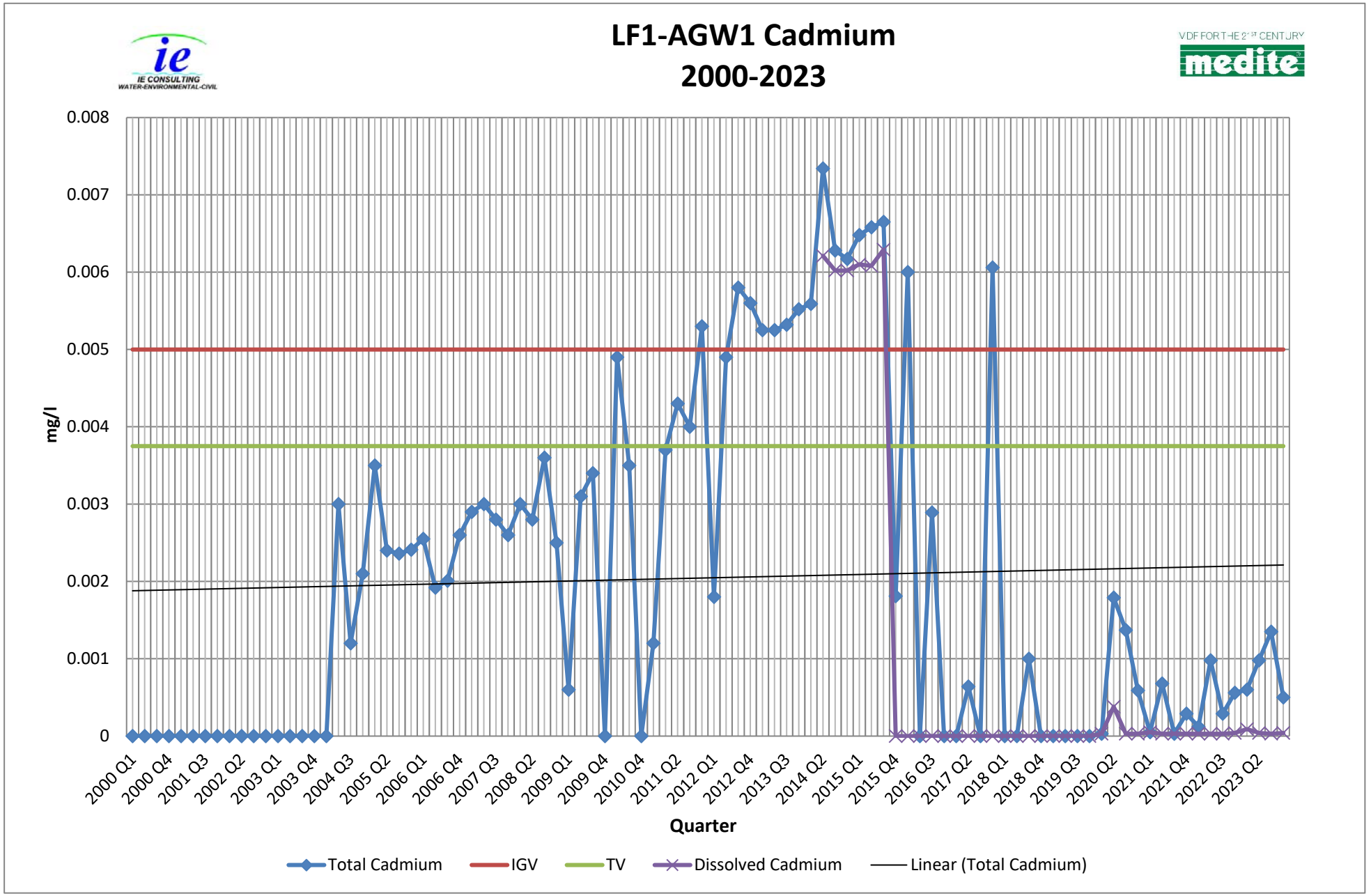
Parameter	Groudnwater Regulations S.I. No 366 of 2016	Groundwater Regulations S.I. No. 9 of 2010	Interim Guideline Values EPA, 2003	Units	Limit of Detection (LOD)	AGW7 Q1-2023	AGW7 Q2-2023	AGW7 Q3-2023	AGW7 Q4-2023	AGW8 Q1-2023	AGW8 Q2-2023	AGW8 Q3-2023	AGW8 Q4-2023	AGW9 Q1-2023	AGW9 Q2-2023	AGW9 Q3-2023	AGW9 Q4-2023	AGW10 Q1-2023	AGW10 Q2-2023	AGW10 Q3-2023	AGW10 Q4-2023
	GTV	GTV	IGV			21-Feb-23	23-May-23	11-Sep-23	29-Nov-23	21-Feb-23	22-May-23	11-Sep-23	29-Nov-23	21-Feb-23	23-May-23	11-Sep-23	29-Nov-23	21-Feb-23	23-May-23	11-Sep-23	29-Nov-23
m/p-cresol	-	-	-	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o-cresol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total cresols	-	-	-	mg/l	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Xylenols	-	-	-	mg/l	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
1-naphthol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,3,5-trimethyl phenol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-isopropylphenol	-	-	-	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Speciated Phenols HPLC	-	-	-	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate as SO4	187.5	187.5	200	mg/l	<0.5	43.9	33.1	33.2	52.3	16.6	16.0	15.8	17.2	18.3	22.6	24.2	21.2	19.2	21.7	15.5	17.1
Chloride	24 - 187.5	24 - 187.5	30	mg/l	<0.3	102.9	91.6	115.3	492.3	18.4	29.8	51.5	20.1	53	110.4	108.9	98.4	23	68.8	33.6	30.0
Bromide	-	-	-	mg/l	<0.05	<0.05	<0.05	0.07	0.36	<0.05	<0.05	<0.05	0.10	<0.05	<0.05	<0.05	0.21	<0.05	<0.05	<0.05	0.37
Fluoride	-	-	1	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate as NO3	37.5	37.5	25	mg/l	<0.2	68.4	89.4	91.3	88.9	15.6	16.1	13.6	15.7	11.7	13.2	14.0	9.6	29.9	19.6	15.6	19.3
Nitrite as NO2	0.375	0.357	0.1	mg/l	<0.02	0.27	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ortho Phosphate as PO4	0.107	-	0.09	mg/l	<0.06	0.06	0.05	0.04	0.07	0.04	0.04	0.03	0.04	0.15	0.14	0.17	0.16	0.13	0.14	0.12	0.13
Ortho Phosphate as P	0.035	-	0.03	mg/l	<0.03	0.02	0.02	0.01	0.02	0.01	0.01	<0.01	0.01	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.04
Nitrate as N	8.5	-	5.6	mg/l	<0.05	15.45	20.18	20.61	20.07	3.53	3.64	3.06	3.55	2.65	2.98	3.16	2.17	6.74	4.42	3.52	4.35
Nitrite as N	0.11	-	0.03	mg/l	<0.006	0.081	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Ammoniacal Nitrogen as N	0.065	0.175	0.12	mg/l	<0.03	6.1	6.24	6.38	4.19	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	0.12	0.03	<0.03	0.03
Ammoniacal Nitrogen as NH4	0.084	0.175	0.15	mg/l	<0.03	7.85	8.04	8.22	5.39	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.05	0.15	0.04	<0.03	0.04
Total Alkalinity as CaCO3	-	-	No abnormal change	mg/l	<1	384	356	390	332	324	296	296	330	334	286	320	322	364	328	352	368
Bicarbonate Alkalinity as CaCO3 (water soluble)	-	-	-	mg/l	<1	384	356	390	332	324	296	296	330	334	286	320	322	364	328	352	368
Electrical Conductivity @25C	800-1875	1875	1000	uS/cm	<2	1211	1186	1268	2373	687	697	721	678	812	988	994	921	790	902	774	797
Formaldehyde	-	-	-	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH	-	-	≥ 6.5 and ≤ 9.5	pH units	<0.01	7.74	7.63	7.49	7.45	7.87	7.74	7.81	7.53	7.81	7.73	7.66	7.55	7.76	7.64	7.49	7.46
Total Organic Carbon	-	-	No abnormal change	mg/l	<2	5	<2	<2	<2	4	<2	<2	<2	5	<2	<2	<2	6	<2	<2	<2

Appendix F

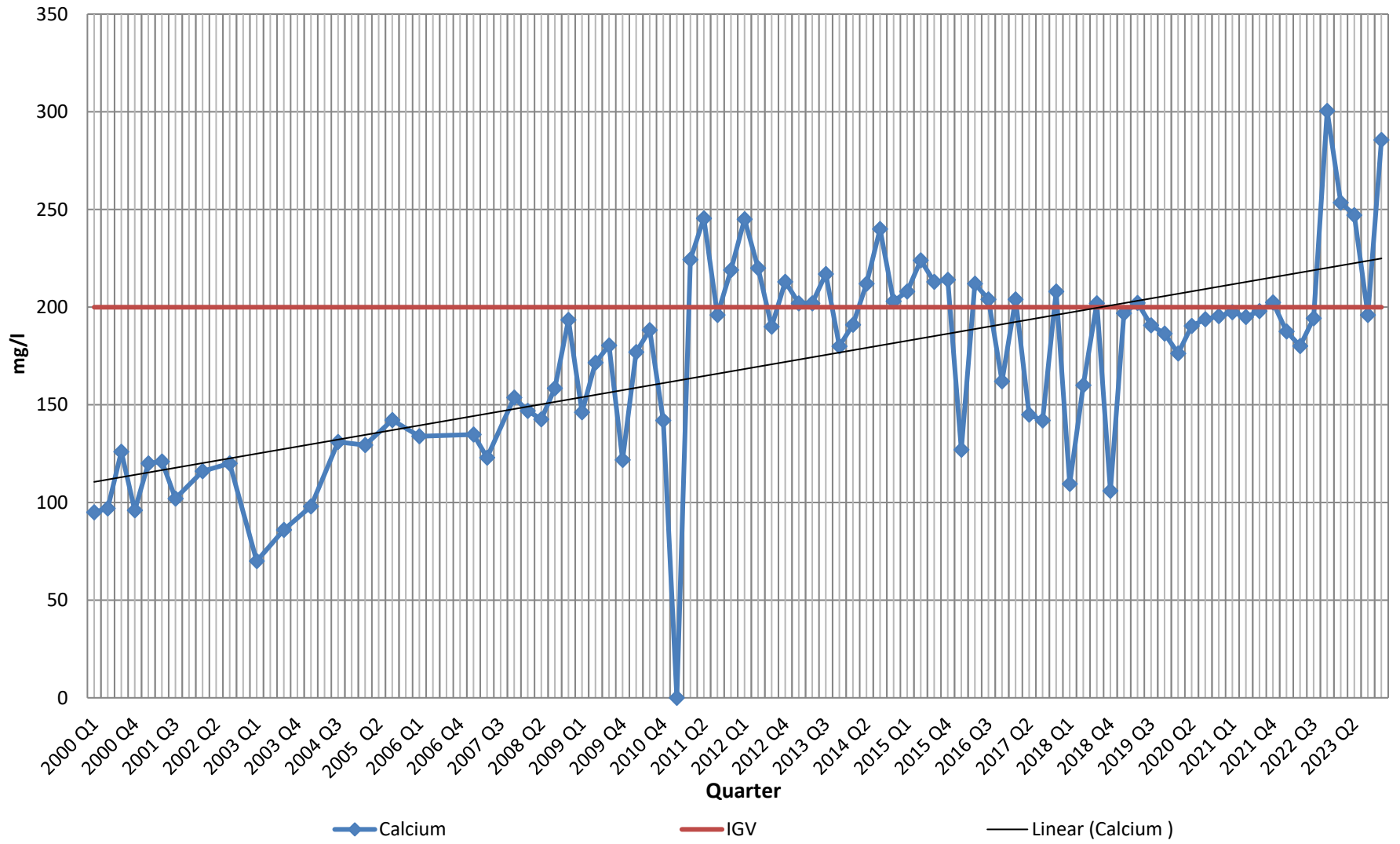
Groundwater Graphs

LF1-AGW1 Ammonia 2000-2023

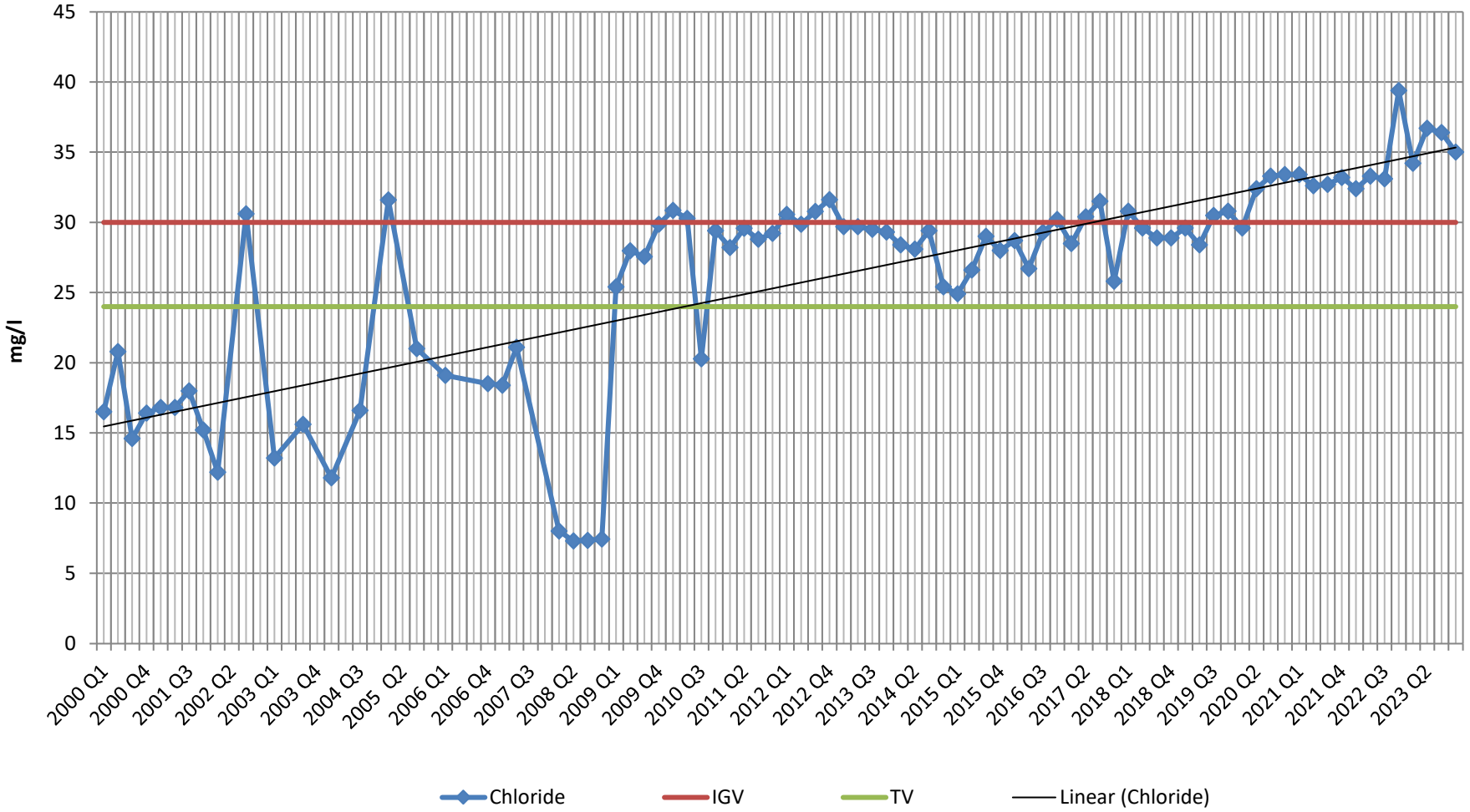



LF1-AGW1 Cadmium
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
VDF FOR THE 21ST CENTURY
medite
mg/l
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
2000 Q1
2000 Q4
2001 Q3
2002 Q2
2003 Q1
2003 Q4
2004 Q3
2005 Q2
2006 Q1
2006 Q4
2007 Q3
2008 Q2
2009 Q1
2009 Q4
2010 Q4
2011 Q2
2012 Q1
2012 Q4
2013 Q3
2014 Q2
2015 Q1
2015 Q4
2016 Q3
2017 Q2
2018 Q1
2018 Q4
2019 Q3
2020 Q2
2021 Q1
2021 Q4
2022 Q3
2023 Q2
Quarter
Total Cadmium
IGV
TV
Dissolved Cadmium
Linear (Total Cadmium)

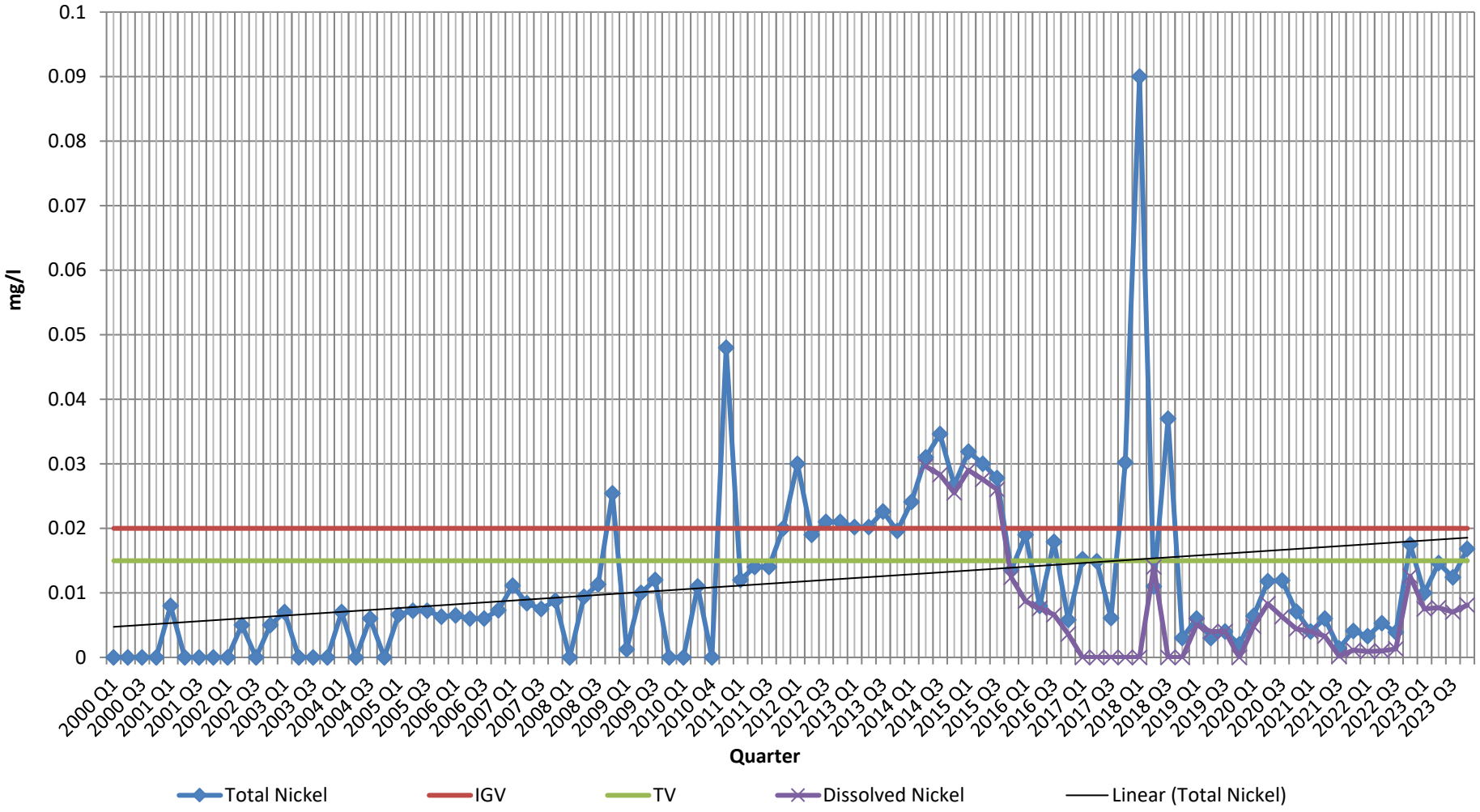
LF1-AGW1 Calcium
2000-2023



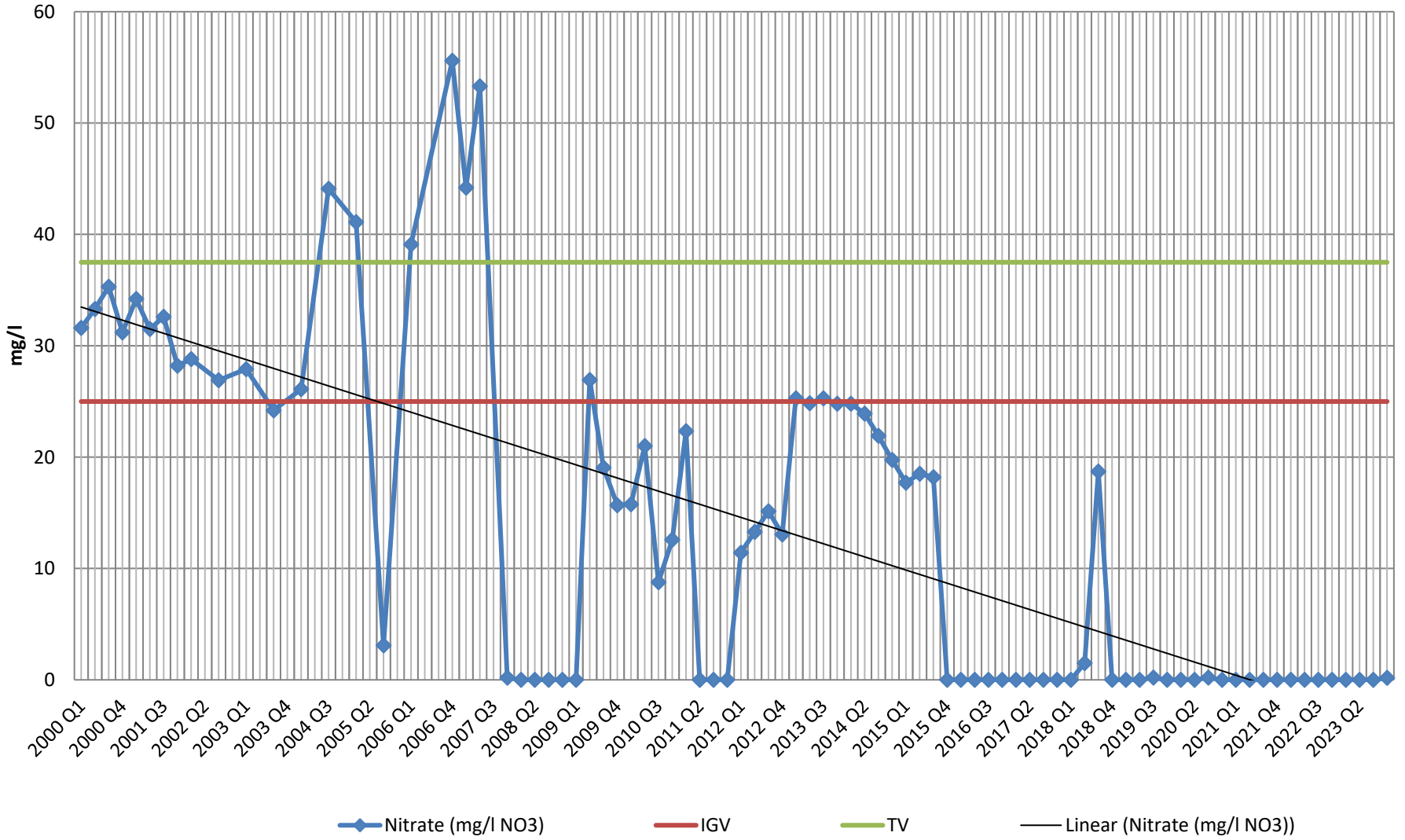
LF1-AGW1 Chloride
2000-2023



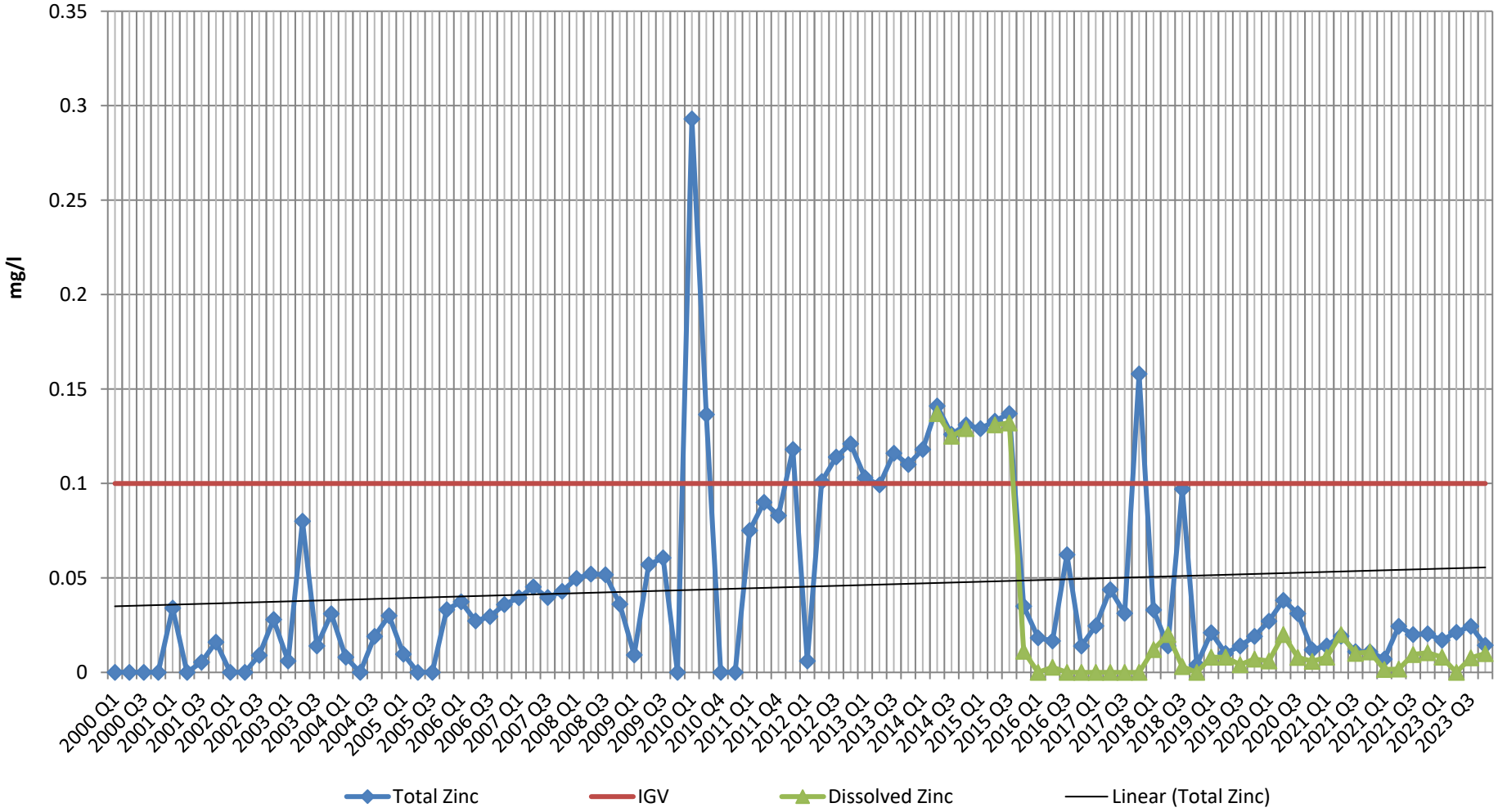
LF1-AGW1 Nickel
2000-2023

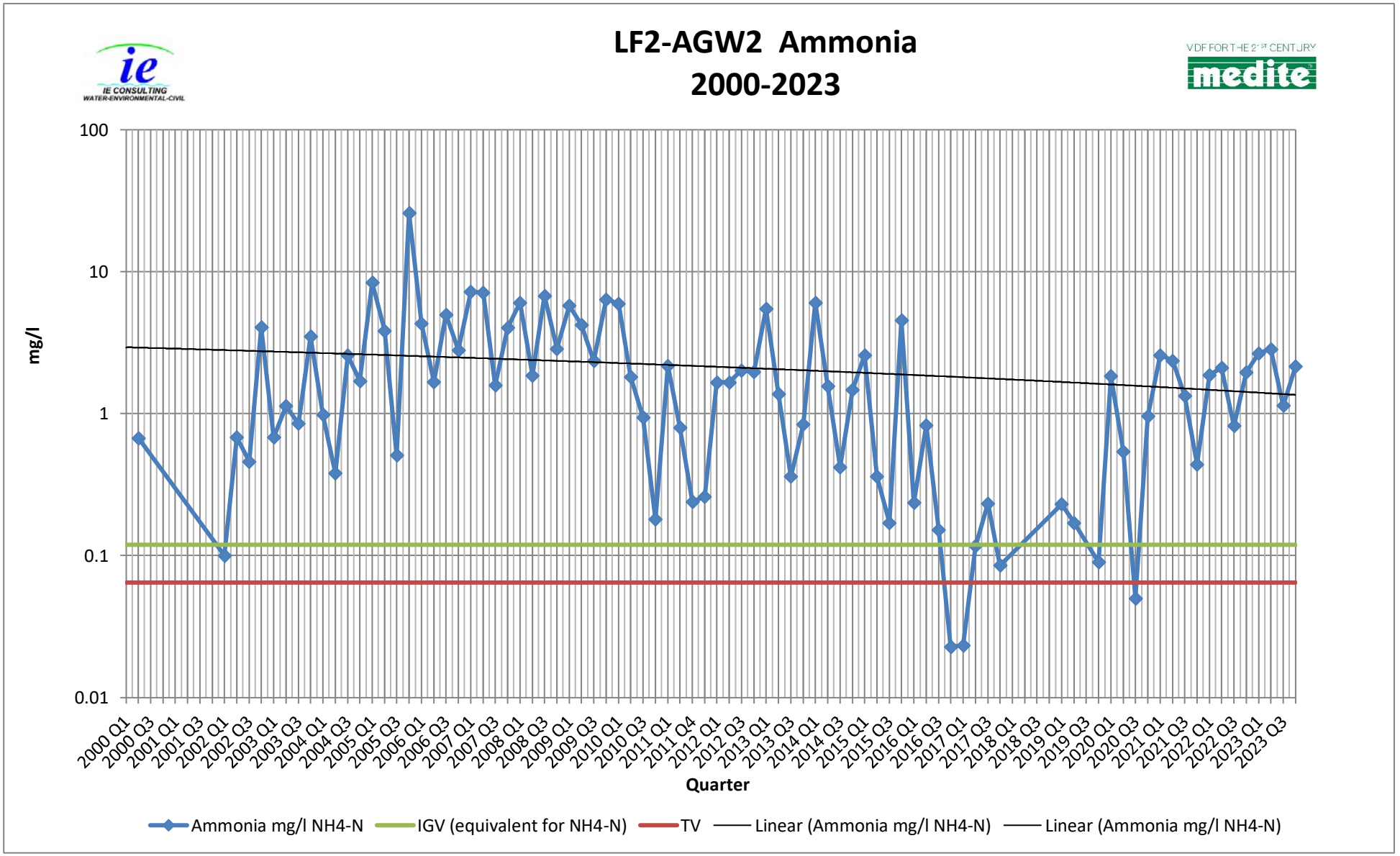


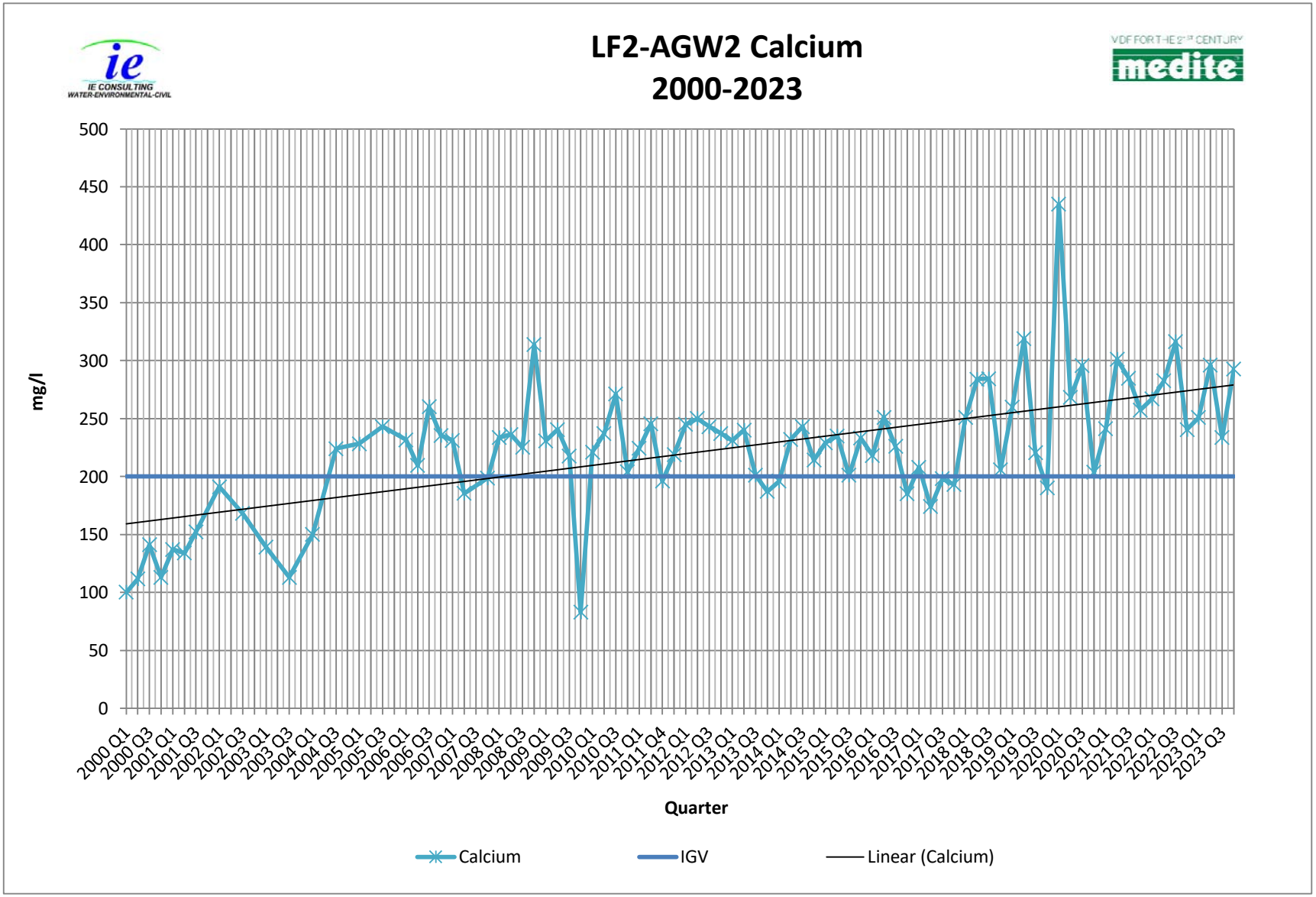
LF1-AGW1 Nitrate
2000-2023

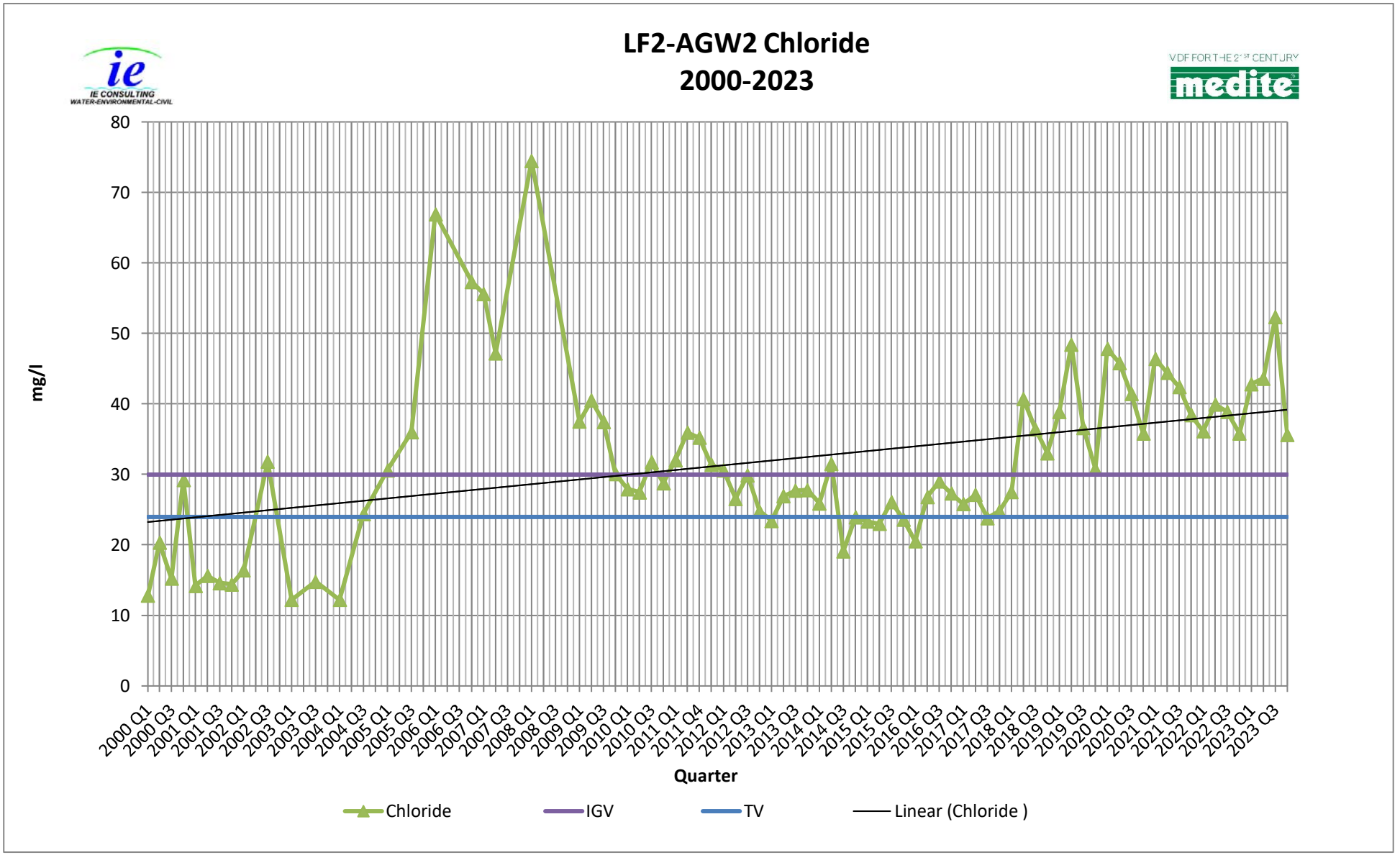


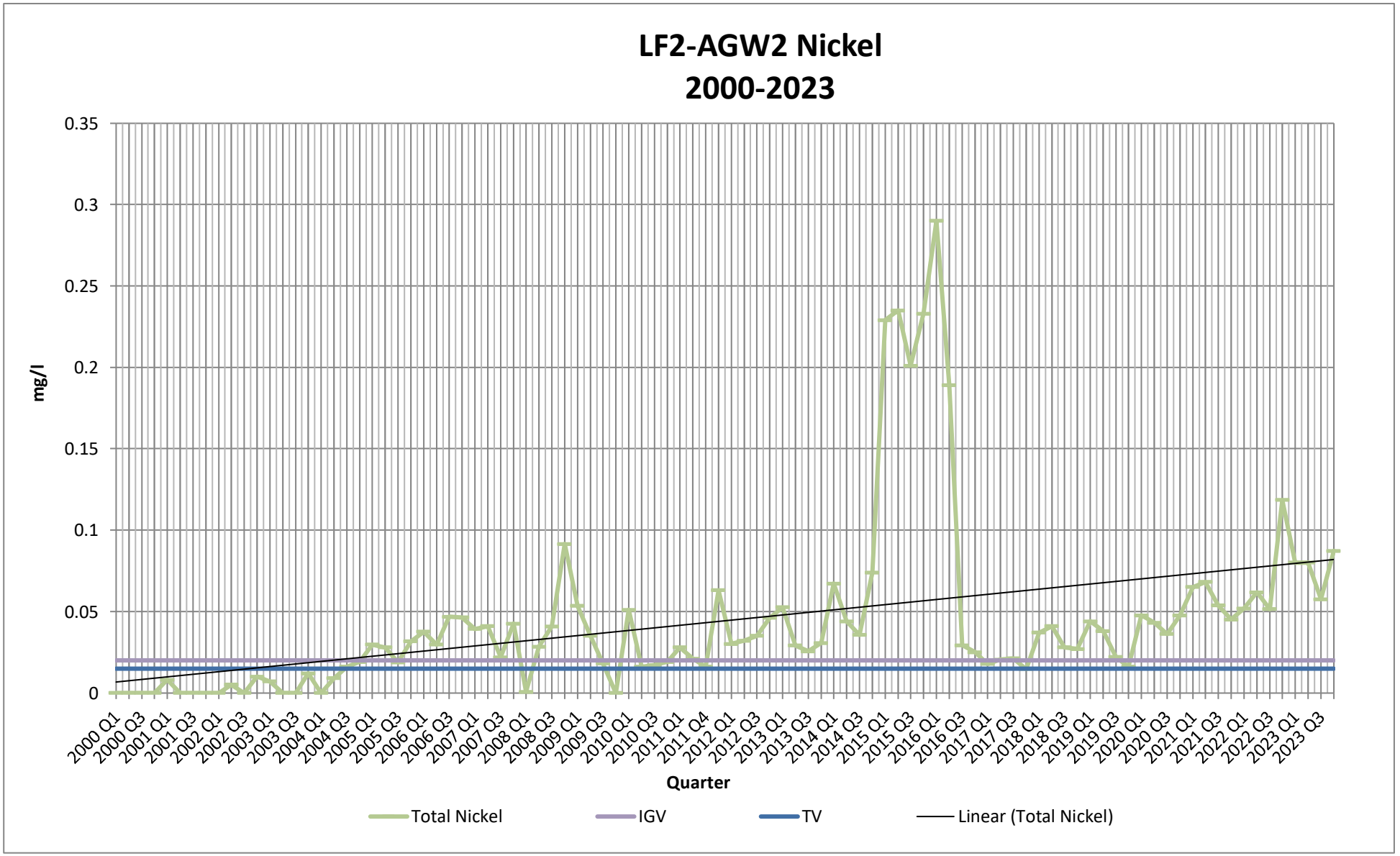
LF1-AGW1 Zinc
2000-2023

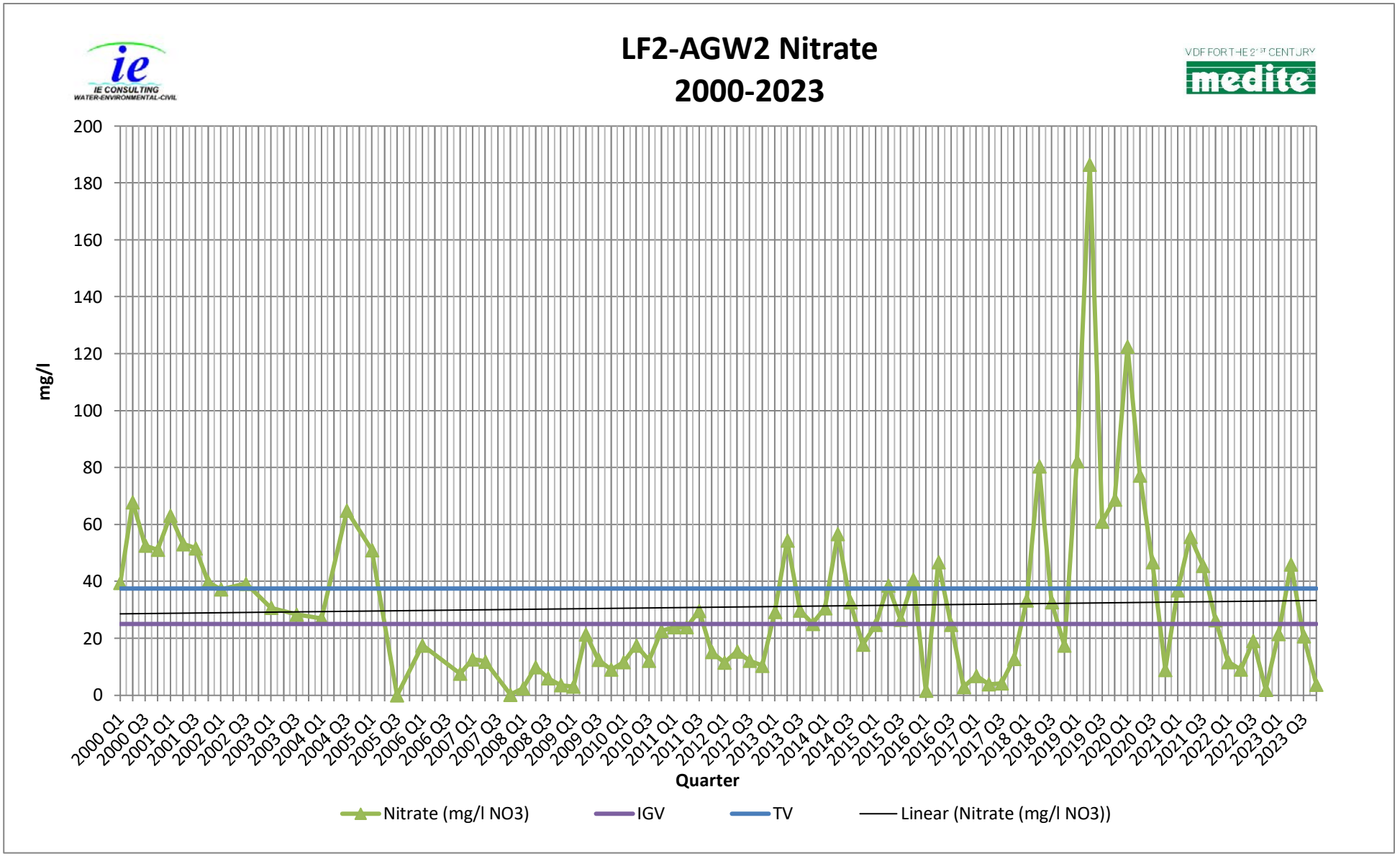


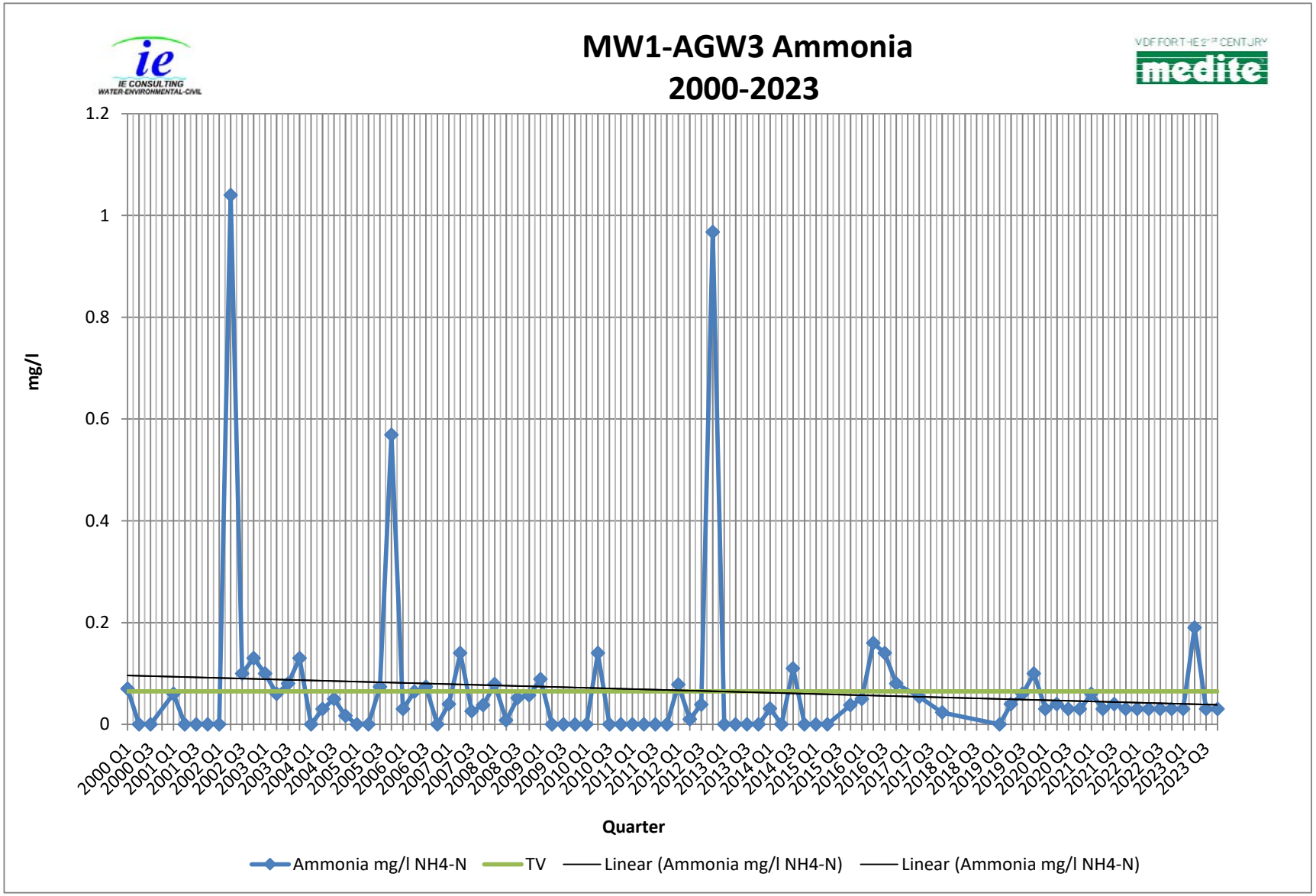

LF2-AGW2 Ammonia
2000-2023
mg/l
100
10
1
0.1
0.01
Quarter
Ammonia mg/l NH4-N
IGV (equivalent for NH4-N)
TV
Linear (Ammonia mg/l NH4-N)
Linear (Ammonia mg/l NH4-N)


LF2-AGW2 Calcium
2000-2023
mg/l
Quarter
Calcium
IGV
Linear (Calcium)


LF2-AGW2 Chloride
2000-2023
mg/l
Quarter
Chloride
IGV
TV
Linear (Chloride)


LF2-AGW2 Nickel
2000-2023
mg/l
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
2000 Q1
2000 Q3
2001 Q1
2001 Q3
2002 Q1
2002 Q3
2003 Q1
2003 Q3
2004 Q1
2004 Q3
2005 Q1
2005 Q3
2006 Q1
2006 Q3
2007 Q1
2007 Q3
2008 Q1
2008 Q3
2009 Q1
2009 Q3
2010 Q1
2010 Q3
2011 Q1
2011 Q4
2012 Q1
2012 Q3
2013 Q1
2013 Q3
2014 Q1
2014 Q3
2015 Q1
2015 Q3
2016 Q1
2016 Q3
2017 Q1
2017 Q3
2018 Q1
2018 Q3
2019 Q1
2019 Q3
2020 Q1
2020 Q3
2021 Q1
2021 Q3
2022 Q1
2022 Q3
2023 Q1
2023 Q3
Quarter
Total Nickel
IGV
TV
Linear (Total Nickel)


LF2-AGW2 Nitrate
2000-2023
mg/l
Quarter
Nitrate (mg/l NO3)
IGV
TV
Linear (Nitrate (mg/l NO3))


MW1-AGW3 Ammonia
2000-2023
mg/l
1.2
1
0.8
0.6
0.4
0.2
0
2000 Q1
2000 Q3
2001 Q1
2001 Q3
2002 Q1
2002 Q3
2003 Q1
2003 Q3
2004 Q1
2004 Q3
2005 Q1
2005 Q3
2006 Q1
2006 Q3
2007 Q1
2007 Q3
2008 Q1
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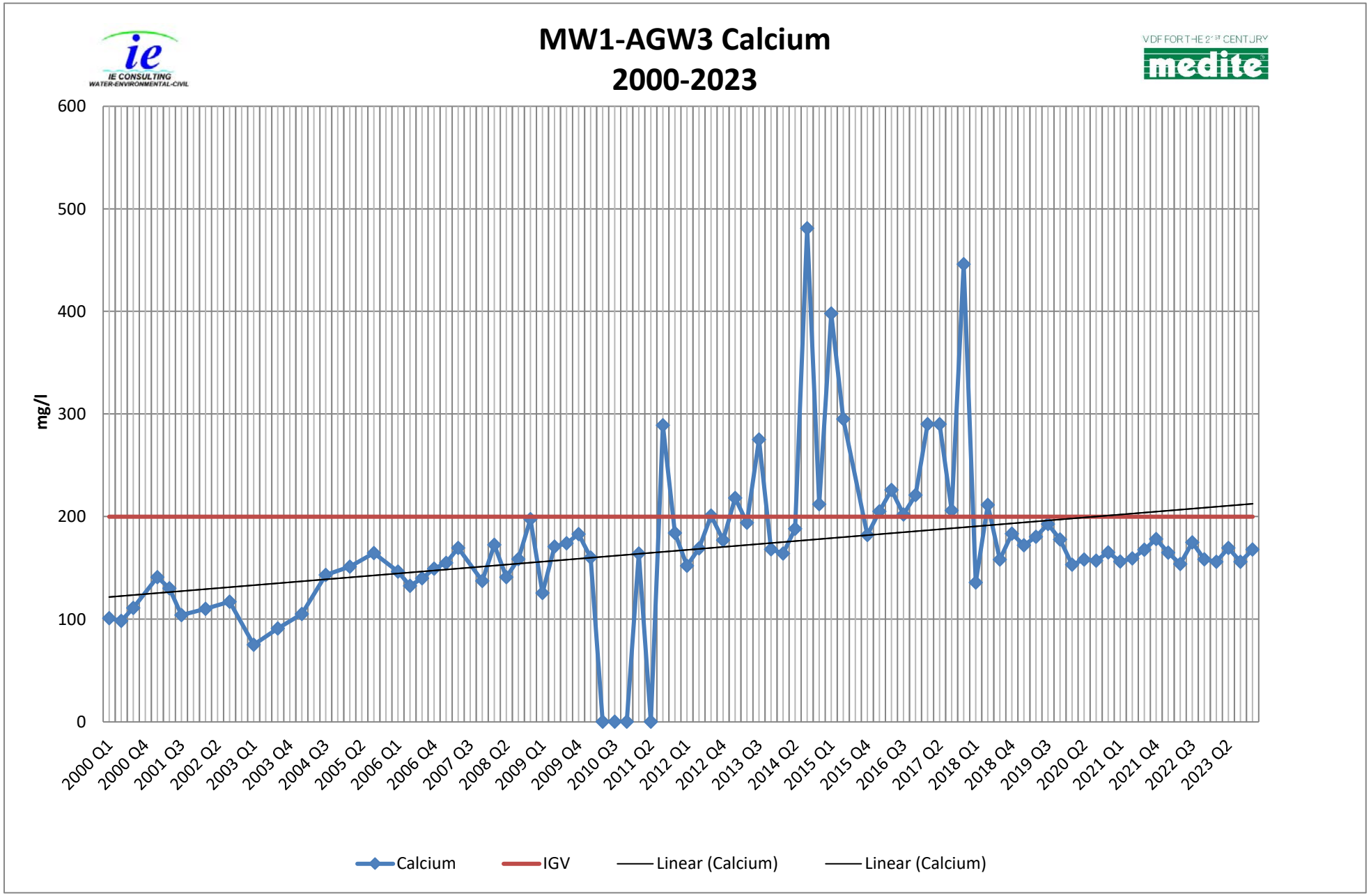
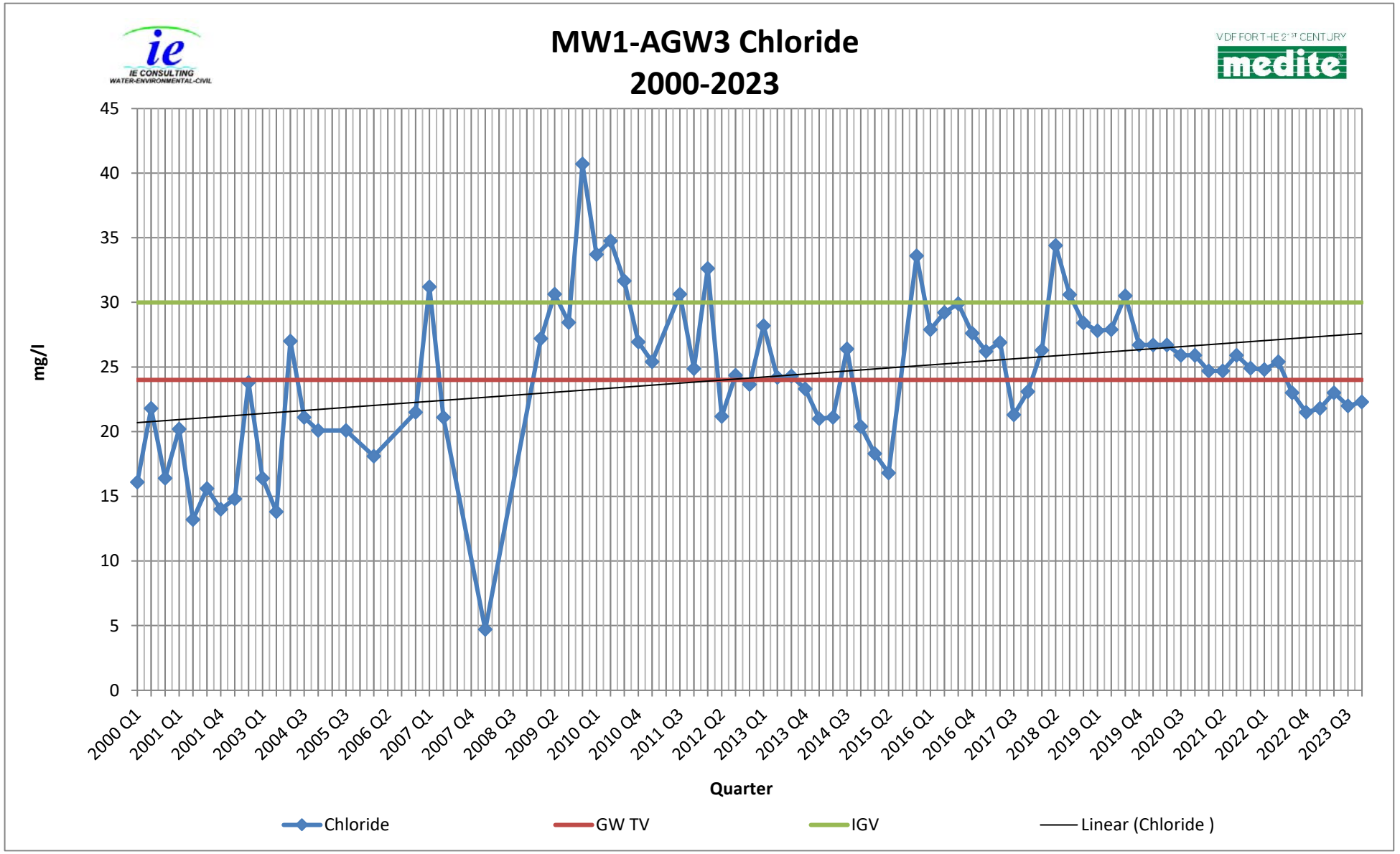
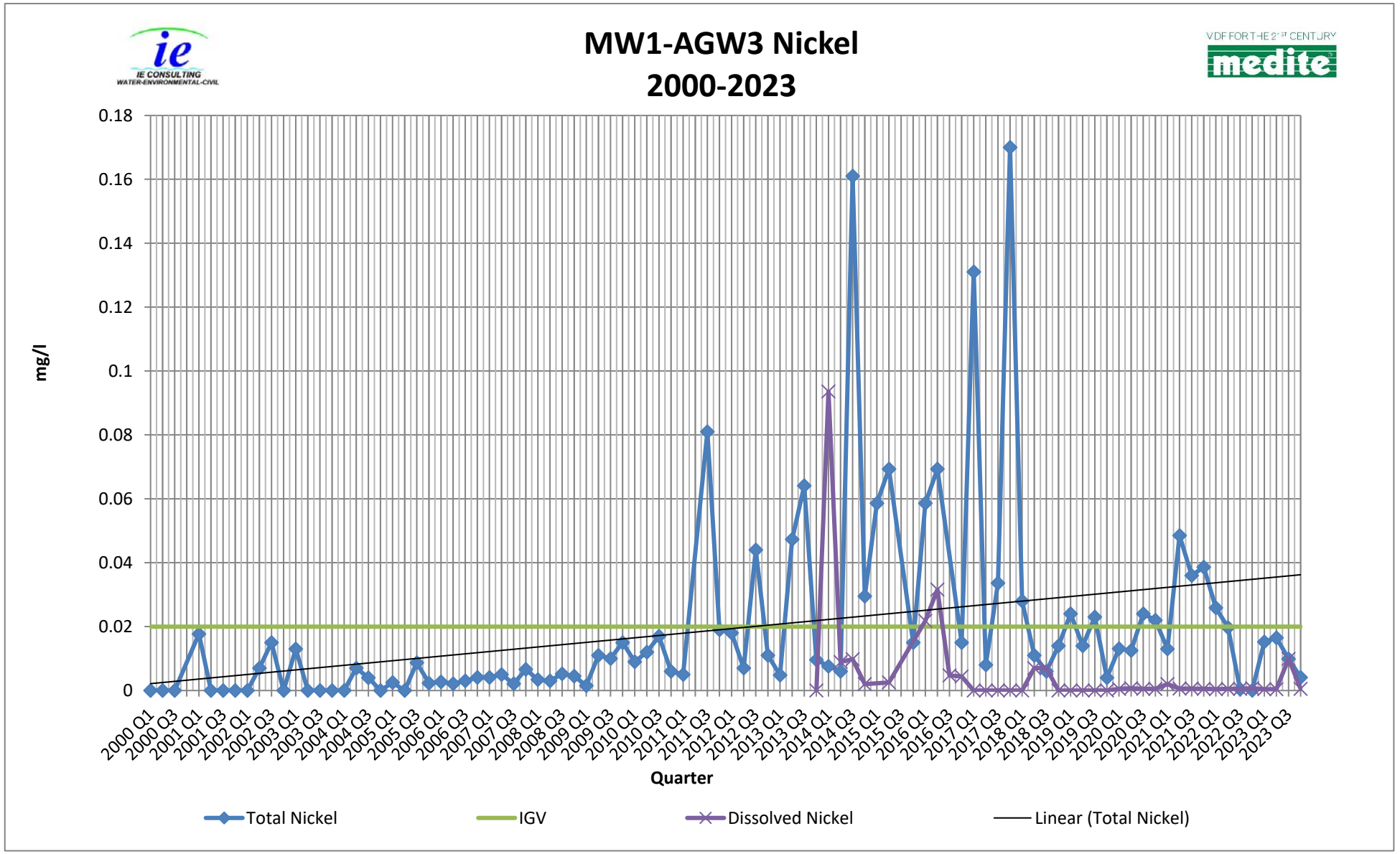
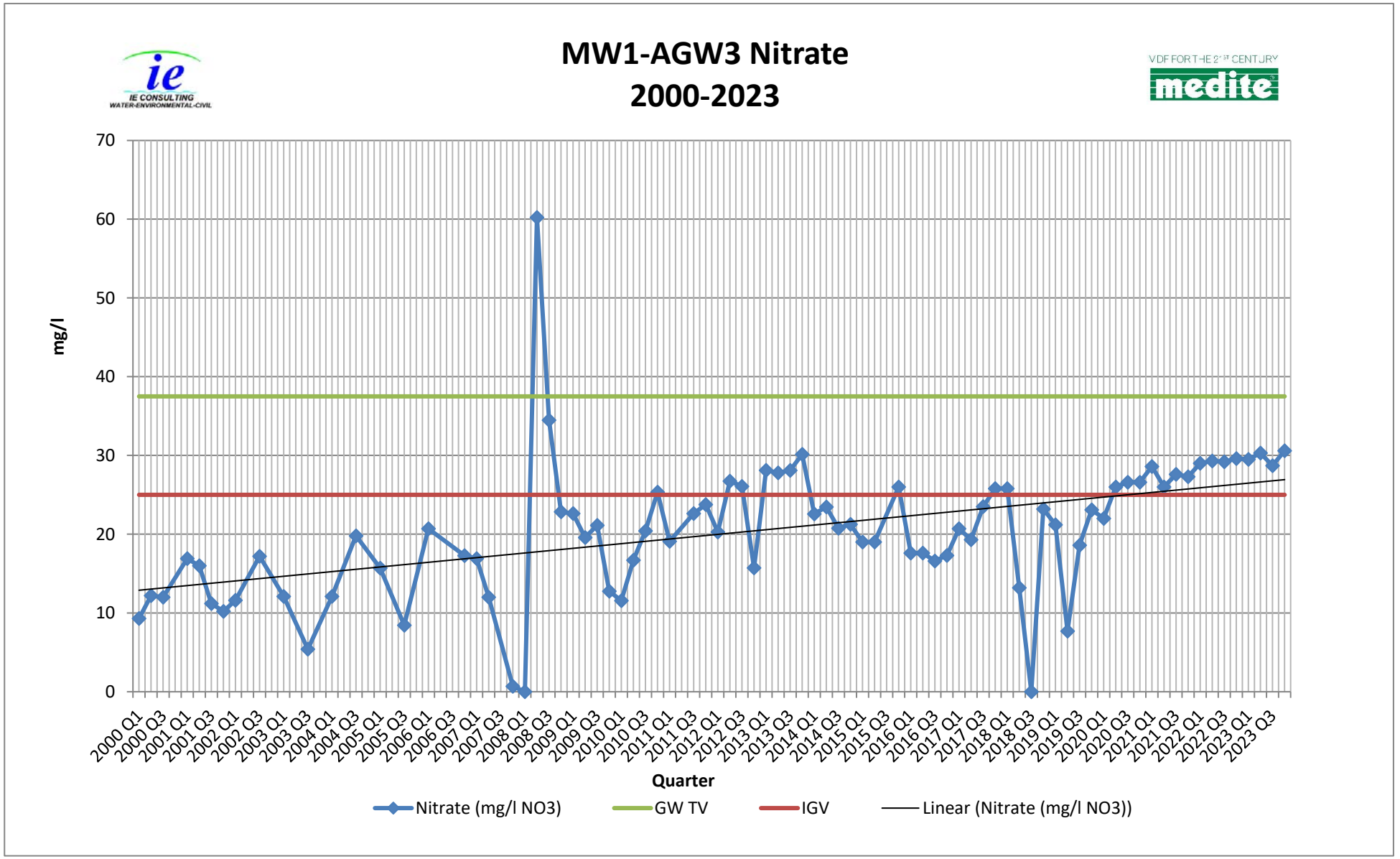
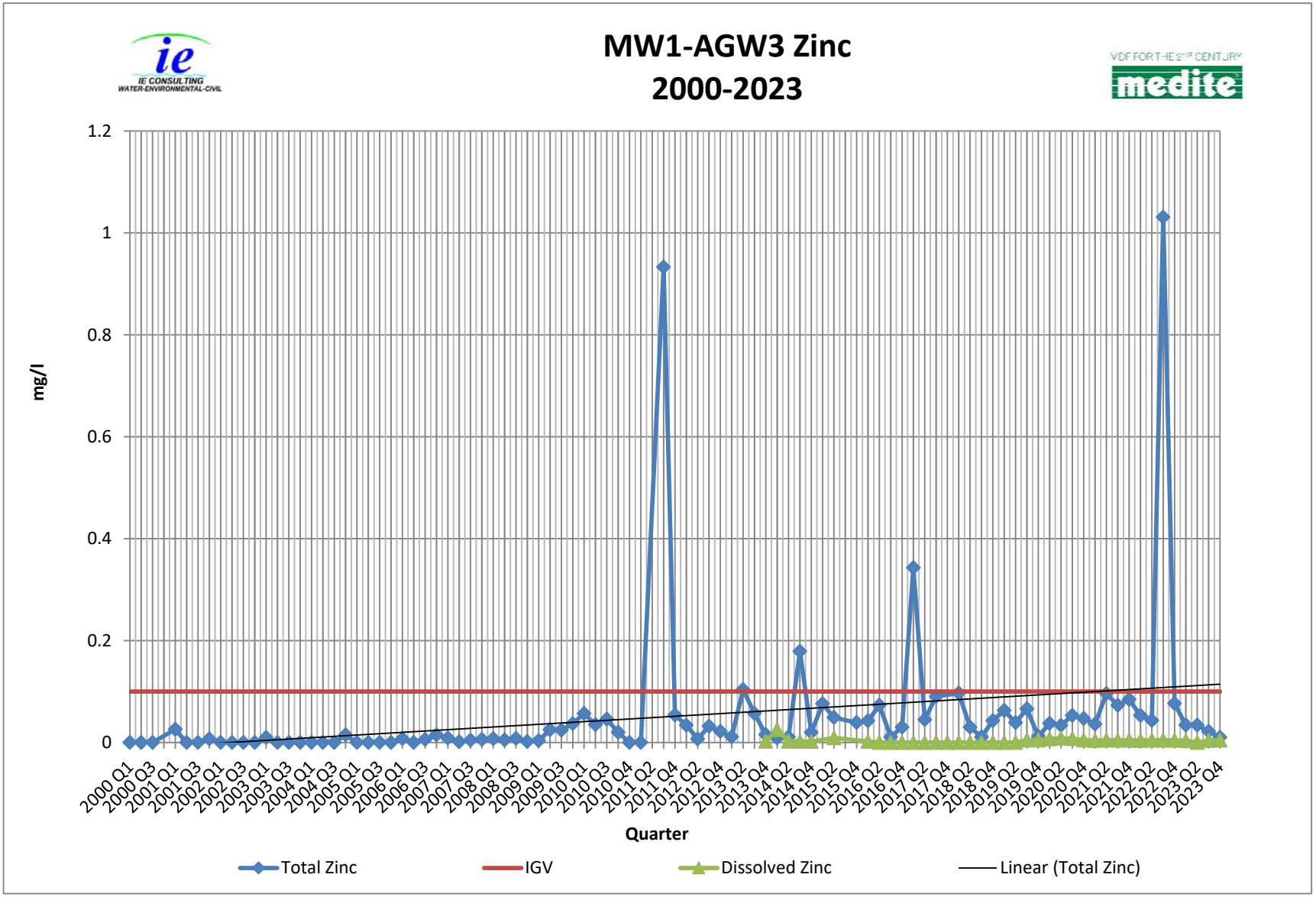
2011 Q1
2011 Q3
2012 Q1
2012 Q3
2013 Q1
2013 Q3
2014 Q1
2014 Q3
2015 Q1
2015 Q3
2016 Q1
2016 Q3
2017 Q1
2017 Q3
2018 Q1
2018 Q3
2019 Q1
2019 Q3
2020 Q1
2020 Q3
2021 Q1
2021 Q3
2022 Q1
2022 Q3
2023 Q1
2023 Q3
Quarter
Ammonia mg/l NH4-N
TV
Linear (Ammonia mg/l NH4-N)
Linear (Ammonia mg/l NH4-N)

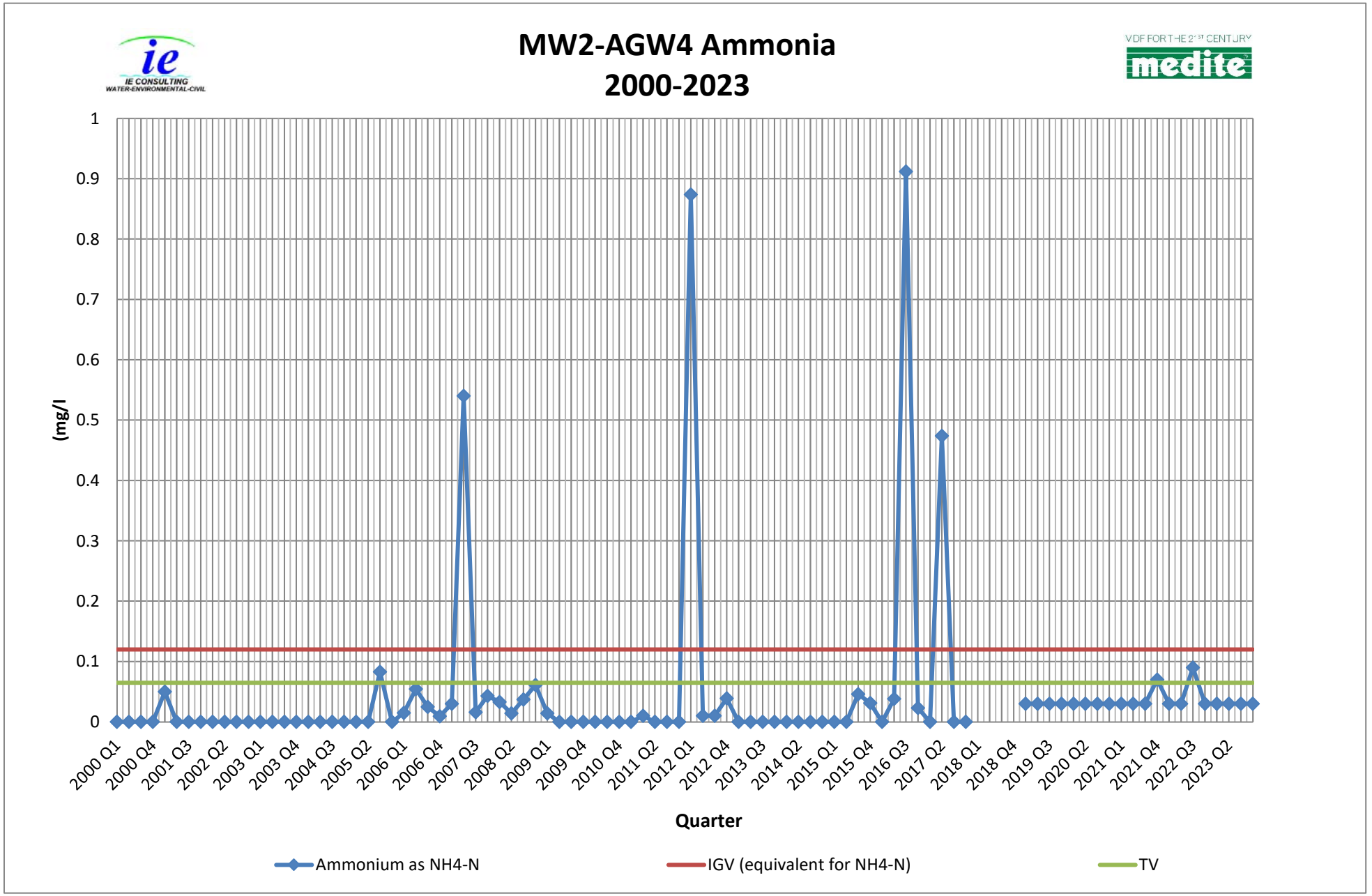

MW1-AGW3 Calcium
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
medite
mg/l
600
500
400
300
200
100
0
2000 Q1
2000 Q4
2001 Q3
2002 Q2
2003 Q1
2003 Q4
2004 Q3
2005 Q2
2006 Q1
2006 Q4
2007 Q3
2008 Q2
2009 Q1
2009 Q4
2010 Q3
2011 Q2
2012 Q1
2012 Q4
2013 Q3
2014 Q2
2015 Q1
2015 Q4
2016 Q3
2017 Q2
2018 Q1
2018 Q4
2019 Q3
2020 Q2
2021 Q1
2021 Q4
2022 Q3
2023 Q2
Calcium
IGV
Linear (Calcium)
Linear (Calcium)

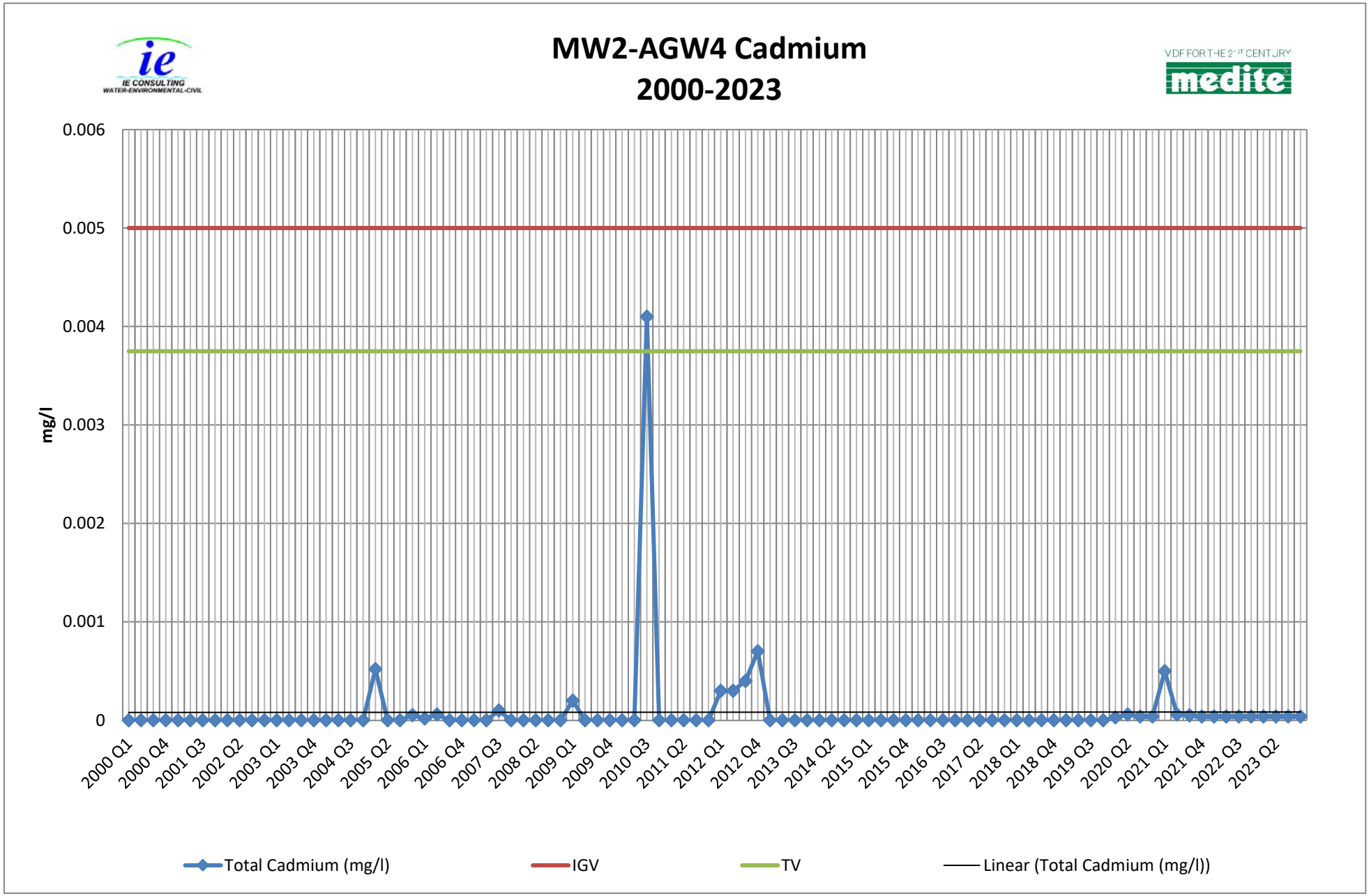

MW1-AGW3 Chloride
2000-2023
mg/l
45
40
35
30
25
20
15
10
5
0
2000 Q1
2001 Q1
2001 Q4
2003 Q1
2004 Q3
2005 Q3
2006 Q2
2007 Q1
2007 Q4
2008 Q3
2009 Q2
2010 Q1
2010 Q4
2011 Q3
2012 Q2
2013 Q1
2013 Q4
2014 Q3
2015 Q2
2016 Q1
2016 Q4
2017 Q3
2018 Q2
2019 Q1
2019 Q4
2020 Q3
2021 Q2
2022 Q1
2022 Q4
2023 Q3
Quarter
Chloride
GW TV
IGV
Linear (Chloride)

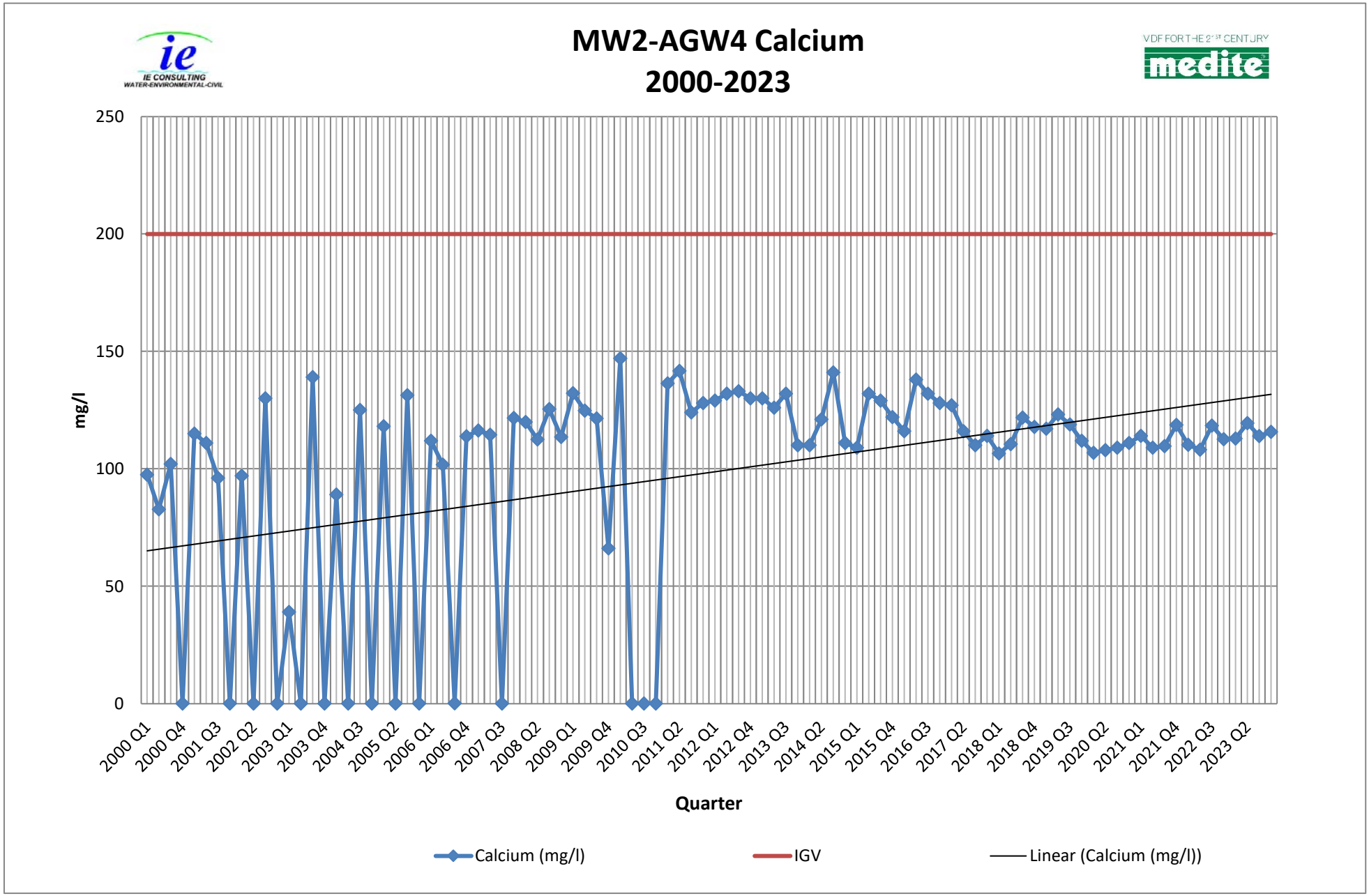

MW1-AGW3 Nickel
2000-2023
mg/l
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Quarter
Total Nickel
IGV
Dissolved Nickel
Linear (Total Nickel)

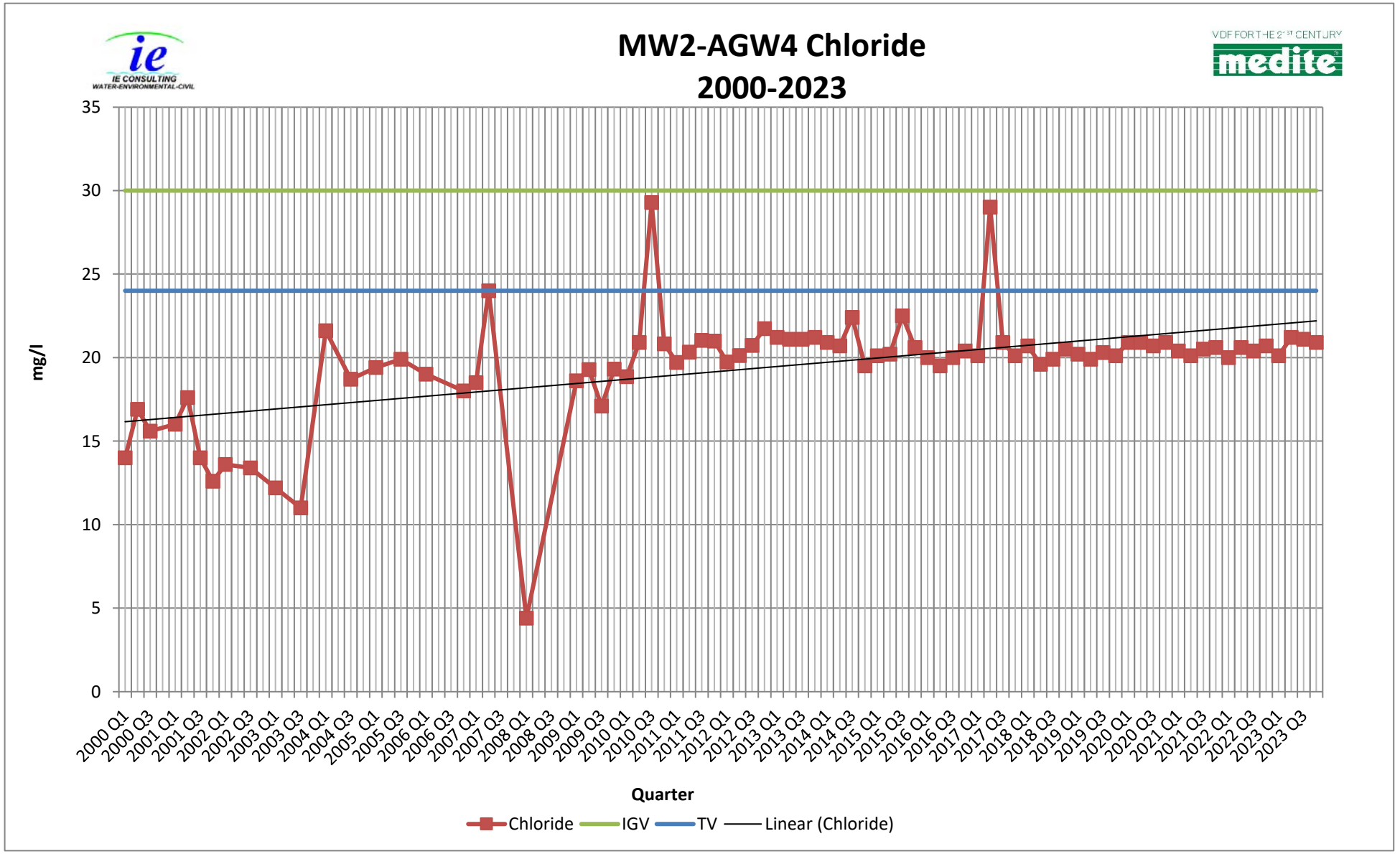

MW1-AGW3 Nitrate
2000-2023
mg/l
70
60
50
40
30
20
10
0
2000 Q1
2000 Q3
2001 Q1
2001 Q3
2002 Q1
2002 Q3
2003 Q1
2003 Q3
2004 Q1
2004 Q3
2005 Q1
2005 Q3
2006 Q1
2006 Q3
2007 Q1
2007 Q3
2008 Q1
2008 Q3
2009 Q1
2009 Q3
2010 Q1
2010 Q3
2011 Q1
2011 Q3
2012 Q1
2012 Q3
2013 Q1
2013 Q3
2014 Q1
2014 Q3
2015 Q1
2015 Q3
2016 Q1
2016 Q3
2017 Q1
2017 Q3
2018 Q1
2018 Q3
2019 Q1
2019 Q3
2020 Q1
2020 Q3
2021 Q1
2021 Q3
2022 Q1
2022 Q3
2023 Q1
2023 Q3
Quarter
Nitrate (mg/l NO3)
GW TV
IGV
Linear (Nitrate (mg/l NO3))

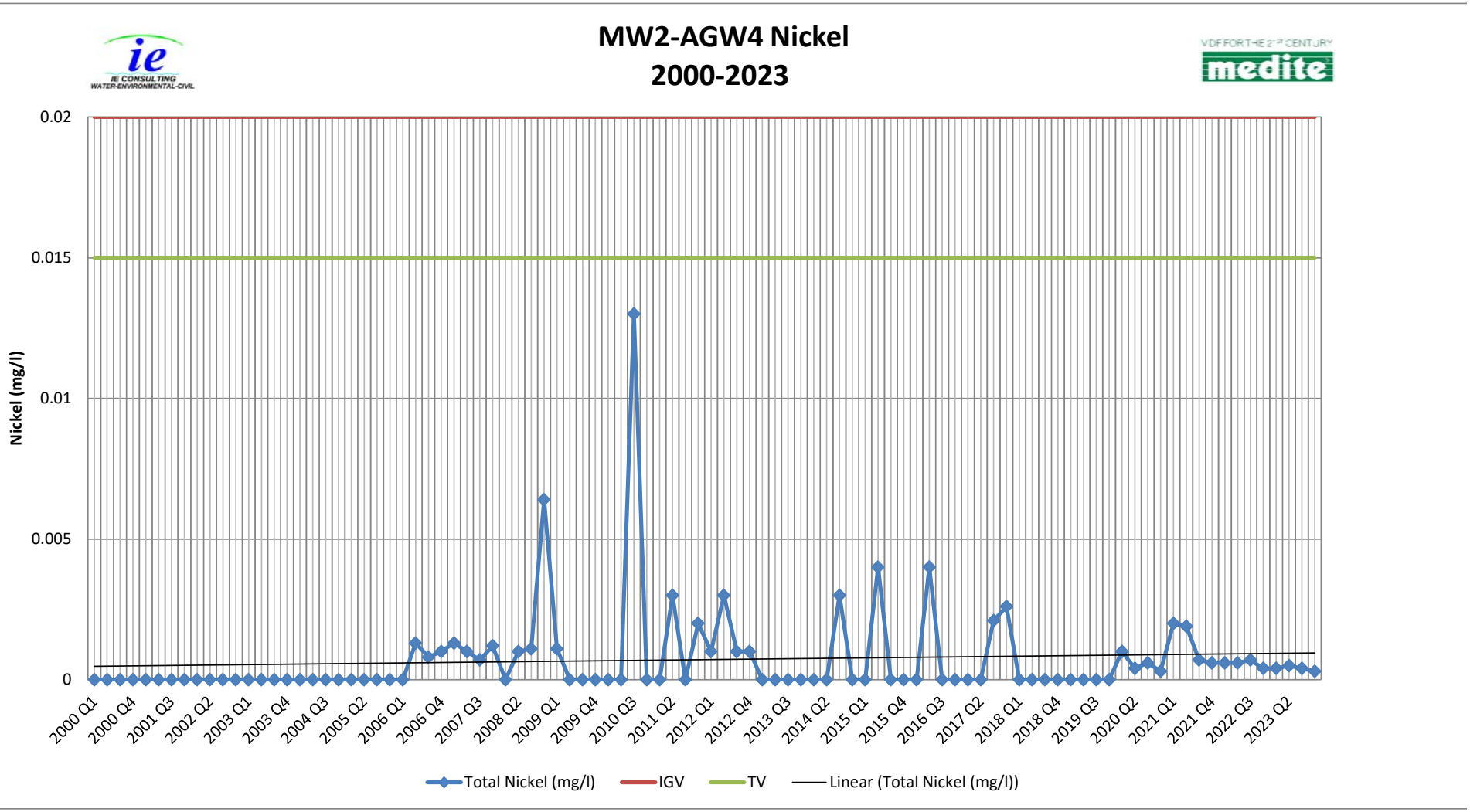

MW1-AGW3 Zinc
2000-2023
mg/l
1.2
1
0.8
0.6
0.4
0.2
0
Quarter
Total Zinc
IGV
Dissolved Zinc
Linear (Total Zinc)


MW2-AGW4 Ammonia
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
medite
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
(mg/l
2000 Q1
2000 Q4
2001 Q3
2002 Q2
2003 Q1
2003 Q4
2004 Q3
2005 Q2
2006 Q1
2006 Q4
2007 Q3
2008 Q2
2009 Q1
2009 Q4
2010 Q4
2011 Q2
2012 Q1
2012 Q4
2013 Q3
2014 Q2
2015 Q1
2015 Q4
2016 Q3
2017 Q2
2018 Q1
2018 Q4
2019 Q3
2020 Q2
2021 Q1
2021 Q4
2022 Q3
2023 Q2
Quarter
Ammonium as NH4-N
IGV (equivalent for NH4-N)
TV

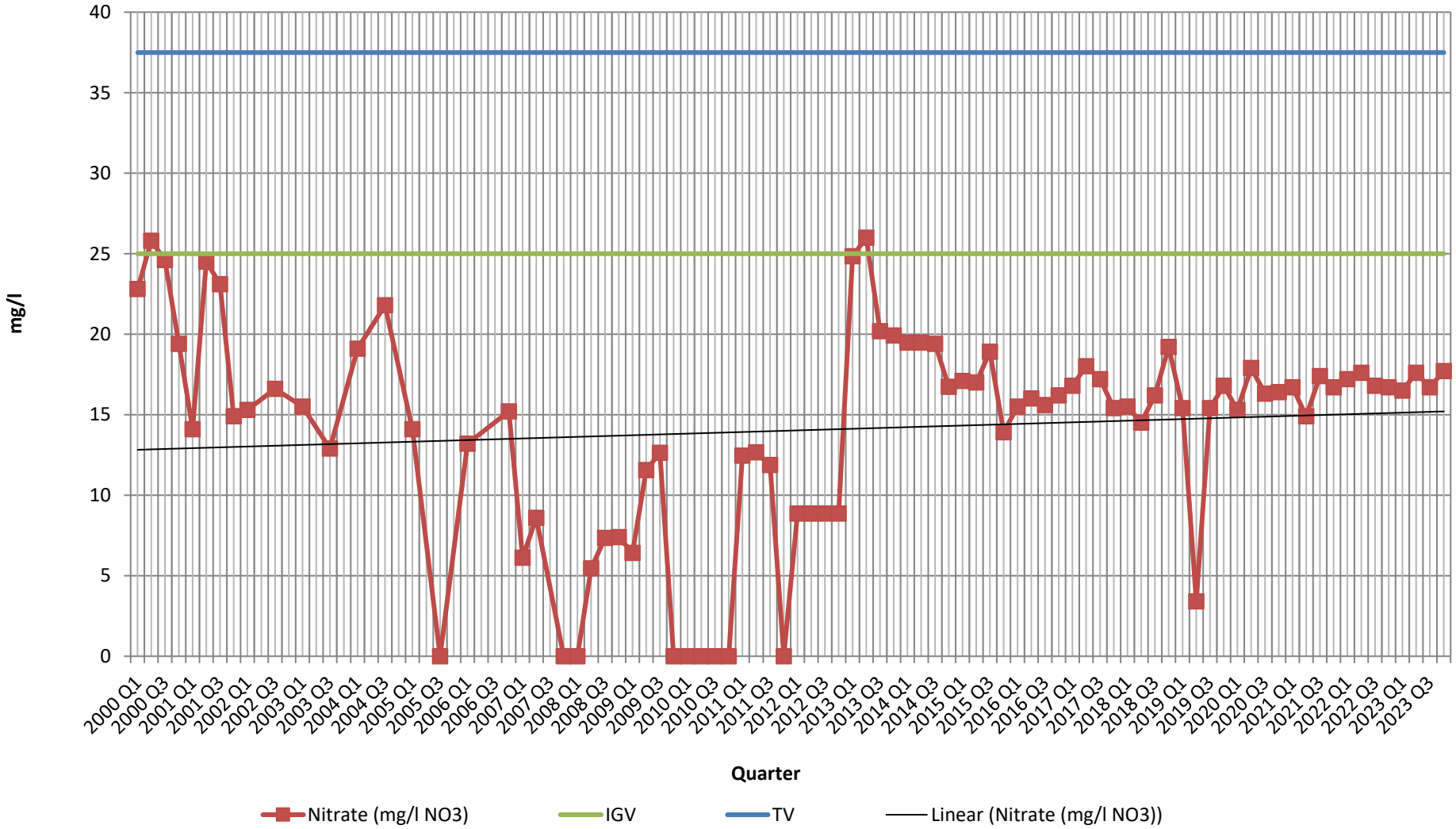

MW2-AGW4 Cadmium
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
VDF FOR THE 21ST CENTURY
medite
mg/l
0.006
0.005
0.004
0.003
0.002
0.001
0
2000 Q1
2000 Q4
2001 Q3
2002 Q2
2003 Q1
2003 Q4
2004 Q3
2005 Q2
2006 Q1
2006 Q4
2007 Q3
2008 Q2
2009 Q1
2009 Q4
2010 Q3
2011 Q2
2012 Q1
2012 Q4
2013 Q3
2014 Q2
2015 Q1
2015 Q4
2016 Q3
2017 Q2
2018 Q1
2018 Q4
2019 Q3
2020 Q2
2021 Q1
2021 Q4
2022 Q3
2023 Q2
Total Cadmium (mg/l)
IGV
TV
Linear (Total Cadmium (mg/l))

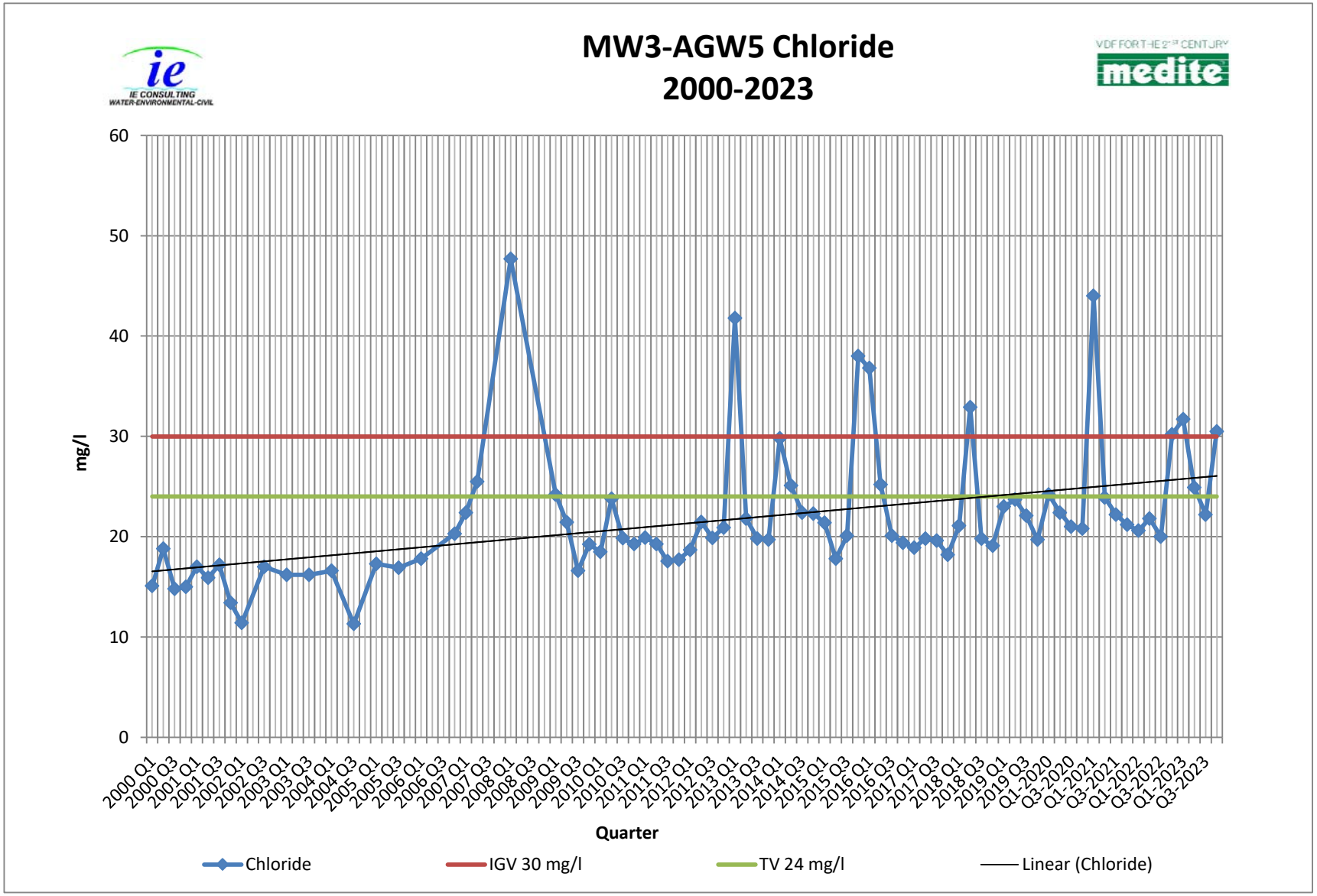

MW2-AGW4 Calcium
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
VDF FOR THE 21ST CENTURY
medite
mg/l
250
200
150
100
50
0
2000 Q1
2000 Q4
2001 Q3
2002 Q2
2003 Q1
2003 Q4
2004 Q3
2005 Q2
2006 Q1
2006 Q4
2007 Q3
2008 Q2
2009 Q1
2009 Q4
2010 Q3
2011 Q2
2012 Q1
2012 Q4
2013 Q3
2014 Q2
2015 Q1
2015 Q4
2016 Q3
2017 Q2
2018 Q1
2018 Q4
2019 Q3
2020 Q2
2021 Q1
2021 Q4
2022 Q3
2023 Q2
Quarter
Calcium (mg/l)
IGV
Linear (Calcium (mg/l))

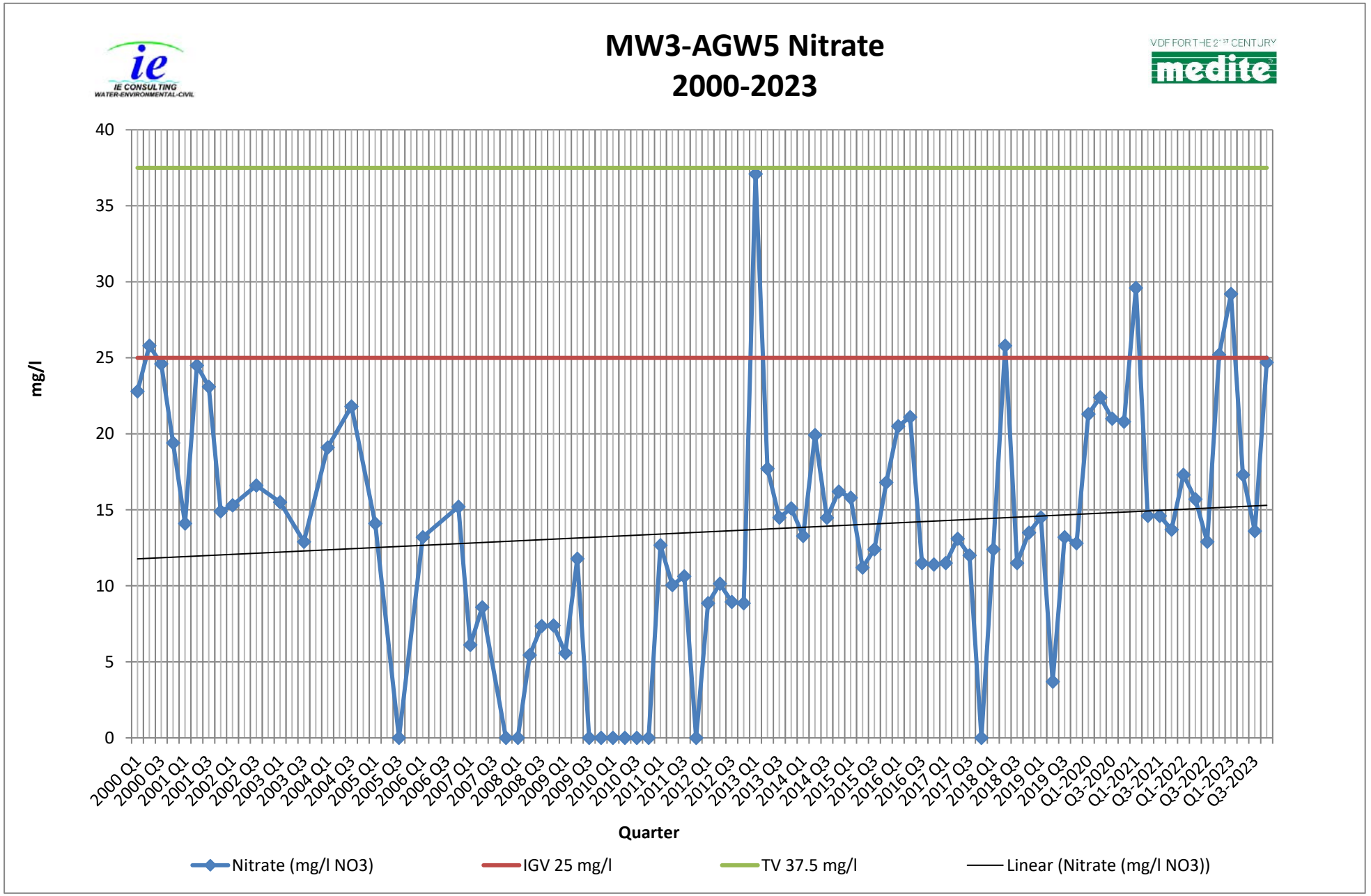

MW2-AGW4 Chloride
2000-2023
mg/l
Quarter
Chloride
IGV
TV
Linear (Chloride)


MW2-AGW4 Nickel
2000-2023
Nickel (mg/l)
0.02
0.015
0.01
0.005
0
2000 Q1
2000 Q4
2001 Q3
2002 Q2
2003 Q1
2003 Q4
2004 Q3
2005 Q2
2006 Q1
2006 Q4
2007 Q3
2008 Q2
2009 Q1
2009 Q4
2010 Q3
2011 Q2
2012 Q1
2012 Q4
2013 Q3
2014 Q2
2015 Q1
2015 Q4
2016 Q3
2017 Q2
2018 Q1
2018 Q4
2019 Q3
2020 Q2
2021 Q1
2021 Q4
2022 Q3
2023 Q2
Total Nickel (mg/l)
IGV
TV
Linear (Total Nickel (mg/l))

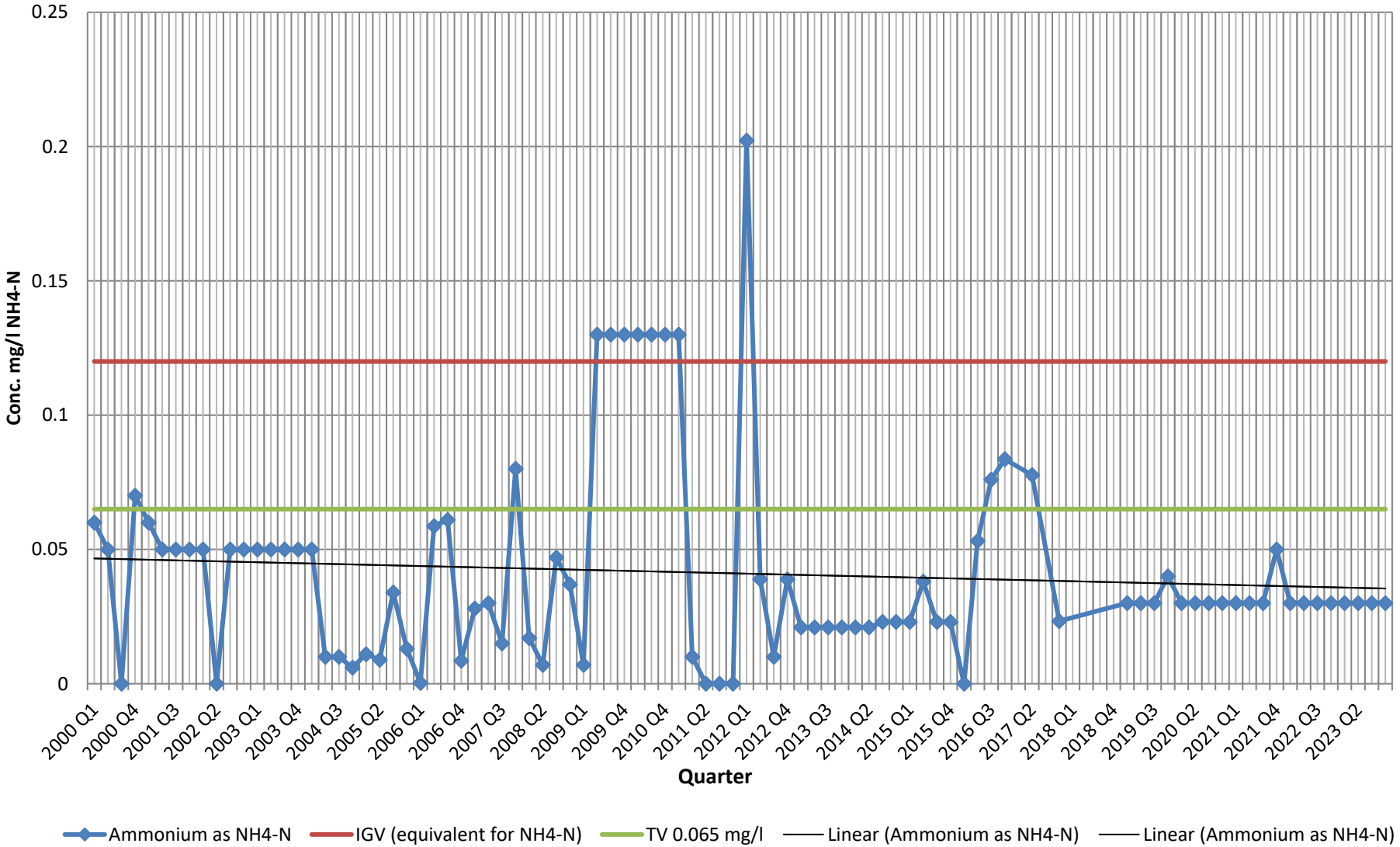
MW2-AGW4 Nitrate
2000-2023

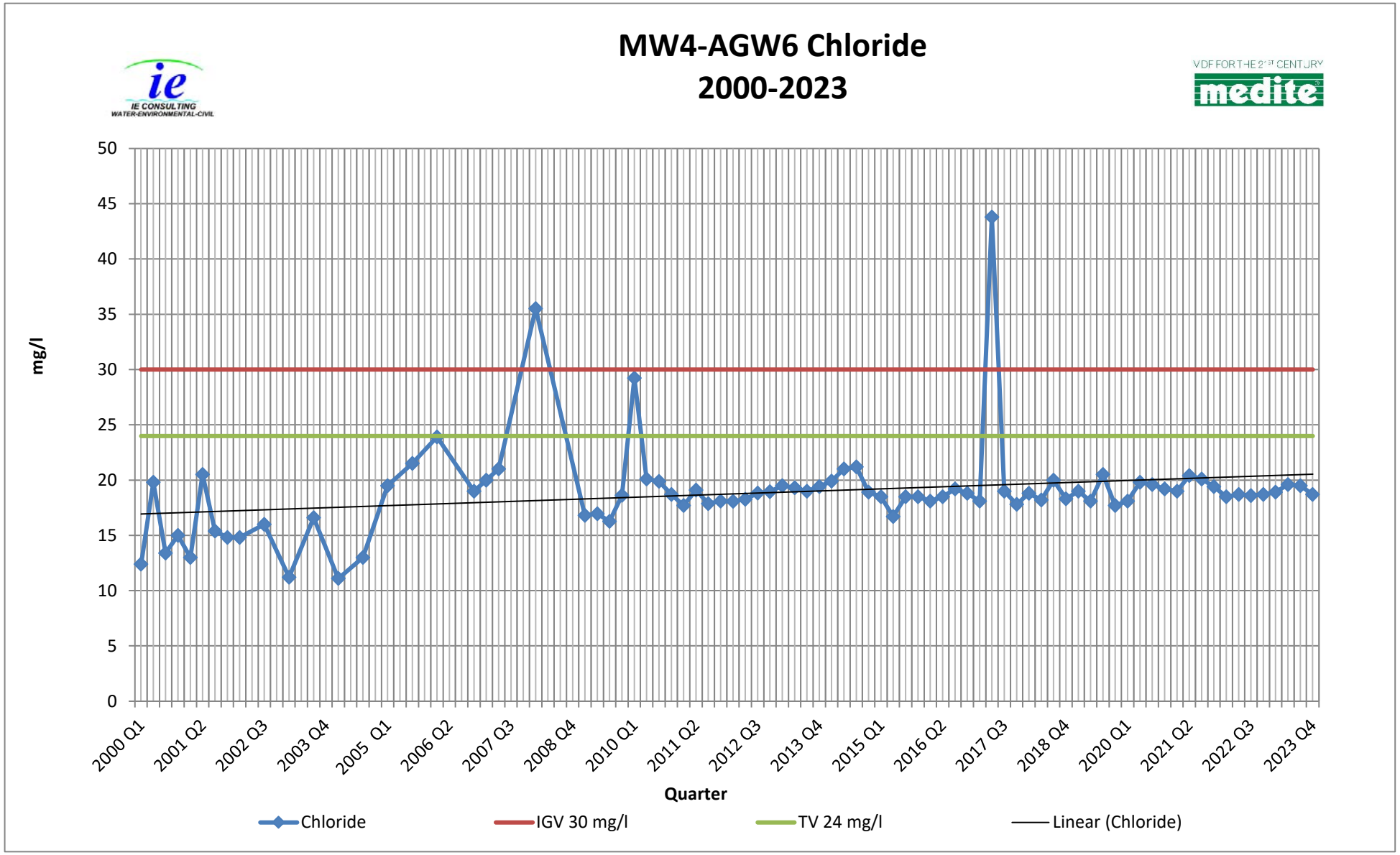



MW3-AGW5 Chloride
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
medite
mg/l
60
50
40
30
20
10
0
Quarter
Chloride
IGV 30 mg/l
TV 24 mg/l
Linear (Chloride)

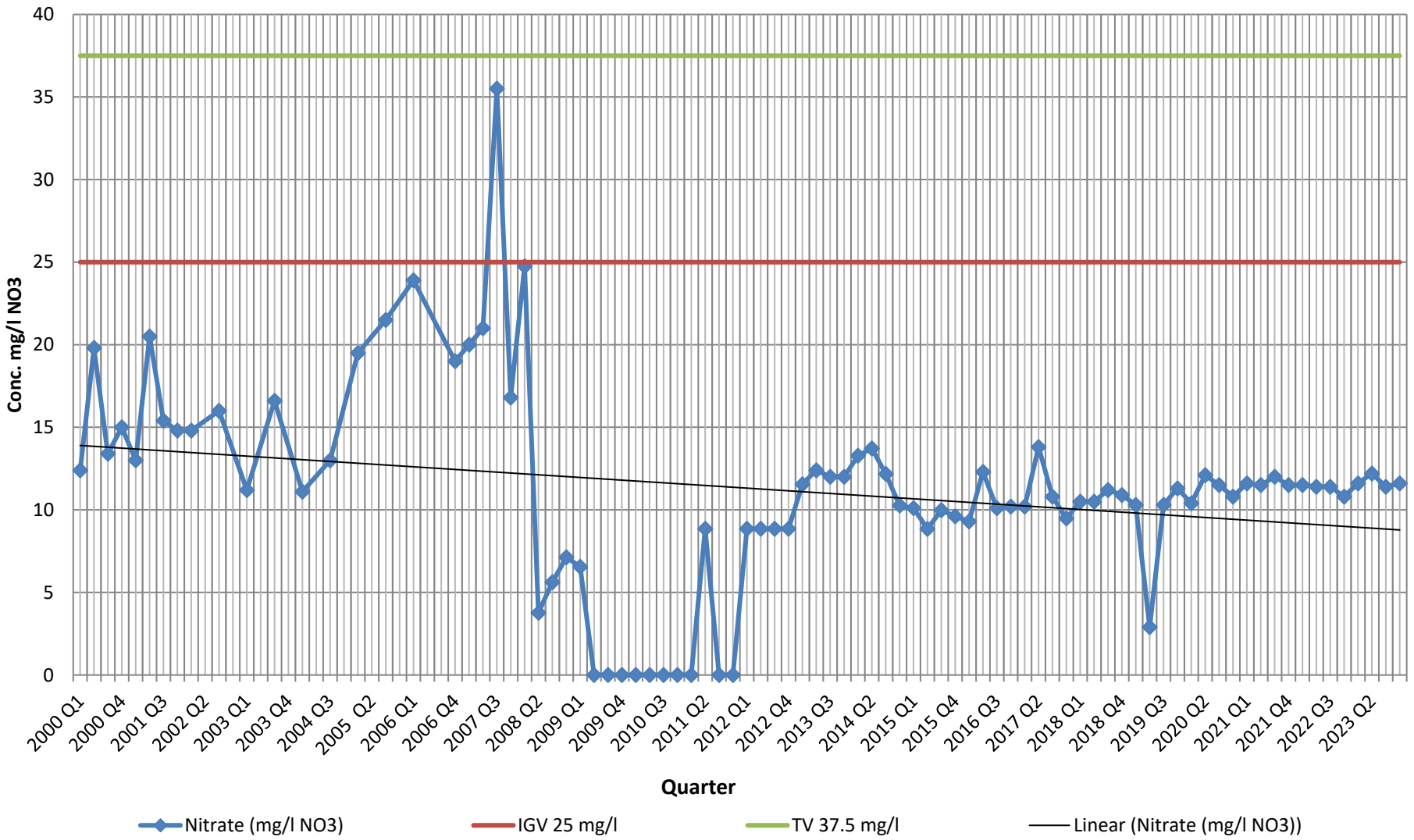

MW3-AGW5 Nitrate
2000-2023
IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL
VDF FOR THE 21ST CENTURY
medite
mg/l
40
35
30
25
20
15
10
5
0
2000 Q1
2000 Q3
2001 Q1
2001 Q3
2002 Q1
2002 Q3
2003 Q1
2003 Q3
2004 Q1
2004 Q3
2005 Q1
2005 Q3
2006 Q1
2006 Q3
2007 Q1
2007 Q3
2008 Q1
2008 Q3
2009 Q1
2009 Q3
2010 Q1
2010 Q3
2011 Q1
2011 Q3
2012 Q1
2012 Q3
2013 Q1
2013 Q3
2014 Q1
2014 Q3
2015 Q1
2015 Q3
2016 Q1
2016 Q3
2017 Q1
2017 Q3
2018 Q1
2018 Q3
2019 Q1
2019 Q3
Q1-2020
Q3-2020
Q1-2021
Q3-2021
Q1-2022
Q3-2022
Q1-2023
Q3-2023
Quarter
Nitrate (mg/l NO3)
IGV 25 mg/l
TV 37.5 mg/l
Linear (Nitrate (mg/l NO3))

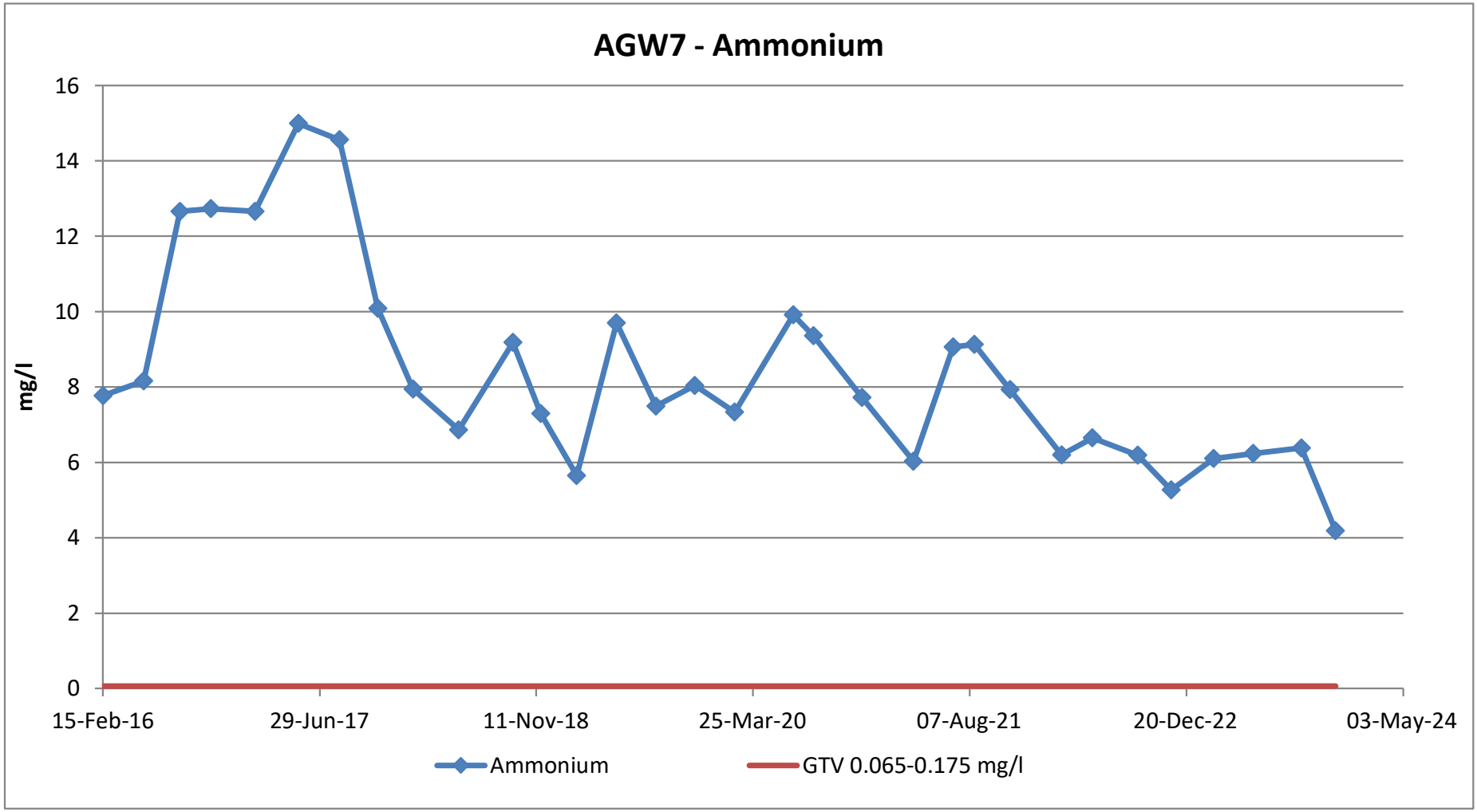
MW4-AGW6 Ammonia
2000-2023

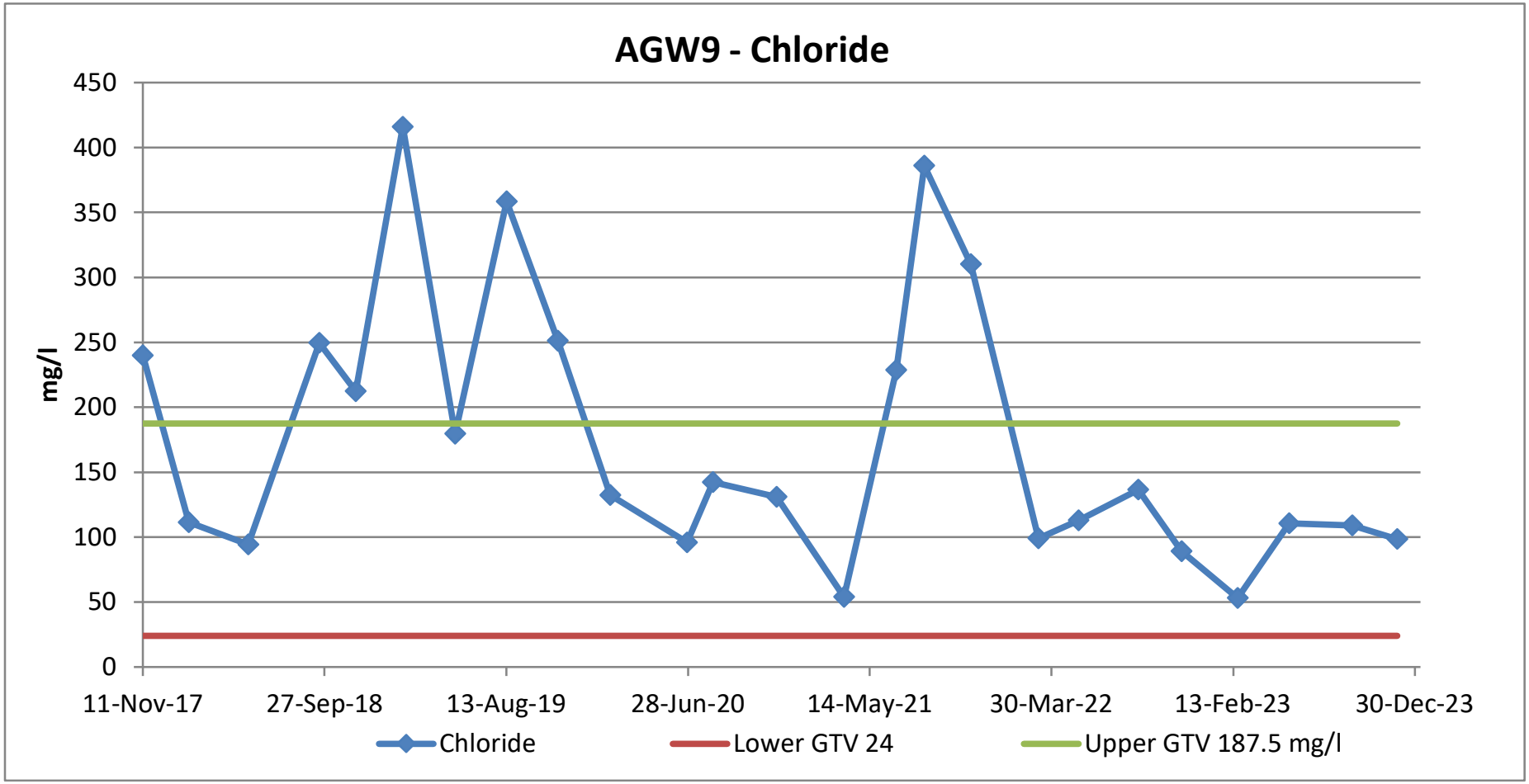


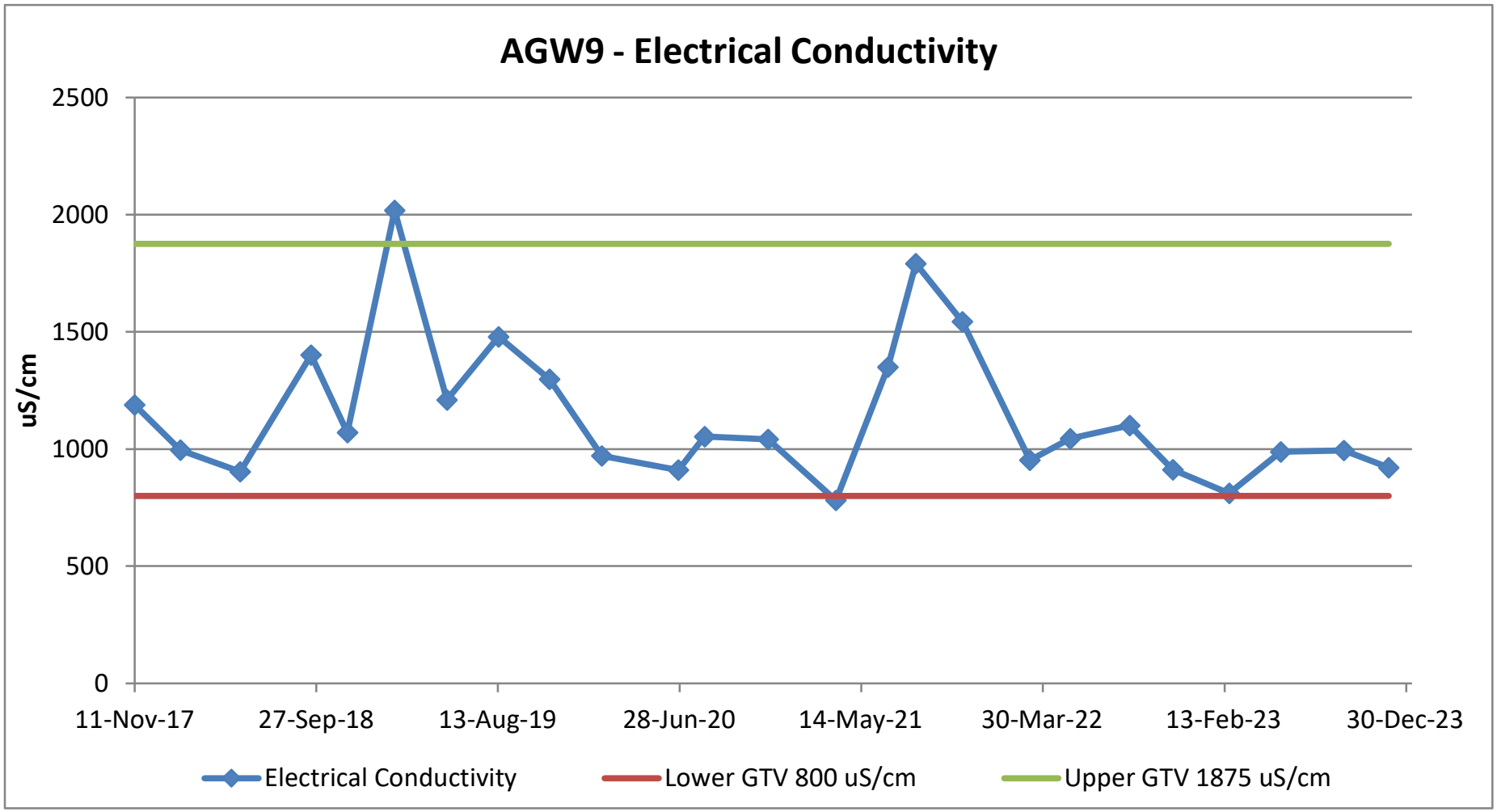

MW4-AGW6 Chloride
2000-2023
mg/l
50
45
40
35
30
25
20
15
10
5
0
2000 Q1
2001 Q2
2002 Q3
2003 Q4
2005 Q1
2006 Q2
2007 Q3
2008 Q4
2010 Q1
2011 Q2
2012 Q3
2013 Q4
2015 Q1
2016 Q2
2017 Q3
2018 Q4
2020 Q1
2021 Q2
2022 Q3
2023 Q4
Quarter
Chloride
IGV 30 mg/l
TV 24 mg/l
Linear (Chloride)

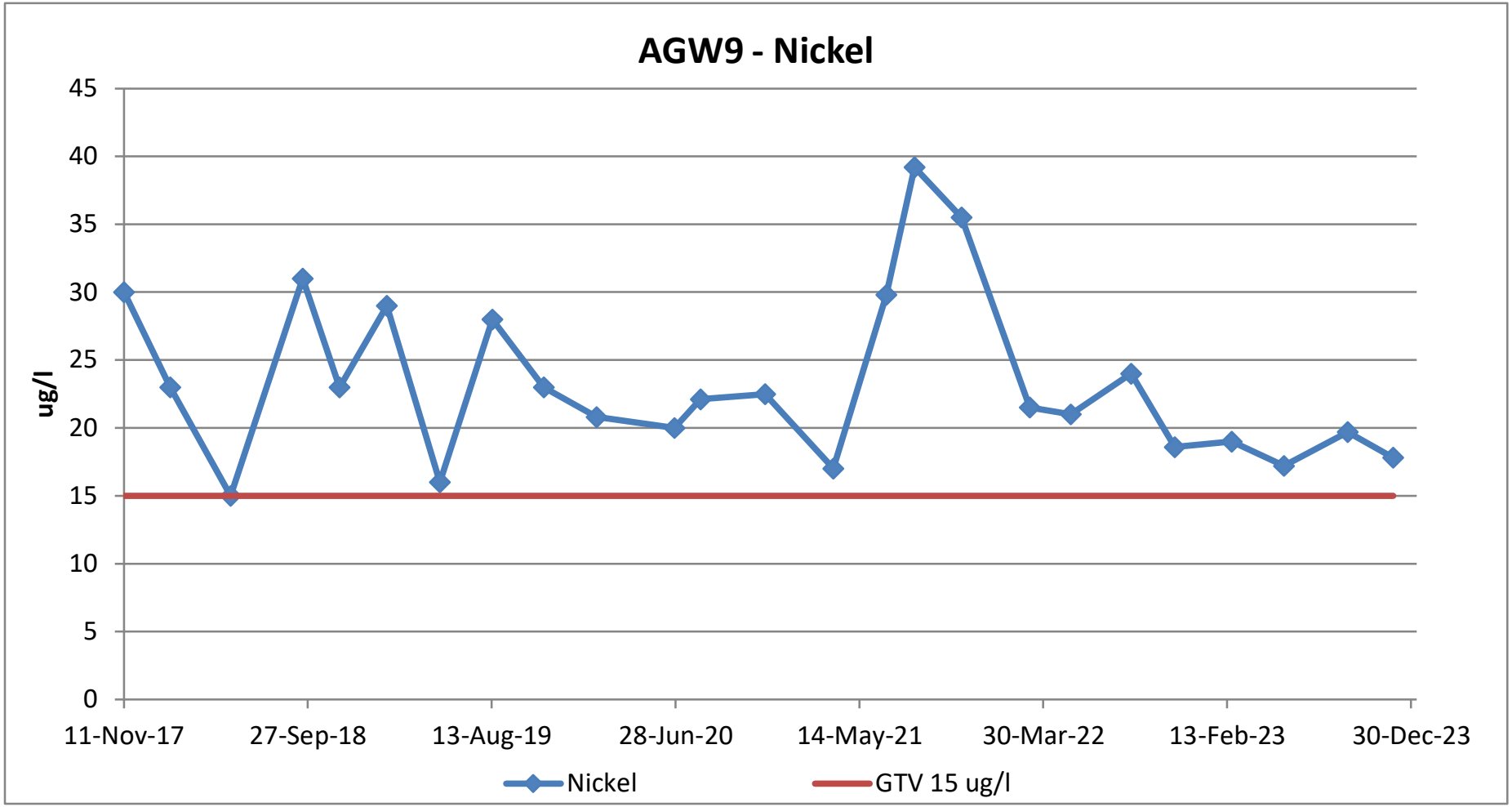
MW4-AGW6 Nitrate
2000-2023

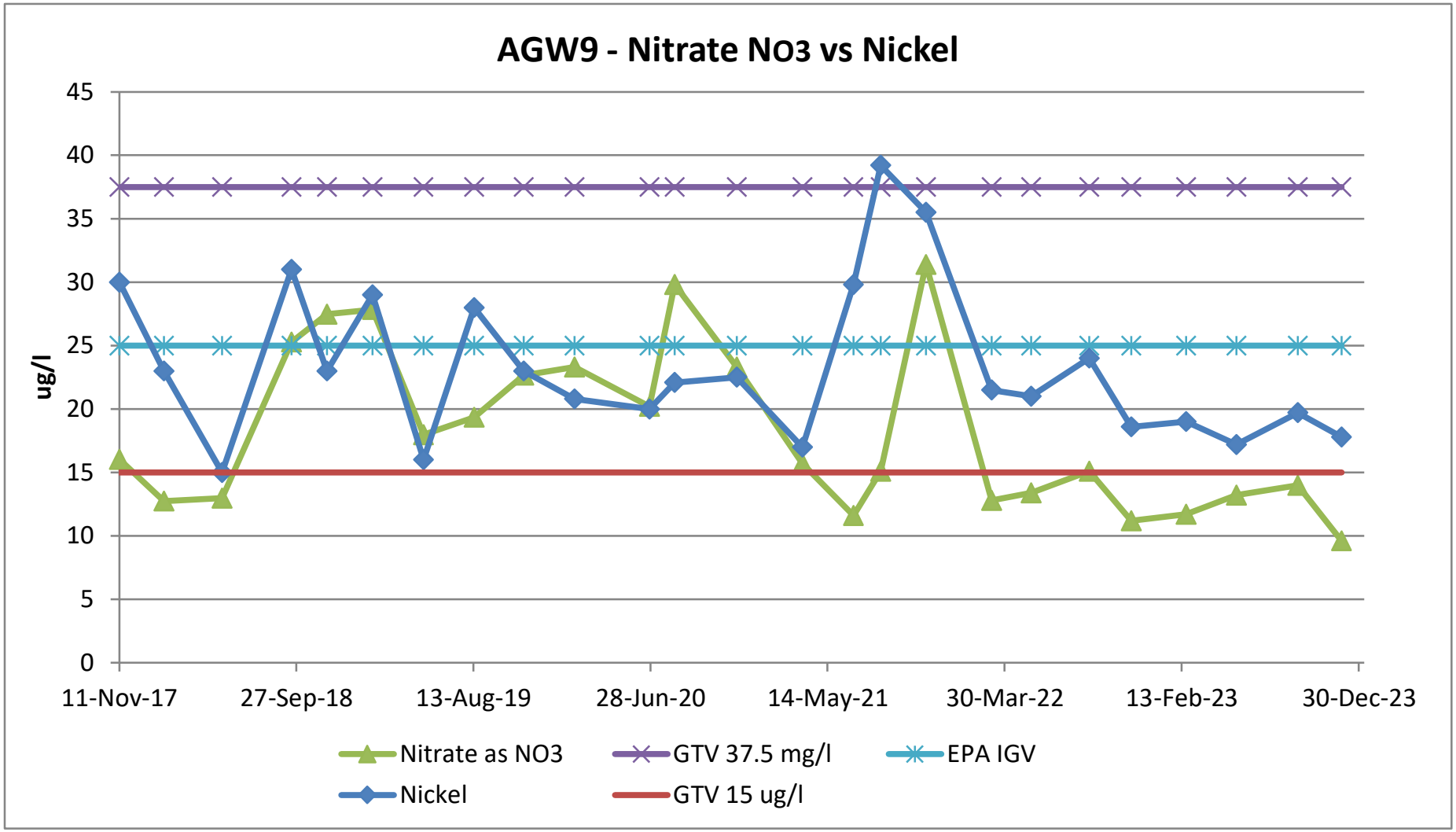


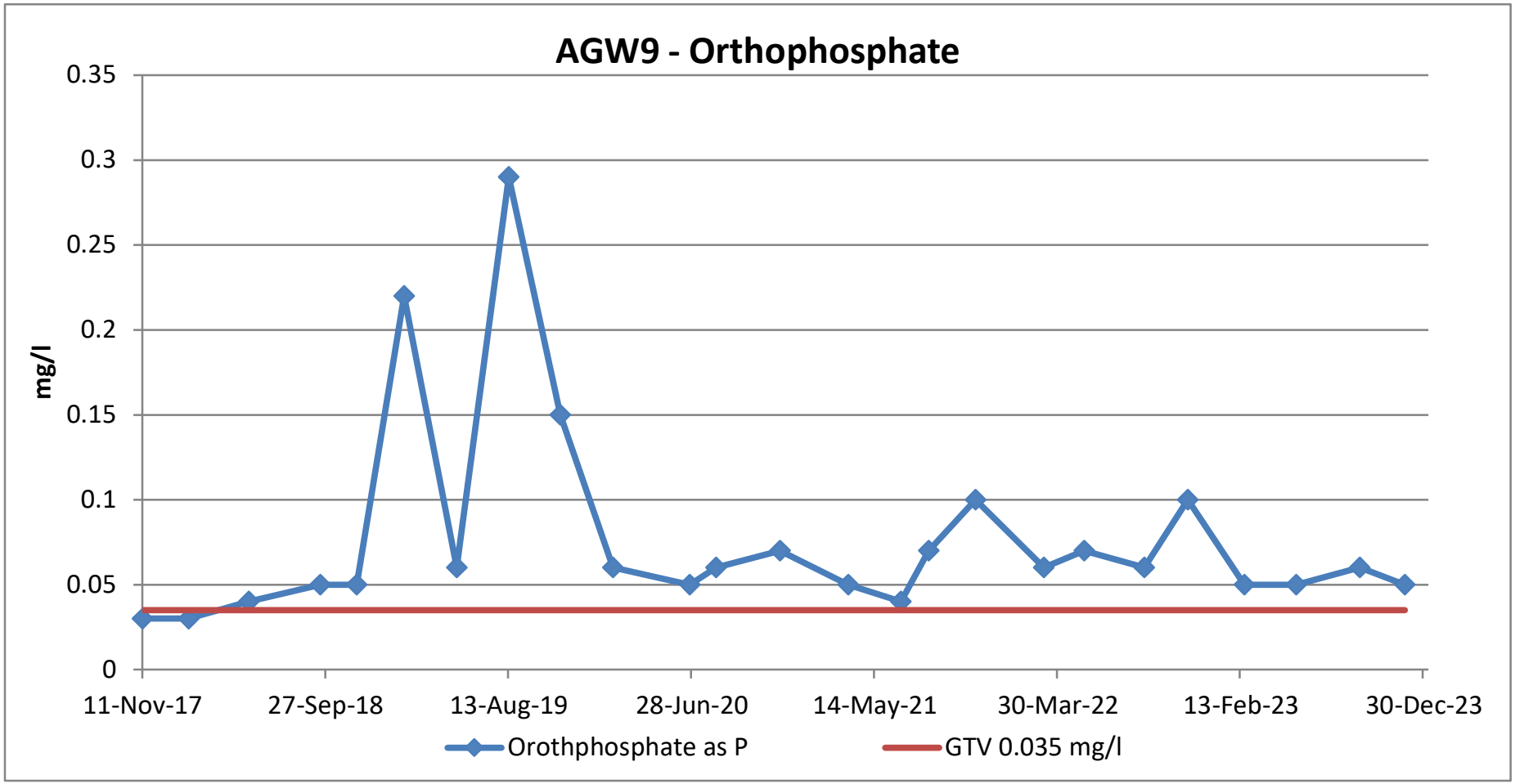

AGW7 - Ammonium
mg/l
16
14
12
10
8
6
4
2
0
15-Feb-16
29-Jun-17
11-Nov-18
25-Mar-20
07-Aug-21
20-Dec-22
03-May-24
Ammonium
GTV 0.065-0.175 mg/l

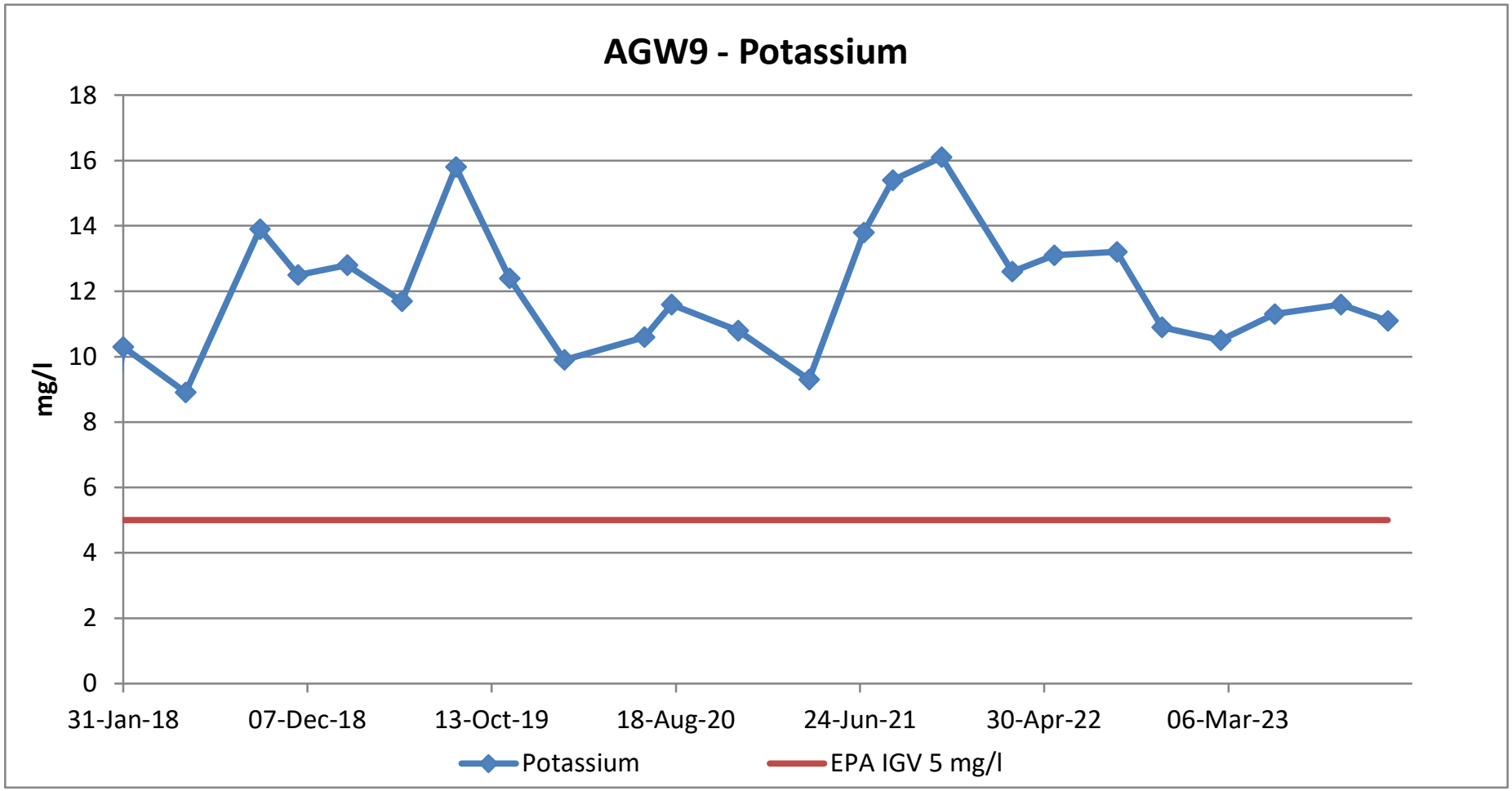

AGW9 - Chloride
mg/l
450
400
350
300
250
200
150
100
50
0
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Chloride
Lower GTV 24
Upper GTV 187.5 mg/l

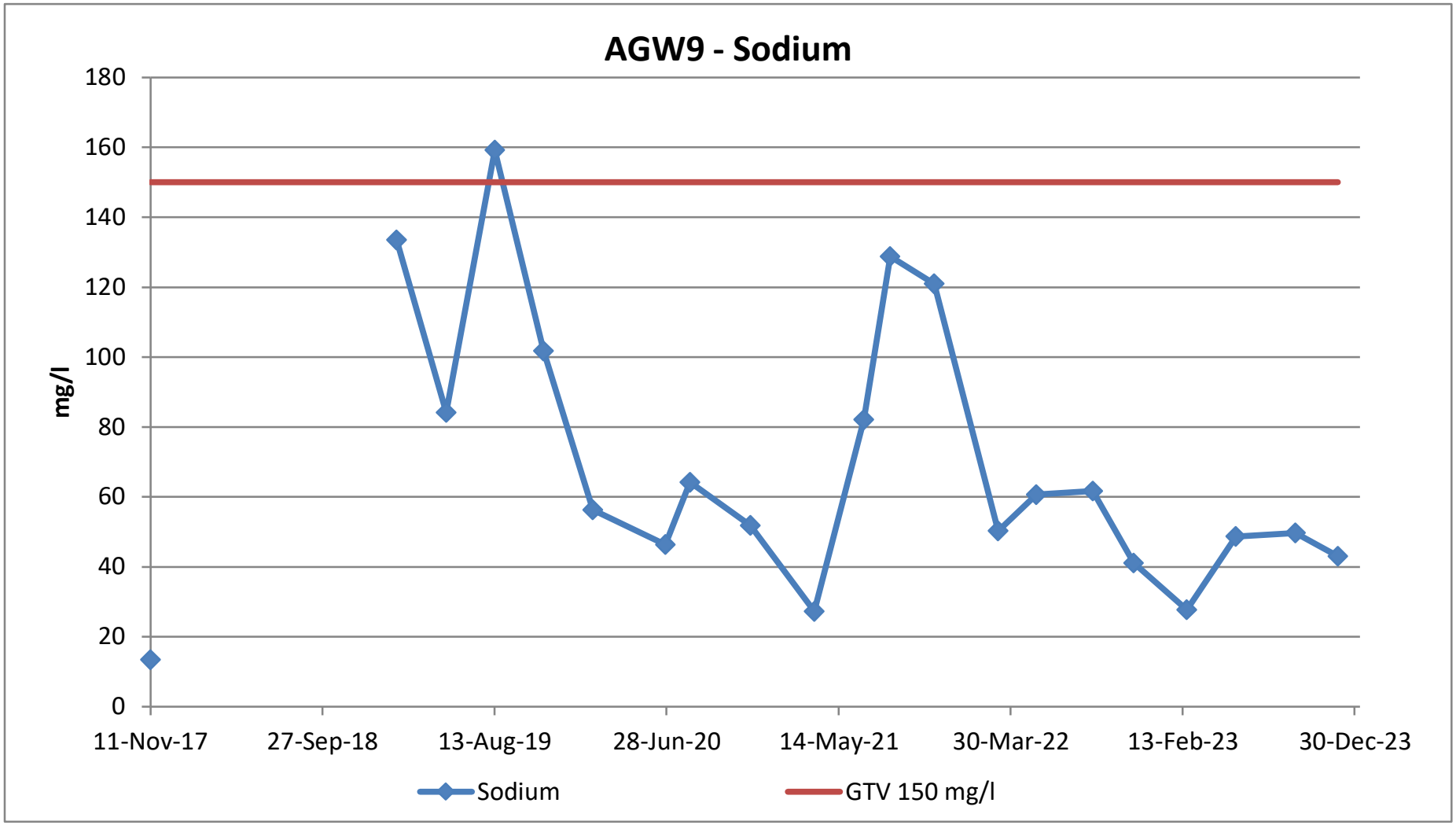

AGW9 - Electrical Conductivity
2500
2000
1500
1000
500
0
uS/cm
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Electrical Conductivity
Lower GTV 800 uS/cm
Upper GTV 1875 uS/cm

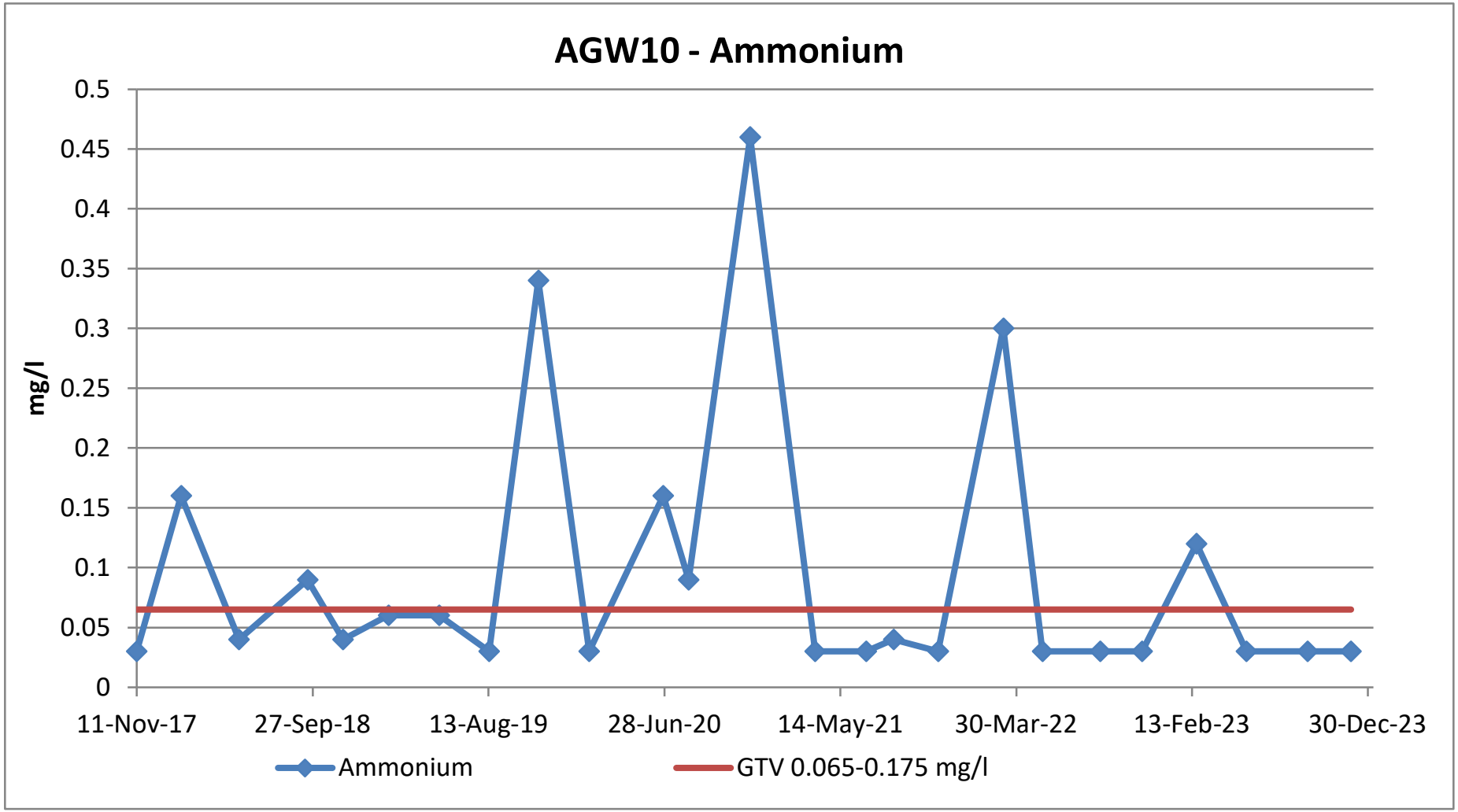

AGW9 - Nickel
45
40
35
30
25
20
15
10
5
0
ug/l
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Nickel
GTV 15 ug/l

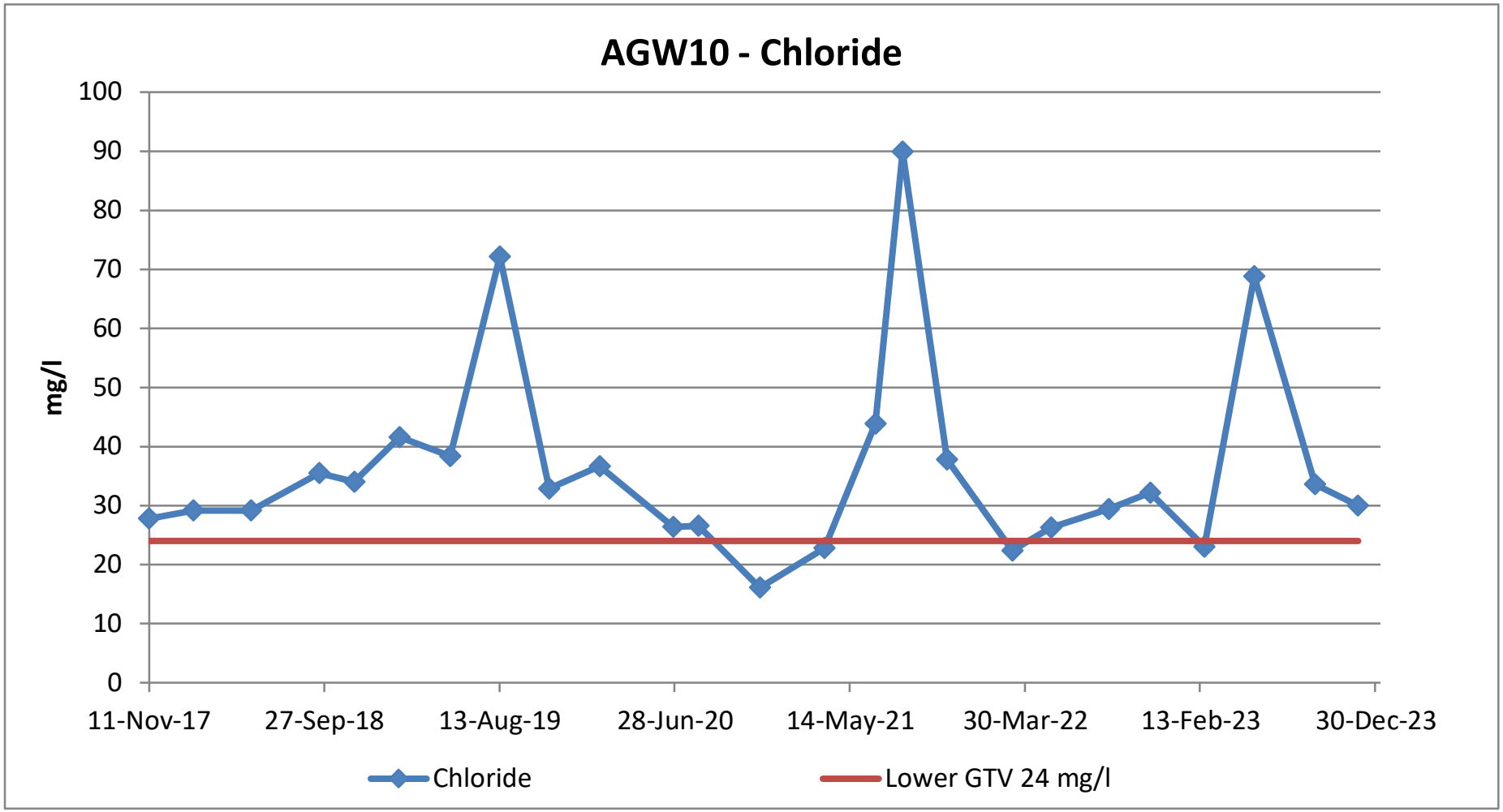

AGW9 - Nitrate NO3 vs Nickel
ug/l
45
40
35
30
25
20
15
10
5
0
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Nitrate as NO3
GTV 37.5 mg/l
EPA IGV
Nickel
GTV 15 ug/l

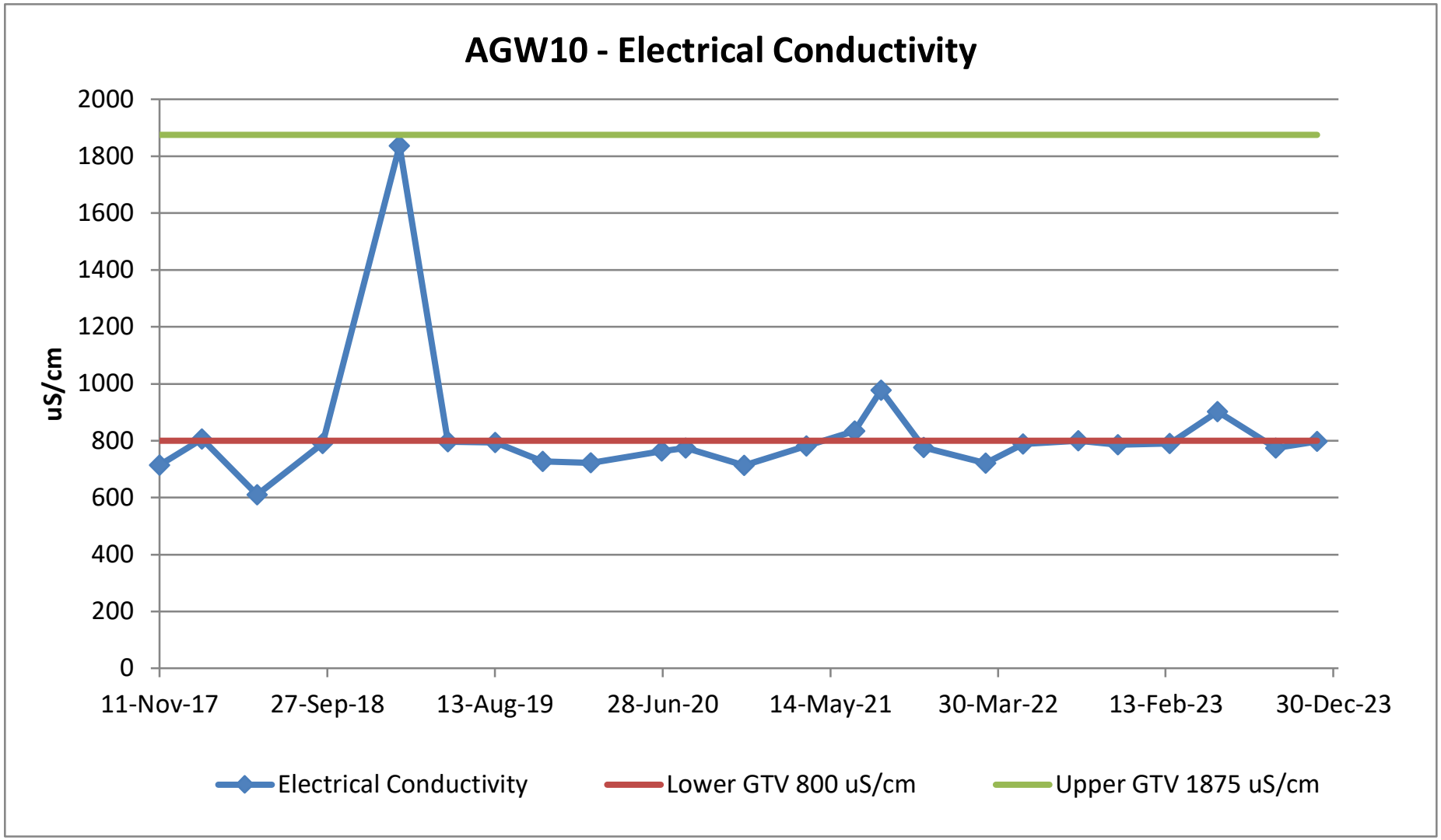

AGW9 - Orthophosphate
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
mg/l
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Orothphosphate as P
GTV 0.035 mg/l

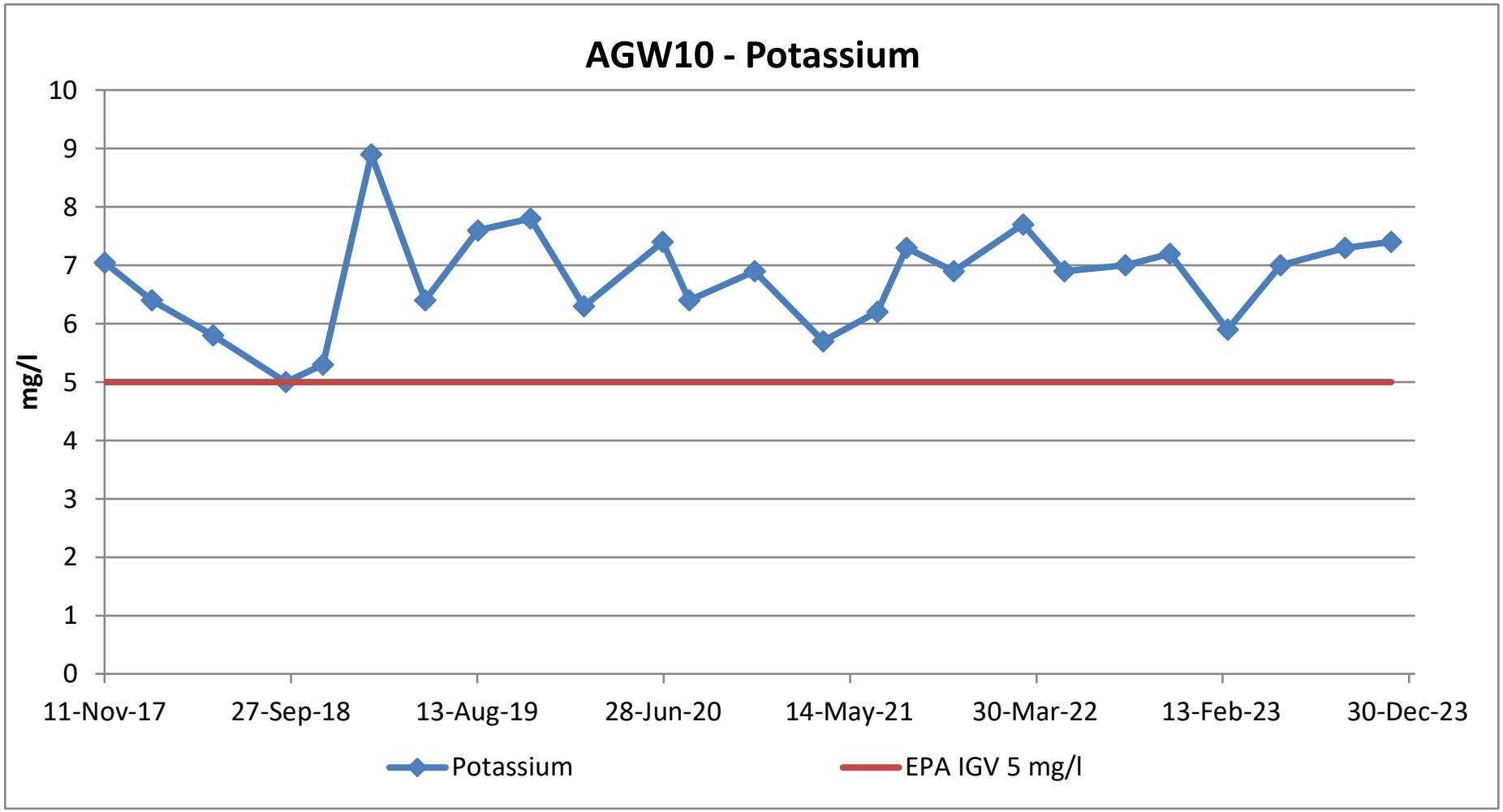

AGW9 - Potassium
mg/l
18
16
14
12
10
8
6
4
2
0
31-Jan-18
07-Dec-18
13-Oct-19
18-Aug-20
24-Jun-21
30-Apr-22
06-Mar-23
Potassium
EPA IGV 5 mg/l

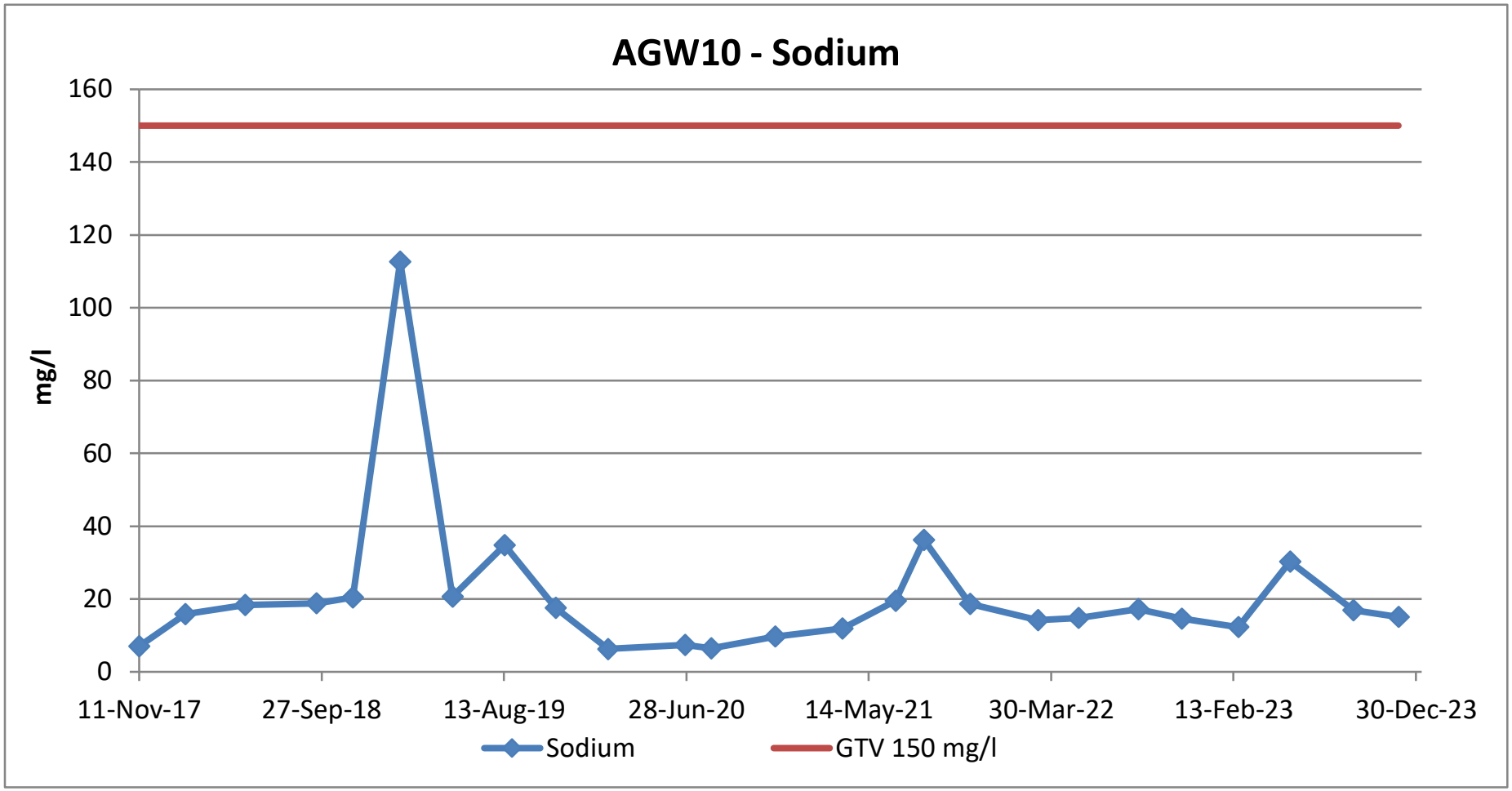

AGW9 - Sodium
180
160
140
120
100
80
60
40
20
0
mg/l
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Sodium
GTV 150 mg/l


AGW10 - Ammonium
mg/l
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Ammonium
GTV 0.065-0.175 mg/l


AGW10 - Chloride
100
90
80
70
60
50
40
30
20
10
0
mg/l
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Chloride
Lower GTV 24 mg/l


AGW10 - Electrical Conductivity
2000
1800
1600
1400
1200
1000
800
600
400
200
0
uS/cm
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Electrical Conductivity
Lower GTV 800 uS/cm
Upper GTV 1875 uS/cm


AGW10 - Potassium
mg/l
10
9
8
7
6
5
4
3
2
1
0
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Potassium
EPA IGV 5 mg/l


AGW10 - Sodium
160
140
120
100
80
60
40
20
0
mg/l
11-Nov-17
27-Sep-18
13-Aug-19
28-Jun-20
14-May-21
30-Mar-22
13-Feb-23
30-Dec-23
Sodium
GTV 150 mg/l

Appendix G

Gas Monitoring Results

Medite Europe Ltd on-site landfill
Historical Landfill Gas Monitoring Results 2010 - 2023
TP1

Statistics	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20-Feb-12**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**
20	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.1
40	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.1
60	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.3	0.3	0.4	0.1
80	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.1
100	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1
120	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1
Average	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.1
Min	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1
Max	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.1
Statistics	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20-Feb-12**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**
20	1031	1005	1002	1021	1016	1012	1012	1023	1010	1009	1006	1016	994	1021
40	1031	1005	1002	1021	1016	1012	1012	1023	1011	1009	1006	1015	994	1021
60	1031	1005	1002	1021	1016	1012	1012	1023	1010	1008	1007	1014	994	1021
80	1031	1004	1002	1021	1016	1012	1012	1023	1011	1009	1006	1013	993	1021
100	1031	1004	1002	1021	1016	1012	1012	1023	1010	1009	1006	1013	994	1021
120	1031	1004	1002	1021	1016	1012	1012	1023	1010	1009	1006	1012	994	1021
AVERAGE	1031	1005	1002	1021	1016	1012	1012	1023	1010	1009	1006	1014	994	1021
Min	1031	1004	1002	1021	1016	1012	1012	1023	1010	1008	1006	1012	993	1021
Max	1031	1005	1002	1021	1016	1012	1012	1023	1011	1009	1007	1016	994	1021
Statistics	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20-Feb-12**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**
20	0.7	0.8	5.4	3.9	4.8	4.6	18.2	18.2	11.2	6.4	6.5	6.1	9.4	9.4
40	1.7	2.3	5.3	3.8	4.9	4.7	18.2	18.2	10.9	6.1	6.2	6.0	9.6	9.6
60	1.7	2.4	5.3	3.8	4.8	4.7	18.3	18.3	8	6.1	5.9	5.8	9.7	9.7
80	1.7	2.5	5.3	3.9	4.7	4.6	18.3	18.3	8.1	5.8	5.9	5.8	9.7	9.7
100	1.7	2.5	5.3	3.9	4.7	4.7	18.3	18.3	7.9	5.5	5.8	5.7	9.7	9.7
120	1.7	2.5	5.3	3.9	4.8	4.7	18.3	18.3	7.9	5.5	5.8	5.7	9.7	9.7
Average	1.5	2.2	5.3	3.9	4.8	4.7	18.3	18.3	9.0	5.9	6.0	5.9	9.6	9.6
Min	0.7	0.8	5.3	3.8	4.9	4.7	18.3	18.3	11.2	6.4	6.5	6.1	9.7	9.7
Max	1.7	2.5	5.4	3.9	4.7	4.6	18.2	18.2	7.9	5.5	5.8	5.7	9.4	9.4
Statistics	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20-Feb-12**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**
20	20.2	19.2	11.3	15.7	12.6	16.1	16.8	15.8	15.4	15.1	15	14.9	13.7	13.7
40	19.1	17.6	10.9	16.0	12.8	16.0	16.7	15.9	15.4	15.3	15.1	14.9	12.7	12.7
60	19.1	17.3	10.8	16.0	13.1	15.9	16.7	15.9	15.4	15.4	15	14.7	12.6	12.6
80	19.1	17.2	10.8	16.0	13.1	16.1	16.7	16.1	15.4	15.4	15.2	14.7	12.5	12.5
100	19.1	17.2	10.8	16.0	12.9	16.0	16.7	16.2	15.4	15.1	15.2	14.7	12.5	12.5
120	19.1	17.2	10.7	16.0	12.9	15.8	16.7	16.1	15.4	15.1	15.2	14.7	12.5	12.5
Average	19.3	17.6	10.9	16.0	12.9	16.0	16.7	16.0	15.4	15.2	15.1	14.8	12.8	12.8
Min	19.1	17.2	10.7	15.7	13.1	16.1	16.8	16.2	15.4	15.4	15.2	14.9	13.7	13.7
Max	20.2	19.2	11.3	16.0	12.6	15.8	16.7	15.8	15.4	15.1	15.0	14.7	12.5	12.5

Statistics	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v	TP1 $CH_{4\%}$ v / v
Time	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0
40	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Average	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Statistics	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**TP1 Pressure mb**	**TP1 Pressure mb**
Time	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
40	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
60	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
80	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
100	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
120	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
AVERAGE	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
Min	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
Max	#N/A	1013	1002	1012	1022	1009	1009	1027	992	1016	1002	1023	987	983
Statistics	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**
Time	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	0.1	4.7	2.3	2.1	1.7	0.4	4.0	2	1.8	0.1	0.1	0.3	0.6	2.6
40	0.1	4.7	2.2	1.9	1.7	3.2	3.8	1.9	1.6	0.1	0.1	0.3	0.6	2.4
60	0.1	4.7	2.2	1.9	1.7	3.3	3.8	1.8	1.2	0.1	0.1	0.3	0.6	2.7
80	0.1	4.7	2.2	1.9	1.7	3.3	3.6	1.8	0.9	0.1	0.1	0.3	0.6	2.8
100	0.1	4.8	2.2	1.9	1.7	3.3	3.4	1.6	0.7	0.1	0.1	0.3	0.6	2.7
120	0.1	4.8	2.2	1.9	1.7	3.3	3.3	1.4	0.6	0.1	0.1	0.3	0.6	2.6
Average	0.1	4.7	2.2	1.9	1.7	2.8	3.7	1.8	1.1	0.1	0.1	0.3	0.6	2.6
Min	0.1	4.8	2.3	2.1	1.7	3.3	4	2	0.6	0.1	0.1	0.3	0.6	2.4
Max	0.1	4.7	2.2	1.9	1.7	0.4	3.3	1.4	1.8	0.1	0.1	0.3	0.6	2.8
Statistics	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**
Time	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	20.6	13.5	18.4	18.7	20.1	2.3	15.2	18.7	19.2	20.8	21.7	19.3	20.3	18.9
40	20.5	13.1	18.2	19	19.5	17.3	14.8	18.8	18.5	20.9	21.8	19.7	20.3	18.9
60	20.5	13.2	18.4	20.1	19.3	17.1	14.7	18.7	18.8	20.9	21.8	19.6	20.3	18.7
80	20.8	13.1	18.3	19.1	19.2	17.2	14.9	19.1	19.3	20.9	21.9	19.7	20.3	18.6
100	20.7	13.1	18.4	19.1	19.2	17.1	15.1	19.1	19.5	20.9	21.9	19.5	20.3	18.7
120	20.8	13.1	18.5	19.1	19.2	16.9	15.3	19.4	19.9	20.9	21.9	19.5	20.3	18.7
Average	20.7	13.2	18.4	19.2	19.4	14.7	15.0	19.0	19.2	20.9	21.8	19.6	20.3	18.8
Min	20.8	13.5	18.5	20.1	20.1	17.3	15.3	19.4	18.5	20.8	21.7	19.3	20.3	18.6
Max	20.5	13.1	18.2	18.7	19.2	2.3	14.7	18.7	19.9	20.9	21.9	19.7	20.3	18.9

Medite Europe Ltd. On-site Landfill
Historical Landfill Gas Monitoring Results 2010 - 2023
TP2

Statistics	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP1 CH_4 % v / v	TP1 CH_4 % v / v	TP1 CH_4 % v / v	TP1 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v	TP2 CH_4 % v / v
Time	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	0.0	0.0	0.0	0.1	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.1	0.0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
40	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0	0	0	0	0	0	0	0	0	0
60	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0	0	0	0	0	0	0	0	0	0
80	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0	0	0	0	0	0	0
100	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0	0	0	0	0	0	0	0	0	0
120	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0	0	0	0	0	0	0	0	0	0
Average	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Statistics	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP1 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**	**TP2 CO_2 v / v**
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20/02/2012**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	1.7	2.1	3.1	10.1	15.6	16.1	12.3	12.5	7.1	11.1	11.4	11.6	11.3	0	0.1	0.1	2.3	3.5	8.6	3.8	7.7	6.5	3.5	0.1	0.1	0.2	1.1	0.1
40	8.8	9.7	4.2	13.4	15.8	16.0	12.2	12.5	6.9	11.1	11.3	11.5	11.4	0	0.1	6.9	2.3	3.6	9.1	3.6	7.8	4.4	3.5	0.1	0.1	0.2	3.5	2.9
60	9.3	10.6	4.1	13.4	15.8	15.9	12.2	12.4	6.9	11.3	11.4	11.5	11.6	0	0.1	6.9	2.3	3.6	9.1	3.6	7.8	2.3	3.5	0.1	0.1	0.2	3.6	6
80	9.3	10.5	4.0	13.4	15.7	16.0	12.2	12.4	7	11.5	11.3	11.5	11.5	0.1	0.1	6.9	2.3	3.6	9.1	3.7	7.8	1.4	3.4	0.1	0.1	0.2	3.7	8.9
100	9.2	10.6	4.1	13.5	15.8	16.1	12.2	12.3	7	11.5	11.5	11.4	11.5	0.1	0.1	6.9	2.3	3.6	9.1	3.6	7.8	1.1	3.4	0.1	0.1	0.2	3.7	10.5
120	9.2	9.2	4.2	13.4	15.7	16.1	12.2	12.2	7.1	11.6	11.5	11.4	11.4	0.2	0.1	6.9	2.3	3.6	9.1	3.7	7.8	1.1	3.4	0.1	0.1	0.2	3.7	11.7
Average	7.9	8.8	4.0	12.9	15.7	16.0	12.2	12.4	7.0	11.4	11.4	11.5	11.5	0.1	0.1	5.8	2.3	3.58	9.02	3.67	7.78	2.80	3.45	0.10	0.10	0.20	3.22	6.68
Max	9.3	10.6	4.2	13.5	15.8	16.1	12.3	12.5	7.1	11.6	11.5	11.6	11.6	0.2	0.1	6.9	2.3	3.6	9.1	3.8	7.8	6.5	3.5	0.1	0.1	0.2	3.7	11.7
Statistics	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP1 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**	**TP2 O_2 v / v**
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20-Feb-12**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	18.9	17.9	15.5	11.7	6.0	6.3	12.3	11.6	12.4	8.8	9	12.4	12.4	20.5	20.8	19.7	18.8	19.5	16.3	16.8	17.1	16.3	18.8	20.7	21.6	19.6	19.7	20.5
40	12.5	10.9	15.1	9.9	5.9	6.1	12.2	11.6	12.3	7.9	8.9	12.2	12.5	20.5	20.8	12.6	17.7	19.5	13.6	16.6	14.4	16.1	18.4	20.9	21.9	20.4	17.1	18.5
60	10.5	9.4	14.8	9.8	6.0	6.0	12.2	11.5	12.4	7.8	8.8	11.9	12.4	20.5	20.6	12.5	17.8	19.4	13.3	15.5	14.3	17.8	18.2	20.9	22.0	20.1	16.3	15.7
80	10.0	9.0	14.8	9.7	6.1	5.9	12.2	11.5	12.3	7.7	8.3	11.8	12.4	20.5	20.8	12.4	17.8	19.5	13.2	15.4	14.2	18.7	18.5	20.9	22.0	20.5	16.0	9.3
100	9.9	9.0	14.9	9.7	6.0	5.9	12.2	11.4	12.2	7.6	8.2	11.8	12.3	20.4	21.0	12.5	17.7	19.5	13.2	15.4	14.2	19.6	18.4	21.0	22.0	20.1	16.0	10.4
120	9.9	9.9	14.8	9.7	5.9	5.9	12.1	11.4	12.2	7.6	8.0	11.8	12.3	20.3	21.0	12.4	17.7	19.5	13.2	15.3	14.2	19.8	18.4	21.0	22.0	20.4	16.0	8.9
Average	12.0	11.0	15.0	10.1	6.0	6.0	12.2	11.5	12.3	7.9	8.5	12.0	12.4	20.5	20.8	13.7	17.9	19.5	13.8	15.8	14.7	18.1	18.5	20.9	21.9	20.2	16.9	13.9
Max	18.9	17.9	15.5	11.7	6.1	6.3	12.3	11.6	12.4	8.8	9.0	12.4	12.5	20.5	21.0	19.7	18.8	19.5	16.3	16.8	17.1	19.8	18.8	21.0	22.0	20.5	19.7	20.5
Statistics	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**Pressure mb**	**TP2 Pressure mb**	**TP2 Pressure mb**
Time	**11-Mar-10**	**19-Nov-10**	**20-Apr-11**	**20-Feb-12**	**17-Jul-12**	**18-Dec-12**	**21-May-13**	**05-Dec-13**	**21-Oct-14**	**22-Dec-14**	**08-May-15**	**23-Dec-15**	**15-Jun-16**	**26-Oct-16**	**03-Mar-17**	**01-Nov-17**	**23-Nov-18**	**14-Dec-18**	**13-Feb-19**	**13-Sep-19**	**12-Feb-20**	**01-Dec-20**	**21-May-21**	**09-Nov-21**	**10-Mar-22**	**30-Aug-22**	**24-Mar-23**	**03-Nov-23**
20	1030	1005	1001	1022	1016	1013	1012	1024	1010	1011	1005	1011	993	1020	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
40	1030	1005	1001	1022	1016	1013	1012	1024	1010	1011	1005	1011	992	1020	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
60	1030	1005	1001	1022	1016	1012	1012	1023	1010	1011	1004	1011	993	1020	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
80	1030	1005	1001	1022	1016	1012	1011	1023	1010	1010	1005	1011	992	1020	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
100	1030	1005	1001	1022	1016	1012	1011	1023	1010	1010	1005	1011	993	1020	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
120	1030	1005	1001	1022	1016	1012	1011	1023	1010	1010	1005	1011	992	1020	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
Average	1030.0	1005.0	1001.0	1022.0	1016.0	1012.3	1011.5	1023.3	1010.0	1010.5	1004.8	1011.0	992.5	1020.0	#N/A	1013	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983
Max																	1002	1012	1022	1008	1009	1027	994	1016	1002	1022	987	983

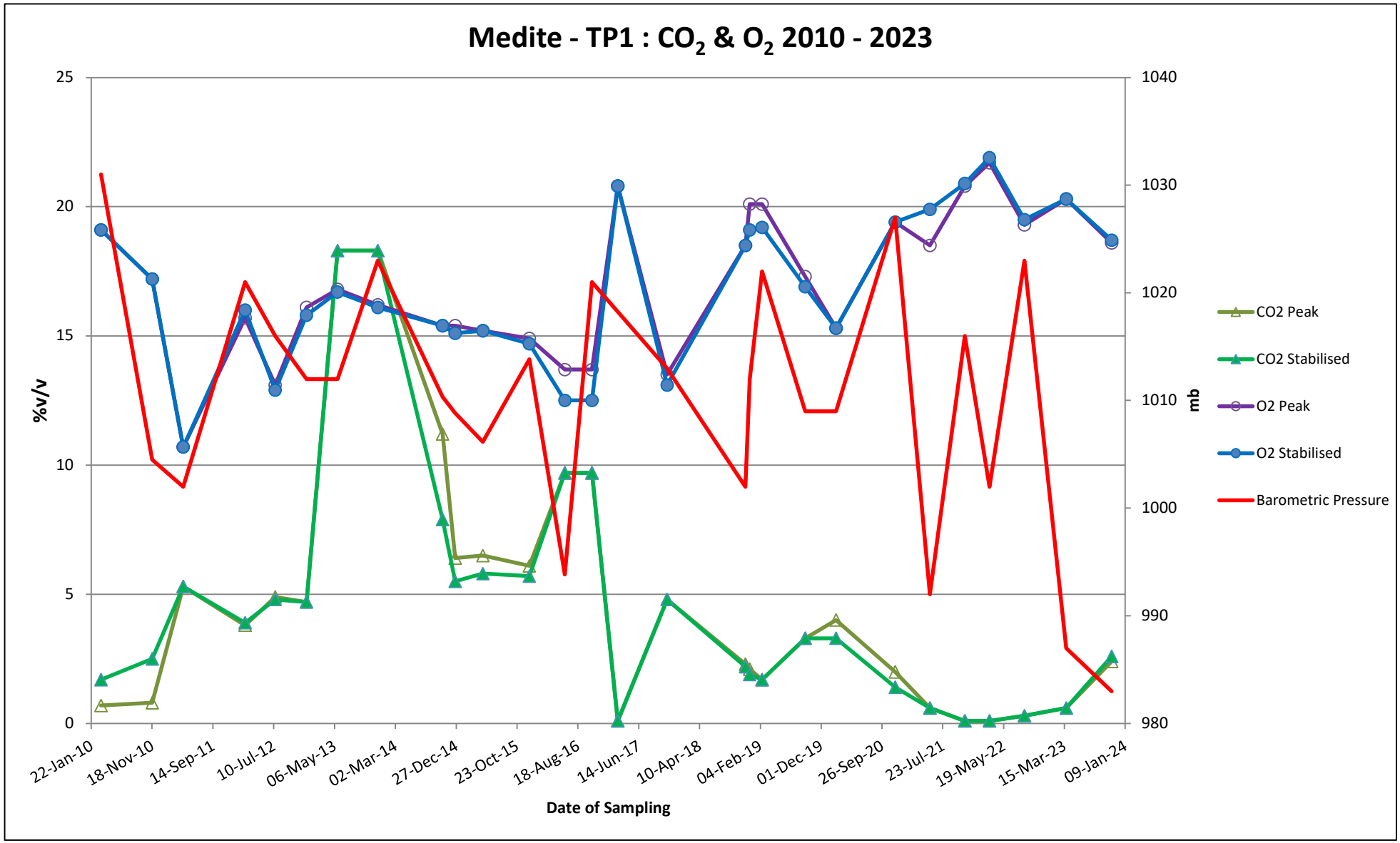
Medite Europe Ltd. On-site Landfill
Historical Landfill Gas Monitoring Results 2010 - 2023

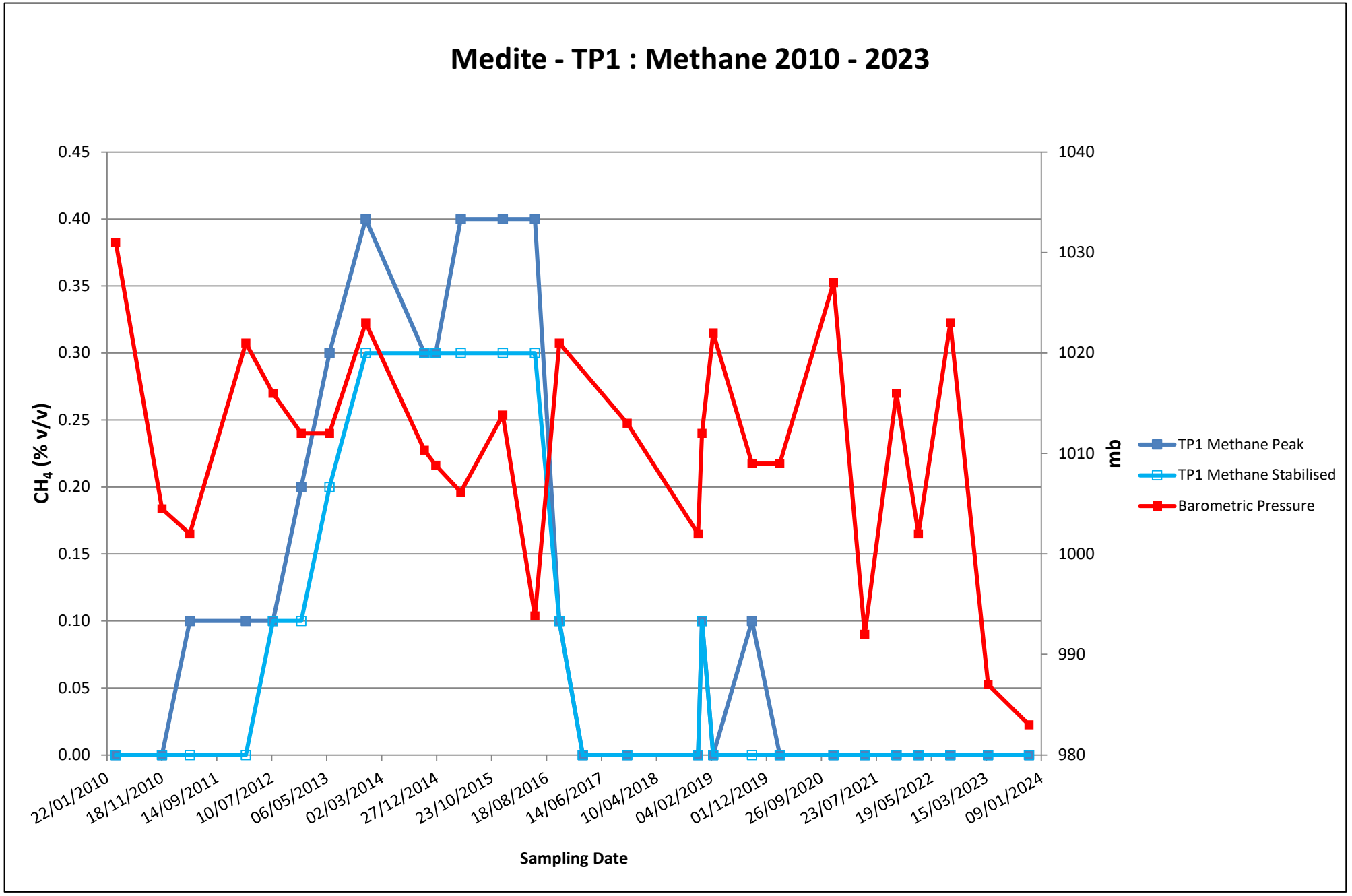
TP3

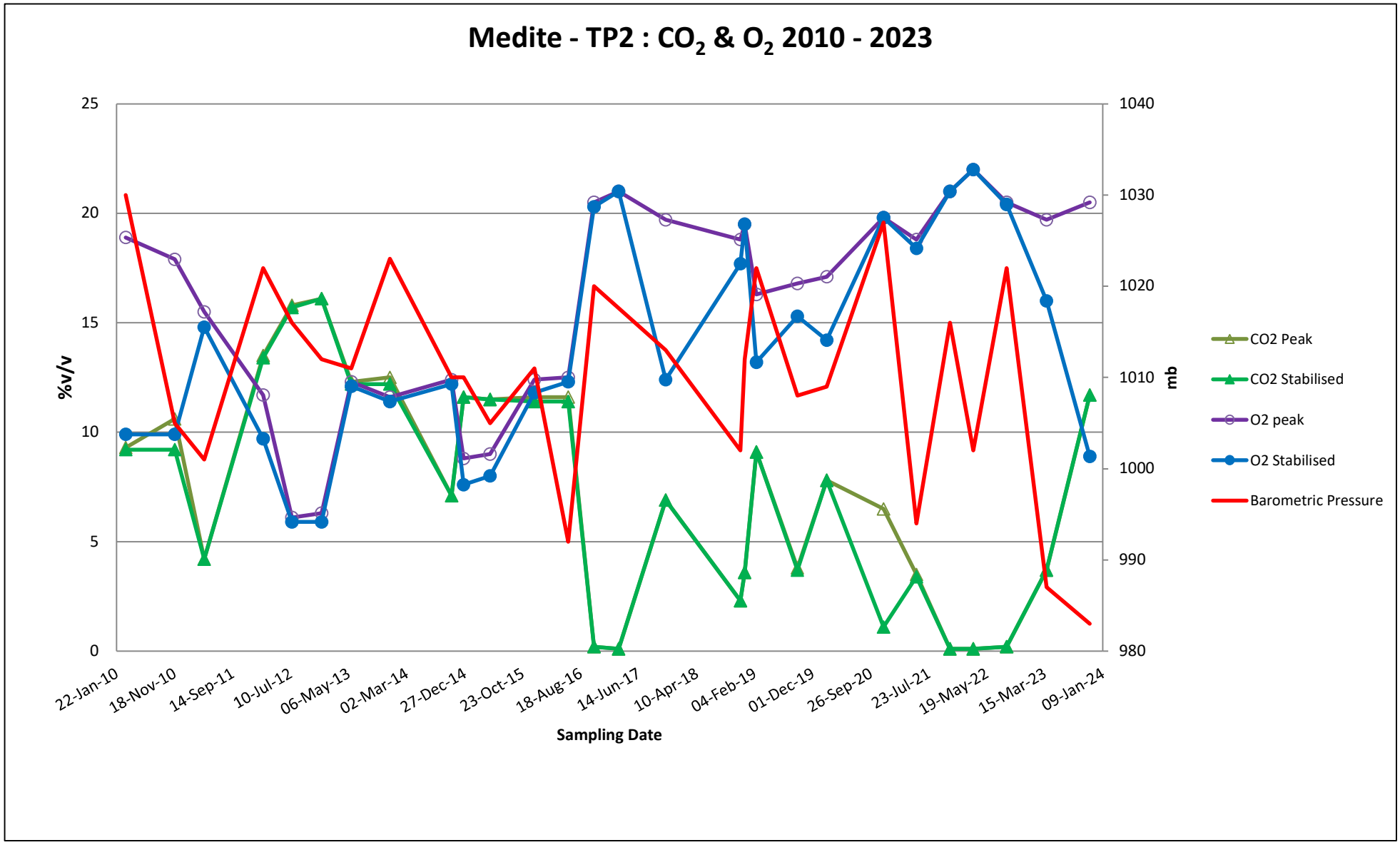
Statistics	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP1 CH_4 %v/v	TP1 CH_4 %v/v	TP1 CH_4 %v/v	TP1 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v	TP3 CH_4 %v/v
Time	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.4	0.4	0.3	0.4	0.1	0.0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
40	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.4	0.3	0.1	0.0	0.0	0	0.1	0	0	0	0	0	0	0.1	0	0	0
60	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	0	0.1	0	0	0	0	0	0	0	0	0	0
80	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.2	0.3	0.4	0.3	0.3	0.1	0.0	0.0	0	0.1	0	0	0	0	0	0	0	0	0	0
100	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.3	0.3	0.4	0.3	0.4	0.1	0.0	0.0	0	0.1	0	0	0	0	0	0	0.2	0	0	0
120	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	0	0.1	0	0	0	0	0	0	0.4	0	0	0
Average	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Max	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP1 CO_2 v/v	TP1 CO_2 v/v	TP1 CO_2 v/v	TP1 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v	TP3 CO_2 v/v
	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	2.4	2.7	8.8	6.4	7.4	8.1	9.3	9.9	7.6	10.9	11.5	11.8	10.9	2.3	0.1	7.6	8.4	13	6.8	0	4.8	6.5	2.9	0.1	0.1	0.2	1.2	1.3
40	11.4	8.4	9.6	6.4	7.6	8	9.4	9.9	7.5	11	11.5	11.7	11.0	2.3	0.1	7.6	8.5	13.3	9.7	7.4	4.9	4.4	2.2	0.1	0.1	0.2	1.2	1.6
60	11.2	9.6	9.5	6.4	7.7	7.9	9.3	9.8	7.5	11.4	11.3	11.7	11.1	2.3	0.1	7.6	8.6	13.3	9.9	7.7	4.8	2.3	1.9	0.1	0.1	0.2	1.2	2.3
80	10.1	9.5	9.5	6.3	7.8	7.8	9.3	9.8	7.4	11.4	11.1	11.6	11.1	2.3	0.1	7.6	8.6	13.3	10	7.7	4.7	1.4	1.6	0.1	0.1	0.2	1.2	4
100	9.3	9.6	9.5	6.2	7.8	7.9	9.3	9.8	7.7	11.4	11.5	11.6	11.0	2.3	0.1	7.6	8.6	13.3	10	7.7	4.5	1.1	1	0.1	0.1	0.2	1.2	5.9
120	9.3	9.6	9.5	6.1	8	7.9	9.2	9.7	7.5	11.4	11.5	11.6	11.0	2.3	0.1	7.6	8.7	13.3	10	7.7	4.3	1.1	0.7	0.1	0.1	0.2	1.2	6.7
Average	9.0	8.2	9.4	6.3	7.7	7.9	9.3	9.8	7.5	11.3	11.4	11.7	11.0	2.3	0.1	7.6	8.6	13.3	9.4	6.4	4.7	2.8	1.7	0.1	0.1	0.2	1.2	3.6
Max	11.4	9.6	9.6	6.4	8.0	8.1	9.4	9.9	7.7	11.4	11.5	11.8	11.1	2.3	0.1	7.6	8.7	13.3	10.0	7.7	4.9	6.5	2.9	0.1	0.1	0.2	1.2	6.7
	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP1 O_2 v/v	TP1 O_2 v/v	TP1 O_2 v/v	TP1 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v	TP3 O_2 v/v
	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	18.9	17.9	14.0	14.9	15.8	15.9	11.9	12.4	11.8	9	9.3	10.4	9.9	18.8	20.7	14.2	19.4	15	13.7	20.3	17.2	19.3	19.4	20.9	21.6	19.6	20.2	19.7
40	12.5	13.6	13.6	15.9	15.8	16	11.9	12.4	11.7	9.2	9.0	10.4	10.0	18.6	20.7	13.7	12.8	11.4	15.5	15.2	17.1	18.5	19.2	21.0	21.9	20.4	20.2	19.6
60	10.5	12.6	13.6	16.0	15.7	16.1	11.9	12.3	11.7	9.2	9.0	10.2	10.0	18.5	20.8	13.7	12.7	10.9	17.2	14	17	19	19.3	21.0	22.0	20.1	20.2	19.2
80	10.0	12.4	13.5	16.1	15.8	16.1	11.9	12.3	11.8	9.2	9.1	10.1	10.1	18.5	20.7	13.7	12.7	10.9	12.9	13.9	16.9	19.3	19.7	21.0	22.0	20.5	20.2	18.1
100	9.9	12.4	13.5	16.2	15.7	16	11.9	12.3	11.7	9.2	9.1	10.1	10.1	18.5	20.9	13.7	12.5	10.8	12.9	13.8	17	19.8	20	21.0	22.0	20.1	20.1	16.6
120	9.8	12.3	13.5	16.3	15.7	15.9	11.9	12.3	11.7	9.2	9.3	10.1	9.9	18.5	20.8	13.8	12.6	10.8	12.9	13.9	17.1	20.1	20.1	21.0	22.0	20.4	20.1	15.8
Average	11.9	13.5	13.6	15.9	15.8	16.0	11.9	12.3	11.7	9.2	9.1	10.2	10.0	18.6	20.8	13.8	13.8	11.6	14.2	15.2	17.1	19.3	19.6	21.0	21.9	20.2	20.16	18.2
Max	18.9	17.9	14.0	16.3	15.8	16.1	11.9	12.4	11.8	9.2	9.3	10.4	10.1	18.8	20.9	14.2	19.4	15.0	17.2	20.3	17.2	20.1	20.1	21.0	22.0	20.5	20.2	19.7
	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	TP3 Pressure mb	TP3 Pressure mb
	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	1031	1005	1001	1022	1016	1013	1012	1023	1012	1011	1006	1010	992	1019	#N/A	1013	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
40	1031	1005	1001	1022	1016	1013	1012	1024	1013	1011	1005	1010	993	1019	#N/A	1013	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
60	1031	1005	1001	1022	1016	1013	1012	1024	1012	1011	1006	1010	993	1019	#N/A	1013	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
80	1031	1005	1002	1022	1016	1013	1012	1024	1012	1010	1006	1010	992	1019	#N/A	1013	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
100	1031	1005	1002	1022	1016	1013	1012	1024	1012	1011	1006	1010	993	1019	#N/A	1013	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
120	1031	1005	1002	1022	1016	1013	1012	1024	1012	1011	1006	1010	992	1019	#N/A	1013	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
Average																	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983
Max																	1002	1012	1023	1008	1008	1027	994	1016	1003	1022	986	983

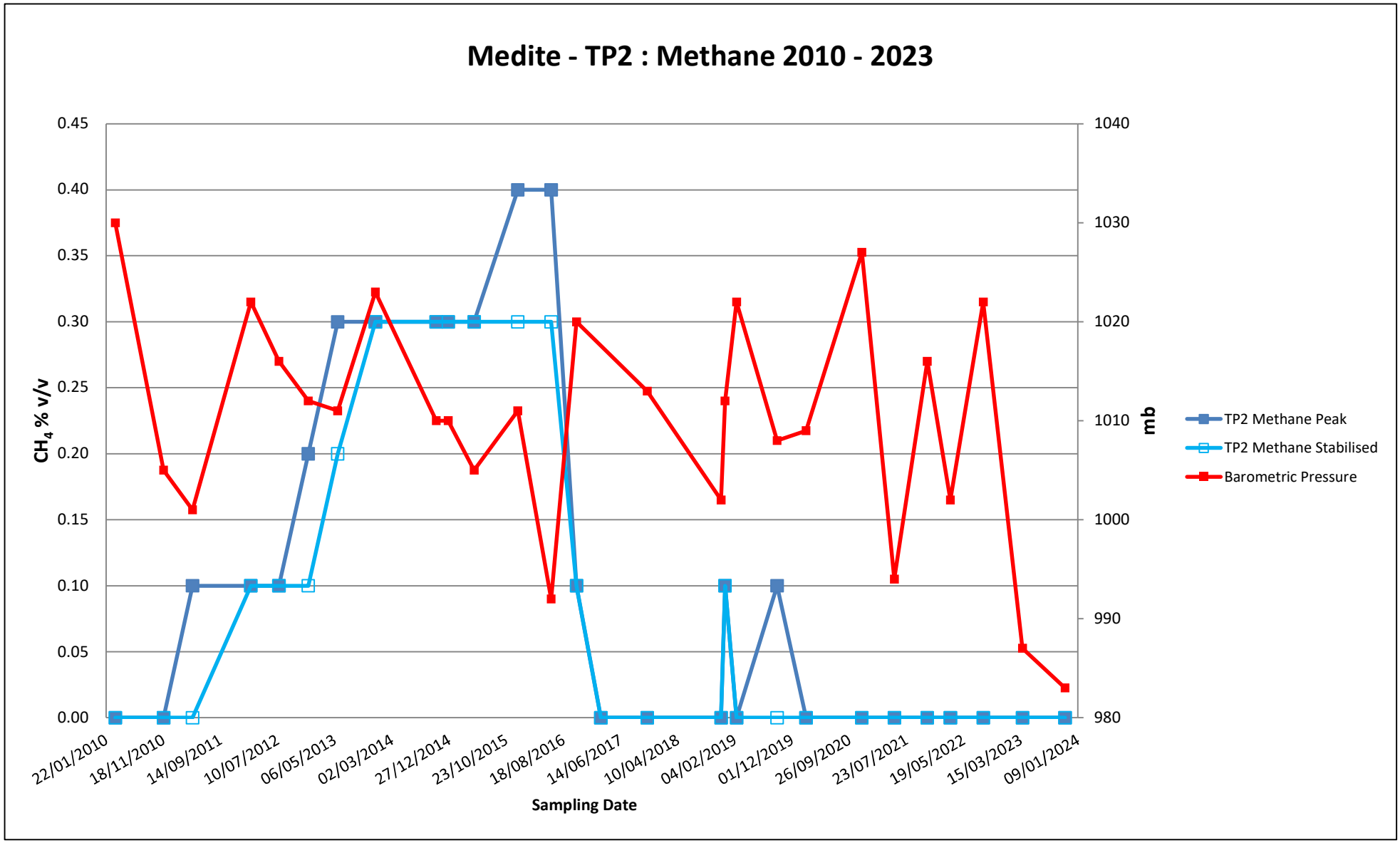
Medite Europe Ltd. On-site Landfill
Historical Landfill Gas Monitoring Results 2010 - 2023
TP4

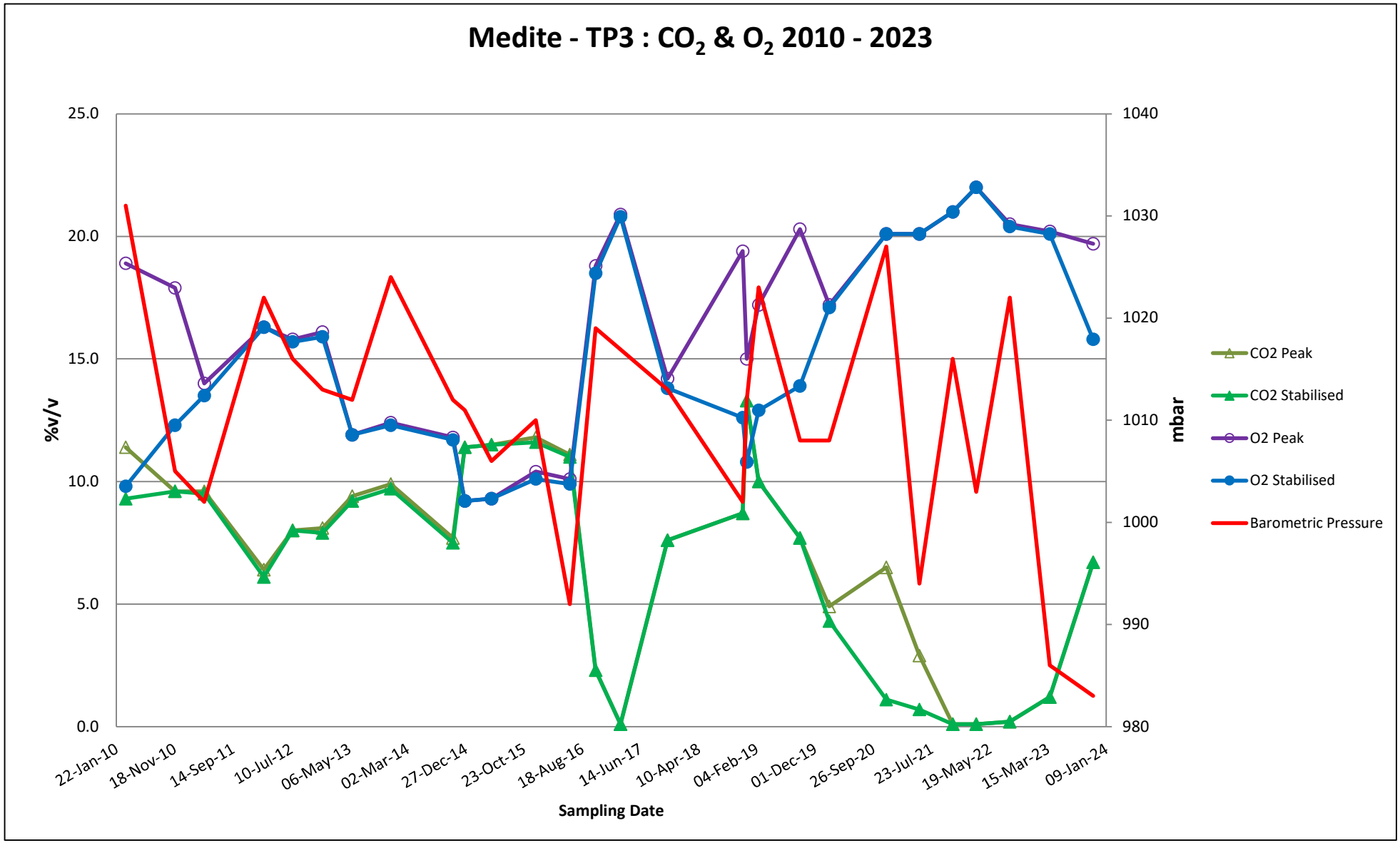
Statistics	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP1 CH_4 % v / v	TP1 CH_4 % v / v	TP1 CH_4 % v / v	TP1 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v	TP4 CH_4 % v / v
Time	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0	0.0	0	0.0	0.1	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.3	0.2	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.1	0.0	0	0.0	0.1	0	0.1	0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.5	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Average	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Max	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.3	0.3	0.4	0.4	0.5	0.1	0.0	0.0	0.0	0.1	0	0.1	0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Statistics	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP1 CO_2 v / v	TP1 CO_2 v / v	TP1 CO_2 v / v	TP1 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v	TP4 CO_2 v / v
Time	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	0.8	0.8	11.0	2.7	5.3	4.8	1.7	5	4.5	4.8	5.3	5.5	5.5	0	0.1	6	0	2.4	1.7	0.4	1.4	2.7	1.3	0.1	0.1	0.3	5.5	0.7
40	2.0	2.3	10.9	4.9	5.2	4.6	1.7	4.9	4.2	4.8	5.4	5.5	5.5	0	0.1	6	0	2.5	1.8	3.2	1.4	2.6	0.8	0.1	0.1	0.3	6.7	1.1
60	2.0	2.4	11.0	4.9	5.1	4.6	1.7	4.8	3.8	4.8	5.5	5.4	5.4	0	0.1	6	1.7	2.5	1.8	3.3	1.3	2.5	0.6	0.1	0.1	0.3	6.9	0.9
80	2.0	2.5	11.1	4.9	5.2	4.8	1.7	4.8	3.7	4.9	5.5	5.4	5.4	0	0.1	6.1	1.7	2.5	1.8	3.3	1.2	2.3	0.5	0.1	0.1	0.3	7.2	1
100	2.0	2.5	11.1	4.9	5.2	4.7	1.7	4.8	3.7	4.9	5.3	5.3	5.3	0	0.1	6.1	1.7	2.5	1.8	3.3	1.2	2.1	0.5	0.1	0.1	0.3	7.3	1.1
120	2.0	2.6	11.1	5.0	5.2	4.8	1.7	4.8	3.7	4.9	5.3	5.3	5.3	0	0.1	6	1.6	2.5	1.8	3.3	1.1	1.6	0.4	0.1	0.1	0.3	7.4	1.1
Average	1.8	2.2	11.0	4.6	5.2	4.7	1.7	4.9	3.9	4.9	5.4	5.4	5.4	0.0	0.1	6.0	1.1	2.5	1.8	2.8	1.3	2.3	0.7	0.1	0.1	0.3	6.8	1.0
Max	2.0	2.6	11.1	5.0	5.3	4.8	1.7	5.0	4.5	4.9	5.5	5.5	5.5	0.0	0.1	6.1	1.7	2.5	1.8	3.3	1.4	2.7	1.3	0.1	0.1	0.3	7.4	1.1
Statistics	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP1 O_2 v / v	TP1 O_2 v / v	TP1 O_2 v / v	TP1 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v	TP4 O_2 v / v
Time	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	20.1	19.2	11.1	15.6	15.1	15.5	16.8	16.5	15.7	10.9	11.2	10.9	11.0	20.7	20.6	9.1	20.9	19.3	19.2	2.3	19.6	19.1	19.8	20.8	21.3	19.6	13.1	20.4
40	18.2	17.6	10.7	14.3	14.8	15.4	16.7	16.6	15.6	10.8	11.1	10.9	11.1	20.6	20.8	9.1	21.1	18.4	18.9	17.3	19.2	19	19.9	20.8	21.6	19.7	13.9	20.7
60	17.8	17.3	10.7	14.1	14.8	15.4	16.7	16.5	15.6	10.8	11.2	10.9	11.1	20.6	20.9	9.2	19.8	18.3	18.8	17.1	19.1	19.2	19.9	20.8	21.6	19.7	13.5	20.6
80	17.6	17.2	10.6	14.1	14.8	15.1	16.7	16.5	15.6	10.8	11.2	10.8	11.0	20.5	20.7	9.1	19	18.3	18.8	17.2	19.3	19.2	20.0	20.8	21.7	19.8	13.1	20.5
100	17.6	17.2	10.6	14.0	14.7	15.3	16.7	16.5	15.6	10.7	11.3	10.9	11.1	20.5	20.7	9.1	19.1	18.3	18.8	17	19.3	19.3	20.3	20.8	21.7	19.8	13	20.5
120	17.6	17.2	10.5	14.0	14.7	15.3	16.7	16.4	15.6	10.6	11.3	10.9	11.0	20.5	20.7	9	19.1	18.3	18.8	16.9	19.4	19.6	20.3	20.9	21.7	19.8	12.9	20.4
Average	18.2	17.6	10.7	14.4	14.8	15.3	16.7	16.5	15.6	10.8	11.2	10.9	11.1	20.6	20.7	9.1	19.8	18.5	18.9	14.6	19.3	19.2	20.0	20.8	21.6	19.7	13.3	20.5
Max	20.1	19.2	11.1	15.6	15.1	15.5	16.8	16.6	15.7	10.9	11.3	10.9	11.1	20.7	20.9	9.2	21.1	19.3	19.2	17.3	19.6	19.6	20.3	20.9	21.7	19.8	13.9	20.7
Statistics	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	Pressure mb	TP4 Pressure mb	TP4 Pressure mb
Time	11-Mar-10	19-Nov-10	20-Apr-11	20-Feb-12	17-Jul-12	18-Dec-12	21-May-13	05-Dec-13	21-Oct-14	22-Dec-14	08-May-15	23-Dec-15	15-Jun-16	26-Oct-16	03-Mar-17	01-Nov-17	23-Nov-18	14-Dec-18	13-Feb-19	13-Sep-19	12-Feb-20	01-Dec-20	21-May-21	09-Nov-21	10-Mar-22	30-Aug-22	24-Mar-23	03-Nov-23
20	1033	1005	1001	1022	1017	1013	1012	1024	1011	1010	1007	1010	993	1440	#N/A	1013	1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
40	1033	1005	1001	1022	1017	1013	1012	1024	1011	1010	1006	1009	993	1440	#N/A	1013	1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
60	1033	1005	1001	1022	1017	1013	1012	1024	1011	1010	1006	1009	992	1440	#N/A	1013	1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
80	1033	1005	1001	1022	1017	1012	1012	1024	1012	1010	1006	1009	993	1440	#N/A	1013	1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
100	1033	1005	1001	1022	1016	1012	1012	1024	1011	1010	1007	1009	993	1440	#N/A	1013	1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
120	1033	1005	1001	1022	1017	1012	1012	1024	1011	1010	1006	1009	993	1440	#N/A	1013	1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
Average	1033	1005	1001														1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983
Max	1033	1005	1001														1002	1012	1022	1009	1008	1028	993	1017	1003	1025	985	983

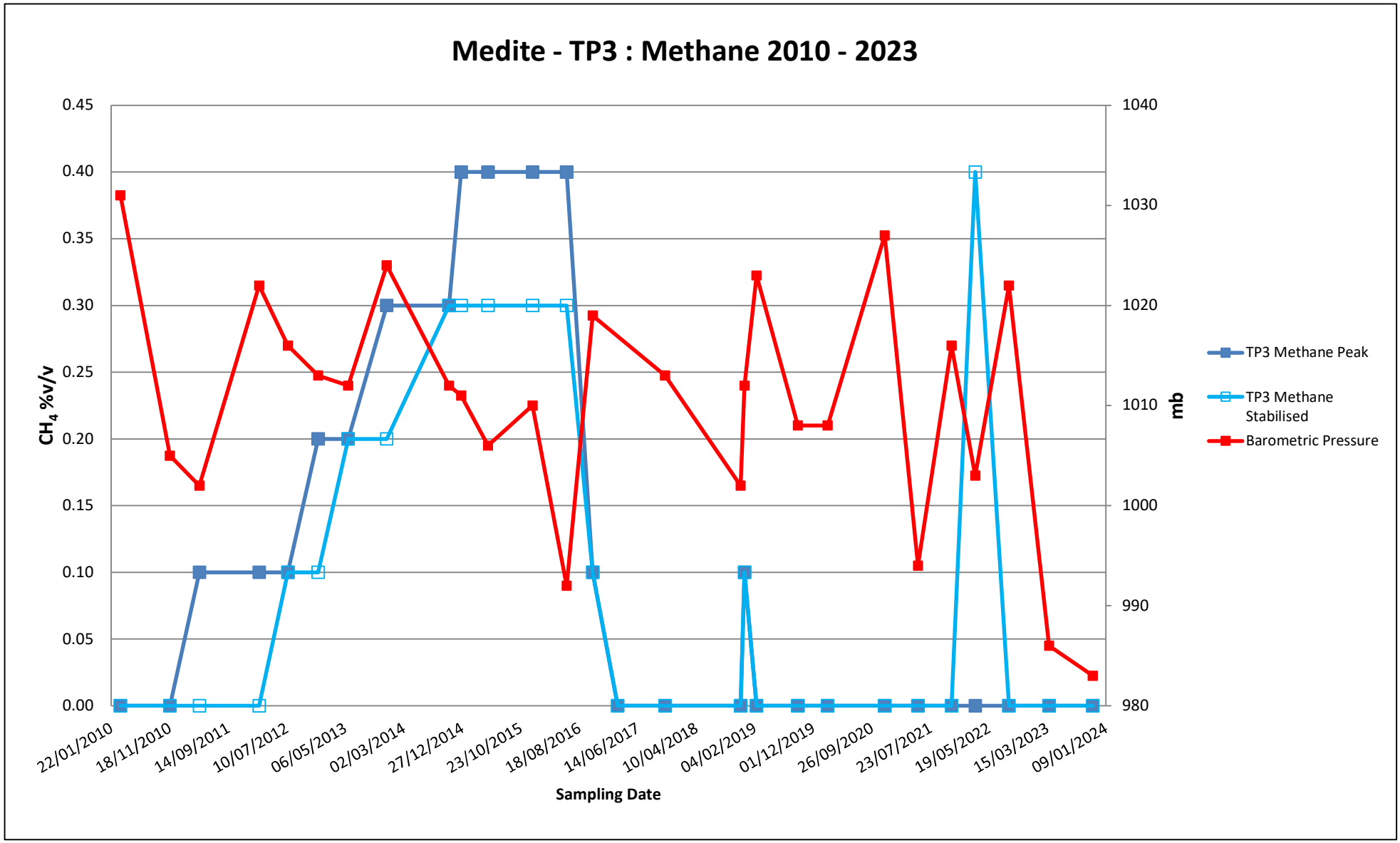

Medite - TP1 : CO2 & O2 2010 - 2023
%v/v
mb
Date of Sampling
CO2 Peak
CO2 Stabilised
O2 Peak
O2 Stabilised
Barometric Pressure
25
20
15
10
5
0
1040
1030
1020
1010
1000
990
980
22-Jan-10
18-Nov-10
14-Sep-11
10-Jul-12
06-May-13
02-Mar-14
27-Dec-14
23-Oct-15
18-Aug-16
14-Jun-17
10-Apr-18
04-Feb-19
01-Dec-19
26-Sep-20
23-Jul-21
19-May-22
15-Mar-23
09-Jan-24

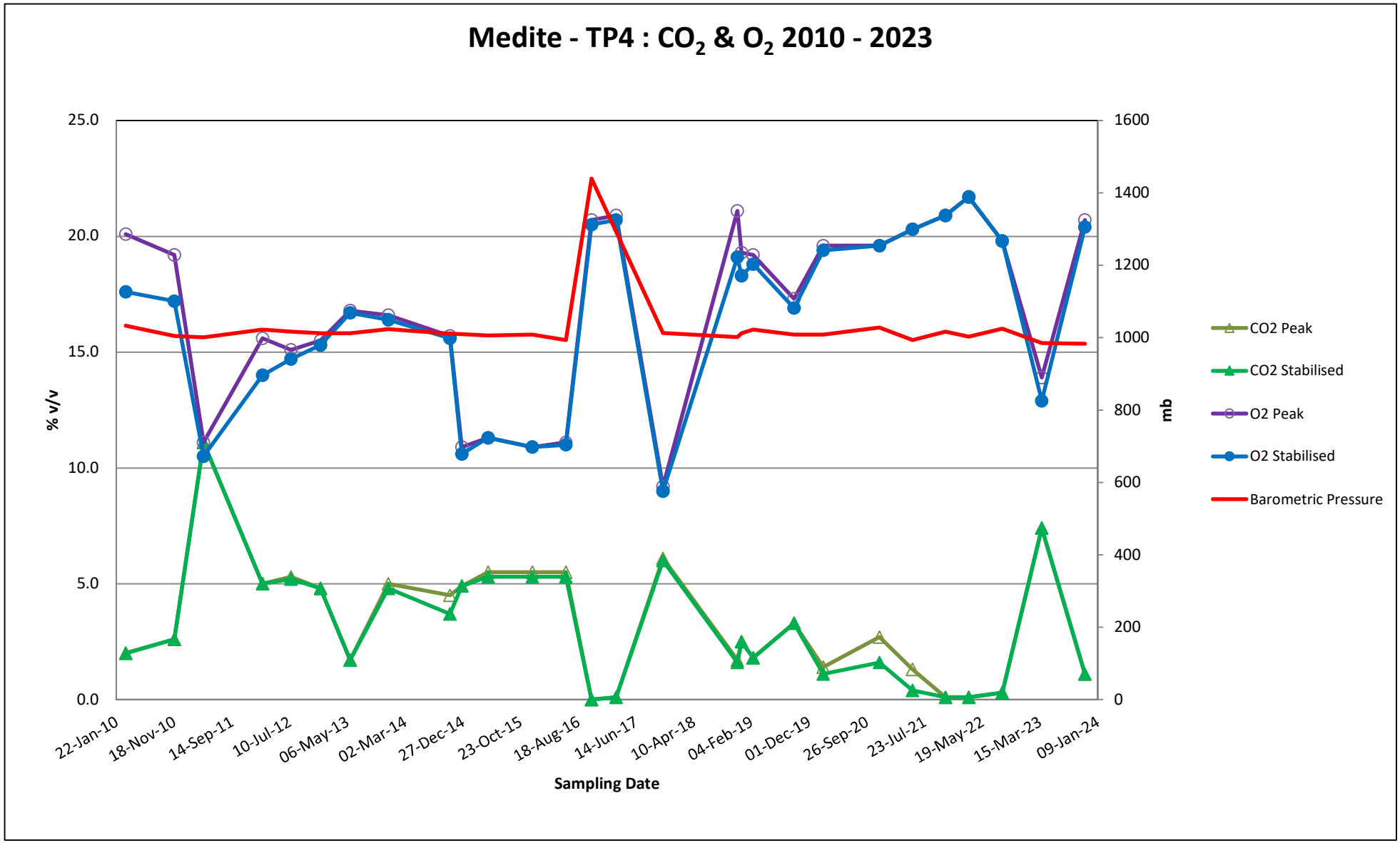

Medite - TP1 : Methane 2010 - 2023
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
CH4 (% v/v)
1040
1030
1020
1010
1000
990
980
mb
22/01/2010
18/11/2010
14/09/2011
10/07/2012
06/05/2013
02/03/2014
27/12/2014
23/10/2015
18/08/2016
14/06/2017
10/04/2018
04/02/2019
01/12/2019
26/09/2020
23/07/2021
19/05/2022
15/03/2023
09/01/2024
Sampling Date
TP1 Methane Peak
TP1 Methane Stabilised
Barometric Pressure

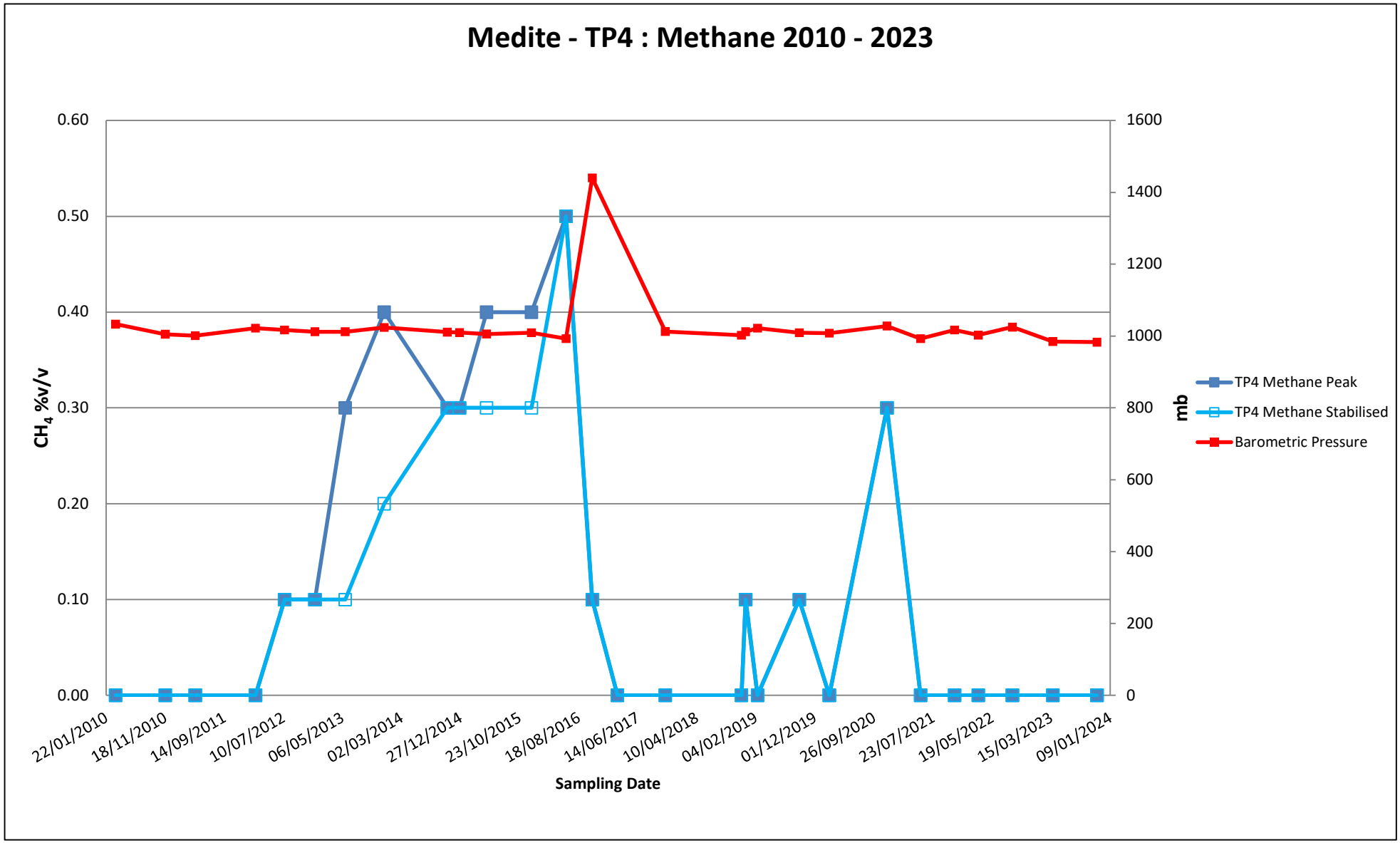

Medite - TP2 : CO2 & O2 2010 - 2023
%v/v
mb
Sampling Date
CO2 Peak
CO2 Stabilised
O2 peak
O2 Stabilised
Barometric Pressure
0
5
10
15
20
25
980
990
1000
1010
1020
1030
1040
22-Jan-10
18-Nov-10
14-Sep-11
10-Jul-12
06-May-13
02-Mar-14
27-Dec-14
23-Oct-15
18-Aug-16
14-Jun-17
10-Apr-18
04-Feb-19
01-Dec-19
26-Sep-20
23-Jul-21
19-May-22
15-Mar-23
09-Jan-24


Medite - TP2 : Methane 2010 - 2023
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
CH4 % v/v
1040
1030
1020
1010
1000
990
980
mb
22/01/2010
18/11/2010
14/09/2011
10/07/2012
06/05/2013
02/03/2014
27/12/2014
23/10/2015
18/08/2016
14/06/2017
10/04/2018
04/02/2019
01/12/2019
26/09/2020
23/07/2021
19/05/2022
15/03/2023
09/01/2024
Sampling Date
TP2 Methane Peak
TP2 Methane Stabilised
Barometric Pressure


Medite - TP3 : CO2 & O2 2010 - 2023
25.0
20.0
15.0
10.0
5.0
0.0
%v/v
1040
1030
1020
1010
1000
990
980
mbar
22-Jan-10
18-Nov-10
14-Sep-11
10-Jul-12
06-May-13
02-Mar-14
27-Dec-14
23-Oct-15
18-Aug-16
14-Jun-17
10-Apr-18
04-Feb-19
01-Dec-19
26-Sep-20
23-Jul-21
19-May-22
15-Mar-23
09-Jan-24
Sampling Date
CO2 Peak
CO2 Stabilised
O2 Peak
O2 Stabilised
Barometric Pressure


Medite - TP3 : Methane 2010 - 2023
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
CH4 %v/v
1040
1030
1020
1010
1000
990
980
mb
22/01/2010
18/11/2010
14/09/2011
10/07/2012
06/05/2013
02/03/2014
27/12/2014
23/10/2015
18/08/2016
14/06/2017
10/04/2018
04/02/2019
01/12/2019
26/09/2020
23/07/2021
19/05/2022
15/03/2023
09/01/2024
Sampling Date
TP3 Methane Peak
TP3 Methane Stabilised
Barometric Pressure


Medite - TP4 : CO2 & O2 2010 - 2023
25.0
20.0
15.0
10.0
5.0
0.0
% v/v
1600
1400
1200
1000
800
600
400
200
0
mb
22-Jan-10
18-Nov-10
14-Sep-11
10-Jul-12
06-May-13
02-Mar-14
27-Dec-14
23-Oct-15
18-Aug-16
14-Jun-17
10-Apr-18
04-Feb-19
01-Dec-19
26-Sep-20
23-Jul-21
19-May-22
15-Mar-23
09-Jan-24
Sampling Date
CO2 Peak
CO2 Stabilised
O2 Peak
O2 Stabilised
Barometric Pressure


Medite - TP4 : Methane 2010 - 2023
0.60
0.50
0.40
0.30
0.20
0.10
0.00
CH4 %v/v
1600
1400
1200
1000
800
600
400
200
0
mb
22/01/2010
18/11/2010
14/09/2011
10/07/2012
06/05/2013
02/03/2014
27/12/2014
23/10/2015
18/08/2016
14/06/2017
10/04/2018
04/02/2019
01/12/2019
26/09/2020
23/07/2021
19/05/2022
15/03/2023
09/01/2024
Sampling Date
TP4 Methane Peak
TP4 Methane Stabilised
Barometric Pressure

Appendix H

Groundwater Sampling Protocol

Title: Groundwater Monitoring	Document type: Procedure
Doc. No.: ENSOP0374	Revision: Rev 2

TITLE: Groundwater Monitoring Procedure

Document Approval by:

	Job Title
Document Creator	**Environmental Manager**
Approver	**Environmental Manager**
Approver	**Technical Manager**

1 PROCESS OWNER

The process owner for this document is the Environmental Manager.

2 PURPOSE

The purpose of this document is to detail the procedure to be followed by Medite personnel or contractors employed by Medite for the sampling of its groundwater boreholes. The objective of this SOP is to provide general reference information on sampling of Medite groundwater boreholes.

3 OBJECTIVES

The objectives of this SOP are:

- To provide general reference information on sampling of Medite groundwater boreholes;
- To ensure that there is confidence in groundwater results i.e. samples are representative of groundwater targeted by the monitoring boreholes
- To mitigate against cross-contamination between boreholes and potential introduction of contamination from personnel, equipment, fuel, surface water etc.

4 SCOPE

The document only details the procedure for sampling the groundwater boreholes. The analysis of these samples is carried out by independent accredited laboratories.

5 DEFINITIONS

SOP: Standard Operating Procedure

6 RESPONSIBILITY

The primary responsibility for implementation of this procedure lays with the trained Medite person– in this case the Environmental Manager.

7 SAFETY AND ENVIRONMENTAL CONCERNS

- PPE
- Site H & S Guidelines

8 METHOD SUMMARY

Prior to sampling each monitoring borehole, the borehole must be purged; this is done with an inertial pump connected to a length of tubing in each individual borehole. A minimum of three borehole volumes is purged from each borehole to remove standing water in the standpipe and to ensure that the sample taken is representative of groundwater at that location. The pump is rinsed through between each borehole. Purging and sampling occurs in a progressive manner from the least contaminated to most contaminated borehole.

9 REFERENCE INFORMATION

Appendix A – Location Map of Groundwater Monitoring Points

Appendix B – Borehole Logs

Appendix C – Field Data Sheet

Appendix D – List of Parameters

10 EQUIPMENT / APPARATUS

Prior to each sampling round, the sampling personnel will gather the equipment, containers and forms required for the work. Before use, the equipment will be operational, cleaned and calibrated (where appropriate) and will consist of the following:

- Water level meter (dipmeter);
- Sample containers (as per laboratory requirements);
- Cooler box and frozen ice packs;
- Laboratory supplied Chain of Custody (CoC) forms;
- Pencil/pens and permanent marker;
- 1 x clean water container (~ 300 litre capacity);
- 1 x clean water rinse container (~ 300 litre capacity);

- Single use cloths (e.g. J-cloths);
- Inertial pump and reel;
- 5 m discharge hose (to attach to sampling reel);
- Decon 90 cleaning solution;
- Single-use or re-useable tubing (one per borehole);
- Field hydrochemistry probe (pH, Temperature and Electrical Conductivity) with calibration and storage solutions;
- 14 litre bucket;
- Field data sheet (*Appendix C*);
- Powder-free nitrile or vinyl gloves;
- Keys for borehole cap locks;
- Logbook;
- Calculator;
- Watch and stopwatch;
- Generator (filled with fuel);
- Extension leads;
- Frequency control unit;
- 1 x 10 litre container;
- Borehole cap collar;
- Appropriate health and safety gear (PPE);
- Borehole logs / borehole depth information;
- Builders twine;
- Scissors.

11 PROCEDURES

11.1 General Preparation

- Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are needed.
- Prepare scheduling and co-ordinate with staff, clients and regulatory agency, if required.
- Perform a general site survey prior to site entry in accordance with the site specific health and safety plan.
- Identify and mark all sampling locations (per IPPC Licence) (*Appendix A*).
- Obtain necessary sampling and monitoring equipment.
- Pre-clean equipment and ensure that it is in working order.
- Calibrate hydrochemistry as per manufacturers' instructions.
- Borehole depth information (*Appendix B*).

11.2 Order of Purging/Sampling

- Start at the least contaminated borehole, if known, (MW4) and finish at the most contaminated borehole (LF1).
- Sample boreholes in following sequence MW4, MW3, MW2, MW1, LF2, LF1, AGW7, AGW8

11.3 Pump Decontamination

The purpose of decontamination is: (1) to eliminate the transfer of contaminants from one groundwater monitor borehole to another, and (2) to protect the health and safety of personnel who may come in contact with contaminated equipment.

Decontamination procedures described in this section will be performed at the beginning of each day of field work, between each monitoring point, at the end of each day of field work, and whenever the equipment is suspected of having been contaminated.

- Mix 9 litres of Decon 90 with 300 litres of clean water
- Fill a second container with clean rinse water.
- Submerge the pump in the 3% Decon solution.
- Switch pump on and pump c. 50 litres through the pump and tubing and make sure to dispose the discharge through the 5 m discharge pipe downslope/ downgradient of the borehole.
- Submerge the pump in the rinse water. Switch the pump on and pump 50 litres of rinse water through the pump and tubing and discharge the water as above. This step acts as a rinse to remove any residual Decon 90.
- Protect the pump and tubing with plastic or other covering prior to lowering it into the borehole.
- Mix a capful of Decon 90 with water in a 10 litre container. As the pump is lowered into the borehole, clean the pump and tubing using a disposable cloth soaked with the Decon 90 solution.

11.4 Borehole Area Preparation

- Lay plastic sheeting around the borehole to minimize likelihood of contamination of equipment from soil adjacent to the borehole.
- Remove locking borehole cap, note borehole ID No. and date in the field note book.
- Remove borehole casing cap.
- Place collar on borehole cap.

11.5 Water Level Measurement

- Clean the dipmeter with the soaked with the Decon 90 solution.
- Lower water level measuring device into borehole until water level is encountered (beep sound is heard).
- Measure distance from water surface to reference measuring point on borehole casing and record in site notebook, including date and time.

11.6 Borehole Volume Calculations

- Measure total depth of borehole and record in site notebook.
- Calculate the volume of water in the borehole and the volume to be purged using the following calculation:

Volume: $\pi r^2 h$

Where:

π = 3.14

Diameter = 154mm (0.154m)

Radius (r) = 77mm (0.077m)

Height (h) = Depth of borehole – (minus) Depth to water table

Multiply 0.0186m^2 * Water Level (m) (h) = One Borehole Volume (m^3)

Multiply by three to calculate the minimum purge volume i.e. three borehole volumes.

11.7 Borehole Purging

- Assemble pump, hoses and extension cable and connect the pump to the tubing in the borehole.
- Attach power supply (from generator) and purge borehole until specific volume of water has been purged.
- Record time that pump is switched on.
- Calculate the time required to purge a minimum of three well volumes by recording the time required to fill a 10 litre bucket. Repeat three times to get an average value. See example calculation below:

Purge Rate: 14 litres / 43 seconds (average time)

Purge Rate: 1 litre / 3.07 seconds

Depth of water in borehole = 18.5 meters

Volume of water = 18.5 x 0.0186 = 0.344 m^3 or 344 litres

Purge Rate required = 344 x 3.07 = 1056 litres / second

1056 / 60 = 17.6 litre / minute

To purge 3 times the volume = 17.6 x 3 = 53 minutes.

- Take a water sample in a bucket at the end of each purge volume. Put in hydrochemistry probe and allow measurements to equilibrate. If after the third purge volume, the pH or Electrical Conductivity value are not stable, purge a fourth volume or a fifth volume until the readings are stable.
- Record time that pump is switched off.
- Remove pump from tubing and install back into pump reel.

11.8 Borehole Sampling

- Ensure fresh clean pairs of gloves are used before sampling borehole.
- Assemble the appropriate sampling bottles beside the borehole.
- Fill the sampling bottles and leave no air space in the containers. Make sure not to touch the tubing spout against the ground, boots or the inside of the containers being filled.
- Cap the bottles tightly and place pre labelled labels.
- Remove the pump and equipment from the borehole.
- Replace the borehole cap and lock.
- Log all samples in site notebook and check all samples on bottles.
- Place in a cool box (with until the fridge at 4^0C in darkness until ready for transport to external laboratory

Note: If re-useable bailers are employed for the sampling, make sure that they are stored and sealed in dedicated plastic bags (one per bailer) annotated with the assigned borehole.

12 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

- The type of analysis for each sample collected determines the type of bottle, preservative, holding time, and filtering requirements.
- Samples are collected directly from the bailers into appropriate laboratory cleaned containers.
- Samples are appropriately preserved, labelled, logged, and placed in a cooler box to be maintained at 4^0C.
- Samples are transported immediately (within 12 hours) of sample collection to the laboratory.
- The following sampling containers are used for collecting the samples:
    - Plastic HDPE (high density polyethylene) containers (2 No.);
    - Glass vials for semi-volatile and volatile parameters (1 No.).

13 GENERAL MEASURES TO PREVENT CROSS-CONTAMINATION

- Generator refueling must be carried out using disposable glove with an appropriate spill tray. Any spillage must be disposed of appropriately.
- Make sure to sample each borehole using a bailer dedicated to each borehole.

14 IPPC LICENCE SCHEDULE 4(ii) GROUNDWATER MONITORING

PARAMETER	Monitoring Frequency	Analysis Method / Technique
pH	Quarterly	pH electrode / meter
Trace Organics	Annually	US EPA Method 524.4
Major Anions	Biannually	Standard Method
Major Cations	Biannually	Standard Method
Phenol	Biannually	Standard Method
Individual Heavy Metals	Quarterly	AA / ICP
Ammonia	Quarterly	Standard Method
Groundwater Level	Quarterly	Standard Method

Reference Wells: MW4, MW3, MW2, MW1, LF1, LF2, AGW7, AGW8

15 RELATED DOCUMENTS

DOCUMENT NUMBER	DOCUMENT TITLE
	IPPC Licence

16 REVISION HISTORY

DATE	REV	NATURE OF CHANGE	Person who made change
05 January 2014	2	Updated original procedure	Andrew O'Meara

Appendix I

Onsite Unstable Hydrochemical Parameters

IE1232-47 **Unstable Hydrochemical Parameters - Groundwater** IE Consulting

Q1-2023		Medite									
		AGW1	AGW2	AGW3	AGW4	AGW5	AGW6	AGW7	AGW8	AGW9	AGW10
Parameter	Unit	22/02/2023	22/02/2023	22/02/2023	22/02/2023	21/02/2023	21/02/2023	21/02/2023	21/02/2023	21/02/2023	21/02/2023
pH	Ph Units	7.03	7.34	7.31	7.50	7.18	7.18	7.20	7.33	7.35	7.44
Temperature	°C	11.3	11	11.5	11.3	12.3	12.1	15.7	13.7	14.2	12.2
Conductivity	µS/cm	921	1058	670	603	616	584	1038	572	649	641

Q2-2023		Medite									
		AGW1	AGW2	AGW3	AGW4	AGW5	AGW6	AGW7	AGW8	AGW9	AGW10
Parameter	Unit	22/05/2023	22/05/2023	23/05/2023	22/05/2023	22/05/2023	22/05/2023	23/05/2023	22/05/2023	23/05/2023	23/05/2023
pH	Ph Units	6.73	6.79	7.49	7.18	7.20	7.21	7.09	7.18	7.26	7.34
Temperature	°C	12.5	12.9	13.5	12.0	12.8	13.1	16.5	14.3	14.7	13.3
Conductivity	µS/cm	883	1161	685	584	577	525	857	561	720	673

Q3-2023		Medite									
		AGW1	AGW2	AGW3	AGW4	AGW5	AGW6	AGW7	AGW8	AGW9	AGW10
Parameter	Unit	12/09/2023	12/09/2023	12/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
pH	Ph Units	7.22	7.68	7.23	7.46	7.11	7.04	7.19	6.96	7.43	7.51
Temperature	°C	13.1	13.7	12.1	13.1	13.1	13.1	17	15.5	15.4	14.2
Conductivity	µS/cm	834	952	620	570	520	505	866	543	702	558

Q4-2023		Medite									
		AGW1	AGW2	AGW3	AGW4	AGW5	AGW6	AGW7	AGW8	AGW9	AGW10
Parameter	Unit	30/11/2023	30/11/2023	30/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023
pH	Ph Units	7.12	7.03	7.29	7.37	7.34	7.37	7.13	7.35	7.28	7.16
Temperature	°C	11.0	11.1	9.9	11.0	11.7	11.3	15.8	14.3	14.1	13.3
Conductivity	µS/cm	1024	1090	716	632	615	548	1780	538	757	675

A - No data collected, instrument error

Appendix J

Physical Observations

Borehole	Q1-2023	Q2-2023	Q3-2023	Q4-2023
AGW1	Orange, highly turbid, no odour, no sheen	Light Brown, no odour, no sheen, no turbidity	Orange/Brown Colour, no odour, no sheen, highly turbid	Orange, highly turbid, ammonia odour, no sheen
AGW2	Orange, highly turbid, no odour, no sheen	Orange Colour, mild turbidity, no odour, no sheen	Orange Colour, no odour, no sheen, highly turbidity	Orange, highly turbid, no odour, no sheen
AGW3	Milkey grey, highly turbid, no odour, no sheen,	Light Brown, highly turbid, no odour, no sheen	Orange/Brown Colour, no odour, no sheen, highly turbidity	Brown/grey, highly turbid, no odour, no sheen
AGW4	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, slight turbidity
AGW5	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, slight turbidity
AGW6	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity
AGW7	Clear, no odour, no sheen, no turbidity, ss	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity
AGW8	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity
AGW9	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, slight turbidity
AGW10	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, no turbidity	Clear, no odour, no sheen, mild turbidity	Clear, no odour, no sheen, slight turbidity
*ss	Suspended Solids			