

Mt Piper Ash Placement Project Lamberts North

Annual Operations Compliance Report

September 2025 – June 2026

Annual Operations Compliance Report

Project Name	**Mt Piper Ash Placement Project Lamberts North**
Project Application Number	**09_0186**
Description of Project	
Project Address	**Mt Piper Power Station, 350 Boulder Road, Portland 2847**
Proponent	**EnergyAustralia NSW**
Title of Compliance Report	**Annual Operations Compliance Report**
Reporting Period	**1 September 2025 – 30 June 2026**
Version	**1.0**
Date	**29 September 2026**

I declare that I have reviewed the contents of the attached Compliance Report and to the best of my knowledge:

i. the Compliance Report has been prepared in accordance with all relevant conditions of consent;

ii. the Compliance Report has been prepared in accordance with the Compliance Reporting Requirements;

iii. the findings of the Compliance Report are reported truthfully, accurately and completely;

iv. due diligence and professional judgement have been exercised in preparing the Compliance Report; and

v. the Compliance Report is an accurate summary of the compliance status of the development.

Notes:

- Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading information (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000; and
- The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years' imprisonment or 200 penalty units, or both).

Name of authorised reporting officer	**Ben Eastwood**
Title	**Mount Piper Environment & Enterprise Planning and Approval Leader**
Signature	
Qualification	**Bachelor Natural Resources Management (Hon)**
Company	**EnergyAustralia NSW**
Company Address	**Locked Bag 1, Portland NSW**

This report may be cited as:

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1. Summary of compliance

EnergyAustralia NSW (EA NSW) owns and operates the Mt Piper Ash Placement Project (PA 09_0186), comprising two separate ash repositories including the Lamberts North Ash Repository (LNAR) and the Lamberts South Ash Repository (LSAR) in accordance with Project Approval 09_0186, granted by the Minister for Planning on 12 February 2012. The installation of the first stage of the Leachate Barrier Management System was completed in April 2022, with the first Brine Conditioned Ash being placed within the lined area in May 2022. This Annual Operations Compliance Report (AOCR) includes a summary of the environmental performance at the LNAR over the September 2025 to June 2026 reporting period. The LNAR is located approximately 18 kilometres north-west of the city of Lithgow and is situated adjacent to the Mount Piper Ash Repository (MPAR) and 700 metres to the east of the Mt Piper Power Station (MPPS). The MPAR is authorised under a separate consent (DA 80/10060) and is not the subject of this report.

The AOCR has been prepared pursuant to Schedule 2, Condition A10 of the Project Approval 09_0186. The AOCR has been prepared in accordance with the NSW Government's Post-approval requirements for Compliance Reporting dated May 2020.

A summary of the LNAR compliance achieved during the reporting period is provided in Table 1. There was one non-compliance identified during the reporting period. A detailed review of compliance with the Conditions of Approval (CoA) is presented in Appendix A. The AOCR contains a summary of monitoring carried out under the conditions of Project Approval 09_0186 during the reporting period.

Groundwater and surface water monitoring undertaken during the reporting period did not identify any impacts from LNAR activities. Water quality in the vicinity of the Mount Piper Ash Repositories is influenced by an adjacent project and therefore cannot be directly compared with the LNAR Environmental Goals for the purpose of determining compliance. Findings of the Independent Groundwater Investigation indicate that the observed water quality trends are associated with legacy impacts from the adjacent Mt Piper Ash Repository (MPAR), rather than LNAR operations. The integrity of the Leachate Barrier Management System was maintained throughout the reporting period, with no releases identified from LNAR. Further details are provided in Section 7.1 and 7.2.

Table 1 Details on Non-Compliance

Relevant Approval	Condition No.	Condition Summary	Compliance Status	Comment	Section where addressed within AOCR
EPL 13007	L5.3	Only approved waste streams generated at the premises may be disposed of within the ash repository.	Non-compliance (Low)	A low-level non-compliance with the OEMP, Section 5.9 was identified during an internal audit, relating to the disposal of materials not permitted within the filter-bag and pond-sediment disposal area. The material was removed, and corrective actions are being implemented, including the development of an updated waste approval procedure, waste register and enhanced inspection processes to prevent recurrence.	10.2 & 6.6

In assessing compliance with CoAs, the key for compliance assessment provided in Table 2 Compliance Status Key was used, in accordance with the NSW Government's Independent Audit Guideline.

Table 2 Compliance Status Key

Risk Level	Colour Code	Description
Compliant		The proponent has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with.
Non-compliant		The proponent has identified a non-compliance with one or more elements of the requirement.
Not triggered		A requirement has an activation or timing trigger that has not been met at the phase of the development when the compliance assessment is undertaken, therefore an assessment of compliance is not relevant.

An acceptable standard of environmental performance has been achieved during the reporting period as evidenced by the following:

- Groundwater and Surface water results indicate that LNAR has not impacted the ground water and surface water quality following the installation of the engineered leachate barrier management system to isolate and contain brine conditioned ash.
- Noise from the LNAR site was largely inaudible or unable to be measured at sensitive receivers during the reporting period. One location was occasionally audible; however, noise levels remained within the applicable limits and were unable to be isolated due to continuous road traffic noise. Overall, the noise levels were deemed compliant with the development consent limits.
- Analysis of the air quality data indicates emissions from the LNAR have been managed effectively during the reporting period and comply with CoA D3 (d) and E18.
- There were no incidents associated with the LNAR site that caused or threatened material harm to the environment during the reporting period.
- One low-level non-compliance with EPL 13007 Condition L5.3 was identified during the internal audit. Corrective actions have been initiated and are being implemented.

2. Introduction

2.1 Background

The MPPS comprises two coal-fired steam turbine generators, with a generating capacity of 700 and 730 MW, built over two stages in 1992 and 1993. The power station (along with the MPAR) is located approximately 17 km northwest of Lithgow and five kilometers east of Portland (Figure 1) and was originally authorised in 1990 by the Lithgow City Council (DA 80/10060). The approved footprint of the LNAR is adjacent to the MPAR, near the MPPS (Figure 2). EA NSW acquired MPPS and associated land holdings and infrastructure from the state-owned Delta Electricity (DE) in September 2013.

Ash from the power station is placed in the LNAR as required. The volume of ash generated and placed varies on an annual basis, depending on electricity demand and generation.

This AOCR relates specifically to the Lamberts North Ash Placement Project (PA 09_0186), which authorises the operation of two ash placement areas, the Lamberts North Ash Repository (LNAR) and the Lamberts South Ash Repository (LSAR). The LNAR is an active ash placement area, and this report summarises its environmental performance for the reporting period from 1 September 2025 to 30 June 2026. The LSAR is yet to be constructed.

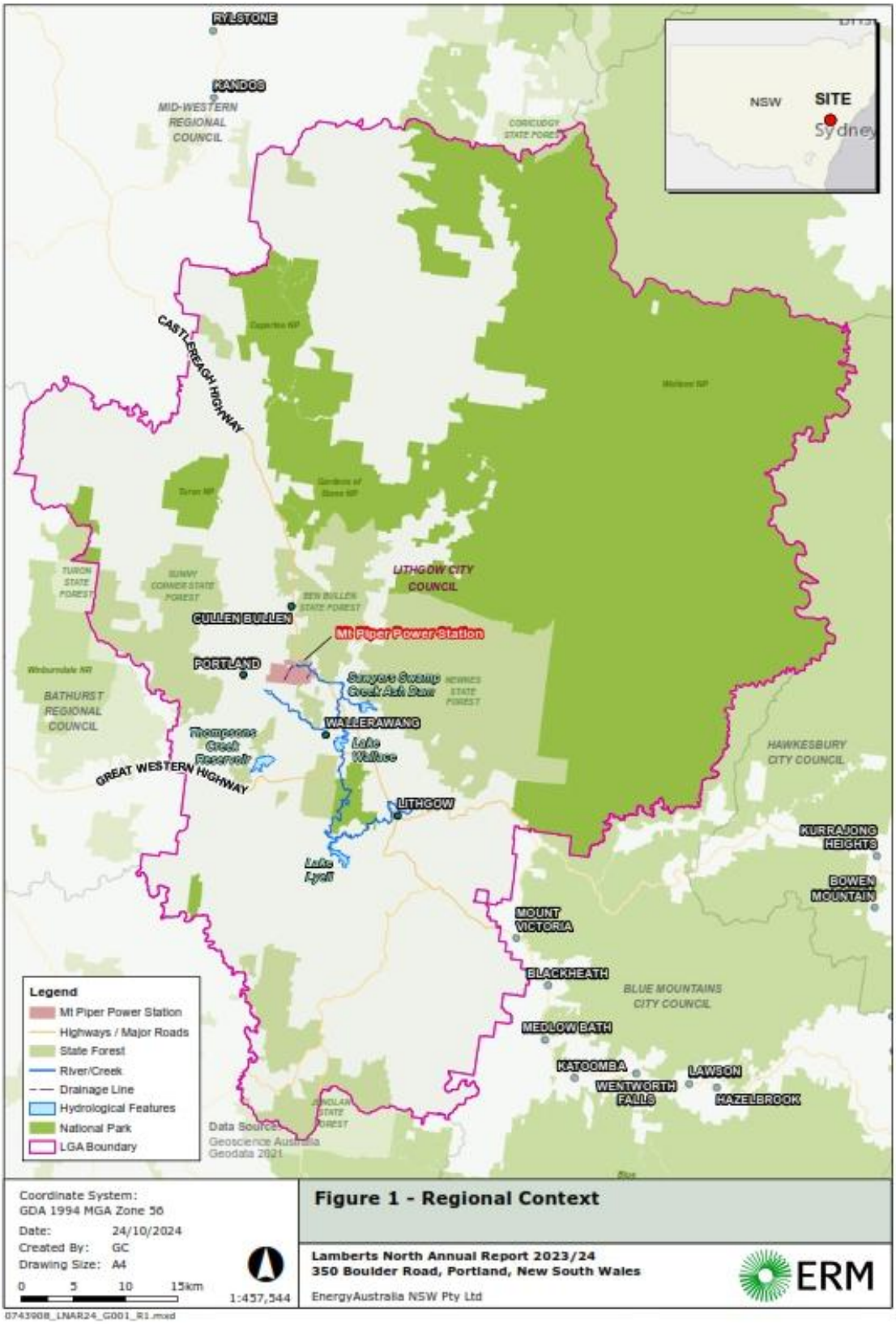


Figure 1 Regional context map

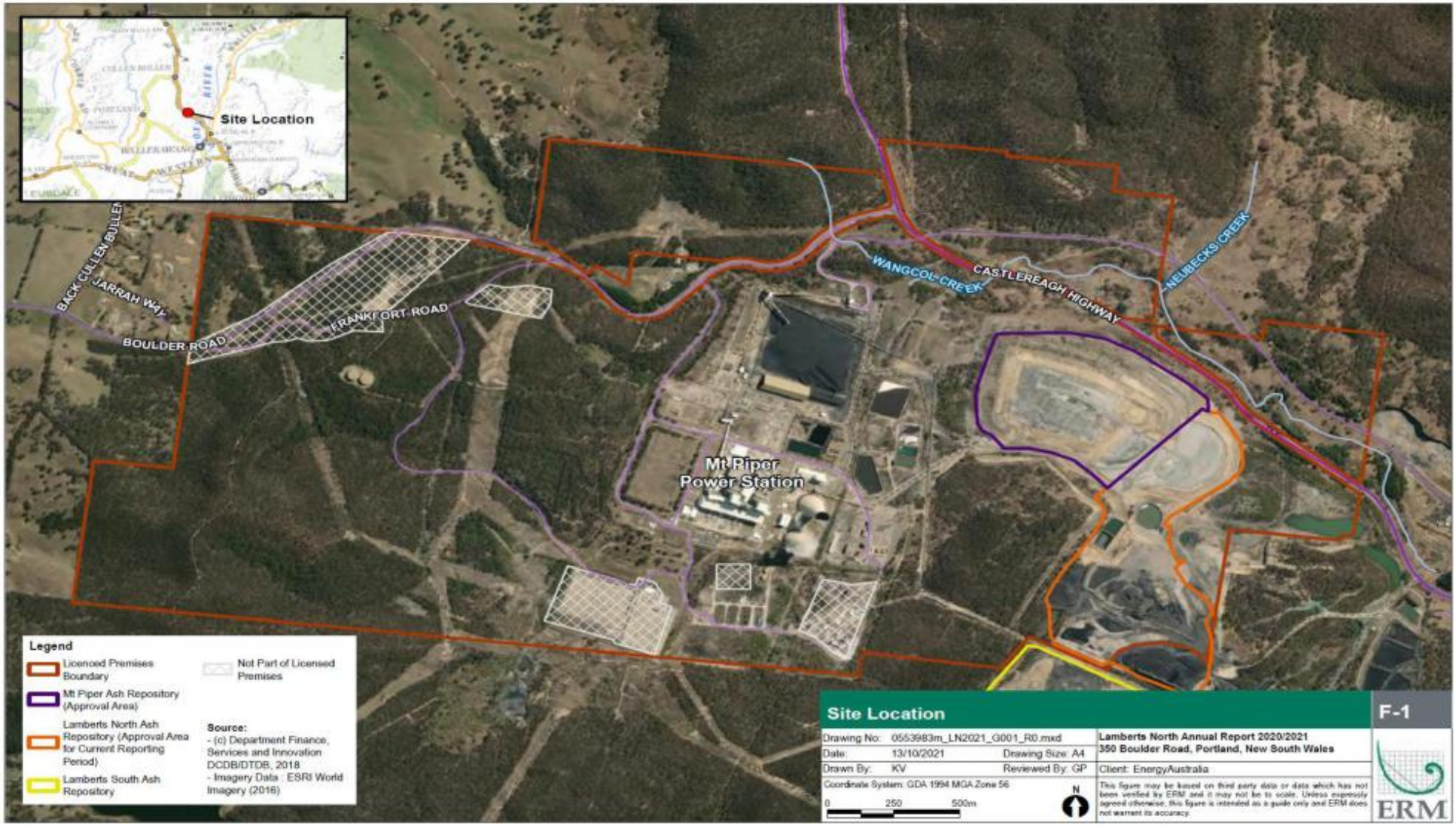


Figure 2 Site Location

2.2 Purpose of the AOCR

The Project Approval (PA 09_0186) contains conditions with which EA NSW needs to comply, as the proponent, at different stages of the Project (Section 3). This report has been prepared in accordance with the NSW Government's, *Post-approval requirements for Compliance Reporting Guideline* (NSW Government, 2020) as required under Condition A10 of the project approval (PA 09_0186).

Section 1 of the Compliance Reporting guidelines (NSW Government, 2020) states that the aim of compliance reporting is to ensure that:

- *The Project's performance in terms of compliance with Conditions of Consent is evaluated on the basis of monitoring data and is communicated at various stages during the carrying out of the development;*
- *The reporting obligations required by the conditions of consent are met; and*
- *Opportunities for improvement are identified and adopted.*

This AOCR has been prepared in order to satisfy CoA A10 of the Project Approval 09_0186 **(DPE, 2021)**. This report covers the operations, environmental and community performance of the LNAR from 1 September 2025 to June 2026 (reporting period).

2.3 Project contacts

The contact details for LNAR are listed in Table 3.

Table 3 Lamberts North Ash Placement Contact

Contact Person	Position	Telephone
Ben Eastwood	Mount Piper Environment & Enterprise Planning & Approval	(02) 63548111

3. Consents, Leases and Licences

This AOCR has been prepared to demonstrate the site's performance and compliance with the relevant conditions of PA 09_0186 and the Statement of Commitments (SoC). Licences and approvals applicable to LNAR are summarised in Table 4:

Table 4 Key Consents, Leases, Licenses and Permits

Approval/Lease/Licence	Issue Date	Expiry Date	Details/Comments
Project Approval 09_0186	16 February 2012 MOD 1: 21 Sep 2021 MOD 2: 5 Nov 2024	-	Granted by the Minister for Department of Planning and the Environment (DPE), under Section 75J of the Environmental Planning and Assessment Act (EP&A Act).
Environment Protection License (EPL) No. 13007	26 March 2025	-	EPL held by EA NSW for MPPS, granted by the Environment Protection Authority (EPA), under Section 55 of the Protection of the Environment Operations Act (POEO Act).
Water Access Licence No. 27428 (WAL)	24 March 2022	-	Granted by Department of Primary Industries-Water (DPE-Water), under the Water Management Act 2000
Water Supply Work and Water Use Approval 10CA117220	24 March 2022	30 June 2031	Granted by DPE-Water, under the Water Management Act 2000

3.1 LNAR Project Approval 09_0186 - Modification 2

In November 2024, Project Approval 09_0186 was modified to authorise amendments to the operational hours of the LNAR (LNAR mod 2) to allow 24-hour operations at LNAR except for landscaping, vegetation and rehabilitation. The Modification supports the construction of the lined areas within the LNAR and meets ash-placement demands. The modification aims to enhance the efficiency and flexibility of the site's operations while maintaining the same ash management activities that are currently authorised under the existing approval. The extended operating hours support continuous and streamlined management without altering the scope of the works currently being undertaken.

3.2 LNAR Compliance Reporting Period

In February 2026, the NSW Department of Planning, Housing and Infrastructure approved a change to the reporting period of the LNAR Annual Operations Compliance Report required under Schedule 2, Condition A10 of the Project Approval 09_0186. The approval allows the AOCR to be submitted on a financial year basis (1 July to 30 June) rather than the previous 1 September to 31 August reporting period. This change ensures consistency with other regulatory reporting requirements for MPPS, reducing duplication and improving the consistency and transparency of environmental performance reporting. Accordingly, this AOCR covers the period from 1

September 2025 to 30 June 2026 and represents a transitional ten-month reporting period. Future AOCRs will cover a full financial year period from 1 July to 30 June.

3.3 Operations Environmental Management Plan

The OEMP provides the framework to manage the environmental aspects associated with the operation of the LNAR. The OEMP (EA NSW, 2025) outlines the requirements associated with the project as stipulated in the relevant provisions of the Project Approval 09_0186 issued by the now DPE, the EPL 13007 issued by the NSW EPA, and the SoC presented in the Submissions Report (SKM, 2011).

The scope of the OEMP covers the operations involving the movement and placement of ash from Mt Piper Power Station (MPPS) to Lamberts North Ash Repository. The environmental performance against the OEMP is provided in Sections 6 to 10 of this report. The OEMP (EA NSW, 2025) has been prepared in consultation with the EPA, WaterNSW, DPE-Water, and DPI-Fisheries and approved by DPHI on 17 April 2025. LNAR stage 2B was completed in September 2025 and commenced receiving ash placement in November 2025.

3.4 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) for the LNAR was developed in consultation with EA NSW's Western Environment Section and approved by the DPE in December 2012. The CEMP meets the requirements of CoA B4, providing the framework to manage the environmental aspects associated with construction works during LNAR operations. The CEMP has been prepared to address the requirements associated with the project as stipulated in the relevant provisions under Project Approval 09_0186 issued by the DPE (CDM Smith, 2012a). No construction activities were undertaken throughout the reporting period.

4. Operations during reporting period

Ash placement operations for MPPS, including LNAR, are undertaken by contracted specialists in the handling and management of ash. Service Stream & Ventia is the current service provider for EA NSW regarding ash and dust management associated with the repository. The LNAR is currently managed under an 'operate and maintain' contract.

A summary of operations at the LNAR within the reporting period can be found in Table 5. As LNAR is now the primary ash placement area for Mt Piper Power Station, future ash placement volumes will fluctuate in response to electricity generation demand, resulting ash production rates and beneficial ash reuse opportunities.

Table 5 Operations Summary

Activity	Previous reporting period	This reporting period	Next reporting period
Fly Ash delivered (T)	538,624	345,331	~454,215
Total ash produced at MPPS (T)	693,857	507,439	~574,215
Total Ash Footprint (ha)	16.7	11.73	13
Area of repository capped (ha)	0	11	11

† Estimate figure based on current year. *Figure based on average of previous years.

4.1 Normal operating hours

The normal hours of operation vary depending on the activity and location. LNAR operation can occur at any time on any day, excluding landscaping and revegetation work. Landscaping and revegetation activities at Lamberts North, as well as all operations at Lamberts South, are permitted between 6 am and 8 pm Monday to Friday, and 6 am to 5 pm on Saturday and Sunday in accordance with CoA E1. Operations undertaken outside these hours are

defined as abnormal or emergency operating conditions and are subject to specific requirements of CoA E2 and Section 2.2.1 of the OEMP.

4.2 Abnormal or emergency operating conditions

Conditions under which operations outside the normal hours of operation can occur have been specified in the Project Approval and can be described as follows:

- Where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or
- Where a breakdown of plant and/or equipment at the repository or the MPPS and the MPPS Extension project with the effect of limiting or preventing ash storage at the power station outside the normal operating hours Condition E1 (Section 3.2 OEMP).
- Where a breakdown of an ash haulage truck(s) or the conveyor belts prevents haulage during the operating hours stipulated under Condition E1 combined with insufficient storage capacity at MPPS to store ash outside of the normal operating hours; or
- In the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs EA NSW (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the MPPS to allow for the ash to be stored.

Under these circumstances, EA NSW is required to notify the EPA, and nearby sensitive receivers prior to any emergency ash haulage or placement operations outside of the '*normal operation*' hours, and the Secretary of the DPE within 7 days after the emergency operations have occurred. All works were undertaken within the CoA specified hours of operation during the current reporting period.

4.3 Activities conducted during the current reporting period

The following activities were undertaken during the reporting period:

- 345,331 tonnes of fly ash were placed in LNAR during the reporting period.

  Capping works in LNAR Stages 1A and 1B commenced during the reporting period and are expected to be completed by the end of 2026.
- Construction of the LNAR Stage 2B Leachate Barrier Management System was completed in September 2025, and the area commenced receiving ash placement in November 2025. Minor earthworks adjacent to the LN Pond 2 were undertaken to improve erosion and sediment control and bank stability.
- Targeted weed control works, including spraying and removal of priority weed species, were undertaken within the LNAR Biodiversity Offset Area.
- Tree thinning and ongoing management of the Biodiversity Offset Area were undertaken, as detailed in Section 6.3
- Land Management works including erosion control, bank stabilisation and minor earthworks were undertaken across the site.



Plate 1 Installation of Capping in LNAR Stage 1 (Photo taken 2026)



Plate 2 Aerial view of Lamberts North Ash Repository showing LNAR Stage 2A and Stage 2B areas, (Photo taken 2026)

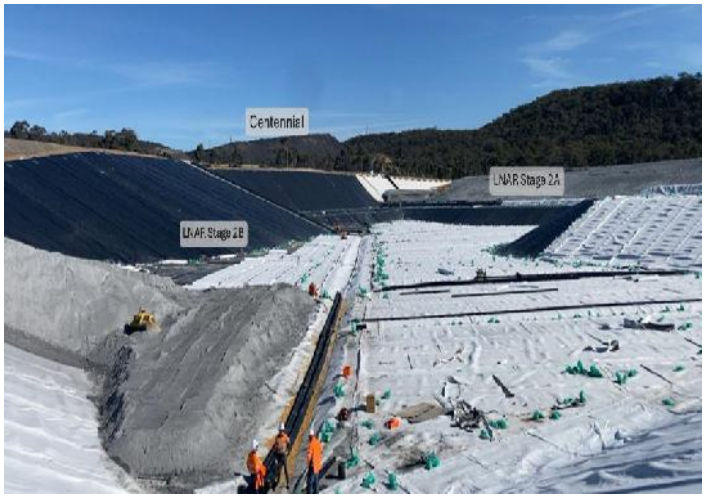


Plate 3 Installation of Geofabric in LNAR Stage 2A and Stage 2B areas (May 2025)

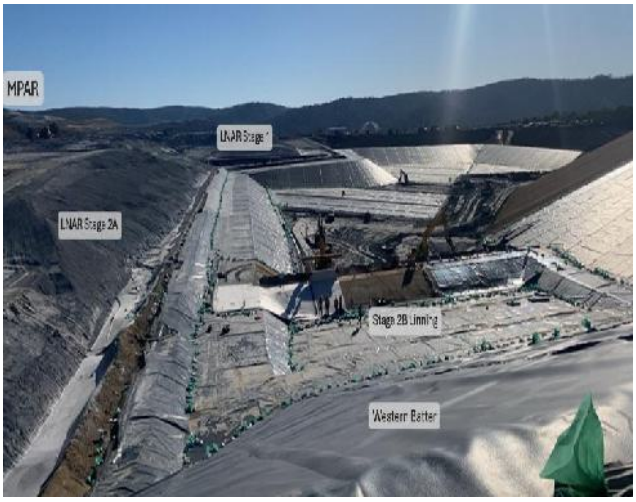


Plate 4 Installation of Liner at LNAR Stage 2B (April 2025)

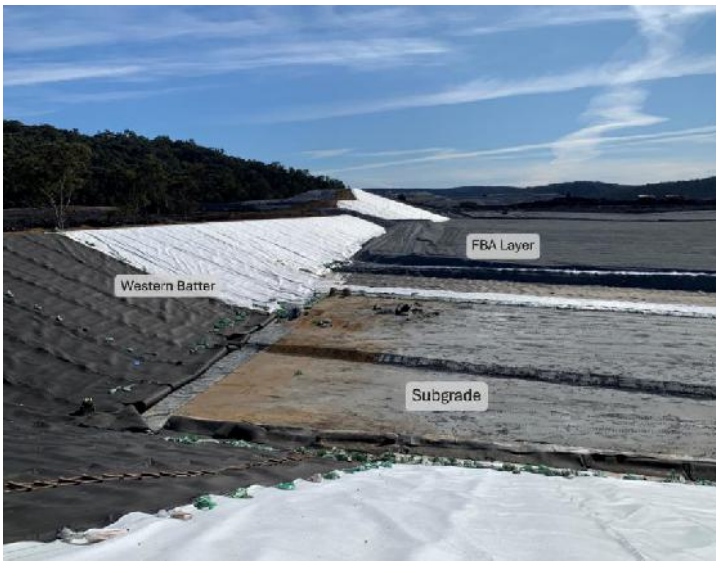


Plate 5 LNAR Stage 2 Set-up (February 2025)



Plate 6 Engineered Leachate Barrier Management System showing the multiple layers in its design (February 2024)

5. Action required from previous AOCR

The only action required from the previous AOCR was to upload the report to the EA website, this has been completed.

Table 6 Actions required from last AOCR

Item	Action required from 2024 AOCR	Requested by	Action taken	Status	Where discussed in AOCR
1	*Upload a copy of the Annual Review to the EnergyAustralia website.*	DPE	Annual Review uploaded onto EA website 11 December 2025	C	5

6. Environmental management and performance

Environmental monitoring of the operations at LNAR is designed to comply with the regulatory requirements specified in Section 3 of the AOCR, and to provide an ongoing analysis of the condition of the environment surrounding the operations. Environmental monitoring is performed at the sites indicated within Figure 3 and the results are used to determine the effectiveness of the environmental controls and management practices at the LNAR.

Detailed procedures outlining the environmental monitoring responsibilities of key stakeholders and the impacts to be mitigated are described in the relevant sub-plans of the OEMP. Details regarding the environmental responsibilities, key stakeholders, and the impacts to be mitigated regarding construction activities are described in the CEMP. A summary of the environmental management measures and associated performance are provided in Table 7.

Table 7 Environmental Performance

Aspect	Approval Criteria / EIS prediction	Status	Trends / Management Implications	Management Actions
Noise	Criteria Day 42 dB(A) Evening 38 dB(A) Night 35 dB(A)	Compliant	The noise associated with LNAR was largely inaudible/unable to be measured. Any measurements obtained were compliant.	No action required
Air Quality	PM10 annual <30 ug/m^3 24 hour <50 ug/m^3 Depositional dust Increase in total 2 g/m^2/month to maximum of 3.5 g/m^2/month	Compliant	During November 2025, an elevated PM_{10} concentration was recorded at the Lamberts North Monitoring Station, the elevated result coincided with increased particulate levels reported across New South Wales, potentially related to regional smoke haze, contributing to the elevated PM_{10} concentration observed at Lamberts North. For the rest of the reporting period, PM10 results were generally reflective of background conditions and remained below the daily standard limit. Minor increases in depositional dust trends were observed during reporting period.	No additional action required

Biodiversity	Implement management actions in accordance with the Biodiversity Conservation Agreement	Compliant	Thinning works and supplementary planting of 10-20 canopy eucalypt trees were undertaken in July 2025 in accordance with the BCT recommendations. The next flora and fauna monitoring period is scheduled for October 2026.	Area managed in accordance with the Biodiversity Conservation Agreement

Performance against contract requirements is provided by Service Stream as a monthly Client Service Report (Service Stream, 2025; 2026) and through external consultant and internal data and reports. Summaries of these reports are provided in the sections below (1– 7) and in Appendix C-F.

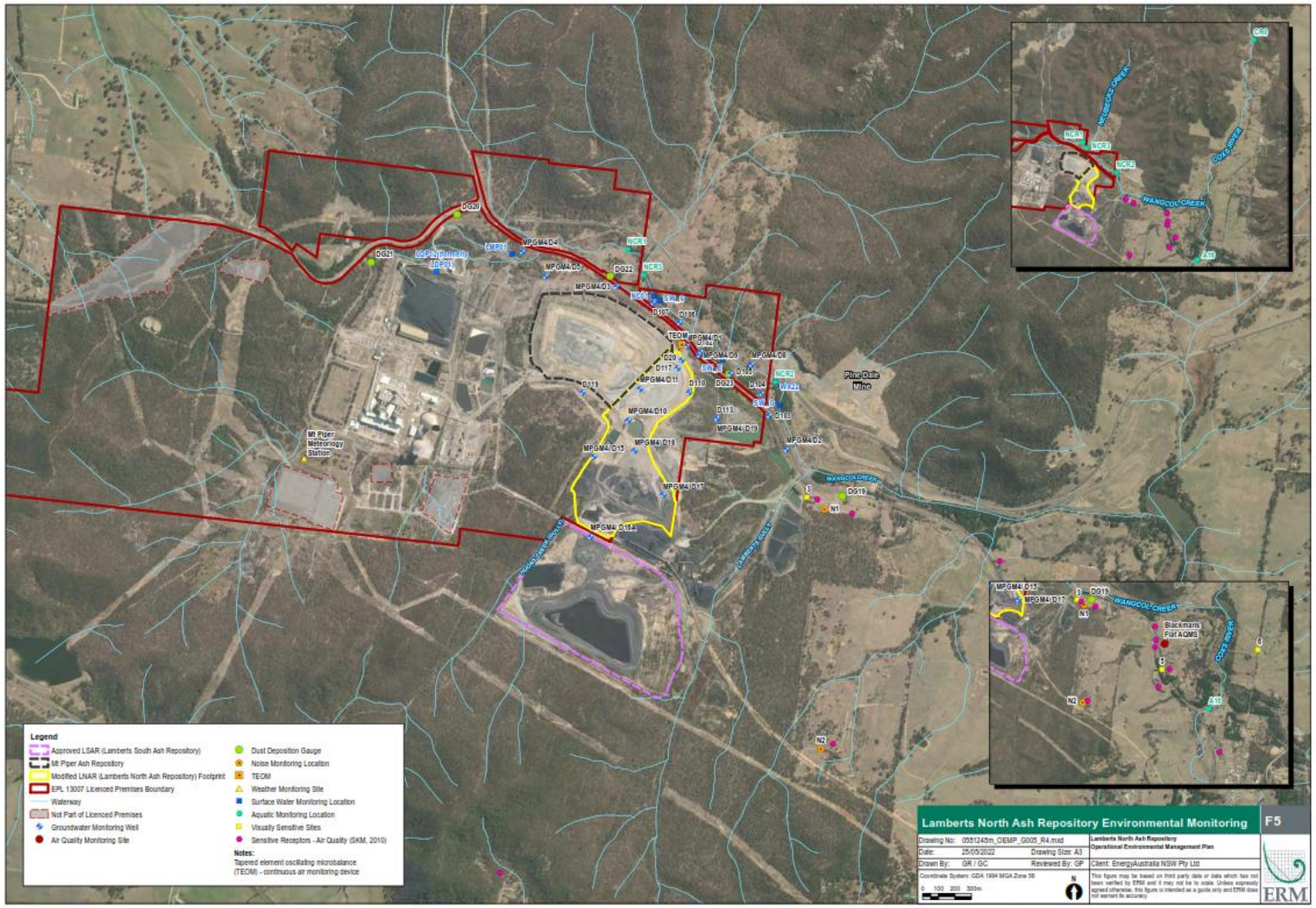


Figure 3 Environmental monitoring locations

6.1 Ash delivery and placement

6.1.1 Environmental Management

Ash generated as a by-product from the operation of MPPS is transported by conveyor from the MPPS to ash silos at the MPAR as part of the existing approved operations. Ash is then transported by heavy haulage vehicles (generally one to two trucks) from the silos to either the MPAR, or the LNAR. Transport to LNAR is facilitated via the southern boundary haulage road in the existing ash repository. On delivery to the LNAR, the water conditioned ash is deposited at the working face where compactors and bulldozers are then used to place the ash in stable landforms with appropriate drainage infrastructure. Ash placement can be broadly described as including the following processes (see also
Figure 4):

- Identifying the current operational location for placement of ash.
- Placing ash at the existing face using trucks and shaping of ash with a bulldozer.
- The ash is treated to achieve an average compaction of 95%, relative to its maximum standard compaction, through controlled combination of water addition and machine compaction with the use of rollers and rubber-tyred vehicles.
- Ash is placed in layers and stepped to produce an overall batter slope of approximately 1(V):4(H), with benches added every 10 m in vertical height change. This process of ash placement produces an average batter length of 40 m.
- The sequence of ash placement will entail initially placing ash across the site starting from the most northerly part, then towards the east and south of LNAR, working to reach a final design height of 980 metres (m) Australian Height Datum (AHD) through abutment with the MPAR.
- Boundary faces are sequentially covered with material to be sourced from locally available material. Once the cover material is placed, vegetation replanting and restoration activities are undertaken. The process is repeated until LNAR is filled to its maximum permissible height and extent.
- Ash will be placed to the desired height (0.5 m to 1 m lifts) in pads, with materials that have been moisture-conditioned with water placed in the lower layers to an elevation as specified in approved design drawings, with corresponding heights of 10 m.
- Methods for the placement of ash materials to optimise compaction and stability of the emplacement areas include target moisture content, compaction density, and progressive capping and vegetation.

Capping of exposed ash areas has been undertaken progressively as LNAR reaches its approved design height. Progressive revegetation of batters will commence once the final perimeter batters are constructed and keyed into the adjoining MPAR.

6.1.2 Environmental Performance

During the reporting period a total of 345,331 tonnes of fly ash were placed in the LNAR, comprising 323,848 tonnes of brine-conditioned ash and 21,483 tonnes of water-conditioned ash placed within LNAR Stage 1 and Stage 2. Approximately 70,000 tonnes of brine-conditioned ash was placed within Stage 1 as part of capping works to achieve the approved final landform. Ash placement activities were undertaken in accordance with the Repository Management Plan, with ongoing monitoring confirming stable placement areas and compliance with operational moisture conditioning and compaction requirements.
Monthly inspections of the ash repository were undertaken by the contractor, and the results are summarised in Appendix B. The management and mitigation measures specified in the approved OEMP were generally complied with.

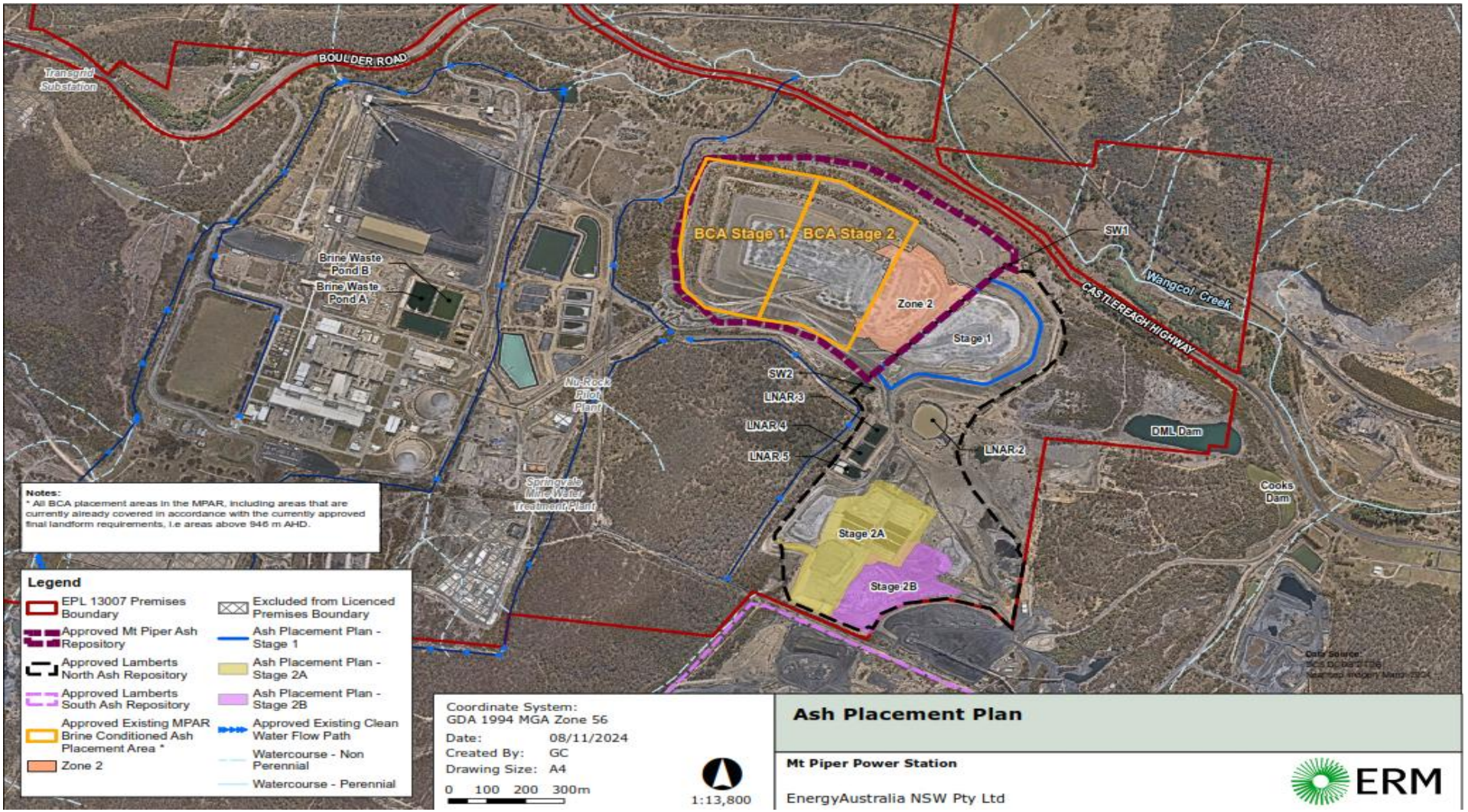


Figure 4 Ash Placement Plan

6.1.3 Reportable Incidents

No reportable incidents have been recorded against ash delivery and placement for the reporting period.

6.1.4 Further Improvements

- Stage 2B was completed in September 2025 and began receiving ash placement in November 2025. Ash placement and stormwater management across the life of the repository continue to be undertaken in accordance with operational requirements.
- Mt Piper continues to work with NuRock to support the beneficial reuse of fly ash in the manufacture of bricks, pavers and concrete blocks. The initiative provides an ongoing opportunity to divert fly ash from disposal and increase the beneficial reuse of ash generated at Mt Piper.
- Mt Piper is participating in a Brine Conditioned Ash (BCA) beneficial reuse trial to evaluate processing methods, chloride removal efficiency and the suitability of treated ash for use in concrete products. The findings will support the assessment of future ash reuse opportunities and potential reductions in ash disposal volumes.
- Mt Piper will continue to supply and market the reuse of fly ash to cement manufacturers.

6.2 Operational Noise Monitoring

6.2.1 Environmental Management

The LNAR Operational Noise Management and Monitoring Plan (ONMMP) has been developed to address the specific requirements of the CoA D3(a) and E7 to E14 for the Project. The ONMMP provides the framework to manage operational noise emissions and minimise potential noise impacts to sensitive receivers during the operation of the Project. The level of noise received by a sensitive receiver will depend on the location of the receiver, the type and duration of works and intervening topography, and existing building structures between the noise emission source and receiver.

The residential community of Blackmans Flat is located to the east of the private haul road and ash repository site. The following residential properties, located within 1100 m from LNAR, have been identified as the nearest potentially affected sensitive receivers to noise from the repository site (Table 8):

Table 8 Representative noise measurement locations

Sensitive Receiver	Distance to Haulage Road (m)
1. Blackmans Flat (east of Lamberts North)	1100
2. Blackmans Flat (west of Castlereagh Highway)	1100

During the reporting period compliance monitoring was conducted in April 2026 during the early morning and evening periods as per the requirements outlined in the ONMMP. The applicable operational noise criteria are outlined in the Project Approval (No. 09_0186), the OEMP and ONMMP. The criteria are summarised as follows:

The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed an LAeq (15 minute) dB(A) as defined in condition E7 and identified in Table 9.

Table 9 Operational Noise Criterion (LAeq (15 minutes) dB(A))

Location	Day (7 am – 6 pm)	Evening (6 pm – 10 pm)	Night (10 pm – 7 am)
All private sensitive receivers within the township of Blackmans Flat	42	38	35

Blackmans Flat (west of Castlereagh Highway)	42	38	35

This criterion applies under all meteorological conditions except for any of the following:

a) Wind speeds greater than 3 m/s at 10 m above ground.
b) Stability category F temperature inversion conditions and wind speed greater than 2m/s at 10m above ground level; and
c) Stability category G temperature inversion conditions.

6.2.2 Environmental Performance

EMM Consulting Pty Ltd (EMM) was engaged by EnergyAustralia NSW to conduct an independent annual operational noise survey, for the LNAR (EMM Consulting, 2026). Noise monitoring was conducted on 21 and 22 April 2026 (Appendix C) in accordance with the methods described in the approved Operational Noise Management and Monitoring Plan (ONMMP). The results of the measured noise levels at the sensitive receivers stipulated in the CoA (Location 1 and Location 2) can be found in Appendix C.

The maximum 15-minute daytime equivalent sound pressure levels (LA_{eq}) measured at both locations during the recording period were dominated by road traffic noise. At location 1, LNAR was inaudible during the daytime measurement, with road traffic noise generating the total measured levels. Noise from birds and engine noise from another mining operation were also noted. At location 2, LNAR was also inaudible during the daytime measurement. Distant road traffic tyre noise was primarily responsible for the total measured levels, while birds and an overhead aircraft were minor contributors to the measured LA1. During evening and night monitoring at Location 1, a continuum pump at LNAR was audible and generated a site-only LA_{eq} of less than 25 dB, however road traffic noise remained the dominant source of measured levels. At location 2, LNAR was inaudible during both evening and night measurements with road traffic engine noise and exhaust surges generating the measured noise levels. (EMM Consulting, 2026).

EMM concluded that operational noise from LNAR complied with the relevant limits during the 2026 survey (EMM Consulting, 2026).

To quantify the likely noise contribution from the LNAR at location 1 and 2, calculations were undertaken to estimate the noise emissions. The measurements are based on a worst-case operational scenario at both assessment locations and include adjustments for activities as outlined in Fact Sheet C of the EPA's *Noise Policy for Industry* (EPA, 2017).

Based on the noise assessment undertaken, operational noise from the LNAR was below the $LA_{eq(15min)}$ 42dBA CoA criterion and therefore complied with the OEMP and PA 09_0186 at the representative residential receivers Location 1 and Location 2 (Table 10).

Table 10 Summary of Cumulative Noise Emissions against the Noise Criteria (dBA)

Location	Description	Maximum predicted noise	Day limit 42 dBA (07:00-18:00)	Evening limit 38 dBA (18:00-22:00) ^	Night limit 35 dBA (22:00-07:00) ^
1	Blackmans Flat (approx. 1.4km)	<25dB	Inaudible	<25dB	<25dB
2	Wallerawang (approx. 2.5km)	Inaudible	Inaudible	Inaudible	Inaudible

6.2.3 Reportable Incidents

No reportable incidents have been recorded against operational noise for the reporting period.

6.2.4 Further Improvements

No further improvements have been identified for the next reporting period.

6.3 Biodiversity Offset Area (BOA)

An area of land adjacent to Thompsons Creek Reservoir was identified as a suitable BOA for the LNAR (Figure 5). In confirming the BOA, various government and community organisations were consulted, and the BOA was selected to build upon existing revegetation programs undertaken at Thompsons Creek Reservoir, with the aim of improving native vegetation connectivity in the region.

The BOA is a 6.8 ha land parcel comprised of two lots:

- Lot 243 of DP 801915 east site estimated 4.7 ha with approximately 605 m of foreshore.
- Lot 432 of DP 803501 south side estimated 2.1 ha with 200 m of foreshore.

The BOA is located on the eastern foreshore of Thompsons Creek Reservoir which is owned and operated by EA NSW for water storage purposes. The BOA is bounded by EA NSW landholdings except for private landholdings along the southern boundary.

EA NSW secured the Thompsons Creek Reservoir BOA in perpetuity during the 2021-22 reporting period. Guidance was sought from the Biodiversity Conservation Trust (BCT) for the suitability of managing the BOA under a formal conservation agreement. The intention of this was to secure the BOA and provide the financial and management resources required to enhance its biodiversity values. An application for a Conservation Agreement was submitted to the BCT in March 2021. The Conservation Agreement was granted by the BCT in March 2022.

The Biodiversity Conservation Agreement (BCA) (BCT, 2022) details the management actions to be performed within the BOA to enhance habitat for native flora and fauna species through site rehabilitation and revegetation. Biennial, flora and fauna monitoring within the BOA is required to be performed in accordance with the BCA, the next monitoring will be carried out in October 2026.

A Landholder Report for the Thompsons Creek BOA is required to be submitted annually to the BCT in accordance with Attachment 3, Part 4, Clauses 2 (a) and (c) of the BCA. The 2025-2026 Landholder Report was submitted to the BCT on 26 February 2026. Following its review, the BCT confirmed that a site inspection was not required during the reporting period. The report was approved by the BCT on 23 June 2026.

6.3.1 Environmental Management

Revegetation works were undertaken across the BOA in 2017, with approximately 2,000 seedlings planted across a 1 ha (approximate) section of the BOA (Plate 7 & Plate 8). To improve the native vegetation connectivity in the BOA, EA NSW engaged a contractor in October 2020 to undertake direct seeding works in areas devoid of native tree cover after the required flora and fauna monitoring was performed. A total area of 1.5 hectares was directly sown with a tree, shrub, and groundcover seed mixture in Spring 2020. An exclusion zone of 30-40 metres from the Thompsons Creek Reservoir high-water level was created to maintain access along the foreshore for recreational fishing activities. Thinning works and additional planting 10 - 20 (canopy) eucalyptus in the central area were conducted in July 2025, in accordance with recommendations from the Biodiversity Conservation Trust. The tree planting conducted in September 2024 continues to progress and develop well. The newly planted trees are establishing well, demonstrating robust growth and resilience, and contributing to the overall success of the revegetation efforts.

To further support wildlife, 20 nesting boxes were installed in suitable habitat areas across the site. Of these, six nesting boxes were actively used by various birds, including lorikeets, wattlebirds and Crimson Rosellas.

The EA environment team is actively monitoring wombat activity within the TCA BOA and undertaking treatments for individuals showing signs of mange. The team has completed the WomSAT online training and obtained approval under WPSA's NPWS Biodiversity Conservation Licence to use Cydectin pour on for Cattle and Red Deer. Through ongoing monitoring using trail cameras, a wombat affected by mange was identified, and treatment flaps were installed to help treat the affected individual. Observation has confirmed that the treatment has been successful in reducing the mange on the wombat.



Figure 5 Biodiversity Offset Area



Plate 7 Tube stock plantings from 2017 – Polygon 4 (Photo Credit: Tom Kelly, 2024)





Plate 8 Established plantings with nesting box installed in tree (Photo taken November 2025)



Plate 9 Recreational fishing along the shoreline of Biodiversity Offset area (Photo taken November 2025)



Plate 10 Growth from Last Year's Tree Planting (Photo taken November 2025)

Eco Logical Australia (ELA) was engaged by EA NSW to perform the biennial flora and fauna monitoring within the BOA. The monitoring was performed in October 2024, in accordance with the requirements within the BOMP and the report is provided as Appendix D (EcoLogical Australia, 2024).

The 2024 flora monitoring found an overall increase in total flora and native species diversity, with a total of 68 flora species (49 native species, 19 exotic species) being recorded. Above average rainfall in 2020 is believed to have influenced these results. Revegetation and natural regeneration have continued to develop, in regard to height and stem density, as well as species diversity. Since the 2022 assessment, the height of 2017 tubestock plantings has grown significantly, with overall height now ranging from 0.1 – 0.4 metres tall, whilst the direct seeding plantings conducted in 2021 have grown up to 0.9 m in height. The presence of exotic species has remained variable throughout the area, however it is currently not affecting the re-establishment of native woodland species. Previously recorded priority weeds, Blackberry and St John's Wort were still present within the BOA, whilst Serrated Tussock was no longer recorded during this monitoring period (EcoLogical Australia, 2024).

The fauna monitoring recorded a total of 33 bird species, which was the highest abundance of birds since the commencement of the monitoring program. The Crimson Rosella (Plate 11) was the most commonly recorded species and also recorded the highest total abundance with 16 individuals identified, whilst the Yellow-faced Honeyeater was the second most abundant, with 14 individuals recorded. Overall, there was an increase in the diversity of native woodland bird species with seven species of birds not previously recorded within the BOA during 2024 surveys. Two threatened bird species were identified, with both species, Dusky Woodswallow and Glossy Black-Cockatoo having been previously recorded at the BOA. Three pest species, Common Starling, Brown Hare, and Feral Pig were also recorded. An additional 43 bird species, 3 amphibians, 4 mammal and 3 reptile species were recorded opportunistically. The previously identified pest, the European Rabbit was not recorded during this period although Brown Hare and Feral Pig were recorded within and adjacent to the BOA, whilst the Eastern Grey Kangaroo was frequently recorded across the BOA, however there was no indication that this species was negatively impacting the plantings or natural regeneration (EcoLogical Australia, 2024).

The next flora and fauna monitoring period is scheduled for Spring 2026 (October), with the results to be included in the 2027 AOCR.



Plate 11 Most commonly recorded and most abundant species, Crimson Rosella (Photo Credit: Tom Kelly, 2024)

6.3.2 Reportable Incidents

No reportable incidents have been recorded against the BOA for the reporting period.

6.3.3 Further Improvements

- Implement Management Plan Actions as required by the Biodiversity Conservation Agreement.
- Monitor for any wildlife entrapment or injury to enhance wildlife safety.
- Implement small patch (1-2 ha) of thinning over the next 5-10 years leaving failed trees in places to boost habitat complexity.

6.4 Wangcol Ck Ecological Monitoring

6.4.1 Environmental Management

The Ecological Monitoring Program (EMP) of the OEMP seeks to address the specific requirements of the CoA. The EMP provides for the requirements for the monitoring of aquatic ecology, in particular macroinvertebrate assemblages and aquatic habitat in accordance with CoA B7. EA NSW will maintain the EMP for a minimum of five years after the final capping of the LNAR in accordance with approval conditions.

The EMP was implemented in November 2012 prior to construction activities and then during construction in April 2013. In December 2023, the sample sites (Figure 3) included in the program were as follows:

- NCR1 on Wangcol Creek, upstream of the project area
- NCR2 on Wangcol Creek, adjacent to the project area
- NCR3 on Wangcol Creek upstream of the project area
- Control A16 on the Cox River at Lidsdale, downstream of the confluence with Wangcol Creek
- NCR4 on Wangcol Creek upstream of MPAR
- NCR5 on Wangcol Creek upstream of MPAR

The EMP aims to monitor and quantify the impacts on the ecology of Wangcol Creek and the associated riparian environment.

The specific objectives of the 2025-2026 study were to:

- Assess whether any impacts to the aquatic ecology of Wangcol Creek have occurred since the previous spring survey (completed December 2024) and determine whether any such impacts were attributable to the project

- Provide recommendations on actions, if any, that may be required to minimise, mitigate or ameliorate any impacts on aquatic ecology that may have occurred, and on any refinements to subsequent monitoring events that would improve the efficacy of the EMP.

6.4.2 Environmental Performance

EA NSW engaged Stantec to conduct the EMP in accordance with the requirements of the OEMP. The assessment of aquatic habitat, water quality and macroinvertebrate assemblages was undertaken in December 2025 during the Spring sampling season (Appendix E).

The biotic indices used in the monitoring program included the following:

- The total number of taxa
- The number of pollution sensitive Ephemeroptera, Plecoptera and Trichoptera (EPT) taxa
- The OE50 taxa score
- SIGNAL2 score

These indices were utilised in order to determine whether any changes have occurred to macroinvertebrates that may relate to the project.

There was no evidence of any change in the spring 2025 data compared with previous sampling events that would suggest an impact to aquatic macroinvertebrates due to activities at Lamberts North. None of the statistical tests indicated any change through time at NCR2 that could have indicated an impact (Stantec, 2026).

There was no evidence of a change in SIGNAL2 Score in spring of 2020, 2021, 2022, 2023, 2024 and 2025 following the notable reduction in this indicator observed previously in autumn 2020. There was also no evidence that capping works were associated with any change to stream health in Wangcol Creek. It is possible that any longer-term improvement of stream health associated with capping works will become evident once data for future surveys is available. A native mountain galaxiid fish and flathead gudgeon were captured at one of the control sites, indicating that Wangcol Creek provides habitat for at least two native species of fish. Some differences in the macroinvertebrate multivariate assemblage structure were detected following the most recent analysis in spring 2022 and in spring 2021, however this did not provide evidence of any impact related to the project (Stantec, 2026).

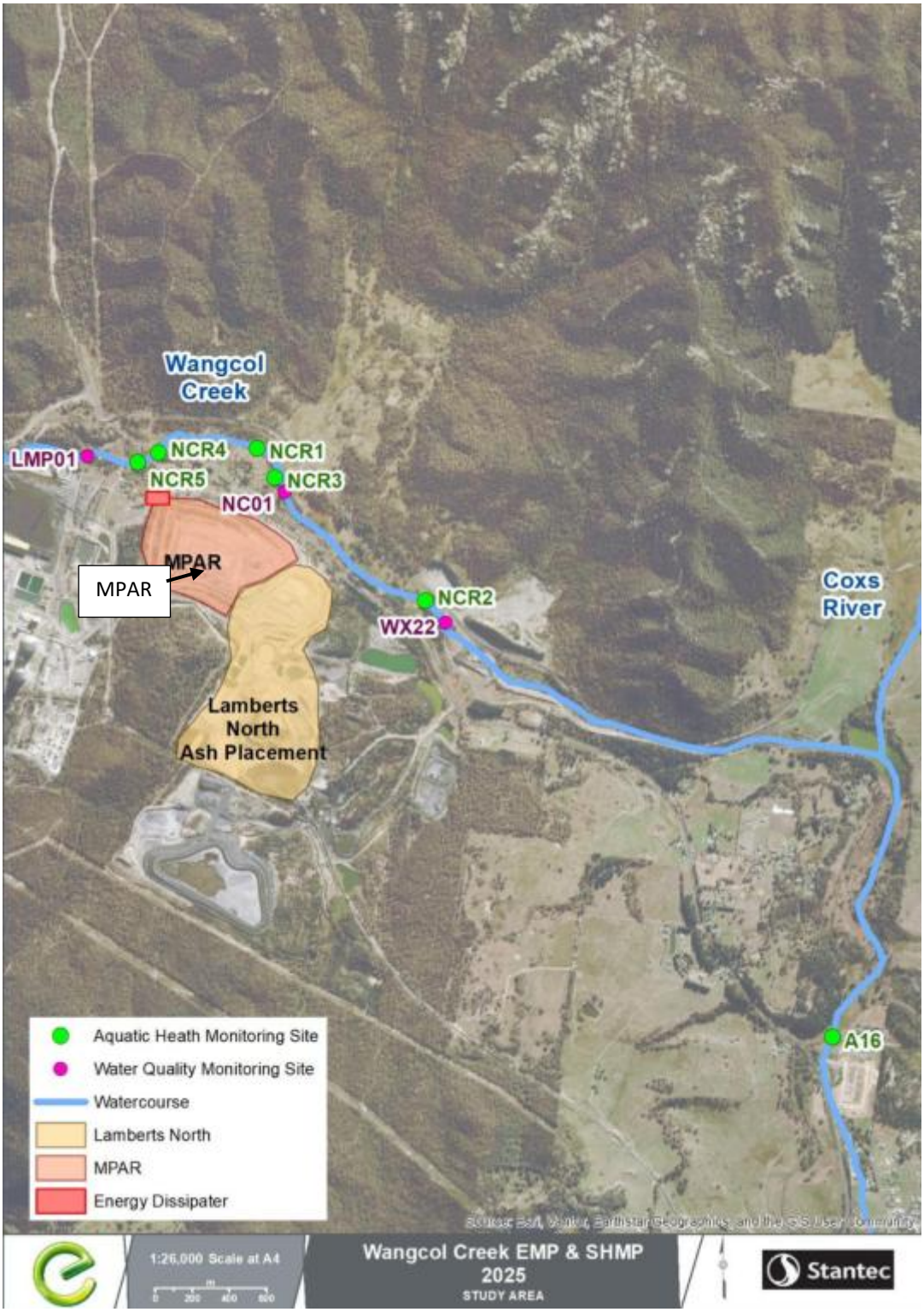


Figure 6 Aquatic ecology monitoring sites and long-term water quality monitoring sites

The OE50 Taxa Score is a biotic index of aquatic habitat and water quality, the score ranges are outlined below:

- Band A – 0.84 to 1.16 indicate habitat equivalent to reference condition
- Band B – 0.52 to 0.83 – significantly impaired habitat
- Band C – 0.20 to 0.51 – severely impaired habitat
- Below 0.20 – extremely impaired habitat

The OE50 Taxa Score for each location is listed in Table 11.

Table 11 OE50 Taxa Score for Spring 2025

Location	OE50 Taxa Score
NCR1	0.36 to 0.96
NCR2	0.27 to 1.04
NCR3	0.19 to 0.85
A16	0.34 to 0.91
NCR4	0.67 to 0.87
NCR5	0.24 to 0.48

These results indicated that on all but one occasion (NCR2 in Spring 2012) the macroinvertebrate assemblages sampled were less diverse than predicted (i.e., OE50 Taxa Score < 1.0). There was limited evidence to suggest a decrease in OE50 Taxa score between spring 2012 and spring 2016 at NCR2, however the OE50 Taxa score in spring 2018 was relatively high. OE50 Taxa Scores at EMP control sites NCR1 and NCR3 in spring 2020 were also the lowest recorded during the EMP, though there was an apparent increase in the OE50 Taxa Score at these sites in subsequent surveys (Stantec, 2026).

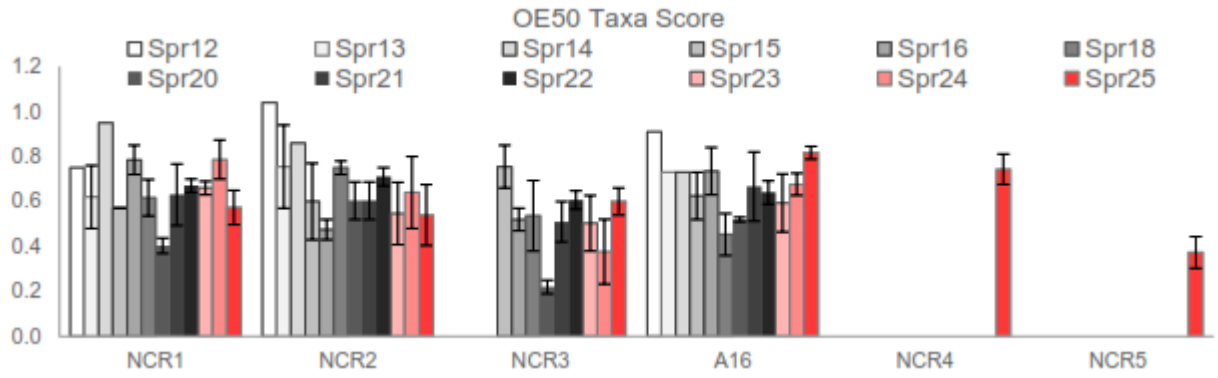


Figure 7 OE50 results for impact and control sites for the period of 2012-2025

The SIGNAL2 Score is a biotic index of water pollution. The scores for Spring 2025 are listed in Table 12.

Table 12 SIGNAL2 Score for Spring 2025

Location	SIGNAL2 score	Pollution Level
NCR1	3.1 to 4.6	Indicative of severe to moderate pollution
NCR2	3.4 to 5.0	indicative of severe to moderate pollution
NCR3	2.9 to 5.2	indicative of severe to moderate pollution
A16	3.6 to 5.2	indicative of severe to moderate pollution
NCR4	3.6 to 3.8	indicative of severe to moderate pollution
NCR5	2.5 to 3.6	indicative of severe to moderate pollution

These scores indicate the degree of environmental stress associated with poor water quality. There were no obvious trends in SIGNAL2 data (Stantec, 2026).

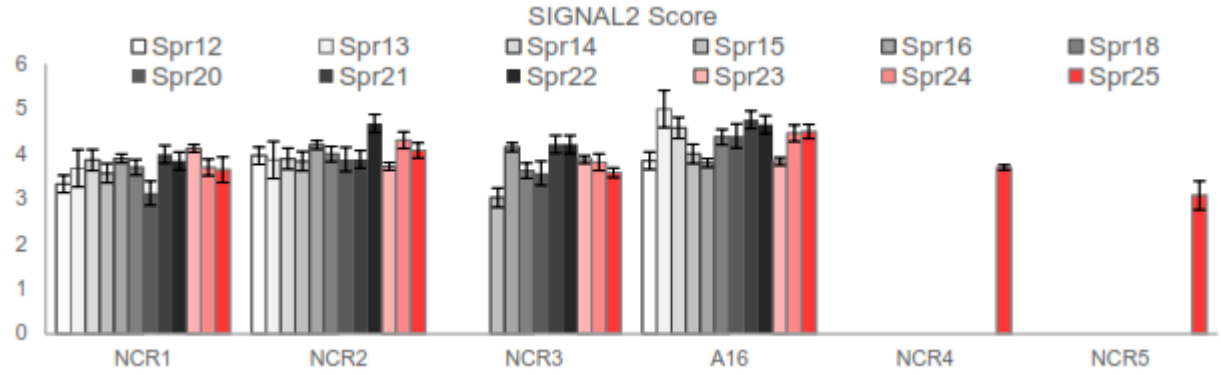


Figure 8 Signal2 results for impact and control sites for the period of 2012-2025

The complex interaction that exists between the various types of existing anthropogenic disturbances in Wangcol Creek (e.g., historic and current coal mining activities, power generation and historic land clearing etc.) along with local rainfall, discharge and hydrology make any associated changes in the water quality and/or macroinvertebrates difficult to distinguish from changes attributable to Lamberts North and capping works at MPAR. Nevertheless, the EMP adds value to the wider monitoring program, and it is expected that any large magnitude and/or cumulative impacts to aquatic biota would be detected, allowing appropriate management actions to be implemented. (Stantec, 2026).

6.4.3 Reportable Incidents

No reportable incidents have been recorded against ecological monitoring for the reporting period.

6.4.4 Further Improvements

- As per the project approval, ongoing monitoring should continue throughout the life of the project (including operation) and for at least two (2) sampling periods following ash placement. This will maximise the validity of data and allow for more accurate comparisons between baseline data. Data from ongoing surveys will allow more confident conclusions to be made on the presence and duration of any potential impact in Wangcol Creek that could be attributed to the project. It is recommended that sampling continue with the next event to be undertaken in Spring 2026 (Stantec, 2026).
- Sampling should continue at the pre-existing, longer-term monitoring sites, along with the additional Control Sites established on Wangcol Creek in spring 2025 (NCR4 and NCR5) in relation to SHMP. While no baseline data are available from these sites, data collected here during future surveys would allow an assessment of potential effects of the capping work on stream health (Stantec, 2026).
- Three replicate AUSRIVAS samples should continue to be collected from each site during future surveys. This will provide a measure of the variation present in each indicator at each site, thereby, improving the ability to detect any future impact by enabling the use of appropriate statistical analysis (Stantec, 2026).
- At this stage no Lamberts North or MPAR capping-works specific mitigation, impact minimisation or ameliorative actions are recommended (Stantec, 2026).

6.5 Air Quality Monitoring

6.5.1 Environmental Management

The OEMP (EA NSW, 2025) outlines the Air Quality Monitoring Program, as required under the CoA (CoA D3 (d) and E18) as stipulated by PA 09_0186. The Air Quality Monitoring Program includes specific site management pertaining to the transport and emplacement of ash, managing dust within the ash repository using an extensive sprinkler system and water cart applications, meteorological monitoring and continuous monitoring for dust/airborne particulates. Sprinklers and compaction are used to minimise fugitive dust from the LNAR. Water trucks are used to manage fugitive dust from the haul roads.

Dust management at the LNAR is included in the responsibilities of all activities, including:

- Daily monitoring from weather station.
- Fly ash conditioning.
- Mobile sprinkler system
- Use of perimeter sprays at the ash placement area
- Wash-down of security roadways, haul road/s and vehicle access roads – water carts
- Static dust monitors
- Ash placement operations
- Final and temporary capping of ash; and
- General maintenance of the ash placement area (Lend Lease, 2012)

6.5.1.1.1 Sprinklers and Pumps

Dust suppression is a key performance objective for ash placement activities. Dust suppression concerns all aspects of exposed ash and ancillary aspects of vehicular traffic during permanent capping and other activities. The main dust suppression method on exposed ash is the use of sprinklers with water sourced from wash down ponds and the blow down towers from Mount Piper's cooling water system – no clean water is used in this application. Water application (measured in sprinkler hours) is based on wind velocity, humidity and temperature. Sprinklers are also used for haul roads. Water source, volumes and sprinkler numbers are monitored daily by Service Stream and reported to EA NSW monthly.

The OEMP (EA NSW, 2025) provides a guide for sprinkler hours at an optimum of 4 hours per day during low evaporation at less than 3 mm per day to ensure that a target of 5 mm by irrigation application is not exceeded (

Table 13).

Table 13 Water use guideline

Water use guidelines based on temperature and wind speed	Water use guidelines
>25° >20km/hr (10hrs/day)	15° <20km/hr (<4 hours/day)
15-24° <20km/hr (8 hrs/day)	
15° <20km/hr (4 hours/day)	
Evaporation 3 – 7 mm per day	**Evaporation < 3 mm per day**
Oct, Nov, Dec, Jan, Feb, Mar	April, May, June, July, Aug, Sept

*Operation of sprinklers in extreme hot and dry conditions requires extended irrigation hours

6.5.1.1.2 Air quality monitoring

As noted in Section 3.2, the reporting period for the LNAR AOCR transitioned from a September-August reporting cycle to a financial year reporting cycle following approval from the NSW DPHI in February 2026. Accordingly, air quality monitoring results presented in this section cover the period from September 2025 to June 2026 and represent a transitional ten-month reporting period.

Air quality impacts at LNAR are managed pursuant to PA 09_0186 and the approved Air Quality Management Plan (AQMP). The AQMP provides the assessment criteria for the LNAR which are monitored through a network of dust monitors.

The monitoring network consists of

- 5 dust deposition gauges (Figure 3), including Dust Gauges 19, 20, 21, 22 and 23
- 1 Tapered Element Oscillating Microbalance (TEOM) measuring <10 µm (PM_{10}) as shown on Figure 3.
- Air Quality Monitoring Station (AQMS) located at Blackmans Flat.

Dust monitoring results are recorded monthly with colour and textural observations.

Performance indicators recommended in the OEMP for air quality monitoring are as follows:

- Increase in Total Suspended Particulates (TSP) by > 2 g/m^2/month to a maximum of 3.5 g/m^2/month at dust deposition gauges outside the ash placement area
- PM_{10} annual average is <30 µg/ m^3 and 24 hour maximum does not exceed 50 µg/m^3

The installed dust gauges meet the requirements for the methods for sampling and analysis of ambient air (AS/NZS 3580.10.1:2003).

6.5.2 Environmental Performance

6.5.2.1.1 Dust suppression – Lamberts North Sprinkler system

Figure 9 reflects a relationship between sprinkler application and evaporation to identify that the target or maximum application rates for irrigation at 5 mm / day was achieved. Net irrigation was calculated by subtracting the daily evaporation from the daily sprinkler irrigation rate.

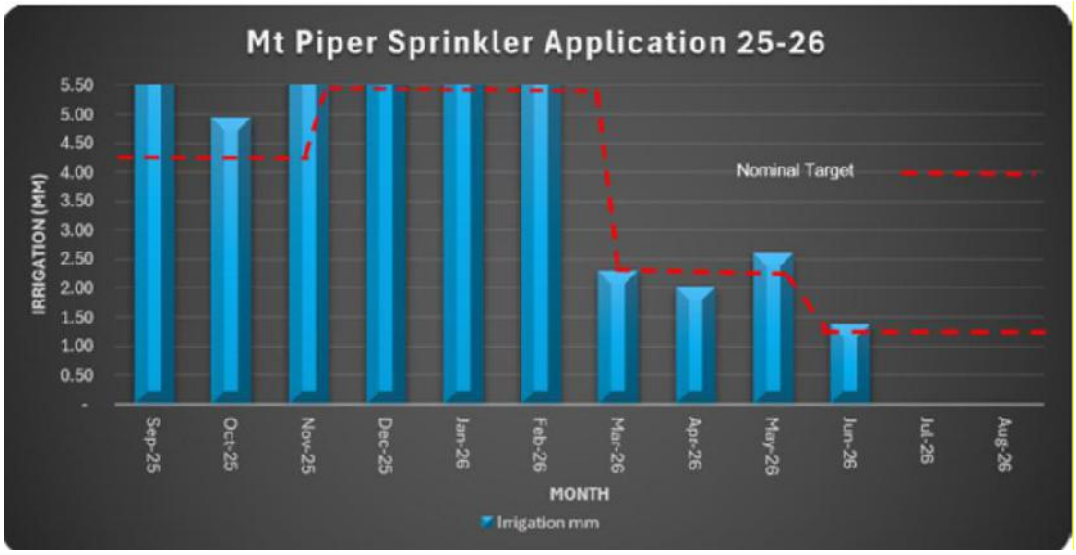


Figure 9 Efficacy of irrigation operations September 2025 – June 2026

6.5.2.1.2 Air quality monitoring

The 2025-2026 reporting period was characterised by above average temperatures and variable rainfall patterns. Australia experienced its fourth-warmest year on record in 2025, the annual average temperature was 1.23°C above the long-term average and above average temperature recorded across all months of the year. National rainfall was approximately 8% above average. Heatwave conditions affected large parts of the country during early and late 2025, contributing to warmer-than-average conditions throughout the reporting period (Bureau of Meteorology, 2026).

Climatic conditions, state-wide dust activity and localised bushfires can influence air quality near the LNAR, as reflected in previous annual reports. These events can affect air quality within the Lithgow Local Government Area and are not necessarily related to activities or impacts associated with the LNAR.

Depositional dust results across gauges DG19-DG23 from September 2025 to June 2026 are shown in Table 14 (Amp Control Group, September 2025- June 2026). The results for all gauges across the reporting period were below the assessment criteria of 3.5 g/m^2/month, except for DG23 in December 2025, which recorded 4.9 g/m^2.

The results remained variable throughout the reporting period, with concentrations generally consistent with historical trends observed at the monitoring locations. Elevated depositional dust levels were recorded at DG23 during November and December 2025, while the remaining gauges continued to record relatively low dust deposition rates. The spike in dust deposition recorded at DG23 is likely associated with a localised event near the gauge and is consistent with increased dust activity hours, above average wind strength and reduced groundcover reported across much of New South Wales (DCCEEW,2025). The rainfall during December 2025 was average to below average across most of the state (DCCEEW,2025). Lower rainfall conditions can reduce natural dust suppression and may contribute to increased dust

deposition. However, the elevated result was isolated to DG23 and was not reflected at the remaining monitoring locations, which continued to record low dust deposition rates. Furthermore, the average wind direction for December was generally north to north-west. Gauge DG23 is located North of the repository, whilst the other gauges are also located generally to the North and Northeast of LNAR. Therefore, it appears unlikely that increased dust levels during that period would have been because of activities at LNAR.

Comparative annual average depositional dust data for the previous seven-year period is also presented in Table 14. Annual depositional results generally declined between 2019 and 2025, reflecting the improved rainfall and groundcover conditions experienced across the region following the drought and bushfire period. The 2026 annual averages remained within the historical range recorded across the monitoring location, with minor increases observed at some gauges, particularly DG19, DG20 and DG23. The variability observed during the reporting period is consistent with the December 2025 DustWatch Report, which identified increased dust activity, above average wind strength, reduced groundcover and average rainfall across much of New South Wales. These factors are likely to have influenced the depositional dust results recorded during the reporting period.

Table 14 Annual depositional dust summaries

Date **1st September 2025 – 30 June 2026**	**Total Insoluble solids (g/m²/month)**				
	DG 19	DG 20	DG 21	DG 22	DG 23
	Insol.	Insol.	Insol.	Insol.	Insol.
Sep-25	0.7	0.5	1.1	0.3	0.5
Oct-25	1.0	0.6	1.1	0.4	0.4
Nov-25	0.9	0.7	1.2	0.6	3.4
Dec-25	0.9	0.8	1.3	0.7	4.9
Jan-26	1.3	1.2	1.2	1.1	1.9
Feb-26	1.5	1.3	1.3	0.9	1.3
Mar-26	0.4	0.6	1.4	0.6	0.5
Apr-26	1.5	0.8	0.9	0.7	1.0
May-26	1.3	0.8	1.3	0.9	1.1
Jun-26	0.6	0.7	0.8	0.4	0.6
Annual averages					
2026	1.0	0.8	1.1	0.7	1.6
2025	0.4	0.3	1.1	0.6	0.4
2024	0.8	0.9	1.5	0.6	0.8
2023	1.0	0.9	0.9	0.7	0.6
2022	0.7	0.5	0.9	0.6	1.1
2021	0.6	0.4	1.2	0.8	1.1
2020	1.8	1.8	2.1	1.1	2.3
2019	1.7	1.8	2.4	2.2	2.7

Comparative depositional dust data for each of the five OEMP dust deposition gauges are presented in Figure 10 -Figure 14 .

Depositional dust concentrations from September 2020 – June 2026 remained relatively consistent, with four separate anomalous peaks above the 3.5 g/m2 per month limit. These peaks were recorded at gauge DG21 in July 2021 (Figure 12), gauge DG23 in February 2022 (Figure 14), gauge DG19 February 2023 (Figure 10) and gauge DG21 January 2024 (Figure 12). All anomalous results were determined to be unrelated to activities at LNAR.

During the current reporting period, depositional dust concentrations continued to remain relatively consistent across all the gauges except for dust gauge DG23 in December 2025. There was no result for dust gauge DG20 in December 2024 as the bottle was broken, and the sample compromised and did not meet the Australian Standard. One

anomalous peak was recorded at dust gauge DG23 during December 2025 (Figure 14). This elevated result was considered unlikely to be associated with LNAR operations, as it coincided with above-average wind strength, reduced groundcover and average to below-average rainfall conditions across New South Wales. The low concentrations recorded before and after the event, together with the dust suppression measures in place at LNAR, support the conclusion that the elevated result was an isolated event unrelated to repository operations.

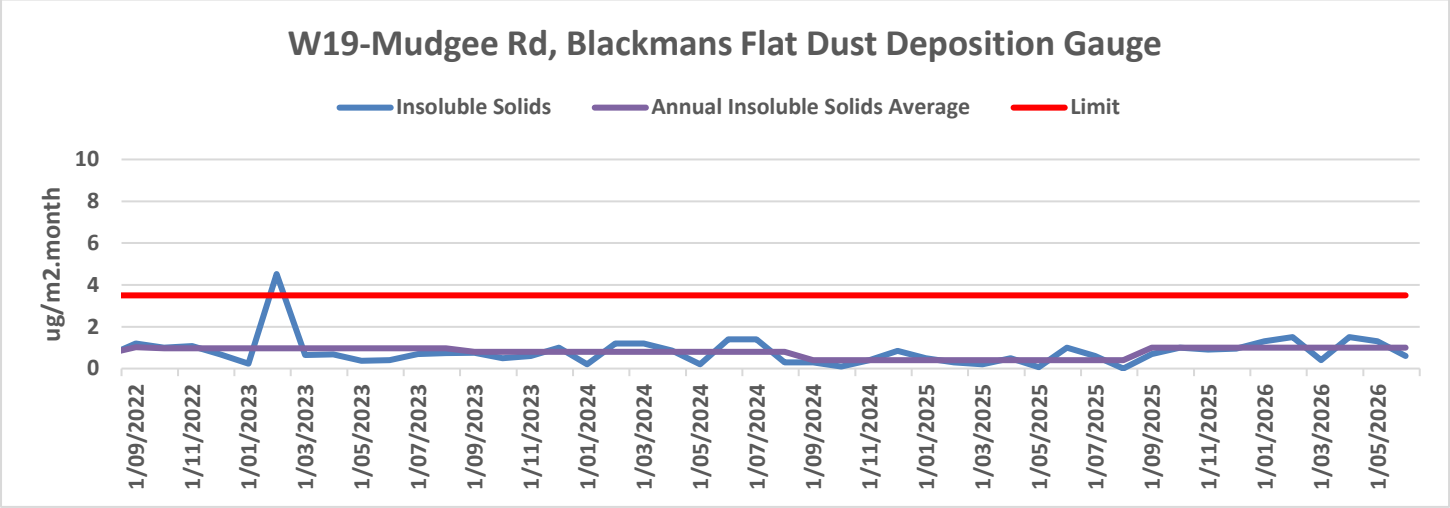


Figure 10 Depositional Dust Summary for Dust Gauge 19

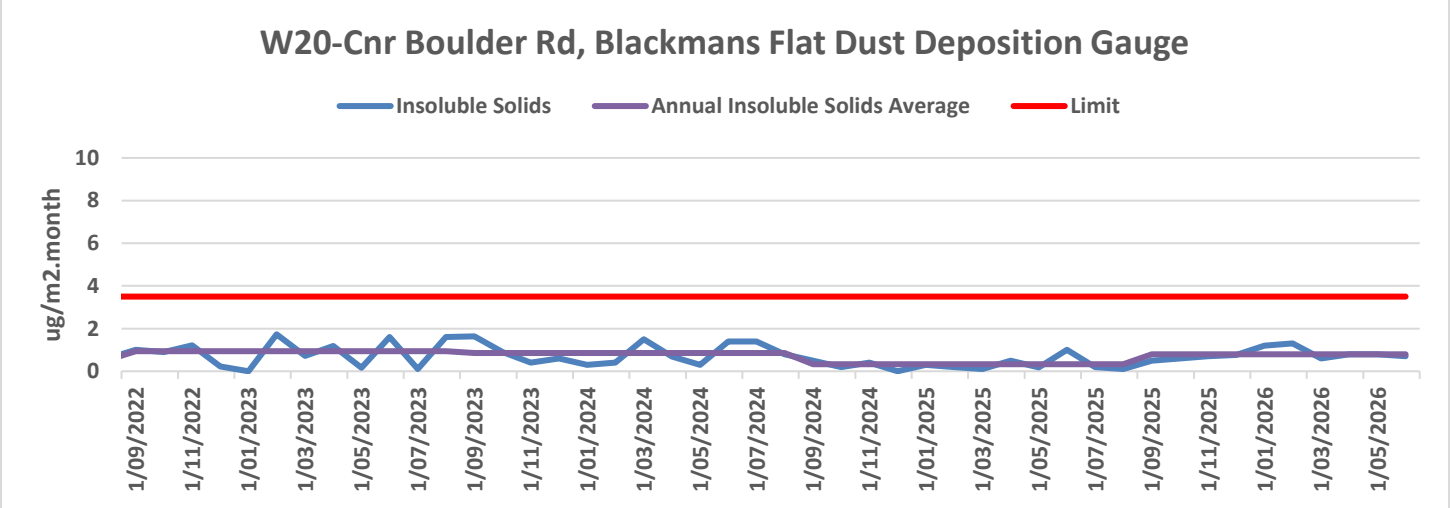


Figure 11 Depositional Dust Summary for Dust Gauge 20

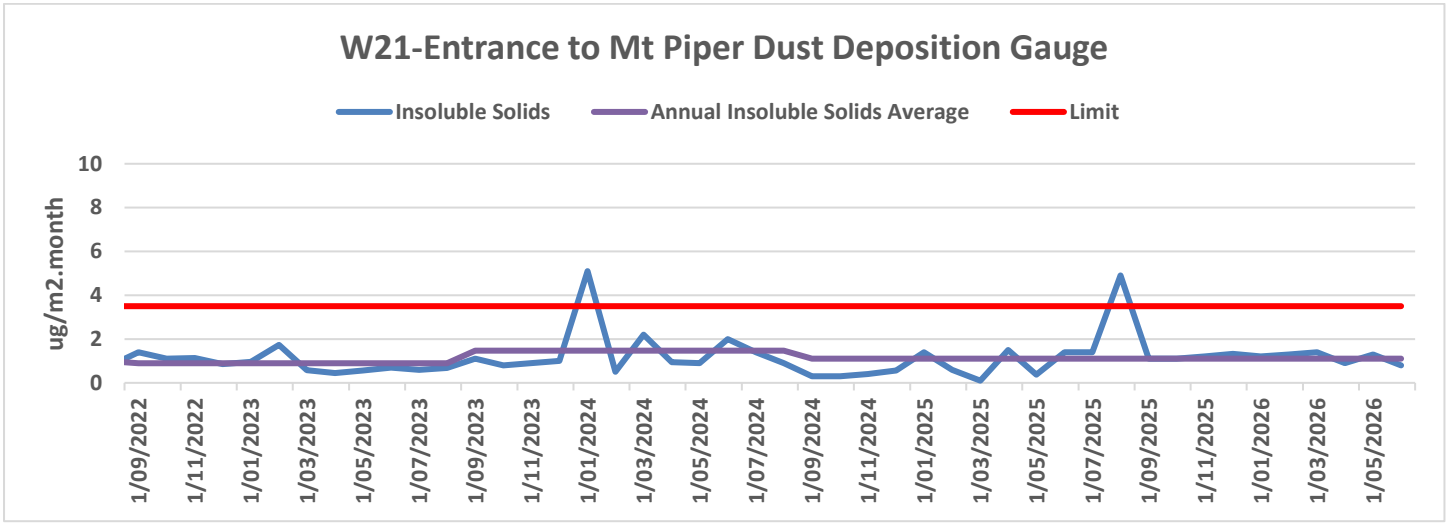


Figure 12 Depositional Dust Summary for Dust Gauge 21

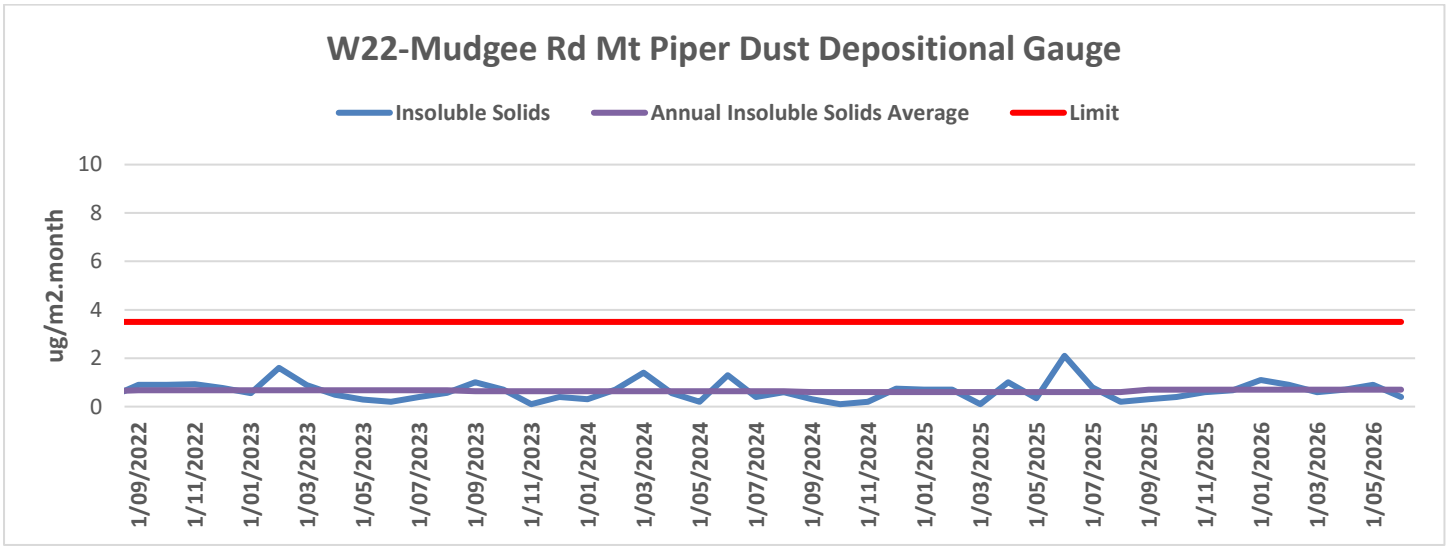


Figure 13 Depositional Dust Summary for Dust Gauge 22

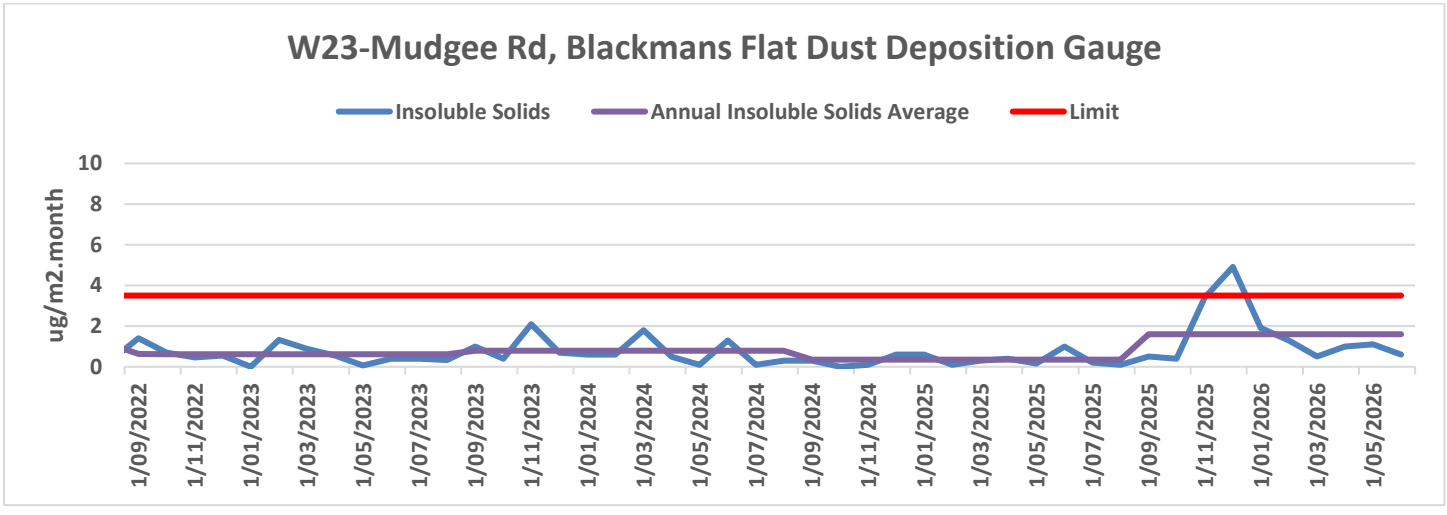


Figure 14 Depositional Dust Summary for Dust Gauge 23

EA NSW monitors fine particulates at LNAR, Blackmans Flat and Wallerawang air quality stations. These are located to the northwest, east and south directions from the LNAR. Analysis of continuous air quality (PM_{10}) monitoring data from the Blackmans Flat, Wallerawang and LN (MPAR) air quality stations was undertaken for the reporting period (Figure 15).

The results show a generally consistent trend in fine particulate matter over the reporting period, with one exception. During late November 2025, Lamberts North recorded a daily PM_{10} concentration above the NEPM daily criterion of 50 µg/m³ (Figure 15). No corresponding exceedances were recorded at the Blackmans Flat or Wallerawang monitoring stations during this period. The elevated result coincided with increased particulate levels reported across much of New South Wales, potentially related to regional smoke haze, which may have contributed to the elevated PM_{10} concentrations observed at Lamberts North.

During the 1 September 2025 to 30 June 2026 reporting period, the annual average PM_{10} result for LNAR was 10.2 µg/m³, which is well below the annual average criteria of 30 µg/m³. The other local monitoring sites recorded PM_{10} results of 8.5 µg/m³ at Blackmans Flat and 10.6 µg/m³ at Wallerawang. Dust suppression systems were operating and functional at LNAR during the reporting period, therefore it appears more likely that any anomalies in PM_{10} concentrations would be attributed to sources external to LNAR.

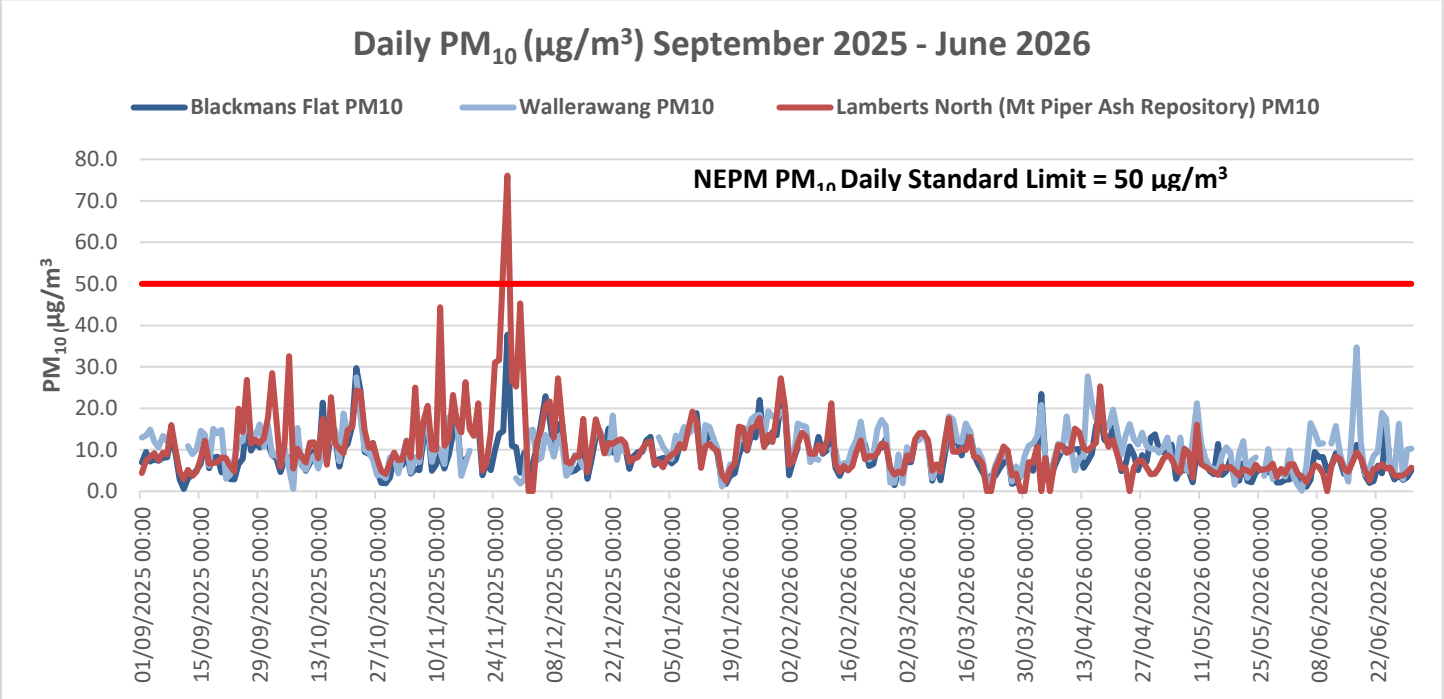


Figure 15 Average PM_{10} from the Mt Piper TEOM from September 2025 to June 2026

6.5.3 Reportable Incidents

No reportable incidents have been recorded against air quality management for the reporting period.

6.5.4 Further Improvements

Pontoon pumps have now been installed into LNAR ponds to enhance operational flexibility around the ash repository. This setup allows multiple pumps to run from a single generator, enabling rapid water transfer between ponds to maintain appropriate freeboard levels. Additionally, it optimises water usage for effective dust suppression.

6.6 Waste Management

6.6.1 Environmental Management

Waste disposal practices at the LNAR are managed in accordance with Environmental Protection Licence 13007 and the Waste Management Sub-Plan (WMP, OEMP Section 5.9). Waste materials are assessed and classified in accordance with the EPA's Waste Classification Guidelines (EPA, 2014) and managed as required by the POEO Act. The WMP addresses waste management on site, and satisfies CoA D2 (g), E23, E24 and E25.

The WMP provides a framework for EA NSW, its contractors and vendors to manage waste and to minimise the potential for adverse impacts to sensitive receivers during the operation of the Project and is comprised of the following targets:

- To ensure waste at the LNAR is managed in accordance with the conditions of EPL 13007.
- To ensure that all Staff and associated contractors involved in the LNAR operations are made aware of the waste management measures contained in the WMP, that waste generated on LNAR is recycled or disposed of in accordance with the WMP.

EA NSW and associated contractors:

- Are not to cause, permit or allow any waste generated outside the ash repository to be received at the ash repository for storage, treatment, processing, reprocessing or disposal, including no wastes except as permitted by the licence or an exemption certificate.
- Waste generated by site personnel (including maintenance wastes such as oils and greases) are collected on a regular basis to be recycled or disposed of at an appropriate facility.
- Evidence of a recycling system in use and site-generated waste being disposed of to an appropriate facility.
- Waste management details are recorded in the monthly environmental report.

Waste-related documents and records reflect adherence to these protocols, thereby providing the foundations for a transparent approach to waste management. The WMP provides further guidance and detail on specific waste streams and applicable management measures (OEMP Section 5.9).

6.6.2 Environmental Performance

Waste management activities were generally undertaken in accordance with the WMP. However, one low-level non-compliance with the OEMP, Section 5.9 Waste Management Plan (only authorised wastes to be disposed of in LNAR) was identified during an internal audit, relating to materials not permitted under the licence being disposed of within the filter-bag and pond-sediment disposal area. The materials were removed and corrective actions are being implemented, including updates to waste approval, record management and inspection processes to prevent recurrence.

6.6.3 Reportable Incidents

No reportable incidents have been recorded against waste management for the reporting period.

6.6.4 Further Improvements

No further improvements are planned for the next reporting year.

6.7 Heritage Management (Aboriginal & Non-Indigenous)

6.7.1 Environmental Management

Project Approval 09_0186 contains CoAs concerning heritage management in Part B – Prior to Construction (B5 (f)) and Part C – During Construction (C8 – 9). These conditions are managed under Section 5.6 of the CEMP. The LNAR has progressed into the operational phase and CoA Part B and C no longer apply.

Whilst there are no specific CoAs for Project Approval 09_0186 for Part E – During Operations, regarding heritage management, contract personnel are educated on their due diligence duties in respect of the protection of Aboriginal and non-indigenous heritage sites and items.

6.7.2 Environmental Performance

No additional heritage sites have been recorded within the vicinity of the LNAR.

6.7.3 Reportable Incidents

No reportable incidents have been recorded against heritage management for the reporting period.

6.7.4 Further Improvements

No further improvements have been identified for the next reporting period.

7. Water management

The water quality assessment presented in this section is based on monitoring undertaken between January 2026 and June 2026. Water quality monitoring data for the period September to December 2025 is reported within the 2024-25 MPAR Annual Environmental Monitoring Report.

7.1 Surface Water Quality Monitoring

7.1.1 Environmental Management

The Soil and Surface Water Management Plan (SSWMP) is a sub-plan as outlined in the OEMP and addresses the specific requirements of the CoA D3 (c) and E16. The SSWMP addresses soil and water cycle management on site, including a surface water monitoring program at receiving waters that is comprised of the following targets:

- The water quality at Wangcol Creek is not impacted by LNAR operations;
- Zero environmental incidents that relate to pollution of waters at Wangcol Creek.
- Erosion to be effectively managed on site and not have an influence and/or impact on surrounding lands outside the boundary of LNAR.

Performance criteria:

- The Environmental Goals adopted have taken into consideration local baseline surface water conditions in Wangcol Creek prior to the commencement of ash placement in the eastern side of the MPAR (referred to as pre-placement). Baseline conditions were specifically established based on the 90th percentiles of the water quality dataset from monitoring site WX22 in Wangcol Creek. An early warning is triggered when the post-ash placement 50th percentiles for the various water quality indicators at each of the surface water monitoring sites, exceed the pre-placement 90th percentiles (Aurecon 2017).
- Ecological results at Wangcol Creek will indicate no significant variation from historical baseline data.
- No visual evidence of erosion and sedimentation impacts on Wangcol Creek following significant rainfall events.

Runoff water from the LNAR is contained in clean and dirty water sediment ponds and forms the primary source of water for dust suppression on exposed ash and capped areas as well as irrigation of the revegetated areas. The CoAs stipulate that a monitoring program must be implemented to record and observe water quality and potential impacts from repository operations on regional surface waters. The OEMP for the LNAR requires sampling at three locations which are outlined in Figure 3 and Table 15.

Table 15 Location of Surface Water Monitoring Points

Site ID	Location Description	Monitoring Frequency
LMP01	Final Holding Pond Weir – monitoring point is located north-west of the MPAR. This monitoring site is located in an upstream position relative to the LNAR.	Monthly[1]/Quarterly[2]
NC01	Located in Wangcol Creek. This monitoring site is located upstream of LNAR and to the north of the MPAR and is an aquatic life background site.	Monthly[1]/Quarterly[2]
WX22	Located in Wangcol Creek at a stream gauge to the east/downstream of MPAR, LNAR and monitoring site LDP01. This monitoring site is also situated downstream of monitoring bore D8.	Monthly[1]/Quarterly[2]

1. Selected field parameters monitored on a monthly basis as required
2. Monitoring undertaken by analytical laboratory Nalco Water – Ecolab

Changes in the water quality and trace metals at Wangcol Creek receiving water site (WX22), from pre-ash placement (October 2012 to August 2013) to the post-ash placement period (September 2013 to August 2017) were examined in the past by Aurecon reported within their Water Quality Monitoring Reports. For the 2025-26 reporting period Environmental Resources Management Australia (ERM) was commissioned by EA NSW to undertake the Annual Environmental Monitoring Report. Surface water monitoring results were generally consistent with previous monitoring outcomes and no impacts from LNAR were identified during the reporting period. Refer to Appendix F for further details.

7.1.2 Environmental Performance

Surface water monitoring is undertaken in accordance with the OEMP and Project Approval 09_0186 to assess water quality within Wangcol Creek and identify potential influences from the range of land uses present in the area, including but not limited to LNAR activities. ERM was commissioned to assess the results of the surface water monitoring program during the reporting period. The findings of this assessment are presented in the Annual Environmental Monitoring Report, provided in Appendix F.

Water quality results from the Lamberts North Ash Repository (LNAR) cannot be directly compared with the LNAR Environmental Goals for the purpose of determining compliance, as water resources in the vicinity of the Mount Piper Ash Repositories are known to be influenced by an adjacent project. Consequently, any comparison of current water quality monitoring results against the Environmental Goals would not provide a fair or reasonable assessment of the LNAR's environmental performance.

The LNAR incorporates an engineered Leachate Barrier Management System (LBMS) designed to prevent interaction between Brine Conditioned Ash (BCA) and surrounding water resources. Throughout the reporting period, the integrity of the LBMS was maintained and it successfully contained all leachate generated from BCA within the LNAR. Based on the demonstrated performance of the containment system and the absence of any identified releases from the repository, the LNAR has complied with the applicable Environmental Goals as outlined in the Development Consent and Operations Environmental Management Plan (OEMP).

A review of surface water Electrical Conductivity concentration trends is presented in Figure 16. Consistent with previous monitoring outcomes, the observed trends do not indicate any impact from LNAR activities during the reporting period. Detailed assessment of surface water monitoring results, including other analytes and long-term trend analysis is provided in Appendix F.

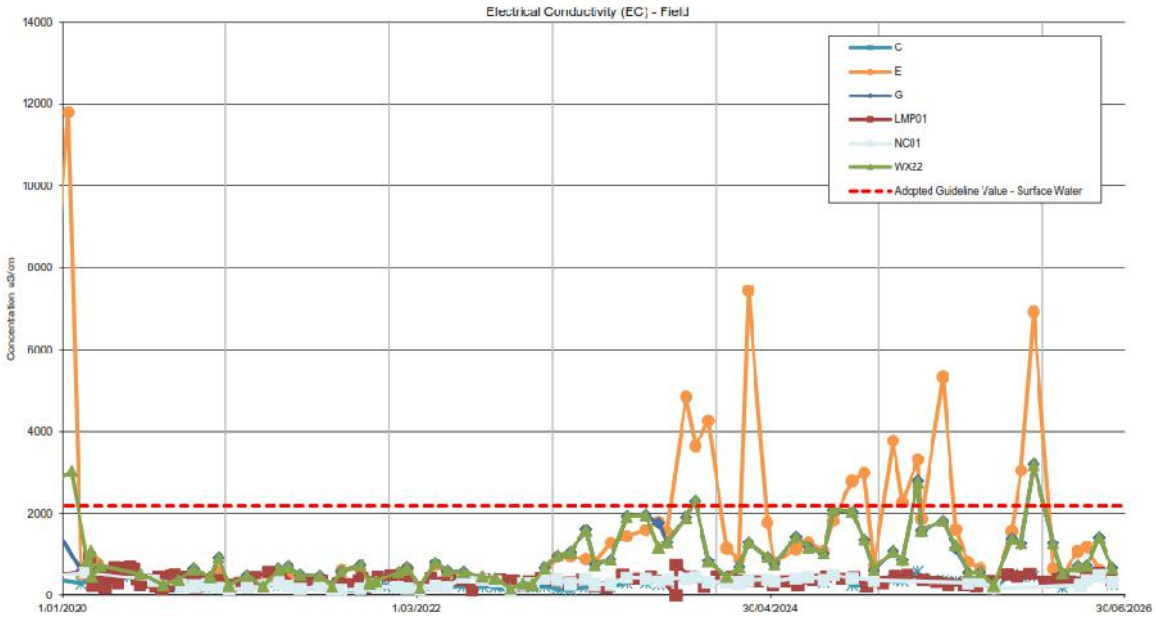


Figure 16 Electrical Conductivity Concentrations in Surface Water

7.1.3 Reportable Incidents

No reportable incidents have been recorded against surface water management for the reporting period.

7.1.4 Further Improvements

- Surface water will continue to be monitored.
- The outcomes of the independent groundwater investigation and ongoing monitoring will continue to support LNAR management and the ongoing performance of the Leachate Barrier Management System.

7.2 Groundwater Monitoring

7.2.1 Environmental Management

The Groundwater Management and Monitoring Plan (GMMP) is a sub-plan of the OEMP and seeks to address the specific requirements of the CoA D3 (b), E15 and E17. The objective of the GWMP is to assess compliance with the CoAs. The GMMP provides for the requirements for the ongoing groundwater monitoring program in accordance with CoA E15. The GMMP was established and implemented in October 2012 prior to construction activities and in addition to the existing monitoring regime for MPAR.

In terms of performance criteria, water quality trigger values set out in the OEMP (CDM Smith 2013), as modified by Aurecon (2017), have been adopted as Environmental Goals for the analytes. In addition to the Environmental Goals outlined above, an early warning is triggered when the post-ash placement 50th percentiles for the various water quality indicators, exceed the pre-ash placement 90th percentiles (Aurecon 2017) (for further details, see Appendix F).

The GMMP provides the procedures and protocols that apply to the monitoring and testing of water quality and involves quarterly sampling of existing long-term bores associated with MPAR and new bores located south of Huon Gully. The locations of the groundwater monitoring sites are presented in Figure 3.

7.2.2 Environmental Performance

Groundwater monitoring is undertaken in accordance with the OEMP and Project Approval 09_0186 to assess groundwater quality and identify potential influences from the range of land uses present in the area, including but not limited to LNAR activities. ERM was commissioned to assess the results of the groundwater monitoring program during the reporting period. The findings of this assessment are presented in the Annual Environmental Monitoring Report, provided in Appendix F.

Groundwater quality results from the vicinity of the Mount Piper Ash Repositories cannot be directly compared with the LNAR Environmental Goals for the purpose of determining compliance, as groundwater conditions in the area are known to be influenced by an adjacent project and factors unrelated to LNAR activities. Consequently, any comparison of groundwater monitoring results against the Environmental Goals would not provide a fair or reasonable assessment of LNAR's environmental performance.

The LNAR incorporates an engineered Leachate Barrier Management System (LBMS) designed to prevent interaction between Brine Conditioned Ash (BCA) and surrounding groundwater resources. Throughout the reporting period, the integrity of the LBMS was maintained and no releases from the repository were identified. Based on the demonstrated performance of the containment system and the findings of the independent groundwater investigation, LNAR has complied with the applicable Environmental Goals outlined in the Development Consent and Operations Environmental Management Plan (OEMP).

A review of groundwater Electrical Conductivity concentration trends is presented in Figure 17. Consistent with previous monitoring outcomes and the findings of the independent groundwater investigation, the observed trends do not indicate any impact from LNAR activities during the reporting period. Detailed assessment of groundwater monitoring results, including other analytes and long-term trend analysis, is provided in Appendix F.

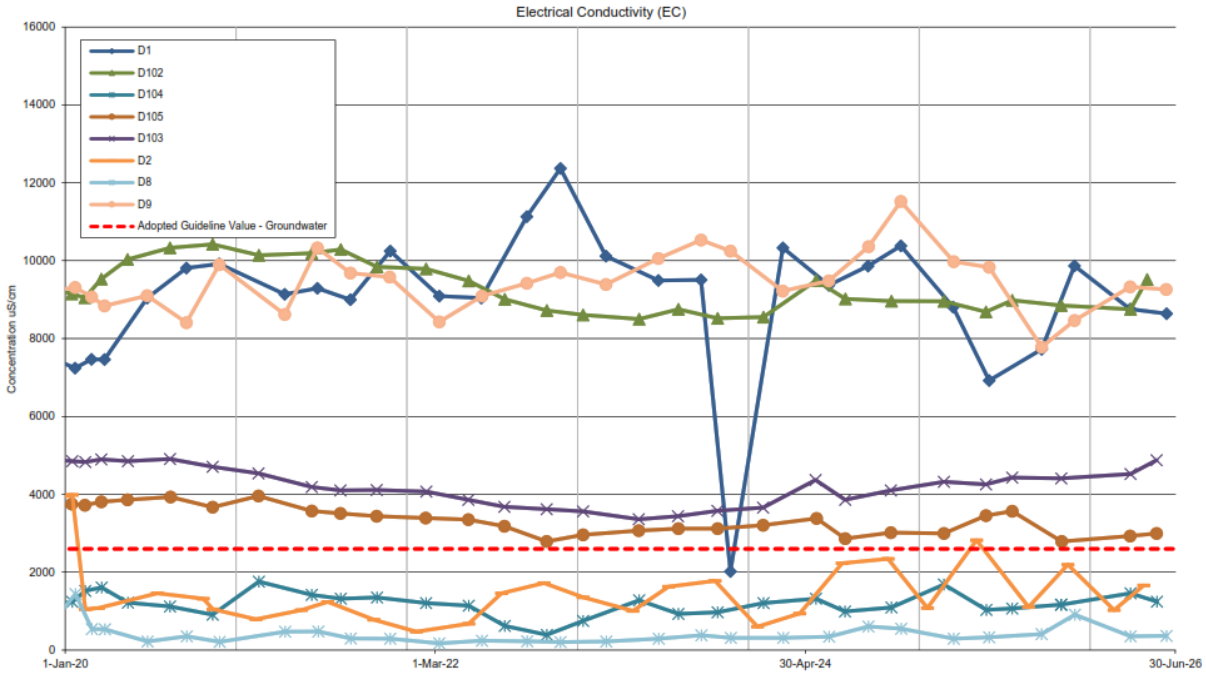


Figure 17 Electrical Conductivity Concentrations in Groundwater

7.2.3 Reportable Incidents

No reportable incidents have been recorded against groundwater management for the reporting period.

7.2.4 Further Improvements

- Groundwater monitoring results and findings from the Independent Groundwater Investigation will continue to inform the ongoing management of LNAR.
- The performance and effectiveness of the Leachate Barrier Management System will continue to be assessed through ongoing environmental monitoring and operational inspections.

7.3 Hydrological Monitoring

The hydrological monitoring program, required by CoA E17, was incorporated into the GMMP because of the change in design to LNAR addressed in the Consistency Report (SKM, 2012). It is noted that this condition relates to assessing and quantifying the impacts and effectiveness of the transformed section of Huons Creek into a subsurface drainage line. Monitoring was undertaken for a period of five years and is now completed.

7.4 Erosion and Sediment Control

7.4.1 Environmental Management

The LNAR catchment area uses external batters and laybacks to stabilise the ash placement and direct runoff to swale drains that are situated parallel to the batters. The swale directs the water towards a controlled point, being an off-flow structure placed approximately every 100 m along the batter. The off-flow structure, which is typically a rock-lined chute, directs the water to a containment pond.

The trucks deliver ash to the working face and create a number of piles next to each other, prior to final placement. The piles of ash allow for any runoff to be directed to the dirty water sediment pond(s). The ash is then graded into its final position and compacted by rollers to specific compaction criteria to mitigate erosion and infiltration.

7.4.2 Environmental Performance

Management of the ash benches is the primary principle of eliminating uncontrolled runoff over any batter. All benches associated with the LNAR Stage 1 and Stage 2 areas are graded west to ensure security against a breach from any external boundary. All surface water runoff from the ash footprint of LNAR Stage 1 and Stage 2 is managed within the boundary of the ash placement area.

The completion of the LNAR Stage 2A Leachate Barrier introduces a 100% Surface-water retention to the Brine Conditioned Ash (BCA) Footprint. Surface Water is collected adjacent to the Stage 2A Collection Sump and pumped to the LNAR Lined Pond System for storage and reticulated onto the Repository BCA Active Placement Pad.

Based on site observations and information reviewed, potential impacts from the operation of LNAR Stages 1 and 2 regarding erosion and sediment control, have been effectively mitigated and managed.

7.4.3 Reportable Incidents

No reportable incidents have been recorded regarding erosion and sediment controls for the reporting period.



Plate 12 Lined LNAR Pond 3 (Photo taken October 2025)



Plate 13 Lined LNAR Ponds 4 and 5 (left to right) (Photo taken October 2025)

7.4.4 Further Improvements

- Bank Stabilisation and erosion control works for Lot 9 and 101 have been completed
- SHG1 dirty water segregation project is planned for construction in 2026, with works to be undertaken by Centennial.

8. Landscape and Revegetation

8.1.1 Environmental Management

During the reporting year, no rehabilitation work was undertaken due to the construction of the Geomembrane system. Rehabilitation works at the LNAR are planned to occur when the 937m contour layback has been constructed around the perimeter of the ash repository.

8.1.2 Environmental Performance

Ash placement in LNAR Stages 2A and 2B remained within existing capped areas and well below capping levels during the reporting period. As a result, no additional land preparation or rehabilitation activities were required in these stages. LNAR Stages 1A and 1B are currently undergoing capping construction and are expected to be completed in Q4 2026. Variations in rehabilitation status from the previous reporting period are primarily associated with the ongoing Stage 1A/1B capping works. The rehabilitation status of the LNAR is detailed in Table 16. The rehabilitation status of the Lamberts North and the adjoining Mt Piper Ash Repository is shown in Appendix G.

Table 16 Rehabilitation Status

Area Type	Prev. Reporting Period Sept 2024 – Aug 2025 Hectares	This Reporting Period Sept 2025 – June 2026 Hectares	Next Reporting Period July 2026 – June 2027 Hectares
Total Footprint	19.8	15.0	15.0
Total active disturbance	16.7	14.9	14.9
Land being prepared for rehabilitation	0	0	0
Land under active rehabilitation	1.3	1.8	0
Completed rehabilitation	0	0	0

8.1.3 Reportable Incidents

No reportable incidents have been recorded against landscape and revegetation management for the reporting period.

8.1.4 Further Improvements

- MPAR capping works are expected to be completed by the end of September 2026, while LNAR Stage 1A/B is scheduled for completion by the end of 2026.

9. Community

9.1 Community Engagement

During the reporting period Community Consultation Committee (CCC) meetings were held on 30 September 2025, 9 December 2025, 24 February 2026, 20 April 2026 and 2 June 2026. The CCC comprises representatives from the local community and EA NSW. The CCC meets periodically to discuss matters relating to operations at MPPS, including activities at MPAR and LNAR. The CCC minutes are made publicly available via the Mt Piper Community page on EA NSW website Mt Piper Community page EnergyAustralia.
This section covers the transitional reporting period from September 2025 to June 2026, following the approved change to financial year reporting for the LNAR AOCR.

9.2 Community Contributions

The MPPS and the associated LNAR have contributed to the economy of the district and State through the purchase of materials and services from local and regional suppliers, and by direct and indirect employment. EA NSW continues to support several community groups and organisations through in-kind support and financial sponsorship programs. During the reporting period, EA NSW had the opportunity to support up to 33 different community organisations and events during the reporting period. A list of these organisations and events are included in Appendix H.

9.3 Community Complaints

There were no community complaints reported to EA NSW relating to the LNAR during the reporting period (Appendix I). EA NSW maintains a 24-hour hotline for the public to report incidents, complaints or enquiries with contact details available on the EnergyAustralia website. EA NSW records the details of all complaints received in a Complaints Register.

9.4 Website Information

A project-specific webpage has been developed to keep the broader community up to date with recent activities at the LNAR in accordance with CoA B10. Copies of the following documents are made publicly available on the EA NSW website:

https://www.energyaustralia.com.au/about-us/what-we-do/generating-energy/lamberts-north-ash-repository

- Environment Assessment
- Project Approval 09_0186
- Modification 1 Report and Response to Submissions
- Construction Environment Management Plan
- Operational Environmental Management Plan
- Annual Reports
- Environment Protection Licence 13007
- Pollution Incident Response Management Plan
- CCC Minutes

10. Independent Environmental Audit

10.1 Independent Environmental Audit

An independent environmental audit was performed in October 2018 (SLR, 2018) and all the recommendations and findings have been completed.

10.2 Environmental Internal Audit

The internal audit focused on compliance with land and surface water management, leachate monitoring, ash placement, environmental controls, monitoring programs and reporting requirements for LNAR Stage 1 and Stage 2. The audit reviewed operational records, monitoring data, site management practices and environmental controls against the OEMP, Water Management Plan and project approval requirements. A total of 10 compliant findings and one low-level non-compliance were identified. The detailed audit report is available in Appendix J.

The audit confirmed that LNAR management systems, monitoring programs and environmental controls are generally effective and support compliance with the approved OEMP, Water Management Plan and project approval requirements. One low-level non-compliance was identified relating to waste management controls, where materials not authorised for disposal within the repository were identified during the audit. The material was removed and corrective actions have been initiated in accordance with the OEMP non-compliance and corrective action process, including updates to waste approval, record management and inspection processes to prevent recurrence. The finding remains subject to ongoing close-out actions.

11. Activities Proposed in the next reporting period

Activities to be conducted in the next reporting period will include:

- Completion of the LNAR Stage 1A/1B capping
- SHG1 dirty-water segregation project
- Continued dust suppression activities to minimise potential air quality impacts from the LNAR Stage 1 and Stage 2.
- Water management works, including the maintenance of sediment and erosion control structures.
- Further tree thinning and management of the Biodiversity Offset Area.
- Continued execution of the Conservation Agreement management actions as outlined and required by the Conservation Agreement.
- Continue marketing the reuse of fly ash to cement manufacturers and other potential users.
- Environmental compliance monitoring for noise emissions, air quality and water quality.
- Continue monitoring the ecological health of Wangcol Creek throughout the life of the Project. The monitoring will continue after final capping of the LNAR for a minimum of five years in accordance with approval conditions.

11.1 Environmental Management Targets and Strategies for the Next Year

Environmental measures to be implemented in the next reporting period are detailed in Table 17.

Table 17 Measures to be implemented in the next reporting period

Environment Management Area	Target / Strategy	Timeframe
Ash Delivery and Placement	Stage 2B was completed in September 2025 and began receiving ash placement in November 2025. Ash placement and stormwater management across the life of the repository continue to be undertaken in accordance with operational requirements.	2026 onwards
	Mt Piper is continuing to work with NuRock, who are utilising fly ash from Mt Piper to manufacture bricks, pavers and concrete blocks. Throughout 2025 NuRock have been calibrating their plant to achieve 100% full automation. During stage one it is estimated that the plant will reuse an estimated 250-280 T of fly ash per day.	
	Mt Piper will continue to supply and market the reuse of fly ash to cement manufacturers.	
Biodiversity Offset Area	Implement Management Plan Actions as required by the Biodiversity Conservation Agreement.	2026 onwards
	Monitor for any wildlife entrapment or injury to enhance wildlife safety.	
	Implement small patch (1-2 ha) of thinning over the next 5-10 years leaving failed trees in places to boost habitat complexity.	

Ecological Monitoring	As per the project approval, ongoing monitoring should continue throughout the life of the project (including operation) and for at least two (2) sampling periods following ash placement. This will maximise the validity of data and allow for more accurate comparisons between baseline data. Data from ongoing surveys will allow more confident conclusions to be made on the presence and duration of any potential impact in Wangcol Creek that could be attributed to the project. It is recommended that sampling continue with the next event to be undertaken in Spring 2026 (Stantec, 2026).	2026 onwards
	Sampling should continue at the pre-existing, longer-term monitoring sites, along with the additional Control Sites established on Wangcol Creek in spring 2025 (NCR4 and NCR5) in relation to SHMP. While no baseline data are available from these sites, data collected here during future surveys would allow an assessment of potential effects of the capping work on stream health (Stantec, 2026).	
	Three replicate AUSRIVAS samples should continue to be collected from each site during future surveys. This will provide a measure of the variation present in each indicator at each site, thereby, improving the ability to detect any future impact by enabling the use of appropriate statistical analysis (Stantec, 2026).	
	At this stage no Lamberts North or MPAR capping-works-specific mitigation, impact minimisation or ameliorative actions are recommended (Stantec, 2026).	
Water Quality	The findings of the Independent Groundwater Investigation and ongoing monitoring will continue to advise on future management and mitigation options for LNAR.	2026 onwards
	The performance and effectiveness of the Leachate Barrier Management System will continue to be assessed through ongoing environmental monitoring and operational inspections.	2026 onwards

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13. Glossary of Terms

µg/m^3	Microgram per cubic metre
AHD	Australian Height Datum
ANZECC	Australian & New Zealand Environmental & Conservation Council
AOCR	Annual Operations Compliance Report
AQMP	Air Quality Management Plan
AQMS	Air Quality Monitoring Station
BCA	Brine-conditioned Ash
BCT	Biodiversity Conservation Trust
BOA	Biodiversity Offset Area
BOM	Bureau of Meteorology
BOMP	Biodiversity Offset Management Plan
CCC	Community Consultative Committee
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval (Project Approval 09_0186)
dB	decibel
DE	Delta Electricity
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPE-Water	– Department of Planning & Environment – Water
DPHI	Department of Planning, Housing and Infrastructure
DPI-Fisheries	Department of Primary Industries - Fisheries
EA NSW	EnergyAustralia NSW
ELA	Eco Logical Australia
EMP	Ecological Monitoring Program
EP&A Act	*Environmental Planning & Assessment Act 1979*
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ERM	Environmental Resources Management Australia Pty Ltd
GMMP	Groundwater Management & Monitoring Plan
ha	hectares
LLS	Local Land Services
LN	Lamberts North
LNAR	Lamberts North Ash Repository
LSAR	Lamberts South Ash Repository
m	metres
m/s	Metres per second
Mod	Modification
MPAR	Mt Piper Ash Repository

MPPS	Mt Piper Power Station
MW	Megawatt
NEMMCO	National Electricity Market Management Company
NEPM	National Environmental Protection Measures
NRAR	Natural Resource Access Regulator
NSW	New South Wales
OEMP	Operational Environmental Management Plan
ONMMP	Operational Noise Management & Monitoring Plan
PM	Particulate Matter
POEO Act	*Protection of the Environment Operations Act 1997*
SoC	Statement of Commitments
SPL	Sound Power Level
SSWMP	Soil & Surface Water Management Plan
T	tonnes
TEOM	Tapered Element Oscillating Microbalance
TSP	Total Suspended Particulates
WAL	Water Access Licence
WMP	Waste Management Plan
WQMR	Water Quality Monitoring Report

Appendix A Conditions of Approval Compliance checklist and status

Lamberts North Compliance Tracking

Heading	Number	Condition Requirement	Development phase	2025-2026 Observation	Compliance Finding
Terms of Approval	**A1**	The Proponent must carry out the project:	At all times	Based on the review undertaken, the Lamberts North operations have been carried out in accordance with the requirements.	**Compliant**
	a)	in accordance with the conditions of this approval granted with respect to the Mt Piper Ash Placement Project (09_0186);			
	b)	in accordance with all written direction of the Secretary; and			
	c)	generally, in accordance with the EA.			
	A2	The conditions of this approval and direction of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and the document listed in condition A1(c). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A1(c), the most recent document prevails to the extent of any inconsistency, ambiguity or conflict.	At all times	No inconsistencies were observed between the listed documents during implementation of the project or during the course of the review of operations for the AOCR	**Compliant**
	A3	The Proponent shall comply with the reasonable requirements of the Secretary arising from the Department's assessment of:	At all times	This has been addressed in Section 5 of 2025-2026 AOCR	**Compliant**
	a)	any documents that are submitted in accordance with this approval; and			
	b)	the implementation of any actions or measures contained in these documents.			
	A4	The Proponent shall meet the requirements of the Secretary in respect of the implementation of any measure necessary to ensure compliance with the conditions of this approval, and general consistency with the documents listed under condition A1(c) of this approval.	At all times	A request was made by the Secretary of the DPE in April 2018 for EA to have an Independent Environmental Audit (IEA) commissioned by June 2019. The IEA was performed in October 2018 (SLR, 2018)	**Compliant**
Limits of Approval	**A5**	This approval shall lapse five years after the date on which it is granted, unless the works that are the subject of this approval are physically commenced on or before that time.	Prior to construction	The Project Approval for Lamberts North Ash Repository (DPI, 2012) is dated 16 February 2012 with construction works on the Lamberts North Ash Repository project commencing 7 January 2013, following approval of the CEMP by DPE in December 2012. Ash placement commenced in September 2013, well before the 'deadline' date.	**Compliant**
Statutory Requirements	**A6**	The Proponent shall ensure that all licences, permits and approvals are updated and/or obtained as required by law and maintained as required with respect to the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals.	At all times	Based on the Environmental Assessment (SKM, 2010) and OEMP (EA NSW, 2025), no permits were required during the operational phase of the project. Prior to construction licences for sinking boreholes were obtained from the NSW Office of Water. No Commonwealth permits, licences or approvals have been identified for the project. The project complies with the requirements of EnergyAustralia NSW's EPL 13007 (See Section 1 of the 2025-26 AOCR)	**Compliant**
Staging	**A7**	Where the Proponent intends to construct and operate the project in discrete stages (i.e. Lamberts North and Lamberts South) it may comply with the requirements in conditions B4, B5, D2, D3, D4, D5 and D6 separately for each stage.	Prior to construction	A CEMP (CDM Smith, 2012a) for construction (CoA B4) including the relevant sub-plans outlined within CoA B5 was approved by the DPI 1 December 2012. An OEMP (CDM Smith, 2013) for operation (CoA D2) of Lamberts North, including the relevant operational sub-plans as outlined in CoA D3 was approved by the DPI in May 2013. The OEMP was reviewed and updated by EnergyAustralia NSW (2025) which was approved by the DPHI on 17 April 2025. An evaluation of ground water levels at Lamberts North (CDM Smith, 2012b) was provided to DPE in May 2013, in accordance with CoA D5. The Leachate Management System Water Balance Assessment (CoA D6) provided to the DPE in February 2022 was approved in April 2022. The above-mentioned conditions are compliant with the Lamberts North stage. They have not been applied to the Lamberts South stage as no construction work has commenced for this stage to date.	**Compliant**
Compliance	**A8**	The Proponent must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects and address details of the incident including: (a) date, time and location; (b) a brief description of what occurred and why it has been classified as an incident (c) a description of what immediate steps were taken in relation to the incident; and(d) identifying a contact person for further communication regarding the incident.	As required	No incidents requiring notification of the Secretary occurred during the reporting period.	**Not triggered**
	A8A	The Proponent must provide the Department with a subsequent incident report in accordance with Appendix 2 (Incident Notification and Reporting Requirements).			
Non-Compliance Notification	**A9**	Within seven days of becoming aware of a non-compliance, the Proponent must notify the Department of the non-compliance. The notification must be in writing and must be submitted via the NSW planning portal (Major Projects). The notification must identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply, the reasons for the non-compliance (if known), and what actions have been undertaken, or will be undertaken, and when, to address the non-compliance. *Note: A non-compliance which has been notified as an incident does not need to also be notified as a noncompliance.*	As required	No non-compliances requiring notification of the Secretary occurred during the reporting period.	**Not triggered**
	A10	Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Requirements outlined in the Compliance Reporting Post Approval Requirements (2020)	At all times	The 2025-26 AOCR had been developed in accordance with the requirements of the Compliance Reporting Post Approval Requirements (2020). On 20 February 2026, the NSW Department of Planning, Housing and Infrastructure approved EnergyAustralia's request to align LNAR compliance reporting with the financial year reporting period 1 July to 30 June, replacing the previous 1 September to 31 August reporting period. This report has been prepared in accordance with that approval.	**Compliant**
Access to Information	**A11**	Until the completion of all rehabilitation required under this approval, the Proponent must:	At all times	Awebsite is available for the project: https://www.energyaustralia.com.au/about-us/energy-generation/lamberts-north-ash-repository the webpage hosts the Environmental Assessment, Submissions report and approvals, as well and Environmental Management Plans, Annual Environmental Management Reports & Compliance Reports and Compliance Tracking. Progress on operations and outcomes of compliance tracking are detailed within the Quarterly Community meeting and the minutes from this meeting are available from the following website: https://www.Energyaustralia.com.au/about-us/energy-generation/mt-piper-power-station/mt-piper-community	**Compliant**
	a)	make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this approval) publicly available on its website:			
	i	the EA;			
	ii	all current statutory approvals for the project;			
	iii	all approved strategies, plans and programs required under the conditions of this approval;			
	iv	staging plans for the project if the construction, operation or decommissioning of the project is to be staged;			
	v	regular reporting on the environmental performance of the project in accordance with the reporting requirements in any plans or programs approved under the conditions of this approval;			

	vi	a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;		All documentation is current and up to date. Summary of the current phase and progress of the project have been addressed in section 1 2025-26 AOCR	
	vii	a summary of the current phase and progress of the project;			
	viii	contact details to enquire about the project or to make a complaint;			
Heading	**Number**	**Condition Requirement**	**Development phase**	**2025-2026 Observation**	**Compliance Finding**
	ix	a Complaints Register, updated monthly;		No complaints have been received regarding operations of the Ash Repositories, including LNAR, for the life of the project. Results of internal audit during the reporting period have been addressed in Section 10 and can be found in Appendix J of the 2025-26 AOCR.	
	x	audit reports prepared as part of any Independent Environmental Audit of the project and the Proponent's response to the recommendations in any audit report;			
	xi	any other matter required by the Secretary; and			
	b)	keep such information up to date, to the satisfaction of the Secretary.			
Environmental Representative	**B1**	Prior to the commencement of any construction activities, or as otherwise agreed by the Secretary, the Proponent shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s). The Proponent shall engage the Environmental Representative(s) during any construction activities, and throughout the life of the project, or as otherwise agreed by the Secretary. The Environmental Representative(s) shall:	At all times	In April 2018, EnergyAustralia NSW advised the DPE of Mrs. Skye Zorz's nomination for the role of Environmental Representative for the Mount Piper Ash Placement Project. This was approved by the Secretary and Mrs. Zorz was approved for the role of Environmental Representative. Mrs. Zorz has left EA, EnergyAustralia is currently seeking a suitable candidate to be nominated as the new Environmental Representative.	**Compliant**
	a)	oversee the implementation of all environmental management plans and monitoring programs required under this approval, and advise the Proponent upon the achievement of these plans/programs;			
	b)	consider and advise the Proponent on its compliance obligations against all matters specified in the conditions of this approval and the Statement of Commitments, as referred to under condition A1(c); and			
	c)	have the authority and independence to recommend to the Proponent reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts and, failing the effectiveness of such steps, to recommend to the Proponent that relevant activities are to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur.			
Groundwater Modelling	**B2**	The Proponent shall develop and maintain an up to date groundwater model for Lamberts North. The model should be calibrated to site-specific data. The Proponent shall consult with Water NSW in the preparation of the groundwater model and the model shall be provided to Water NSW within five months of project approval, unless otherwise agreed by the Secretary. The model shall address but not necessarily be limited to the following:	Prior to construction	A Groundwater modelling report was prepared by CDM Smith in November 2012 (CDM Smith, 2012b). The report was prepared in consultation with SCA and evaluated the potential impacts of construction and operational activities at the site and to assist in determining appropriate surface and groundwater management measures. No construction work has commenced at Lamberts South Ash Repository. EnergyAustralia NSW maintains an up-to-date groundwater model. The most recent update to the model was undertaken as part of the independent groundwater investigation completed in August 2023. The model is maintained by independent experts ERM.	**Compliant**
	a)	the findings of the groundwater monitoring of existing ash placement areas and be based on average groundwater quality data;			
	b)	updated predictions of the long term behaviour, fate and impacts of ash placement, in particular for water quality parameters such as sulphates, chlorides, boron, manganese, nickel, zinc, molybdenum copper, arsenic and barium;			
	c)	updated risk assessment for ground and surface water quality impacts under a range of rainfall events of differing duration and intensities (including up to a 100 year ARI event);			
	d)	calibration to site-specific data; and			
	e)	identification of appropriate surface and groundwater management measures required in order to achieve a neutral or beneficial effect on water quality.			
		Prior to construction of Lamberts South, the Lamberts North groundwater model is to be updated as set out above in items (a) - (e) in consultation with Water NSW, to apply to Lamberts South.			
Groundwater Monitoring	**B3**	Baseline groundwater monitoring data, including groundwater quality, location of groundwater monitoring wells, depth and flow of groundwater in the project area should be obtained for a minimum of two sampling events prior to construction and a minimum of two sampling events after construction and prior to ash placement commencing. The baseline monitoring data along with the modelling predictions in B2 should be used in the consideration of the design of the ash placement facilities. The location of groundwater monitoring wells and parameters to be monitored should be undertaken in consultation with Water NSW Prior to construction of Lamberts South the Proponent shall conduct baseline groundwater data collection as set out above, and use the results and the modelling predictions in B2 in the consideration of the design of the ash placement facilities	At all times	Groundwater bores were installed in July 2012 and were licenced for their construction with NSW Office of Water. The first sampling event for baseline testing was performed upon installation and prior to construction. The location and parameters to be undertaken were done in consultation with SCA. Existing historical groundwater bores that were established since the construction of Mt Piper are used to supplement the newly installed groundwater bores. Additional groundwater monitoring bores were installed as part of the independent groundwater investigation in 2018 and 2020.	**Compliant**
Construction Environmental Management Plan	**B4**	The Proponent shall prepare and implement a Construction Environmental Management Plan (CEMP) to outline environmental management practices and procedures to be followed during construction of the project. The Plan shall be prepared in consultation with Council and relevant government agencies, and be consistent with the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004 or its latest revision) and shall include, but not necessarily be limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	a)	a description of all relevant activities to be undertaken on the site during construction including an indication of stages of construction, where relevant;			
	b)	identification of the potential for cumulative impacts with other construction activities occurring in the vicinity and how such impacts would be managed;			
	c)	details of any site compounds and mitigation, monitoring, management and rehabilitation measures specific to the site compound(s) that would be implemented;			
	d)	statutory and other obligations that the Proponent is required to fulfil during construction including all relevant approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;			
	e)	evidence of consultation with relevant government agencies required under this condition and how issues raised by the agencies have been addressed in the plan;			
	f)	a description of the roles and responsibilities for all relevant employees involved in the construction of the project including relevant training and induction provisions for ensuring that all employees, contractors and sub- contractors are aware of their environmental and compliance obligations under these conditions of approval;			
	g)	details of how the environmental performance of construction will be managed and monitored, and what actions will be taken to address identified potential adverse environmental impacts;			

	h)	specific consideration of relevant measures to address any requirements identified in the documents referred to under conditions A1(c);			
	i)	a complaints handling procedure during construction;			
	j)	emergency management measures including measures to control bushfires;			
Heading	**Number**	**Condition Requirement**	**Development phase**	**2025-2026 Observation**	**Compliance Finding**
	k)	details of waste management including reuse and/or recycling of waste material, to minimise the need for treatment or disposal of those materials outside the site; and			
	l)	the additional requirements of this approval.			
		The CEMP for the project (or any stage of the project) shall be submitted to the Secretary for approval at least four weeks prior to the commencement of any construction work associated with the project (or stage as relevant), unless otherwise agreed by the Secretary. Construction shall not commence until written approval has been received from the Secretary.			
	B5	As part of the CEMP for the project, the Proponent shall prepare and implement the following plans:			
Construction Noise Management Plan	a)	a Construction Noise Management Plan to detail how construction noise impacts would be minimised and managed. The Plan shall be developed in consultation with the EPA and shall include, but not necessarily be limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing a Construction Noise Management Plan was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	i)	details of construction activities and an indicative schedule for construction works;			
	ii)	identification of construction activities that have the potential to generate noise impacts on sensitive receivers;			
	iii)	identification of noise criteria and procedures for assessing noise levels at sensitive receivers;			
	iv)	details of reasonable and feasible actions and measures to be implemented to minimise noise impacts;			
	v)	details of noise monitoring and if any noise exceedance is detected, how any non-compliance would be rectified; and			
	vi)	procedures for notifying sensitive receivers of construction activities that are likely to affect their noise amenity.			
Groundwater Management Plan	b)	a Groundwater Management Plan to detail measures to manage groundwater impacts. The Plan shall be prepared in consultation with DCCEEW Water and Water NSW and include, but not necessarily be limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing a Groundwater Management Plan was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	i)	identification of the construction activities that could affect groundwater at the site, including groundwater interference and impacts to groundwater users and dependent species;			
	ii)	a description of the management controls to minimise impacts to groundwater during construction;			
	iii)	methods for monitoring groundwater during construction including a program to monitor groundwater flows and groundwater quality in the project area;			
	iv)	a response program to address identified exceedances of existing groundwater quality criteria approved for Area 1 (the existing ash placement area); and			
	v)	provisions for periodic reporting of results to Water NSW during construction.			
Soil and Surface Water Management Plan	c)	a Soil and Surface Water Management Plan to outline measures that will be employed to manage water on the site, to minimise soil erosion and the discharge of sediments and other pollutants to lands and/or waters throughout the construction period. The Plan shall be based on best environmental practice and shall be prepared in consultation with Water NSW and DCCEEW Water and any other relevant government agency. The Plan shall include, but not necessarily be limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing a Soil and Surface Water Management Plan was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	i)	baseline data on the water quality and available flow data in Huons Creek, Lamberts Gully Creek and Wangcol Creek;			
	ii)	water quality objectives and impact assessment criteria for Huons Creek, Lamberts Gully Creek and Wangcol Creek;			
	iii)	a geomorphic assessment of the capacity of Lamberts Gully Creek to accommodate additional flow under a range of rainfall events and duration, prior to commencement of construction works;			
	iv)	identification of the construction activities that could cause soil erosion or discharge sediment or water pollutants from the site;			
	v)	description of stockpile locations and disposal methods;			
	vi)	a description of the management methods to minimise soil erosion or discharge of sediment or water pollutants from the site, including a strategy to minimise the area of bare surfaces, stabilise disturbed areas, and minimise bank erosion;			
	vii)	demonstration that the proposed erosion and sediment control measures will conform with, or exceed, the relevant requirements of Managing Urban Stormwater: Soils and Construction (Landcom, 2004);			
	viii)	a site water management strategy identifying drainage design including the separation of clean and dirty water areas for the project, details of the lining of surface water collection ponds and the associated water management measures including erosion and sediment controls and provisions for recycling/reuse of water and the procedures for decommissioning water management structures on the site and consideration to the treatment of water prior to discharge to the environment			
	ix)	measures to monitor and manage soil and water impacts in consultation with DCCEEW Water including: control measures for works close to or involving waterway crossings (including rehabilitation measures following disturbance and monitoring measures and completion criteria to determine rehabilitation success);			
	x)	measures to monitor and manage flood impacts in consultation with DCCEEW Water and shall include, but not necessarily be limited to a flood model for predicted water levels and contingency measures for the site during potential floods;			
	xi)	a program to monitor surface water quality, including Lamberts Gully Creek and Wangcol Creek;			
	xii)	a protocol for the investigation of identified exceedances in the impact assessment criteria;			
	xiii	a response plan to address potential adverse surface water quality exceedances; and			
	xiv)	provisions for periodic reporting of results to DCCEEW Water and Water NSW as per condition B8.			
Air Quality Management	d)	a Air Quality Management Plan, to provide details of dust control measures to be implemented during the construction of the project. The Plan shall be prepared in consultation with the EPA and should include, but not necessarily be limited to:		A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing an Air Quality Management Plan was developed in consultation with Delta Electricity Environment Section, NOW	

Plan	i)	identification of sources of dust deposition including, truck movements, regrading, backfilling, stockpiles and other exposed surfaces;	Prior to & during construction	and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	ii)	identification of criteria, monitoring and mitigation measures for the above sources; and			
Heading	**Number**	**Condition Requirement**	**Development phase**	**2025-2026 Observation**	**Compliance Finding**
	iii)	a reactive management programme detailing how and when construction operations are to be modified to minimise the potential for dust emissions, should emissions exceed the relevant criteria.			
Flora and Fauna Management Plan	e)	a Flora and Fauna Management Plan, to outline measures to protect and minimise loss of native vegetation and native fauna habitat as a result of construction of the project. The Plan shall be prepared in consultation with the BCS and shall include, but not necessarily be limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing a Flora and Fauna Management Plan was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	i)	plans showing terrestrial vegetation communities; important flora and fauna habitat areas; locations of threatened flora and fauna and areas to be cleared. The plans shall also identify vegetation adjoining the site where this contains important habitat areas and/or threatened species, populations or ecological communities;			
	ii)	procedures to accurately determine the total area, type and condition of vegetation community to be cleared;			
	iii)	methods to manage impacts on flora and fauna species and their habitat which may be directly or indirectly affected by the project, procedures for vegetation clearing or soil removal/stockpiling and procedures for identifying and re-locating hollows, installing nesting boxes and managing weeds; and			
	iv)	a procedure to review management methods where they are found to be ineffective.			
Aboriginal Heritage Plan	f)	an Aboriginal Heritage Plan to monitor and manage Aboriginal heritage impacts in consultation with registered Aboriginal stakeholders and prepared in consultation with Heritage NSW. The plan should include but not necessarily limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing an Aboriginal Heritage Plan was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	i)	an updated Cultural Heritage Management Plan to cover the protection of sites previously recorded in the 2005 Aboriginal heritage assessment;			
	ii)	procedures for the management of unidentified objects and/or human remains, including ceasing work;			
	iii)	Aboriginal cultural heritage induction processes for construction personnel; and			
	iv)	procedures for ongoing Aboriginal consultation and involvement should Aboriginal heritage sites or objects be found during construction.			
Ash Transportation Plan	g)	an Ash Transportation Plan to provide details on the preferred option for the transportation of ash from the Mt Piper Power Station to the ash placement areas. The Plan shall include but not necessarily limited to:	Prior to & during construction	A CEMP (CDM Smith, 2012a) for construction at Lamberts North containing an Ash Transportation Plan was developed in consultation with Delta Electricity Environment Section, NOW and SCA. The CEMP was approved by the DPI in December 2012.	**Compliant**
	i)	justification of the proposed option for ash transportation (either haulage access roads and/or conveyor) for ash transportation;			
	ii)	details of the proposed option, including construction requirements, impacts and mitigation measures;			
	iii)	plans showing the location of the chosen option; and			
	iv)	provision of mitigation measures should the conveyor breakdown			
Biodiversity Offsets	**B6**	The Proponent shall develop and submit for the approval of the Secretary, a Biodiversity Offset Management Plan. The Biodiversity Offset Management Plan is to be submitted within 12 months of the project approval, unless otherwise agreed to by the Secretary. The Plan shall be developed in consultation with the BCS and shall:		A Biodiversity Offset Management Plan (BOMP) for Lamberts North in consultation with OEH was submitted 14 May 2013 to DPI. The BOMP (Delta Electricity, 2012) was not approved 18 June 2013 and DPI requested the BOMP to be revised to include an offset of 1:1 to the existing rehabilitation site and be resubmitted. The BOMP was revised in consultation with OEH and submitted 23 July 2015. The revised BOMP (EA NSW, 2015) was approved 24 August 2015. A Biodiversity Offset Strategic Outline (BOSO) was prepared for Lamberts South and was considered appropriate by the Department. The BOMP was further revised in consultation with OEH and submitted to DPE 3 May 2019. The revised BOMP (EA NSW, 2019b) was approved 19 December 2019. The Biodiversity Offset Area (TCR) is managed in accordance with the conservation agreement (Made under the Biodiversity Conservation Act 2016) granted by Biodiversity Conservation Trust BCT on March 2022. The conservation agreement and associate management plan has been prepared to satisfy condition B6 (a-g).	**Compliant**
	a)	identify the objectives and outcomes to be met by the Biodiversity Offset Management Plan;			
	b)	describe the size and quality of the habitat/vegetation communities of the offset;			
	c)	identify biodiversity impacts, including impacts related to the loss of impacted flora and fauna including threatened Capertee Stringybark (Eucalyptus cannonii), nine (9) hectares of remnant vegetation (including, Red Stringy Bark Woodland, Scribbly Gum Woodland, Ribbon Gum Woodland), habitat for microbat and woodland bird species and the 31 ha of rehabilitated vegetation to be removed;			
	d)	describe the decision-making framework used in selecting the priority ranking of compensatory habitat options available in the region. Where possible, this should include purchase of land, development of agreements with identified land management authorities (e.g. EPA, Council) for long term management and funding of offsets and mitigation measures, and installation of identified mitigation measures;			
	e)	include an offset for direct and indirect impacts of the proposal which maintains or improves biodiversity values;			
	f)	identify the mechanisms for securing the biodiversity values of the offset measures in perpetuity and identify a monitoring regime, responsibilities, timeframes and performance criteria; and			
	g)	detail contingency measures to be undertaken should monitoring against performance criteria indicate that the offset/ rehabilitation measures have not achieved performance outcomes. Rehabilitation measures are required to be implemented to ensure that the biodiversity impacts are consistent with a maintain or improve biodiversity outcome.			
Ecological Monitoring Program	**B7**	The Proponent shall prepare and implement an Ecological Monitoring Program prior to construction, in consultation with DCCEEW Water and BCS to monitor and quantify the impacts on the ecology of Wangcol Creek and the associated riparian environment. The Program shall include, but not necessarily be limited to:	At all times	The Ecological Monitoring Plan (EMP) was produced on 31 November 2012 in consultation with NOW and DPI (Fisheries). Baseline data was sampled 7 November 2012 and autumn and spring sampling obtained for 2013 and 2014. Spring sampling has been performed in December 2016 (Cardno, 2017), December 2018 (Cardno, 2019), November 2020 (Cardno, 2021), November 2021 (Cardno, 2022), December 2022 (Stantec 2023), December 2023 (Stantec, 2024), December 2024 (Stantec, 2025) and December 2025 (Stantec 2026). Autumn samplings have been performed in May 2018 (Cardno, 2018) and May 2020 (Cardno, 2020).	**Compliant**
	a)	a sampling, data collection and assessment regime to establish baseline ecological health and for ongoing monitoring of ecological health of the instream environment during construction and throughout the life of the project (including operation);			
	b)	at least one in-stream sampling period prior to ash placement at Wangcol Creek and at least two (2) sampling periods following ash placement at each of Lamberts North and Lamberts South;			
	c)	an assessment regime for monitoring the ecological health of the riparian environment for a period of at least five (5) years after final capping; and			
	d)	management measures to address any adverse ecological impacts.			
Compliance Monitoring and Tracking	**B8**	The Proponent must develop and implement a Compliance Tracking Program for the project, prior to commencing construction, to track compliance with the requirements of this approval and must include, but not necessarily be limited to:		A Compliance Tracking program (this document) was developed & implemented prior to commencing construction. The Compliance and Tracking document was approved by DPI on 13 December 2012.	

	a)	provisions for periodic review of the compliance status of the project against the requirements of this approval and the Statement of Commitments detailed in the document referred to in condition A1c) of this approval;	At all times		**Compliant**
	b)	provisions for periodic reporting of the compliance status to the Secretary;			
Heading	**Number**	**Condition Requirement**	**Development phase**	**2025-2026 Observation**	**Compliance Finding**
	c)	a program for independent environmental auditing in accordance with the Department's Independent Audit Post Approval Requirements (2020);			
	d)	procedures for rectifying any non-compliance identified during environmental auditing or review of compliance, complying with the requirements listed in condition A9 of this approval;			
	e)	mechanisms for recording environmental incidents and actions taken in response to those incidents, complying with the requirements listed in conditions A8 and A8A of this approval;			
	f)	provisions for reporting environmental incidents to the Secretary during construction and operation; and			
	g)	provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.			
		The Compliance Tracking Program must be implemented prior to construction of the project with a copy submitted to the Secretary for approval at least four weeks prior to the commencement of the project, unless otherwise agreed by the Secretary.			
	B9	Nothing in this approval restricts the Proponent from utilising any existing compliance tracking programs administrated by the Proponent to satisfy the requirements of condition B8. In doing so, the Proponent must demonstrate to the Secretary how these systems address the requirements and/or have been amended to comply with the requirements of the condition.			
Community Information and Complaints Management Provision of Information	**B10**	Prior to the construction of the project, the Proponent shall establish and maintain a website for the provision of electronic information associated with the project. The Proponent shall, subject to confidentiality, publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to:	Prior to construction	A project website is available for the project: https://www.energyaustralia.com.au/about-us/energy-generation/lamberts-north-ash-repository the webpage hosts the Environmental Assessment, Submissions report and approvals, as well and Environmental Management Plans, Annual Environmental Management Reports & Compliance Reports and Compliance Tracking. Progress on operations and outcomes of compliance tracking are detailed within the Quarterly Community meeting and the minutes from this meeting are available from the following website: https://www.Energyaustralia.com.au/about-us/energy-generation/mt-piper-power-station/mt-piper-community	**Compliant**
	a)	the documents referred to under condition A1 of this approval;			
	b)	this project approval, Environment Protection Licence and any other relevant environmental approval, licence or permit required and obtained in relation to the project;			
	c)	all strategies, plans and programs required under this project approval, or details of where this information can be viewed;			
	d)	information on construction and operational progress; and			
	e)	the outcomes of compliance tracking in accordance with the requirements of this project approval.			
Complaints and Enquiries Procedure	**B11**	Prior to the construction of the project, the Proponent shall ensure that the following are available for community complaints and enquiries during construction and operation:	Prior to construction	The Project website contains a link to the following website which contains the relevant contact details are available from the following website: https://www.energyaustralia.com.au/about-us/energy-generation/mt-piper-power-station This website lists the following contact details for the project: 24-hour contact number – call Mt Piper Power Station on (02) 6354 8111 Postal Address: Mt Piper Power Station Locked Bag 1000 Portland, NSW, 2847 Email: community@energyaustralia.com.au These details were published in the Community Information Plan (CIP) article published in Lithgow Mercury dated 8 December 2012.	**Compliant**
	a)	a 24 hour contact number(s) on which complaints and enquiries about construction and operational activities may be registered;			
	b)	a postal address to which written complaints and enquiries may be sent; and			
	c)	an email address to which electronic complaints and enquiries may be transmitted.			
		The telephone number, postal address and email address shall be published in a newspaper circulating in the local area prior to the commencement of the project. The above details shall also be provided on the website required by condition B11 of this approval.			
	B12	The Proponent shall record the details of complaints received through the means listed under condition B11 of this approval in a Complaints Register. The Register shall record, but not necessarily be limited to:	At all times	Any complaints to EnergyAustralia NSW go via the switchboard, or through email or mail and are then redirected to the appropriate area of EnergyAustralia operations. All complaints are recorded in the Incidents and Complaints register with all details captured including actions taken if necessary, as per EA NSW Environment Management System (EMS) Procedure. If actions were necessary, a review of those actions are to be taken before the complaint is closed out. In addition, the ash contractors produce a monthly compliance report including any complaints received. No complaints were received regarding operations of the Ash Repositories, including LNAR, for the September 2025 to June 2026 reporting period (as per Appendix H of the AOCR).	**Compliant**
	a)	the date and time of the complaint;			
	b)	the means by which the complaint was made (e.g. telephone, email, mail, in person);			
	c)	any personal details of the complainant that were provided, or if no details were provided a note to that effect;			
	d)	the nature of the complaint;			
	e)	the time taken to respond to the complaint;			
	f)	any investigations and actions taken by the Proponent in relation to the complaint;			
	g)	any follow-up contact with, and feedback from, the complainant; and			
	h)	if no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken.			
		The Complaints Register shall be made available for inspection by the Secretary upon request.			
Community Information Plan	**B13**	Prior to the commencement of construction of the project, the Proponent shall prepare and implement a Community Information Plan which sets out the community communications and consultation processes to be undertaken during construction and operation of the project. The Plan shall include but not be limited to:	Prior to construction	The Lamberts North Ash Placement Stakeholder Communications Plan (September 2012) was specifically prepared and implemented for the purposes of this project. This was published in the local newspaper, the Lithgow Mercury, dated 8 December 2012. A Community Information Plan (CIP) was also prepared in October 2013. The CIP was updated to reflect EnergyAustralia NSW as the owners and remove any references to Delta Electricity in accordance with a recommendation from the 2014 Independent Environmental Audit by Aurecon.	**Compliant**
	a)	measures for disseminating information on the development status of the project and methods for actively engaging with surrounding landowners, including Forests NSW and affected stakeholders regarding issues that would be of interest/ concern to them during the construction and operation of the project; and			
	b)	procedures to inform the community where work has been approved to be undertaken outside the normal Construction hours, in particular noisy activities.			
		A copy of the Plan shall be provided to the Secretary one month prior to the commencement of construction.			
Design	**B14**	The ash placement areas shall be designed by a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary to ensure structural stability of the ash placement areas.	Prior to construction	Design approved by DPE 1 December 2012. The ash placement areas were designed by JK Williams, in consultation with the Principal Ash contractors to ensure structural stability of the ash placement areas. The ash placement areas were constructed in line with the design.	**Compliant**

Environmental Incident Reporting	**C1**	The Proponent shall notify the Secretary of any environmental incident within 12 hours of becoming aware of the incident. The Proponent shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred.	At all times	No environmental incidents requiring notification of the Secretary occurred during the 2025-2026 reporting period.	**Not triggered**

Heading	Number	Condition Requirement	Development phase	2025-2026 Observation	Compliance Finding
	C2	The Proponent shall meet the requirements of the Secretary to address the cause or impact of any environmental incident, as it relates to this approval, reported in accordance with condition C1 of this approval, within such period as the Secretary may require.			
Construction Hours	**C3**	Construction activities associated with the project shall only be undertaken during the following hours:	During construction	No construction activities that trigger the requirements described under these conditions have occurred during the reporting period. Installation of the leachate barrier system is expressly defined within the consent as “operations”.	**Not triggered**
	a)	7:00 am to 6:00 pm, Mondays to Fridays, inclusive			
	b)	8:00 am to 1:00 pm on Saturdays; and			
	c)	at no time on Sundays or public holidays.			
	C4	Construction outside the hours stipulated in condition C3 of this approval is permitted in the following circumstances:			
	a)	where construction works do not cause audible noise at any sensitive receiver; or			
	b)	for the delivery of materials required outside these hours by the Police or other authorities for safety reasons; or			
	c)	where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.			
	C5	The hours of construction activities specified under condition C3 of this approval may be varied with the prior written approval of the Secretary. Any request to alter the hours of construction specified under condition C3 shall be:			
	a)	considered on a case-by-case basis;			
	b)	accompanied by details of the nature and need for activities to be conducted during the varied construction hours; and			
	c)	accompanied by information necessary for the Secretary to reasonably determine that activities undertaken during the varied construction hours will not adversely impact on the acoustic amenity of sensitive receivers in the vicinity of the site.			
Construction Noise	**C6**	The construction noise objective for the project is to manage noise from construction activities (as measured by LAeq (15 minute) descriptor) so as not to exceed: Location — Day (LAeq (15 minute)) dB(A) All private receivers within the township of Blackmans Flat — 46 All other residences — 43 The Proponent shall implement reasonable and feasible noise mitigation measures with the aim of achieving the construction noise objective consistent with the requirements of the Interim Construction Noise Guideline (DECC, July 2009) (or its latest version), unless the Secretary agrees otherwise, including noise generated by heavy vehicle haulage and other construction traffic associated with the project.	During construction	No construction activities that trigger the requirements described under these conditions have occurred during the reporting period. Installation of the leachate barrier system is expressly defined within the consent as “operations”.	**Not triggered**
Dust Generation	**C7**	The Proponent shall construct the project in a manner that minimises dust emissions from the site, including wind-blown from earth works and stockpiles and traffic generated dust. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Proponent shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.	During construction	No construction activities that trigger the requirements described under these conditions have occurred during the reporting period. Installation of the leachate barrier system is expressly defined within the consent as “operations”.	**Not triggered**
Heritage Impacts	**C8**	If during the course of construction the Proponent becomes aware of any previously unidentified Aboriginal object(s), all work likely to affect the object(s) shall cease immediately and Heritage NSW informed in accordance with the National Parks and Wildlife Act 1974. In addition, registered Aboriginal stakeholders shall be informed of the finds. Works shall not recommence until an appropriate strategy for managing the objects has been determined in consultation with Heritage NSW and the registered Aboriginal stakeholders and written authorisation from Heritage NSW is received by the Proponent.	During construction	The course of action for Aboriginal objects identified during construction is detailed in the CEMP Aboriginal sub-plan approved by DPI 1 December 2012. No aboriginal artefacts were discovered during construction.	**Compliant**
	C9	If during the course of construction the Proponent becomes aware of any unexpected historical relic(s), all work likely to affect the relic(s) shall cease immediately and notify Heritage NSW in accordance with the Heritage Act 1977. Works shall not recommence until the Proponent receives written authorisation from Heritage NSW.	During construction	No historical relics were discovered during construction.	**Compliant**
Soil and Water Quality Impacts	**C10**	The Proponent shall comply with section 120 of the Protection of the Environment Operations Act 1997 which prohibits the pollution of waters.	At all times	Compliance is achieved through the CEMP Soil and Surface Water sub-plan approved by DPI 1 December 2012 and EPL 13007.	**Compliant**
	C11	Soil and water management controls shall be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities, in accordance with:			
	a)	Managing Urban Stormwater: Soils and Conservation (Landcom, 2004);			
	b)	Managing Stormwater: Urban Soils and Construction 2A Installation of Services (DECC 2008); and			
	c)	Managing Stormwater: Urban Soils and Construction Vol 2C Unsealed Roads (DECC 2008).			
	C12	During construction, the Proponent shall maintain a buffer of 50 metres from the construction work to Wangcol Creek.		Buffer was maintained as documented in JK Williams Contractor meeting minutes.	**Compliant**
	C13	Surface water drainage must be appropriately engineered and stabilised to convey run off without collapse or erosion. Surface water run off collection ponds are to be lined.		Surface water drainage was engineered and stabilised as per CEMP Soil and Surface Water sub-plan approved by DPI 1 December 2012.	**Compliant**
Waste Generation and Management	**C14**	All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.	At all times	EnergyAustralia NSW manages all site waste in accordance with EPL 13007, disposal and restricted waste area or via licenced waste contractor.	**Compliant**
	C15	The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by an EPL, if such a licence is required in relation to that waste.		No wastes generated outside the Lamberts North site were allowed to enter the area. To prevent unlawful access to the repository area, regular security patrols are conducted across the site. Both the Principal Ash Contractor and EnergyAustralia NSW personnel are required to report if they encounter any rubbish or wastes outside those that are allowed during routine operations.	**Compliant**

	C16	The Proponent shall ensure that all liquid and / or non-liquid waste generated and / or stored on the site is assessed and classified in accordance with the Waste Classification Guidelines (DECC, 2008), or any future guideline that may supersede that document.		EnergyAustralia NSW manages all site waste in accordance with EPL 13007, disposal and restricted waste area or via licenced waste contractor.	**Compliant**
Heading	**Number**	**Condition Requirement**	**Development phase**	**2025-2026 Observation**	**Compliance Finding**
Ash Management	**D1**	The Proponent shall prepare a long-term ash management strategy including a program for investigation and assessment of alternative ash management measures with a goal of 40% reuse of ash by 31 December 2020. The report shall be submitted to the Secretary six months prior to the commencement of operations. The Proponent shall report on the status and outcomes of its investigations to the Secretary every two years from the commencement of the operation of the project, unless otherwise agreed by the Secretary.	Prior to & during operations	Lamberts North Consistency Report (SKM, 2012) and Ash Management Strategy (Delta Electricity, 2012) approved by DPI 30 July 2012 details the long-term ash management strategy for ash re-use. EnergyAustralia have provided two yearly updates on the status of the Ash Management Strategy (EA NSW, 2016; 2018; 2020)	**Compliant**
Operational Environmental Management Plan	**D2**	The Proponent must prepare an Operational Environmental Management Plan (OEMP) to detail an environmental management framework, practices and procedures to be followed during operation of the project. The OEMP must be prepared to the satisfaction of the Secretary, and in consultation with the relevant government agencies and must include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025.	**Compliant**
	a)	identification of all statutory and other obligations that the Proponent is required to fulfil in relation to operation of the project, including all approvals, licences, approvals and consultations;			
	b)	a description of the roles and responsibilities for all relevant employees (including contractors) involved in the operation of the project;			
	c)	overall environmental policies and principles to be applied to the operation of the project;			
	d)	standards and performance measures to be applied to the project, and a means by which environmental performance can be periodically reviewed and improved, where appropriate;			
	e)	management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval;			
	f)	the environmental monitoring requirements outlined under conditions E12 to E18 inclusive;			
	g)	details of waste management including reuse and/or recycling of waste material, to minimise the need for treatment or disposal of those materials outside the site;			
	h)	specific consideration of relevant measures to address any requirements identified in the documents referred to under conditions A1(c) of this approval;			
	i)	the additional requirements of this approval;			
	j)	details of traffic management measures for public roads including managing vehicle movements, ensuring haul routes proposed are communicated to contractors and staff and complied with, measures to reduce impacts during peak hours and at intersections, scheduling heavy vehicle movements to minimise convoy or platoon lengths, identifying local climate conditions that may affect road safety and ensuring truckloads are covered at all times; and			
	k)	incorporation of traffic management measures into a Drivers Code of Conduct for transporting materials on public roads for all contractors and staff; and			
	L)	details of traffic light management measures during evening and night hours.			
		The OEMP must be submitted for the approval of the Secretary no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Secretary. Operation must not commence until written approval has been received from the Secretary. Nothing in this approval precludes the Proponent from incorporating the requirements of the OEMP into existing environmental management systems and plans administered by the Proponent.			
	D3	As part of the OEMP for the project, required under condition D2 of this approval, the Proponent must prepare and implement the following Management Plans:			
Operational Noise Management Plan	a)	an Operational Noise Management Plan to detail measures to mitigate and manage noise during operation of the project. The Plan must be prepared in consultation with the EPA and include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) containing an Operational Noise Management Plan was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025.	**Compliant**
	i)	identification of activities that will be carried out in relation to the project and the associated noise sources;			
	ii)	identification of all relevant sensitive receivers and the applicable criteria at those receivers commensurate with the noise limit specified under condition E7 of this approval;			
	iii)	noise monitoring procedures (as referred to in condition E12 of this approval) for periodic assessment of noise impacts at the relevant receivers against the noise limits specified under this approval and the predicted noise levels as detailed in the EA;			
	iv)	details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during operation, including the feasibility of noise reducing benching;			
	v)	procedures to ensure that all reasonable and feasible noise mitigation measures are applied during operation of the project and procedures and corrective actions to be undertaken if non-compliance against the operational noise criteria as detailed in condition E7 is detected at the sensitive receivers; and			
	vi)	provisions for periodic reporting of results to the EPA as per condition B8.			
Groundwater Management Plan	b)	a Groundwater Management Plan to detail measures to mitigate and manage groundwater impacts. The Plan must be prepared in consultation with DCCEEW Water and Water NSW and include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) containing a Groundwater Management Plan was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by DPHI on 17 April 2025. For the 2025-2026 reporting period, it is noted that ground water monitoring has remained compliant. All the necessary investigation and mitigation measures have been completed, ensuring compliance with reporting requirements.	**Compliant**
	i)	consideration of the revised updated groundwater model as per condition B2;			
	ii)	baseline data on groundwater quality (including Huons Creek), location of groundwater monitoring wells, depth and available flow of groundwater in the project area;			
	iii)	identification of potential sources of water pollutants and management measures, including the leachate management system which must be designed and constructed generally in accordance with the Environmental Guidelines, Solid Waste Landfills (EPA, 2016) and monitoring requirements;			
	iv)	groundwater assessment criteria including trigger levels for remedial measures;			

	v)	a contingency plan for events that have the potential to pollute or contaminate groundwater sources of water. The plan must include remediation actions and communication strategies (including notification of potentially affected nearby bore users) for the effective management of such an event to prevent discharge of these pollutants from all sources within the project area;			
Heading	**Number**	**Condition Requirement**	**Development phase**	**2025-2026 Observation**	**Compliance Finding**
	vi)	a monitoring program as per condition E15 for groundwater connectivity, water levels, groundwater flow and water quality over the short and long term that includes upstream and downstream locations. The program must continue for a minimum of five years following final capping and landscaping;			
	vii)	a protocol for the investigation of identified exceedances of the groundwater impact assessment criteria; and			
	viii)	provisions for periodic reporting of results to Water NSW as per condition B8.			
Soil and Surface Water Management Plan	c)	a Soil and Surface Water Management Plan to outline measures that will be employed to manage water on the site, to minimise soil erosion and the discharge of sediments and other pollutants to lands and/or waters throughout the life of the project. The Plan must be based on best environmental practice and must be prepared in consultation with the DCCEEW Water and Water NSW. The Plan must include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) containing a Soil and Surface Water Management Plan was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW during the 2024-25 reporting period to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025. For the 2025-2026 reporting period, it is noted that soil and surface water monitoring has remained compliant. All the necessary investigation and mitigation measures have been completed, ensuring compliance with reporting requirements.	**Compliant**
	i)	baseline data on the surface water quality and available flow in Wangcol Creek and Lamberts Gully Creek			
	ii)	water quality objectives and impact assessment criteria for Wangcol Creek and Lamberts Gully Creek;			
	iii)	identification of the operation activities that could cause soil erosion or discharge sediment or water pollutants from the site;			
	iv)	a description of the management controls to minimise soil erosion or discharge of sediment or water pollutants from the site, including a strategy to minimise the area of bare surfaces, stabilise disturbed areas, minimise bank erosion and including the leachate management system which must be designed and constructed generally in accordance with the Environmental Guidelines, Solid Waste Landfills (EPA, 2016);			
	v)	demonstration that the proposed erosion and sediment control measures will conform with, or exceed, the relevant requirements of Managing Urban Stormwater: Soils and Construction (Landcom, 2004);			
	vi)	details of the water management system including separation of clean and contaminated/polluted water flows, provisions for the treatment, recycling/reuse and/or discharge of flows;			
	vii)	site water balance including water usage for ash placement, sources of water and quantity of run-off generated;			
	viii)	details of the lining for the surface water collection ponds;			
	ix)	measures to minimise potential surface water infiltration;			
	x)	a flow and water quality monitoring program for Wangcol Creek and Lamberts Gully Creek that includes discharge points, upstream and downstream locations as per condition E16 and limits for identified pollutants;			
	xi)	specified remedial actions and contingency plans to mitigate any water quality exceedances on receiving waters including identified trigger levels for remedial measures or the activation of contingency plans; and			
	xii)	provisions for periodic reporting of results to Water NSW as per condition B8.			
Air Quality Management Plan	d)	a Air Quality Management Plan to outline measures to minimise impacts from the project on local air quality. The Plan must be prepared in consultation with NSW Health and the EPA and include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) containing an Air Quality Management Plan was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025.	**Compliant**
	i)	baseline data on dust deposition levels;			
	ii)	air quality objectives and impact assessment criteria;			
	iii)	an assessment of alternative methods of ash placement to minimise the exposure of active placement areas to prevailing winds;			
	iv)	mitigation measures to be incorporated during ash placement activities, haulage, etc;			
	v)	an operating protocol for the ash placement irrigation system including activation rates, application rates and area of coverage and means of dealing with water shortages;			
	vi)	detail how ash placement moisture levels will be maintained;			
	vii)	a contingency plan to deal with high winds and dust suppression;			
	viii)	a protocol for the investigation of visible emissions from the ash placement area;			
	ix)	a response plan to address exceedances in visible emissions including PM10, TSP and deposited dust from the ash placement areas; and			
	x)	an air quality monitoring program as referred to in condition E18 of this approval including identified air quality monitoring locations (including monitoring at sensitive receivers) and meteorological monitoring to predict high wind speed events;			
	xi)	provisions for periodic reporting of results to the EPA as per condition B8; and			
	xii)	a protocol for suppressing dust emissions within the EPL limits under normal and adverse weather conditions at all stages of the ash placement process.			
Landscape / Revegetation Plan	e)	a Landscape/Revegetation Plan to outline measures to minimise the visual impacts of the ash placement areas and ensure the long-term stabilisation of the site and compatibility with the surrounding landscape and land use. The Plan must include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) containing a Landscape & Revegetation Plan was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025.	**Compliant**
	i)	identification of design objectives and standards based on local environmental values, vistas, and land uses;			
	ii)	identification of the timing and progressive implementation of revegetation works for ash placement areas as they are completed, including short-term and long term goals including landscape plans;			
	iii)	a schedule of species to be used in revegetation, including the use of local native species in revegetation works selected by a qualified expert to ensure the rehabilitation works do not compromise the long term integrity of the capping; and			
	iv)	procedures and methods to monitor and maintain revegetated areas during the establishment phase and long-term.			

Site Rehabilitation Plan	f)	a Site Rehabilitation Management Plan to outline measures to stabilise and rehabilitate the site following project completion. The Plan must be prepared in consultation with Water NSW and DCCEEW Water. The Plan must include, but not necessarily be limited to:	Prior to operations	The Operation Environmental Management Plan (CDM Smith, 2013) containing a Site Rehabilitation Management Plan was approved by DPI in May 2013 and operations at Lamberts North commenced in September 2013. The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025.	**Compliant**
	i)	reinstatement of geomorphologic stable drainage lines on the rehabilitated areas and a timeframe for rehabilitation;			
	ii)	restoration, rehabilitation and revegetation of the project's site;			
	iii)	measures to control water pollutants from rehabilitated areas; and			

Heading	Number	Condition Requirement	Development phase	2025-2026 Observation	Compliance Finding
	iv)	a program and timeframe for monitoring rehabilitated areas.			
	D3A	The Proponent must implement the OEMP as approved by the Secretary.	At all times	Based on the review undertaken, the Lamberts North operations have been carried out in accordance with the OEMP.	**Compliant**
Groundwater Quality and Geotechnical Impacts	**D4**	Prior to commencement of operation the Proponent shall submit a geotechnical report prepared by a suitably qualified expert that demonstrates the site has been engineered as being suitable for ash placement. The report must also provide an evaluation of groundwater levels once re-profiling has been completed.	Prior to operations	An evaluation of groundwater levels at Lamberts North (CDM Smith, 2012b) was provided to DPI May 2013. The groundwater level evaluation report demonstrated that the activities associated with preparation and re-profiling of Lamberts North area had minimal impact on groundwater levels on and immediately adjacent to the site.	
Leachate Management System	**D5**	Prior to the commencement of operation of each stage of the ash placement process, the Proponent must demonstrate to the satisfaction of the Secretary, in consultation with the EPA, that the design of the leachate management system is generally consistent with the Environmental Guidelines, Solid Waste Landfills (EPA, 2016), including:	Prior to operations of each stage	The Lamberts North Ash Repository Leachate Management System Water Balance Assessment (ERM, dated 3 February 2022), submitted in accordance with Condition D5, was approved by DPE on 27 April 2022. The approved assessment included the staged development of the leachate management system, including Stage 2 development areas.	**Compliant**
	a)	the leachate barrier system, including liner and leachate collection system; and			
	b)	the leachate storage dam/s including freeboard, appropriate sizing based on site water balance modelling and liner.			
Operational Hours	**E1**	The Proponent must comply with the following operating hours: **Activity** / **Day** / **Time** Lamberts North operation, excluding landscaping and revegetation/rehabilitation of the site — Any day — Any time Lamberts North Landscaping and revegetation/rehabilitation and Lamberts South operation — Monday-Friday — 6am to 8pm Lamberts North Landscaping and revegetation/rehabilitation and Lamberts South operation — Saturday and Sunday — 6am to 5pm	During Operations	Works were undertaken within the CoA specified hours of operation during the current reporting period. An application was approved by DPHI during the reporting period to modify the operating hours to 24/7.	**Compliant**
	E2	Operations outside the hours stipulated in condition E1 of this approval are only permitted in the following emergency situations:			
	a)	where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or			
	b)	breakdown of plant and/or equipment at the ash placement areas or the Mt Piper Power Station with the effect of limiting or preventing ash storage at the power station outside the operating hours defined in condition E1; or			
	c)	a breakdown of an ash haulage truck(s) or the conveyor preventing haulage during the operating hours stipulated in condition E1 combined with insufficient storage capacity at the Mt Piper Power Station to store ash outside of the project operating hours; or			
	d)	in the event that the Australian Energy Market Operator (AEMO), or a person authorised by AEMO, directs the Proponent (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the Mt Piper Power Station to allow for the ash to be stored.			
		In the event of conditions E2b) or E2c) arising, the Proponent is to take all reasonable and feasible measures to repair the breakdown in the shortest time possible.			
	E3	In the event that an emergency situation as referred to under condition E2b) or E2c) occurs more than once in any two month period, the Proponent shall prepare and submit to the Secretary for approval a report including, but not limited to:	During operations - emergency situations	Works were undertaken within the CoA specified hours of operation during the current reporting period.	**Not triggered**
	a)	the dates and a description of the emergency situations;			
	b)	an assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations;			
	c)	identification of a preferred mitigation measure(s); and			
	d)	timing and responsibility for implementation of the mitigation measure(s).			
		The report is to be submitted to the Secretary within 60 days of the second emergency situation occurring. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.			
	E4	The Proponent shall notify the EPA prior to undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition E1 of this approval and keep a log of such operations.			
	E5	The Proponent shall notify the Secretary in writing within seven days of undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition E1 of this approval.			
	E6	The Proponent shall notify nearby sensitive receivers (as defined in the OEMP required under condition D3(a) of this approval) prior to 8.00 pm where it is known that emergency ash haulage or placement operations will be required outside of the hours of operation stipulated in condition E1 of this approval.			

Operational Noise	**E7**	The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed the following $LA_{eq(15\ minute)}$ dB(A): **Location** / **Day (7am to 6pm)** / **Evening (6pm to 10pm)** / **Night (10pm to 7am)** All private sensitive receivers within the township of Blackmans Flat: 42 / 38 / 35 All other sensitive receivers: 42 / 38 / 35 This noise criteria set out above applies under all meteorological conditions except for any of the following:	During operations	Noise criteria is included in Table 5-3 of the approved OEMP. Meteorological conditions to which the above criteria apply are included in Section 5.4.5.1 of the OEMP.	**Compliant**

Heading	Number	Condition Requirement	Development phase	2025-2026 Observation	Compliance Finding
	a)	wind speed greater than 3 metres/second at 10 metres above ground level;			
	b)	stability category F temperature inversion conditions and wind speed greater than 2 metres/second at 10 metres above ground level; and			
	c)	stability category G temperature inversion conditions.			
		This criteria does not apply where the Proponent and an affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and the EPA.			
	E8	To determine compliance with the LAeq(15 minute) noise limits, the noise monitoring equipment must be located at the most affected:	During operations	Addressed in section 5.4.5.3 of the approved OEMP and section 6.2 of the 2025-26 AOCR.	**Compliant**
	a)	within 30 metres of a dwelling façade where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises; or			
	b)	approximately on the boundary where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises			
	E9	For the purposes of monitoring noise from the premises to determine compliance with the noise limits:	During operations	Addressed in section 5.4.5.3 of the approved OEMP.	**Compliant**
	a)	noise monitoring must be undertaken in accordance with the Noise Policy for Industry (NSW EPA, 2017), or its latest version, using equipment accepted by the EPA in writing;			
	b)	the meteorological data to be used for determining meteorological conditions is the data recorded by the meteorological weather station at the premises; and			
	c)	stability category temperature inversion conditions are to be determined in accordance with the Noise Policy for Industry (NSW EPA, 2017), or its latest version.			
	E10	The Proponent shall implement measures to ensure noise attenuation of trucks. These measures may include, but are not necessarily limited to, installation of residential class mufflers, engine shrouds, body dampening, speed limiting, fitting of rubber stoppers to tail gates, limiting the use of compression braking, and ensuring trucks operate in a one-way system at the ash placement areas where feasible.	During operations	The plant and equipment mitigation measures are included in Table 5-2 of the approved OEMP. No noise complaints have been received for Lamberts North within the reporting period.	**Compliant**
Operational Noise Review	**E11**	Within 60 days of the commencement of operation of the project, unless otherwise agreed to by the Secretary, the Proponent shall submit to the Secretary an Operational Noise Review to confirm the operational noise impacts of the project. The Operational Noise Review shall be prepared in consultation with the EPA. The Review shall:	Prior to operations	The Operation Noise Review Report was prepared in October 2013 by Aurecon. The report was submitted to the DPI on 9th October 2013 and the EPA 10th October 2013 for review. The report concluded that the noise resulting from Lamberts North operations comply with the criteria specified in condition E7 at the representative residential receivers at Location 1 and Location 2. No complaints regarding noise from Lamberts North have been recorded within the reporting period.	**Compliant**
	a)	identify the appropriate operational noise objectives and levels for sensitive receivers;			
	b)	describe the methodologies for noise monitoring, including the frequency of measurements and location of monitoring sites;			
	c)	document the operational noise levels at sensitive receivers as ascertained by the noise monitoring program;			
	d)	assess the noise performance of the project against the noise criteria specified in condition E7 of this approval and the predicted noise levels as detailed in the report referred to under condition A1 of this approval; and			
	e)	provide details of any entries in the Complaints Register relating to noise impacts.			
		Where monitoring indicates noise levels in excess of the operational noise criteria specified in condition E7 of this approval, the Proponent shall prepare a report as required by condition E13 of this approval.			
Ongoing Operational Noise Monitoring	**E12**	The Proponent shall prepare and implement an Operational Noise Monitoring Program to assess compliance against the operational noise criteria stipulated in condition E7 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with the EPA and must include the proposed frequency of monitoring and as a minimum must include monitoring when there are any significant changes in work locations or processes. The noise monitoring program shall be prepared in accordance with the requirements of the Noise Policy for Industry (NSW EPA, 2017), or its latest version, and shall include, but not be limited to:	Prior to & during operations	The operational noise monitoring program is included in Table 5-4 of the approved OEMP. Monitoring was performed during the reporting period. The report states that the noise resulting from Lamberts North operations complies with the criteria specified under condition E7 at the representative residential receivers at Location 1 and Location 2.	**Compliant**
	a)	monitoring at Lamberts North, Lamberts South and Blackmans Flat during ash placement activities; and			
	b)	monitoring of the effectiveness of any noise mitigation measures implemented under condition D3(a) of this approval, against the noise criteria specified in condition E7 of this approval.			
		The Proponent shall forward to the EPA and the Secretary a report containing the results of any non-compliance within 14 days of conducting a noise assessment. The monitoring program shall form part of the OEMP referred to in condition D3 (a) of this approval.			
	E13	Where noise monitoring including as required by condition E11 and E12 of this approval identifies any non-compliance with the operational noise criteria specified under condition E7 of this approval the Proponent shall prepare and submit to the Secretary a report including, but not limited to:		No non-compliances with the operational noise criteria specified under condition E7 has been reported during this reporting period	
	a)	an assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source;			
	b)	identification of the preferred measure(s) for reducing noise at the source;			

	c))	feedback from directly affected property owners and the EPA on the proposed noise mitigation measures; and	During operations – if required		Compliant
	d)	location, type, timing and responsibility for implementation of the noise mitigation measure(s).			
		The report is to be submitted to the Secretary within 60 days of undertaking the noise monitoring which has identified exceedances of the operational noise criteria specified under condition E7, unless otherwise agreed to by the Secretary. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.			
	E14	If after the implementation of all reasonable and feasible source controls, as identified in the report required by condition E13, the noise generated by the project continues to exceed the criteria stipulated in condition E7 the Proponent shall implement at the receiver reasonable and feasible noise mitigation measures, such as double glazing, insulation, air conditioning and or other building acoustic treatments, in consultation with and with the agreement of the affected landowner.	During operations – if required	No non-compliances with the operational noise criteria specified under condition E7 has been reported during this reporting period	Compliant

Heading	Number	Condition Requirement	Development phase	2025-2026 Observation	Compliance Finding
Groundwater Monitoring	**E15**	The Proponent shall prepare and implement a Groundwater Monitoring Program to monitor the impacts of ash placement activities on local groundwater quality and hydrology. The Program shall be developed in consultation with Water NSW, and shall describe the location, frequency, rationale and procedures and protocols for collecting groundwater samples as well as the parameters analysed and methods of analysis. The monitoring program shall be ongoing for the operation of the project and for a minimum of 5 years following project completion and include, but not be limited to:	Prior to & during operations	The Groundwater Monitoring program is included as part of the Groundwater Management Plan as Section 5.5 of the approved OEMP. Monitoring has been carried out on a continual monthly basis including the first 12 months of operations to establish baseline data. Results of Groundwater monitoring during the reporting period have been addressed in Section 7.2 and can be found in Appendix F of the 2025-26 AOCR.	Compliant
	a)	monitoring at established bore sites (or replacement bore sites in the event that existing sites are damaged or lost) as described in the Groundwater Management Plan as per condition D3(b); and			
	b)	a schedule for periodic monitoring of groundwater quality, depth and flow at all monitoring sites, at an initial frequency of no less than once every month for the first 12 months of operation.			
		The monitoring program shall form part of the Groundwater Management Plan referred to in condition D3(b) of this approval.			
Surface Water Quality Monitoring	**E16**	The Proponent shall prepare and implement a surface water quality monitoring program to monitor the impacts of the ash placement activities on Wangcol Creek and Lamberts Gully. The Program shall be developed in consultation with Water NSW, and shall describe the location, frequency, rationale and the procedures and protocols for collecting water samples as well as the parameters analysed and methods of analysis. The program shall include, but not necessarily be limited to:	Prior to & during operations	The Surface water monitoring programme is included in Table 5-20 of the approve OEMP. Monitoring is performed at the Final Holding Pond monitoring station to Wangcol Creek (LDP01), and at NC01 and WX22. Wet weather monitoring was performed in October 2013 and March 2014. Results of Surface water monitoring during the reporting period have been addressed in Section 7.1. and can be found in Appendix F of the 2025-26 AOCR.	Compliant
	a)	monitoring at the existing water quality monitoring sites as described in the document referred to under condition A1c);			
	b)	monitoring at surface water discharge points from Lamberts Gully Creek			
	c)	monitoring at surface water discharge points into Wangcol Creek;			
	d)	wet weather monitoring with a minimum of two events recorded within the first 12 months operation of the project; and			
	e)	a schedule for periodic monitoring of surface quality at all sites throughout the life of the project, at an initial frequency of no less than once every month for the first 12 months and must include, but not be limited to, monitoring of dissolved oxygen, turbidity, sulphates, salinity, boron, manganese, iron chloride, total phosphorus and total nitrogen.			
Hydrological Monitoring Program	**E17**	A Hydrological Monitoring Program to assess and quantify the impacts and effectiveness of the transformed section of Huons Creek into a sub-surface drainage line in consultation with Water NSW and DCCEEW Water and any other relevant government agency. Monitoring is to be undertaken for a period of five (5) years upon completion of the creek transformation. The program must include sampling for identified pollutants before and after the transformation works and include a sampling site downstream of the sub-surface section of Huons Creek. In the first 12 months following completion of the transformation, monitoring is to be undertaken at least every three (3) months upon completion of the creek transformation and after any heavy wet weather event. The monitoring program shall form part of the Soil and Surface Water Management Plan referred to in condition D3(c) of this approval.	Prior to & during operations	Huons Creek was filled in during construction of the Lamberts North ash placement site commenced. As such, it was not developed as a sub-surface drain as was originally proposed. A Consistency report (SKM, 2012) was submitted to the DPI on 30 July 2012. The report states that groundwater modelling performed during construction demonstrated that the water contained within the creek was largely groundwater as a result of the Huon Void intersecting the groundwater table. Based on this finding, the hydrological monitoring program was incorporated into the Groundwater Management Plan.	Compliant
Air Quality Monitoring	**E18**	The Proponent shall prepare an Air Quality Monitoring Program, in consultation with the EPA and NSW Health. The Program shall include, but not necessarily be limited to, monitoring for dust. Monitoring sites shall be identified as per condition D3 (d). The air quality monitoring program shall be ongoing for the life of the project, and during final rehabilitation and stabilisation of the site. The monitoring program shall form part of the Air Quality Management Plan referred to in condition D3(d) of this approval.	Prior to & during operations	The Air Quality Monitoring Program is included in section 5.7.6 of the approved OEMP. It states that air quality monitoring will be undertaken for the life of the project. TEOM and dust gauge data has been collected monthly in the first 12 months of operation to determine whether additional monitoring stations are required as a result of the project. The results of Air Quality monitoring during the reporting period are addressed in Section 6.5 of the 2025-26 AOCR.	Compliant
Environmental Incident Reporting	**E19**	The Proponent shall notify the Secretary of any environmental incident within 12 hours of becoming aware of the incident. The Proponent shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred.	At all times	No environmental incidents requiring notification of the Director- General occurred within the 2025-2026 reporting period.	Not triggered
	E20	The Proponent shall meet the requirements of the Secretary to address the cause or impact of any environmental incident, as it relates to this approval, reported in accordance with condition E19 of this approval, within such period as the Secretary may require.			

Heading	Number	Condition Requirement	Development phase	2025-2026 Observation	Compliance Finding
Waste Generation and Management	**E23**	All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.	At all times	The Principal Ash Management Contractor utilises EnergyAustralia NSW's waste management facilities for wastes generated in the operation of the repository, including waste oils, general waste and materials for recycling. These are stored in intermediate storage facilities at Mt Piper Power Station and routinely removed by EnergyAustralia NSW's waste contractors. No additional waste materials were generated during the 2025-2026 reporting period.	**Compliant**
	E24	The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.	At all times	No wastes generated outside the Lamberts North site are allowed to enter the area. To prevent the unlawful access to the repository area, regular security patrols are conducted across the site. Both Lend Lease and EnergyAustralia NSW security personnel are required to report if they encounter wastes outside those that are allowed during routine operations	**Compliant**
	E25	The Proponent shall ensure that all liquid and / or non-liquid waste generated and / or stored on the site is assessed and classified in accordance with the Waste Classification Guidelines (DECC, 2008), or any future guideline that may supersede that document.	At all times	The Principal Ash Management Contractor provides Monthly Ash Placement Work Instructions to address all issues of routine site maintenance as part of a monthly work program. Waste management is conducted in accordance with EPA guidelines.	**Compliant**
Revision of Strategies, Plans and Programs	**E26**	Within 3 months, unless the Secretary agrees otherwise, of:	At all times	The OEMP was reviewed by EnergyAustralia NSW in 2025 to ensure that it reflects the current activities and management. The OEMP (EA NSW, 2025) was approved by the DPHI on 17 April 2025.	**Compliant**
	a)	the submission of an incident report or independent audit report under condition B8 or B9; and			
	b)	the approval of any modification to the conditions of this approval; or			
	c)	a direction of the Secretary under condition A1 of Schedule 2;			
		the Proponent must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary. *Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.*			
Visual Amenity and Lighting	**E27**	The Proponent must:	At all times	No visual or lighting complaints were received during the reporting period.	**Compliant**
	a)	implement all reasonable and feasible measures to mitigate visual and off-site lighting impacts of the project; and			
	b)	ensure no outdoor lights shine above the horizontal; and			
	c)	ensure that all external lighting associated with the project complies with AustralianStandard AS4282 2023 – Control of Obtrusive Effects of Outdoor Lighting (or its latest version).			
Project Completion Management Plan	**F1**	No later than one month prior to the decommissioning of the project, or as otherwise agreed by the Secretary, the Proponent is to prepare a Project Completion Management Plan, in consultation with Water NSW, for the approval of the Secretary. The Plan is to include but not necessarily be limited to:	Prior to decommissioning	The Project is still in operational phase.	**Not triggered**
	a)	identification of structures to be removed and how they will be removed;			
	b)	measures to reduce impacts on the environment and surrounding sensitive land uses			
	c)	details of components to be recycled;			
	d)	details of rehabilitation and revegetation with reference to the biodiversity offset required under condition B6;			
	e)	groundwater assessment criteria including trigger levels for remedial measures;			
	f)	a groundwater monitoring program as per condition E15 for groundwater connectivity, water levels, groundwater flow and water quality over the short and long term that includes upstream and downstream locations. The program shall continue for a minimum of five years following final capping and landscaping;			
	g)	a contingency plan to address potential exceedances and mitigation measures in groundwater and groundwater quality impacts and if exceedances continue, implementation of further measures and groundwater monitoring to demonstrate compliance;			
	h)	surface water assessment criteria including trigger levels for remedial measures;			
	I	available flow and water quality monitoring program for Wangcol Creek and Lamberts Gully Creek that includes discharge points, upstream and downstream locations as per condition E16 and limits for identified pollutants. The program shall continue for a minimum of five years following final capping and landscaping; and			
	j)	a contingency plan to address potential exceedances and mitigation measures in surface water and surface water quality impacts and if exceedances continue, implementation of further measures and surface water monitoring to demonstrate compliance.			

Appendix B Annual Summary of Ash Repository Environment Management

Summary of Environmental Management at Lamberts North

	September 2025	October 2025	November 2025	December 2025	January 2026	February 2026	March 2026	April 2026	May 2026	June 2026
Ash Moisture **Fresh Water 23-26%**										
Compaction Testing **Dry density ratio 95%** **Fresh ash acceptable 93%**										
Landform Stability **No slumping or movement**										
Weather station operational										
Irrigation system Operational										
Internal dust deposition gauges **Insoluble solids = 4 g m^{-2} month**										
Ash Contaminated Water contained within site boundary										
Geotechnical vibrating wire piezometers **Stack stability**										
No Community complaint										

Appendix C Lamberts North Operational Noise Assessment – 2026

Lamberts North Ash Repository

Environmental noise monitoring - 2026

Prepared for EnergyAustralia NSW Pty Ltd

May 2026

Lamberts North Ash Repository

Environmental noise monitoring - 2026

EnergyAustralia NSW Pty Ltd

E230068 RP1

May 2026

Version	Date	Prepared by	Reviewed by	Comments
V1	11 May 2026	Will Tuck	Ryan Bruniges	Draft
V2	21 May 2026	Will Tuck	Ryan Bruniges	Final

Approved by



Ryan Bruniges
Associate Acoustics Consultant
22 May 2026

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1 Introduction

1.1 Background

EMM Consulting Pty Ltd (EMM) was engaged by EnergyAustralia NSW Pty Ltd to conduct an annual noise survey of operations at the Lamberts North Ash Repository (LNAR, the site) associated with Mt Piper Power Station located near Wallerawang, NSW. The survey purpose was to quantify the acoustic environment and compare site noise levels against specified limits, in accordance with the LNAR Operational Noise Management and Monitoring Plan (ONMMP).

Attended environmental noise monitoring described in this report was done during the day, evening, and night periods of 21 and 22 April 2026 at two monitoring locations.

1.2 Attended monitoring locations

Site monitoring locations are detailed in Table 1.1 and shown on Figure 1.1. It should be noted that Figure 1.1 shows actual monitoring positions, not necessarily the location of residences.

Table 1.1 Attended noise monitoring locations

Location descriptor	Description	Coordinates (MGA 56)	
		Easting	Northing
N1	Noon Street, Blackmans Flat	226399	6304407
N2	End of Karawatha Drive, Wallerawang	226566	6302995

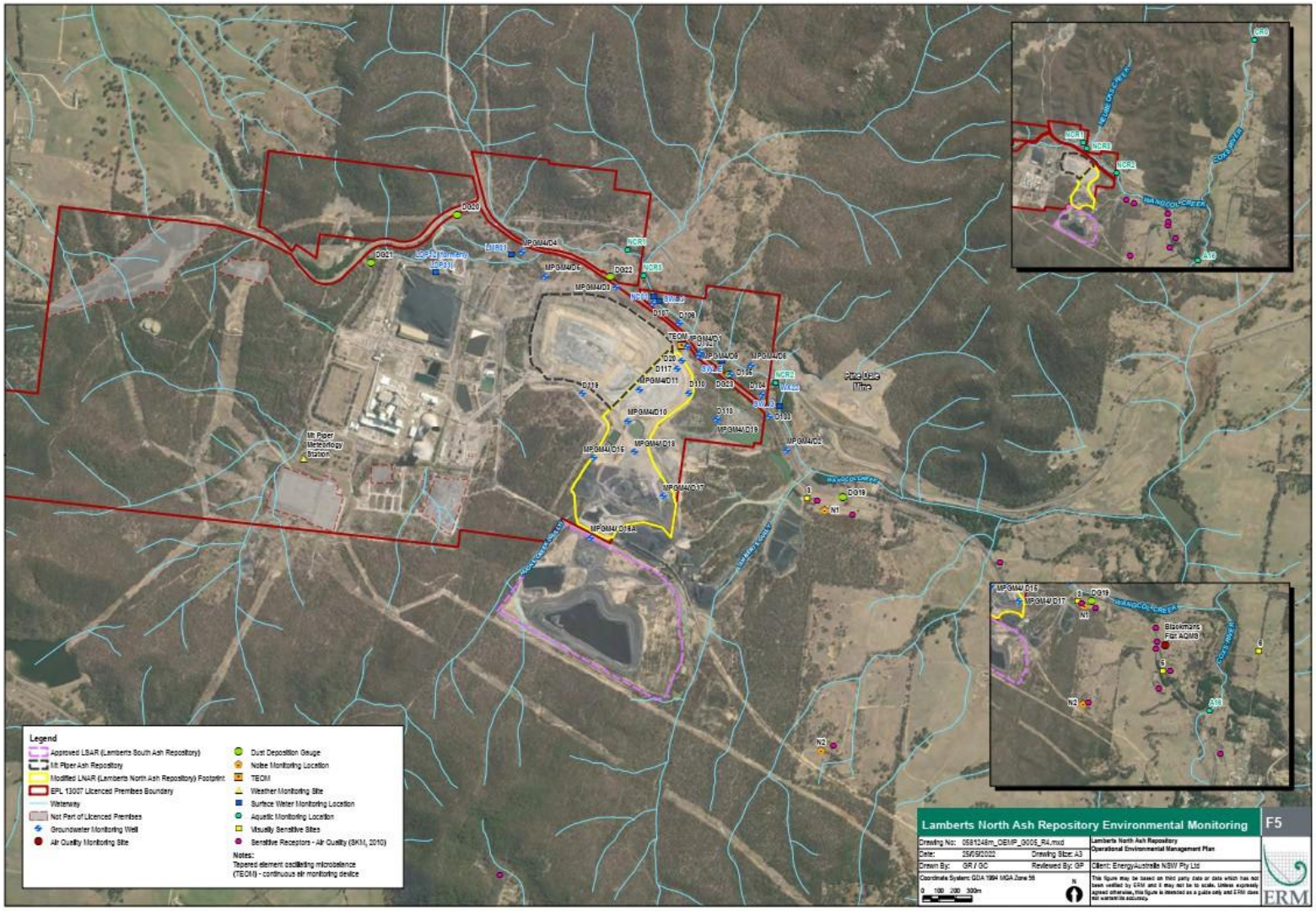


Figure 1.1 Attended noise monitoring locations

1.3 Terminology and abbreviations

Some definitions of terms and abbreviations which may be used in this report are provided in Table 1.2.

Table 1.2 Terminology and abbreviations

Term/descriptor	Definition
dB(A)	Noise level measurement units are decibels (dB). The "A" weighting scale is used to approximate how humans hear noise.
L_{Amax}	The maximum root mean squared A-weighted noise level over a time period.
L_{A1}	The A-weighted noise level which is exceeded for 1% of the time.
$L_{A1,1minute}$	The A-weighted noise level which is exceeded for 1% of the specified time period of 1 minute.
L_{A10}	The A-weighted noise level which is exceeded for 10% of the time.
L_{Aeq}	The energy average A-weighted noise level.
L_{A50}	The A-weighted noise level which is exceeded for 50% of the time, also the median noise level during a measurement period.
L_{A90}	The A-weighted noise level exceeded for 90% of the time, also referred to as the "background" noise level and commonly used to derive noise limits.
L_{Amin}	The minimum A-weighted noise level over a time period.
L_{Ceq}	The energy average C-weighted noise energy during a measurement period. The "C" weighting scale is used to take into account low-frequency components of noise within the audibility range of humans.
SPL	Sound pressure level. Fluctuations in pressure measured as 10 times a logarithmic scale, with the reference pressure being 20 micropascals.
Hertz (Hz)	The frequency of fluctuations in pressure, measured in cycles per second. Most sounds are a combination of many frequencies together.
AWS	Automatic weather station used to collect meteorological data, typically at an altitude of 10 metres
VTG	Vertical temperature gradient in degrees Celsius per 100 metres altitude.
Sigma-theta	The standard deviation of the horizontal wind direction over a period of time.
IA	Inaudible. When site noise is noted as IA then there was no site noise at the monitoring location.
NM	Not Measurable. If site noise is noted as NM, this means some noise was audible but could not be quantified.
Day	Monday – Saturday: 7 am to 6 pm, on Sundays and Public Holidays: 8 am to 6 pm.
Evening	Monday – Saturday: 6 pm to 10 pm, on Sundays and Public Holidays: 6 pm to 10 pm.
Night	Monday – Saturday: 10 pm to 7 am, on Sundays and Public Holidays: 10 pm to 8 am.

Appendix A provides further information that gives an indication as to how an average person perceives changes in noise level, and examples of common noise levels.

2 Noise limits

2.1 Project approval

The most current approval associated with activities at LNAR is Project Approval 09_0186 MOD 2 (November 2024), which encompasses activities at the LNAR and Lamberts South Ash Repository. Part E of the project approval details specific conditions relating to noise generated by activities in these areas. Relevant sections of the project approval are reproduced in Appendix B.1.

2.2 Noise management plan

Noise monitoring requirements are detailed in the ONMMP, which is contained within the LNAR Operational Environmental Management Plan (OEMP). The most recent version of the OEMP was issued in April 2025. Relevant sections are reproduced in Appendix B.2.

2.3 Noise limits

Noise impact limits based on the project approval are provided in Table 2.1.

Table 2.1 Noise impact limits, dB

Location	Day $L_{Aeq,15minute}$	Evening $L_{Aeq,15minute}$	Night $L_{Aeq,15minute}$
N1	42	38	35
N2	42	38	35

2.4 Meteorological conditions

Part E7 of the project approval outlines meteorological conditions required for criteria to be applicable. Noise criteria detailed in the project approval apply under all meteorological conditions except for the following:

a) wind speed greater than 3 metres/second measured at 10 metres above ground level

b) stability category F temperature inversion conditions and wind speed greater than 2 metres/second measured at 10 metres above ground level

c) stability category G temperature inversion conditions.

Meteorological data was obtained from the Mt Piper Power Station automatic weather station (AWS), in accordance with the ONMMP, which allowed correlation of atmospheric parameters with measured site noise levels.

2.5 Additional requirements

Monitoring and reporting have been done in accordance with the NSW Environmental Protection Authority (EPA) 'Noise Policy for Industry' (NPfI) issued in October 2017 and the 'Approved methods for the measurement and analysis of environmental noise in NSW' (Approved Methods) issued in January 2022.

2.6 Very noise-enhancing meteorological conditions

In accordance with the Approved Methods, monthly noise monitoring for the site is scheduled to occur during forecast meteorological conditions where noise limits in Table 2.1 will be applicable. However, in cases where actual meteorological conditions do not align with forecasts and noise limits are subsequently not directly applicable, it is the expectation of regulators that noise impact still be managed.

The NPfI states that:

> Noise limits derived for consents and licences will apply under the meteorological conditions used in the environmental assessment process, that is, standard or noise-enhancing meteorological conditions. For 'very noise-enhancing meteorological conditions' a limit is set based on the limit derived under standard or noise-enhancing conditions (whichever is adopted in the assessment) plus 5 dB. In this way a development is subject to noise limits under all meteorological conditions.

Therefore, if monthly noise monitoring occurs during meteorological conditions outside of those specified in Section 2.4, site noise limits will be adjusted based on Table 2.1 plus 5 dB.

3 Methodology

3.1 Overview

Attended environmental noise monitoring was done in general accordance with Australian Standard AS1055 'Acoustics, Description and Measurement of Environmental Noise' and relevant NSW EPA requirements.

3.2 Attended noise monitoring

During this survey, attended noise monitoring was conducted during the day, evening, and night periods at each location. The duration of each measurement was 15 minutes. Atmospheric conditions were measured at each monitoring location.

Measured sound levels from various sources were noted during each measurement and particular attention was paid to the extent of site's contribution (if any) to measured levels. At each monitoring location, the site-only $L_{Aeq,15minute}$ and L_{Amax} were measured directly or determined by other methods detailed in Section 7.1 of the NPfI.

The terms 'Inaudible' (IA) or 'Not Measurable' (NM) may be used in this report. When site noise is noted as IA, it was inaudible at the monitoring location. When site noise is noted as NM, this means it was audible but could not be quantified. All results noted as IA or NM in this report were due to one or more of the following:

- Site noise levels were very low, typically more than 10 dB below the measured background (L_{A90}), and unlikely to be noticed.
- Site noise levels were masked by more dominant sources that are characteristic of the environment (such as breeze in foliage or continuous road traffic noise) that cannot be eliminated by monitoring at an alternate or intermediate location.
- It was not feasible or reasonable to employ methods such as to move closer and back calculate. Cases may include rough terrain preventing closer measurement, addition/removal of significant source to receiver shielding caused by moving closer, and meteorological conditions where back calculation may not be accurate.

If exact noise levels from site could not be established due to masking by other noise sources in a similar frequency range, but were determined to be at least 5 dB lower than relevant limits, then a maximum estimate may be provided. This is expressed as a 'less than' quantity, such as <20 dB or <30 dB.

For this assessment, the measured L_{Amax} has been used as a conservative estimate of $L_{A1,1minute}$. The EPA accepts sleep disturbance analysis based on either the $L_{A1,1minute}$ or L_{Amax} metrics, with the L_{Amax} representing a more conservative assessment of site noise emissions.

3.3 Modifying factors

All measurements were evaluated for potential modifying factors in accordance with the NPfI. Assessment of modifying factors is undertaken at the time of measurement if the site was audible and directly quantifiable. If applicable, modifying factor penalties have been reported and added to measured site-only L_{Aeq}.

Low-frequency modifying factor penalties have only been applied to site-only L_{Aeq} levels if the site was the only contributing low-frequency noise source. Specific methodology for assessment of each modifying factor is outlined in Fact Sheet C of the NPfI.

3.4 Instrumentation and personnel

Attended noise monitoring was conducted by Will Tuck. Qualifications, experience, and/or demonstration of competence in accordance with the Approved Methods is available upon request.

Equipment used to measure environmental noise levels is detailed in Table 3.1. Calibration certificates are provided in Appendix C.

Table 3.1 Measurement equipment

Item	Serial number	Calibration due date	Relevant standard
Brüel & Kjær Type 2250 sound level meter	3029726	20/08/2027	IEC 61672-3:2013
Brüel & Kjær Type 4231 calibrator	3026661	20/08/2026	IEC 60942:2017

4 Results

4.1 Total measured noise levels and atmospheric conditions

Total noise levels measured during each 15-minute attended measurement are provided in Table 4.1. Discussion as to the noise sources responsible for these measured levels is provided in Section 5 of this report.

Table 4.1 Total measured noise levels, dB – 2026 [1]

Location	Start date and time	L_{Amax}	L_{A1}	L_{A10}	L_{Aeq}	L_{A50}	L_{A90}	L_{Amin}
N1 – Day	22/04/2026 09:47	71	66	61	57	52	45	40
N1 – Evening	21/04/2026 21:17	67	64	55	51	36	33	31
N1 – Night	21/04/2026 23:00	68	62	40	48	34	33	32
N2 – Day	22/04/2026 09:20	59	48	44	42	40	37	33
N2 – Evening	21/04/2026 21:44	53	39	33	30	27	21	18
N2 – Night	21/04/2026 22:28	51	42	36	32	27	20	18

Notes: 1. Levels in this table are not necessarily the result of activity at site.

Atmospheric condition data measured by the operator during each measurement using a hand-held weather meter is shown in Table 4.2. The wind speed, direction and temperature were measured at approximately 1.5 metres above ground. Attended noise monitoring is not done during rain, hail, or wind speeds above 5 m/s at microphone height.

Table 4.2 Measured atmospheric conditions – 2026

Location	Start date and time	Temperature °C	Wind speed m/s	Wind direction °magnetic north [1]	Cloud cover 1/8s
N1 – Day	22/04/2026 09:47	12	3.0	120	5
N1 – Evening	21/04/2026 21:17	14	<0.5	-	4
N1 – Night	21/04/2026 23:00	9	<0.5	-	6
N2 – Day	22/04/2026 09:20	11	2.0	130	5
N2 – Evening	21/04/2026 21:44	14	<0.5	-	4
N2 – Night	21/04/2026 22:28	11	<0.5	-	6

Notes: 1. "-" indicates calm conditions at monitoring location.

4.2 Site only noise levels

4.2.1 Modifying factors

There were no modifying factors, as defined in the NPfI, applicable during the survey.

4.2.2 Monitoring results

Table 4.3 provides site noise levels in the absence of other sources, where possible, and includes weather data from the site AWS. Noise limits are applicable under all weather conditions but are adjusted during very noise-enhancing weather conditions as defined by the NPfI.

Table 4.3 Site noise levels and limits – 2026

Location	Start date and time	Wind		Stability class	Very enhancing? [1]	Site limits, dB	Site levels, dB	Exceedances, dB
		Speed m/s	Direction [3]			$L_{Aeq,15minute}$	$L_{Aeq,15minute}$ [2]	$L_{Aeq,15minute}$
N1 – Day[4]	22/04/2026 09:47	-	-	-	No	42	IA	Nil
N1 – Evening	21/04/2026 21:17	1.9	133	E	No	38	<25	Nil
N1 – Night	21/04/2026 23:00	1.6	148	F	No	35	<25	Nil
N2 – Day[4]	22/04/2026 09:20	-	-	-	No	42	IA	Nil
N2 – Evening	21/04/2026 21:44	1.6	138	E	No	38	IA	Nil
N2 – Night	21/04/2026 22:28	1.4	161	F	No	35	IA	Nil

Notes:
1. Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfI.
2. Site-only $L_{Aeq,15minute}$, includes modifying factor penalties if applicable.
3. Degrees magnetic north, "-" indicates calm conditions.
4. Site meteorological data was not available during measurement. Standard meteorological conditions have been assumed to be applicable.

5 Discussion

5.1 Noted noise sources

During attended monitoring, the time variations (temporal characteristics) of noise sources are considered in each measurement via statistical descriptors. Analysis of 1/3 octave-band environmental noise levels was done at the time of monitoring. From these observations, summaries have been derived for the location and provided in this section. The following figures display frequency ranges of various noise sources at each location for L_{A1}, L_{A10}, L_{Aeq}, L_{A50}, and L_{A90} descriptors. These figures also provide, graphically, statistical information for these noise levels.

An example is provided as Figure 5.1, where frogs and insects are seen to be generating noise at frequencies above 1,000 Hz, while industrial noise is observed at frequencies less than 1,000 Hz.

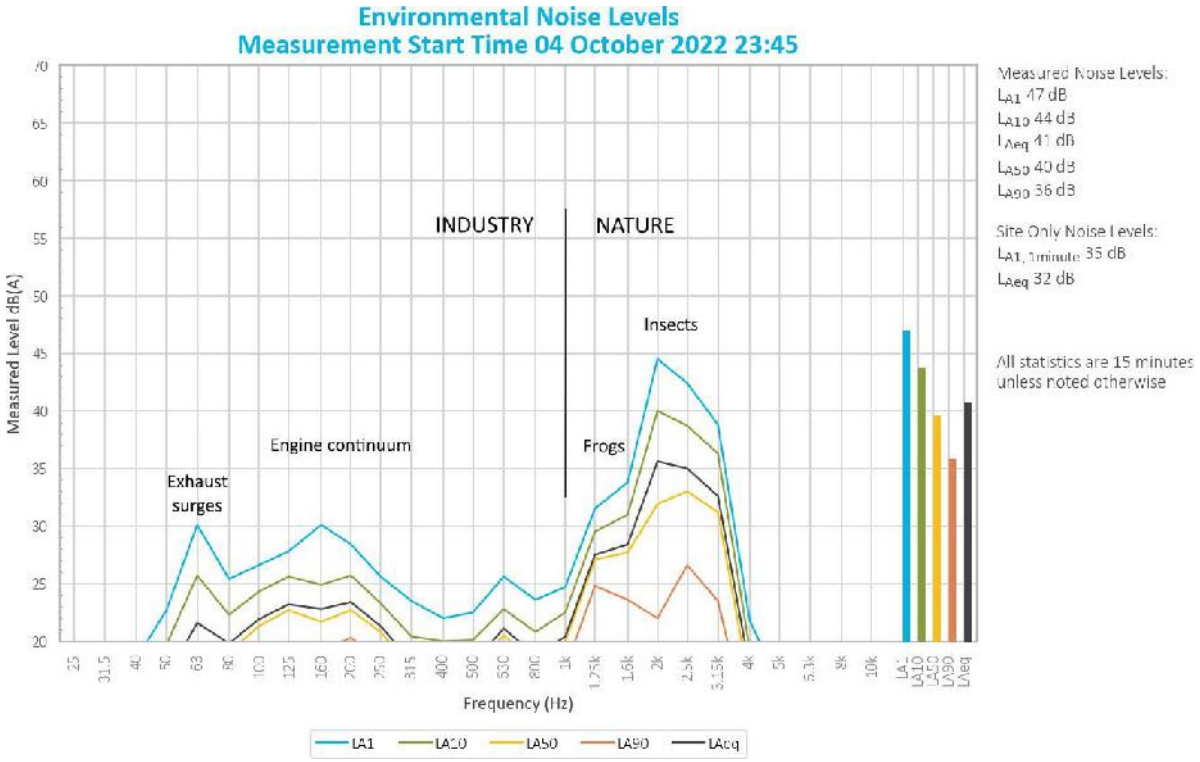


Figure 5.1 Example graph (refer to Section 5.1 for explanatory note)

5.2 N1 – Day

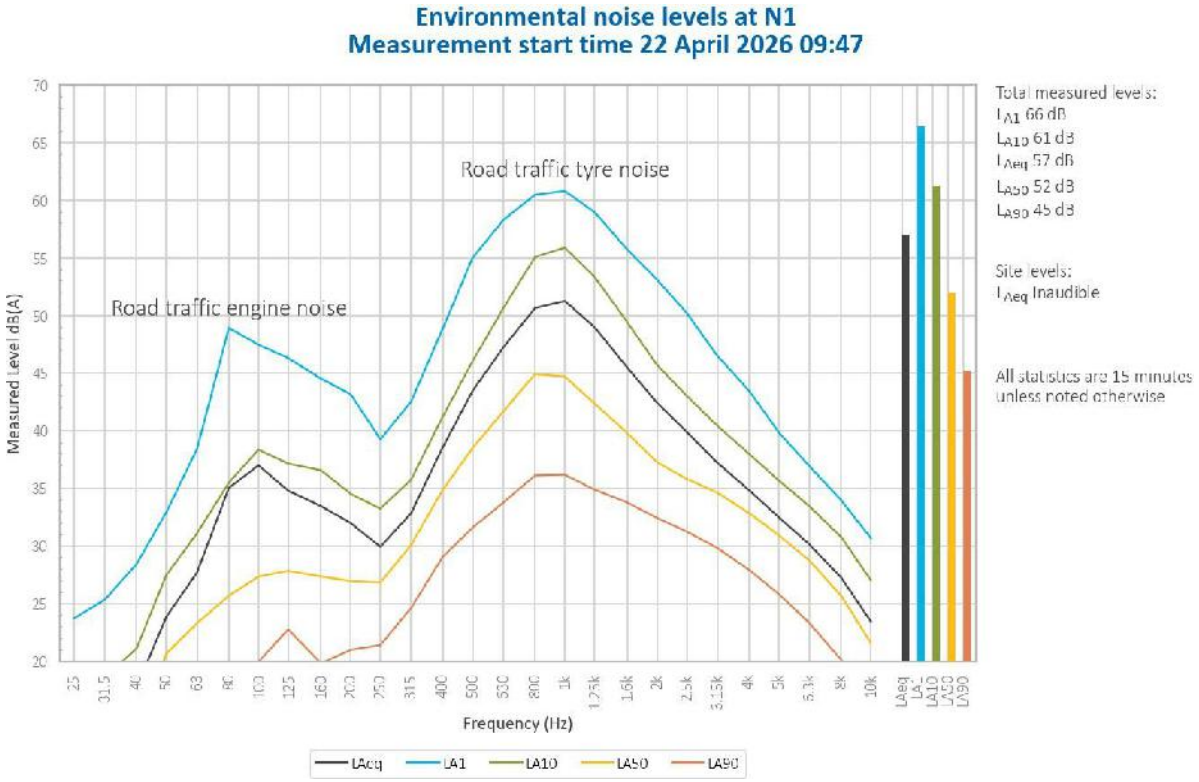


Figure 5.2 Environmental noise levels – N1, Noon Street

LNAR was inaudible during the measurement.

Road traffic noise generated total measured levels.

Noise from birds and engine noise from another mining operation were also noted.

5.3 N1 – Evening

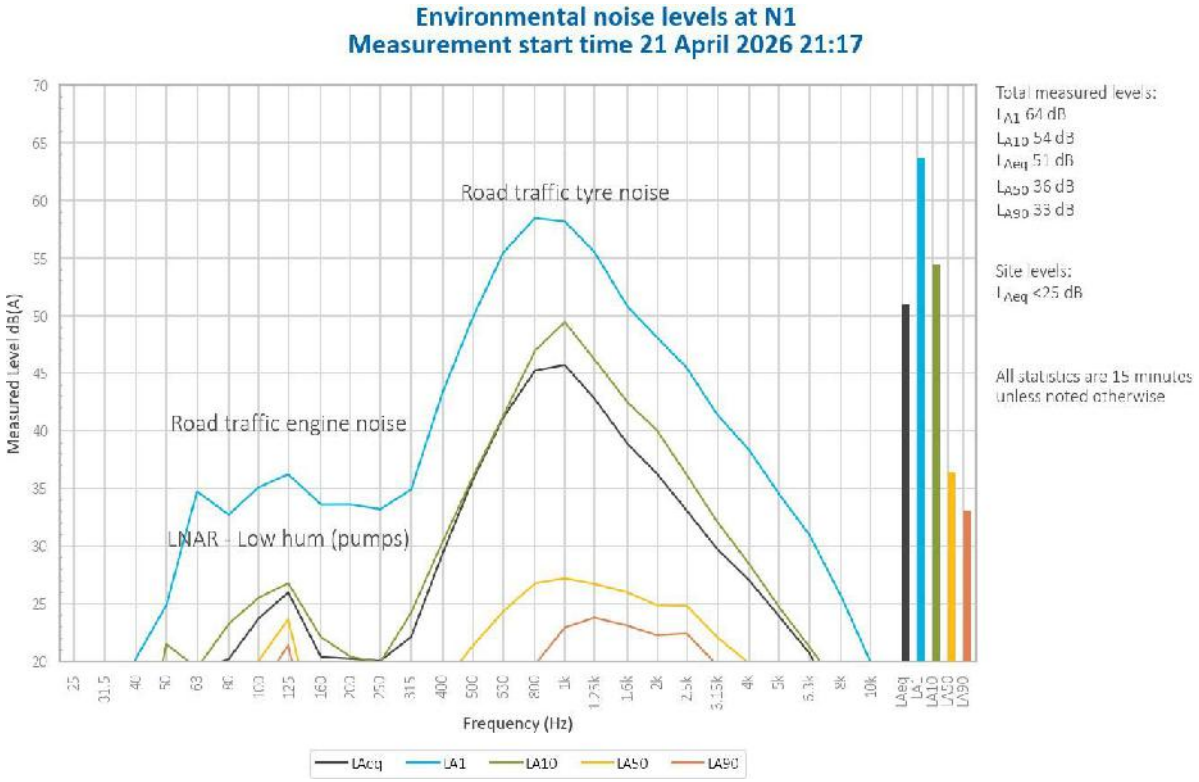


Figure 5.3 Environmental noise levels – N1, Noon Street

Continuum from a pump at LNAR was audible during the measurement and generated a site only L_{Aeq} of less than 25 dB.

Road traffic noise generated total measured levels.

Noise an air quality monitoring station was also noted.

5.4 N1 – Night

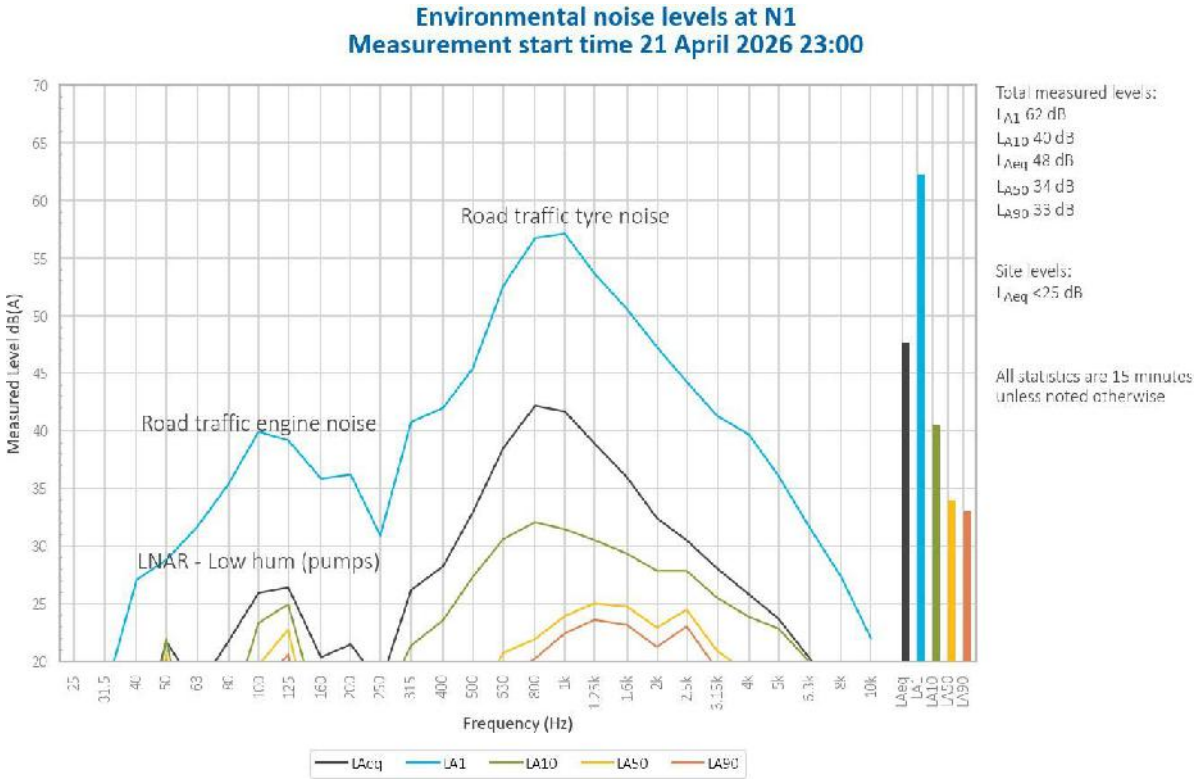


Figure 5.4 Environmental noise levels – N1, Noon Street

Continuum from a pump at LNAR was audible during the measurement and generated a site only L_{Aeq} of less than 25 dB.

Road traffic noise generated total measured levels.

Noise from an air quality monitoring station was also noted.

5.5 N2 – Day

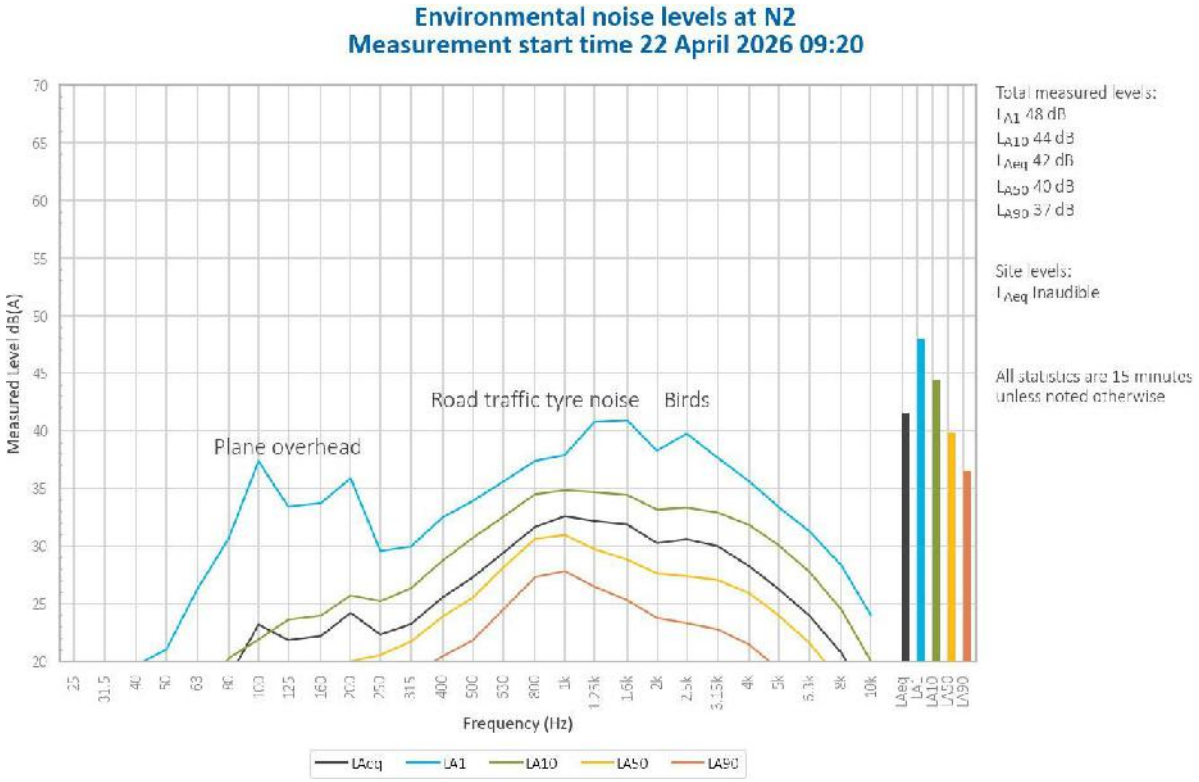


Figure 5.5 Environmental noise levels – N2, End of Karawatha Drive

LNAR was inaudible during the measurement.

Distant road traffic tyre noise was primarily responsible for total measured levels. Birds and plane overhead were a minor contributor to the measured L_{A1}.

5.6 N2 – Evening

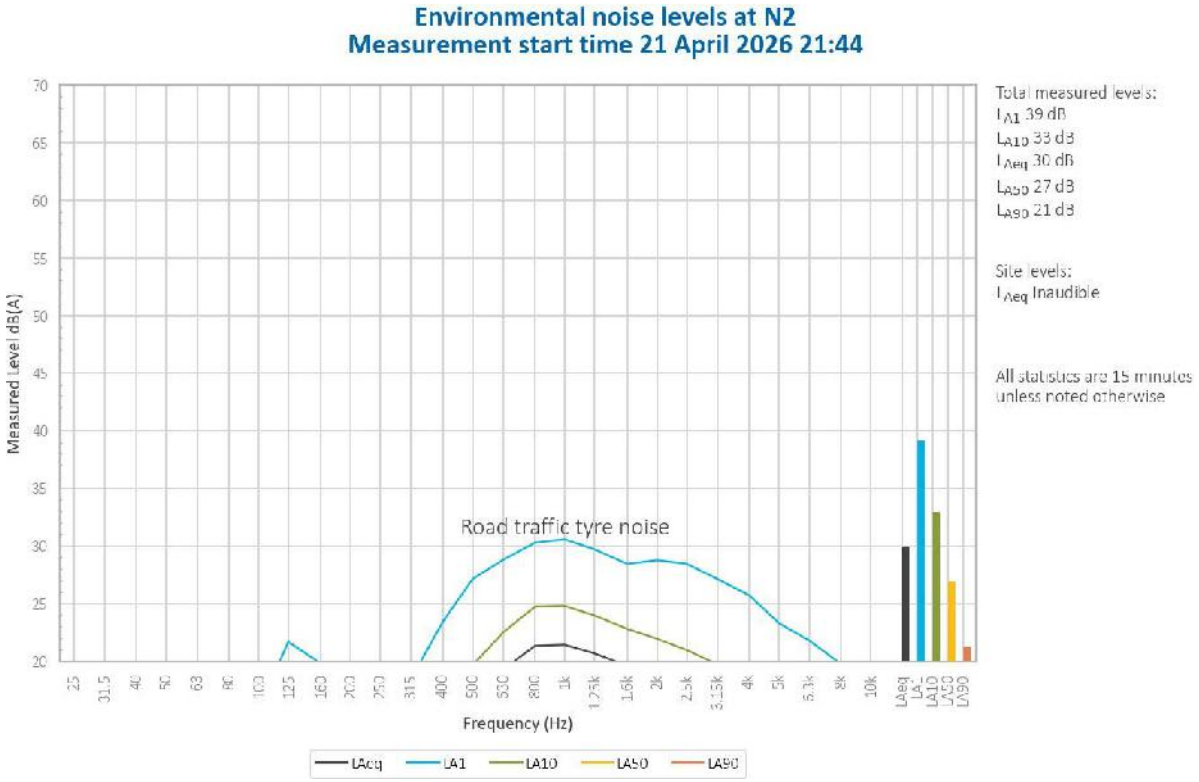


Figure 5.6 Environmental noise levels – N2, End of Karawatha Drive

LNAR was inaudible during the measurement.

Road traffic engine noise generated total measured levels.

5.7 N2 – Night

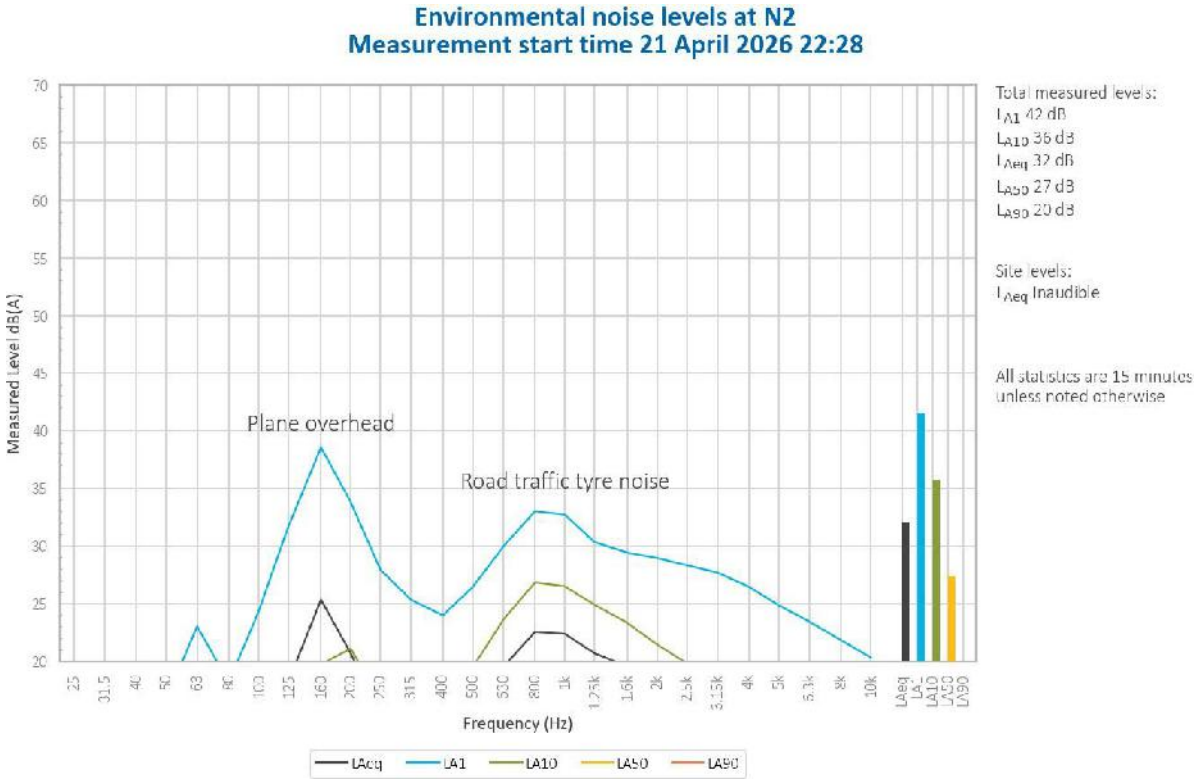


Figure 5.7 Environmental noise levels – N2, End of Karawatha Drive

LNAR was inaudible during the measurement.

Road traffic engine and exhaust surges generated total measured levels. A plane overhead contributed to the L_{A1}.

6 Summary

EMM was engaged by EnergyAustralia NSW Pty Ltd to conduct an annual noise survey of operations at the LNAR. The survey purpose was to quantify the acoustic environment and compare site noise levels against specified limits, in accordance with the LNAR ONMMP.

Attended environmental noise monitoring described in this report was done during the day, evening, and night periods of 21 and 22 April 2026 at two monitoring locations.

Noise levels from site complied with relevant limits at all monitoring locations during the 2026 survey.

Appendix A
Noise perception and examples

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A.1 Noise levels

Table A.1 gives an indication as to how an average person perceives changes in noise level. Examples of common noise levels are provided in Figure A.1.

Table A.1 Perceived change in noise

Change in sound pressure level (dB)	Perceived change in noise
Up to 2	Not perceptible
3	Just perceptible
5	Noticeable difference
10	Twice (or half) as loud
15	Large change
20	Four times (or quarter) as loud

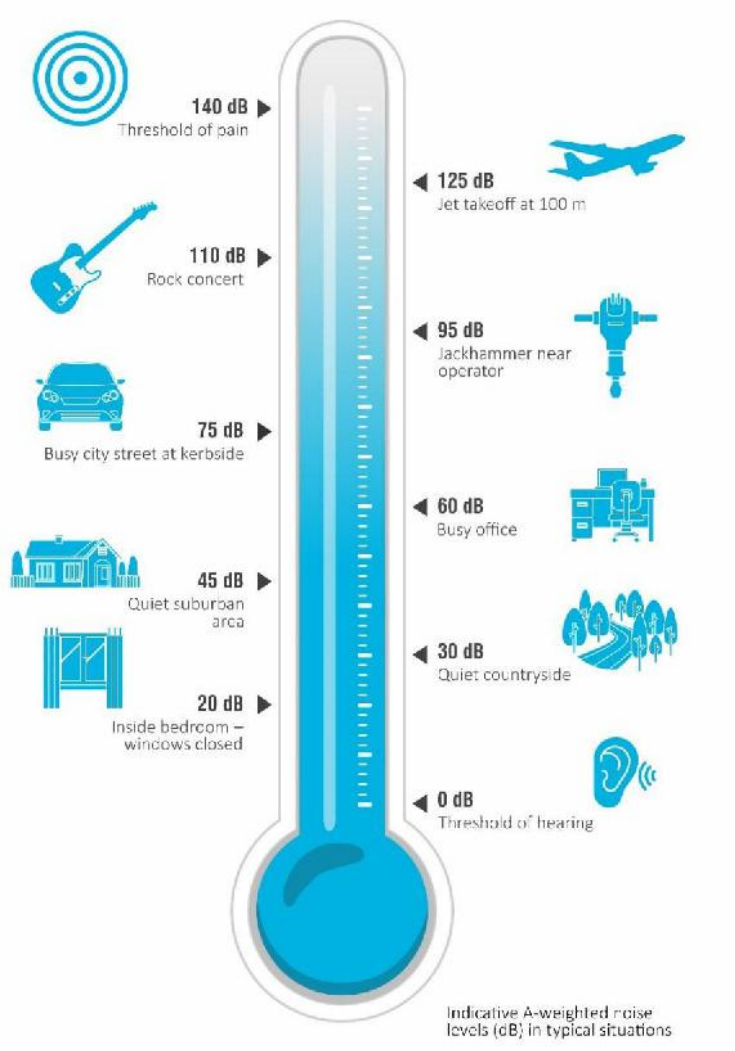


Figure A.1 Common noise levels

Appendix B
Regulator documents

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B.1 Project approval

D3. As part of the OEMP for the project, required under condition D2 of this approval, the Proponent must prepare and implement the following Management Plans:

(a) an **Operational Noise Management Plan** to detail measures to mitigate and manage noise during operation of the project. The Plan must be prepared in consultation with the EPA and include, but not necessarily be limited to:

i) identification of activities that will be carried out in relation to the project and the associated noise sources;

ii) identification of all relevant sensitive receivers and the applicable criteria at those receivers commensurate with the noise limit specified under condition E7 of this approval;

iii) noise monitoring procedures (as referred to in condition E12 of this approval) for periodic assessment of noise impacts at the relevant receivers against the noise limits specified under this approval and the predicted noise levels as detailed in the EA;

iv) details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during operation, including the feasibility of noise reducing benching;

v) procedures to ensure that all reasonable and feasible noise mitigation measures are applied during operation of the project and procedures and corrective actions to be undertaken if non-compliance against the operational noise criteria as detailed in condition E7 is detected at the sensitive receivers; and

vi) provisions for periodic reporting of results to the EPA as per condition B8.

Operational Noise

E7. The cumulative operational noise from the ash placement area and ash haulage activity shall not exceed the following $L_{Aeq(15\ minute)}$ dB(A):

Location	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
All private sensitive receivers within the township of Blackmans Flat	42	38	35
All other sensitive receivers	42	38	35

This noise criteria set out above applies under all meteorological conditions except for any of the following:

(a) wind speed greater than 3 metres/second at 10 metres above ground level;
(b) stability category F temperature inversion conditions and wind speed greater than 2 metres/second at 10 metres above ground level; and
(c) stability category G temperature inversion conditions.

This criteria does not apply where the Proponent and an affected landowner have reached a negotiated agreement in regard to noise, and a copy of the agreement has been forwarded to the Secretary and the EPA.

E8. To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, the noise monitoring equipment must be located at the most affected point:

(a) within 30 metres of a dwelling façade where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises; or
(b) approximately on the boundary where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises.

E9. For the purposes of monitoring noise from the premises to determine compliance with the noise limits:

(a) noise monitoring must be undertaken in accordance with the *Noise Policy for Industry* (NSW EPA, 2017), or its latest version, using equipment accepted by the EPA in writing;
(b) the meteorological data to be used for determining meteorological conditions is the data recorded by the meteorological weather station at the premises; and
(c) stability category temperature inversion conditions are to be determined in accordance with the *Noise Policy for Industry* (NSW EPA, 2017), or its latest version.

E10. The Proponent shall implement measures to ensure noise attenuation of trucks. These measures may include, but are not necessarily limited to, installation of residential class mufflers, engine shrouds, body dampening, speed limiting, fitting of rubber stoppers to tail gates, limiting the use of compression braking, and ensuring trucks operate in a one-way system at the ash placement areas where feasible.

FOR INFORMATION

Ongoing Operational Noise Monitoring

E12. The Proponent shall prepare and implement an **Operational Noise Monitoring Program** to assess compliance against the operational noise criteria stipulated in condition E7 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with the EPA and must include the proposed frequency of monitoring and as a minimum must include monitoring when there are any significant changes in work locations or processes.

The noise monitoring program shall be prepared in accordance with the requirements of the *Noise Policy for Industry* (NSW EPA, 2017), or its latest version, and shall include, but not be limited to:

(a) monitoring at Lamberts North, Lamberts South and Blackmans Flat during ash placement activities; and

(b) monitoring of the effectiveness of any noise mitigation measures implemented under condition D3(a) of this approval, against the noise criteria specified in condition E7 of this approval.

The Proponent shall forward to the EPA and the Secretary a report containing the results of any non-compliance within 14 days of conducting a noise assessment. The monitoring program shall form part of the OEMP referred to in condition D3 (a) of this approval.

E13. Where noise monitoring including as required by condition E11 and E12 of this approval identifies any non-compliance with the operational noise criteria specified under condition E7 of this approval the Proponent shall prepare and submit to the Secretary a report including, but not limited to:

(a) an assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source;

(b) identification of the preferred measure(s) for reducing noise at the source;

(c) feedback from directly affected property owners and the EPA on the proposed noise mitigation measures; and

(d) location, type, timing and responsibility for implementation of the noise mitigation measure(s).

The report is to be submitted to the Secretary within 60 days of undertaking the noise monitoring which has identified exceedances of the operational noise criteria specified under condition E7, unless otherwise agreed to by the Secretary.

The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Secretary.

E14. If after the implementation of all reasonable and feasible source controls, as identified in the report required by condition E13, the noise generated by the project continues to exceed the criteria stipulated in condition E7 the Proponent shall implement at the receiver reasonable and feasible noise mitigation measures, such as double glazing, insulation, air conditioning and or other building acoustic treatments, in consultation with and with the agreement of the affected landowner.

FOR INFORMATION

B.2 Noise management plan

5.4 Operational Noise Management and Monitoring Plan

5.4.1 Introduction

This Operational Noise Management and Monitoring Plan **(ONMMP)** seeks to address the specific requirements of PA 09_0186 CoA relating to noise and vibration during operation. These conditions include CoA D3 (a), E6 and E7 - E14 (provided in Appendix C). It provides a framework for EA, its Contractors and vendors to manage operational noise emissions and minimise potential adverse impacts to sensitive receivers during the operation of the Project.

This ONMMP identifies in **Table 5-1** the performance targets (and performance criteria), reference documents, key issues, constraints and strategies and the mitigation measures that comply with the conditions of approval D3 (a), E6, E7, E8, E9, E10, E11,E12, E13, E14. **Table 5-2** sets out mitigation measures to manage potential noise impacts.

EA have prepared and will implement the ONMMP to assess compliance against the operational noise criteria stipulated in CoA E7, throughout the life of the project.

5.4.2 Sensitive Receptors

The term 'sensitive receiver' used in this plan refers to nearby receivers, such as residents and businesses that may potentially be affected by noise emissions identified for the project. The Environmental Assessment (Appendix C Construction and Operational Noise Assessment (SKM, 2010)) identified two sensitive receivers which were then selected as noise monitoring locations. They are referred to as Noise Monitoring Locations 1 and 2 and are shown in **Figure 5** . Noise Monitoring Location 1 is located in Blackmans Flat approximately 1.1km east of the project. Noise Monitoring Location 2 is located on a rural property 1.1km west of Castlereagh Highway

5.4.3 Noise generating activity

5.4.3.1 Approved operational conditions

Operational activities shall be undertaken during the following hours (CoA E1):

Activity	Day	Time
Lamberts North operation, excluding landscaping and revegetation/rehabilitation of the site	Any day	Any time
Lamberts North landscaping and revegetation/ rehabilitation and Lamberts South operation	Monday - Friday	6 am to 8 pm
	Saturday and Sunday	6 am to 5pm

CoA E2 stipulates emergency situations where operations outside these hours are permitted. **Section 2.2.1** of this OEMP lists these emergency situations.

5.4.3.2 Key potential noise impacts

Key potential noise impacts during operational activities are anticipated to include those listed below:

- Transporting fly ash and bottom ash to and from the ash repository using haulage trucks along the designated haul roads;
- Placing ash in stockpiles in designated areas before being spread out by a dozer;
- Compacting the ash using a dozer and roller;
- Maintenance on the haulage roads using a grader, roller, dozers and water carts;
- Dust suppression across the site using a series of techniques including but not limited to water carts and sprinklers systems;
- Developing and maintaining water management structures (containments, drains and sumps) using an excavator;
- Using variously sized pumps on site to pump water from various water sources;
- Using light vehicles on occasion to inspect the ash repository and carry out environmental monitoring;
- The machinery & plant generate noise from the engine & drive line, hydraulics and reverse warning devices;
- Preparing for and installing the leachate barrier system;
- Development of various lined ponds including those associated with the leachate management system.

5.4.5 Operational Noise Monitoring Program

This section provides the requirements for the ongoing noise monitoring program and operational noise review in accordance with CoA E8, E9, E11 E12, E13, and E14. **Table 5-3** provides the operational noise criterion for LNAR activities. **Table 5-4** provides the details of the noise monitoring program. **Table 5-5** provides the standards and requirements that shall be considered during monitoring. The meteorological data recorded at the MPPS weather station will be used to interpret noise monitoring and investigate noise complaints (**Figure 5**).

The reporting requirements and corrective actions required in the event of non-compliance are listed in **Table 5-6** and **Table 5-7**, respectively.

5.4.5.1 Noise Criteria

EA have prepared, and will implement the ONMMP to assess compliance against the operational noise criteria stipulated in CoA E7, throughout the life of the project.

As specified in CoA E7, the operational noise criteria from LNAR activities shall not exceed the LAeq (15 minute) dB(A) identified in **Table 5-3**.

Table 5-3 Operational Noise Criterion (LAeq(15 minute) dB(A))

Location	Day (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm to 7am)
All private sensitive receptors within the township of Blackmans Flat	42	38	35
All other sensitive receivers	42	38	35

These criteria do not apply where the Proponent and an affected landowner have reached a negotiated agreement in regard to noise, and a copy of that agreement has been forwarded to the Secretary and the NSW EPA.

5.4.5.2 Meteorological Conditions

The noise criteria identified in **Table 5-3** applies under meteorological conditions except for any of the following:

- Wind speed greater than 3 m/second at 10 m above ground level;
- Stability category F temperature inversion conditions and wind speed greater than 2 m/second at 10 m above ground level; and
- Stability category G temperature inversion conditions.

5.4.5.3 Determining Compliance

EA will engage a suitably qualified and experienced acoustic consultant to undertake noise monitoring of LNAR activities. The acoustic consultant will determine and confirm compliance with the noise criteria as set out in **Table 5-3**.

5.4.5.4 Monitoring

The Noise Monitoring Program, including the Operational Noise Review (as completed), is provided below in **Table 5-4**. **Table 5-5** provides the standards and requirements that shall be considered during monitoring.

3.	Plant and equipment used at LNAR shall meet the typical sound power levels as per its manufacturing standard. This will be checked following receipt of any ongoing noise complaints.	E10 D3(a)(viii)	Following complaint	Manufacturing standard	Contractor
4.	Ongoing noise monitoring shall be conducted from commencement of operation by a qualified noise specialist in accordance with Conditions of Approval E7, E8 & E9 and the EPA approved Operational Noise monitoring program.	E12 D3(a) (viii)	Annual	Noise monitoring Program	EA

Potential Impact	Location	Parameters	Frequency	Technique	Reporting	Responsibility	CoA and OEMP Reference
Ongoing Noise Monitoring	Two most affected sensitive receivers: ▪ Blackmans Flat ▪ Wallerawang (refer to **Figure 5**) Lamberts North (in accordance with CoA E12(a). Other locations as required, in response to a substantiated complaint.	LAeq, LA10, LA90 and LAMax. Noise levels shall not exceed the noise criteria (**Table 5-3**) at the nearest most affected receiver.	Annual throughout the life of the project or following a complaint as required Upon significant changes in work locations or processes which affect overall site noise emissions	Attended and unattended noise monitoring technique shall be undertaken adopting the following guidelines; ▪ *Noise Policy for Industry* (NSW EPA, 2017), or its latest version; ▪ AS 1055: 1997 *Acoustics – Description and Measurement of Environmental Noise;* ▪ *Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (NSW EPA 2022)* Ongoing attended monitoring using Class 1 or 2 noise monitoring equipment as defined by AS IEC61672.1-2004 and ASEIC61672.2- 2004, or other noise monitoring equipment accepted by the NSW EPA in writing.	Annual monitoring report. Non-compliances: ▪ If noise monitoring survey indicates non-compliance against compliance criteria, then EA is required to forward a report containing the results to the NSW EPA and the Secretary within 14 days of conducting a noise assessment. ▪ An additional investigation report shall be submitted to the Secretary within 60 days of undertaking noise monitoring and must include the criteria specified in CoA E13 within 60 days of undertaking the noise monitoring.	Acoustic Specialist EA EA	D3(a) (vii) D3(a) (viii), E7, E8, E9, E12 Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (NSW EPA 2022 *Noise Policy for Industry* (NSW EPA, 2017), or its latest version AS1055 CoA E12 CoA E13

Appendix C
Calibration certificates

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C.1 Calibration certificates

NVMS

Sydney Calibration Laboratory
Unit 21, 1 Talavera Road, Macquarie Park NSW 2113, Australia
Accredited for compliance with ISO/IEC 17025 - Calibration. Laboratory No. 1301

NATA

CERTIFICATE OF CALIBRATION

Certificate No: CAU2501012 Page 1 of 11

CALIBRATION OF:

Sound Level Meter:	Brüel & Kjær	2250	No: 3029726
Microphone:	Brüel & Kjær	4189	No: 3279089
Preamplifier:	Brüel & Kjær	ZC-0032	No: 30515
Supplied Calibrator:	Brüel & Kjær	4231	No: 3026661
Software version:	BZ7223 Version 4.7.6	Pattern Approval:	-
Instruction manual:	BE1712-22	Identification:	N/A

CUSTOMER:

EMM Consulting Pty Limited
Level 4, 74 Pirie St
Adelaide SA 5000

CALIBRATION CONDITIONS:

Preconditioning: 4 hours at 23 °C
Environment conditions: *see actual values in **Environmental conditions** sections*

SPECIFICATIONS:

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC61672-1:2013 class 1. Procedures from IEC 61672-3:2013 were used to perform the periodic tests. The measurements included in this document are traceable to Australian / International standards through accredited calibration of all relevant reference equipment.

PROCEDURE:

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System B&K 3630 with application software type 7763 (version 8.6 - DB: 8.60) and test procedure 2250-4189.

RESULTS:

	Initial calibration		Calibration prior to repair/adjustment
X	Calibration without repair/adjustment		Calibration after repair/adjustment

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of Calibration: 20/08/2025 Certificate issued: 21/08/2025

Calibration Technician:
Approved Signatory: Barath Chandar Rajendran

Reproduction of the complete certificate is allowed. Part of the certificate may only be reProduced after written Permission.

NVMS

Sydney Calibration Laboratory
Unit 21, 1 Talavera Road, Macquarie Park NSW 2113, Australia
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NATA

CERTIFICATE OF CALIBRATION

Certificate No: CAU2501011

CALIBRATION OF:

Acoustic Calibrator:	Bruel & Kjaer Type 4231	No: 3026661
Identification:	N/A	

CLIENT:

EMM Consulting Pty Limited
Level 4, 74 Pirie St
Adelaide SA 5000

CALIBRATION CONDITIONS:

Preconditioning:	12 hours at 23 °C		
Environment conditions	Air temperature:	23.5 °C	± 3°C
	Air pressure:	102.5 kPa	± 3 kPa
	Relative Humidity:	45.4 %RH	± 20 %RH

SPECIFICATIONS:

The acoustic calibrator has been calibrated in accordance with the requirements as specified in IEC 60942:2017 class 1. The measurements included in this document are traceable to Australian / International standards through accredited calibration of all relevant reference equipment.

PROCEDURE:

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System B&K 3630 with application software type 7794 (version 8.6 - DB: 8.60) and test procedure P_4231_D07.

RESULTS:

	Initial calibration		Calibration prior to repair/adjustment
X	Calibration without repair/adjustment		Calibration after repair/adjustment

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor k = 2 providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of Calibration: 20/08/2025

Certificate issued: 21/08/2025

Calibration Technician:

Approved Signatory: Barath Chandar Rajendran

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Appendix D Lamberts North Biodiversity Offset Area Flora & Fauna Monitoring Reports 2024

Lamberts North Biodiversity Offset Area
Flora and Fauna Monitoring Report 2024

Energy Australia NSW

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Template 2.8.1

Executive Summary

The Lamberts North Biodiversity Offset Area (BOA) is located at Thompsons Creek Reservoir and was established as per the condition of approval for the Mt Piper Power Station Ash Placement Project. The BOA was formerly secured in perpetuity through a Biodiversity Conservation Agreement (BCA) with the NSW Biodiversity Conservation Trust (BCT) in March 2022. Along with the BCA, the Biodiversity Offset Management Plan (BOMP) for the Lamberts North BOA details the management actions to be undertaken within the BOA to enhance habitat for native flora and fauna species through site rehabilitation and revegetation.

Eco Logical Australia (ELA) has been engaged by Energy Australia NSW (EA) to undertake biennial flora and fauna monitoring to assess the progress of management actions undertaken within the BOA. This report details the results of monitoring undertaken in October 2024, which forms the fifth round of monitoring successfully completed to date.

The 2024 flora monitoring results demonstrated an increase in total flora species diversity as well as an increase in native species diversity when compared to the baseline results from 2016 and subsequent monitoring iterations. Exotic ground cover results recorded during 2024 remained variable, both across sites and monitoring years, however, recorded an overall increase on 2022 monitoring results. Above average rainfall across an extended period, including the preceding three and six-month period, has likely contributed to both the increased native species richness and exotic ground cover by promoting an abundance of vegetative cover in the ground layer. As the BOA has a history of previous clearing and pastoral use, it is likely that exotic ground cover will continue to fluctuate on a seasonal basis.

The 2024 fauna monitoring results recorded the equal highest bird species richness (alongside 2022) since the commencement of monitoring at the BOA. A total of two threatened species listed as vulnerable under the NSW Biodiversity Conservation Act 2016 (BC Act) and/or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were recorded during 2024, with both species, *Artamus cyanopterus* (Dusky Woodswallow) and *Calyptorhynchus lathami* (Glossy Black-Cockatoo), having been previously recorded at the BOA. Several bird species were also recorded opportunistically within the BOA for the first time, indicating that overall species richness continues to increase. Three pest animal species, *Sturnus vulgaris* (Common Starling), *Lepus europaeus* (Brown Hare) and *Sus scrofa* (Feral Pig), were recorded within the BOA as part of a total fauna species list of 43 bird, three amphibian, four mammal and three reptile species.

An assessment of revegetation works undertaken in 2017, 2021 and recently completed plantings in 2024 was undertaken, along with an assessment of ongoing natural regeneration. Both revegetation and natural regeneration continues to develop with regards to structure (height and stem density) and composition (a diversity of characteristic native woodland species) across the BOA. Stem densities of revegetation areas are well in excess of the target 160 stems/ha and have been observed to decline as plantings develop for 2017 tubestock plantings, however, high stem densities remain for 2021 direct seeding areas. It is likely that total stem density will decline over time as plantings continue to mature and progress over time, towards a structure more similar to that of surrounding native woodland.

Whilst exotic species are present within revegetation and natural regeneration areas, recommendations as to their management have been included within this report and their current abundance and density

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are not limiting the re-establishment of native woodland in these areas. Given the scale and success of revegetation and active natural regeneration to date, no further revegetation works are recommended for the BOA at this stage.

All BOMP performance and completion criteria are currently being achieved and as such, the BOA is considered to be consistent with its BCA.

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Abbreviations

Abbreviation	Description
BC Act	NSW *Biodiversity Conservation Act 2016*
BCA	Biodiversity Conservation Agreement
BCT	NSW Biodiversity Conservation Trust
BOA	Biodiversity Offset Area
BoM	Bureau of Meteorology
BOMP	Biodiversity Offset Management Plan
EA	Energy Australia NSW
ELA	Eco Logical Australia Pty Ltd
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ha	hectare

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1. Introduction

Eco Logical Australia (ELA) was engaged by Energy Australia NSW (EA) to undertake flora and fauna monitoring at the Lamberts North Biodiversity Offset Area (BOA). The BOA was established as a requirement of Project Approval 09_0186 for the Mt Piper Power Station Lamberts North Ash Placement Project.

The Lamberts North BOA is located at Thompsons Creek Reservoir, 14 km north-west of Lithgow, comprising 6.8 ha, including:

- 4.7 hectare (ha) of Lot 243 of DP 801915
- 2.1 ha of Lot 432 of DP 801915.

EA sought guidance from the NSW Biodiversity Conservation Trust (BCT) for the suitability of managing the BOA under a formal conservation mechanism. The intention of this was to secure the BOA and provide the financial and management resources required to enhance its biodiversity values. An application for a Biodiversity Conservation Agreement (BCA) was submitted to the BCT in March 2021, with the final signed BCA received in March 2022.

EA developed a Biodiversity Offset Management Plan (BOMP) for the Lamberts North BOA (Energy Australia, 2019) as per Schedule 2 Condition B6 of the Project Approval, which sets out the management actions to be undertaken within the BOA.

The objective of the flora and fauna monitoring program is to measure the progress of management actions undertaken within the Lamberts North BOA to enhance habitat for native flora and fauna, including threatened species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and NSW *Biodiversity Conservation Act 2016* (BC Act). The monitoring program also allows for the identification of any management issues requiring attention within the BOA and provides recommendations for addressing such issues. The 2024 monitoring forms the fifth round of data collection within the BOA, following baseline monitoring conducted in 2016 and subsequent monitoring in 2018, 2020 and 2022 (ELA 2016; ELA 2018; ELA 2020; ELA 2022).

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2. Methodology

2.1 Floristic monitoring

Four floristic monitoring plots that were established during 2016 were re-surveyed during spring 2024 (three sites within the BOA and one analogue site – site locations are shown in Appendix A). The floristic survey at each site included:

- Full floristic surveys of a 20m x 20m plot recording all vascular plant species within the plot
- Biometric plot data using the BioBanking assessment methodology within a 20m x 50m plot which included an assessment of:
  - Native species richness - within 20 m x 20 m flora plot
  - Native tree cover and native midstorey cover – at regular 5 m intervals along 50 m transect (10 points)
  - Native ground (grass, shrub, other) and exotic cover – at regular 1 m intervals along 50 m transect (50 points)
  - Habitat features (number of trees with hollows, length of fallen logs) and proportion of over-storey species regeneration – within 20 m x 50 m plot.

2.2 Fauna monitoring

Fauna surveys were undertaken to provide an inventory of fauna species present within the BOA. Fauna surveys were focused on species which are good indicators of improvements in habitat structure, with birds being the primary focus. Other fauna assemblages were also recorded opportunistically to inform general site diversity. Two monitoring sites established in 2016 were re-surveyed during spring 2024, with their locations shown in Appendix A. Table 1 below details the survey methods undertaken at each of the two fauna monitoring sites.

Table 1: Fauna methodology

Method	Detail	Requirement per site
Bird survey	Timed, fixed area surveys for diurnal birds, observing and listening.	20 minute count morning and afternoon over 2 days
Opportunistic observations	Opportunistic observations recorded for all birds, mammals, reptiles and amphibian species observed. Any evidence of scats, scratchings and digging recorded with all evidence of pest animal activity noted and recorded with a GPS.	Opportunistic

2.3 Revegetation and Natural regeneration assessment

Field survey of revegetated and naturally regenerating areas across the BOA was undertaken to assess the status of the development of re-established native woodland across the BOA through both active revegetation and assisted natural regeneration. The field survey involved traversing the BOA and recording the following within thirteen (13) 20 m x 20 m sub-plots:

- Upper-storey and midstorey species that have established
- Height range and average height of species present

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- Density of species present
- Type and age of revegetation
- Spatial mapping of revegetation / natural regeneration polygons
- Evidence of pest animals and/or over-abundant native herbivores (e.g. scats, chewings, diggings, burrows)
- Surface stability and erosion issues.

Zones of successful revegetation / natural regeneration (upper-storey species) were digitally recorded using a ESRI Field Maps spatial mapping software to accurately record vegetation data in real time, along with any relevant management issues observed in the field.

3. Results

3.1 Weather conditions

The 2024 BOA monitoring was undertaken on Thursday 10 and Friday 11 October 2024 by ELA ecologists Tom Kelly and Elliott Poulier.

The weather data presented below in Table 2 was taken from the Bureau of Meteorology's (BoM) Lithgow weather station, 14 km south-east of the BOA (BoM 2024). The weather conditions during the survey were mostly fine with some light rainfall recorded on Thursday 10 October 2024. In the three and six-month periods preceding the 2024 monitoring, the Lithgow region experienced above average rainfall (BoM 2024), which extends a prolonged period of generally above average rainfall for the region since 2020.

Table 2: Weather observations throughout the monitoring period

Date	Minimum Temperature (°C)	Maximum Temperature (°C)	Rain (mm)	Relative Humidity (%)	Cloud Cover (%)	Wind Direction	Wind Speed at 9am (km/h)
10/10/2024	6.8	20.1	0.8	88	6	NNE	9
11/10/2024	3.7	21.9	0	86	3	-	Calm

3.2 Floristic Monitoring

A full list of flora species recorded within the Lamberts North BOA during 2024 monitoring is included in Appendix C.

3.2.1 Species richness

A total of 68 flora species (49 native species, 19 exotic species) were recorded across all floristic monitoring sites, which represents the highest recorded total species richness since the commencement of monitoring in 2016. The four monitoring sites total species richness ranged from 18 to 40 species, with a range of 13 – 28 native species (Table 3). Both total and native species richness was highest at the Analogue site (TD4) which is reflective of the site's remnant vegetation. Exotic species richness was highest at sites TD2 and TD4 (14 and 12 species), with the remaining two monitoring sites (TD1 and TD3) recording relatively low exotic species richness (8 and 5 species, respectfully) (Table 3).

Table 3: Total, native and exotic species richness across floristic monitoring sites

Site	Total species richness	Native species richness	Exotic species richness
TD1	25	17	8
TD2	33	19	14
TD3	18	13	5
TD4	40	28	12

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3.2.2 Vegetation structure

Vegetation structural data (incorporating the height range and percent foliage cover of all vegetation strata within each monitoring site) is presented below in Table 4. The growth of canopy (mid and upper-storey stratum) species has continued the development of native woodland vegetation structure across the BOA. A native upper-storey was present within two of four monitoring sites (TD1 and TD4) and is developing through eucalypt plantings at the remaining two sites (TD2 and TD3). Native upper-storey stratum percent foliage cover increased from 5% to 7% between 2022 and 2024 monitoring, with midstorey cover at this site as well as sites TD2 and TD3 (comprised predominantly of planted *Eucalyptus* spp.) also increasing from 2022 to 2024.

Table 4: Vegetation structure of BOA floristic monitoring sites

Site Number	Stratum	Lower Height (m)	Upper Height (m)	Foliage Cover (%)	Dominant Species
TD1	U	5	9	7	*Eucalyptus mannifera, Eucalyptus dives, Eucalyptus pauciflora*
	M	0.5	5	0.7	*Eucalyptus* spp. (plantings)
	L1	0.01	0.4	80	*Microlaena stipoides* var. *stipoides , Anthoxanthum odoratum, Phalaris aquatica*
	L2	0.01	0.3	10	*Acetosella vulgaris, Hypochaeris radicata, Senecio quadridentatus*
TD2	M	0.5	5	2	*Eucalyptus* spp. (plantings)
	L1	0.01	0.2	95	*Microlaena stipoides* var. *stipoides, Rytidosperma* spp., *Anthoxanthum odoratum*
	L2	0.01	0.5	3	*Hypochaeris radicata, Geranium solanderi, Acetosella vulgaris*
TD3	M	0.4	4	5	*Eucalyptus* spp. (plantings), *Acacia dealbata*
	L1	0.01	0.3	85	*Anthoxanthum odoratum, Phalaris aquatica*, *Rytidosperma* spp.
	L2	0.01	0.3	7	*Hypochaeris radicata, Acetosella vulgaris*
TD4	U1	6	10	20	*Allocasuarina littoralis, Eucalyptus mannifera, Eucalyptus dives*
	U2	2	4	2	*Allocasuarina littoralis*
	L1	0.01	0.3	55	*Microlaena stipoides, Rytidosperma* sp., *Anthoxanthum odoratum*
	L2	0.01	0.5	5	*Lomandra* spp., *Poranthera microphylla, Hypochaeris radicata*

U = upper-storey; M = midstorey; L = lower-storey

3.2.3 Exotic species and cover

A total of 19 exotic species were recorded across the four floristic monitoring sites surveyed during 2024 monitoring, with these exotic species including both annual and perennial species. Exotic species richness was slightly below both 2022 and 2020 monitoring (20 species recorded), however, was higher compared to 2018 monitoring, noting that this monitoring period was undertaken during drought conditions and recorded only five exotic species. Exotic cover ranged from 4% at site TD4 to 64% at site TD3 and across each site, showed variable trends compared to 2020 and 2022, decreasing at site TD4, whilst increasing at sites TD1, TD2 and TD3 (see Figure 3).

Two species listed as priority weeds under the *Central Tablelands Regional Strategic Weed Management Plan 2023-2027* (Central Tablelands LLS 2023) were recorded in the BOA, *Hypericum perforatum* (St John's Wort) and *Rubus fruticosus* sp. aggregate (Blackberry). Both St John's Wort and Blackberry were previously recorded in the BOA during monitoring in 2022 (Blackberry was also recorded during 2016 and 2020). *Nassella trichotoma* (Serrated Tussock) previously recorded during 2016 and 2020, was not recorded within the BOA during 2024 monitoring.

3.3 Fauna Monitoring

3.3.1 Bird Surveys

A total of 33 individual species were recorded during the bird surveys completed as part of 2024 monitoring. No threatened species were recorded during surveys, however two threatened species *Artamus cyanopterus* (Dusky Woodswallow) and *Calyptorhynchus lathami* (Glossy Black-Cockatoo) were recorded opportunistically. Dusky Woodswallow was observed in flight above the BOA and recent chewings of she-oak cones from *Allocasuarina littoralis* (Black She-oak) indicate the presence of Glossy Black-Cockatoo utilising the vegetation within the BOA as foraging habitat. Both species are listed as vulnerable under the BC Act and the Glossy Black-Cockatoo is also listed as vulnerable under the Commonwealth EPBC Act.

Species diversity and abundance results for each of the two monitoring sites and survey periods (morning and afternoon) are tabulated below in Table 5 and Table 6. Both sites recorded relatively consistent species diversity across both morning and afternoon surveys and overall, recorded similar species richness and abundance, Fauna site 1 - 23 species, 78 individuals and Fauna site 2 - 22 species, 86 individuals. Fauna site 1 recorded higher abundance during the morning survey with a decrease during the afternoon, and this trend was reversed at Fauna site 2. *Platycercus elegans* (Crimson Rosella) was the most commonly recorded species, recorded at both sites during all survey periods and also recorded the highest total abundance (16 individuals) (see Appendix E). *Caligavis chrysops* (Yellow-faced Honeyeater) was the second most abundant species, with a total of 14 individuals recorded across both monitoring sites.

Whilst the overall assemblage of bird species recorded during the surveys is indicative of open habitats, a diverse range of native woodland bird species were recorded. Seven species of birds not previously recorded within the BOA were recorded during 2024 surveys and included *Acanthiza nana* (Yellow Thornbill), *Alisterus scapularis* (Australian King-Parrot), *Dicaeum hirundinaceum* (Mistletoebird), *Falco longipennis* (Australian Hobby), *Ocyphaps lophotes* (Crested Pigeon), *Todiramphus sanctus* (Sacred Kingfisher), and *Zosterops lateralis* (Silvereye). This change in species assemblage indicates an increasing species richness over time, including the addition of species associated with native woodland habitat,

such as Australian King-Parrot and Mistletoebird. One pest bird species, *Sturnus vulgaris* (Common Starling) was recorded within the BOA, with a total of six individuals of this priority pest species recorded at Fauna site 2 (Central Tablelands Local Land Services 2024).

Table 5: Bird survey species diversity results

Site	Species diversity		
	Morning survey	Afternoon survey	Total
Fauna 1	17	16	23
Fauna 2	13	17	22

Table 6: Bird survey abundance results

Site	Bird abundance		
	Morning survey	Afternoon survey	Total
Fauna 1	44	34	78
Fauna 2	30	56	86

3.3.2 Opportunistic observations

An additional 13 bird species were recorded opportunistically within the BOA, along with three amphibian, four mammal and three reptile species. All opportunistic species were identified through either direct observation, identification of scats, chewings, diggings and/or calls. The opportunistically recorded bird species included the two abovementioned threatened species, along with five species typical of native woodland habitat in *Acanthiza reguloides* (Buff-rumped Thornbill), *Gerygone olivacea* (White-throated Gerygone), *Merops ornatus* (Rainbow Bee-eater), *Philemon corniculatus* (Noisy Friarbird) and *Scythrops novaehollandiae* (Channel-billed Cuckoo). The previously recorded priority pest *Oryctolagus cuniculus* (European Rabbit) was not recorded in 2024 although other priority pest species *Lepus europaeus* (Brown Hare; visual observation) and *Sus scrofa* (Feral Pig; diggings and scats only) where recorded within and/or adjacent to the BOA. Whilst *Macropus giganteus* (Eastern Grey Kangaroo) was recorded frequently across the BOA, there was no indication that this species was applying grazing pressure upon plantings or natural regeneration. A list of all fauna observed during monitoring is included in Appendix D. Locations of threatened and pest species observations are displayed in Appendix B.

3.4 Revegetation and natural regeneration assessment

Revegetation works undertaken across the BOA in 2017 included planting of approximately 2,000 tubestock seedlings. Assessment of the plantings in 2018 identified a total of 547 successfully established plants which increased to 705 in 2020, across both the eastern and western portions of the BOA. Additional direct seeding revegetation works were completed in 2021 to 'infill' small sections of the BOA not subject to previous revegetation works or undergoing natural regeneration.

Additional tree and shrub tubestock plantings were undertaken prior to the monitoring survey in 2024. Six new polygons were mapped within the BOA containing recent plantings, in both wetland and dryland

areas. One of these new polygons was split from Polygon 1 recorded from the previous monitoring surveys in 2022, to distinguish between the new 2024 plantings and 2021 direct seeded areas.

A total of 13 revegetation / natural regeneration polygons were assessed across the extent of the BOA (Figure 1). Each polygon contained native upper-storey species characteristic of surrounding native woodland from either 2017 or 2024 tubestock plantings, 2021 direct seeding, natural regeneration, or a combination of these. Dominant native upper-storey species included *Eucalyptus dives* (Broad-leaved peppermint), *Eucalyptus mannifera* (Brittle Gum), *Eucalyptus pauciflora* (Snow Gum) and *Eucalyptus viminalis* (Ribbon Gum), with the proportion of each species varying within each polygon. Tubestock plantings undertaken in 2017 have continued to develop well since 2022 (likely aided by continued above average rainfall), averaging between 1.9 m and 3.1 m in height, however, growing to a maximum height of 6.5 – 7 m across multiple polygons. Typically younger natural regeneration (excluding some large saplings up to 3 m) and 2021 direct seeding recorded an average range from 0.7 m to 1.5 m in height. The stem density of native upper-storey species recorded was well above the target for re-establishing native woodland (160 stems/ha), ranging from 500 stems/ha to 15,150 stems/ha. Stem density has been observed to decline as revegetation develops in the oldest and most well-developed revegetation (2017 tubestock plantings e.g. Polygon 4 – see Figure 1 and Appendix E), whilst stem density in the younger 2021 direct seeding polygons (e.g. Polygon 6 – see Figure 1) has not yet declined.

Some of the recent 2024 tubestock plantings contained substantial proportions of plants showing signs of distress (i.e. leaf-drop, withering, discolouration, dead plants). Polygon 8 recorded approximately 70% of plants within tree guards as indicating signs of distress and Polygon 9 recorded approximately 50% under distress. The distressed plants comprised a range of native shrub and tree species and was not isolated to a single species or genus (e.g. *Eucalyptus*). It was also noted in the field whilst undertaking surveys that Polygons 11-13 included small areas of plantings which extended outside of the mapped boundary of the BOA (see Figure 1 below).

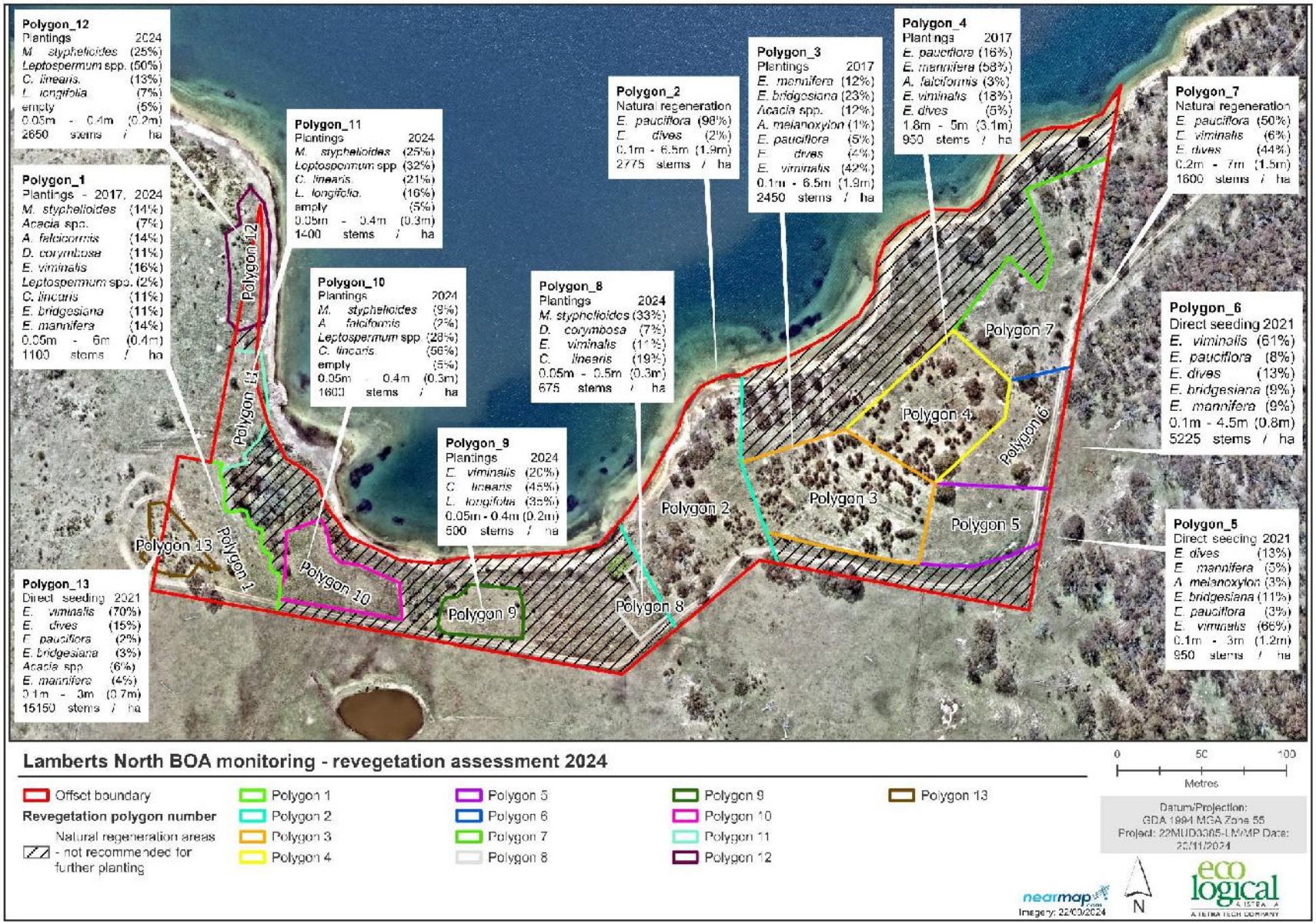


Figure 1: Revegetation and natural regeneration assessment results

4. Discussion and Recommendations

4.1 Floristic monitoring

Across all floristic monitoring sites, total species richness recorded in 2024 was the highest since the commencement of monitoring in 2016, with a total of 68 species recorded. Total native species richness (49 species) was also the highest recorded across all monitoring years, although only floristic monitoring site TD2 recorded its highest score (Figure 2). Native species richness at TD1 and TD4 dropped slightly compared to the 2022 surveys, whilst site TD3 recorded an increase compared to 2022, however, a lower score than recorded in 2020 (Figure 2). Relatively high native species richness scores in 2020, 2022 and 2024 are likely indicative of above average rainfall experienced across the region since the conclusion of drought conditions in early 2020 (section 4.1).

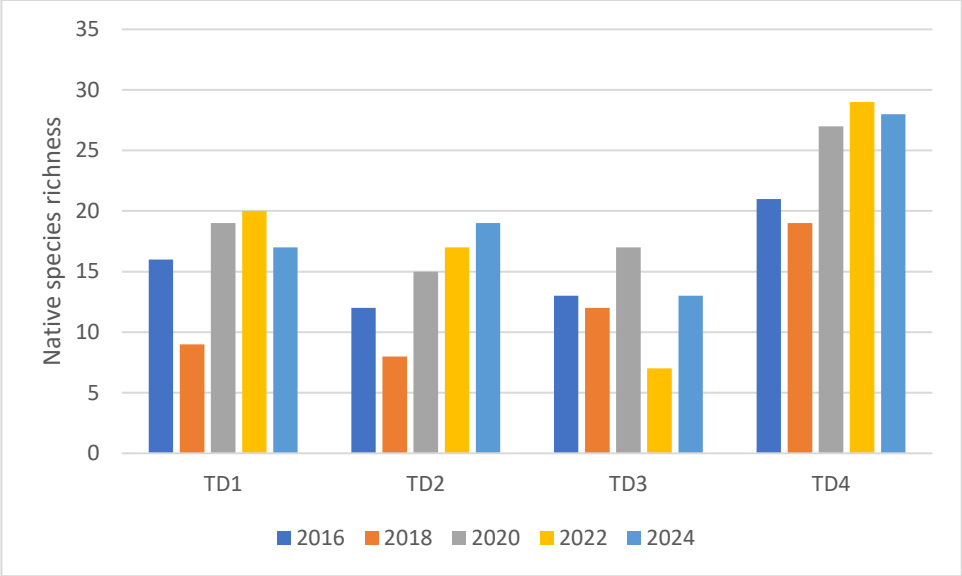


Figure 2: Native species richness at floristic monitoring sites

Exotic ground cover results recorded during 2024 were variable both across sites and previous monitoring years, although showed a substantial increase at sites TD1 and TD3 compared with results from 2022 (Figure 3). Site TD3 had previously demonstrated a consistent declining exotic ground cover trend until the increase this year (Figure 3). The high exotic cover recorded at this site was driven by the exotic perennial grass Anthoxanthum odoratum (Sweet Vernal Grass), which has been recorded in previous monitoring years, however, in lower percent cover. Site TD4 was the only site to display a reduction in exotic cover since the previous 2022 survey period (Figure 3). Given the BOA's history of disturbance, seasonal fluctuations in exotic ground cover are likely to continue, however, as more data is collected during subsequent monitoring periods, greater insight into the patterns and relationships of exotic and native cover will be able to be explored.

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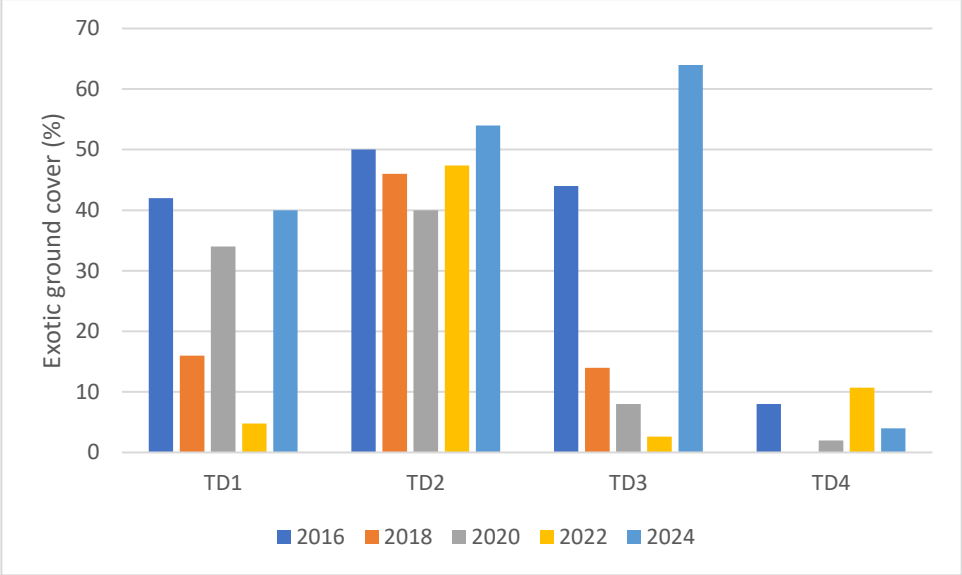


Figure 3: Exotic ground cover at floristic monitoring sites

Two listed weed species, Blackberry and St John's Wort were recorded in the BOA in 2024. St John's Wort was recorded at a few locations, whilst mostly small patches (less than one square metre) of Blackberry were scattered throughout the BOA, particularly in the western portion (see Appendix B). Targeted herbicide application is recommended for these listed weed species, with manual removal of Blackberry also recommended post-herbicide treatment, to avoid the potential of re-shooting. Specific control methodologies are provided for both species on the NSW Department of Primary Industries website: https://weeds.dpi.nsw.gov.au/.

4.2 Fauna monitoring

Total bird species richness across both fauna monitoring sites matched the total recorded in 2022, which was the highest recorded since the commencement of monitoring in 2016. Similar to native flora species richness (see Figure 2), bird species richness across monitoring years has generally shown an increasing trend since 2018 (drought conditions), which has coincided with above average rainfall conditions (Figure 4). Fauna site 1 has consistently recorded higher bird species richness than Fauna site 2, likely due to its increased connectivity to surrounding remnant native woodland (see Appendix A), combined with the more advanced stage of revegetation and natural regeneration present within this portion of the BOA (see Figure 1). These factors allow for woodland bird species (e.g. the aforementioned Honeyeater species) to travel from remnant native woodland outside of the BOA, into developing suitable native woodland habitat within the BOA.

The overall bird species richness (including opportunistically recorded species) was also slightly higher than previous years, with an additional one bird species recorded compared with the 2022 survey. A total of two threatened species were recorded within the BOA, both of which had been recorded during previous surveys.

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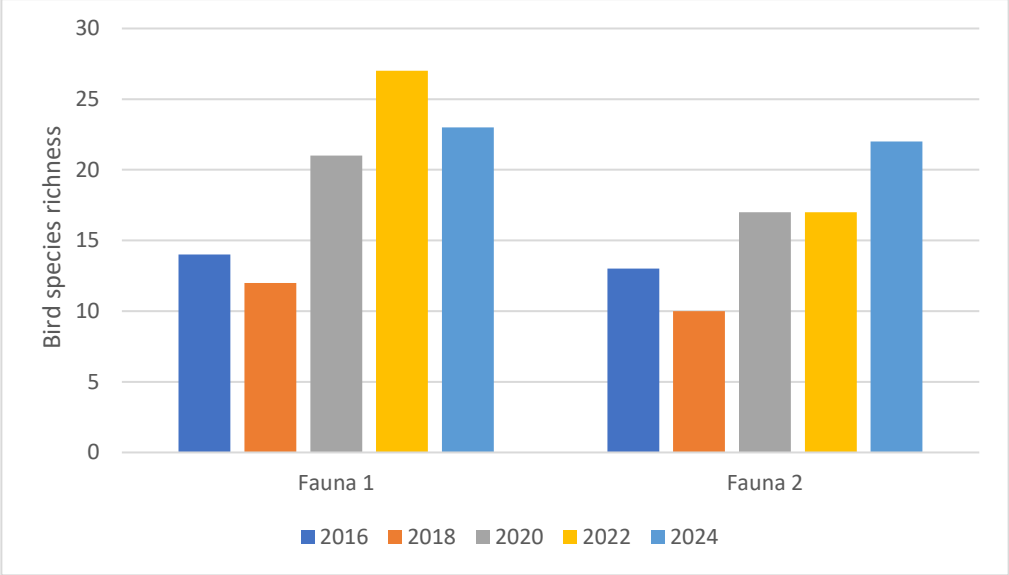


Figure 4: Bird species richness at fauna monitoring sites

4.3 Revegetation and natural regeneration assessment

The revegetation works conducted within the BOA, along with natural regeneration, continues to develop with regards to structure (height and stem density) and composition (a diversity of characteristic native woodland species). Since the previous assessment in 2022, the heights of tubestock plantings have grown (0.1 m – 0.4 m), whilst direct seeding plantings completed in 2021 have grown up to 0.9 m in height. Stem densities well exceed the target of 160 stems/ha. It is recommended that a follow up inspection of the 2024 tubestock plantings indicating signs of distress be undertaken within the next 3-6 months to assess survival rates.

Whilst exotic species are present across revegetation and natural regeneration areas, they are not limiting the re-establishment of native woodland across the BOA. However, weed management is recommended across the BOA to target priority weed species. Given the scale and success of revegetation and active natural regeneration to date, no further revegetation works are recommended for the BOA at this stage.

4.4 Assessment of Performance and Completion Criteria

Table 6 of the BOMP provides the performance and completion criteria for key management actions undertaken within the BOA, with Table 7 below providing an assessment of the relevant criteria against the results of 2024 monitoring.

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Table 7: Assessment of BOMP performance and completion criteria

Action	Management Action	Performance criteria	Completion criteria	Comment
Vertebrate pest control	Undertake vertebrate pest control program	Vertebrate pests eradicated and no non-target species affected	Levels of vertebrate pests do not pose a risk to revegetation works	**No signs of vertebrate pests impacting upon revegetation works.**
	Monitor pest animal populations	Undertake biannual inspections Complete biennial monitoring	Monitoring is ongoing, to determine continuing effectiveness of control program	**Previously recorded European Rabbit not recorded in 2024. Six individual Common Starling were recorded, as well as one individual Brown Hare and evidence of Feral Pig activity.**
Weed control	Ongoing inspections and monitoring of BOA for weed presence	Undertake biannual inspections and biennial monitoring	Ongoing inspections and monitoring to determine continuing effectiveness of treatment	**Two listed weed species, Blackberry and St John's Wort recorded during monitoring.**
	Treat any state or regional priority weeds observed	Control of serrated tussock and blackberry in BOA Records of treatment retained	No listed weeds present within BOA No areas of high density weed infestations present which limit regeneration/ revegetation of the BOA	**Targeted herbicide treatment of the above listed species recommended.** **Weeds / exotic species are not limiting the development of revegetation / natural regeneration.**
Assisted Natural Regeneration	Assist natural regeneration through weed and pest animal management strategies	Undertake weed and pest animal inspections and monitoring Control weed and pest animal levels to reduce competition and grazing pressure	Weed and pest animals controlled to a level that does not impact on natural regeneration	**Weed and pest animal presence is not limiting the development of natural regeneration. Listed weed species been identified and recommended for management.**
	Monitor natural regeneration	Natural regeneration levels recorded during biennial monitoring	Monitoring records continued development of natural regeneration and identifies any requirement for management intervention	**Natural regeneration of characteristic woodland upper-storey species recorded and mapped across the BOA.**
Active revegetation	Undertake direct seeding	No plantings in the 30 m buffer zone commencing at the edge of the high water mark or 10 m buffer zone from natural regeneration areas	Establishment of locally native species at a density greater than 160 stems/ha	**Additional tubestock planting completed in 2024. Native woodland upper-storey species successfully established at densities well in excess of 160 stems/ha.**
	Monitoring of revegetated works	Undertake biennial monitoring	Monitoring confirms establishment of native species and densities consistent with the surrounding vegetation communities	**Native woodland upper-storey species successfully established via 2017 and 2024 tubestock plantings and 2021 direct seeding at densities well in excess of 160 stems/ha.**

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Action	Management Action	Performance criteria	Completion criteria	Comment
Re-establishment of fauna habitat	Re-establish fauna habitat through assisted natural regeneration and active revegetation of the BOA	Re-establishment of native woodland consistent with surrounding vegetation communities	Establishment of locally native species at a density greater than 160 stems/ha	**Native woodland upper-storey species successfully established at densities well in excess of 160 stems/ha.** **2024 bird monitoring recorded highest bird species diversity to date, including a diverse range of native woodland bird species.**
Offset Monitoring	Undertake flora monitoring	Establish permanent monitoring plots and undertake baseline monitoring Biennial floristic monitoring undertaken	Ongoing flora monitoring completed and results reported and implemented for adaptive management of the BOA	**Biennial monitoring successfully completed for 2024.**
	Undertake fauna monitoring	Undertake baseline monitoring Develop a list of key indicator bird species representative of improvements in habitat structure Undertake biennial systematic fauna monitoring, focusing on bird surveys, as well as opportunistic observations	Ongoing fauna monitoring completed and results reported and implemented for adaptive management of the BOA	**Biennial monitoring successfully completed for 2024.**

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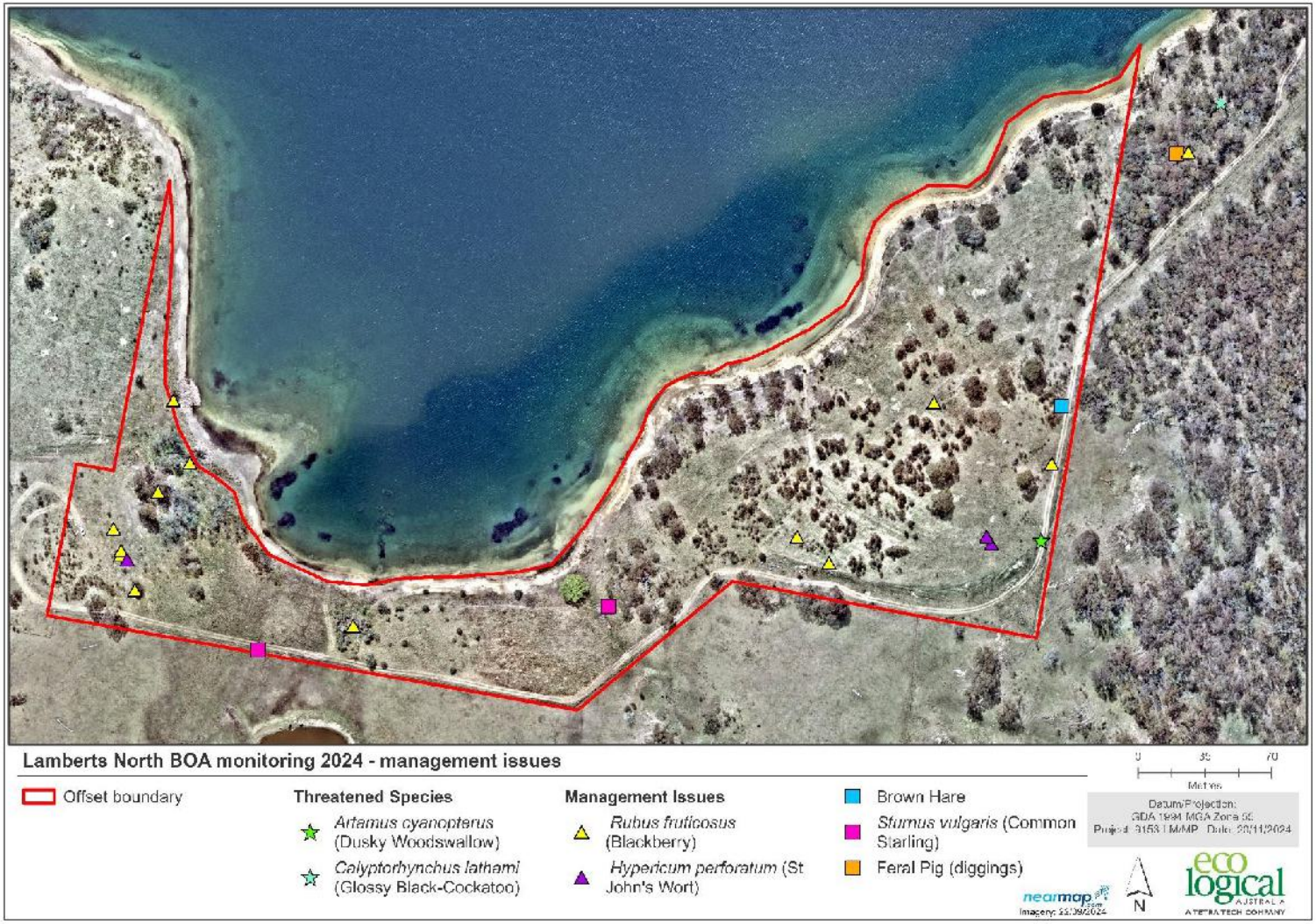
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Appendix A Floristic and Fauna Monitoring Sites



Appendix B Management issues and threatened species recorded



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Appendix C Flora species recorded

Family	Scientific Name	Species	Native/Exotic
Araliaceae	*Hydrocotyle laxiflora*	Stinking Pennywort	Native
Asparagaceae	*Lomandra confertifolia*	Mat-rush	Native
Asparagaceae	*Lomandra filiformis*	Wattle Mat-rush	Native
Asparagaceae	*Lomandra glauca*	Pale Mat-rush	Native
Asparagaceae	*Lomandra longifolia*	Spiny-headed Mat-rush	Native
Asparagaceae	*Lomandra multiflora*	Many-flowered Mat-rush	Native
Asteraceae	*Cassinia sifton*	Sifton Bush	Native
Asteraceae	*Cirsium vulgare*	Spear Thistle	Exotic
Asteraceae	*Conyza bonariensis*	Flaxleaf Fleabane	Exotic
Asteraceae	*Euchiton* sp.		Native
Asteraceae	*Gamochaeta* sp.		Exotic
Asteraceae	*Hypochaeris radicata*	Cat's Ear	Exotic
Asteraceae	*Pseudognaphalium luteoalbum*	Jersey Cudweed	Native
Asteraceae	*Senecio quadridentatus*	Cotton Fireweed	Native
Asteraceae	*Sonchus oleraceus*	Common Sowthistle	Exotic
Asteraceae	*Taraxacum officinale*	Dandelion	Exotic
Boraginaceae	*Cynoglossum australe*		Native
Caryophyllaceae	*Cerastium glomeratum*	Mouse-ear Chickweed	Exotic
Caryophyllaceae	*Stellaria pungens*	Prickly Starwort	Native
Casuarinaceae	*Allocasuarina littoralis*	Black She-oak	Native
Convolvulaceae	*Dichondra repens*	Kidney Weed	Native
Cyperaceae	*Cyperus* sp.		Native
Cyperaceae	*Lepidosperma laterale*		Native
Dennstaedtiaceae	*Pteridium esculentum*	Common Bracken	Native
Dilleniaceae	*Hibbertia riparia*	Erect Guinea-flower	Native
Dilleniaceae	*Hibbertia obtusifolia*	Hoary Guinea-flower	Native
Ericaceae	*Lissanthe strigosa*	Peach Heath	Native
Fabaceae (Faboideae)	*Pultenaea microphylla*	Spreading Bush-pea	Native
Fabaceae (Faboideae)	*Trifolium repens*	White Clover	Exotic
Fabaceae (Mimosoideae)	*Acacia dealbata*	Silver Wattle	Native
Gentianaceae	*Centaurium tenuiflorum*		Exotic
Geraniaceae	*Geranium solanderi*	Native Geranium	Native
Haloragaceae	*Gonocarpus tetragynus*		Native
Haloragaceae	*Haloragis heterophylla*	Rough Raspwort	Native

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Family	Scientific Name	Species	Native/Exotic
Hypericaceae	*Hypericum perforatum*	St John's Wort	Exotic
Juncaceae	*Juncus sp.*		Native
Loranthaceae	*Amyema miquelii*		Native
Myrtaceae	*Eucalyptus bridgesiana*	Apple Box	Native
Mrytaceae	*Eucalyptus dives*	Broad-leaved Peppermint	Native
Myrtaceae	*Eucalyptus macrorhynca*	Red Stringybark	Native
Myrtaceae	*Eucalyptus mannifera*	Brittle Gum	Native
Myrtaceae	*Eucalyptus pauciflora*	Snow Gum	Native
Myrtaceae	*Eucalyptus viminalis*	Manna Gum	Native
Myrtaceae	*Leptospermum myrtifolium*	Myrtle Tea-tree	Native
Oxalidaceae	*Oxalis perennans*		Native
Oxalidaceae	*Oxalis* sp.		Native
Phyllantaceae	*Poranthera microphylla*		Native
Plantaginaceae	*Plantago lanceolata*	Lamb's Tongues	Exotic
Plantaginaceae	*Veronica plebeia*	Creeping Speedwell	Native
Poaceae	*Anthoxanthum odoratum*	Sweet Vernal Grass	Exotic
Poaceae	*Austrostipa scabra*	Speargrass	Native
Poaceae	*Cynodon dactylon*	Couch	Native
Poaceae	*Eragrostis leptostachya*	Paddock Lovegrass	Native
Poaceae	*Microlaena stipoides*	Weeping Meadow Grass	Native
Poaceae	*Panicum effusum*	Hairy Panic	Native
Poaceae	*Paspalum dilatatum*	Paspalum	Exotic
Poaceae	*Phalaris aquatica*	Phalaris	Exotic
Poaceae	*Phalaris* sp.		Exotic
Poaceae	*Poa sieberiana*	Snow Grass	Native
Poaceae	*Rytidosperma racemosum*		Native
Poaceae	*Rytidosperma* sp.		Native
Polygonaceae	*Acetosella vulgaris*	Sheep Sorrel	Exotic
Primulaceae	*Lysimachia arvensis*	Scarlet Pimpernel	Exotic
Pteridaceae	*Cheilanthes sieberi*	Rock Fern	Native
Rosaceae	*Acaena echinata*	Sheep's Burr	Native
Rosaceae	*Rubus fruticosus*	Blackberry	Exotic
Solanaceae	*Solanum nigrum*	Blackberry Nightshade	Exotic
Violaceae	*Viola sieberiana*		Native

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Appendix D Fauna species recorded

Classification	Scientific Name	Common Name
Amphibian	*Crinia signifera*	Common Eastern Froglet
Amphibian	*Limnodynastes tasmaniensis*	Spotted Marsh Frog
Amphibian	*Uperoleia laevigata*	Smooth Toadlet
Bird	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill
Bird	*Acanthiza nana*	Yellow Thornbill
Bird	*Acanthiza reguloides*	Buff-rumped Thornbill
Bird	*Alisterus scapularis*	Australian King-Parrot
Bird	*Anas gracilis*	Grey Teal
Bird	*Anas superciliosus*	Pacific Black Duck
Bird	*Anthochaera carunculata*	Red Wattlebird
Bird	*Anthus australis*	Australian Pipit
Bird	*Artamus cyanopterus^*	Dusky Woodswallow
Bird	*Aythya australis*	Hardhead
Bird	*Calyptorhynchus lathami^*	Glossy Black-Cockatoo
Bird	*Caligavis chrysops*	Yellow-faced Honeyeater
Bird	*Chenonetta jubata*	Australian Wood Duck
Bird	*Colluricincla harmonica*	Grey Shrikethrush
Bird	*Coracina novaehollandiae*	Black-faced Cuckooshrike
Bird	*Corcorax melanorhamphos*	White-winged Chough
Bird	*Corvus coronoides*	Australian Raven
Bird	*Corvus mellori*	Little Raven
Bird	*Cygnus atratus*	Black Swan
Bird	*Dacelo novaeguineae*	Laughing Kookaburra
Bird	*Dicaeum hirundinaceum*	Mistletoebird
Bird	*Egretta novaehollandiae*	White-faced Heron
Bird	*Falco cenchroides*	Nankeen Kestrel
Bird	*Falco longipennis*	Australian Hobby
Bird	*Fulica atra*	Eurasian Coot
Bird	*Gerygone olivacea*	White-throated Gerygone
Bird	*Grallina cyanoleuca*	Magpie-lark
Bird	*Gymnorhina tibicen*	Australian Magpie
Bird	*Hirundo neoxena*	Welcome Swallow
Bird	*Malurus cyaneus*	Superb Fairywren
Bird	*Merops ornatus*	Rainbow Bee-eater

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Classification	Scientific Name	Common Name
Bird	*Microcarbo melanoleucos*	Little Pied Cormorant
Bird	*Ocyphaps lophotes*	Crested Pigeon
Bird	*Pardalotus striatus*	Striated Pardalote
Bird	*Petrochelidon nigricans*	Tree Martin
Bird	*Philemon corniculatus*	Noisy Friarbird
Bird	*Platycercus elegans*	Crimson Rosella
Bird	*Platycercus eximius*	Eastern Rosella
Bird	*Rhipidura albiscapa*	Grey Fantail
Bird	*Rhipidura leucophrys*	Willie Wagtail
Bird	*Scythrops novaehollandiae*	Channel-billed Cuckoo
Bird	*Strepera graculina*	Pied Currawong
Bird	*Sturnus vulgaris**	Common Starling
Bird	*Todiramphus sanctus*	Sacred Kingfisher
Bird	*Vanellus miles*	Masked Lapwing
Bird	*Zosterops lateralis*	Silvereye
Mammal	*Lepus europaeus**	Brown Hare
Mammal	*Macropus giganteus*	Eastern Grey Kangaroo
Mammal	*Sus scrofa**	Feral Pig
Mammal	*Vombatus ursinus*	Common Wombat
Reptile	*Austrelaps ramsayi*	Highland Copperhead
Reptile	*Lampropholis delicata*	Garden Skink
Reptile	*Pseudechis porphyriacus*	Red-bellied Black Snake

^ Threatened Species, * Introduced Species

Appendix E Fauna monitoring photos



2017 tubestock plantings – Polygon 4. Photo Credit: Tom Kelly, 2024



Crimson Rosella utilising revegetated habitat within the BOA. Photo Credit: Tom Kelly, 2024



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Appendix E Wangcol Creek Ecological Monitoring Program – Spring 2025

Stantec

Wangcol Creek Ecological Survey Report 2025

April 10, 2026

Prepared for:

EnergyAustralia



WANGCOL CREEK ECOLOGICAL SURVEY REPORT 2025

Revision	Version	Date	Description
A	Draft	30-01-26	Draft for Client Review
B	Revised Draft	09-03-26	Revised Draft
0	Final	10-04-26	Final

WANGCOL CREEK ECOLOGICAL SURVEY REPORT 2025

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Executive Summary

Introduction

EnergyAustralia NSW (EnergyAustralia) operates Mount Piper Power Station (MPPS), near Lithgow NSW. EnergyAustralia manages the associated Mt Piper Ash Repository (MPAR) and Lamberts North Ash Repository (LNAR). Approvals associated with LNAR and MPAR require the monitoring of aquatic health in nearby Wangcol Creek via the Wangcol Creek Ecological Monitoring Program (EMP) and Wangcol Creek Stream Health Monitoring Program (SHMP), respectively. The objectives of these monitoring programs is to identify any potential impacts that may occur in Wangcol Creek associated with ash placement at Lamberts North or MPAR capping works. Construction of Lamberts North commenced in February 2013 and ash placement on Lamberts North site commenced in September 2013. Capping works commenced October 2025.

Stantec, formerly Cardno and Cardno Ecology Lab, was commissioned by EnergyAustralia to undertake the spring (December) 2025 monitoring component of the EMP and SHMP. In accordance with the EMP, previous sampling was undertaken by Cardno or other specialist consultants during 2012 to 2024.

Methods

The spring 2025 monitoring consisted of surveys of aquatic habitat, water quality and macroinvertebrate assemblages (using the AUSRIVAS protocol) on 15 and 16 December 2025 at five sites on Wangcol Creek and one site on Coxs River: The following biotic indices were derived from the macroinvertebrate data collected in spring 2025 and statistically compared with those from previous spring surveys:

- Total number of taxes.
- Number of pollution-sensitive Ephemeroptera, Plecoptera and Trichoptera (EPT) taxa.
- OE50 Taxa Score (a biotic index of aquatic habitat and water quality).
- SIGNAL2 Score (a biotic index of water pollution).
- Water quality data were collected in situ to supplement the long-term water quality and water discharge data from Wangcol Creek and local rainfall data sourced from EnergyAustralia, the Bureau of Meteorology, and WaterNSW. Water quality data were examined to aid in the interpretation of macroinvertebrate data.

Findings

There was no evidence of any change in spring 2025 compared with previous sampling events that would suggest an impact to aquatic macroinvertebrates due to Lamberts North. None of the statistical tests indicated any change through time at NCR2 that could have indicated an impact. Although some differences in the macroinvertebrate multivariate assemblage structure compared with the more recent sampling events in spring 2022 and in spring 2021 were detected, these did not provide evidence of any impact related to Lamberts North. There was also no evidence of a change in SIGNAL2 Score in spring of 2020, 2021, 2022, 2023, 2024 and 2025 following the notable reduction in this indicator observed previously in autumn 2020. There was also no evidence that capping works were associated with any change to stream health in Wangcol Creek. It is possible that any longer-term improvement of stream health associated with capping works will become evident once data from future surveys is available. The

capture of native species of fish (mountain galaxiid and flathead gudgeon) in Wangcol Creek indicated the creek provides habitat for at least two native species of fish.

Recommendations

1. Based on Condition B7 of Lamberts North Approval, ongoing monitoring should continue throughout the life of the project (including operation), and for at least two (2) sampling periods following ash placement. Thus, it is recommended that sampling continue with the next event to be undertaken in spring 2026.

1. Sampling should continue at the pre-existing, longer-term monitoring sites, along with the additional Control sites established on Wangcol Creek in spring 2025 (NCR4 and NCR5) in relation to the SHMP. While no baseline data is available from these sites, data collected here during future surveys would allow an assessment of potential effects of the capping works on stream health.

2. Continue collecting three replicate AUSRIVAS samples from each site during all future surveys. This will provide a measure of the variation present at each site, improving the ability to detect any future impact(s) by enabling the use of appropriate statistical analysis.

Based on spring 2025 data, no Lamberts North or MPAR capping-works-specific mitigation, impact minimisation or ameliorative actions are recommended.

1.0 INTRODUCTION

1.1 BACKGROUND

EnergyAustralia NSW (EnergyAustralia) owns and operates Mount Piper Power Station (MPPS), near Lithgow, NSW. MPPS comprises of a 700 MW and 730 MW steam turbine generators and produces power through the burning of coal sourced from local coal mines. EnergyAustralia manages the associated Mt Piper Ash Repository (MPAR) and Lamberts North Ash Repository (LNAR), collectively referred to as the Ash Repositories.

This report has been prepared to satisfy the monitoring and reporting requirements in the:

- Lamberts North Project Approval 09/0186: Condition B7: Ecological Monitoring Program.
- MPPS Development Consent: Modification 9 Condition 43: Monitoring of Stream Health.

These requirements are detailed in in **Table 1-1** and have been addressed via implementing the Wangcol Creek Ecological Monitoring Program (EMP) and the Wangcol Creek Stream Health Monitoring Program (SHMP).

Table 1-1 Description of relevant consent conditions for Lamberts North and Modification 9 and the relevant sections of this report where these are addressed.

Condition	Description	Relevant Section
09/0186: B7 (a), (b), (c) & (d)	The Proponent shall prepare and implement an Ecological Monitoring Program prior to construction, in consultation with DCCEEW Water and BCS to monitor and quantify the impacts on the ecology of Wangcol Creek and the associated riparian environment. The Program shall include, but not necessarily be limited to:	
	(a) a sampling, data collection and assessment regime to establish baseline ecological health and for ongoing monitoring of ecological health of the in- stream environment during construction and throughout the life of the project (including operation).	**Section 3.0**
	(b) at least one in-stream sampling period prior to ash placement at Wangcol Creek and at least two (2) sampling periods following ash placement at each of Lamberts North and Lamberts South.	**Section 1.1.1.1** **Section 1.1.1.2** **Section 4.0**
	(c) an assessment regime for monitoring the ecological health of the riparian environment for a period of at least five (5) years after final capping; and	**Section 3.0** **Section 3.4.1**
	(d) management measures to address any adverse ecological impacts [if impacts detected].	**Section 6.0**
80/10060: 43 (a)	Monitoring of … stream health … in Wangcol Creek, and downstream of the energy dissipater as described in Modification 9.	**Section 3.0** **Section 4.0**

1.1.1 Ecological Monitoring Program

1.1.1.1 Baseline Study

The LNAR involves the storage of ash at Lamberts North, including construction activities, ash placement and capping, site rehabilitation, and ongoing management. Construction began in February 2013 and ash placement began in September 2013. It is noted Lamberts South was not developed and the EMP is focused on Lamberts North only. The objective of the Wangcol Creek Ecological Monitoring Program (EMP) is to detect potential impacts on the aquatic ecology of Wangcol Creek due to LNAR, and informing management decisions taken to mitigate, minimise and / or ameliorate any impacts detected.

The EMP was first described by GHD (2014a). In accordance with the EMP, baseline aquatic ecology sampling was undertaken at two sites on Wangcol Creek in spring 2012 (GHD 2014b) (**Table 1-2**). Aquatic macroinvertebrate data from the baseline study is presented alongside data collected during construction and operation in **Section 4.0**.

Table 1-2 Timing of aquatic ecology surveys undertaken for the Wangcol Creek EMP and the respective report reference. The timing of key Project activities and the respective monitoring phase are also identified.

EMP Monitoring Phase	Sampling Date	AUSRIVAS Season	Report Reference
Preparation of EMP	n/a	n/a	GHD (2014a)
Baseline	8 Nov 2012	Spring 2012	GHD (2014b)
Commencement of Construction – February 2013			
During Construction	6 May 2013	Autumn 2013	GHD (2014c)
Commencement of Ash Placement – September 2013			
During Ash Placement	12 Dec 2013	Spring 2013	GHD (2014d)
	22 May 2014	Autumn 2014	GHD (2014e)
	19 Nov 2014	Spring 2014	CEL (2015)
	14 Dec 2015	Spring 2015	Cardno (2016)
	1 to 2 Dec 2016	Spring 2016	Cardno (2017)
	9 and 11 May 2018	Autumn 2018	Cardno (2018)
	11 Dec 2018	Spring 2018	Cardno (2019)
	20 May 2020*	Autumn 2020	Cardno (2020)
	18 November 2020	Spring 2020	Cardno (2021)
	16 November 2021	Spring 2021	Cardno (2022)
	7 Dec 2022	Spring 2022	Stantec (2023)
	5 Dec 2023	Spring 2023	Stantec (2024)
	12 Dec 2024	Spring 2024	Stantec (2025)
	15 and 16 Dec 2025	Spring 2025	Current study

*Planned originally to be undertaken in late November / early December of spring 2019, though due to bush fire the survey was postponed to autumn 2020.

1.1.1.2 During Construction and Operation

Further sampling at these sites was done during construction in autumn 2013 (GHD 2014c) and during operation in spring 2013 (GHD 2014d) and autumn 2014 (GHD 2014e). Cardno Ecology Lab (2014) reviewed the EMP following a request by EnergyAustralia in late 2014. Key recommendations from

Cardno Ecology Lab (2014, 2015) included in subsequent surveys were the sampling of AUSRIVAS edge habitat only and not riffle habitat, an additional EMP reference site on Wangcol Creek (NCR3) upstream of any potential impact that may occur due to Lamberts North, and the reclassification of site NCR1 as a control site. Further surveys during operation focused on spring (to align with baseline data collection and given the majority of previous surveys were undertaken in spring) and were undertaken in spring 2014 (Cardno Ecology Lab 2015), spring 2015 (Cardno 2016), spring 2016 (Cardno 2017), autumn 2018 (Cardno 2018), spring 2018 (Cardno 2019), autumn 2020 (Cardno 2020), spring 2020 (Cardno 2021), spring 2021 (Cardno 2022), spring 2022 (Stantec 2023), spring 2023 (Stantec 2024), spring 2024 (Stantec 2025) and in spring 2025 (current study).

1.1.1.3 Findings

The reports listed in **Table 1-2** include background information on the aquatic ecology of Wangcol Creek and present the results of AUSRIVAS sampling and the assessment of aquatic habitat at these sites. Each report assessed whether impacts on the aquatic ecology of Wangcol Creek attributable to Lamberts North may have occurred or been occurring since the 2012 baseline study. No impacts attributable to Lamberts North were identified in data collected soon after the start of construction in autumn 2013 (GHD 2014c). GHD (2014d and e) suggested that impacts to macroinvertebrates may have occurred following the commencement of ash placement in spring 2013 and autumn 2014, respectively. However, the EMP review (Cardno Ecology Lab 2014) did not find any conclusive evidence of this.

The findings of subsequent surveys are summarised as follows:

- The findings associated with the spring 2015 monitoring event did not provide any evidence of an impact due to Lamberts North (Cardno 2016). None of the PERMANOVA tests undertaken on data collected from NCR1 and NCR2 in spring of 2015 indicated any change in aquatic ecology that could be attributed to a Project-related impact.
- There was also no conclusive evidence of any change in spring 2016 data from previous data that would suggest an impact attributable to Lamberts North (Cardno 2017). None of the statistical tests indicated any change through time at NCR2 that could be attributed to a Project-related impact.
- Surveys in autumn 2018 (Cardno 2018) and spring 2018 (Cardno 2019) also provided no evidence of any Project-related impacts on aquatic ecology.
- There was limited evidence to suggest a change in one indicator (SIGNAL2 Score) that occurred at NCR2 in autumn 2020. This change could have been associated with Lamberts North (Cardno 2020); however, detailed examination of trends in this indicator at other sites and of the individual taxa did not provide convincing evidence of a Project-related impact. In any case, the observed small magnitude of the reduction in this indicator did not raise concern for overall aquatic ecology in Wangcol Creek at that time.
- There was no evidence that the reduction in SIGNAL2 Score detected at NCR2 in autumn 2020 had persisted through to spring 2020. There was also no evidence in spring 2020 data of any change in other indicators that would suggest an impact due to Lamberts North (Cardno 2021).
- None of the statistical tests that included data from spring 2021, spring 2022, spring 2023 and spring 2024 indicated any change through time at NCR2 that could otherwise have indicated an impact on aquatic ecology. Although some spatial and temporal differences in the macroinvertebrate multivariate assemblage structure were detected following the 2021 to 2024 surveys, they did not collectively provide evidence of any impact related to Lamberts North (Cardno 2022, Stantec 2023;

2024, 2025). These included differences between surveys at control sites, and between control sites during individual surveys. There were also some differences detected between NCR2 (impact) and A16 (control), but those differences were not considered to be indicative of an impact given that differences among control sites were also detected, and to relatively greater extents and in varying directions.

1.1.2 Stream Health Monitoring Program

The objective of the Wangcol Creek Stream Health Monitoring Program (SHMP) is the detection of potential impacts associated with the capping works at the Mount Piper Ash Repository (MPAR – also known as Ash Area 1). The purpose of the capping is to slow the leaching of potential contaminants from the ash into groundwater and Wangcol Creek. Once completed, stormwater would be redirected to Wangcol Creek. The first year of monitoring associated with the SHMP was incorporated into the EMP monitoring undertaken in spring 2025. Capping works commenced 10 October 2025 and were underway during the spring 2025 survey and through January 2026.

1.2 CURRENT STUDY

1.2.1 Ecological Monitoring Program

EnergyAustralia commissioned Stantec (formerly Cardno and Cardno Ecology Lab) to undertake the spring (December) 2025 monitoring in accordance with the EMP. The specific objectives of the current EMP study were to:

- Sample indicators of ecological health in Wangcol Creek potentially affected by Lamberts North and at unaffected control sites on the creek and on the Coxs River in spring 2025.
- Compare the findings with those of studies undertaken in spring of previous years, completed as part of the EMP.
- Assess whether any impacts to the aquatic ecology of Wangcol Creek have occurred since the previous spring survey (completed December 2024) and determine whether any such impacts were attributable to Lamberts North.
- Provide recommendations on actions, if any, that may be required to minimise, mitigate or ameliorate any impacts on aquatic ecology that may have occurred, and on any refinements to subsequent monitoring events that would improve the efficacy of the EMP.

1.2.2 Stream Health Monitoring Program

The spring 2025 monitoring also provided the first year of monitoring for the SHMP. This included the establishment and commencement of monitoring of stream health at two new monitoring sites on Wangcol Creek in relation to the MPAR capping works.

2.0 EXISTING INFORMATION

2.1 ENVIRONMENTAL CONTEXT

Wangcol Creek (also known as Neubecks Creek) flows in an easterly direction north of Lamberts North and Mod. 9 (**Figure 3.1**). It is a naturally ephemeral creek, though it may appear perennial due to ongoing discharge from industries within its catchment. It has two main tributaries: a western arm that arises in the southwest of Ben Bullen State Forest, several kilometres northwest of Lamberts North, and a northern arm that arises in Blackmans Flat, a few kilometres north of Lamberts North site. These two tributaries join just north of the Castlereagh Highway and to the northwest of Lamberts North site before the creek joins the Coxs River several kilometres further downstream at Blue Lake, a flooded historic quarry approximately 2 kilometres north of Lidsdale. Other tributaries of Wangcol Creek include Lamberts Gully, which flows north into Wangcol Creek from the southeast of Lamberts North Area. LNAR includes ash placement over Huons Gully, which otherwise would have flowed into Wangcol Creek upstream of Lamberts Gully. Several un-named drainage lines also traverse the area.

Wangcol Creek is situated in a substantially disturbed catchment in which water quality, quantity and drainage patterns are influenced by surrounding historical and current mining operations (e.g., Ivanhoe Colliery, Commonwealth Open Cut Coal Mine, Angus Place Coal Mine, Kerosene Vale Mine and Pine Dale Coal Mine), power generation (Mount Piper and Wallerawang Power Stations) and agricultural land practices. The creek has also been re-aligned several times to facilitate nearby mining practices. The 2010 audit (DECCW 2010) indicated that as a whole, the Upper Coxs River sub-catchment was under a high level of stress due to inflows from the sewage treatment plants, inflows of urban stormwater, runoff from roads and grazing lands, regulation of flows by dams, extraction of surface and ground water, occurrence of barriers to fish passage, geomorphological disturbance from past and present mining, and licensed discharges from nearby power stations and coal mines.

2.2 AQUATIC AND RIPARIAN HABITAT

The riparian vegetation of the Wangcol Creek Catchment consists primarily of cleared land with some disturbed native regrowth. Some more established areas of mixed native and invasive trees and shrubs (e.g., willow (*Salix alba*) and blackberry (*Rubus* sp.)) are present along the main channel of the creek in the vicinity of Lamberts North.

Adjacent to Lamberts North, Wangcol Creek consists of faster-flowing riffle and deeper, slower-flowing pools (GHD 2014a). The substratum generally consists of sand, coarse gravel, cobbles and rock. In places there are large deposits of fine sediment.

2.3 WATER QUALITY

Water quality in Wangcol Creek was reviewed as part of the Environmental Assessment for Lamberts North (SKM 2010). The review examined water quality data collected from four previously established water quality monitoring sites located on the creek in the vicinity of Lamberts North (**Figure 2-1**):

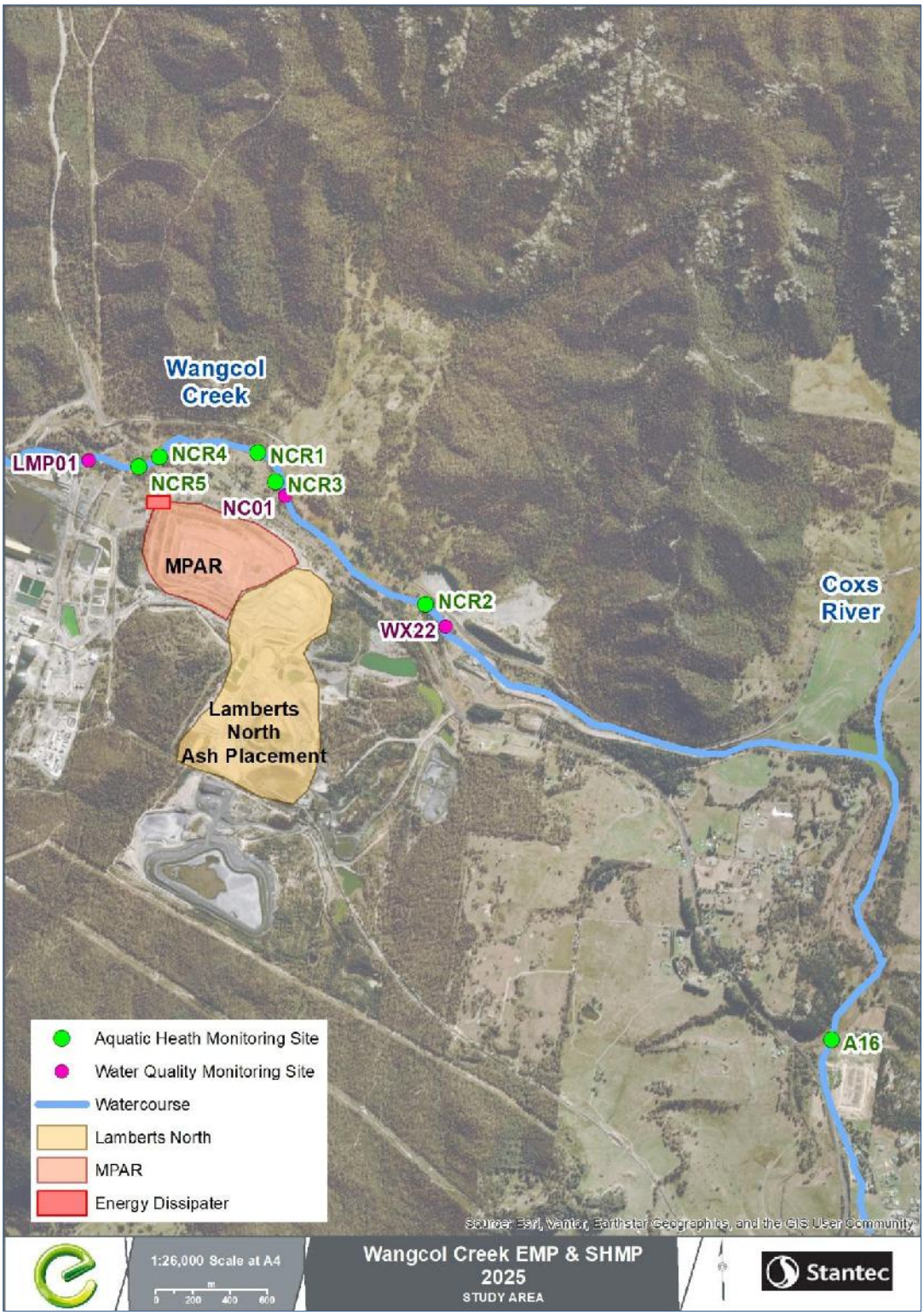


Figure 2-1 **Location of Lamberts North (Lamberts North Ash Placement Area), MPAR, energy dissipater, Wangcol Creek, the Coxs River, aquatic ecology monitoring sites and long-term water quality monitoring sites.**

- LMP01: Wangcol Creek Weir (previous MPPS Licensed Monitoring Point 1): located upstream of Lamberts North and the previous ash storage area (MPAR).
- WX22: Wangcol Creek gauging station, located adjacent to Lamberts North.

Data available from LMP01 and WX22 for the period 2000 to 2009 and from Sites 2 and 3 for 2000 to 2007. Data was compared with Australian Guideline Default Trigger Values (DTVs) (ANZECC/ARMCANZ 2000) for upland rivers in south-eastern NSW. The findings are summarised as follows:

- Electrical Conductivity (EC) often exceeded the upper DTV (350 µs/cm) and was recorded as high as 1333 µs/cm at LMP01 and 1200 µs/cm at Site 3.
- pH was within lower and upper DTVs (6.5 to 8.0).
- Concentrations of metals (aluminium, sliver, arsenic, cadmium, chromium, manganese, copper and zinc) were above the trigger value for 95% protection of freshwater ecosystems at one or more sites.

Additional water quality data from WX22 collected by EnergyAustralia from 2008 to 2012 were presented by GHD (2014a). These data indicated that nickel, boron, copper and lead in Wangcol Creek also exceeded DTVs at times.

2.4 AQUATIC BIOTA

There is little publicly available information on the aquatic biota of Wangcol Creek. GHD (2014a) reviewed the findings of a 1993 aquatic flora and fauna survey of Wangcol Creek by the former Department of Water Resources (DWR 1994). The findings of this review are summarised in **Sections 3.4.1** and **3.4.2**. Additional information on macroinvertebrates in Wangcol Creek and the wider upper Coxs River Catchment is summarised from the findings of SCA Sydney Drinking Water Catchment Audits (GHD 2013). The findings of an ecotoxicology study in the northern arm of Wangcol Creek (Battaglia *et al*. 2005) are also summarised in **Section 3.4.2.1**.

2.4.1 Flora

The review of DWR (1994) provided by GHD (2014a) noted the following observations of aquatic flora in Wangcol Creek:

- Emergent aquatic flora is relatively diverse, with common species including tall spikerush (*Eleocharis sphacelata*), spikerush (*Eleocharis acuta*), jointed rush (*Juncus articulatus*), common reed (*Phragmites australis*) and cumbungi (*Typha orientalis*).
- Submerged aquatic flora was sparse and consisted of green algae (*Chara* sp., *Nitella* sp., *Spirogyra* sp. and *Rhizoclonium* sp.).
- A smothering effect due to the presence of fine sediments in the creek was offered as an explanation for the low diversity of submerged aquatic flora.
- Dense beds of tall spikerush and cumbungi were present in some sections of creek, reducing water flow in these sections.

2.4.2 Fauna

2.4.2.1 Aquatic Macroinvertebrates

The review of DWR (1994) suggested that Wangcol Creek supported a diverse macroinvertebrate community, dominated by true flies (Order: Diptera), caddisflies (Order: Trichoptera), damselflies and dragonflies (Order: Odonata), and beetles (Order: Coleoptera).

More recent surveys of AUSRIVAS edge habitat in Wangcol Creek adjacent to Lamberts North and at other nearby sites on the Coxs River were undertaken as part of the SCA Sydney Drinking Water Catchment Audits (GHD 2013). The results of the 2009 survey on Wangcol Creek indicated the aquatic habitat here was severely impaired (AUSRIVAS Band C) relative to reference condition. The aquatic habitat at sites on the Coxs River upstream and downstream of the confluence with Wangcol Creek sampled in 2009 ranged from severely impaired to significantly impaired (AUSRIVAS Band B) relative to reference condition. Further monitoring at a subset of these sites in 2011 also indicated that the aquatic habitat was severely to significantly impaired. Long-term sampling undertaken at A16 (also included in the EMP, see **Section 4.2**) on the Coxs River downstream of the confluence with Wangcol Creek from 2001 to 2012 indicated that the condition of aquatic habitat ranged generally from severely impaired to equivalent to reference condition (AUSRIVAS Band A). In 2002, the macroinvertebrate assemblage at this site was richer than expected under the AUSRIVAS model (Band X). While the habitat condition at A16 appears to have declined from 2009 to 2012, there has been a general improvement across the Upper Coxs River sub-catchment through that time (GHD 2013).

It was noted in GHD (2014a) that the macroinvertebrate assemblages at most of the sites sampled in the Coxs River catchment (at least prior to 2010), were characterised by pollution-tolerant taxa, and that the invertebrate assemblages and individual taxa were influenced by EC in the river.

A study by Battaglia *et al*. (2005) indicated that the abundance and diversity of macroinvertebrate fauna in Wangcol Creek was much lower than in two reference creeks (Megalong Creek and Jocks Creek) and attributed this difference to acid mine drainage (AMD) from previous mining activities within the area. The study found a strong correlation between water quality (concentrations of several analytes, including nickel and zinc, which were found to be greater in Wangcol Creek than in the reference creeks) and macroinvertebrate data. The study also concluded that poor water quality rather than the quality of the sediment from the creek bed had impacted on macroinvertebrate assemblages within the creek.

2.4.2.2 Fish

The DWR (1994) review indicated three species of fish occurred in Wangcol Creek during the DWR (1994) survey:

- The native mountain galaxias (*Galaxius olidus*), which represented over 90% of the fish caught.
- The native flathead gudgeon (*Philypnodon grandiceps*).
- The non-native wild goldfish (*Carassius auratus*).

The diversity and abundance of the fish assemblage in Wangcol Creek was considered relatively poor in comparison with other nearby freshwater streams.

Topographical maps show several crossings that may represent barriers to fish movement by reducing longitudinal connectivity and habitat availability, potentially causing population fragmentation.

3.0 METHODS

3.1 STUDY RATIONALE

The primary aim of the EMP and SHMP is to identify any changes in the selected indicators of aquatic ecology at the impact site that are in a different direction, or of a different magnitude, to any changes that may be concurrently occurring at the control sites. Any such changes would be considered in relation to variation in environmental (such as water quality) data to attempt to explain the pattern of changes and explore the potential cause(s). It is noted that a potential impact attributable to Lamberts North and MPAR would not be related to a point source, such as a licensed discharge, for any potential contaminant, but rather a potential diffuse impact such as leaching of potential contaminants from the ash storage area.

In the case of the SHMP, potential changes in aquatic indicators following works could be associated with a beneficial effect from the ash capping, as ash capping is expected to reduce the potential for any contaminants to effect stream health. Following the completion of capping works, stormwater arising on the MPAR site will be discharged to Wangcol Creek. If detected, any changes would need to be interpreted with consideration to the presence / absence of any existing impacts associated with the MPAR. It is noted, however, that no data from before the commencement of capping at MPAR are available. Interpretation of any effect of capping works on indicators stream health must be undertaken with regard to this.

The methods utilised in the current study and described in **Sections 3.2** to **3.5** are based on those undertaken previously and prescribed in the EMP (GHD 2014a), and incorporate the modifications and additions described in the review of the EMP (Cardno Ecology Lab 2014a) (**Sections 2.1** and **2.2**). The methods also incorporate two additional sites (Sites NCR4 and NCR4) in relation to the SHMP.

3.2 STUDY SITES

The following sites were sampled by Cardno on 15 to 16 December 2025 within the spring AUSRIVAS sampling season (**Figure 2-1** and **Table 3-1**):

- NCR1 (Control site for Lamberts North and Impact site for MPAR) located on Wangcol Creek upstream of Huons Gully and Lamberts North. This site is also located downstream of LMP01 and the current Mount Piper LDP12 (located upstream of LMP01). Water is discharged from the Coal Settling Pond via LDP12 into the Final Holding Pond (FHP). The FHP is located on Wangcol Creek and operates as the final pollution-control structure for water associated with the MPPS. While NCR1 is situated on a section of Wangcol Creek that has been, and continues to be, influenced by other disturbances, it is not expected to be subject to any influence attributable to Lamberts North but may be influenced Mod. 9.
- NCR2 (Impact site for Lamberts North and MPAR) located on Wangcol Creek adjacent to Lamberts North area.
- NCR3 (Control site for Lamberts North and Impact site for Mod. 9) located on Wangcol Creek upstream of Lamberts North area. This site is not expected to be subject to any impacts attributable to Lamberts North but may be subject to influence associated with Mod. 9.

- A16 (Control) located on the Coxs River approximately 5 km downstream of the ash placement (this site is an ongoing WaterNSW macroinvertebrate monitoring site).
- NCR4 (Control site for MPAR) located on Wangcol Creek upstream of MPAR.
- NCR5 (Control site for MPAR) located on Wangcol Creek upstream of MPAR.

NCR4 and NCR5 were established on Wangcol Creek upstream of MPAR and downstream of the FHP. Thus, they are influenced by discharges associated with licenced discharges from MPPS, but not from any diffuse groundwater or surface water runoff associated with MPAR.

Table 3-1 EMP and SHMP monitoring sites and their respective designations.

Site	EMP Designation	SHMP Designation
NCR1	Control	Impact
NCR2	Impact	Impact
NCR3	Control	Impact
NCR4	*NA*	Control
NCR5	*NA*	Control
A16	Control	Control

It is noted that the control site on the Coxs River (A16) is located downstream of the confluence with Wangcol Creek and could conceivably experience impacts attributable to Lamberts North and / or MPAR. It is, however, considered unlikely that such impacts would occur because A16 is located some distance downstream and receives substantial flows from the upper Coxs River. The coordinates of each site are presented in **Appendix A**.

3.3 TIMING

The timing of the current and previous sampling undertaken at each site is presented in **Table 3-2**.

Table 3-2 The timing and number of AUSRIVAS edge and riffle habitat samples collected at each of the Wangcol Creek EMP and SHMP aquatic ecology monitoring sites during 2012 to 2025.

Date	AUSRIVAS Season	NCR1		NCR2 (Impact Site)		NCR3	A16		CR0	NCR4	NCR5
AUSRIVAS Habitat		Edge	Riffle	Edge	Riffle	Edge	Edge	Riffle	Edge	Edge	Edge
8 Nov 2012	Spr. 2012	1	1	1	1		1	1			
6 May 2013	Aut. 2013	2		1	1						
12 Dec 2013	Spr. 2013	2		2			1	1			
22 May 2014	Aut. 2014	2		2							
19 Nov 2014	Spr. 2014	1		1			1	1			
14 Dec 2015	Spr. 2015	2		2		2	2		2		
1 to 2 Dec 2016	Spr. 2016	2		2		2	2		2		
9 and 11 May 2018	Aut. 2018	2		2		2	2				
11 December 2018	Spr. 2018	3		3		3	3				
20 May 2020	Aut. 2020	3		3		3	3				
18 November 2020	Spr. 2020	3		3		3	3				
16 November 2021	Spr. 2021	3		3		3	3				
7 December 2022	Spr. 2022	3		3		3	3				
5 December 2023	Spr. 2023	3		3		3	3				
12 December 2024	Spr. 2024	3		3		3	3				
15 to 16 Dec. 2025	Spr. 2025	3		3		3	3			3	3

Note, only spring data were examined in the current report (**Section 1.1.1)**. Riffle habitat was not sampled due to absence of this habitat during low flows. Monitoring was not undertaken at CR0 in autumn 2018 and spring 2018 due to low water level and monitoring here subsequently ceased due to persistent low water level.

3.4 FIELD SAMPLING

3.4.1 Aquatic Habitat

Aquatic habitat and riparian vegetation was assessed using methods in the NSW AUSRIVAS Manual (Turak *et al.* 2004). Descriptions of physical habitat included visual assessments of streambed composition, aquatic and riparian vegetation, potential disturbances and sketches of the river profiles.

The condition of aquatic habitat was assessed using the Reference Condition Selection Criteria (RCSC) categories developed by the Queensland Government (QLD DNRM 2001), as per the requirements of the EMP. This assessment rates the level of impact (i.e., departure from natural condition) from 1 (very major) to 5 (indiscernible) that a watercourse experiences from several potential anthropogenic disturbances in relation to the selection of reference aquatic ecology monitoring sites. The condition of aquatic habitat and riparian vegetation was also assessed using a modified version of the Riparian, Channel and Environmental (RCE) Inventory method (Peterson 1992; Chessman *et al.* 1997). This assessment involves evaluation and scoring of the characteristics of the adjacent land, the condition of riverbanks, channel and bed of the watercourse, and the degree of disturbance evident at each site (**Appendix C**). The maximum score (52) indicates a stream with little or no obvious physical disruption, while the lowest score (13), indicating a heavily channeled stream without any riparian vegetation, can be considered poor condition.

Digital photographs were taken looking upstream and downstream at each site to provide a record of aquatic habitat present at the time of sampling and to aid in the site descriptions.

3.4.2 Water Quality

Water quality was measured *in situ* with a YSI 6920 water quality probe and meter that were calibrated prior to sampling. Water quality was measured before aquatic fauna were sampled to avoid disturbance to the waterway. The following variables were recorded between 10:00 and 15:00 on the day of sampling:

- Temperature (°C).
- Electrical Conductivity, EC (µs/cm).
- pH.
- Dissolved oxygen, DO (mg/L and % saturation).
- Turbidity (NTU).

Duplicate readings of each variable were taken in accordance with Australian Guidelines (ANZECC/ARMCANZ 2000; ANZG 2018).

These water quality data were intended to provide information on environmental conditions at the time of sampling for aquatic ecology. Long term trends in water quality data collected by other specialists were also examined (**Section 3.6.1**).

3.4.3 AUSRIVAS Macroinvertebrates

Aquatic macroinvertebrates associated with edge habitats were sampled using the AUSRIVAS rapid assessment methodology (RAM) (Turak *et al*. 2004). Three replicate edge samples were collected at

each site using dip nets (250 µm mesh) deployed over a period of 3 to 5 minutes along a total of 10 m of edge habitat within a 100 m reach of the river. The dip net was used to agitate and scoop up material from vegetated river edge habitats. Where the habitat was discontinuous, patches of habitats cumulatively totaling a length of 10 m were sampled over the 100 m reach. After the 3–5 minutes, each RAM sample was rinsed from the net onto a white sorting tray from which live animals were removed (‘picked‘) using forceps and pipettes. Each tray was picked for a minimum period of forty minutes, after which it was further picked at ten-minute intervals either until no new specimens had been found or until a total of 60 minutes (i.e., the initial 40 minutes plus up to another 20 minutes) had elapsed. Care was taken to collect cryptic and fast-moving animals in addition to those that were conspicuous and / or slow-moving. The animals collected at each site were placed into a labelled jar containing 70% alcohol in water. The aim of the live picking is to pick as many macroinvertebrate taxa as possible within the prescribed picking time. There is no set minimum or maximum number of animals to be collected; however, at least 20 chironomids were collected where possible to help ensure that an adequate representation of all subfamilies was obtained.

Environmental variables, including alkalinity, modal river width and depth, percentage boulder or cobble cover, and latitude and longitude, were recorded in the field. These variables were required for running the AUSRIVAS predictive model for edge habitat. Distance from source, altitude, and land-slope were determined from appropriate topographic maps. Mean annual rainfall was sourced from the regional precipitation maps presented in the AUSRIVAS Sampling and Processing Manual (Turak *et al*. 2004).

3.5 LABORATORY METHODS

AUSRIVAS samples were sorted under a binocular microscope (at 40 X magnification) and identified to Family level, with the exception of Oligochaeta and Polychaeta (Class), Ostracoda (Subclass), Nematoda and Nemertea (Phylum), Acarina (Order) and Chironomidae (Subfamily). Up to ten animals of each family were counted, in accordance with the latest AUSRIVAS protocol (Turak *et al*. 2004).

3.6 DATA ANALYSIS

3.6.1 Water Quality and Hydrological Data

Water quality data were compared with the Australia, New Zealand Environment Conservation Council default trigger values (DTVs) for physical and chemical stressors for slightly disturbed upland rivers in southeast Australia (ANZECC/ARMCANZ 2000). These DTVs are in the process of being updated and more recent DTVs have been used where available. Currently, the concentration of boron in freshwater is the only relevant water quality measure / toxicant with an updated DTV (ANZG 2018), and DTVs provided by ANZECC/ARMCANZ (2000) are used otherwise. The sites on Wangcol Creek and the Coxs River are at an altitude of 885 to 920 m and thus are classified as upland watercourses by ANZECC/ARMCANZ (2000). For metal data, guidelines for 95% protection of species for slightly to moderately disturbed ecosystems were utilised. While Wangcol Creek is probably more accurately described as a heavily modified system, guidelines for slightly to moderately disturbed systems are applied to these systems as a precautionary measure (ANZECC/ARMCANZ 2000).

EC and pH data collected from LMP01, NC01 and WX22 (**Figure 2-1**) by EnergyAustralia between 12 January 2014 and December 2025 were examined to aid in the interpretation of macroinvertebrate data. Concentrations of nickel and zinc (metals identified as exceeding locally derived guidelines in Wangcol

Creek (Aurecon 2014)), and aluminium and boron (previous examination of these data suggested elevated concentrations of these metals occurred around the time of the aquatic ecology survey in spring 2014 (Cardno Ecology Lab 2015)) recorded from these sites from January 2014 to December 2025 by EnergyAustralia were also examined to aid the interpretation of macroinvertebrate data. Previous examination of data for four other metals of potential concern (barium, copper (Cu-F), iron (Fe-F) and manganese (Mn-F) (Cardno Ecology Lab 2015)) suggested an increase in concentrations above background levels at one or more sites prior to the spring 2015 aquatic ecology survey (Cardno 2016). EC and the concentration of boron, nickel and zinc appeared elevated at WX22 (adjacent to the ash placement and NCR2) in early 2018 prior to the December 2018 survey. Boron also appeared to be elevated at LMP01 and NC01 at that time.

Local monthly rainfall data obtained from the Bureau of Meteorology (BOM) station at Lidsdale (approximately 5 to 6 km southeast of the aquatic ecology monitoring sites on Wangcol Creek) (BOM 2025) and monthly discharge data from WaterNSW station 212055 (WaterNSW 2025) from January 2012 to December 2025 are also presented.

This cursory examination of water quality data was undertaken to help understand any observed patterns in macroinvertebrate data. More detailed assessment of any impacts on water quality in Wangcol Creek attributable to Lamberts North will be undertaken by other specialist consultants.

3.6.2 Macroinvertebrate Indicators

The AUSRIVAS protocol uses a software package to determine the environmental condition of a waterway based on predictive models of the distribution of aquatic macroinvertebrates at reference sites (Coysh *et al.* 2000). The ecological health of the river was assessed by comparing the macroinvertebrate assemblages collected in the field (i.e., 'observed') with macroinvertebrate assemblages expected to occur in reference waterways with similar environmental characteristics. The data from this study were analysed using the NSW models for pool edge habitat sampled in spring. The AUSRIVAS predictive model generates the following indices:

- OE50 Taxa Score – The ratio of the number of macroinvertebrate families with a greater than 50% predicted probability of occurrence that were actually observed (i.e., collected) at a site to the number of macroinvertebrate families expected with a greater than 50% probability of occurrence. OE50 taxa scores provide a measure of the impairment of macroinvertebrate assemblages at each site, with values close to 0 indicating an impoverished assemblage and values close to 1 indicating that the condition of the assemblage is similar to that of the reference rivers.
- Overall AUSRIVAS Bands, derived from OE50 Taxa scores, indicate the level of impairment of the assemblage. These bands are graded as described in **Table 3-3**.

Table 3-3 AUSRIVAS Bands and corresponding OE50 Taxa Scores for AUSRIVAS edge habitat sampled in spring.

Band	Description	Spring OE50 Score
X	Richer invertebrate assemblage than reference condition	> 1.16
A	Equivalent to reference condition	0.84 to 1.16
B	Sites below reference condition (i.e., significantly impaired)	0.52 to 0.83
C	Sites well below reference condition (i.e., severely impaired)	0.20 to 0.51
D	Impoverished (i.e., extremely impaired)	≤ 0.19

The SIGNAL2 biotic index (Stream Invertebrate Grade Number Average Level) developed by Chessman (2003) was also used to determine the environmental quality of sites on the basis of the presence or absence of families of macroinvertebrates. This method assigns grade numbers between 1 (highly tolerant of pollution) and 10 (highly sensitive to pollution) to each macroinvertebrate family, based largely on their responses to chemical pollutants. For a given site, the sum of all grade numbers is divided by the total number of families recorded to obtain an average SIGNAL2 Score for that site. The SIGNAL2 Score therefore uses the average sensitivity of macroinvertebrate families to present a snapshot of biotic integrity at the site. SIGNAL2 values are as follows:

- SIGNAL > 6 = Healthy habitat.
- SIGNAL 5 – 6 = Mild pollution.
- SIGNAL 4 – 5 = Moderate pollution.
- SIGNAL < 4 = Severe pollution.

The SIGNAL2 Scores were calculated using un-weighted SIGNAL2 grade data because weighting SIGNAL2 grades according to abundance may bias the SIGNAL2 Score towards naturally more abundant taxa.

Two other biotic indicators: Total Taxon Richness (the number of macroinvertebrate taxa collected in the sample) and Ephemeroptera, Plecoptera and Trichoptera (EPT) Taxon Richness (the combined number of mayfly, stonefly and caddis fly taxa, respectively, which are considered relatively pollution sensitive), were also derived via the AUSRIVAS macroinvertebrate data. The relative contribution of each of the major taxonomic groups (including Trichoptera, Diptera, Coleoptera, Hemiptera, Plecoptera, Odonata, Ephemeroptera, Crustacea and Mollusca) to the total number of taxa present in each sample was also examined visually to provide an indication of any changes that could be indicative of an impact.

3.6.3 Statistical Analysis

3.6.3.1 Objective

The objective of the statistical analyses was to identify and further examine any differences between the Impact site and Control sites in terms of the selected macroinvertebrate indicators. Statistically significant differences associated with an interactive effect of Survey and Site could provide evidence that an impact may have occurred or may be developing. Such potential evidence is assessed by examining differences between pairs of Surveys and Treatments / Sites via a suite of pairwise comparisons. It is noted that for Mod. 9, any changes should be interpreted giving consideration to the nature of the works. For example, capping works could conceivably result in either an improvement or a degradation of aquatic health in Wangcol Creek.

3.6.3.2 EMP

Two statistical designs were utilised for the Wangcol Creek EMP according to the availability of replicate sampling (i.e., two or more AUSRIVAS samples per site). The first used data collected from NCR1 and NCR2 in spring of 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025, while the second used data from NCR1, NCR2, NCR3 and A16 sampled in 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025 (**Section 3.6.3.4**). The first design enabled any changes since 2013 (albeit following commencement of Lamberts North) at NCR1 and NCR2 to be examined, while the second design also

included additional control sites NCR3 and A16 (albeit only from 2015 onwards) to help place any changes at the NCR2 impact site in the context of other sites elsewhere in the wider catchment area.

The two analytical designs utilised were:

1. Comparison between the NCR1 and NCR2 sites, sampled in spring of 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025:
    a. Year (i.e., Survey): A fixed factor with ten levels: 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025.
    b. Site: A fixed factor with two levels: NCR1 and NCR2.
2. Comparison among all sites, sampled in spring of 2015, 2016, 2018, 2020, 2021, 2022, , 2024 and 2025:
    a. Treatment: A fixed factor with two levels: Impact and Controls.
    b. Year (i.e., Survey): A fixed factor with nine levels: 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025.
    c. Site: A random factor with four levels nested in Treatment: NCR1, NCR3 and A16 nested in Controls and NCR2 as Impact.

3.6.3.3 SHMP

The statistical design for the Wangcol Creek SHMP focused on examining differences between Treatments in 2025. The analytical design was:

a. Treatment: A fixed factor with two levels: Impact and Controls.
b. Site: A random factor with six levels nested in Treatment: NCR1, NCR2 and NCR3 nested in Impact, and NCR4, NCR5 and A16 nested in Control.

This design will be modified in future surveys to account for temporal changes and to enable detection of potential changes that may be indicative of an effect of Mod. 9 on stream health.

3.6.3.4 Multivariate Analyses

A matrix of differences in the types of taxa between all possible pairs of samples was compiled by calculating their respective Bray-Curtis dissimilarity coefficients. Permutational analysis of variance (PERMANOVA+ in Primer v6) was used to examine spatial differences and temporal changes, and their interaction, in macroinvertebrate assemblage presence / absence data sampled using AUSRIVAS (Anderson et al. 2008; Clarke and Gorley 2006). Differences among the levels of main-effects factors and interaction terms may be examined by post-hoc pair-wise permutational t-tests. Only statistical differences with a significance level of $P \leq 0.05$ were considered. Significant differences between groups may arise due to differences between group means, differences in dispersion (equivalent to variance) among groups or a combination of both. Either outcome could be indicative of an impact. However, only significant statistical interactions are potentially indicative of an impact, hence significant main effects were not considered in detail.

Multivariate patterns in data collected from each site during spring of 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025 were also examined using the Principal Coordinates Analysis (PCoA) routine in PERMANOVA+. This is a generalised form of Principal Components Analysis (PCA) in which

samples are projected onto linear axes based on their dissimilarities in a way that best describes the patterns among them using as few dimensions as possible (Clarke and Gorley 2006). The amount of variation 'explained' by each principal axis is indicated and the dissimilarity between data points can be determined from their distances apart on the axes (Anderson et al. 2008). Relative differences among samples were also examined using Hierarchical Clustering in PERMANOVA+ in Primer v6.

3.6.3.5 Univariate Analyses

PERMANOVA + was used to examine spatial differences and temporal changes in the number of taxa, OE50 Taxa Scores, SIGNAL2 Indices and the number of EPT taxa. These analyses were based on a Euclidean distance matrix of all possible pairs of samples of the variable of interest and a statistical significance level of $P \leq 0.05$.

As is the case with multivariate analyses, significant differences between groups (e.g., NCR1 and NCR2) that could be indicative of a mining impact may arise due to differences between group means, differences in dispersion (variance) among groups or a combination of both. A potential impact could affect both the magnitude and dispersion of an indicator (e.g., number of taxa). If a statistically significant difference between groups was detected, the proportion of the statistical difference attributable to the difference in variance between pairs of groups would be explored using the PERMDISP procedure to determine whether variances were statistically different. If there is no statistical difference between variances, the statistical difference detected between groups is most likely due to differences between group means. When a statistical difference between variances is detected, the difference between groups could be due to both the difference in variance and the difference in means between groups.

3.6.3.6 QA/QC Procedures

Data generated in the field were checked for accuracy and completeness before leaving each site. On return to the laboratory, field data sheets were photocopied, entered into spreadsheet format and checked. Spreadsheet files were locked prior to analysis to prevent accidental over-writes or corruption.

In the laboratory, the remains of each macroinvertebrate sample were retained and checked by another aquatic scientist to ensure that no animals were missed. A Stantec staff member with appropriate training and experience checked the identifications and counting of samples. These activities were recorded on the Laboratory Management Sheet. Data were entered into an electronic spreadsheet and data for each sample were printed and checked by a second staff member.

4.0 RESULTS

4.1 AQUATIC HABITAT

4.1.1 General Observations

4.1.1.1 NCR1

As was the case for previous surveys, in 2025 the aquatic habitat at NCR1 (Control site for the EMP and Impact site for the SHMP) appeared relatively undisturbed (**Plate 1a** and **b**). There was no evidence of recent channel re-alignments or re-sectioning, and several mature trees, albeit including some invasive willows, were present on both banks. This vegetation would help stabilise banks, thereby minimising erosion and associated increases in sedimentation. It would also be a source of woody debris, which provides habitat for fish and macroinvertebrates. The upstream section of the site consisted of a large pool bordered by dense beds of cumbungi. The downstream section consisted of a channel approximately 1 m in width with loose cobble and pebble substratum. Some flow was present at the time of sampling. Rushes (*Juncus* sp.) were common along this section.

4.1.1.2 NCR2

While the section of Wangcol Creek at NCR2 (Impact site for the EMP and SHMP) (**Plate 1c** and **d**) also did not appear to have been subject to recent modification, the banks just downstream of the site previously had been re-sectioned and reinforced. Riparian vegetation consisted primarily of grasses and a few isolated trees. The absence of substantial bank-stabilising vegetation likely explains the bank slumping and erosion present throughout the site. The channel consisted of loose material covered with fine sediment / diatom layer. A concrete gauging station / ford runs through the centre of the site, acting as a small weir.

4.1.1.3 NCR3

The aquatic habitat at NCR3 (**Plate 1e** and **f**) was very similar to that at NCR2. The riparian vegetation within a few metres of the creek was relatively undisturbed, with several large trees and grasses present. There was no evidence of bank or channel modifications.

4.1.1.4 NCR4

Wangcol Creek at NCR4 (Control site for the SHMP) (**Plate 2a** and **b**) consisted of a shallow channel <0.5 m deep that flowed into a pool approximately 10 m across. The emergent aquatic plant bullrush (*Typha* sp.) was present along the edges of the pool and riparian vegetation on the southern bank included some trees but was otherwise disturbed, with invasive blackberry present. Channel substratum consisted of gravel, sand and silt.

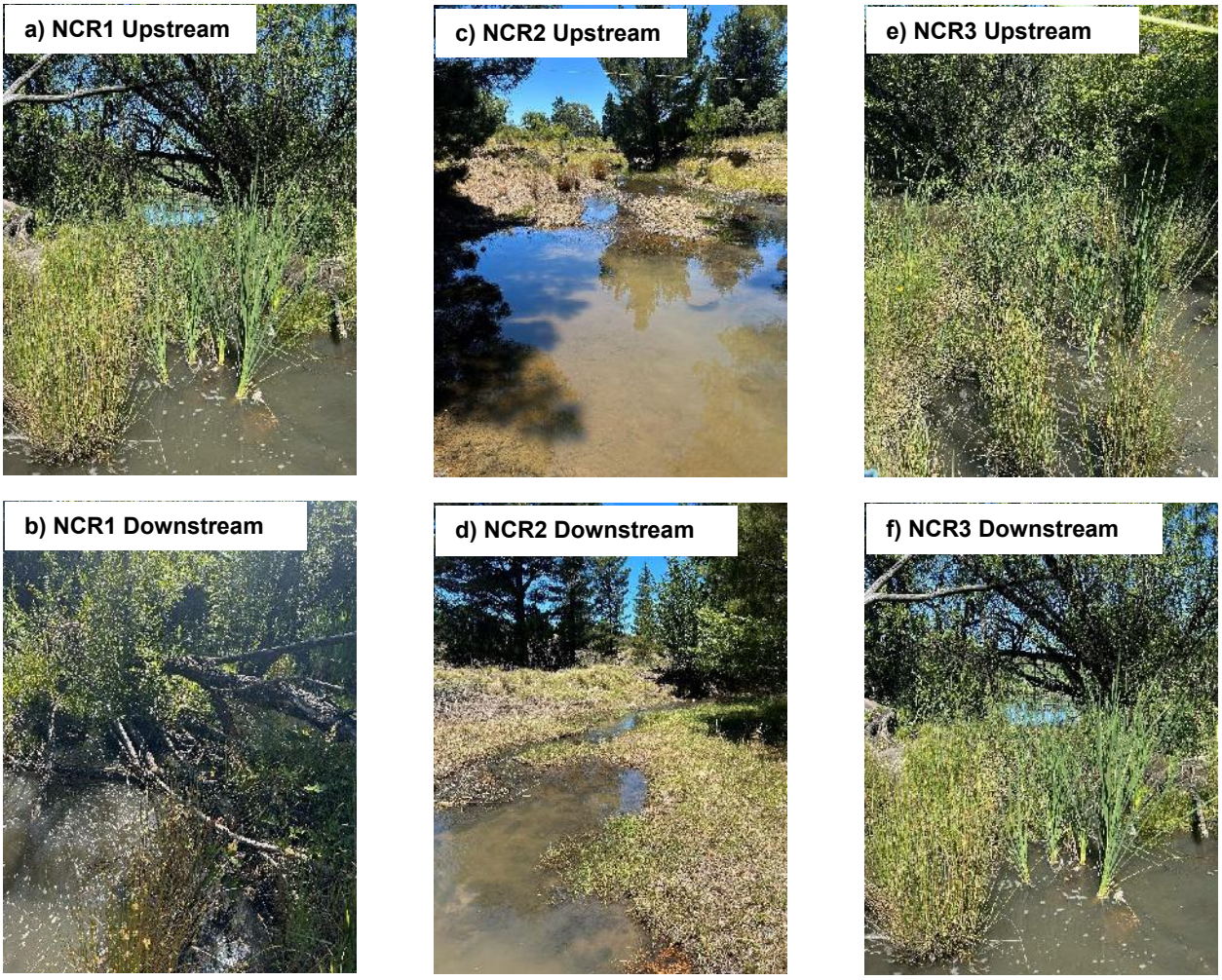


Plate 1: Photographs of NCR1 looking a) upstream and b) downstream, NCR2 looking c) upstream and d) downstream and NCR3 looking e) upstream and f) downstream in 2025.

4.1.1.5 NCR5

Wangcol Creek at NCR5 (Control site for the SHMP) (**Plate 2b** and **c**) consisted of a deeper channel <1 m deep just upstream of the highway. The emergent aquatic plant bullrush was present along the edges of the northern bank, while riparian vegetation on the southern bank included some trees but was otherwise disturbed, with invasive blackberry present. Channel substratum consisted of gravel, sand and silt.

4.1.1.6 A16

The relatively steep banks, uniform bank profile and absence of any trees and other substantial riparian vegetation at A16 (**Plate 2e** and **f**) suggest that this section of the Coxs River has been re-aligned and / or re-sectioned. Bank slumping was present, though bank material was somewhat stabilised by grasses. The channel consisted primarily of loose cobbles and pebbles, with moderate water flow present at the time of sampling.



Plate 2: Photographs of NCR4 looking a) upstream and b) downstream, NCR5 looking c) upstream and d) downstream and A16 looking e) upstream and f) downstream in 2025.

4.1.2 RCE and RCSC Scores

General observations of aquatic habitat at each site were supported by the results of the RCE inventory. The total RCE scores for Sites NCR1, NCR2, NCR3, NCR4, NCR5 and A16 were 36, 25, 36, 28, 28 and 33, respectively (**Appendix D**). In the cases of the four sites assessed in previous surveys (i.e., NCR1, NCR2, NCR3 and A16, these scores were the same as those recorded for these sites in previous surveys. The low score for NCR2 was due primarily to the relatively poor condition of the riparian vegetation, unstable banks and the absence of in-stream habitat (e.g., large woody debris). A16 scored relatively low in categories associated with the condition of riparian vegetation compared with NCR1 and NCR2, though it did score relatively highly in categories associated with channel form, riffle / pool sequence and channel substratum.

The results of the Reference Condition Selection Criteria (RCSC) assessment reflected the disturbed nature of the local and catchment-wide environment (**Appendix D**). Each site scored 1 to 2 (indicative of major influences) in categories associated with the influence of major extractive industry, alteration of riparian vegetation, and point-source wastewater discharge. Influence from intensive agriculture and major dams / weirs were not apparent at any site.

4.2 WATER QUALITY AND HYDROLOGY

4.2.1 Spring 2025 Water Quality

The mean values for each water quality indicator measured at each site in spring 2025 (NCR1, NCR2, NCR3, NCR4 and NCR5 on Wangcol Creek and A16 on Coxs River) are presented in **Appendix E**. The results are summarised as follows:

- Temperature ranged from 17.2°C to 23.5°C on Wangcol Creek and was 24.2°C on Coxs River.
- EC ranged from 207 µS/cm to 372 µS/cm on Wangcol Creek and was 1,604 µS/cm on Coxs River. It was above the upper DTV at NRC1 and NCR3 (albeit only marginally), and at A16.
- pH ranged from 6.8 to 7.5 on Wangcol Creek and was 7.3 on Coxs River.
- ORP ranged from 96 mV to 161 mV on Wangcol Creek and was 120 mV on Coxs River.
- Dissolved oxygen ranged from 45.0% to 96.0% on Wangcol Creek and was 95.0% on Coxs River. It was below the lower DTV at NCR1, NCR3 and NCR4.
- Turbidity ranged from 1.8 NTU to 60.5 NTU on Wangcol Creek and was 0.3 NTU on Coxs River. It was above the upper DTV at NCR1, NCR3, NCR4 and NCR5 and below the lower DTV at NCR2 and A16.

4.2.2 Long Term Data

Daily discharge data logged at WaterNSW station 212055 (WX22), located on Wangcol Creek immediately downstream of NCR2, from January 2012 to December 2025 (WaterNSW 2026), are presented in **Figure 4-1**. Examination of discharge data alongside daily rainfall logged at BOM station 063132 at Lidsdale (BOM 2026) (**Figure 4-2**), and EC (**Figure 4-3a**) and pH (**Figure 4-3b**) at WX22, NCO1 and LMP01 provided by EnergyAustralia, indicated the following:

- Greater discharge events in Wangcol Creek followed periods of greater rainfall.
- EC measured at WX22 tended to be greater (up to 3,197 µS/cm) and more variable than at NC01 and LMP01 (up to 880 µS/cm).
- The EC at each site was often above the upper DTVs (350 µS/cm). During the majority of 2020, 2021 and 2022, EC did not exceed 1,000 µS/cm. During 2023 to 2025, EC at WX22 was elevated and often exceeded 1,000 µS/cm.
- The relatively great EC recorded at WX22 in 2019 and through 2023 to 2025 coincided with relatively low rainfall and low discharge, though the relatively low EC through 2020 to 2022 also appeared to follow relatively low rainfall and discharge. This suggests EC is somewhat but not strongly influenced by rainfall and discharge.
- pH at LMP01, NC01 and WX22 largely remained within DTVs (pH 6.5 to 8.0). In some years there was relatively greater variability in pH for some sites, sometimes close to 1 pH unit, and up to 2 pH units (e.g., LMP01 in 2020). The pH at LMP01 was generally greater than that at NC01 and WX22 prior to 2023. It also appeared elevated at LMP01 in early 2020. pH was elevated (pH 8.7) at WX22 in June 2025.

Patterns in EC and discharge among sites following January 2016 were similar, but less pronounced than for data prior to January 2016 (Cardno Ecology Lab 2015).

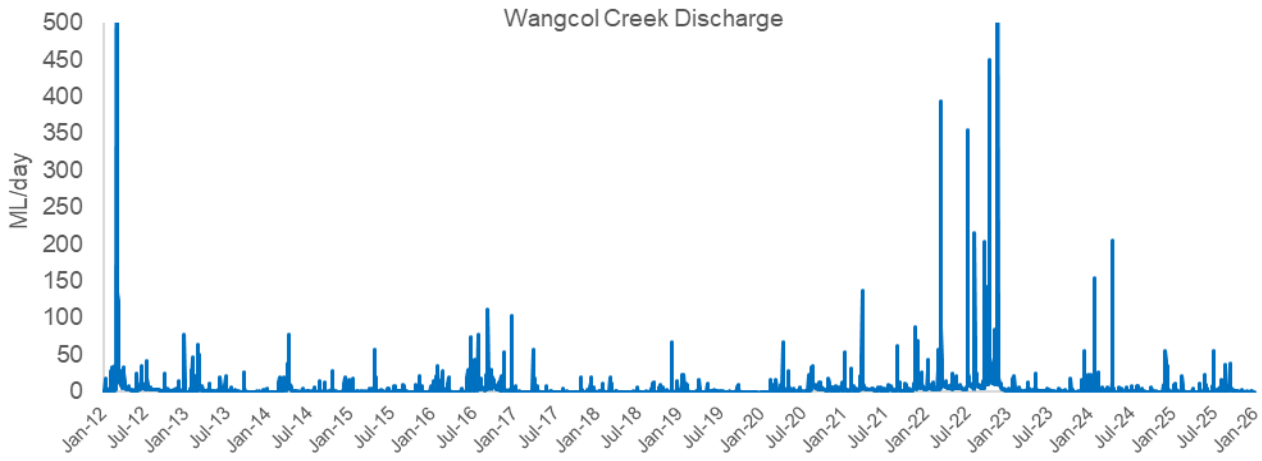


Figure 4-1 **Daily discharge at NSW DPI (Water) station 212055 at WX22 on Wangcol Creek January 2012 to December 2025 (WaterNSW 2025). The peak discharge in March 2012 was reported as 2,841 ML/day and on 14 November 2022 as 824 ML/day. For easier interpretation of the other discharge data, the Y axis scale is limited to 500 ML/day.**

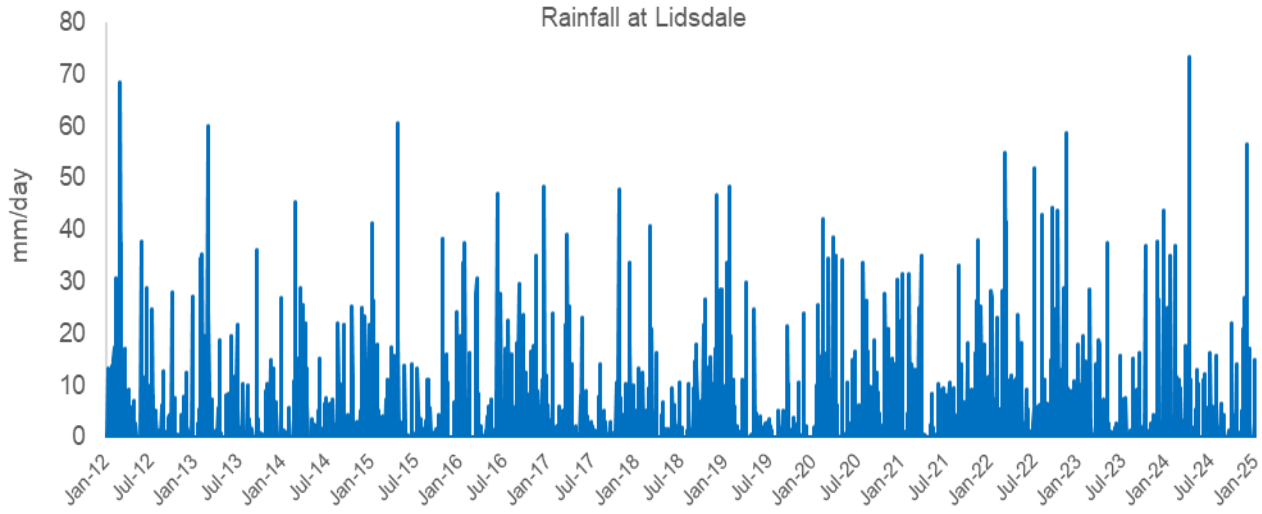
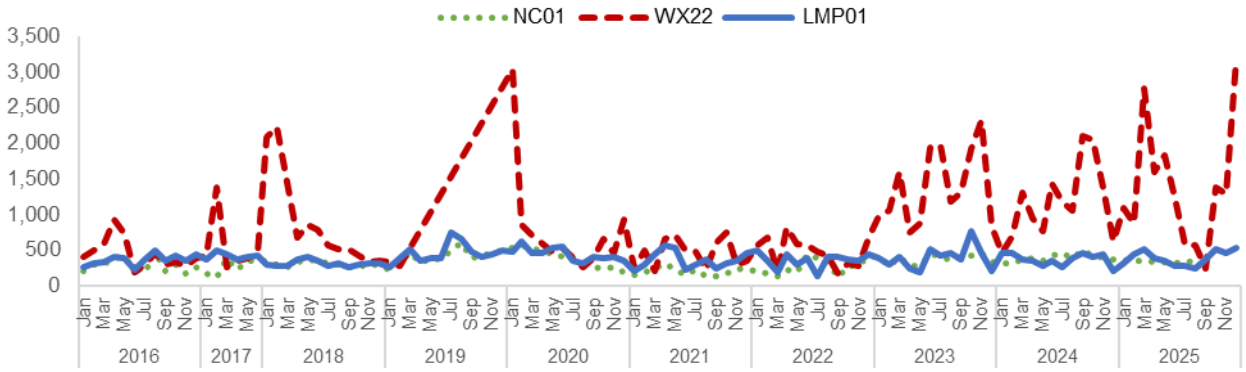


Figure 4-2 **Daily rainfall at BOM Lidsdale station 063132 January 2012 to December 2025.**

a) Electrical Conductivity (ANZECC/ARMCANZ (2000) DTVs = 30 µS/cm to 350 µS/cm)



b) pH (ANZECC/ARMCANZ (2000) DTVs = 6.5 to 8.0)

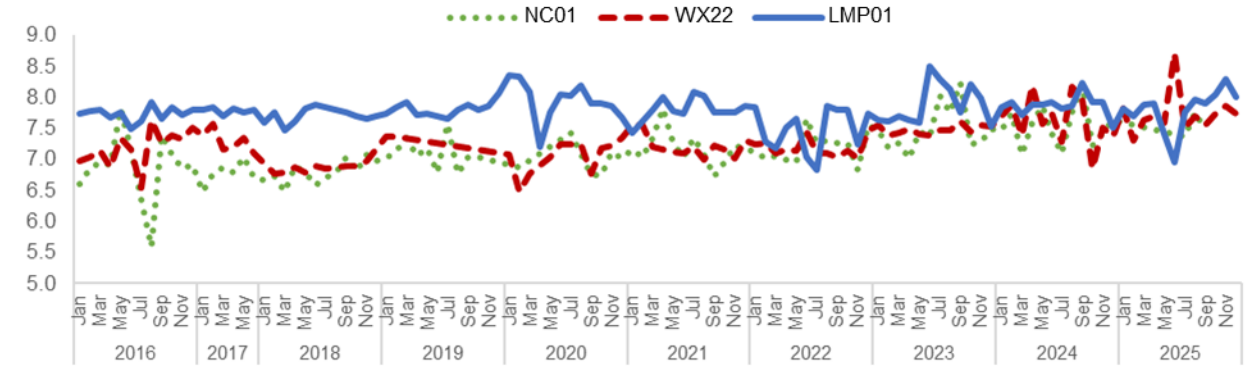


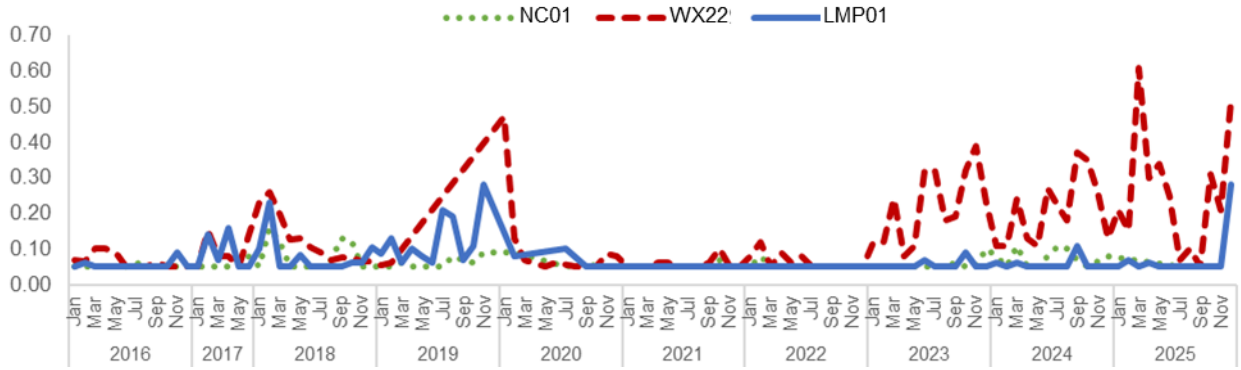
Figure 4-3 **a) electrical conductivity and b) pH measured at LMP01, NC01 and WX22 on Wangcol Creek by EnergyAustralia from January 2016 to December 2026.**

Figure 4-4a to **c** and **Figure 4-5a** and **b** present the concentrations of a selection of heavy metals (those identified previously as exceeding local guidelines or identified as potentially elevated prior to the aquatic ecology surveys (**Section 3.6.1**)) measured at LMP01, NC01 and WX22 on Wangcol Creek between January 2016 and December 2025. These data indicated the following:

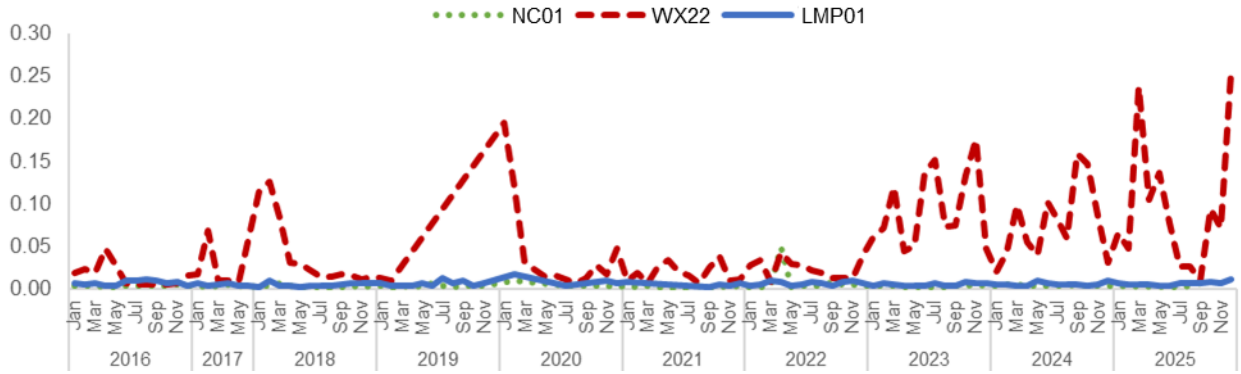
- The concentrations of boron and nickel were greater at WX22 than at LMP01 and NC01 during most sampling events. This was most evident during 2023 to 2025, when concentrations were several times greater at WX22.
- Concentrations of boron, nickel and zinc appeared to be elevated at WX22 during January to February 2018 and January to February 2020. Boron and zinc also appeared to be elevated further upstream (i.e., at NC01 and LMP01) at this time.
- Concentrations of zinc and copper were elevated above guidelines at LMP01 and NC01 on occasion, with boron, nickel, and zinc all above the guideline value at LMP01 in January 2020 and nickel above the guideline value in 2023 through 2025. Aluminium was often above the guideline value at all sites between 2016 and 2024. Copper was also above the guideline value at LMP01 in July 2019 and at WX22 in June 2024, and zinc was above the guideline value at LMP01 in January 2025.

- From around the beginning of 2021 and through to December 2022, there was little evidence of substantial elevations greater than observed during 2020 and / or prior. This likely reflects the greater dilution associated with greater rainfall and flow during this time.
- During 2023 to 2025, concentrations of boron and nickel at WX22 were elevated (above the DTV in the case of nickel). This appeared to coincide with relatively low rainfall, discharge and correspondingly elevated EC from the beginning of 2023.

a) Boron (ANZG 2018) 95 % Species Protection Trigger Value = 0.94 mg / L)



b) Nickel (ANZECC/ARMCANZ (2000) 95 % Species Protection Trigger Value = 0.011 mg / L)



c) Zinc (ANZECC/ARMCANZ (2000) 95 % Species Protection Trigger Value = 0.008 mg / L)

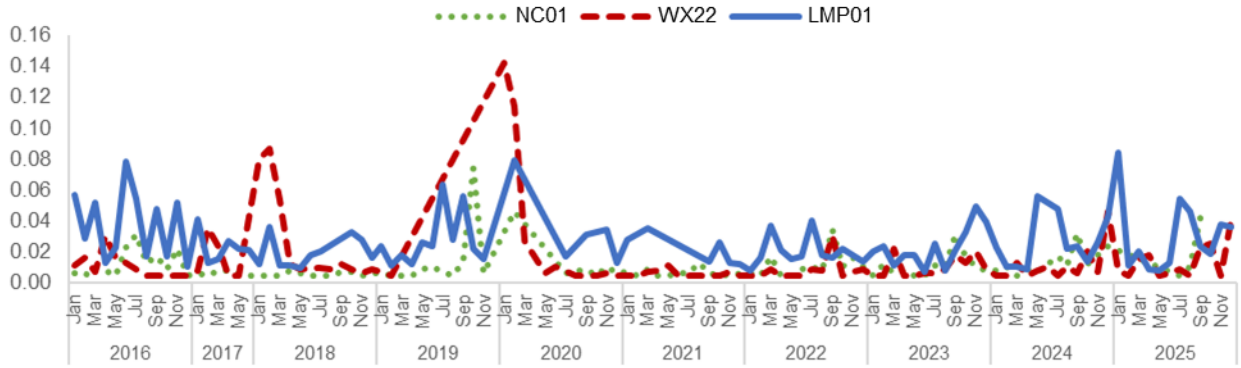
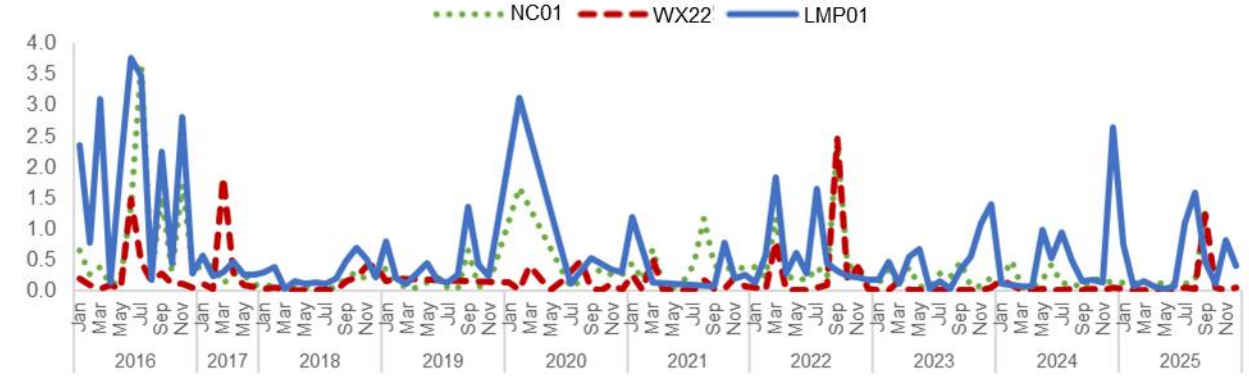


Figure 4-4 **Concentration (mg / L) of a) boron, b) nickel and c) zinc measured at LMP01, NC01 and WX22 on Wangcol Creek by EnergyAustralia from January 2016 to December 2025.**

a) Aluminium (ANZECC/ARMCANZ (2000) 95 % Species Protection Trigger Value = 0.055 mg / L)



b) Copper (ANZECC/ARMCANZ (2000) 95 % Species Protection Trigger Value = 0.0014 mg/L)

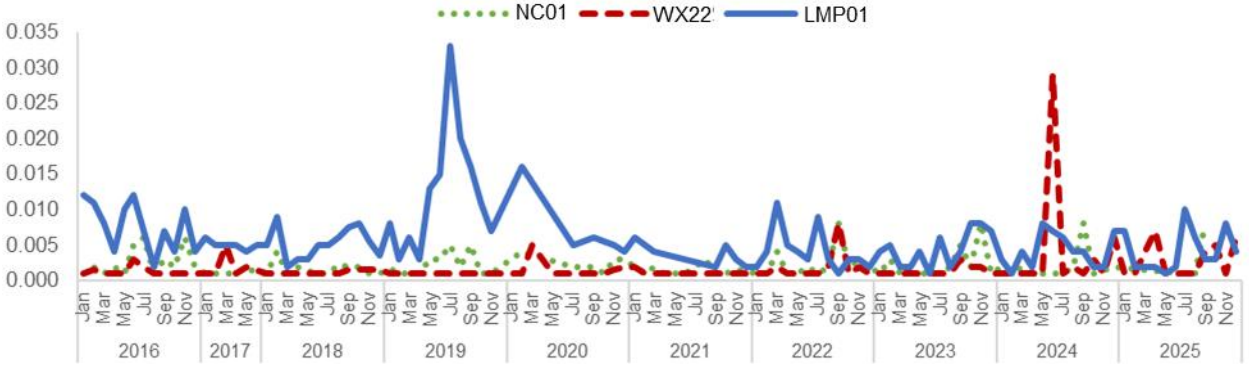


Figure 4-5 **Concentration (mg / L) of a) aluminium and b) copper measured at LMP01, NC01 and WX22 on Wangcol Creek by EnergyAustralia from January 2016 to December 2025.**

4.3 AUSRIVAS MACROINVERTEBRATES

4.3.1 General Findings

4.3.1.1 Identified Taxa

A total of 54 taxa were identified from the 18 samples collected in spring 2025 (**Appendix F**). Over the course of the EMP, a total of 100 macroinvertebrate taxa have been identified from the 117 edge samples collected in spring. Out of the 86 taxa assigned a SIGNAL2 grade, 65 were assigned a grade of 5 or lower, indicating that most taxa are moderately to very tolerant of pollution. Seven taxa (Athericidae, Gripopterygiidae, Hydrobiosidae, Leptophlebiidae, Telephlebiidae, Glossosomatidae and Philopotamidae) have a SIGNAL2 grade of 8 to 9, indicating they are sensitive to pollution. Leptophlebiidae were found in most samples collected from NCR1, NCR2 and NCR3 prior to 2025 and at NCR4 in 2025.

The most common taxa identified from edge samples (those identified in over half all samples from Wangcol Creek and Coxs River) included Dytisidae (diving beetles), Leptophlebiidae (mayflies), Chironomidae (non-biting midge; consisting of the subfamilies: Chironominae, Orthocladiinae and Tanypodinae) and Corixidae (backswimmers). Leptophlebiidae are pollution sensitive; however, most of

the other taxa are pollution tolerant (SIGNAL2 grade 2 to 4). Few taxa appeared to be restricted to individual sites or separate watercourses. There was some evidence to suggest that Caenidae are uncommon at NCR1, and that Atyidae are uncommon at A16 (though Atyidae were caught in each sample from A16 in 2024). These taxa have been assigned SIGNAL2 Grades of 1 to 4. It should be noted, however, that the presence of pollution tolerant taxa does not necessarily indicate poor water quality, as these taxa would be expected to occur in watercourses with good water quality also.

Several fish have also been caught in AUSRIVAS dip nets or observed during AUSRIVAS sampling. The non-native fish species, eastern gambusia (*Gambusia holbrooki*), was inadvertently caught in the AUSRIVAS dip nets or observed in Wangcol Creek in 2022 and 2025, and in Coxs River in 2023, 2024 and 2025. The native mountain galaxiid (*Galaxias olidus*), was inadvertently caught in the dip net at NCR3 in 2018 and 2021, at NCR2 in 2024 and at NCR1 in 2025. The native flathead gudgeon (*Philypnodon grandiceps*) was also caught in dip nets at NCR1 in 2025.

4.3.1.2 Number of Taxa

The number of macroinvertebrate taxa identified from edge samples has ranged from 10 to 27 at NCR1, 10 to 29 at NCR2, 5 to 25 at NCR3, 7 to 25 at A16, 17 to 18 at NCR4 and 10 to 19 at NCR5 **(Appendix F** and **Appendix G**; **Figure 4-6**). No site had consistently more or fewer taxa than other sites, though there is slight evidence of a trend of decrease in number of taxa through time to 2022 at NCR1 and NCR2, and a decrease to 2020/21 at NCR3 and A16. Numbers of taxa have been generally variable among years and among sites since 2022.

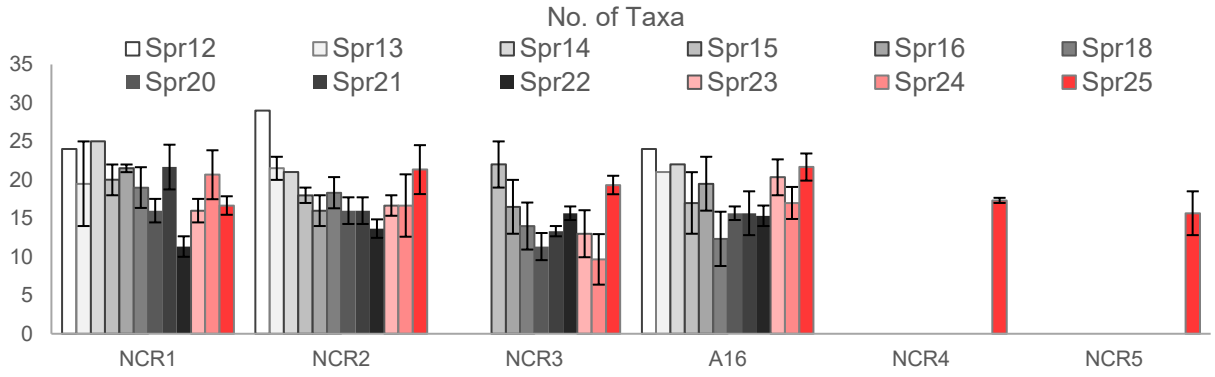


Figure 4-6 **Number of Taxa identified in AUSRIVAS samples from each site sampled between spring 2012 and spring 2025 Standard error bars are displayed where n ≥ 2.**

4.3.1.3 Number of EPT Taxa

The number of EPT taxa identified from edge samples collected has ranged from 1 to 7 at NCR1 and NCR2, 0 to 6 at NCR3, 1 to 8 at A16, 1 to 4 at NCR4 and 3 to 4 at NCR5 (**Appendix F** and **Appendix G**; **Figure 4-7**). While the number of EPT taxa recorded at NCR1 and NCR2 has been relatively consistent, larger numbers were found at NCR1 in spring 2021 and at NCR2 in spring 2012. Overall, more EPT taxa have been recorded at A16 than at the other sites, particularly NCR3.

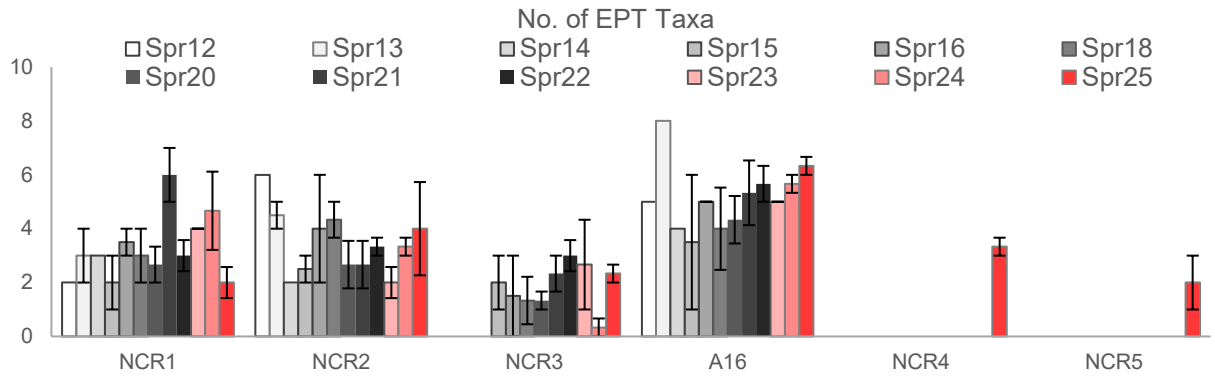


Figure 4-7 **Number of EPT Taxa identified in AUSRIVAS samples from each site sampled between spring 2012 and spring 2025 Standard error bars are displayed where n ≥ 2.**

4.3.1.4 OE50 Taxa Score

The OE50 Taxa Score has ranged from 0.36 to 0.96 at NCR1, 0.27 to 1.04 at NCR2, 0.19 to 0.85 at NCR3, 0.34 to 0.91 at A16, 0.64 to 0.87 at NCR4 and 0.24 to 0.48 at NCR5 (**Appendix F** and **Appendix G**; **Figure 4-8**). OE50 Scores below 0.20 indicate extremely impaired habitat, while scores from 0.20 to 0.51 indicate severely impaired habitat (Band C), from 0.52 to 0.83 indicate significantly impaired habitat (Band B), and from 0.84 to 1.16 indicate habitat equivalent to reference condition (Band A). These results indicated that on all but one occasion (NCR2 in spring 2012) the macroinvertebrate assemblages sampled were less diverse than predicted (i.e., OE50 Taxa Score < 1.0). There was limited evidence to suggest a decrease in OE50 Taxa Score between spring 2012 and spring 2016 at NCR2; however, the OE50 Taxa Score in spring 2018 was relatively high. OE50 Taxa Scores at EMP control sites NCR1 and NCR3 in spring 2020 were also the lowest recorded during the EMP, though there was an apparent increase in the OE50 Taxa Score at these sites in subsequent surveys.

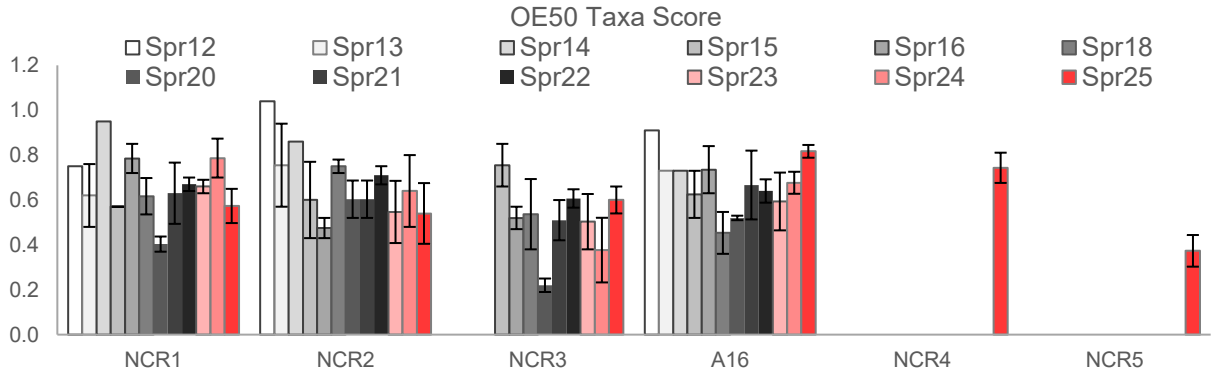


Figure 4-8 **OE50 Taxa Scores from AUSRIVAS samples from each site sampled between spring 2012 and spring 2025. Standard error bars are displayed where n ≥ 2.**

4.3.1.5 SIGNAL2 Score

The SIGNAL2 Scores ranged from 3.1 to 4.6 at NCR1, 3.4 to 5.0 at NCR2, 2.9 to 5.2 at NCR3, 3.6 to 5.2 at A16, 3.6 to 3.8 at NCR4 and 2.5 to 3.6 at NCR5 (**Appendix F** and **Appendix G**; **Figure 4-9**). These scores are indicative of severe to moderate water pollution and suggest that all of these sites experience some degree of environmental stress due to poor water quality. There were no obvious trends in SIGNAL2 data.

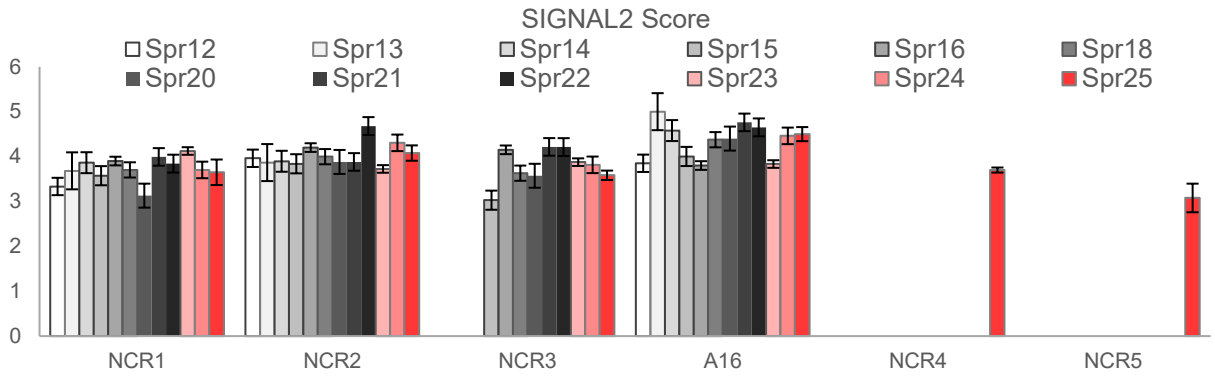


Figure 4-9 **SIGNAL2 Scores from AUSRIVAS samples from each site sampled between spring 2012 and spring 2025. Standard error bars are displayed where n ≥ 2.**

4.3.2 Relative Contribution of Taxonomic Groups

The relative contribution of taxonomic groups in edge samples was relatively consistent among sites and surveys, and there was little evidence of any substantial changes in the relative contribution of taxonomic groups occurring at NCR2 that could be indicative of an impact (**Figure 4-10**).

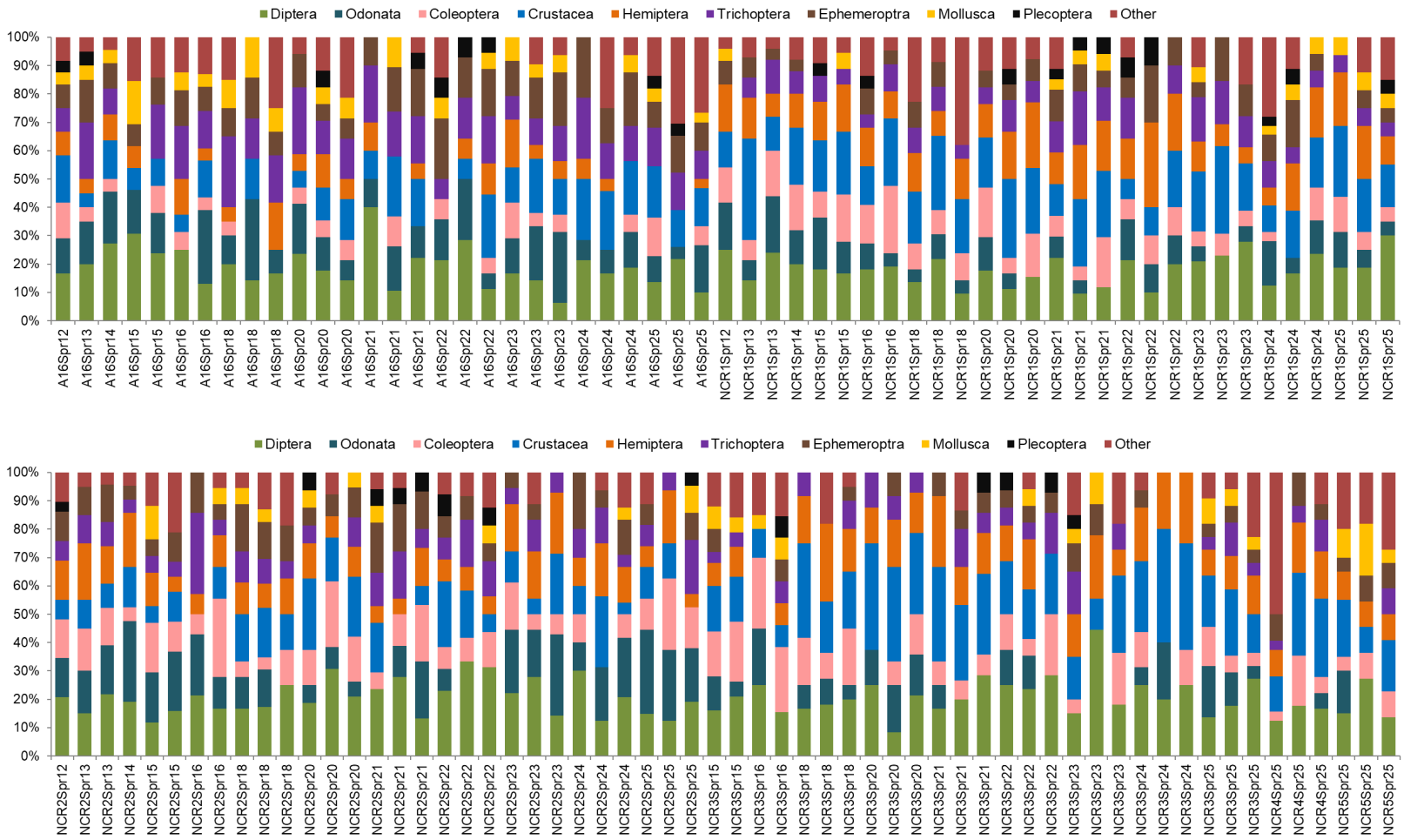


Figure 4-10 **Relative contribution of major taxonomic groups identified from AUSRIVAS edge samples collected at NCR1, NCR2, NCR3, NCR4 and NCR5 on Wangcol Creek and A16 on the Coxs River during spring of 2013, 2014, 2018, 2020, 2021, 2022, 2023, 2024 and 2025. 'Other' includes taxa in the Families Pyralidae and Dugesiidae, the Order Temnocephalidae, Subclasses Oligochaeta and Collembola and the taxonomic group Hydracarina.**

4.3.1 Statistical Analyses

4.3.1.1 EMP

None of the PERMANOVA tests undertaken using data collected from NCR1 and NCR2 in spring of 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025 indicated a statistically significant interaction between Site and Survey (**Table 4-1**). There was a statistically significant main effect of Survey for Total Number of Taxa, Number of EPT Taxa, SIGNAL2 Score and multivariate assemblage structure, and of Site for SIGNAL2 Score and multivariate assemblage structure. Statistically significant main effects do not indicate an impact. This same pattern was evident in 2024 (Stantec 2025).

Table 4-1 **Summary of results of PERMANOVA analyses undertaken using AUSRIVAS data collected from NCR1 and NCR2 in spring of 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025. * = P ≤ 0.05, ** = P ≤ 0.01, *** = P ≤ 0.001, ns = not statistically significant. See Appendix H for full results.**

Indicator	Site	Survey	Survey x Site
Number of Taxa	ns	*	ns
Number of EPT Taxa	ns	*	ns
OE50 Taxa Score	ns	ns	ns
SIGNAL2 Score	*	ns	ns
Assemblage	*	*	ns

None of the PERMANOVA tests undertaken using data collected from the Impact (NCR2) and Control (NCR1, NCR3 and A16) sites in spring of 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025 indicated a statistically significant interaction between Treatment and Survey (**Table 4-2**). There was a statistically significant main effect of Survey for Number of EPT Taxa and of Site (nested in Treatment) for Number of EPT Taxa, OE50 Taxa Score and SIGNAL2 Score, and a statistically significant interaction of Survey and Site for multivariate assemblage structure. Statistically significant main effects and statistically significant interactions involving nested (random) factors (i.e., Site in this analysis) do not indicate an impact.

There was also a statistically significant effect of Survey for Total Number of Taxa, Number of EPT Taxa, SIGNAL2 Score, OE50 Taxa Score and of Site for Number of EPT Taxa and SIGNAL2 Score. None of these differences indicated an impact. This same pattern was evident in 2024 (Stantec 2025).

Table 4-2 **Summary of results of PERMANOVA analyses undertaken using AUSRIVAS data collected from EMP Impact (NCR2) and Controls (NCR1, NCR3 and A16) sampled in spring of 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025. * = P ≤ 0.05, ** = P ≤ 0.01, *** = P ≤ 0.001, ns = not statistically significant. See Appendix H for full results. RED = redundant term due to significant interaction.**

Indicator	Treatment	Survey	Site (Treatment)	Treatment x Survey	Survey x Site (Treatment)
Number of Taxa	ns	ns	*	ns	ns
Number of EPT Taxa	ns	ns	***	ns	ns
OE50 Taxa Score	ns	ns	*	ns	ns
SIGNAL2 Score	ns	ns	***	ns	ns
Assemblage	ns	RED	RED	ns	***

4.3.1.2 SHMP

None of the PERMANOVA tests undertaken using data collected from the SHMP Impact (NCR1, NCR2 and NCR3) and Control (NCR4, NCR5 and A16) sites in spring of 2025 indicated a statistically significant difference between Treatments (**Table 4-1**). This result would theoretically help facilitate the detection of any future influence of the capping works at MPAR. There was a statistically significant main effect of Site for Total Number of EPT Taxa, OE50 Taxa Score, SIGNAL2 Score and multivariate assemblage structure, which indicated spatial differences among Sites within Treatments.

Table 4-3 **Summary of results of PERMANOVA analyses undertaken using AUSRIVAS data collected from the SHMP Impact (NCR1, NCR2 and NCR3) and Control (NCR4, NCR5 and A16) in spring of 2025. * = P ≤ 0.05, ** = P ≤ 0.01, *** = P ≤ 0.001, ns = not statistically significant. See Appendix H for full results.**

Indicator	Treatment	Site (Treatment)
Number of Taxa	ns	ns
Number of EPT Taxa	ns	*
OE50 Taxa Score	ns	**
SIGNAL2 Score	ns	*
Assemblage	ns	***

4.3.1.3 PCoA

The PCoA undertaken for all edge assemblages sampled (except at CR0) during spring of 2012, 2013, 2014, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025 is presented in **Figure 4-11**. There is evidence to suggest that assemblages at A16 differed from those at each of the other sites. This is evident in assemblages from A16 tending to group towards the bottom right of the PCoA, slightly offset from those at the other sites, which appear to be overlaying each other to a greater degree of overlap. There was little evidence of other distinct groupings, such as for Surveys.

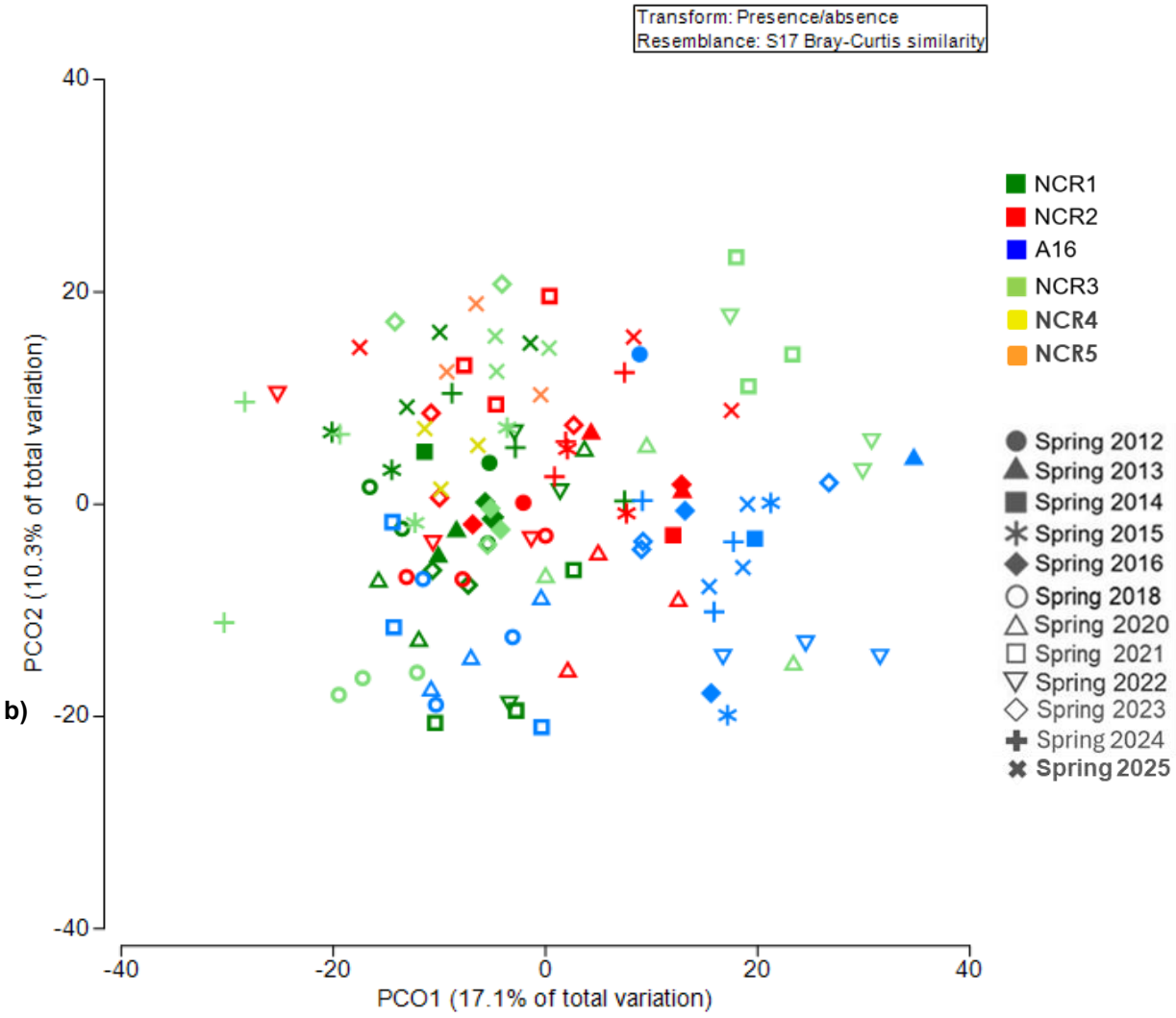


Figure 4-11 **a) Principal Coordinates Analysis (PCoA) and b) CLUSTER diagram of AUSRIVAS edge macroinvertebrate assemblages sampled using AUSRIVAS at NCR1, NCR2, NCR3, NCR4 and NCR5 on Wangcol Creek and at A16 on Coxs River in spring of 2012, 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025.**

5.0 DISCUSSION

5.1 AQUATIC HABITAT

The findings of this and previous investigations indicate that aquatic habitat in Wangcol Creek has experienced past degradation due primarily to local industry and historic land clearing. This appears to have been relatively severe at NCR2, NCR4 and NCR5, where the condition of the riparian vegetation, creek banks and streambed were poorer compared with those habitats at NCR1 and NCR3. While these sites have been subject to anthropogenic impacts in the past, no further direct impacts on aquatic habitat in Wangcol Creek attributable to Lamberts North (e.g., associated with creek realignment, vegetation clearing) were predicted or have been detected in the current survey in 2025 or previously.

Although the current condition of aquatic habitat in Wangcol Creek is not attributable to Lamberts North or MPAR, the differences in habitat observed between NCR2, NCR4 and NCR5, the remaining sites NCR1 and NCR3, and the upstream monitoring site in the Coxs River (A16) could be expected to influence the number and type of macroinvertebrate taxa (and other aquatic biota) found in samples at these sites. Notably, there has been greater abundance of riparian and aquatic vegetation at NCR1 and NCR3 compared with NCR2, NCR4 and NCR5 and A16. The additional food and habitat this would afford may partly explain any differences in the structure of macroinvertebrate assemblages at these sites.

The presence of the mountain galaxiid in the dip net at NCR3 in autumn of 2017 and spring of 2018 and 2021, and at NCR2 in spring 2024, and the flathead gudgeon at NCR1 in 2025, also indicates that the creek is providing habitat for at least two native species of fish.

5.2 WATER QUALITY AND HYDROLOGY

Water quality in Wangcol Creek is influenced by various types of anthropogenic disturbance. This is evident in several indicators (e.g., EC and concentrations of several metals) being outside of default guidelines for the protection of aquatic life. Aurecon (2014) attributed these impacts to previous and current coal mining and power generation activities, among others. Groundwater from the Lamberts North area flows eastward towards Wangcol Creek (Aurecon 2014). Groundwater from the MPAR area may also flow eastward through Lamberts North area and into Wangcol Creek and potentially northeast towards Wangcol Creek. This pattern of groundwater flow prevented the identification of suitable water quality tracers that could be used to identify potential leachates from the ash deposited on Lamberts North site and discriminate them from those associated with MPAR (Aurecon 2014).

Concentrations of heavy metals and indicators of water quality recorded following MPAR ash placement indicated concentrations of several metals (including barium, nickel and zinc) exceeded guidelines. However, Aurecon (2014) noted that exceedances could not be attributed to Lamberts North due to the confounding influence of groundwater flow from historic mine workings and MPAR. It was also noted that elevated ECs and concentrations of metals observed in Wangcol Creek correlate with preceding periods of low rainfall and flow. Relatively high ECs and concentrations of nickel at WX22, compared with those at LMP01 and NC01, were attributed to inflows from MPPS. Elevated concentrations of zinc at WX22 were

most likely due to local mine water seepage during dry weather. SKM (2010) noted that there is sufficient data from the on-going monitoring and modelling studies undertaken as part of previous and current studies to suggest that the main contributor to impaired water in Wangcol Creek is historic coal mining activities rather than MPAR or the operation of MPPS. The findings of the review of water quality data collected before and after ash placement on Lamberts North site that was done by Aurecon (2014) suggested a complex interaction among the various water quality impacts in Wangcol Creek (Aurecon 2014), which would also be affected by local rainfall patterns and water flow in the creek.

While Lamberts North and MPAR may also be influencing water quality in Wangcol Creek, it has not been possible to discriminate potential changes in water quality associated with Lamberts North from confounding effects of other pre-existing influences (e.g., groundwater seepage from MPAR). The duration and magnitude of elevated measures of some water quality indicators in Wangcol Creek appear to be influenced by flow, which in turn is influenced by patterns in local rainfall (no major flow-controlling impoundments are present on Wangcol Creek).

During periods of low rainfall and flow, water in Wangcol Creek likely consists of a series of disconnected pools where evaporation results in increased EC and concentrations of metals (Aurecon 2014). Periods of high rainfall and flow will have a diluting effect, thereby reducing the EC and the concentrations of metals. This process likely explains the variation in measures of water quality observed in Wangcol Creek and the elevations in EC and concentrations of metals observed following low rainfall. Differences in the location, duration and magnitude of water quality impairment in Wangcol Creek will depend on a complex set of interactions among anthropogenic influences (e.g., historic and current coal mining activities, power generation and historic land clearing, etc.) and local rainfall, discharge and hydrology.

While the relative influence of impacts on water quality from multiple sources in Wangcol Creek remains unclear, the variation among sites and the changes that have been observed during the EMP would be expected to influence macroinvertebrates (and other aquatic flora and fauna) in the creek. This may have explained the apparent change in biotic indices and structure of the macroinvertebrate assemblage sampled previously at NCR2 in autumn 2013 following the commencement of construction on Lamberts North site (Cardno Ecology Lab 2015). In any case, elevations in EC at this time were attributed to rainfall and flow patterns in the creek, rather than any impacts due to Lamberts North (Aurecon 2014) . The depauperate macroinvertebrate assemblage found in Wangcol Creek previously by Battaglia et al. (2005) was attributed to reduced pH (measured at pH 5.1 in Wangcol Creek compared with pH 6.5 to 6.7 in reference creeks), high concentrations of metals, or a combination of these, associated with AMD. pH data collected by EnergyAustralia suggest that, while somewhat variable, pH in Wangcol Creek is generally within DTVs for the protection of aquatic life.

Measures of water quality recorded by Cardno in spring 2025 were generally comparable to those measured previously as part of the EMP by Stantec and others (GHD 2014b to e). Although the EC recorded in Wangcol Creek during the EMP was often above the upper DTV (350 µS/cm), this does not necessarily mean that this poses a threat to aquatic life. Notably, elevations in EC have occurred at both the Impact and Controls sites, and therefore are not indicative of a Lamberts North related impact. The EC recorded at NCR2 by Stantec in spring 2025 was also only marginally above the upper DTV. The elevated EC noted in 2023 and 2024 appeared to be localised to WX22 and coincided with lower rainfall



and discharge (Stantec 2025). The relatively lower EC recorded in Wangcol Creek in December 2016 was likely a result of a diluting effect of recent rainfall and higher flows, whereas the elevated EC at WX22 in autumn 2018 and autumn 2020 appeared to be associated with low rainfall.

A review of the sensitivity of Australian freshwater biota to salinity undertaken by Hart et al. (1991) indicates that adverse effects on freshwater macroinvertebrates are likely to become apparent when salinity rises to around 1,000 mg/L (approximately 1,562 µS/cm). Aquatic macrophytes and riparian plants are slightly more tolerant, being sensitive to salinities from 1,000 mg/L to 2,000 mg/L (1,562 µS/cm to 3,134 µS/cm) and above 2,000 mg/L (> 3,134 µS/cm), respectively. Adult fish are tolerant of salinities up to 10,000 mg/L (15,620 µS/cm). A subsequent review of the effects of increasing salinity on freshwater ecosystems in Australia undertaken by Nielsen et al. (2003) indicated the following:

- Majority of algae do not tolerate salinities >10,000 mg/L (15,620 µS/cm).
- Diatoms decrease in abundance and richness as salinity increases.
- Freshwater plants tolerate salinities up to 4,000 mg/L (6,250 µS/cm), but adverse effects on growth and development of roots and leaves become apparent above 1,000 mg/L (1,562 µS/cm).
- Macroinvertebrate fauna of rivers appear to be tolerant and resilient to increasing salinity.
- Structurally simple macroinvertebrates such as soft-bodied hydra, insect larvae and molluscs are more sensitive to increased salinity.
- Salinity tolerance testing of 59 macroinvertebrate taxa indicated tolerance ranged from 5,000 to 50,000 mg/L (7,810 to 78,100 µS/cm), with baetid mayflies and macro-crustaceans being the least and most tolerant, respectively.
- A majority of native and introduced fish appear to be tolerant of salinities more than 3,000 mg/L (4,686 µS/cm).

These findings would suggest that for most of the time during the EMP the ECs measured in Wangcol Creek (i.e., approximately 100 to 2,000 µS/cm), while not ideal, should not have substantial detrimental effects on most macroinvertebrates. Baetid mayflies, which were found to be particularly sensitive to EC, were found in the AUSRIVAS samples collected from Wangcol Creek at NCR2 in May 2020, following recent elevated EC of 3,040 µS/cm in January 2020 a few tens of metres downstream at WX22 (Cardno 2020). Baetids were also found at each site sampled in Spring 2024 and 2025.

Long term water quality data indicated that EC and concentrations of boron and nickel were elevated at WX22, just downstream NCR2, through 2023 to 2025. There was also a short-term elevation in copper at WX22 in June 2024. Elevated concentrations of some metals were also detected at WX22 adjacent to Lamberts North in early 2018 and early 2020. Previously, elevations in the concentrations of some metals were detected around March 2015, though by the time of the 2015 survey concentrations of these were no longer elevated (Cardno 2017). There was also a short-term elevation in aluminium at LMP01 on 2 December 2024 (10 days prior to the December 2024 aquatic ecology survey) that did not persist into early 2025. While EC and concentrations of metals may be elevated, no clear association between water quality and macroinvertebrate data was found during previous surveys ((Cardno Ecology Lab 2015; Cardno 2016, 2017, 2018, 2019, 2020, 2022; Stantec 2023, 2024, 2025)), nor during the current study (**Section 5.3**). The previous finding of a reduction in the number of EPT taxa at NCR2 between autumn

2018 and autumn 2020 could, however, be related to observed changes in water quality in early 2020 (Cardno 2020 and **Section 5.2**).

It is unlikely that any potential impact on water quality due to Lamberts North or MPAR could be completely isolated from background impacts associated with historic and current coal mining, power generation and historic land clearing activities. A complex interaction between the specific characteristics of each impact (in terms of type and magnitude of impact on water quality), local rainfall, flow and hydrology and water quality in Wangcol Creek would make it almost impossible to definitively attribute any change in water quality, and thus any effect on macroinvertebrates, to Lamberts North. Nevertheless, the collection and interpretation of water quality data during monitoring of aquatic ecology should help in identifying the cause of any changes detected in macroinvertebrate data that could be indicative of an impact. This information would help target any future impact minimisation and remediation efforts.

5.3 MACROINVERTEBRATES

5.3.1 General Findings

The general findings of the current study support those of previous investigations. The macroinvertebrate assemblage supported by Wangcol Creek appears to experience some degree of environmental stress. This is evident in OE50 Taxa Scores and AUSRIVAS Bands generally indicative of macroinvertebrate assemblages that are less diverse than predicted by the AUSRIVAS model, and thus also indicative of relatively poor aquatic habitat and / or water quality. Low individual taxon SIGNAL2 grades and SIGNAL2 indices are also indicative of severe to moderate pollution. Wangcol Creek is situated in a heavily disturbed and modified catchment. It has experienced substantial environmental stress due to historic and current coal mining activities, power generation and land clearing practices, and continues to do so. Poor water quality (primarily elevated EC and concentrations of heavy metals) due to discharged process water, groundwater flow from historic mine workings, increased sedimentation due to run-off from nearby roads and other impermeable surfaces, and the removal of native vegetation, are likely the major contributing factors to the generally depauperate macroinvertebrate assemblages supported by the creek.

Despite this, some pollution sensitive taxa were also identified. This suggests that while the macroinvertebrate assemblage does experience some degree of environmental stress due to poor habitat and water quality, conditions are not as severe as may be expected considering the sometimes very poor water quality of Wangcol Creek (with several indicators often measured outside of guidelines for the protection of aquatic life) and the degree of historic habitat modification it has experienced. The aquatic ecology of Wangcol Creek also does not appear to be particularly poor in a regional context. AUSRIVAS data collected from Wangcol Creek were comparable to those collected from A16 on the Coxs River, which has been subjected to, and continues to experience similar disturbances (i.e., impacts on water quality and the condition of riparian vegetation) to those in Wangcol Creek. These results were also comparable to those of the ongoing Coxs River Biological Monitoring Program, where the AUSRIVAS Bands at sites on the Coxs River downstream of Wangcol Creek during 2011 to 2022 ranged from Band C to Band B, with most sites on most occasions assigned B (Cardno 2021, 2022).

The presence of Leptophlebiidae in edge samples collected from Wangcol Creek, including in each sample collected from NCR2 in autumn 2020 (Cardno 2020), in one of the three samples from NCR2 in spring 2020 and spring 2023 (Cardno 2020; Stantec 2024), from all three samples from NCR2 in 2021 (Cardno 2022) and 2022 (Stantec 2023), and in two of the three samples from NCR2 in 2024 (Stantec 2025), also suggests that the effect of poor water quality on macroinvertebrate fauna in the creek is somewhat limited. Although Leptophlebiidae were not captured at NCR2 in the current study, they were also not captured from the EMP Control site NCR1. Previously, in the Georges River, fewer leptophlebiids have been associated with elevated ECs attributed to mine water discharge (Cardno Ecology Lab 2010a and references therein). This study, and the findings of an Australian Coal Industry Research Program (ACARP) funded study into the effects of saline water discharge on aquatic biota in the Southern and Hunter Coalfields of NSW (Cardno Ecology Lab 2010b), also suggested that elevated EC can influence the abundance of aquatic macroinvertebrates.

While low pH was suggested as a possible cause of depauperate macroinvertebrate assemblages in Wangcol Creek in an earlier study done by Battaglia *et al*. (2005), pH has generally found to have more recently been greater than this and largely within DTVs throughout the EMP. The findings here are similar to those of Soucek *et al*. (2000), where the abundance and diversity of macroinvertebrates was found to be reduced in streams affected by acid mine discharge, irrespective of pH, suggesting other factors such as metal toxicity were more likely responsible.

Any inferences regarding the role of water quality in influencing macroinvertebrates in Wangcol Creek must be made with caution as several other measures of water quality not considered here, such as concentrations of nutrients, or a combination of these, may also be having an influence. It is also likely that assemblages sampled through time on Wangcol Creek (and any other watercourse) are not independent, potentially confounding any associated inferences. It is also possible that the macroinvertebrate fauna present in Wangcol Creek have, over time, become tolerant to impaired water quality and that any short-term elevations in otherwise already elevated measures may have a limited observable effect.

5.3.2 EMP - Changes in Macroinvertebrates

PERMANOVA tests did not indicate any Lamberts North-related changes to macroinvertebrate assemblages in spring 2025. Likewise, there was no evidence of any trends in data collected in spring that could be indicative of an impact having occurred or developing. This is consistent with the findings of previous investigations in spring (Cardno Ecology Lab 2015; Cardno 2016, 2017, 2019, 2022; Stantec 2023, 2024, 2025).

As was the case in spring 2020 to spring 2024 (Cardno 2020, 2022; Stantec 2023, 2024, 2025), in the current spring 2025 study there was no evidence of a repeat of the reduction in SIGNAL2 Score observed previously in autumn 2020 (Cardno 2020). Overall, data collected over the course of the EMP does not suggest any Project-related impact on macroinvertebrates in Wangcol Creek has occurred. There was also no indication that the apparent elevation in concentrations of boron, nickel and copper at WX22 or the short-term elevation in aluminium at LMP01 (albeit LMP01 is located upstream of all monitoring sites) during 2024 / 2025 has impacted upon indicators of aquatic quality monitored as part of the EMP. The low

OE50 Taxa Score at Control sites NCR1 and NCR3 noted in spring 2020 (also the lowest recorded during the EMP (Cardno 2020)), was not repeated at these sites in subsequent surveys including the current study in spring 2025.

Previously, the only other evidence of an impact occurring in data collected in spring and autumn was the apparent reduction in the total number of taxa and the number of EPT taxa, a lower OE50 Taxa Score and a change in the structure of the macroinvertebrate assemblage observed at NCR2 in autumn 2013 (Cardno Ecology Lab (2015)). However, these observations could not be supported by statistical tests and, in any case, there was evidence of a recovery following that survey. Notably, such changes were not evident in the current study. Although a statistically significant interactive effect of Site and Survey was detected in the spring 2021 and spring 2022 multivariate assemblage data analysed previously (Cardno 2022, Stantec 2023), examination of pairwise tests provided no evidence to suggest this was related to Lamberts North. In isolation, significant differences between pairs of surveys at control sites, and between control sites during individual surveys, do not provide conclusive evidence of an impact.

5.3.3 SHMP - Differences in Macroinvertebrates

PERMANOVA did not detect any difference in the selected indicators between the Impact (downstream of MPAR) and Control (upstream / not affected by MPAR) sites relevant to the SHMP. Thus, there is no suggestion that the capping works have influenced stream health, nor might any be expected given the relatively short period of time between commencement of capping works in October 2025 and the current survey in December 2025.

The absence of data from NCR4 and NCR5 before capping works, and indeed from prior to commencement of ash placement at MPAR in the 1990s, hinders the identification of potential effects on stream health associated with the works. The lack of significant differences between Treatments in spring 2025 does suggest, at least, that there is currently no acute, localised impact of MPAR on stream health in the adjacent section of Wangcol Creek that could be isolated from any MPPS and / or general catchment-scale impacts occurring in the creek.

It is also possible that any effect of capping works (and Lamberts North) may be somewhat masked by broader-scale impacts associated with licenced MPPS discharges from LDP12, an effect of groundwater seepage from MPAR on Wangcol Creek, and general catchment-scale impacts occurring in the creek. It is possible that any longer-term improvement of stream health associated with capping works will become evident once data from future surveys are available.

6.0 CONCLUSION AND RECOMMENDATIONS

There was no evidence from the spring 2025 survey to suggest a change in macroinvertebrate indicators has occurred at NCR2 that could be associated with Lamberts North. Furthermore, the condition of aquatic habitat and biota at NCR2 did not differ substantially from the habitat upstream of Lamberts North. There was also no evidence to indicate that the reduction in SIGNAL2 Score that occurred at NCR2 in autumn 2020 persisted to or was repeated in subsequent surveys including the current, spring 2025 study.

There was no evidence that capping works associated with Mod. 9 were associated with any change to stream health in Wangcol Creek. It is possible that any longer-term improvement of stream health associated with capping works will become evident once data from future surveys are available.

The complex interactions that exist between the various types of existing anthropogenic disturbances in Wangcol Creek (e.g., historic and current coal mining activities, power generation and historic land clearing etc.), along with local rainfall, discharge and hydrology, make any associated changes in water quality and / or macroinvertebrates difficult to distinguish from changes attributable to Lamberts North and capping works at MPAR. Nevertheless, the EMP and SHMP add value to the wider monitoring program, and it is expected that any large-magnitude and / or cumulative impacts on aquatic biota would be detected, allowing appropriate management actions to be implemented.

The following recommendations will help to ensure the robustness of the EMP and SHMP in the detection of potential changes in aquatic ecology attributable to Lamberts North and MPAR capping works:

1. Based on Condition B7 of Lamberts North Approval, ongoing monitoring should continue throughout the life of the project (including operation), and for at least two (2) sampling periods following ash placement. Thus, it is recommended that sampling continue with the next event to be undertaken in spring 2026.
2. Sampling should continue at the pre-existing, longer-term monitoring sites, along with the additional Control sites established on Wangcol Creek in spring 2025 (NCR4 and NCR5) in relation to the SHMP. While no baseline data are available from these sites, data collected here during future surveys would allow an assessment of potential effects of the capping works on stream health.
3. Continue collecting three replicate AUSRIVAS samples from each site during all future surveys. This will provide a measure of the variation present at each site, improving the ability to detect any future impact(s) by enabling the use of appropriate statistical analysis.

At this stage no Lamberts North or MPAR capping-works-specific mitigation, impact minimisation or ameliorative actions are recommended.

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APPENDICES

Wangcol Creek EMP 2012-2024

Appendix A SITE GPS COORDINATES

Site	Latitude	Longitude
NCR1	-33.35061	150.04753
NCR2	-33.35822	150.05704
NCR3	-33.35205	150.04852
NCR4	-33.35068	150.04184
NCR5	-33.35113	150.04060
A16	-33.38001	150.07990

Datum: WGS 84, Zone 56H

Appendix B REFERENCE CONDITION SELECTION CRITERIA

No.	Reference Condition Selection Criteria Category	Comment
1	Influence of intensive agriculture upstream	Intensive agriculture is that which involves irrigation, widespread soil disturbance, use of agrochemicals and pine plantations. Dry-land grazing does not fall into this category.
2	Influence of major extractive industry (current or historical) upstream	This includes mines, quarries and sand/gravel extraction.
3	Influence of major urban area upstream	This will be relative to population size, river size and distance between the site and the impact.
4	Influence of significant point-source wastewater discharge upstream	Exceptions can be made for small discharges into large rivers.
5	Influence of dam or major weir	Sites within the ponded area of impoundments also fail.
6	Influence of alteration to seasonal flow regime	This may be due to abstraction or regulation further upstream than the coverage by Criterion 5. Includes either an increase or decrease in seasonal flow.
7	Influence of alteration to riparian zone	Riparian vegetation should be intact and dominated by native species.
8	Influence of erosion and damage by stock on riparian zone and banks	Stock damage to the stream bed may be included in this category.
9	Influence of major geomorphological change on stream channel	Geomorphological change includes bank slumping, shallowing, braiding and unnatural aggradation or degradation.
10	Influence of alteration to in-stream conditions and habitats	This may be due to excessive algal and macrophyte growth, by sedimentation and siltation, by reduction in habitat diversity by drowning or drying out of habitats (e.g., riffles) or by direct access of stock into the river.

Appendix C RIVER, CHANNEL AND ENVIRONMENTAL (RCE) CATAGORIES

Descriptor and category	Score
1. Land use pattern beyond the immediate riparian zone	
Undisturbed native vegetation	4
Mixed native vegetation and pasture/exotics	3
Mainly pasture, crops or pine plantation	2
Urban	1
2. Width of riparian strip of woody vegetation	
More than 30 m	4
Between 5 and 30 m	3
Less than 5 m	2
No woody vegetation	1
3. Completeness of riparian strip of woody vegetation	
Riparian strip without breaks in vegetation	4
Breaks at intervals of more than 50 m	3
Breaks at intervals of 10 - 50 m	2
Breaks at intervals of less than 10 m	1
4. Vegetation of riparian zone within 10 m of channel	
Native tree and shrub species	4
Mixed native and exotic trees and shrubs	3
Exotic trees and shrubs	2
Exotic grasses / weeds only	1
5. Stream bank structure	
Banks fully stabilised by trees, shrubs etc.	4
Banks firm but held mainly by grass and herbs	3
Banks loose, partly held by sparse grass etc.	2
Banks unstable, mainly loose sand or soil	1
6. Bank undercutting	
None, or restricted by tree roots	4
Only on curves and at constrictions	3
Frequent along all parts of stream	2
Severe, bank collapses common	1
7. Channel form	
Deep: width / depth ratio < 7:1	4
Medium: width / depth ratio 8:1 to 15:1	3
Shallow: width / depth ratio > 15:1	2
Artificial: concrete or excavated channel	1

Descriptor and category	Score
8. Riffle / pool sequence	
Frequent alternation of riffles and pools	4
Long pools with infrequent short riffles	3
Natural channel without riffle / pool sequence	2
Artificial channel; no riffle / pool sequence	1
9. Retention devices in stream	
Many large boulders and/or debris dams	4
Rocks / logs present; limited damming effect	3
Rocks / logs present, but unstable, no damming	2
Stream with few or no rocks / logs	1
10. Channel sediment accumulations	
Little or no accumulation of loose sediments	4
Some gravel bars but little sand or silt	3
Bars of sand and silt common	2
Braiding by loose sediment	1
11. Stream bottom	
Mainly clean stones with obvious interstices	4
Mainly stones with some cover of algae / silt	3
Bottom heavily silted but stable	2
Bottom mainly loose and mobile sediment	1
12. Stream detritus	
Mainly un-silted wood, bark, leaves	4
Some wood, leaves etc. with much fine detritus	3
Mainly fine detritus mixed with sediment	2
Little or no organic detritus	1
13. Aquatic vegetation	
Little or no macrophyte or algal growth	4
Substantial algal growth; few macrophytes	3
Substantial macrophyte growth; little algae	2
Substantial macrophyte and algal growth	1

Appendix D RESULTS OF RCSC AND RCE ASSESSMENTS

River, Channel and Environmental (RCE) Category in spring 2021)						
Site:	NCR1	NCR2	NCR3	A16	NCR4	NCR5
Land use pattern beyond the immediate riparian zone	3	2	3	2	3	3
Width of riparian strip of woody vegetation	3	2	3	1	3	2
Completeness of riparian strip of woody vegetation	2	1	2	1	1	1
Vegetation of riparian zone within 10 m of channel	3	2	3	1	3	3
Stream bank structure	3	1	3	2	2	2
Bank undercutting	4	1	4	3	2	2
Channel form	3	3	3	4	3	3
Riffle / pool sequence	2	2	2	4	2	2
Retention devices in stream	3	1	3	2	1	1
Channel sediment accumulations	2	2	2	4	2	3
Stream bottom	3	3	3	4	2	2
Stream detritus	3	2	3	2	2	2
Aquatic vegetation	2	3	2	3	2	2
Total	36	25	36	33	28	28
Reference Condition Selection Criteria Category						
Site:	NCR1	NCR2	NCR3	A16	NCR4	NCR5
Influence of intensive agriculture	5	5	5	5	5	5
Influence of major extractive industry (current or historical) upstream	1	1	1	1	1	1
Influence of major urban area upstream	3	3	3	5	3	3
Influence of significant point-source wastewater discharge upstream	2	2	2	2	2	2
Influence of dam or major weir	5	5	5	5	5	5
Influence of alteration to seasonal flow regime	3	3	3	3	3	3
Influence of alteration to riparian zone	1	1	1	1	1	1
Influence of erosion and damage by stock on riparian zone and banks	5	5	5	3	5	5
Influence of major geomorphological change on stream channel	3	1	3	2	2	2
Influence of alteration to in-stream conditions and habitats	3	3	3	3	3	3

1 = Very major impact, 2 = Major impact, 3 = Moderate impact, 4 = Minor impact, 5 = Indiscernible impact

Appendix E WATER QUALITY DATA 2025

Measure	DTV	NCR1		NCR2		NCR3		A16	
		Mean	SE	Mean	SE	Mean	SE	Mean	SE
Temperature	n/a	18.3	0.0	23.5	0.0	17.2	0.0	24.2	0.0
Conductivity	30–350	361	0	207	0	372	0	1,604	0
pH	6.5–8.0	6.8	0.0	7.4	0.0	6.9	0.0	7.3	0.0
ORP (mV)	n/a	161	0.0	132	0.0	125	0.0	120	0.0
DO (% Sat)	90–110	45.0	0.0	96.0	0.0	55.0	0.0	95.0	0.0
Turbidity (NTU)	2–25	35.0	0.0	1.8	0.0	38.5	0.0	0.3	0.0

Measure	DTV	NCR4		NCR5	
		Mean	SE	Mean	SE
Temperature	n/a	19.4	0.0	18.6	0.0
Conductivity	30–350	307	0	300	0
pH	6.5–8.0	7.3	0.0	7.5	0.0
ORP (mV)	n/a	129	0.0	141	0.0
DO (% Sat)	90–110	71.4	0.0	91.1	0.0
Turbidity (NTU)	2–25	60.5	0.0	48.8	0.0

DTV: Default Trigger Values for slightly disturbed upland rivers in southeast Australia (ANZECC/ARMCANZ 2000). Grey shading indicates measure outside of DTVs

Appendix F RAW AUSRIVAS DATA SPRING 2025

Site	NCR1	NCR1	NCR1	NCR2	NCR2	NCR2	NCR3	NCR3	NCR3	NCR4	NCR4	NCR4	NCR5	NCR5	NCR5	A16	A16	A16
Rep	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Taxon																		
Nematoda													1					
Corbiculidae / Sphaeriidae			1										2	1				
Lymnaeidae		1				2	3							2	1	1		
Physidae	1					2	1	1	1				1					1
Oligochaeta			2				2		1	10			1	2	3		2	1
Cladocera	2	2	1				2	10	10	2	6	2	1		1			
Copepoda	8	10	10	2	1			3	7	10	10	10	4	10	2	7	1	4
Ostracoda	3	9	10	1			10	10	10		8	10	5		8	3	1	1
Atyidae	1				3		1	3		4	3	7	7			1	1	3
Palaemonidae										3		2			1	2		2
Parastacidae				1			1				1							
Araneae				1					1									
Hydracarina		2	1	1				1	3	6		2				2	4	2
Entomobryidae													2		3		1	
Caenidae				1		2	1		1	2			4	2	3	10	10	10
Baetidae		1	2	6		3		1		2	1	2			5		1	4
Leptophlebiidae										2	1					3	4	10
Coenagrionidae							3											9
Isostictidae				4				1										
Megapodagrionidae				4	2	1												
Synlestidae				2									1					
Gomphidae				2												2		2
Aeshnidae				7	8	3	1					3	1				1	2
Telephlebiidae / Aeshnidae	3			2	1		1	2					1					3
Hemicorduliidae / Corduliidae	1		2	10	7	10	3		3							1		3
Libellulidae				1														
Synthemistidae / Corduliidae		1				4												
Gripopterygiidae			1			1										1	2	
Mesoveliidae	1																	
Veliidae	1	2	3		10				2	5	1	1			1			
Corixidae	6	10	10	1	9	4	10	10	10	10	9	8	10					4
Notonectidae		3		4	1		3	4	1	4	4	7	10	2	3			
Sialidae				1														
Dytiscidae	1			4	2	3			2	2	2	8	5	1		1		5
Hydrochidae				1	1	1	2				1				2	1		1
Hydrophilidae	2	2	2	3	5	5	3	7			1				5	1		
Scirtidae / Helodidae							2											
Elmidae					1													
Culicidae					5									1	2			
Chironomidae / Chironominae	5	5	8	10		2	2	5	6	8	6	9	1	5	3	5	4	10
Chironomidae / Orthocladiinae			1	10					4	3							1	
Chironomidae / Tanypodinae	5	3	5	10		5	1	5	2	3	8	10	10		2	6	3	6
Ceratopogonidae	7	4	3	10	2	10	4	1	3	1	3	1	4	1				
Simuliidae																10	3	1
Psychodidae			1						3									
Tipulidae			2			4			1									
Empididae																	1	
Hydroptilidae	4		1			1		1							1	5	10	7
Philopotamidae				1														
Hydropsychidae						1										10	1	2
Ecnomidae						1						4						
Conoesucidae															1			
Leptoceridae		3		8	8	1	5	5	2	1	1	2				8	9	10
Pyralidae																1		5

Note: a maximum of 10 individuals were counted per sample.

Appendix G AUSRIVAS BIOTIC INDICES 2012 TO 2025

Date	AUSRIVAS Season	No. of Taxa	No. of EPT Taxa	OE50 Taxa Score	AUSRIVAS Band	SIGNAL2 Score
NCR1						
8 Nov 2012	Spring 2012 Rep 1	24	2	0.75	B	3.3
12 Dec 2013	Spring 2013 Rep 1	14	2	0.48	C	3.5
12 Dec 2013	Spring 2013 Rep 2	25	4	0.76	B	3.9
19 Nov 2014	Spring 2014 Rep 1	25	3	0.95	A	3.9
14 Dec 2015	Spring 2015 Rep 1	22	3	0.57	B	3.9
14 Dec 2015	Spring 2015 Rep 2	18	1	0.57	B	3.2
1-2 Dec 2016	Spring 2016 Rep 1	22	4	0.85	A	3.6
1-2 Dec 2016	Spring 2016 Rep 2	21	3	0.72	B	4.2
11 Dec 2018	Spring 2018 Rep 1	20	4	0.75	B	3.9
11 Dec 2018	Spring 2018 Rep 2	23	4	0.63	B	3.9
11 Dec 2018	Spring 2018 Rep 3	14	1	0.47	C	3.3
18 Nov 2020	Spring 2020 Rep 1	17	2	0.47	C	3.1
18 Nov 2020	Spring 2020 Rep 2	18	4	0.36	C	3.2
18 Nov 2020	Spring 2020 Rep 3	13	2	0.38	C	3.1
16 Nov 2021	Spring 2021 Rep 1	27	7	0.85	A	3.9
16 Nov 2021	Spring 2021 Rep 2	21	7	0.66	B	4.1
16 Nov 2021	Spring 2021 Rep 3	17	4	0.38	C	4.0
7 Dec 2022	Spring 2022 Rep 1	14	4	0.64	B	4.1
7 Dec 2022	Spring 2022 Rep 2	10	3	0.64	B	3.9
7 Dec 2022	Spring 2022 Rep 3	10	2	0.73	B	3.6
5 Dec 2023	Spring 2023 Rep 1	18	4	0.69	B	3.8
5 Dec 2023	Spring 2023 Rep 2	13	4	0.60	B	4.6
5 Dec 2023	Spring 2023 Rep 3	17	4	0.69	B	4.1
12 Dec 2024	Spring 2024 Rep 1	27	7	0.96	A	3.8
12 Dec 2024	Spring 2024 Rep 2	18	5	0.70	B	3.9
12 Dec 2024	Spring 2024 Rep 3	17	2	0.70	B	3.4
15-16 Dec 2025	Spring 2025 Rep 1	16	1	0.43	C	3.5
15-16 Dec 2025	Spring 2025 Rep 2	15	2	0.60	B	3.3
15-16 Dec 2025	Spring 2025 Rep 3	19	3	0.69	B	4.2
NCR2						
8 Nov 2012	Spring 2012 Rep 1	29	6	1.04	A	4.0
12 Dec 2013	Spring 2013 Rep 1	20	4	0.57	B	3.7
12 Dec 2013	Spring 2013 Rep 2	23	5	0.94	A	4.0
19 Nov 2014	Spring 2014 Rep 1	21	2	0.86	A	3.9
14 Dec 2015	Spring 2015 Rep 1	17	2	0.43	C	3.4

Date	AUSRIVAS Season	No. of Taxa	No. of EPT Taxa	OE50 Taxa Score	AUSRIVAS Band	SIGNAL2 Score
14 Dec 2015	Spring 2015 Rep 2	19	3	0.77	B	4.3
1-2 Dec 2016	Spring 2016 Rep 1	14	6	0.52	B	4.9
1-2 Dec 2016	Spring 2016 Rep 2	18	2	0.43	C	3.5
11 Dec 2018	Spring 2018 Rep 1	18	5	0.69	B	3.9
11 Dec 2018	Spring 2018 Rep 2	22	5	0.78	B	4.1
11 Dec 2018	Spring 2018 Rep 3	15	3	0.78	B	4.0
18 Nov 2020	Spring 2020 Rep 1	16	3	0.52	B	3.5
18 Nov 2020	Spring 2020 Rep 2	13	1	0.52	B	3.7
18 Nov 2020	Spring 2020 Rep 3	19	4	0.77	B	4.4
16 Nov 2021	Spring 2021 Rep 1	17	6	0.66	B	4.4
16 Nov 2021	Spring 2021 Rep 2	18	7	0.81	B	4.5
16 Nov 2021	Spring 2021 Rep 3	15	4	0.66	B	4.3
7 Dec 2022	Spring 2022 Rep 1	13	3	0.76	B	5.0
7 Dec 2022	Spring 2022 Rep 2	12	3	0.74	B	4.5
7 Dec 2022	Spring 2022 Rep 3	16	4	0.63	B	4.5
5 Dec 2023	Spring 2023 Rep 1	18	2	0.67	B	3.6
5 Dec 2023	Spring 2023 Rep 2	18	3	0.70	B	3.9
5 Dec 2023	Spring 2023 Rep 3	14	1	0.27	C	3.6
12 Dec 2024	Spring 2024 Rep 1	10	3	0.48	C	4.5
12 Dec 2024	Spring 2024 Rep 2	16	3	0.48	C	4.4
12 Dec 2024	Spring 2024 Rep 3	24	4	0.96	A	4.0
15-16 Dec 2025	Spring 2025 Rep 1	27	4	0.66	B	4.4
15-16 Dec 2025	Spring 2025 Rep 1	16	1	0.27	C	3.9
15-16 Dec 2025	Spring 2025 Rep 1	21	7	0.69	B	4.0
NCR3						
14 Dec 2015	Spring 2015 Rep 1	25	3	0.85	A	3.2
14 Dec 2015	Spring 2015 Rep 2	19	1	0.66	B	2.9
1-2 Dec 2016	Spring 2016 Rep 1	20	0	0.47	C	4.2
1-2 Dec 2016	Spring 2016 Rep 2	13	3	0.57	C	4.1
11 Dec 2018	Spring 2018 Rep 1	12	1	0.38	C	3.8
11 Dec 2018	Spring 2018 Rep 2	10	0	0.38	C	3.2
11 Dec 2018	Spring 2018 Rep 3	20	3	0.85	A	3.9
18 Nov 2020	Spring 2020 Rep 1	8	1	0.28	C	4.5
18 Nov 2020	Spring 2020 Rep 2	12	2	0.19	D	3.1
18 Nov 2020	Spring 2020 Rep 3	14	1	0.19	D	3.1
16 Nov 2021	Spring 2021 Rep 1	12	1	0.36	C	4.1
16 Nov 2021	Spring 2021 Rep 2	14	3	0.50	C	4.0
16 Nov 2021	Spring 2021 Rep 3	14	3	0.67	B	4.5
7 Dec 2022	Spring 2022 Rep 1	16	3	0.62	B	4.0

Date	AUSRIVAS Season	No. of Taxa	No. of EPT Taxa	OE50 Taxa Score	AUSRIVAS Band	SIGNAL2 Score
7 Dec 2022	Spring 2022 Rep 2	17	2	0.53	B	3.5
7 Dec 2022	Spring 2022 Rep 3	14	4	0.67	B	5.2
5 Dec 2023	Spring 2023 Rep 1	19	6	0.75	B	4.5
5 Dec 2023	Spring 2023 Rep 2	9	1	0.38	C	3.3
5 Dec 2023	Spring 2023 Rep 3	11	1	0.38	C	3.9
12 Dec 2024	Spring 2024 Rep 1	16	1	0.66	B	3.8
12 Dec 2024	Spring 2024 Rep 2	5	0	0.19	D	3.0
12 Dec 2024	Spring 2024 Rep 3	8	0	0.28	C	4.6
15-16 Dec 2025	Spring 2025 Rep 1	21	2	0.54	B	3.5
15-16 Dec 2025	Spring 2025 Rep 1	17	3	0.54	B	3.8
15-16 Dec 2025	Spring 2025 Rep 1	20	2	0.72	B	3.4
A16						
8 Nov 2012	Spring 2012 Rep 1	24	5	0.91	A	3.9
12 Dec 2013	Spring 2013 Rep 1	20	8	0.73	B	5.0
19 Nov 2014	Spring 2014 Rep 1	22	4	0.73	B	4.6
14 Dec 2015	Spring 2015 Rep 1	13	1	0.52	B	3.6
14 Dec 2015	Spring 2015 Rep 2	21	6	0.73	B	4.4
1-2 Dec 2016	Spring 2016 Rep 1	16	5	0.84	A	3.7
1-2 Dec 2016	Spring 2016 Rep 2	23	5	0.63	B	3.9
11 Dec 2018	Spring 2018 Rep 1	19	7	0.64	B	4.4
11 Dec 2018	Spring 2018 Rep 2	7	2	0.36	C	4.7
11 Dec 2018	Spring 2018 Rep 3	11	3	0.36	C	4.1
18 Nov 2020	Spring 2020 Rep 1	17	6	0.50	C	4.6
18 Nov 2020	Spring 2020 Rep 2	16	4	0.53	B	4.5
18 Nov 2020	Spring 2020 Rep 3	14	3	0.53	B	4.1
16 Nov 2021	Spring 2021 Rep 1	10	3	0.36	C	5.2
16 Nov 2021	Spring 2021 Rep 2	19	6	0.82	B	4.5
16 Nov 2021	Spring 2021 Rep 3	18	7	0.82	B	4.6
7 Dec 2022	Spring 2022 Rep 1	14	5	0.55	B	4.3
7 Dec 2022	Spring 2022 Rep 2	14	5	0.73	B	4.9
7 Dec 2022	Spring 2022 Rep 3	18	7	0.64	B	4.7
5 Dec 2023	Spring 2023 Rep 1	24	5	0.68	B	3.7
5 Dec 2023	Spring 2023 Rep 2	21	5	0.76	B	4.0
5 Dec 2023	Spring 2023 Rep 3	16	5	0.34	C	3.8
12 Dec 2024	Spring 2024 Rep 1	14	6	0.59	B	4.8
12 Dec 2024	Spring 2024 Rep 2	21	6	0.76	B	4.5
12 Dec 2024	Spring 2024 Rep 3	16	5	0.68	B	4.1
15-16 Dec 2025	Spring 2025 Rep 1	21	6	0.76	B	4.4
15-16 Dec 2025	Spring 2025 Rep 1	19	7	0.85	A	4.8

Date	AUSRIVAS Season	No. of Taxa	No. of EPT Taxa	OE50 Taxa Score	AUSRIVAS Band	SIGNAL2 Score
15-16 Dec 2025	Spring 2025 Rep 1	25	6	0.84	A	4.3
NCR4						
15-16 Dec 2025	Spring 2025 Rep 1	18	4	0.87	A	3.8
15-16 Dec 2025	Spring 2025 Rep 1	17	3	0.72	B	3.6
15-16 Dec 2025	Spring 2025 Rep 1	17	3	0.64	B	3.6
NCR5						
15-16 Dec 2025	Spring 2025 Rep 1	19	1	0.40	C	3.6
15-16 Dec 2025	Spring 2025 Rep 1	10	1	0.24	C	2.5
15-16 Dec 2025	Spring 2025 Rep 1	18	4	0.48	C	3.1

Appendix H RESULTS OF PERMANOVAS

a) Comparison between NCR1 and NCR2 sampled in spring of 2013, 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025.

Source of Variation	df	SS	MS	Pseudo-F	P
Number of Taxa					
Site	1	13.68	13.68	0.912	0.343
Survey	**10**	**322.04**	**32.20**	**2.146**	**0.043**
Site x Survey	10	142.04	14.20	0.947	0.499
Residual	34	510.17	15.01		
Total	55	982.13			
Number of EPT Taxa					
Site	1	0.23	0.23	0.101	0.757
Survey	**10**	**50.92**	**5.09**	**2.215**	**0.043**
Site x Survey	10	20.63	2.06	0.897	0.550
Residual	34	78.17	2.30		
Total	55	150.00			
SIGNAL2 Score					
Site	**1**	**1.42**	**1.42**	**11.169**	**0.002**
Survey	10	2.61	0.26	2.044	0.055
Site x Survey	10	1.64	0.16	1.284	0.283
Residual	34	4.34	0.13		
Total	55	10.48			
OE50 Taxa Score					
Site	1	0.000003	0.000003	0.000107	0.994
Survey	10	0.278240	0.027824	1.152600	0.356
Site x Survey	10	0.290250	0.029025	1.202400	0.320
Residual	34	0.820750	0.024140		
Total	55	1.389400			
Multivariate Assemblage					
Site	**1**	**5277.20**	**5277.20**	**5.591**	**<0.001**
Survey	**10**	**25035.00**	**2503.50**	**2.653**	**<0.001**
Site x Survey	10	11126.00	1112.60	1.179	0.160
Residual	34	32090.00	943.84		
Total	55	73800.00			

b) Comparison among Impact (NCR2) and Control (NCR1, NCR3 and A16) sites sampled in spring of 2015, 2016, 2018, 2020, 2021, 2022, 2023, 2024 and 2025.

Source of Variation	df	SS	MS	Pseudo-F	P
Number of Taxa					
Treatment	1	1.53	1.53	0.025	0.897
Survey	8	241.21	30.15	1.017	0.468
Site (Treatment)	**2**	**124.02**	**62.01**	**4.085**	**0.019**
Treatment x Survey	8	56.48	7.06	0.238	0.981
Site (Treatment) x Survey	16	474.24	29.64	1.953	0.031
Residual	64	971.50	15.18		
Total	99	1982.40			
Number of EPT Taxa					
Treatment	1	0.23	0.23	0.004	0.956
Survey	8	38.60	4.82	1.779	0.134
Site (Treatment)	**2**	**117.60**	**58.80**	**24.436**	**<0.001**
Treatment x Survey	8	18.03	2.25	0.831	0.597
Site (Treatment) x Survey	16	43.40	2.71	1.127	0.355
Residual	64	154.00	2.41		
Total	99	378.99			
SIGNAL2 Score					
Treatment	1	0.59	0.59	0.242	0.669
Survey	8	4.38	0.55	2.372	0.069
Site (Treatment)	**2**	**4.91**	**2.45**	**14.078**	**<0.001**
Treatment x Survey	8	0.63	0.08	0.343	0.931
Site (Treatment) x Survey	16	3.69	0.23	1.323	0.208
Residual	64	11.16	0.17		
Total	99	26.70			
OE50 Taxa Score					
Treatment	1	0.02	0.02	0.186	0.716
Survey	8	0.31	0.04	1.290	0.327
Site (Treatment)	**2**	**0.25**	**0.12**	**4.521**	**0.016**
Treatment x Survey	8	0.32	0.04	1.320	0.317
Site (Treatment) x Survey	16	0.48	0.03	1.103	0.370
Residual	64	1.76	0.03		
Total	99	3.40			
Multivariate Assemblage					
Treatment	1	5583.30	5583.30	0.476	0.842
Survey	8	27505.00	3438.10	1.808	RED
Site (Treatment)	2	23462.00	11731.00	11.886	RED
Treatment x Survey	8	12916.00	1614.50	0.849	0.754
Site (Treatment) x Survey	**16**	**30425.00**	**1901.50**	**1.927**	**<0.001**
Residual	64	63165.00	986.95		
Total	99	168540.00			

c) Comparison between the SHMP Impact (NCR1, NCR2 and NCR3) and the Control (NCR4, NCR5 and A16) sites sampled in spring of 2025.

Source of Variation	df	SS	MS	Pseudo-F	P
Number of Taxa					
Treatment	1	3.56	3.56	0.157	0.717
Site (Treatment)	4	90.44	22.61	1.858	0.176
Residual	12	146.00	12.17		
Total	17	240.00			
Number of EPT Taxa					
Treatment	1	5.56	5.56	0.610	0.691
Site (Treatment)	**4**	**36.44**	**9.11**	**3.905**	**0.035**
Residual	12	28.00	2.33		
Total	17	70.00			
SIGNAL2 Score					
Treatment	1.000	0.0006	0.0006	0.001	0.977
Site (Treatment)	**4.000**	**3.4808**	**0.8702**	**6.948**	**0.002**
Residual	12.000	1.5031	0.1253		
Total	17.000	4.9845			
OE50 Taxa Score					
Treatment	1	0.02	0.02	0.281	0.486
Site (Treatment)	**4**	**0.34**	**0.09**	**4.524**	**0.021**
Residual	12	0.23	0.02		
Total	17	0.60			
Multivariate Assemblage					
Treatment	1.000	2663.60	2663.60	1.239	0.315
Site (Treatment)	4.000	8602.00	2150.50	2.839	**<0.001**
Residual	12.000	9088.40	757.37		
Total	17.000	20354.00			

Appendix F Lamberts North Ash Placement Project - Water Management Monitoring Report January to June 2026

Water Management and Monitoring Report (Water Quality - January to June 2026)

Lamberts North Ash Placement Project - PA 09_0186

PREPARED FOR
EnergyAustralia NSW Pty Ltd

DATE
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REFERENCE
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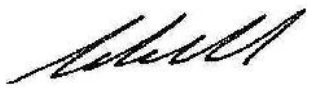
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Water Management and Monitoring Report (Water Quality - January to June 2026)

Lamberts North Ash Placement Project - PA 09_0186

0810778_R02



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ACRONYMS AND ABBREVIATIONS

Acronym	Description
AHD	Australian Height Datum
ALS	ALS Global Pty Ltd
ANZECC	Australia and New Zealand Environment Conservation Council
ANZG	Australia and New Zealand Guidelines
AUSRIVAS	Australian River Assessment System
BCA	Brine conditioned ash
BRWMP	Brine and Residuals Management Plan
CCC	Community Consultative Committee
CSM	Conceptual Site Model
CSP	Coal Settling Pond
DA	Development Approval
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
EC	Electrical conductivity
Ecolab	Ecolab Pty Ltd
EMR	Environmental Monitoring Report
EMP	Ecological Monitoring Program
EnergyAustralia	EnergyAustralia NSW Pty Limited

Acronym	Description
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPL	Environment Protection Licence
ERM	Environmental Resources Management Australia Pty Ltd
FBA	Furnace Bottom Ash
FHP	Final Holding Pond
GCB	Groundwater Collection Basin
Ha	Hectares
HDPE	High-Density Polyethylene
K	Hydraulic Conductivity
km	kilometers
LBMS	Leachate Barrier Management System
LCC	Lithgow City Council
LDP	Licenced Discharge Point
LGA	Local Government Area
LLDPE	Linear Low-Density Polyethylene
LMBS	Leachate Management Barrier System
LMP	Licenced Monitoring Point
LNAR	Lamberts North Ash Repository
LOR	Limit of Reporting
m btoc	metres below top of casing
m AHD	metres Australia Height Datum
MF	Micro Filtration
mg/L	milligrams per litre
ML	megalitre
MPAR	Mt Piper Ash Repository
MPPS	Mt Piper Power Station
MW	Megawatts
Nalco	Nalco / Ecolab Pty Ltd
NATA	National Association of Testing Authorities
NGM	Numerical Groundwater Model
n_{eff}	Effective Porosity
NSW	New South Wales

Acronym	Description
OEMP	Operational Environmental Management Plan
PA	Project Approval
POEO Act	Protection of the Environment Operations Act (NSW) 1997
QA/QC	Quality Assurance and Quality Control
QC	Quality Control
RL	Relative Level
RO	Reverse Osmosis
SPR	Source Pathway Receptor Linkages
SSD	State Significant Development
SWTP	Springvale Water Treatment Project
t	tonnes
TARPs	Trigger Action Response Plans
TDS	Total Dissolved Solids
v	Seepage Velocity
WCA	Water Conditioned Ash
WMP	Water Management Plan
µg/L	micrograms per litre
µS/cm	microSiemens per centimetre

EXECUTIVE SUMMARY

EnergyAustralia NSW Pty Ltd (EnergyAustralia) has undertaken groundwater and surface water monitoring associated with the Mt Piper Ash Repository (MPAR) and Lamberts North Ash Repository (LNAR) in accordance with the requirements of Development Consent DA80/10060, Project Approval PA09_0186, Environment Protection Licence (EPL) 13007, the approved Water Management Plan (WMP), and the Operational Environmental Management Plan (OEMP). Monitoring undertaken during the reporting period of January to June 2026 continues to provide a representative assessment of surface water and groundwater conditions surrounding Mt Piper Power Station.

Monitoring results indicate that leachate generation from the MPAR continues to occur and remains evident in groundwater downgradient of the repository. This outcome is expected given the MPAR historically operated as an unlined ash repository and the movement of dissolved salts and indicator analytes associated with historical brine conditioned ash placement has been extensively characterised through previous investigations and monitoring programs. Elevated concentrations of electrical conductivity, total dissolved solids, sulfate, chloride, boron, manganese and nickel continue to be observed in groundwater surrounding the MPAR and remain generally consistent with the known groundwater plume identified by the Independent Groundwater Investigation and indicated by groundwater modelling.

Importantly, significant mitigation measures have now been implemented to address the source of leachate generation. Installation of the primary mitigation control, being the low permeability cap across the MPAR, has been substantially completed and is expected to significantly reduce rainfall infiltration and future leachate generation from the underlying ash. Additional works focused on batter slope improvement, drainage optimisation, topsoiling and revegetation are scheduled for completion during Q4 2026. While these source control measures are expected to reduce future recharge through the ash mass and ultimately decrease leachate generation, it is recognised that groundwater systems respond gradually and that measurable improvements in groundwater and surface water quality will take time to become evident due to the existing impacted groundwater already present within the surrounding hydrogeological system.

Water quality monitoring within Wangcol Creek continues to exhibit variability similar to that observed in previous years. Electrical conductivity and associated key indicator analytes typically increased during periods of lower rainfall and reduced creek flow and subsequently decreased following rainfall events and periods of higher flow. This pattern is consistent with the established understanding that groundwater affected by historical MPAR leachate contributes to creek water quality, particularly within former mining disturbance areas where groundwater and surface water are hydraulically connected. The lower concentrations observed during parts of the reporting period were attributed to above-average rainfall and increased streamflow, resulting in dilution of groundwater inputs. While variable water quality conditions are expected to continue in the short term, the implementation of the MPAR capping works is expected to progressively reduce leachate generation and contribute to long-term improvements in Wangcol Creek water quality.

The LNAR continues to perform as designed. Unlike the MPAR, the LNAR has been constructed as a lined and capped facility incorporating a Leachate Barrier Management System (LBMS) and associated leachate collection and management infrastructure. Monitoring data collected during the reporting period provides no evidence that operations at the LNAR are adversely

impacting groundwater or surface water resources, including Wangcol Creek. Water quality results near the LNAR remain consistent with the established conceptual site model, which attributes observed impacts primarily to historical MPAR operations rather than the currently operating lined LNAR facility. Monitoring of the LNAR leachate system confirmed that the containment and management systems continue to operate effectively and in accordance with design intent.

Groundwater monitoring adjacent to Brine Waste Ponds A and B continues to identify elevated electrical conductivity and associated indicator analytes within leak detection bores MPGM5/D5 and MPGM5/D6. The persistence of elevated concentrations and increasing trends in some parameters suggests that the integrity of one or both pond liners may be compromised. EnergyAustralia has recognised this issue and has scheduled replacement of the Brine Waste Pond A and B liners during the 2026/27 period. Ongoing monitoring will continue to assess groundwater conditions and confirm the effectiveness of the remedial works once completed.

Independent stream stability and ecological monitoring undertaken within Wangcol Creek identified no evidence of adverse impacts to stream stability or aquatic ecosystem health attributable to the MPAR or LNAR. The assessments concluded that creek conditions remain reflective of historical catchment and mining influences rather than current ash repository operations.

EnergyAustralia complied with the groundwater, surface water and leachate monitoring requirements prescribed by Development Consent DA80/10060, Project Approval PA09_0186, EPL 13007, the approved WMP and the approved OEMP during the reporting period. No water-related incidents or non-compliances were reported.

In summary, the monitoring results confirm that groundwater and surface water impacts associated with historical MPAR operations continue to be evident and are consistent with the long-established understanding of site conditions. Key mitigation measures, including installation of the MPAR impermeable cap, ongoing batter slope and drainage works, replacement of Brine Waste Pond liners, and consideration of additional future mitigation measures, are expected to progressively reduce leachate generation and improve long-term environmental outcomes. The monitoring network continues to provide a representative assessment of groundwater and surface water resources surrounding Mt Piper Power Station and demonstrates that current management controls are effectively identifying and managing environmental risks.

1. INTRODUCTION

EnergyAustralia NSW Pty Ltd (EnergyAustralia) engaged Environmental Resources Management Australia Pty Ltd (ERM) to prepare an Annual Environmental Monitoring Report for ash placement operations at the Mt Piper Power Station (MPPS), located at 350 Boulder Road, Portland, New South Wales (NSW) (the Site). Refer to Figure 1 showing the location of the Site. All figures are presented in Appendix A.

This report should be read in conjunction with the Statement of Limitations (Section 14).

1.1 BACKGROUND

EnergyAustralia owns and operates the MPPS, which is located within the Lithgow Local Government Area (LGA), approximately 110 kilometres (km) west of Sydney and five km east of Portland NSW. The location of the MPPS in a regional context is presented in Figure 1.

The MPPS is authorised by development consent Development Approval (DA) 80/10060 (Mt Piper Consent) granted under the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act) on 1 April 1982. The Mt Piper Consent has been modified on ten occasions, including Modification 9 as approved on 24 June 2025 (Mod 9) and Modification 10 as approved on 11 June 2026 (Mod 10). The Mt Piper Consent as modified authorises the MPPS and ancillary activities, including the Mt Piper Ash Repository (MPAR).

The MPPS was built between 1984 and 1993 and comprises two coal-fired steam turbine generating units. Each unit was originally constructed to generate up to 660 megawatts (MW), and they have since been upgraded to utilise improvements in turbine technology. The generating units now produce up to 700 MW and 730 MW respectively. The ash produced from coal combustion to generate electricity is beneficially reused where market opportunities permit or placed in purpose-built ash placement repositories. The MPPS has two approved and operating ash placement repositories:

- The MPAR, which was originally approved under development consent 230/89 granted by Lithgow City Council (LCC) on 21 March 1980. DA 230/89 was subsequently incorporated, via subsequent modifications, into the Mt Piper Consent. Most of the ash produced at MPPS to date has been placed within the MPAR; and
- The adjoining Lamberts North Ash Repository (LNAR), which was separately approved in February 2012 under Project Approval (PA) 09_0186 (LNAR Project Approval), is located immediately adjacent to the MPAR. In September 2021, PA 09_0186 was modified to authorise amendments to the design and operation of the LNAR (LNAR MOD 1). In November 2024, PA 09_0186 was modified a second time to authorise the extension of operational hours at the LNAR (LNAR MOD 2).

The MPAR and LNAR are collectively referred to as the 'Ash Repositories'. Figure 2 presents the location of the Ash Repositories, along with other relevant features of the MPPS.

1.2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

Although the MPAR and the LNAR are adjoining landforms, sharing common infrastructure and the same surface and groundwater monitoring network, the 'Ash Repositories' are generally managed as separate operational facilities. Water, leachate, and other environmental aspects at each are managed through the LNAR Operational Environmental Management Plan (EnergyAustralia, 2025) (the OEMP) (for the LNAR) and the MPAR Water Management Plan (ERM, 2026c) (the WMP) (for the MPAR).

The MPPS (including the MPAR and the LNAR) is also regulated under Environment Protection Licence (EPL) 13007 granted under the Protection of the Environment Operations Act 1997 (NSW) (the POEO Act). The EPL regulates the materials authorised for placement in the Ash Repositories, along with water monitoring and reporting requirements.

1.2.1 THE MPAR WATER MANAGEMENT PLAN

Following the approval of Mod 9 to the Mt Piper Consent, the WMP was prepared, submitted to, and approved by the NSW Department of Planning, Housing and Infrastructure (DPHI) in accordance with Condition 43 of the Mt Piper Consent. The WMP includes monitoring of defined groundwater and surface water parameters to assess for changing conditions as a potential result of the approved activities. To demonstrate compliance with the WMP, reporting is required on an annual basis for the previous year and the results are presented to key regulatory stakeholders.

The WMP was updated on 28 July 2026 to acknowledge the approval of Mod 10, however this revision does not address any new water management requirements that are specific to the works authorised by Mod 10, which have not yet been implemented at the MPPS. As required by the Mt Piper Consent, a revised WMP will be prepared prior to the commencement of the works authorised by Mod 10.

1.2.2 THE LNAR OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

Water quality monitoring for the LNAR is conducted in accordance with the OEMP (EnergyAustralia, 2025). The OEMP includes a surface water management plan, a groundwater management plan, and a leachate management plan that stipulate monitoring and reporting requirements for each, in general alignment with the WMP and the EPL.

1.2.3 SPRINGVALE WATER TREATMENT PROJECT

The Springvale Water Treatment Project (SWTP) is separately approved under State Significant Development (SSD) 7592 (the SWTP Consent) and operates adjacent to the MPPS (Figure 2). It treats mine water received from local mines (Springvale and Angus Place) for beneficial re-use at MPPS. The SWTP produces both liquid and solid waste brine streams which are placed in the Ash Repositories, as approved.

A Brine and Residuals Management Plan (GHD, 2019) (the BRWMP) was approved under the conditions of the SWTP Consent. The BRWMP includes, as an attachment, the Mt Piper Power Station Brine Conditioned Flyash Co-placement Extension Water Management and Monitoring Plan (Connell Wagner, 2008) previously approved under the Mt Piper Consent (2008 Water Management Plan). The 2008 Water Management Plan was subsequently updated and superseded by the 2020 Water Management Plan (ERM, 2020). The 2008 Water Management Plan and the 2020 Water Management Plan have been superseded by the WMP (ERM, 2026c).

1.3 REGULATORY REQUIREMENTS

There is general consistency between the groundwater and surface water monitoring analytical schedule required by the Mt Piper Consent (and the WMP), the LNAR Project Approval (and the OEMP) and the EPL. Hence this environmental monitoring report (EMR) has been developed to satisfy the water related reporting requirements of each.

This EMR documents the results of groundwater and surface water monitoring undertaken during the reporting period and addresses the relevant reporting obligations under:

- MPAR, Conditions 44 and 45 of the Mt Piper Consent, and the relevant reporting requirements of the approved Water Management and Monitoring Plan (the WMP);
- LNAR, to address Conditions A10, E15, and E16 of the LNAR Project Approval and the relevant reporting requirements of the approved the OEMP; and
- EPL, to address Conditions R5.8, R5.9 and R5.10.

This EMR has been prepared in general accordance with the post approval compliance reporting requirements (DPE, 2020) from the NSW Department of Planning, Housing and Infrastructure (DPHI), formerly known as Department of Planning and Environment (DPE).

Table B-1 (for the Mt Piper Consent and the WMP), Table B-2 (for the EPL) and Table B-3 (for the LNAR Project Approval and the OEMP), Appendix B present a summary of the regulatory compliance requirements for each of these regulatory instruments, and where they are addressed in this EMR. Consistent with feedback from the then DPE on the 2021/22 EMR, Table 1-1 provides a statement of compliance as at the end of the reporting period, and based on the information in this EMR.

As presented in Table 1-1, below, the EPL refers to a 'Surface Water and Groundwater Monitoring Report', the LNAR Project Approval refers to 'Water Management and Monitoring Report', and the Mt Piper Consent refers to an 'Environmental Monitoring Report (EMR)'. The title page of this report reflects the compliance report title as referenced in the relevant regulatory instruments. However, for consistency throughout this report, the term 'Environmental Monitoring Report' has been adopted as an overarching term that encompasses the water monitoring and compliance reporting requirements of all applicable approvals and licences.

TABLE 1-1 STATEMENT OF COMPLIANCE

Approval Instrument	Conditions	Compliance Report Title	Were the conditions of the relevant approval complied with?
DA80/10060 (Mt Piper Consent)	Conditions 44 and 45	'Environmental Monitoring Report' (Water Quality – January to June 2026)	YES
PA 09_0186 (LNAR Project Approval)	Conditions A10, E15 and E16	'Water Management and Monitoring Report' (Water Quality – January to June 2026)	YES
EPL 13007	Conditions R5.8, R5.9 and R5.10	'Surface Water and Groundwater Monitoring Report (Water Quality – January to June 2026)	YES

1.4 OBJECTIVES AND SCOPE OF WORK

The objectives of this EMR are to address the relevant reporting requirements of the Mt Piper Consent, the LNAR Project Approval and the EPL (Section 1.3) for the period 01 January 2026 to 30 June 2026 (i.e. the reporting period). This EMR has been prepared for the 6 month reporting period only to facilitate transition to a consistent reporting period of 1 July to 31 June from 2026/2027 on.

Considering the reporting period, it is acknowledged that, because of the revised LNAR reporting period (i.e. from September to August annually, to July to June annually), as approved by the DPHI on 24 February 2026 (reference: MP09_0186-PA-29), LNAR monitoring data collected between September and December 2025 will not be included in this EMR. However, as the WMP, OEMP and EPL monitoring programs are aligned, the September to December 2025 monitoring data is presented in previous EMR (ERM, 2026a). The exception to this is for ash placement volumes and leachate management outcomes for the LNAR, for which monitoring and management was conducted in compliance with the OEMP; this information can be shared separately upon request.

The following scope of work has been completed by ERM to meet the objectives of the EMR:

- Development of an annual review summary to include operational activities and actions taken from previous annual reporting, environmental performance, incidents and non-compliances, community engagement, and actions / activities planned to be undertaken;
- Import of environmental monitoring data provided by EnergyAustralia to the existing database maintained by ERM for the Site;
- Review of surface water and groundwater quality with comparison to the adopted guideline values as presented in the WMP and the OEMP, as applicable;
- Review of surface water and groundwater quality trends for the reporting period, to enable comparison between years;
- Interpretation and discussion of results, including potential interaction of groundwater from the vicinity of the Ash Repositories with Wangcol Creek water quality;
- Review of leachate monitoring data in accordance with the leachate monitoring plan set out in the OEMP;
- Groundwater model validation in accordance with the approach presented in the WMP;
- Update on the Trigger Action Response Plans (TARPS) and contingency measures currently being implemented in accordance with the WMP;
- An update on contingency and mitigation measures currently being implemented in accordance with the WMP and the OEMP;
- Assessment of the effectiveness of mitigation measures being implemented, being considered and/or recommendations for improvements where necessary, as required by the EPL;
- Preparation of a summary of the Wangcol Creek Ecological Monitoring Program (EMP) and Wangcol Creek Stream Stability Survey results (based on the outcomes of reports provided by others) in accordance with the WMP;
- Compilation of supporting appendices including figures, hydrographs for key bores, and concentration trend graphs (major ions and metals) for key groundwater and surface water monitoring locations; and
- Preparation of this report.

1.5 CONTACT

Contact details for the key personnel responsible for the environmental management of the MPPS are listed in Table 1-2 below.

TABLE 1-2 CONTACT DETAILS

Contact Person	Organisation	Position	Telephone
Mr Ben Eastwood	EnergyAustralia	NSW Environment Leader	(02) 6354 8111

1.6 REPORT STRUCTURE

The following outlines the general structure of this report:

- Section 2 presents an overview of the Independent Groundwater Investigation and its outcomes;
- Section 3 presents a summary of annual site operations at the Ash Repositories;
- Section 4 presents a review of the environmental setting, focusing on local climate, hydrology, geology and hydrogeology;
- Section 5 presents a summary of the groundwater and surface water characterisation and monitoring program;
- Section 6 presents an assessment of the groundwater data provided by EnergyAustralia;
- Section 7 presents an assessment of the surface water data provided by EnergyAustralia;
- Section 8 presents an assessment of the leachate monitoring data provided by EnergyAustralia for the operational leachate barrier management systems within the LNAR;
- Section 9 presents a summary of deviations from the monitoring program;
- Section 10 presents discussion of groundwater and surface water results in context of the numerical groundwater model (NGM) that was developed as part of the Independent Groundwater Investigation;
- Section 11 presents a comparison to the TARPs;
- Section 12presents the summary and recommendations of the report;
- Section 13 presents the references used in this report; and
- Section 14 presents the Statement of Limitations.

2. INDEPENDENT GROUNDWATER INVESTIGATION

In 2016, ERM was engaged to complete the Independent Groundwater Investigation (2016-2023) associated with the elevated concentrations of key indicator analytes (EC, sulfate, chloride, boron, manganese and nickel) in groundwater and surface water that have since been attributed to leaching and seepage associated with BCA placement within the MPAR.

As part of the Independent Groundwater Investigation, the Groundwater Flow Model Report (ERM, 2023a) presents a summary of the conceptual site model (CSM) and source-pathway-receptor (SPR) linkages related to BCA placement within the MPAR. The primary pathway for migration of solutes derived from BCA in the MPAR is by the vertical migration of leachate (water sourced from rainfall and irrigation across the MPAR) down through the BCA placed within the MPAR. Once the leachate reaches the base of the ash at the MPAR, the vertical migration of leachate is assumed to continue until it mixes with the regional water table that underlies the Site.

Groundwater that flows to the east from the MPAR is primarily received by DML Dam and Cooks Dam due to the higher hydraulic conductivity of mined out areas. A portion of the groundwater that flows to the north-east and east from the MPAR is received by Wangcol Creek at Areas D, E and G, as indicated by relative groundwater and creek elevations and water quality where former open cuts are present in the creek. Consequently, these sections of Wangcol Creek and their associated ecosystems and downstream waterways are receptors of groundwater, and have the potential to be impacted because of previous BCA placement in the MPAR.

Review of long-term analytical data at Wangcol Creek has also found a strong relationship between periods of lower streamflow and higher EC. Higher EC is correlated with elevated concentrations of key indicator analytes, particularly chloride and sulfate. These higher concentrations coincide with late spring to early autumn, a period which is characterised by lower rainfall and higher evaporation, resulting in a greater relative contribution of groundwater inputs to the surface water system when compared to conditions during winter. A complete SPR linkage is considered present for Wangcol Creek based on the general absence of groundwater users in the surrounding area (ERM, 2023a).

These findings have informed a number of operational changes to the MPAR as authorised as part of Mod 9 to the Mt Piper Consent, including the installation of a low-permeability cap and associated water management features on the MPAR (MPAR Phase 1 Capping and Drainage) and installation of a leachate barrier management system (LBMS) and capping in MPAR Zone 2 (MPAR Zone 2 LBMS and Capping). The MPAR Phase 1 Capping and Drainage is intended to mitigate the vertical leachate migration pathway. Following installation of the MPAR Zone 2 LBMS, future BCA placement in the MPAR will be limited to Zone 2.

As a result of the preliminary findings of the Independent Groundwater Investigation, in September 2021, the LNAR Project Approval was modified to authorise amendments to the design and operations of the LNAR (LNAR Mod 1), principally, the installation of a LBMS, with BCA placement approved within the lined areas. The approved final landform for the MPAR as authorised by Mod 9 to the Mt Piper Consent has also been designed to integrate with the separately approved final landform for the LNAR.

3. ANNUAL OPERATIONS SUMMARY

A summary of operations at the Ash Repositories over the reporting period, and actions taken since the previous reporting period, is provided in the following subsections.

3.1 ASH PLACEMENT

Ash produced at the MPPS includes Furnace Bottom Ash (FBA) (~10%) and fly ash (~90%). Bottom ash is placed directly onto the Ash Repositories. Prior to the placement of fly ash within the Ash Repositories, it is conditioned to increase its moisture content to manage dust, achieve required compaction and maintain geotechnical stability of the Ash Repositories. Fly ash is conditioned by the addition of either:

- Water, sourced in accordance with existing MPPS water licences and allocations including recycled process water and fresh (non-potable) water. Fly ash treated with water is referred to as Water Conditioned Ash (WCA). WCA is permitted to be placed within all areas of the MPAR and has been placed into the MPAR since 1993; or
- Brine, a by-product from:
    - Treatment of evaporative cooling water from the cooling towers of MPPS to remove salts and impurities. Treatment at the MPPS Brine Concentrators is approved under the Mt Piper Consent, and
    - The SWTP.

Fly ash treated with brine is referred to as brine conditioned ash (BCA).

Ash placement operations for MPPS, including within the Ash Repositories, are undertaken by specialist ash placement contractors. Service Stream and Ventia are the current service providers for EnergyAustralia in relation to aspects of ash placement and dust management at the MPPS. Figure 2 and Figure 3 provide the layout of the Site features and the ash placement plan, respectively.

During the reporting period, 0 tonnes (t) of ash was placed at the MPAR, consistent with implementation of MPAR Phase 1 Capping and Drainage. Between September 2025 and June 2026, 364,251 t of ash was placed at the LNAR. A summary of ash placement operations at the Ash Repositories is presented in the following subsections.

3.1.1 MPAR OPERATIONS SUMMARY

WCA was authorised to be placed in the MPAR since 1993, while BCA was authorised to be placed into the MPAR within the MPAR Stage 1 (from 2000) and Stage 2 (from 2008) BCA placement areas at elevations above 946 metres Australian Height Datum (m AHD) (Figure 3).

All placement of BCA in unlined areas of the MPAR ceased in September 2025, and no ash placement activities have occurred in the MPAR during the reporting period. A summary of ash placement operations at the MPAR for the reporting period and for the previous reporting period is presented in Table 3-1.

TABLE 3-1 MPAR ASH PLACEMENT OPERATIONS SUMMARY

Activity	July 2024 to December 2025	January 2026 to June 2026
Ash delivered to the MPAR (t)	61,920 (BCA) 22,080 (WCA)	0
Water co-placed at the MPAR (ML)	23	0
Brine co-placed at the MPAR (ML)	40	0
Solid Mixed Salts placed at the MPAR (t)	0	0
Total MPAR ash footprint at the end of the period (ha)	16.7	16.7
Area of MPAR capped during the period (ha)	1.3	5.4

t = tonnes, ha = hectares, ML = megalitres

The status of the Mod 9 works at the time this EMR was prepared (in July-August 2026) is presented in Section 3.6.

3.1.2 LNAR OPERATIONS SUMMARY

WCA was authorised to be placed into the LNAR from 2012 and, from September 2021, BCA was authorised to be placed in the lined cells within the LNAR.

During the 2021/22 reporting period, a leachate barrier system was installed in LNAR Stage 1a and Stage 1b. During the 2024/25 reporting period a leachate barrier system was installed in LNAR Stage 2a and installation of a leachate barrier system within LNAR Stage 2b was commenced (refer Figure 3). The leachate barrier system is supported by a leachate management system to capture, store and transfer leachate generated from the lined areas to ponds LNAR 2 – LNAR 5 as required based on operations at the Ash Repositories.

With reference to the Ash Repository Survey captured in April 2026 (Appendix C, and Figure 3), and Table 3-2 below, between September 2025 to June 2026 approximately 342,768 t of BCA and 21,483 t of WCA were placed in the LNAR Stage 1 and Stage 2 placement areas. A summary of ash placement operations at the LNAR for September 2024 to August 2025 and for September 2025 to June 2026 is presented in Table 3-2.

TABLE 3-2 LNAR ASH PLACEMENT OPERATIONS SUMMARY

Activity	September 2024 to August 2025	September 2025 to June 2026
Ash delivered to the LNAR (t)	451,110 (BCA) 101,912 (WCA)	342,768 (BCA) 21,483 (WCA)
Water co-placed at the LNAR (ML)	23	7.213
Brine co-placed at the LNAR (ML)	106	84.795
Solid Mixed Salts placed at the LNAR (t)	6,984.5 Lime Salts 1,997 Mixed Salts	12,860 Lime Salts 2,479.5 Mixed Salts

Activity	September 2024 to August 2025	September 2025 to June 2026
Total active LNAR ash placement footprint during the period (ha)	16.1	11.73
Area of LNAR capped at the end of the period (ha)	5.43	11

t = tonnes, ha = hectares, ML = megalitres

The status of the LNAR works at the time this EMR was prepared (in July-August 2026) is presented in Section 3.6.

3.2 BRINE COMPOSITION

Both the EnergyAustralia Reverse Osmosis (RO) brine concentrators and micro filtration (MF) infrastructure system, and the SWTP, transfer the brine stream to Brine Waste Pond A and Brine Waste Pond B for temporary storage (Figure 2). Brine from the EnergyAustralia brine concentrators is typically transferred to Brine Waste Pond A, while brine from the SWTP is typically transferred to Brine Waste Pond B. Brine in Waste Pond B can overtop to Brine Waste Pond A, in order to manage stored brine volumes between the ponds.

This brine is used to condition the ash that is placed in approved BCA placement areas and brine composition data has been used to inform the discussion of surface water and groundwater results in this report. During the reporting period the average concentrations of key indicator analytes and parameters in brine stored in Brine Waste Pond A and Brine Waste Pond B were reported as follows:

- Electrical conductivity reported from Brine Waste Pond A averaged 63,500 µS/cm while those in Brine Waste Pond B averaged 77,000 µS/cm;
- Chloride concentrations reported from Brine Waste Pond A averaged 6,590 mg/L while those in Brine Waste Pond B averaged 7,130 mg/L;
- Sulfate concentrations reported from Brine Waste Pond A averaged 22,600 mg/L while those in Brine Waste Pond B averaged 24,980 mg/L;
- Silver (total) concentrations reported from both Brine Waste Pond A and Brine Waste Pond B were consistently reported below the laboratory Limit of Reporting (LOR);
- Chromium (total) concentrations reported from Brine Waste Pond A averaged 164 µg/L while concentrations from Brine Waste Pond B averaged 120 µg/L;
- Iron (total) concentrations reported from Brine Waste Pond A averaged 110 µg/L while concentrations from Brine Waste Pond B averaged 138 µg/L;
- Barium (total) concentrations reported from Brine Waste Pond A averaged 95 µg/L while concentrations from Brine Waste Pond B averaged 23 µg/L;
- Boron (total) concentrations reported from Brine Waste Pond A averaged 24,750 µg/L while concentrations from Brine Waste Pond B averaged 12,710 µg/L;
- Manganese (total) concentrations reported from Brine Waste Pond A averaged 158 µg/L while concentrations from Brine Waste Pond B averaged 45 µg/L;
- Nickel (total) concentrations reported from Brine Waste Pond A averaged 642 µg/L while concentrations from Brine Waste Pond B averaged 606 µg/L; and
- Lead (total) concentrations reported from Brine Waste Pond A averaged 39 µg/L while concentrations from Brine Waste Pond B averaged 12 µg/L.

Averages of the historical brine composition reported from Brine Waste Pond A and Brine Waste Pond B are provided in Appendix D. The sample frequency for Brine Waste Pond A is monthly, and Brine Waste Pond B is weekly, when the system is in service. Note, where applicable, analytes are reported as total (unfiltered) concentrations.

3.3 SITE WATER DISCHARGES

The licensed discharge point (LDP12) for the MPPS under EPL 13007 is located at the Coal Settling Pond (CSP), which is a sediment basin for stormwater runoff from the coal stockpile area. During the reporting period, water discharged from the CSP via LDP12 was estimated to be 106.3 megalitres (ML). LDP12 was sampled on six occasions during the reporting period, and water quality at LDP12 complied with the discharge water quality criteria under EPL 13007 Condition L3.7 on all occasions. Records of discharge flows at LDP12 during the reporting period are provided in Appendix E, with associated water quality data presented in Appendix I.

Surface water flow from LDP12 (representative of discharge from the CSP) enters the Western Drain, which is part of the upstream Wangcol Creek catchment, before flowing into the Final Holding Pond (FHP). The FHP holds stormwater from the clean water diversions around the MPPS and has gates that can be closed in the event of an environmental incident to limit the likelihood of adverse impacts to the downstream surface water environment. The FHP was constructed within Wangcol Creek, and it operates as the final pollution control structure for surface water discharges associated with the MPPS. Figure 2 presents the locations of the CSP and the FHP.

Surface water monitoring location LMP01 is representative of instream Wangcol Creek conditions downstream of the CSP and the FHP, and upstream of the Ash Repositories. Figure 4a presents the locations of LDP12 and LMP01.

3.4 INCIDENTS AND NON-COMPLIANCES

Based on information provided by EnergyAustralia, no incidents or non-compliances occurred at the MPPS over the period from 1 January to 30 June 2026.

3.5 COMMUNITY ENGAGEMENT

Based on information provided by EnergyAustralia, no complaints were submitted over the period from 1 January to 30 June 2026. A summary of the Community Consultative Committee (CCC) meeting minutes related to the Ash Repositories is provided in Table 3-3, below.

TABLE 3-3 ASH REPOSITORIES CCC MEETING MINUTES

Meeting Month	Ash Repository	Relevant Details
February 2026	MPAR & LNAR	• CCC Members and EnergyAustralia staff took a 75-minute tour of the Ash Repositories noting progress on MPAR Phase 1 Capping and Drainage works, and the process for lining the LNAR and deposition of brine and water conditioned ash on the LNAR. • Excess ash and its uses were discussed. It was noted that there is currently a strong market for the use of ash in cementitious materials, and EnergyAustralia is actively working to increase the amount of ash that goes to this, or alternative, markets. Some ash is kept to facilitate co-placement of brine.

Meeting Month	Ash Repository	Relevant Details
		• Mt Piper Mod 10 will be focused on augmenting water management around the coal stockpile area through diversion and detention infrastructure. • EnergyAustralia anticipated that Mod 10 would likely be submitted to DPHI in March.
April 2026	N/A	Details related to operations at the Ash Repositories were not discussed during the April 2026 CCC meeting.
June 2026	MPAR	• The Wangcol Creek options assessment had been submitted to the EPA and further information was to be provided at the next CCC following discussion with the EPA on the preferred option. • EnergyAustralia's primary focus is on limiting leachate entering groundwater through MPAR Phase 1 Capping and Drainage works, as described in Mod 9. • It was noted that the final MPAR capping will include overburden supplied from within the EPL licenced premises area and topsoil that will be planted with grasses to stabilise the surface of the capping layers. • An overview of the Mod 10 application and consent conditions was requested to be presented at the next meeting.

3.6 ACTIONS AND ACTIVITIES PLANNED FOR 2026/2027

Progressive ash placement operations will continue at the Ash Repositories in 2026 and 2027. In addition to this, as detailed further in the WMP, EnergyAustralia plans to begin implementing or completing the following operational changes:

- Installation of the MPAR Phase 1 Capping is largely complete, including the seal bearing layer (consisting of placed ash material), the linear low-density polyethylene (LLDPE) geomembrane liner and the sub-soil layer. Topsoil placement and revegetation did not commence within the reporting period, though completion is anticipated in 2026 to achieve the approval final landform for the MPAR Stage 1 and Stage 2 areas;
- MPAR Phase 1 Drainage construction is progressing, with completion anticipated in 2026;
- MPAR Zone 2 LBMS and Capping is subject to detailed design, with installation of the LBMS anticipated to commence in approximately 2027 or 2028, following which BCA placement activities in the MPAR Zone 2 will commence;
- The elevation of WCA placement within MPAR Zone 2 is approximately 950 to 965 m AHD. This landform will be further altered as part of the MPAR Zone 2 installation and subsequent ash placement operations. As required by Condition 58 of the Mt Piper Consent the MPAR Zone 2 LBMS and Capping design will be submitted to the Secretary prior to installation, with the approved design to determine the base liner elevation;
- BCA placement in the LNAR lined placement areas commenced in accordance with LNAR Mod 1 from 13 May 2022;
- Installation of the LNAR Stage 1a and Stage 1b Capping has commenced, with completion anticipated in late 2026;

- Ash placement within the LNAR Stage 2b area has been underway since November 2025;
- The Brine Waste Pond A and Brine Waste Pond B liner replacement works are planned to be completed in 2026 / 2027;
- The SHG1 de-silting has been completed;
- Whole of life repository planning and design continued with Modification 3 for the LNAR extension anticipated to commence in late 2026;
- The Wangcol Creek Remediation Options Feasibility Study (ERM, 2026b) required by Condition U1 of the EPL (varied 10 December 2025) this condition was finalised and submitted to the EPA as required; and
- The MPAR Capping Strategy (ERM, 2026d) was completed separately to the satisfaction of the EPA (approved 05 March 2026) to address Condition 59 of the Mt Piper Consent.

4. ENVIRONMENTAL SETTING

4.1 CLIMATE

Climate data was provided by EnergyAustralia and is sourced from a weather station on site at MPPS (see Figure 2). A summary of the climate data is presented in Table 4-1. Rainfall data is graphed in the hydrographs included in Appendix G.

TABLE 4-1 LOCAL CLIMATE DATA FOR 2026

Month	Rainfall Total (mm)	Min. Temperature (°C)	Max. Temperature (°C)
January 2026	87.0	6.1	32.9
February 2026	107.2	8.3	27.7
March 2026	136.6	1.6	26.6
April 2026	3.0	-2.6	22.9
May 2026	58.2	-2.5	18.3
June 2026	55.8	-5.7	16.4
TOTAL / MIN / MAX (6 months)	**447.8**		

Data from MPPS Weather Station provided by EnergyAustralia

The total rainfall in the 2025 calendar year was 674.2 mm. This is lower than the total reported rainfall in three of the last five previous calendar years (797.2 mm in 2024, 1121.6 mm in 2022, and 938.7 mm in 2021), but higher than the 634.3 mm recorded for the 2023 calendar year and the 595 mm recorded for the 2020 calendar year. The higher-than-average periods of rain from December 2020 to March 2021 broke the period of relative drought experienced at the Site, and more broadly within NSW, between 2017 and 2020.

Overall, the six-month reporting period was characterised by above-average rainfall. The highest monthly rainfall occurred in March 2026 (136.6 mm), while the lowest was recorded in April 2026 (3.0 mm). Rainfall during the February to March 2026 period was substantially higher than during the corresponding period in previous years, with a combined total of 243.8 mm, approximately double that for the same period in 2025 and 2024.

4.2 HYDROLOGY

MPPS and the Ash Repositories are within the Wangcol Creek catchment, and Wangcol Creek is a tributary of the Coxs River. MPPS sits on the eastern edge of the Great Dividing Range and includes the headwaters of Wangcol Creek. Locally, Wangcol Creek is present to the north and north-east of the Ash Repositories. Wangcol Creek flows to the east and south-east and joins the Coxs River approximately 3.2 km east of the Site.

As introduced in Section 3.3 and presented in Figure 2, clean water diversions extend around the MPPS and are discharged into Wangcol Creek via the FHP. Clean water diversions are also present from the MPAR Phase 1 Capping and Drainage footprint (via the energy dissipator) and around the Ash Repositories, joining Wangcol Creek downstream of the FHP.

Real-time instream monitoring of upstream Wangcol Creek surface water flow, EC, and pH is undertaken at LMP01, while real-time monitoring of surface water flow and EC is conducted further downstream within Wangcol Creek at NSW stream gauge 212055, which is co-located with monitoring location WX22.

Further details regarding water management arrangements at the Ash Repositories are described in the WMP (for the MPAR) and the OEMP (for the LNAR).

4.3 GEOLOGY

The Site is located on the western margin of the Sydney Basin, and the geology is characterised by eastward dipping sedimentary deposits that extend approximately 130 km east towards the NSW coast. There are no significant faulting or folding structures in the region surrounding the Site (CDM Smith, 2012).

The Site is located at an outcrop of the Illawarra Coal Measures, which has been mined throughout the region. The Narrabeen Group, comprised of sandstones, overlies the Illawarra Coal Measures in the vicinity of the Site, forming the surrounding hillsides. The Illawarra Coal Measures host the coal seams that were previously mined out in the vicinity of the Site and overlie the Shoalhaven Group.

4.4 HYDROGEOLOGY

Groundwater beneath the Site is present within the Illawarra Coal Measures, with a regional groundwater flow direction generally to the east / south-east in the vicinity of the Site (Figure 5a and Figure 5b). The Groundwater Flow Model Report (ERM, 2023a) presents a summary of the natural stratigraphy of the Illawarra Coal Measures in the vicinity of the Site.

The area surrounding the Ash Repositories is characterised by former open cut and below ground coal mining. The below ground mined out areas are variably filled in with goaf, or in some areas remain as voids. Former open cut mines remain as ponds, including within the alignment of Wangcol Creek to the north of MPAR, or have been filled in. Long-term groundwater monitoring near the Ash Repositories indicates that the water table occurs variably in the former underground mining and open cut areas and, away from the Ash Repositories, predominantly in the overlying Bunnyong Sandstone. The water table elevation range is approximately 908 m AHD to 914 m AHD in the vicinity of the Ash Repositories. Groundwater elevation contours are presented in Figure 5a and Figure 5b. Groundwater elevation data and other hydrogeological parameters are presented in Section 6.3.

5. WATER CHARACTERISATION AND MONITORING PROGRAM

The water monitoring program for the Ash Repositories, as outlined in the WMP (ERM, 2026c), the OEMP (EnergyAustralia, 2025) and EPL 13007, includes monitoring locations, monitoring frequency, sampling methods, analytical schedule and reporting requirements. A summary of the water characterisation and monitoring program is presented in Table 5-1, below.

The associated data collected is suitable to inform reporting requirements for the MPAR under the Mt Piper Consent (Conditions 44 and 45), the LNAR under the LNAR Project Approval (Conditions A10, E15 and E16), and the MPPS under the EPL (Condition R5.8).

TABLE 5-1 WATER CHARACTERISATION AND MONITORING PROGRAM

Item	Details
Stream Health, Stream Flow, and Channel Stability Monitoring	As required by the WMP, stream health monitoring was completed as part of the existing Wangcol Creek EMP. The monitoring is undertaken on an annual basis, in spring, by suitably qualified independent consultants. The Wangcol Creek EMP consists of six Australian River Assessment System (AUSRIVAS) sample sites NCR1, NCR2, NCR3 and A16, with NCR4 and NCR5 being added in 2025 to satisfy Condition 43 of the Mt Piper Consent (Mod 9). As required by the WMP, stream stability monitoring was completed on a bi-annual basis by suitably qualified independent consultants as part of the existing Wangcol Creek Stream Stability Survey. The Wangcol Creek Stream Stability Survey is conducted at 11 sites SH1, SH2, SH3, SH3a, SH4, SH5, with SH6- SH10 being added in 2025 to satisfy Condition 43 of the Mt Piper Consent (Mod 9). The stream health and channel stability monitoring locations are presented in Figure 4b. The channel stability assessment completed in September 2025 (RCA, 2025) concluded that both the Pine Dale Mine (PDM) and MPPS drainage systems are in good geomorphic condition, with no significant impacts observed since the previous monitoring period. The results of the stream health survey completed in December 2025 (Stantec, 2026) indicated that ecological stream health within Wangcol Creek and the Coxs River has not been adversely affected by the LNAR or MPAR approved operations, with observed aquatic conditions reflecting long-standing, site-specific and catchment-scale disturbances rather than project-related impacts. As annual channel stability assessment and stream health survey were not undertaken during the 6-month reporting period, more detailed results of these studies are presented in the previous EMR (ERM, 2026a).
Site Inspections	Routine site inspections are undertaken by Service Stream and Ventia and their contractors to identify potential environmental hazards or areas that require corrective action. These may include, but are not limited to, additional sediment and soil erosion works, noise, dust or lighting controls etc. Visual inspections of the MPAR and LNAR infrastructure (pumps, pipe work, ponds) are conducted to ensure infrastructure remains in working order (e.g. no leaks). Maintenance of infrastructure is conducted as required.

Item	Details
Water Quality Monitoring	The locations and frequency for water quality monitoring are presented in the WMP (ERM, 2026c), the OEMP (EnergyAustralia, 2025), and EPL 13007. Deviations from this monitoring program, when they occurred, are presented in Section 9.
Water Quality Monitoring Methods	Groundwater sampling is conducted in accordance with the method described in Section 10.3 of the WMP. Field sampling and laboratory analysis is conducted in general accordance with the NSW EPA (2022), *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW* guidance by trained personnel from Nalco / Ecolab Pty Ltd (Ecolab), with some laboratory analytical services subcontracted to ALS Global Pty Ltd (ALS). These analytical services are National Association of Testing Authorities (NATA) accredited for the services provided. Details regarding the Nalco sampling method and quality assurance and quality control (QA/QC) program are presented in Appendix F.
Water Quality Monitoring Zones	**Groundwater** Considering the groundwater flow direction, current and historical operations at the Ash Repositories, and their relative locations to MPAR, the groundwater dataset is assessed based on the following zones: • Upgradient of MPAR / background: MPGM4/D4, MPGM4/D5; • Cross-gradient of MPAR / adjacent to MPAR to the north and adjacent Wangcol Creek: MPGM4/D3, D106, D107, and D119; • Downgradient of MPAR, areas adjacent to Wangcol Creek: MPGM4/D1, MPGM4/D2, MPGM4/D8, MPGM4/D9 and D102 – D105; • Downgradient of MPAR, including LNAR (north) and historical mining disturbance (east): MPGM4/D10, MPGM4/D19, D110, D113, and D117; and • Cross-gradient of MPAR to the south, including LNAR (south) and historical mining disturbance: D15, D16A, D17, and D18. **Surface Water** Considering the surface water flow direction, current and historical operations at the Ash Repositories, and their relative locations to MPAR, the surface water data set for the Ash Repositories is assessed based on the following monitoring zones: • Upstream of the Ash Repositories: Coal Settling Pond, LDP12, LMP01; • Mid-stream / adjacent to the MPAR: NC01, SW_C, and SW_E; and • Downstream of the MPAR: SW_F / WX22 (which is co-located with NSW stream gauge 212055), SW_G.
Adopted Guideline Values	The WMP (ERM, 2026c), the OEMP (EnergyAustralia, 2025), and EPL 13007 present a summary of Environmental Goals and ANZG (2018) guideline values adopted for this report. The combined Environmental Goals and adopted ANZG (2018) guideline values will be referred to in this report as the 'adopted guideline values'. The adopted guideline values are presented in the header portion of the groundwater (Appendix H) and surface water (Appendix I) analytical data tables, respectively. The Environmental Goals utilise the Australia and New Zealand Environment Conservation Council (ANZECC) (2000) 95% ecosystem protection values, stock watering, irrigation water or drinking water values, in combination with

Item	Details
	90th percentile pre-brine placement local environmental (groundwater/surface water) data (whichever is greater). The local guideline values incorporated into the Environmental Goals are based upon the 90th percentile pre-ash placement water quality results, as measured at surface water quality point WX22 (for surface water) or at the former groundwater collection basin (GCB) (for groundwater). These Environmental Goals have been used to assess groundwater conditions in relation to the Ash Repositories for almost 30 years and are considered suitable to monitor changes in water quality that consider the sources of water pollutants and existing groundwater and surface water conditions. Where Environmental Goals are not provided for a specific analyte, relevant Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) default guideline values that consider 95% freshwater species protection values have been adopted. For several analytes, the guideline value is hardness (as $CaCO_3$) dependent and, in these instances, location-specific, hardness corrected guidelines for the specific analytes in groundwater or surface water have been applied. Water quality results from the LNAR cannot be directly compared with the adopted guideline values for the purpose of determining compliance, as local water resources are known to be influenced by the legacy BCA related groundwater impacts associated with the MPAR (as described in Section 2). This is considered in the discussion of results throughout this EMR.
Trend Assessment Approach – Visual and Statistical Trends	In addition to comparing results from the reporting period with the adopted guideline values for surface water and groundwater, a trend assessment for concentrations of key indicator analytes in groundwater and surface water was conducted. For both groundwater and surface water, concentration data for key indicator analytes including the six years prior to the beginning of the reporting period (i.e. 01 January 2020 to 30 June 2026) was adopted for the trend assessment. Statistical (Mann Kendall for groundwater and regression analysis for surface water) and visual assessment of trends were undertaken. Trend assessment was not conducted for the entire historical dataset, as there have been significant changes in ash placement operations and footprints over the history of the Ash Repositories. The WMP (ERM, 2026c) presents longer-term trend graphs using data for the period 2014 to 2024. **Visual Trend Assessment** Visual trend assessments for groundwater and surface water were undertaken for key indicator analytes related to historical BCA placement in the MPAR. Due to the, at specific times, elevated concentrations of lead (total) and molybdenum (total) for surface water, visual trend assessment was also conducted for these analytes. Concentrations through time for these analytes in groundwater and surface water are presented in Appendix J and Appendix K, respectively. **Statistical Trend Assessment** The Mann-Kendall method (for groundwater) and linear regression (for surface water) were applied to evaluate trends in key indicator analyte concentrations in groundwater and surface water from each individual monitoring location.

Item	Details
	In addition to key indicator analyte concentrations, statistical trend assessments were undertaken for analytes with previous concentrations above adopted guideline values, including fluoride, arsenic (dissolved), copper (dissolved), and zinc (dissolved) in surface water. Where concentrations were reported below the laboratory LOR, half the laboratory LOR concentration was used for the assessment of trends. Furthermore, statistical trend assessments were only applied to filtered concentrations of metals. As detailed further in Section 9, on occasion, directly comparable historical datasets are not available to support long-term trend assessment or statistical analysis for certain analytes. Where required, trend assessment for these analytes will be undertaken in future reporting periods once a sufficient long-term dataset has been established. Further details of the trend assessment methodology are provided in previous EMRs, including (ERM, 2026a), with Mann-Kendall outputs for groundwater and linear regression outputs for surface water presented in Appendix M.

6. GROUNDWATER DATA ASSESSMENT

6.1 OBJECTIVE

The objective of the groundwater monitoring program is to identify water quality changes at an early stage so that potential causes can be investigated and, if necessary, effects mitigated. The groundwater data is compared between locations, to historical data, and to the adopted guideline values in order to assess changes in groundwater quality and the extent to which changes may be related to activities associated with the Ash Repositories, brine containment in Brine Waste Pond A and B, and multipurpose water storage which occurs at Settling Pond D.

6.2 GROUNDWATER MONITORING LOCATIONS AND FREQUENCY

A summary of the groundwater monitoring locations and their position relative to MPAR is presented in Table 6-1 and Figure 4a.

TABLE 6-1 GROUNDWATER MONITORING NETWORK

Bore ID	Location Description	Screened Material	Frequency	No. of Samples, Jan-June 2026
Upgradient of MPAR (background)				
MPGM4/D4	Background groundwater monitoring location, north-west (upgradient) of the MPAR	Fill	Quarterly	2
MPGM4/D5	Background groundwater monitoring location, north-west (upgradient) of the MPAR	Mudstone/ Sandstone and coal	Quarterly	2
Cross-gradient MPAR / adjacent MPAR to the north and adjacent Wangcol Creek				
MPGM4/D3	Background groundwater monitoring location, north (cross gradient) of the MPAR	Sandstone and/or siltstone	Quarterly	2
D106	North (cross gradient) of MPAR and adjacent Wangcol Creek	Weathered sandstone and/or Shale	Quarterly	2
D107	North (cross gradient) of MPAR and adjacent Wangcol Creek	Siltstone and/or shale	Quarterly	2
D119	Upgradient / adjacent MPAR	Bedrock (sedimentary)	Quarterly	2

Bore ID	Location Description	Screened Material	Frequency	No. of Samples, Jan-June 2026
Downgradient MPAR, areas adjacent Wangcol Creek				
MPGM4/D1	North-east (downgradient) of the MPAR	Mudstone, sandstone and coal	Quarterly	2
MPGM4/D2	East (downgradient) of the MPAR and adjacent Wangcol Creek	Not known	Quarterly	2
MPGM4/D8	East (downgradient) of the MPAR and adjacent to the northern side of Wangcol Creek	Alluvial deposits	Quarterly	2
MPGM4/D9	North-east (downgradient) of the MPAR and adjacent to Wangcol Creek	Alluvial deposits	Quarterly	2
D102	North-east (downgradient) of the MPAR and adjacent to Wangcol Creek. Nested (deeper) with D9	Siltstone	Quarterly	2
D103	East (downgradient) of the MPAR and adjacent Wangcol Creek	Coal and/or siltstone	Quarterly	2
D104	East (downgradient) of the MPAR and adjacent Wangcol Creek	Sandstone	Quarterly	2
D105	East (downgradient) of the MPAR and adjacent Wangcol Creek	Coal	Quarterly	2
Downgradient MPAR including LNAR (north) and historical mining disturbance (east)				
MPGM4/D10	East (downgradient) of the MPAR, and adjacent to LN Pond 2	Fill / mine spoil	Quarterly	2
MPGM4/D19	East (downgradient) of the Ash Repositories	Fill / mine spoil	Quarterly	2

Bore ID	Location Description	Screened Material	Frequency	No. of Samples, Jan-June 2026
D110	Within / immediately adjacent LNAR north	Bedrock (sedimentary)	Quarterly	2
D113	Cross- and downgradient of LNAR / adjacent Wangcol Creek	Bedrock (sedimentary)	Quarterly	2
D117	Within / immediately adjacent LNAR north	Fill (mine spoil)	Quarterly	2
Cross-gradient MPAR to the south, including LNAR (south) and historical mining disturbance				
MPGM4/D15	South of the Ash Repositories	Sandstone and/or shale	Quarterly	2
MPGM4/D16A[#]	South of the Ash Repositories (commissioned in October 2022 to replace D16)	Sandstone and/or shale	Quarterly	2
MPGM4/D17	South of the Ash Repositories	Sandstone and/or shale	Quarterly	2
MPGM4/D18	South of the Ash Repositories	Sandstone and/or shale	Quarterly	2
Brine Waste Pond Leak Detection Bores				
MPGM5/D5	Adjacent (downgradient) Brine Waste Pond A	Not known	Quarterly	2
MPGM5/D6	Adjacent (downgradient) Brine Waste Pond B	Not known	Quarterly	2
MPGM/24 and MPGM/25	Adjacent Settling Pond D (north-west)	Not known	Quarterly	0 (dry)
MPGM/26 and MPGM/27	Adjacent Settling Pond D (south-east)	Not known	Quarterly	0 (dry)

The number of samples in Table 6-1 indicates the number of occasions where a complete, or near complete suite of analysis was conducted during the reporting period.

6.3 GROUNDWATER MONITORING RESULTS AND DISCUSSION

Groundwater quality monitoring was undertaken by Nalco on behalf of EnergyAustralia. Details regarding the Nalco sampling method and QA/QC program are discussed in Section 5, with additional information provided in Appendix F.

6.3.1 GROUNDWATER ELEVATION AND INFERRED FLOW DIRECTIONS

Hydrographs showing groundwater elevations for each bore have been grouped by monitoring zone, as outlined in Section 6.2. The hydrographs show measured groundwater elevations overlaid by rainfall data from 01 January 2024 to 30 June 2026 and are presented in Appendix G. Throughout the reporting period, measured groundwater elevations remained stable (within a 1.1 m range) at all groundwater bores. Throughout the two-and-a-half-year period assessed within the hydrographs the following observations are noted.

- Groundwater elevations in upgradient / background bores were typically higher than those other monitoring zones, ranging between 915 to 919 m AHD;
- Groundwater elevations in bores located cross gradient of the MPAR / adjacent MPAR north and Wangcol Creek typically ranged between 909 and 913 m AHD, with elevations at D119 and MPGM4/D3 consistently higher than elevations at D106 and D107;
- Groundwater elevations in bores located downgradient of the MPAR and adjacent to Wangcol Creek were stable and ranged from 903 m AHD to 910 m AHD;
- Groundwater elevation in bores located downgradient MPAR, LNAR (north) and historical mining disturbance (east) were generally stable, ranging from 907 m AHD to 912 m AHD, with the exception of outlier values at D110 and D19 as addressed in the previous EMR (ERM, 2026a); and
- Groundwater elevations in bores located cross-gradient MPAR to the south, including LNAR (south) and historical mining disturbance areas, typically ranged from 908 m AHD to 916 m AHD, with the exception of outlier values at D17 and D18 as addressed in the previous EMR (ERM, 2026a). The highest groundwater elevation in this monitoring zone was consistently reported at D15.

Since groundwater levels were not all measured at the same time during each monitoring round, groundwater elevations from different bores may not be directly comparable in these instances.

While groundwater elevations in several bores varied during the reporting period, the groundwater elevation contours indicate groundwater flow to the east and south-east. Groundwater elevation contours are presented in Figure 5a and Figure 5b which present data from February to March 2026, and May to June 2026, respectively. The groundwater flow regime is inferred to be generally consistent across the seasons and is consistent with previously inferred groundwater flow directions.

Bores MPGM5/D5 and MPGM5/D6 are located adjacent and downgradient of Brine Waste Pond A and B, respectively. Survey data is not available for these bores; as such the water levels from these bores are reported as metres below a point of reference (metres below top of casing, m btoc), rather than as groundwater elevation. The presence of water in these bores is not inferred to reflect the regional water table as these bores are installed approximately 5 m above the water bearing zone targeted by other nearby monitoring bores. Over the reporting period, depth to water measurements in these bores remained stable and consistent with historical data. Depth to water measured in MPGM5/D5 was lower than that measured in MPGM5/D6, consistent with historical conditions.

6.3.2 HYDROGEOLOGICAL PARAMETERS

To provide an indication of groundwater flow rates as well as groundwater flow directions, hydrogeological parameters (measured and estimated) were used to estimate seepage velocities at the Site over the reporting period

Seepage velocities were estimated using groundwater levels from March 2026 and May 2026 for the following alignments:

- D110 to D105, which represents groundwater flow from MPAR towards Wangcol Creek to the east. This alignment transects the Bunnyong Sandstone (i.e. unmined host geology) that is generally present in the area north of the MPAR to the Wangcol Creek alignment; and
- D110 to D103, which represents groundwater flow from MPAR to the east. This alignment transects the highly disrupted fill / mine spoil geology that is generally present in the area to the east and south-east of the Ash Repositories.

Estimated seepage velocity values are summarised in Table 6-2 below. Details of these estimates and data inputs are provided in Appendix G. Estimated seepage velocities for the current reporting period are consistent with those derived from the 2024 and 2025 monitoring data (ERM, 2026a).

For the values estimated for fill/mine spoil, water in this area is actively taken from DML and Cooks Dam and likely recharges the system from other open voids in the area.

These estimated values are considered to be generally consistent with groundwater conditions, including areas of impacted groundwater from MPAR in the fill/mine spoil of highly disturbed areas and in areas where bedrock remains in place, such as between MPAR and Wangcol Creek.

TABLE 6-2 GROUNDWATER SEEPAGE VELOCITY CALCULATIONS

Time Period	Transect and Geological Unit	Estimated Seepage Velocity ($\bar{v}$) (m/year)
Feb – Mar 2026	Fill / Mine Spoil D110 – D103	340
May – Jun 2026		330
Feb – Mar 2026	Sandstone D110 – D105	36
May – Jun 2026		32

Note: Estimated seepage velocity is presented to two significant figures

6.3.3 GROUNDWATER QUALITY

Groundwater monitoring data for the reporting period is presented in Appendix H and is summarised in the following sections. Trend graphs of concentrations over time since January 2020 are provided in Appendix J, and statistical analysis is presented in Appendix M.

It is noted that all analysed concentrations of metals are reported as filtered for groundwater and brine bore results, with the exception of iron which is reported as total and filtered concentrations, as required by the EPL.

6.3.3.1 UPGRADIENT OF MPAR / BACKGROUND

Data obtained from bores MPGM4/D4 and MPGM4/D5, located to the north-west and hydraulically upgradient (background) of the MPAR, is summarised below and compared to the adopted guideline values for groundwater. Groundwater results for key indicator analytes relating to historical BCA placement in the MPAR are summarised in Figure 6a.

Field Parameters

Field parameters recorded at the groundwater bores in this monitoring zone for the reporting period are summarised as follows:

- pH values obtained from field measurements for groundwater from MPGM4/D4 and MPGM4/D5 ranged from 3.50 to 5.90. The pH values from bore MPGM4/D4 was consistently acidic (3.50 and 3.51 pH units) during the reporting period and pH values from both bores were within historical ranges. The measured pH values from these background bores were consistently more acidic than the adopted guideline value range for groundwater (6.5 to 8.0);
- EC values obtained from field measurements ranged from 610 µS/cm to 1,191 µS/cm and were stable for each bore throughout the reporting period. EC values did not exceed the adopted guideline value for groundwater (2,600 µS/cm); and
- Total dissolved solids (TDS) values ranged between 496 mg/L and 1,010 mg/L and were generally consistent throughout the reporting period. TDS values did not exceed the adopted guideline value (2,000 mg/L).

Graphs of concentrations over time since January 2020 (Appendix J) for up gradient (background) bores MPGM4/D4 and MPGM4/D5 show concentrations of TDS and EC in groundwater have remained stable and below the adopted guideline values.

Major and Minor Ions

Throughout the reporting period, concentrations of chloride, calcium (total and filtered), sodium (total and filtered), fluoride, and cyanide were reported below the adopted guideline values for groundwater from bores within this monitoring zone. Concentrations of sulfate in groundwater from MPGM4/D5 were reported above the adopted guideline value during the February 2026 monitoring round.

Hardness as $CaCO_3$ of groundwater within this monitoring zone ranged from 54.6 mg/L (Bore D4) to 533 mg/L (Bore D5) over the reporting period. The hardness of groundwater was consistently reported above the adopted guideline value at MPGM4/D5, but was consistently below the adopted guideline value at MPGM4/D4.

The highest concentrations of chloride and sulfate since January 2020 were reported in groundwater from both background bores during the February 2026 monitoring round, however concentrations returned to within historical ranges in the subsequent monitoring round. Comparison of the February 2026 results with the historical baseline dataset (WMP; ERM, 2026c) further indicates that these results are anomalous and are not representative of upgradient groundwater conditions.

This interpretation is supported by the absence of a corresponding increase in TDS and EC. As chloride and sulfate are major contributors to TDS, elevated concentrations of these major ions would typically result in an increase in TDS concentrations. However, TDS concentrations and EC values in groundwater from these bores were generally consistent, indicating that the reported increases in chloride and sulfate are likely anomalous and not indicative of groundwater quality in these bores.

Nutrients

Throughout the reporting period, concentrations of nutrients including ammonia, nitrate, nitrite, and 'nitrite and nitrate (as N)' were reported below the adopted guideline values at MPGM4/D4 and MPGM4/D5 for groundwater. Concentrations of total nitrogen were reported above the adopted guideline value, but within the same order of magnitude, during all sampling rounds at MPGM4/D4 and MPGM4/D5.

Metals

Throughout the reporting period, the following concentrations of metals in groundwater from bores MPGM4/D4 and MPGM4/D5 were reported above the adopted guideline values:

- Aluminium, cobalt, iron (total and filtered) on both occasions at MPGM4/D4 and MPGM4/D5;
- Arsenic and lead on both occasions at MPGM4/D4; and
- Manganese on both occasions at MPGM4/D5.

Concentrations of aluminium, arsenic (filtered, V, and III), iron (total and filtered), lead, zinc, and vanadium were higher in groundwater from bore MPGM4/D4 when compared to groundwater from bore MPGM4/D5, noting the lower pH in groundwater from MPGM4/D4 is likely to influence the dissolved metals concentrations.

Concentrations of boron and nickel have remained below the adopted guideline values in groundwater from these bores since January 2020. Concentrations of manganese in groundwater from MPGM4/D5, and iron (total and filtered) from MPGM4/D4 and MPGM4/D5 have generally remained above the adopted guideline value historically and during the reporting period.

Statistical Trend Summary

As shown in Appendix M, for the groundwater bores located in this monitoring zone, review of the data collected since January 2020 identified the following statistically significant trends:

Increasing trends were identified for:

- Chloride in groundwater from MPGM4/D4, however this is likely influenced by the February 2026 value, which is considered anomalous.

Decreasing trends were identified for:

- EC, iron (total), and sulfate from MPGM4/D4; and
- EC, iron (filtered), sulfate, manganese, and TDS from MPGM4/D5.

Discussion

The area surrounding the MPAR has been highly disturbed by historical mining activities, and the low pH in this area is reported to have resulted from the oxidation of iron sulfide (Connell Wagner, 2007). The elevated concentrations of metals are likely associated with the resulting acidification mobilising metals into groundwater. Concentrations of key indicator analytes since January 2020 have, overall, remained relatively stable in this area.

Given the hydraulic gradient observed, with an inferred local groundwater flow direction towards the east, concentrations recorded at MPGM4/D4 and MPGM4/D5 are considered to indicate background conditions and are not considered to be associated with the activities at the Ash Repositories.

6.3.3.2 CROSS GRADIENT MPAR / ADJACENT MPAR TO THE NORTH AND ADJACENT WANGCOL CREEK

Data obtained from groundwater bores situated cross gradient of the MPAR, adjacent to the north of the MPAR and adjacent to Wangcol Creek (MPGM4/D3, D106, D107) and to the south of MPAR (D119) is summarised below and compared to the relevant adopted guideline values for groundwater. Groundwater results for key indicator analytes relating to historical BCA placement in the MPAR are summarised in Figure 6b.

Field Parameters

Field parameters monitored at the groundwater bores in this monitoring zone for the reporting period are summarised as follows:

- Field measured pH values in groundwater in this area were slightly acidic but relatively stable, ranging from 5.99 to 6.34 over the reporting period. These values are more acidic than the adopted guideline value range (6.5 – 8) at groundwater bores within this monitoring zone, however remained within historical ranges during the reporting period;
- Field measured EC values ranged from 869 µS/cm to 11,040 µS/cm and were generally stable within each bore throughout the reporting period. EC values were consistently reported above the adopted guideline value for groundwater (2,600 µS/cm) in groundwater from bores D106 and D107; and
- TDS values were generally followed a similar trend to EC values in each bore over the reporting period, with TDS values consistently reported above the adopted guideline value for groundwater (2,000 mg/L) at D106 and D107. TDS values over the reporting period ranged between 572 mg/L and 9,800 mg/L and were generally stable to decreasing (D119) throughout the reporting period.

Whilst EC and TDS at D106 and D107 have consistently been reported above the adopted guideline values, they have declined steadily since 2022. EC and TDS at MPGM4/D3 and D119 have generally remained lower, with concentrations declining in groundwater from D119 to values below the adopted guideline value since January 2020.

Major and Minor Ions

During the reporting period, calcium (total and filtered), fluoride, and cyanide were consistently reported below the adopted guideline values in groundwater from bores in this monitoring zone. Concentrations of chloride and sulfate were consistently reported above the adopted guideline values at D106 and D107, and concentrations of sodium (total and filtered) were consistently reported above the adopted guideline values at D106, D107, and D119.

Hardness as $CaCO_3$ of groundwater from bores in this monitoring zone ranged from 354 mg/L to 2,590 mg/L over the reporting period. The hardness of groundwater was above the adopted guideline value on both occasions at all groundwater bores in this monitoring zone.

Graphs of concentrations of sulfate and chloride over time since January 2020 indicate similar trends to EC and TDS, with concentrations of sulfate and chloride at D106 and D107 consistently above the adopted guideline values but steadily declining since 2022. Concentrations of chloride and sulfate in groundwater from bore D119 have declined since 2020 to below the adopted guideline values, and at MPGM4/D3 have remained low and stable.

Nutrients

Throughout the reporting period, concentrations ammonia, nitrate, and nitrite were reported below the adopted guideline values in groundwater from each bores in this monitoring zone. Concentrations of 'nitrite and nitrate (as N)' were reported above the adopted guideline value on both occasions in groundwater from bores D106 and D119, and during the March 2025 monitoring round from bore MPGM4/D3. Concentrations of total nitrogen were reported above the adopted guideline value on both occasions in groundwater from each bore in this monitoring zone. Total phosphorus concentrations were reported above the adopted guideline value during the February 2026 monitoring round at D119.

Metals

Throughout the reporting period, concentrations of the following metals in groundwater from bores MPGM4/D3, D106, D107, and D119 were reported above the adopted guideline values:

- Aluminium during the April 2026 monitoring round at D119;
- Boron on both occasions at D106 and D107, and during the April 2026 monitoring round at D119;
- Cobalt on both occasions at D106, D107, and D119;
- Copper during the March 2026 monitoring round at D106 and D107;
- Iron (total and filtered) on both occasions at each bore within this monitoring zone;
- Lead on both occasions at D107; and
- Manganese and nickel on both occasions at D106 and D107.

Graphs of concentrations over time since January 2020 for groundwater bores in this monitoring zone indicate that concentrations of manganese and nickel in groundwater from D106 and D107 have fluctuated and remained above the adopted guideline value but have generally decreased in since 2022. Manganese and nickel have consistently remained stable and below the adopted guideline value at MPGM4/D3 and D119. Concentrations of iron (total and filtered) in groundwater from each bore in this have fluctuated but have generally remained above the adopted guideline value.

Boron concentrations have remained above the adopted guideline value at D106 and D107 but below the adopted guideline value at MPGM4/D3. Concentrations of boron at D119 have fluctuated both above and below the adopted guideline value but remained within historical ranges throughout the reporting period.

Statistical Trend Summary

As shown in Appendix M, for the groundwater bores located in this monitoring zone, review of the data collected since January 2020 identified the following statistically significant trends:

Increasing trends were identified for:

- Chloride in groundwater from MPGM4/D3, however concentrations remained below the adopted guideline value; and
- Boron in D106, with concentrations within historical ranges.

Decreasing trends were identified for:

- Chloride, iron (filtered), manganese, and nickel in bore D106;
- Chloride, EC, iron (total and filtered), manganese, nickel, sulfate, and TDS in bore D107; and
- Boron, chloride, EC, and sulfate in bore D119.

Discussion

Concentrations of key indicator analytes in groundwater from MPGM4/D3, located cross-gradient of the MPAR generally remained within a similar order of magnitude to the concentrations reported at background bores MPGM4/D4 and MPGM4/D5. Concentrations of the key indicator analytes chloride and sulfate in groundwater from D119, located to the south of the MPAR, have declined since 2020 and are below the adopted guideline values. Concentrations of key indicator analytes at D106 and D107, located to the north-east of the MPAR, were consistently reported above the adopted guideline values and at an order of magnitude higher than concentrations at background bores. During the reporting period concentrations of key indicator analytes remained within historical ranges at each bore within this monitoring zone.

Iron (total and filtered) and a component of manganese concentrations are considered to be related to background water quality in the area, based on concentrations in groundwater from the background bores MPGM4/D4 and MPGM4/D5. However, EC, TDS, chloride, sulfate, boron and nickel concentrations in groundwater from bores D106 and D107 are considered to be related to historical BCA placement activities at the MPAR. The seepage of constituents from the BCA placement area to underlying and adjacent groundwater has been assessed as part of the Independent Groundwater Investigation, detailed in Section 2. The decreasing concentrations of key indicator analytes at D106 and D107 is indicative of the plume migrating through this area, with these bores now intersecting groundwater with lower, although still above adopted guidelines, concentrations of sulfate, chloride, nickel, manganese, and iron concentrations in groundwater. Fluctuations of concentrations of key indicator analytes in groundwater may still occur in the future due to the variable BCA placement history at the MPAR over time, resulting in different seepage contributions to groundwater over time.

6.3.3.3 DOWNGRADIENT MPAR, AREAS ADJACENT WANGCOL CREEK

Data obtained from groundwater bores situated downgradient MPAR and adjacent to Wangcol Creek (MPGM4/D1, MPGM4/D2, MPGM4/D8, MPGM4/D9 and D102 to D105) is summarised below and compared to the adopted guideline values for groundwater. Groundwater results for key indicator analytes relating to historical BCA placement in the MPAR are summarised in Figure 6c.

Field Parameters

Field parameters recorded at the groundwater bores in this monitoring zone for the reporting period are summarised as follows:

- Field measured pH values in groundwater from bores located downgradient of MPAR and adjacent Wangcol Creek ranged from 5.37 to 6.54. pH values were generally more acidic than the adopted guideline value range (6.5 – 8), with the exception of D102 on one occasion. pH values remained within historical ranges during the reporting period for each groundwater bores in this monitoring zone;
- Field measured EC values ranged from 357 µS/cm to 9,520 µS/cm and, in groundwater from each bore, were generally stable throughout the reporting period. EC values were reported above the adopted guideline value in groundwater from MPGM4/D1, D102, D103, D105 and MPGM4/D9; and

- TDS generally followed a similar trend to EC over the reporting period, with TDS values consistently reported above the adopted guideline value for groundwater (2,000 mg/L) at MPGM4/D1, D102, D103, and MPGM4/D9. TDS values over the reporting period ranged between 225 mg/L and 8,980 mg/L and were generally stable throughout the reporting period.

Graphs of concentrations over time since January 2020 indicate that EC and TDS at MPGM4/D1, MPGM4/D9, D102, D103, and D105 are generally above the adopted guideline values. EC and TDS concentrations in groundwater from D104, MPGM4/D2, and MPGM4/D8 have generally remained stable and below the adopted guideline values since January 2020.

Major and Minor Ions

Throughout the reporting period, calcium (total and filtered), fluoride, and cyanide concentrations were consistently reported below the adopted guideline values in groundwater from each monitoring bore in this monitoring zone.

During the reporting period, concentrations of sodium (total and filtered) in groundwater from bores MPGM4/D1, D102, D103, D105 and MPGM4/D9 were reported above the adopted guideline value. Concentrations of sulphate were reported above the adopted guideline value on both occasions at MPGM4/D1, D102, and D103, and on one occasion at D105, MPGM4/D2, and MPGM4/D9. Chloride concentrations were reported above the adopted guideline value on both occasions at MPGM4/D1 and D102, and on one occasion at MPGM4/D9, noting that the other reported concentration is considered to be anomalously low based on EC and TDS values.

Hardness as $CaCO_3$ of groundwater within this monitoring zone ranged from 139 mg/L to 3,180 mg/L over the reporting period. The hardness of groundwater was reported above the adopted guideline value on both occasions at all groundwater bores within this monitoring zone, with the exception of MPGM4/D8.

Graphs of concentrations over time since January 2020 show concentrations of sulfate follow a similar pattern to EC and TDS. Concentrations of sulfate at MPGM4/D1, MPGM4/D9, D102, D103, and D105 have generally remained stable, above the adopted guideline value, noting the concentration of sulfate reported at MPGM4/D9 during the March 2026 monitoring round is considered to be anomalously low based on EC and TDS values. The sulfate concentration in groundwater from D105 during the May 2026 monitoring round was below the adopted guideline for the first time since 2020 (this location was installed in 2018). Sulfate concentrations in groundwater from D104 and MPGM4/D8 have remained below the adopted guideline value since at least 2020. Concentrations of sulfate at MPGM4/D2 have generally remained below the adopted guideline value with the exception of the January 2020, May 2025, and February 2026 monitoring rounds.

Graphs of chloride concentrations over time since January 2020 indicate that chloride in groundwater from MPGM4/D1, D102, and MPGM4/D9 have generally remained above the adopted guideline value. Similar to the sulfate concentration at MPGM4/D9, the low concentration of chloride reported at MPGM4/D9 during the March 2026 monitoring round is considered to be anomalous when TDS and EC values are considered. Concentrations of chloride in groundwater from the other bores in this monitoring zone have remained generally stable and below the adopted guideline value.

Nutrients

Throughout the reporting period, concentrations of ammonia, nitrate, and nitrite were reported below the adopted guideline values for groundwater at all groundwater bores within this monitoring zone. Concentrations of 'nitrite and nitrate (as N)' were reported above the adopted guideline value on both occasions in groundwater from MPGM4/D8, and on one occasion from D104. Concentrations of total nitrogen were reported above the adopted guideline value on both occasions for each groundwater bores in this monitoring zone, with the exception of MPGM4/D2 which only reported a detectable concentration of total nitrogen during the April 2026 monitoring round. Concentrations of total phosphorus in groundwater from D103 to D105, MPGM4/D2, MPGM4/D8, and MPGM4/D9 were reported above the adopted guideline value on one occasion during the reporting period. Concentrations of orthophosphate were reported above the adopted guideline value during the May 2026 monitoring round at D104.

Metals

Throughout the reporting period, the following concentrations of metals in groundwater from bores MPGM4/D1, MPGM4/D2, MPGM4/D8, MPGM4/D9 and D102 to D105 were reported above the adopted guideline values:

- Aluminium on both occasions at MPGM4/D2 and MPGM4/D8, and on one occasion at MPGM4/D1, D104, and MPGM4/D9;
- Boron in both monitoring rounds at MPGM4/D1, D102, D103, and MPGM4/D9, and on one occasion at MPGM4/D2 and D105;
- Cobalt and iron (total and filtered) on both occasions at MPGM4/D1, MPGM4/D2, MPGM4/D9 and D102 – D105;
- Copper on one occasion at MPGM4/D1, D102 and D103;
- Manganese on both occasions at MPGM4/D1, D102, D103, D105, and MPGM4/D9; and
- Nickel on both occasions at MPGM4/D1, D102, D103, and MPGM4/D9.

Graphs of concentrations over time since January 2020 indicate that concentrations of nickel, manganese, and, except for MPGM4/D2, boron have generally remained stable below the adopted guideline values in groundwater from MPGM4/D2, MPGM4/D8, and D104. Concentrations of boron at MPGM4/D2 have increased to values at or above the adopted guideline value since April 2023.

Concentrations of iron (total and filtered) have fluctuated but generally remained above the adopted guideline value in groundwater from each groundwater bores in this monitoring zone except for MPGM4/D8. Since April 2021, concentrations of iron (total) have generally remained stable and at or below the adopted guideline value at MPGM4/D8 with the exception of a short period between March and September 2025. Similarly, concentrations of iron (filtered) at MPGM4/D8 have generally remained stable and below the adopted guideline value since January 2020 with the exception of the November 2025 monitoring round. During the reporting period, concentrations of iron (total and filtered) at MPGM4/D2, D104, and MPGM4/D8 generally remained stable within historical ranges.

Similar to trends for other analytes at MPGM4/D1, MPGM4/D9, D102, and D103, concentrations of metals in groundwater from these bores have generally remained stable and above the adopted guideline values, however concentrations of nickel and manganese at D103 have increased since 2023 but remain within historical values.

Concentrations of metals in groundwater from bore D105 have historically fluctuated above and below the adopted guideline values (e.g. nickel and boron), or have been consistently reported above the adopted guideline values (manganese and iron (total and filtered)). Concentrations of metals at D105 have generally remained stable or have declined since January 2020.

Statistical Trend Summary

As shown in Appendix M, for the groundwater bores located in this monitoring zone, review of the data collected since January 2020 identified the following statistically significant trends:

Increasing trends were identified for:

- Boron and nickel in groundwater from MPGM4/D2, however concentrations remained within historical ranges;
- Nickel from MPGM4/D8, however concentrations remained within historical ranges; and
- Boron from MPGM4/D9, with the highest concentration over time reported during the June 2026 monitoring round.

Decreasing trends were identified for:

- Chloride, iron (total and filtered), manganese, and nickel from MPGM4/D1; and
- Boron, EC, manganese, nickel, and TDS from D102;
- Sulfate from D104; and
- Chloride, EC, iron (total and filtered), manganese, nickel, sulfate, and TDS from D105.

Discussion

pH values were generally more acidic than the adopted guideline value range at all groundwater bores within this area, except for D102. The lower pH values are consistent with background conditions in the area and may result from historical mine disturbance and/or represent regional groundwater quality.

The concentrations of EC and TDS, chloride, sulfate, boron and nickel that were above the adopted guideline values are considered to represent changes to water quality and are not primarily related to background and pre-ash placement conditions. These analytes are present at elevated concentrations in the brine used to condition the BCA, and in groundwater immediately downgradient of the MPAR. Concentrations of these analytes in groundwater from bores MPGM4/D1, MPGM4/D9, D102, D103 and D105 are considered to be related to BCA placement activities at MPAR. Statistical trend assessment undertaken for key indicator analyte concentrations since January 2020 identified more statistically significant decreasing trends, or stable trends when compared to previous reporting periods.

Whilst some concentrations of analytes in groundwater from MPGM4/D2, MPGM4/D8, and D104 were reported above the adopted guideline values, concentrations of key indicator analytes in these groundwater bores were consistently lower than the other groundwater bores located downgradient of the MPAR and adjacent Wangcol Creek and generally remained within the same order of magnitude as background bores MPGM4/D4 and MPGM4/D5.

6.3.3.4 DOWNGRADIENT MPAR, INCLUDING LNAR (NORTH) AND HISTORICAL MINING DISTURBANCE (EAST)

Data obtained from groundwater bores situated downgradient MPAR including LNAR (north) and historical mining disturbance (east) (MPGM4/D10, MPGM4/D19, D110, D113, D117) are

summarised below and compared to the adopted guideline values for groundwater. Groundwater results for key indicator analytes relating to historical BCA placement in the MPAR are summarised in Figure 6d.

Field Parameters

Field parameters recorded at the groundwater bores in this monitoring zone are summarised as follows:

- pH values for groundwater from bores located downgradient of MPAR and adjacent Wangcol Creek ranged from 5.90 to 6.15. pH values were consistently more acidic than the adopted guideline value range (6.5–8) and remained within historical ranges;
- Field EC values ranged from 4,118 µS/cm to 9,966 µS/cm and were generally stable throughout the reporting period. EC values were reported above the adopted guideline value for groundwater (2,600 µS/cm) in groundwater from each bore in this area; and
- TDS generally followed a similar trend to EC over the reporting period, with TDS values reported above the adopted guideline value for groundwater (2,000 mg/L) at each groundwater bore. TDS values over the reporting period ranged between 3,220 mg/L and 9,070 mg/L and were generally stable throughout the reporting period.

Graphs of concentrations over time since January 2020 indicate that EC and TDS at MPGM4/D10, MPGM4/D19, D110, D113 and D117 have generally remained above the adopted guideline values. Concentrations of EC and TDS in groundwater from D113, D117 and D19 have all followed a similar pattern, remaining generally stable since September 2020. D110 has remained stable since 2020 for EC and TDS, but has consistently reported higher concentrations than D113, D117 and D19. The highest TDS concentration at D110 since January 2020 was reported during the March 2026 monitoring round, however concentrations subsequently returned to within historical ranges. Similarly, the highest concentration of EC in groundwater from D110 was reported during the May 2026 monitoring round.

Major and Minor Ions

Throughout the reporting period, sulfate and sodium (total and filtered) were consistently reported above the adopted guideline values in groundwater from each bore in this monitoring zone.

Chloride was reported above the adopted guideline value on both occasions at D110 and MPGM4/D10. The fluoride concentration in groundwater from D117 was reported above the adopted guideline value in March 2026 but later returned to below the adopted guideline value.

Hardness as $CaCO_3$ of groundwater within this monitoring zone ranged from 867 mg/L to 3,180 mg/L over the reporting period. The hardness of groundwater was reported above the adopted guideline value on both occasions at each groundwater borein this monitoring zone.

Concentrations of calcium (total and filtered) and cyanide were below the above the adopted guideline values during the reporting period.

Graphs of concentrations over time since January 2020 show concentrations of sulfate generally follow the trends of EC and TDS, with concentrations from each bore in this monitoring zone generally remaining above the adopted guideline value since January 2020. The lowest concentration of sulfate in groundwater from D117 since January 2020 was reported during the April 2026 monitoring round.

Graphs of chloride concentrations over time since January 2020 indicate that D110 has remained generally stable, above the adopted guideline value. Similar to other analytes at MPGM4/D10, concentrations of chloride in groundwater have been increasing since 2022 but remained within historical ranges during the reporting period. Chloride concentrations in groundwater from D19, D113 and D117 have generally remained stable and below the adopted guideline value since 2020.

Nutrients

Throughout the reporting period, concentrations of ammonia and nitrite were reported below the adopted guideline values for groundwater from each bores in this monitoring zone. Concentrations of 'nitrite and nitrate (as N)' were reported above the adopted guideline value on both occasions at D117 and D110, and on one occasion at D113. Total nitrogen concentrations were reported above the adopted guideline value on both occasions at each groundwater bores in this monitoring zone. Concentrations of total phosphorus were reported above the adopted guideline value on one occasion at D113 and D117.

Metals

Throughout the reporting period, the following concentrations of metals in groundwater from bores MPGM4/D10, MPGM4/D19, D110, D113 and D117 were reported above the adopted guideline values:

- Aluminium on both occasions at MPGM4/D10, D117, and D19, and on one occasion at D113 and D110;
- Boron, cobalt, and iron (total) on both occasions at each groundwater bore in this monitoring zone;
- Iron (filtered) on both occasions at MPGM4/D10, D110, D113, and MPGM4/D19, and on one occasion at D117;
- Cadmium, molybdenum, and selenium on both occasions at D117;
- Copper on one occasion at D110;
- Lead on both occasions at MPGM4/D10;
- Manganese on both occasions at D110 and D117, and on one occasion at MPGM4/D10; and
- Nickel on both occasions at D110, and on one occasion at MPGM4/D10, D113, and MPGM4/D19.

Graphs of concentrations of metals over time since January 2020 indicate that concentrations of metals in groundwater from bores in this monitoring zone vary over time. Concentrations of nickel have generally remained stable and below the adopted guideline value in groundwater from D117 since 2022. Nickel concentrations in groundwater from MPGM4/D10 and D110 have fluctuated above the adopted guideline value since 2020 (D110) and 2022 (MPGM4/D10), but remained within historical ranges during the reporting period. Nickel concentrations in groundwater from D113 and D19 have remained at or above the adopted guideline value since approximately 2023, but within historical ranges during the reporting period.

Concentrations of manganese in groundwater have generally remained stable and either fluctuated above or below the adopted guideline value (MPGM4/D10, D113, and D19), or consistently remained above the adopted guideline value since at least 2022 (D110 and D117) over time since January 2020. Concentrations of manganese have typically been more elevated

at D110 than at other groundwater bores within this monitoring zone however concentrations at D110 have declined steadily since January 2020, with the lowest concentration reported during the May 2026 monitoring round. Concentrations of manganese in groundwater from D117 have increased since 2022, to the highest historical value during the April 2026 monitoring round.

Iron (total) concentrations in groundwater have generally remained stable, above the adopted guideline value for MPGM4/D10, D110, D113, and D19, but remained within historical ranges during the reporting period. Iron (total) concentrations in groundwater for D117 have fluctuated above and below the adopted guideline value but remained within historical ranges during the reporting period.

Concentrations of iron (filtered) in groundwater from MPGM4/D10, D110, D113, and D19 have generally remained stable above the adopted guideline value, however a steady increasing trend has been observed since 2022 at MPGM4/D10, D113, and D19. The lowest concentration of iron (filtered) at D110 since January 2020 was reported during the May 2026 monitoring round. Whilst iron (filtered) concentrations at D117 have generally remained stable below the adopted guideline value since October 2022, concentrations were reported slightly above the adopted guideline value during the April 2026 sampling event.

Concentrations of boron at D19, D110 and D113 have generally remained stable above the adopted guideline value over time since January 2020. Boron concentrations in MPGM4/D10 increased from 2022 to 2024, declining but remaining above the adopted guideline value since then. Boron concentrations in groundwater at D117 have consistently remained above the adopted guideline value at generally an order of magnitude higher than other groundwater bores within this area, however concentrations remained within historical ranges during the reporting period.

Statistical Trend Summary

As shown in Appendix M, for the groundwater bores located in this monitoring zone, review of the data collected since January 2020 identified the following statistically significant trends:

Increasing trends were identified for:

- Boron, EC, manganese, and nickel in groundwater from MPGM4/D10, however concentrations remained within historical ranges;
- Iron (total) and nickel at D19, however concentrations remained within historical ranges;
- Nickel at D113, however concentrations remained within historical ranges; and
- Manganese at D117, with the highest concentration over time reported during the April 2026 monitoring round.

Decreasing trends were identified for:

- Manganese from D110; and
- Nickel and sulfate from D117.

Discussion

pH values were consistently more acidic than the adopted guideline value range in groundwater from each bore in this monitoring zone, which is consistent with background conditions in the area and may result from historical mine disturbance and/or represent regional groundwater quality.

Concentrations of key indicator analytes were identified at concentrations equal to or above the adopted guideline values in groundwater from bores around the MPAR and in the mine disturbance area to the east. Concentrations of iron (total and filtered) and manganese in groundwater from the bores in this area were of a similar order of magnitude to those in groundwater from the background monitoring bores (MPGM4/D4 and MPGM4/D5). These concentrations are considered to be related to background groundwater conditions, except for potentially manganese concentrations at D110 and D117, which were reported at an order of magnitude above MPGM4/D4 and MPGM4/D5.

The TDS, EC, sulfate, chloride, boron, and nickel concentrations in groundwater from bores in this area are elevated relative to background locations. Connell Wagner (2007) reported elevated levels of sulfate, boron, nickel, zinc, manganese and iron previously in this area based on pre-ash placement data from bore B904 (operational between 1997 and 2000), which may have been influenced by underground mine workings to the south of this area. However, concentrations of sulfate, chloride, boron, nickel and zinc are also likely to indicate seepage from BCA in the MPAR.

6.3.3.5 CROSS GRADIENT MPAR TO THE SOUTH, INCLUDING LNAR (SOUTH) AND HISTORICAL MINING DISTURBANCE

Data from groundwater bores considered to be cross gradient from MPAR to the south, including LNAR (south) and historical mining disturbance areas are summarised below and compared to the adopted guideline values for groundwater. Bores in this area include D15, D16A, D17, and D18. Groundwater results for key indicator analytes relating to historical BCA placement in the MPAR are summarised in Figure 6e.

Field Parameters

Field parameters recorded at the groundwater bores in this monitoring zone are summarised as follows for the reporting period:

- Field pH values were, at times, more acidic than the adopted guideline value range in groundwater from D15 and D17 although values were generally stable during the reporting period, ranging between 6.05 and 7.14. pH values at D18 and D16A ranged between 6.68 and 7.57, and remained within the adopted guideline value range (6.5 to 8.0). pH values generally remained within historical ranges during the reporting period, with the exception of D16A and D17 which, during the March 2026 monitoring round, reported the highest pH values since monitoring of these bores commenced;
- Field EC values ranged from 650 µS/cm to 2,065 µS/cm and were generally stable throughout the reporting period. EC values were consistently reported below the adopted guideline value for groundwater (2,600 µS/cm) at each groundwater bore in this area; and
- TDS generally followed a similar trend to EC over the reporting period, with TDS values consistently being reported below the adopted guideline value for groundwater (2000 mg/L). TDS values over the reporting period ranged between 361 mg/L and 1,540 mg/L and were generally stable throughout the reporting period.

Since at least 2022 concentrations of EC and TDS in groundwater from bores D15, D16A, D17, and D18 have generally remained below the adopted guideline values. EC and TDS at D16A and D18 have consistently remained stable.

Major and Minor Ions

Throughout the reporting period, concentrations of chloride, sulfate, calcium (total and filtered), fluoride, and cyanide, were reported below the adopted guideline values in groundwater from bores D15, D16A, D17 and D18. Sodium (total and filtered) was reported above the adopted guideline value on both occasions at D15.

Hardness as $CaCO_3$ of groundwater within this monitoring zone ranged from 308 mg/L to 832 mg/L over the reporting period. The hardness of groundwater was reported above the adopted guideline value on both occasions at each groundwater bore in this monitoring zone.

Graphs of concentrations of sulfate and chloride over time since January 2020 for D15, D16A, D17, and D18 follow a similar trend to EC and TDS. Sulfate and chloride concentrations in groundwater at D16A and D18 and have consistently remained stable and below the adopted guideline values. Sulfate and chloride concentrations in bores D15 and D17 generally declined between 2020 and 2024, remaining below the adopted guideline since at least 2024 for sulfate, and since 2020 for chloride. Concentrations of sulfate and chloride at each groundwater bore in this monitoring zone remained within historical ranges during the reporting period.

Nutrients

Throughout the reporting period, concentrations of nitrate and nitrite were reported below the adopted guideline values for groundwater at D15, D16A, D17 and D18. Concentrations of ammonia were reported above the adopted guideline value during the March 2026 monitoring round at D17. Concentrations of 'nitrite and nitrate (as N)' were reported above the adopted guideline value on both occasions at D15, D16A, and D18, and on one occasion at D17. Concentrations of total nitrogen were reported above the adopted guideline value on both occasions at each groundwater bore in this monitoring zone. Concentrations of total phosphorus in groundwater from D15, D17, and D18 were reported above the adopted guideline value on one occasion during the reporting period.

Metals

Throughout the reporting period, the following concentrations of metals in groundwater from bores D15, D16A, D17 and D18 were reported above the adopted guideline values:

- Aluminium and arsenic during the June 2026 monitoring round at D15;
- Cobalt on both occasions at D15, and on one occasion at D16A, D17, and D18;
- Iron (total) on both occasions at D15, D17, and D18, and on one occasion at D16A;
- Iron (filtered) on both occasions at D15, and during the June 2026 monitoring round at D17 and D18; and
- Molybdenum during the March 2026 monitoring round at D17.

Graphs of concentrations over time since January 2020 indicate that concentrations of nickel, manganese, and boron have generally remained stable or declining, and below the adopted guideline values for D15, D16A, D17, and D18. Concentrations of iron (total and filtered) in groundwater from D16A and D18 have exhibited some fluctuation and have generally remained above the adopted guideline value since 2022. During the reporting period, concentrations of metals at D16A and D18 remained within historical ranges.

Concentrations of iron (total) in groundwater at D15 and D17 have varied since January 2020 and have generally remained above the adopted guideline value, however during the March 2026 monitoring round concentrations at D17 were reported at an order of magnitude above the previous historical maximum. Iron (total) concentrations at D17 returned to within historical ranges during the subsequent monitoring round. When comparing this result with the historical baseline dataset presented in the WMP (ERM, 2026c), the concentration of iron (total) at D17 during the March 2026 monitoring round is considered to be anomalous. Whilst iron (filtered) at D17 has demonstrated some variability since January 2020, concentrations remained within historical ranges during the reporting period.

Statistical Trend Summary

As shown in Appendix M, for the groundwater bores located in this monitoring zone, review of the data collected since January 2020 identified the following statistically significant trends:

Increasing trends were identified for:

- Iron (total) and manganese in groundwater from D18, however concentrations remained within historical ranges.

Decreasing trends were identified for:

- Chloride, EC, iron (total and filtered), manganese, nickel, sulfate, and TDS from D15;
- Chloride and sulfate at D16A; and
- Boron, chloride, EC, manganese, nickel, sulfate, and TDS at D17.

Discussion

With the exception of an outlier concentration of iron (total) reported at D17, concentrations of key indicator metals from groundwater bores within this area are generally lower than, or within the range of, those reported in groundwater from background bores MPGM4/D4 and MPGM4/D5.

Concentrations of sulfate, chloride, and EC in groundwater from D16A and D18 were generally consistent with the background bores MPGM4/D4 and MPGM4/D5, however concentrations in D15 and D17 were slightly higher than background bores. Metal concentrations above the adopted guideline values, apart from iron (total and filtered), were mostly reported in groundwater from bore D15.

Concentrations of key indicator analytes in groundwater from bore D15 that were reported above the adopted guideline values are considered likely to have been influenced by activities at the MPAR. Bore D15 is located cross-gradient, rather than directly down hydraulic gradient of the MPAR, however the presence of preferential flow paths associated with former mine workings and other water management activities are likely to be factors in the apparent distribution of the analytes in groundwater.

6.3.3.6 BRINE WASTE POND LEAK DETECTION BORES

Water quality results from monitoring bores MPGM5/D5 and MPGM5/D6, located adjacent to the Brine Waste Holding Ponds (A / B) and to the west and upgradient of the MPAR, are summarised with reference to the adopted guideline values for groundwater in the sections below. As discussed in the previous EMR (ERM, 2026a), water in these bores is not inferred to reflect the regional water table. Water quality results for key indicator analytes relating to historical BCA placement in the MPAR are summarised in Figure 6f.

Field Parameters

Field parameters recorded at bores adjacent to the Brine Waste Holding Ponds (A/B) for the reporting period are summarised as follows:

- Field pH values for bores MPGM5/D5 and MPGM5/D6 ranged from 6.69 to 6.8. pH values were consistently within the adopted guideline value range (6.5 – 8) and remained within historical ranges during the reporting period;
- Field EC values ranged from 6,297 µS/cm to 38,306 µS/cm. EC values were above the adopted guideline value for groundwater (2,600 µS/cm) at both leak detection bores, and were higher at MPGM5/D5 than at MPGM5/D6; and
- TDS generally followed a similar trend to EC over the reporting period, with TDS values above the adopted guideline value for groundwater (2,000 mg/L) on both occasions at both leak detection bores, but was consistently higher at MPGM5/D5 (up to 35,700 mg/L).

Concentrations of EC and TDS during the reporting period at the brine leak detection bores remained within the historical ranges since January 2020.

Major and Minor Ions

Concentrations of chloride, sulfate, and sodium (total and filtered) were reported above the adopted guideline values in water from bores MPGM5/D5 and MPGM5/D6 during the reporting period. Fluoride was reported above the adopted guideline value during the February 2026 monitoring round at both brine leak detection bores, however concentrations of calcium (total and filtered) and cyanide were reported below the adopted guideline value during the reporting period.

Hardness as $CaCO_3$ of water within this monitoring zone ranged from 677 mg/L to 3,630 mg/L over the reporting period. The hardness of water was reported above the adopted guideline value on both occasions at each bore within this monitoring zone.

Sulfate and chloride concentrations in leak detection bores MPGM5/D5 and MPGM5/D6 since January 2020 indicate trends consistent with those observed for EC and TDS, with concentrations generally increasing from 2022 onwards. However, during the February 2026 monitoring event, the highest concentrations of sulfate and chloride since January 2020 were reported in both bores. During the April 2026 monitoring event, sulfate and chloride concentrations returned to levels within the pre-2023 range. Comparison of the February 2026 sulfate and chloride concentrations with TDS (which was lower than the reported sulfate concentration alone) and EC from the same event, noting that neither EC nor TDS increased, the sulfate and chloride results are considered to be anomalous (see Section 6.3.3.1).

Nutrients

Concentrations of ammonia, total nitrogen, and total phosphorus were reported above the adopted guideline values on both occasions at MPGM5/D5 and MPGM5/D6 during the reporting period. Concentrations of 'nitrite and nitrate (as N)' were reported above the adopted guideline values on both occasions at MPGM5/D6.

Metals

The following concentrations of metals in water samples from the leak detection bores (MPGM5/D5 and MPGM5/D6) were reported above the adopted guideline values during the reporting period:

- Aluminium on both occasions at MPGM5/D5, and during the February 2026 monitoring round at MPGM5/D6;
- Cobalt, iron (total and filtered), molybdenum, and nickel on both occasions at both brine leak detection bores;
- Boron, cadmium, copper, lead, manganese, and mercury on both occasions at MPGM5/D5; and
- Chromium and zinc during the February 2026 monitoring round at MPGM5/D5.

Graphs of concentrations of metals over time since January 2020 indicate that nickel, manganese, and boron at MPGM5/D6 have generally remained stable at (in the case of nickel and manganese), or below (in the case of boron) the adopted guideline values. During the reporting period, concentrations of these metals at MPGM5/D6 remained within historical ranges.

Similar to the reported concentrations of chloride and sulfate in MPGM5/D5, elevated concentrations (the highest reported to date) of nickel, manganese and boron were reported for the February 2026 monitoring event. These may be related to the anomalous values of chloride and sulfate reported for this bore during the same event. If these points are excluded, a steady increasing trend in nickel concentrations at MPGM5/D5 has been observed since 2021. Concentrations of manganese at MPGM5/D5 have remained above the adopted guideline values. Concentrations of nickel, boron, and manganese at MPGM5/D5 subsequently returned to within historical ranges during the April 2026 monitoring round.

Iron (total and filtered) concentrations have generally declined (MPGM5/D6) or remained stable (MPGM5/D5) above the adopted guideline value over time since January 2020. The lowest concentration of iron (total) at MPGM5/D6 since January 2020 was reported during the April 2026 monitoring round. Concentrations of iron (filtered) remained within historical ranges during the reporting period at both bores.

Concentrations of nickel, manganese, and boron at MPGM5/D5 have typically been higher than concentrations from MPGM5/D6 over time since January 2020. However, concentrations of iron (total and filtered) at MPGM5/D6 have generally been higher and have fluctuated more than concentrations from MPGM5/D5.

Statistical Trend Summary

As shown in Appendix M, for the brine waste pond leak detection bores, the groundwater data collected over time since January 2020 identified the following statistically significant trends:

Increasing trends were identified for:

- Chloride, EC and nickel in water from both MPGM5/D5 and MPGM5/D6;
- Iron (total and filtered) in water from MPGM5/D5; and
- Sulfate and TDS in water from MPGM5/D6.

Decreasing trends were identified for:

- Manganese in water from MPGM5/D5; and
- Iron (total and filtered) in water from MPGM5/D6.

Discussion

Concentrations of key indicator analytes at MPGM5/D5 (excluding Feb 2026 data) were generally within the same order of magnitude or below those reported in Brine Waste Pond A and Brine Waste Pond B (Section 3.2 and Appendix D).

Based on the continued elevated concentrations at MPGM5/D5 and the increasing concentrations at MPGM5/D6, the integrity of the brine waste pond liner is likely to have been compromised. Accordingly, further investigation and implementation of appropriate mitigation measures are warranted.

The previous EMR (ERM, 2026a) presents further discussion of previous known or suspected Brine Waste Pond leaks. It is understood that the Brine Waste Pond A and Brine Waste Pond B liner replacement works are planned to be completed in 2026 / 2027.

7. SURFACE WATER DATA ASSESSMENT

7.1 OBJECTIVE

The objective of the surface water monitoring program is to identify water quality changes so that potential causes can be investigated and, if necessary, effects mitigated. The surface water data is compared between locations and to the established adopted guideline values to assess changes in water quality, the extent to which changes may be related to activities associated with the LNAR and/or MPAR, and to assess whether the TARPs or contingency measures should be considered and/or implemented.

7.2 SURFACE WATER MONITORING LOCATIONS AND FREQUENCY

A summary of the surface water monitoring locations is presented in Table 7-1 and the locations are presented on Figure 4a.

TABLE 7-1 SURFACE WATER MONITORING LOCATIONS

Site ID	Position	Location Description	Frequency	No. of Samples in 2026
CSP	Upstream	Samples from the CSP are routinely collected monthly prior to planned discharge events and at times during discharge. These samples are differentiated as LDP12 (when discharge is occurring) and CSP (not discharging). The data from LDP12 and CSP is not representative of instream surface water conditions. Data from LDP12 is not regulated by the adopted guideline values and is provided in this report for comparison only.	As required during discharge[1]	15
LDP12	Upstream			6
LMP01	Upstream	This monitoring point is located north-west of the MPAR and immediately downstream of the FHP. It is an upstream position relative to the Ash Repositories and is where water from the headwaters of Wangcol Creek flows out from the MPPS operational area, downstream of the FHP.	Monthly	6
NC01	Mid-stream	Located midstream in the monitored area of Wangcol Creek, upstream of the Ash Repositories.	Monthly	4
SW_C	Mid-stream	Located within Wangcol Creek, the monitoring location is located midstream of the monitored area of Wangcol Creek and near groundwater monitoring bore D107.	Monthly	6
SW_E	Mid-stream	Located within Wangcol Creek, downstream of former open cuts "Area D" and "Area E" between the locations of groundwater monitoring bores D9 and D105.	Monthly	6

WX22 / SW_F	Downstream	Located in Wangcol Creek at a stream gauge to the east/downstream of the Ash Repositories. Also serves as WaterNSW monitoring point 212055.	Monthly	6
SW_G	Downstream	Located within the downstream portion of Wangcol Creek, downstream of WX22 (SW_F), within a former open cut mine working and in the vicinity of groundwater monitoring bore D103.	Monthly	6

The number of samples in Table 7-1 indicates the number of occasions where a complete, or near complete suite of analysis was conducted. It is noted that NC01 was unable to be sampled on a monthly basis due to insufficient water.

7.3 SURFACE WATER MONITORING RESULTS

The surface water data for the reporting period is presented in Appendix I, where the surface water results are compared to the adopted guideline values. Graphs of concentrations of key indicator analytes over time since January 2020 are presented in Appendix K, and statistical analysis is presented in Appendix M. Figure 7, Appendix A summarises the surface water data for key indicator analytes during the reporting period.

7.3.1 UPSTREAM SURFACE WATER MONITORING RESULTS

LDP12 and LMP01 are located upstream of the ash repositories and water quality at these locations is not considered to be influenced by activities at the Ash Repositories. However, other aspects of the Mt Piper brine management infrastructure (e.g., brine transfer pipelines and brine waste holding ponds) are located within the catchment upstream of these sampling locations.

Data for LDP12 (i.e. when discharging) is presented in the following written sections of this report and in Table I-2, Appendix I and is discussed with respect to the discharge limits (EPL 13007). However, assessment of trends and statistical assessment of LDP12, and comparison with adopted guideline values has not been conducted as this location is not representative of in-stream conditions and the results are regulated in accordance with the EPL.

Concentrations and trends in surface water at LMP01, which receives flow from LDP12 and other upstream portions of the Wangcol Creek catchment, are assessed with respect to potential impacts from the Mt Piper brine management infrastructure on the upstream section of Wangcol Creek and are compared to the relevant adopted guidelines (Table I-1, Appendix I). Graphs showing the concentrations of key analytes at LMP01 over time are presented in Appendix K.

7.3.1.1 LDP12

As shown in Table I-2, Appendix I, EC, turbidity, lab pH, oil and grease and total suspended solids (for which discharge limits apply) in surface water from LDP12 were below the relevant discharge limits (within the range for pH) during each of the 6 monitoring events in this reporting period.

7.3.1.2 FIELD PARAMETERS

Field parameters monitored at LMP01 for the reporting period are summarised as follows:

- pH values obtained from laboratory analysis of surface water samples from LMP01 ranged from 7.86 to 8.01. The pH at LMP01 was outside of the range of the adopted guideline value (6.5 to 8.0) during the March 2026 monitoring round. pH values at LMP01 remained within historical ranges during the reporting period;
- EC values obtained from laboratory analysis of surface water from LMP01 were consistently reported below the adopted guideline value (2,200 µS/cm), and ranged from 346 µS/cm to 548 µS/cm;
- TDS values at LMP01 were consistently below the adopted guideline value for surface water (1,500 mg/L). TDS values over the reporting period at LMP01 ranged from 214 mg/L to 319 mg/L; and
- Turbidity was reported above the adopted guideline value range for surface water (2 to 25 mg/L) on three occasions at LMP01 and ranged between 5.98 mg/L and 292 mg/L.

Graphs of concentrations over time since January 2020 indicate that concentrations of EC and TDS at LMP01 have remained stable and consistently below the adopted guideline values.

7.3.1.3 MAJOR AND MINOR IONS

Concentrations of sulfate, chloride, fluoride, calcium (total and filtered), sodium (total and filtered), and cyanide at LMP01 were below the adopted guideline values for surface water during the reporting period, consistent with data since January 2020 and within the historical range.

Hardness as $CaCO_3$ of surface water at LMP01 ranged from 91.9 mg/L to 154 mg/L over the reporting period, and was consistently reported below the adopted guideline value.

7.3.1.4 NUTRIENTS

Concentrations of ammonia, nitrate, and nitrite were reported below the adopted guideline values for surface water at LMP01 during the reporting period. Concentrations of other nutrients in surface water reported above the adopted guideline values during the reporting period at LMP01 are as follows:

- ‘Nitrite and nitrate (as N)’ and total phosphorus on all occasions; and
- Total nitrogen on five occasions.

7.3.1.5 METALS

The following concentrations of metals in surface water from LMP01 were reported above the adopted guideline values during the reporting period:

- Aluminium (total) on five occasions;
- Chromium (total) and lead (total) during the January 2026 monitoring round;
- Copper (total) and iron (total) between January and March 2026 and during the June 2026 monitoring round; and
- Molybdenum (total) during the February 2026 monitoring round.

Graphs since January 2020 for LMP01 indicate concentrations of iron (total), lead (total), molybdenum (total), and nickel (total and filtered) have varied over time. The highest iron (total) concentration since July 2020 was reported during the January 2026 monitoring round at LMP01 as was the highest lead (total) concentration at LMP01 since December 2024. However, concentrations of both these metals subsequently declined to within historical ranges and filtered concentrations of these metals remained stable below the adopted guideline values. Concentrations of iron (filtered), manganese (total and filtered) and boron (total and filtered) have consistently remained stable and below the adopted guideline values at LMP01.

7.3.1.6 STATISTICAL ASSESSMENT OF TRENDS

No statistically significant trends were identified for key indicator analytes at LMP01 over time from January 2020.

7.3.1.7 DISCUSSION

Given that LMP01 is located upstream of the MPAR, and that the water table in this location is below the base of the stream bed, the water quality at LMP01 is considered to represent regional upgradient conditions and is not considered to have been impacted by seepage from the Ash Repositories.

7.3.2 MIDSTREAM SURFACE WATER MONITORING RESULTS

Locations NC01, SW_C and SW_E are considered to represent midstream conditions relative to the ash repositories in the monitored area of Wangcol Creek. Locations NC01 and SW_C are located north of the ash repositories, along an area of Wangcol Creek that is not known to have been subject to open cut mining operations. SW_E is located further downstream of NC01 and SW_C, to the east of the ash repositories and immediately downstream from an area of Wangcol Creek that was historically subject to open cut mining activities.

7.3.2.1 FIELD PARAMETERS

Field parameters monitored at NC01, SW_C, and SW_E for the reporting period are summarised as follows:

- Field pH values at midstream surface water monitoring locations ranged from 7.15 to 8.3. pH at the midstream surface water monitoring locations were generally reported within the adopted guideline value range (6.5 to 8.0), however pH at NC01 and SW_C during the May and June 2026 monitoring rounds, and SW_E during the April to June 2026 monitoring rounds were more alkaline than the adopted guideline value range. pH values at midstream surface water monitoring locations generally remained within historical ranges throughout the reporting period, however the highest pH value at SW_E since surface water monitoring commenced was reported during the June 2026 monitoring round;
- Field EC values for surface water from midstream monitoring locations were consistently reported below the adopted guideline value (2,200 µS/cm). EC at midstream surface water monitoring locations ranged from 192 µS/cm to 1,191 µS/cm;
- TDS generally followed a similar trend to EC over the reporting period, with TDS at midstream monitoring locations consistently reported below the adopted guideline value (1,500 mg/L). TDS concentrations ranged from 146 mg/L to 746 mg/L; and
- Turbidity was reported above the adopted guideline value range for surface water (2 to 25 mg/L) on three occasions at SW_C, at NC01 on two occasions, and on one occasion at SW_E. Turbidity at midstream surface water monitoring locations ranged from 2.1 mg/L to 134 mg/L.

Graphs of concentrations over time since January 2020 show EC and TDS concentrations at NC01 and SW_C have remained low and stable, below the adopted guideline values for surface water. EC and TDS concentrations at SW_E have varied, particularly since 2023, however concentrations returned to below the adopted guideline values throughout the current reporting period. The lower concentrations of EC and TDS observed for all midstream surface water monitoring locations during the reporting period are considered to be attributed to the higher than average rainfall experienced between January and March 2026 and are representative of the seasonal autumn to winter influences on surface water flow and water quality.

7.3.2.2 MAJOR AND MINOR IONS

Concentrations of chloride, sulfate, sodium (total and filtered), calcium (total and filtered), fluoride , and cyanide were reported below the adopted guideline values for surface water at all midstream monitoring locations during the reporting period. Hardness as $CaCO_3$ was reported above the adopted guideline value (200 mg/L) during the March and April 2026 monitoring rounds at SW_E.

Graphs of concentrations over time since January 2020 for chloride and sulfate are consistent with the trends identified for EC and TDS. Chloride and sulfate concentrations at NC01 and SW_C have consistently remained low and stable, below the adopted guideline values. Concentrations of sulfate and chloride at SW_E have fluctuated both above and below the adopted guideline value since 2023, but remained below the adopted guideline values and within historical ranges during the current reporting period.

7.3.2.3 NUTRIENTS

Concentrations of ammonia, nitrate, and nitrite were consistently reported below the adopted guideline values for all midstream surface water monitoring locations during the reporting period. Concentrations of nutrients in surface water reported above the adopted guideline values during the reporting period are as follows:

- ‘Nitrite and nitrate (as N)’ on three occasions at SW_C and on two occasions at NC01;
- Total nitrogen at SW_E and NC01 on all occasions, and SW_C on five occasions; and
- Total phosphorus at SW_C on three occasions, NC01 on two occasions, and SW_E one occasion.

7.3.2.4 METALS

The following concentrations of metals in surface water from midstream monitoring locations were reported above the adopted guideline values during the reporting period:

- Aluminium (total) on all occasions at SW_C and NC01, and on three occasions at SW_E;
- Aluminium (filtered) on two occasions at SW_C and on one occasion at NC01;
- Chromium (total) during the June 2026 monitoring round at SW_E;
- Cobalt (filtered) and nickel (total and filtered) between January and May 2026 at SW_E;
- Copper (total) on two occasions at SW_C and SW_E, and on one occasion at NC01;
- Iron (total) on all occasions at each midstream monitoring location;
- Iron (filtered) between March and May 2026 at SW_E; and

Concentrations over time since January 2020 for boron (total and filtered), iron (filtered), manganese (total and filtered), and nickel (total and filtered) are generally consistent with TDS at NC01 and SW_C have remained below the adopted guideline values. Whilst concentrations of boron (total) at NC01 have remained below the adopted guideline value, the highest concentration since January 2020 was reported during the March 2026 monitoring round. Concentrations of iron (total) have fluctuated above the adopted guideline value at SW_C and NC01, however remained within historical ranges throughout the reporting period.

Concentrations of iron (total and filtered), boron (total and filtered), and manganese (total and filtered) at SW_E have fluctuated above the adopted guideline value since 2023. However, during the reporting period, concentrations of these analytes had declined to below the respective adopted guideline values. Overall, concentrations of nickel (total and filtered) at SW_E declined during the reporting period, remaining above the adopted guideline value for all but the June 2026 monitoring event and within historic ranges. Concentrations of lead (total) and molybdenum (total) have generally remained at, or below, the adopted guideline value at each midstream surface water monitoring location.

7.3.2.5 STATISTICAL ASSESSMENT OF TRENDS

Linear regression analysis undertaken for concentrations of key indicator analytes in surface water from midstream monitoring locations identified statistically significant increasing trends at NC01 for fluoride (R = 0.528) and at SW_C for electrical conductivity (R = 0.54), fluoride (R = 0.63) and total dissolved solids (R = 0.60).

7.3.2.6 DISCUSSION

As is the case with LMP01, NC01 and SW_C are located upstream of the MPAR, and the water table in these locations is below the base of the stream bed. Therefore, the water quality at these locations is considered to represent regional upgradient conditions and is not considered to have been significantly impacted by seepage from the Ash Repositories.

However, due to historical open cut mining activities along the creek alignment at SW_E, the base of the creek bed intersects the water table allowing discharge of groundwater to surface water in this location. Furthermore, as described in Section 2 and presented by ERM (2026b), during periods of low rainfall, lower surface water flows in Wangcol Creek result in a greater relative contribution of groundwater to surface water in Wangcol Creek in the mine void areas. Consequently, groundwater conditions exert more influence on surface water quality in the mine disturbance areas, particularly during low flow period.

Iron concentrations are related to background conditions in the local environment, resulting from the long-term mining activities and disturbed geology. Nickel concentrations in surface water are considered to be influenced by interaction between groundwater and the surface water of Wangcol Creek.

When compared to previous reporting periods, concentrations of key indicator analytes in surface water at all midstream monitoring locations were generally lower than concentrations observed between 2023 and 2025 and, in the case of chloride, sulfate, EC and TDS, were consistently below the respective adopted guideline values. These lower concentrations are considered to reflect the influence of above-average rainfall that occurred between January and March 2026. Based on the historical baseline dataset presented in the WMP (ERM, 2026c), it is anticipated that concentrations of target analytes in surface water may increase again during future periods of lower rainfall and reduced stream flow, particularly since this reporting period encompasses the autumn to winter months.

7.3.3 DOWNSTREAM SURFACE WATER MONITORING RESULTS

Locations WX22 (SW_F) and SW_G are considered to represent downstream conditions relative to the Ash Repositories in the monitored area of Wangcol Creek. Both WX22 and SW_G are located east of the LNAR along an area of Wangcol Creek that, in the vicinity of SW_G, has been subject to open cut mining operations.

7.3.3.1 FIELD PARAMETERS

Field parameters monitored at WX_22 and SW_G for the reporting period are summarised as follows:

- Field pH values at downstream surface water monitoring locations ranged from 7.61 to 8.1. pH at SW_G and WX22, generally within the adopted guideline value range (6.5 to 8.0), however pH was more alkaline than the adopted guideline value range at SW_G during the May 2026 monitoring round, and at WX22 during the April and June 2026 monitoring rounds. pH values at downstream surface water monitoring locations remained within historical ranges throughout the reporting period;
- Field EC values at downstream surface water monitoring locations were reported below the adopted guideline value (2,200 µS/cm) on all occasions at SW_G and WX22. EC at downstream surface water monitoring locations ranged from 535 µS/cm to 1,420 µS/cm;
- TDS generally followed a similar trend to EC over the reporting period, with concentrations reported below the adopted guideline value (1,500 mg/L) on both occasions at downstream monitoring locations. TDS concentrations ranged from 364 mg/L to 972 mg/L; and
- Turbidity was reported outside the adopted guideline value range for surface water (2 to 25 mg/L) during all sampling events at SW_G and WX22, with the exception of the May 2026 monitoring round at both locations. Turbidity at downstream surface water monitoring locations ranged from 0.9 mg/L to 59 mg/L.

Graphs of concentrations over time since January 2020 for SW_G and WX22 show EC and TDS concentrations at these locations are very similar and have generally remained below the respective adopted guideline values, however, have increased and shown greater variability since 2022. During the reporting period, concentrations of EC and TDS remained stable within historical ranges and below the adopted guideline values.

7.3.3.2 MAJOR AND MINOR IONS

Concentrations of chloride, sulfate, sodium (total and filtered), calcium (total and filtered), fluoride, and cyanide were reported below the adopted guideline values for surface water at all downstream monitoring locations during the reporting period. Hardness as $CaCO_3$ was reported above the adopted guideline value during the January and May 2026 monitoring rounds at both downstream monitoring locations.

Graphs of concentrations over time since January 2020 for SW_G and WX22 indicate that chloride and sulfate concentrations are generally consistent with EC and TDS trends and have increased since 2022. During the reporting period, concentrations of chloride and sulfate remained stable within historical ranges and below the adopted guideline values.

7.3.3.3 NUTRIENTS

Concentrations of ammonia, nitrate, nitrite, and 'nitrite and nitrate (as N)' were reported below the adopted guideline values for surface water at WX22 and SW_G during the reporting period. Concentrations of other nutrients in surface water reported above the adopted guideline values for downstream monitoring locations during the reporting period are as follows:

- Total nitrogen at downstream monitoring locations on all occasions, except for the April 2026 monitoring round; and
- Total phosphorus at SW_G on three occasions, and at WX22 on two occasions.

7.3.3.4 METALS

The following concentrations of metals in surface water from downstream monitoring locations were reported above the adopted guideline values during the reporting period:

- Aluminium (total) at on three occasions at SW_G, and on two occasions at WX22;
- Boron (total) during the May 2026 monitoring round at WX22;
- Chromium (total) during the June 2026 monitoring round at SW_G;
- Copper (total) during the February 2026 monitoring rounds at both downstream monitoring locations;
- Iron (total) on three occasions at WX22 and on two occasions at SW_G; and
- Nickel (total and filtered) on all occasions at downstream monitoring locations.

Graphs of concentrations over time since January 2020 for boron (total and filtered) and nickel (total and filtered) are generally consistent with EC and TDS; specifically concentrations of these metals in surface water at downstream monitoring locations have, overall, increased since 2022, but remained within historical ranges during the reporting period. Concentrations of boron (filtered) remained below the adopted guideline value at SW_G and WX22 during the reporting period, however concentrations of nickel (total and filtered) consistently remained above the adopted guideline value but within historical ranges. Concentrations of boron (total) were reported above the adopted guideline value during the May 2026 monitoring round at WX22, but the concentration had declined in the subsequent monitoring round.

Concentrations of iron (total) in surface water from downstream monitoring locations have fluctuated above and below the adopted guideline value over time since January 2020. Whilst iron (filtered) has also demonstrated some variability, concentrations have generally remained below the adopted guideline value since 2022; iron (filtered) concentrations at these locations during this reporting period remained below the adopted guideline value. Lead (total), manganese (total and filtered), and molybdenum (total) concentrations in surface water from SW_G and WX22 were below the adopted guideline values and have generally remained stable and below the adopted guideline values throughout the historical dataset. Concentrations of lead (total), manganese (total and filtered), and molybdenum (total) remained within historical ranges and below the adopted guideline values throughout the reporting period.

7.3.3.5 STATISTICAL ASSESSMENT OF TRENDS

Linear regression analysis undertaken for concentrations of key indicator analytes in surface water from downstream monitoring locations identified a statistically significant increasing trend at SW_G for boron (filtered) ($R = 0.56$).

7.3.3.6 DISCUSSION

SW_G and WX22 are located to the east of the ash repositories and are considered to represent downstream conditions in Wangcol Creek. As is the case with SW_E, SW_G has been subject to open cut mining operations.

When compared to previous reporting periods, concentrations of key indicator analytes in surface water at downstream monitoring locations were generally lower than concentrations observed between 2023 and 2025. As observed at SW_E, concentrations of key indicator analytes at downstream monitoring locations generally declined and were less variable following increased rainfall and surface water flow between January and March 2026. As flow conditions began to decline towards the end of the monitoring period, key indicator analytes returned to within previously observed ranges at SW_G and WX22.

Based on the historical baseline dataset presented in the WMP (ERM, 2026c), it is anticipated that concentrations of target analytes in surface water may increase again during future periods of lower rainfall and reduced stream flow, particularly since this reporting period encompasses the autumn to winter months.

8. LEACHATE MANAGEMENT

8.1 OBJECTIVES

The objective of the leachate monitoring program is to assess the management of generated stormwater runoff from active ash placement areas and leachate at the LNAR and to minimise the potential for adverse impacts to the environment.

8.2 LEACHATE MANAGEMENT SYSTEM

To manage the risk of vertical and lateral movement of BCA leachate, a leachate barrier system was included as an integral component of the LNAR Mod 1. As described in the OEMP, the leachate barrier system comprises three primary components as summarised below:

- A liner comprising a geotechnical base layer and sidewall liner. The liner includes a leachate collection system through drainage aggregate, leachate sumps and connecting pipework;
- A capping liner welded to the sidewall liner overlain with fill material, growth medium and erosion protection measures as necessary; and
- Leachate storage ponds and ancillary multipurpose high-density polyethylene (HDPE) double lined storage ponds to manage BCA leachate and water intercepted from other areas of the LNAR:
  - Leachate storage ponds: LNAR 3, LNAR 4, LNAR 5[1]; and
  - Multipurpose storage ponds: Settling Pond D, and LNAR2 (referred to as LN Pond 2 in the OEMP).

The leachate management system includes internal drains that follow the general subgrade gradient to direct leachate to collection sumps. Leachate is then pumped out from the risers and transferred to leachate storage ponds.

The volume of stored leachate is managed via reuse for dust suppression within the lined BCA placement areas of the LNAR.

8.3 LEACHATE MONITORING PLAN

A summary of the leachate monitoring plan, as outlined in the OEMP (EnergyAustralia, 2025), is presented in Table 8-1.

TABLE 8-1 LEACHATE MONITORING PLAN

Location Description	Monitoring Parameters	Frequency	Target
Leachate storage	Storage volume / capacity. Available freeboard. Leachate quality as measured from leachate storage	Monthly for leachate quality monitoring for the first 24 months, then quarterly.	Suitable freeboard / pumping capacity available with account for seasonal weather and forecasting. To be defined by contractor.

[1] Referred to as Pond BWA, BWB, and BWC respectively in the OEMP.

Location Description	Monitoring Parameters	Frequency	Target
Leachate storage	Monitoring for leachate within the space between storage liners and within underlying sump.	Monthly as part of routine inspections.	No leaks.
Lined ash placement areas	Leachate level monitoring as measured from leachate collection sumps and leak detection system.	Monthly as part of routine inspections.	Level to be maintained no more than 300 millimetres (mm) above the upper surface of the base liner. No leaks.
Leachate transfer pipelines	Monitoring volume and operational integrity.	Weekly as part of routine inspections.	Visual inspection and documentation to assess the integrity of the transfer system. Record of volumes via flow totaliser meter.

8.4 LEACHATE MONITORING OUTCOMES

Evidence of leachate monitoring conducted in accordance with the OEMP's leachate monitoring plan is presented in Appendix N and includes the following:

- Monthly LNAR leachate system inspection and leachate collection sump pump out records (representative example);
- LNAR lined pond storage summary examples for January and June 2026, as extracted from the Service Stream Monthly Client Report – Mt Piper (Contract CW2228375). These storage records are presented in each monthly client report from Service Stream to EnergyAustralia;
- LNAR lined pond storage and transfer tracking spreadsheet, presenting January 2026 to July 2026 data, as provided by Service Stream via an email to EnergyAustralia NSW Pty Ltd (Service Stream, 2026);
- LNAR lined pond storage, leachate collection pipeline and leachate collection sump annual monitoring summary spreadsheet, as provided by Service Stream (Service Stream, 2026); and
- LNAR lined pond storage analytical data summary, with Surface Water Environmental Goals provided alongside for comparison purposes only as these Environmental Goals do not apply to leachate or water collected from this system.

In summary, based on the evidence of monitoring presented in Appendix N, leachate monitoring has been conducted in general accordance with the requirements of the OEMP. Operational management and monitoring of the leachate management system has been reported to be consistent with the design intent, successfully containing leachate generated from BCA within the LNAR. As such, implementation of contingency or mitigation measures has not been required.

9. DEVIATIONS FROM THE MONITORING PROGRAM

It is noted that during previous monitoring rounds, barium, beryllium, cobalt, cadmium, chromium, lead, manganese, mercury, molybdenum, antimony, selenium, and silver were analysed only for total (unfiltered) concentrations in groundwater and surface water. In accordance with the WMP and EPL 13007, these analytes were only analysed for filtered concentrations in groundwater during the reporting period. Whilst both total and filtered metal concentrations have been analysed in surface water samples, statistical trend assessment has only been undertaken using filtered metal concentrations. Filtered metal concentrations provide a more readily comparable indication of water quality because they capture only the dissolved fraction present in the aquifer and / or surface water system, excluding the suspended sediments and particulates that can be mobilised during sampling and, for groundwater, are unlikely to be transported in aquifer systems. As a result, limited directly comparable data was available to support long-term trend assessment or statistical analysis of these metals for surface water and groundwater. Where required, trend assessment for these analytes will be undertaken in future reporting periods once a sufficient filtered concentration dataset has been established.

Furthermore, where analysis of certain analytes has only been undertaken for the current monitoring period, no directly comparable historical dataset was available to support long-term trend assessment or statistical analysis. Where required, trend assessment for these analytes will be undertaken in future reporting periods once a sufficient filtered concentration dataset has been established.

For some samples, filtered metals were reported at concentrations that were higher than concentrations for the un-filtered samples from the same monitoring round. The differences between these total and filtered concentrations were confirmed by the laboratory to be within the laboratory’s acceptance criteria for experimental variation.

The laboratory LORs for fluoride, aluminium (filtered), antimony (filtered), chromium (filtered), hexavalent chromium, trivalent chromium, silver (dissolved), ‘nitrite and nitrate (as N)’, total nitrogen, and total phosphorus, were above the adopted guideline values for surface water and / or groundwater for one or more sampling events throughout the reporting period. This is consistent with previous reporting periods.

Evidence of the collection of field QA/QC samples (i.e. rinsate, trip blanks or trip spikes) during the field-based programs was not provided. Results of laboratory QC measures including laboratory duplicate, triplicate, method blanks or spike data were not presented for review and, as such, are not considered in this report.

10. GROUNDWATER MODEL VALIDATION

As presented on Figure 10-1, the groundwater flow paths and surface water interaction modelled by ERM (2023a) indicate that groundwater that flows to the east from the MPAR is primarily received by DML Dam and Cooks Dam, and a portion of the groundwater that flows to the north-east and east from the MPAR is received by Wangcol Creek at and near Areas D, E and G. The groundwater elevation contours developed using groundwater elevation data for the reporting period, presented in Figure 5a and 5b (Appendix A), are generally consistent with the modelled groundwater flow paths.

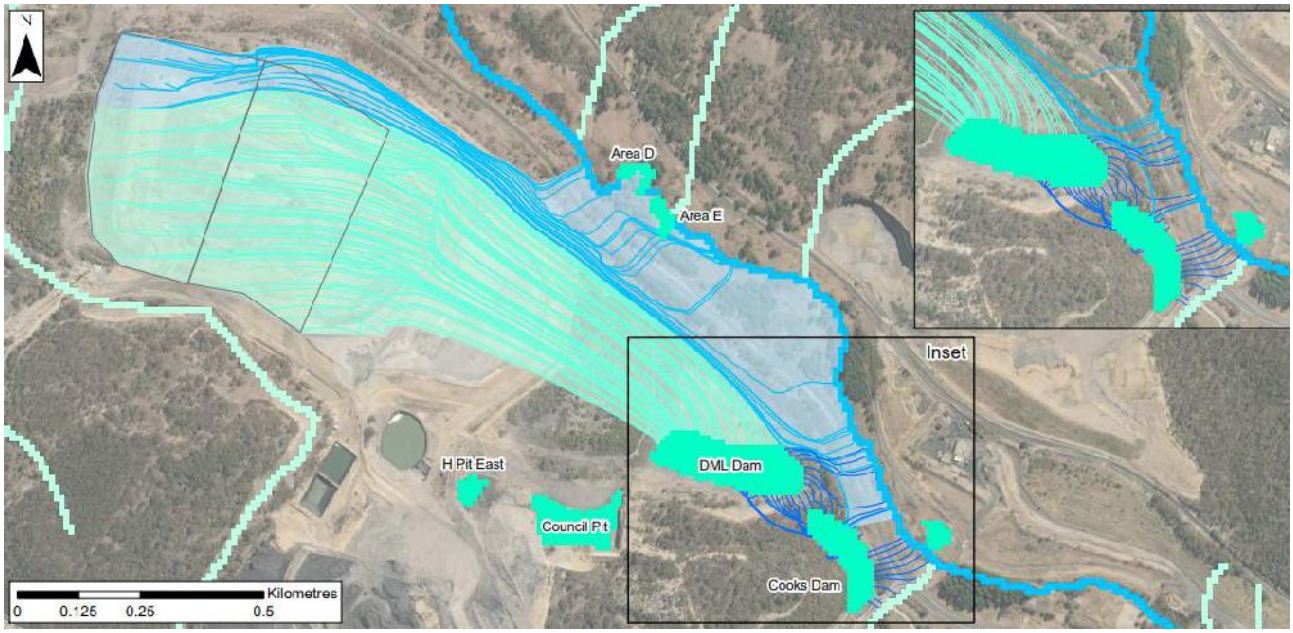


FIGURE 10-1 MODELLED GROUNDWATER FLOW PATHS AND SURFACE WATER INTERACTION

ERM (2023a) formed the basis for the Solute Transport Model (ERM, 2023b), which modelled chloride migration in groundwater based on the previously approved decommissioning scenario for the MPAR (i.e. Scenario 1). The simulated chloride outcomes for Layer 3 under Scenario 1 are presented in Figure 10-2 below, where Year 0 is 2019 and Year 6 is 2025. Chloride is used as a primary indicator of potential impacts associated with brine because the local area is highly mineralised and it is difficult to distinguish the origin of other solutes. Additionally, chloride is unlikely to undergo chemical alteration in groundwater or surface water at the Site.

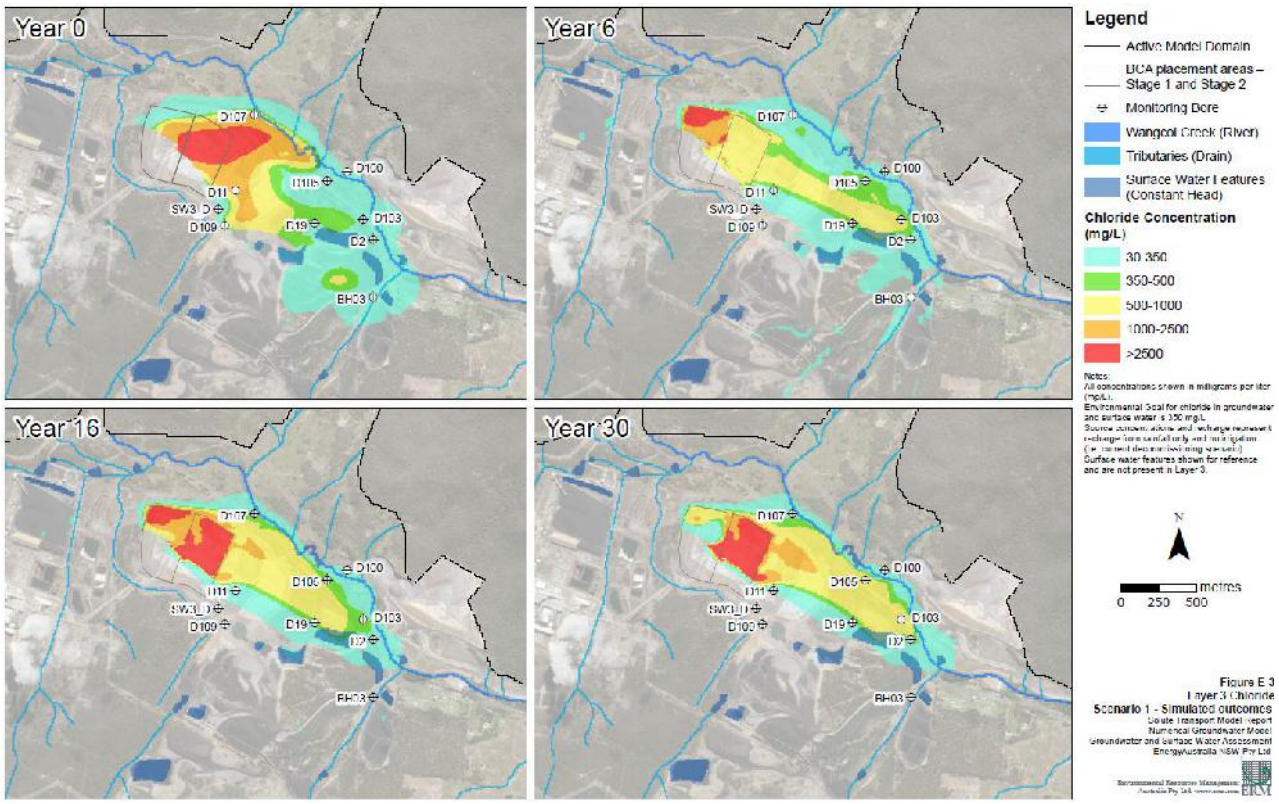


FIGURE 10-2 SCENARIO 1 SIMULATED CHLORIDE CONCENTRATIONS

The distribution of chloride concentrations in groundwater as described in this report is generally aligned with the modelled chloride plume under Scenario 1. However, as outlined in Section 3.1.1, the Stage 1 and Stage 2 BCA placement areas reached their approved final landform height in September 2025, and as authorised by Mod 9 to the Mt Piper Consent, recharge control measures for BCA placement areas in the MPAR are currently being implemented (see Section 2). As such, the nominal "start date" in the model is offset by approximately 6 years. In the future, as the source control measures are implemented at the MPAR, the groundwater model validation may consider Scenario 3a as described by ERM (2023b), which modelled a low permeability cap over a targeted area of the MPAR.

Overall, the conceptual basis of the NGM, i.e. the conceptual groundwater model, and the underpinning assumptions to the groundwater flow and solute transport model, remain valid. This report has not identified material unexpected changes to the local groundwater system that may be attributable to the Ash Repositories, and the CSM does not require an update at this time. Monitoring will continue in accordance with the WMP and EPL and groundwater model validation will continue to form part of the annual reporting as required.

11. COMPARISON TO THE TARPs

The TARPs, as presented in Section 11.2 of the WMP (ERM, 2026c), have been prepared in relation to reported results, including water quality monitoring and Site inspections to provide a means of detecting potential changes in risk profile relating to conditions at the MPAR.

11.1 LEACHATE AND BRINE WASTE POND MANAGEMENT TRIGGERS

Installation of the MPAR Zone 2 LBMS had not commenced during the reporting period. As the triggers are dependent on the implementation of the operational changes approved as part of Mod 9, assessment of MPAR leachate management will be documented and evaluated in future reports as construction progresses.

During the reporting period statistically significant increasing trends were apparent for chloride, EC, iron (total and filtered), and nickel at MPGM5/D5, and chloride, EC, nickel, sulfate and TDS at MPGM5/D6. However, statistically significant decreasing trends were apparent for manganese at MPGM5/D5 and iron (total and filtered) at MPGM5/D6. As discussed in Section 6.3.3.6, it is considered likely that the integrity of the brine waste pond liner may have been compromised, and it is understood that Brine Waste Pond A and Brine Waste Pond B liner replacement works are planned to be completed in 2026 / 2027.

11.2 COVER AND CAP INTEGRITY TRIGGERS

Installation of MPAR Phase 1 Capping is largely complete, including the seal bearing layer, the LLDPE geomembrane liner, and the sub-soil layer as well as drain construction; however, some further works remain. However, as detailed in Section 3.1.1, topsoiling and revegetation works for the MPAR Phase 1 Capping were ongoing to the end of the reporting period. As the triggers are dependent on the implementation of the operational changes approved as part of Mod 9, assessment of these TARPs will be documented and evaluated in future reports when the installation of MPAR Phase 1 Capping is completed.

11.3 UNSUITABLE OR INSUFFICIENT VEGETATION TRIGGERS

Whilst construction for the MPAR Phase 1 Capping and Drainage is largely complete, the vegetation of these areas had not been completed during the reporting period. As the triggers are dependent on the implementation of these operational changes approved as part of Mod 9, assessment of these TARPs will be documented and evaluated in future reports when construction is completed.

11.4 ANALYTE CONCENTRATION TRIGGERS

The WMP provides analyte concentration triggers, as listed below:

- Adopted Guideline Values Trigger: *Concentrations of a monitored parameter at a given location are reported above the Environmental Goal or adopted ANZG value for the first time;*
- Historical Maximums Trigger: *Concentrations at a given location reported an order of magnitude above the historical maximum; and*
- Statistically Significant Increasing Trend Trigger: *Concentrations at a given location indicate a statistically significant increasing trend.*

The following subsections present a summary of where these triggers have been met, and the associated actions and responses where required.

11.4.1 ADOPTED GUIDELINE VALUES TRIGGER

Triggers pertaining to a concentrations that, for the first time, are above the relevant adopted guideline value for surface water and groundwater samples collected over the reporting period are outlined in Table O-1, Appendix O.

Consistent with the approach described in Section 5, where Environmental Goals have not been established for a given analyte, the ANZG (2018) guidelines were applied. The application of the ANZG (2018) guidelines resulted in several analytic results where concentrations of specific analytes were above the adopted guideline value and had not, by definition, been reported previously. In these instances, concentrations relative to the new adopted value have been interpreted in the context of the historical dataset, where available, for these analytes.

As detailed in Section 9, analysis of certain analytes has been undertaken for the first time during the reporting period. As such, no directly comparable historical dataset was available. For the purposes of this TARP assessment, and consistent with above, where concentrations of specific analytes were above the adopted guideline value during the reporting period they have been included in Table O-1 to provide a benchmark for future trend evaluations. However, these values should be interpreted as the establishment of a new analytical baseline that has not been previously characterised due to the absence of historical data. Where filtered metal concentrations were above the adopted guideline value, but a directly comparable historical filtered metals dataset was not available, the results were considered alongside the historical baseline data for the corresponding total metal concentrations documented in the WMP (ERM, 2026c).

As detailed in Section 9, LORs for several key indicator analytes have consistently been above the adopted guideline values both historically and throughout the reporting period. For the purposes of this TARP assessment, results where concentrations are above these elevated LORs have not been interpreted as representing concentrations above the adopted guideline value.

11.4.2 HISTORICAL MAXIMUM TRIGGER

As detailed in Section 9, several target analytes have consistently been reported below the LOR. Where an analyte was reported above the LOR during the current monitoring round, but all corresponding historical results were below the LOR, the data has not been considered as a historical maximum trigger and has therefore been excluded from this TARP analysis.

As detailed in Section 11.4.1 above, although TARP triggers are present for total metal concentrations, the filtered (dissolved) fractions provide the appropriate basis for assessment and should be applied when interpreting groundwater and surface water quality.

As detailed in Section 9, where analysis of certain analytes has been undertaken for the first time during the reporting period, no directly comparable historical dataset was available and therefore these analytes have been excluded from this TARP analysis.

Concentrations of target analytes in the brine leak detection bores and at all surface water sampling locations did not meet the historical maximums trigger throughout during the reporting period.

As discussed in previous sections, Table O-2, Appendix O, presents the groundwater results for the reporting period that met the historical maximum trigger. The historical maximum for each analyte was calculated using all available data from 2003 to 30 June 2026.

11.4.3 STATISTICALLY SIGNIFICANT INCREASING TREND TRIGGER

Statistically significant increasing concentrations are discussed for groundwater in Section 6.3.3, and for surface water in Section 7.3. As statistically significant increasing trends were identified in surface water and groundwater, a review of the NGM and CSM was undertaken in Section 10, which identified that the conceptual basis of the NGM, i.e. the conceptual groundwater model, and the underpinning assumptions to the groundwater flow and solute transport model remain valid.

11.5 TARP SUMMARY

A summary of the comparison to the TARPs is as follows:

- Activities related to the implementation of Mod 9, including MPAR Phase 1 Capping and Drainage, had commenced at the time of this report. However, as the triggers are dependent on the implementation of these operational changes approved as part of Mod 9, assessment of triggers related to leachate management i.e. as related to MPAR Zone 2 LBMS), cover and cap integrity, and vegetation will be evaluated in future reports once construction has been completed;
- There was no reason to suspect the data provided for this reporting period needed clarification with the laboratory, beyond that presented, or that confirmatory re-sampling was required;
- The application of the ANZG (2018) guidelines as adopted guideline values for some analytes has resulted in concentrations of several analytes being reported above the adopted guideline value. In these instances, the triggers were interpreted with the additional lines of evidence to evaluate the relationship of these concentrations to Site conditions;
- Analysis of certain analytes has been undertaken for the first time during the reporting period. As such, no directly comparable historical dataset was available. Where concentrations of these analytes were above the adopted guideline value they have been included as part of this TARP assessment to provide a benchmark for future trend evaluations, however these concentrations should be interpreted as the establishment of a new analytical baseline that has not been previously characterised due to the absence of historical data.
- At all surface water sampling locations, in the cases where concentrations of key indicator analytes reported during the reporting period were above the historical maximums, they were similar concentrations to those previously reported;
- Increasing concentrations of key indicator analytes in the brine waste pond leak detection bores warrant further assessment; and
- A number of statistically significant increasing trends were identified for key indicator analytes in groundwater and surface water, however the results are consistent with modelled outcomes and were not considered to alter the previously assessed risk profile.

Overall, the trigger responses outlined by the WMP were generally completed as prescribed.

12. SUMMARY AND RECOMMENDATIONS

Based on the continued elevated concentrations at MPGM5/D5 and the increasing concentrations at MPGM5/D6, the integrity of the liner/s at Brine Waste Pond A and/or Brine Waste Pond B may have been compromised. ERM understands that liner repair / replacement activities are planned to be completed in 2026 / 2027.

The results of routine groundwater and surface water monitoring during this reporting period indicate that elevated concentrations of key indicator analytes are present in groundwater downgradient from the MPAR. This is consistent with the findings of previous annual monitoring reports, and with the findings of the Independent Groundwater Investigation, which have reported that the elevated concentrations of key indicator analytes are attributed to leaching and seepage associated with BCA placement within the MPAR. The distribution of key indicator analyte concentrations in groundwater as described in this report is generally consistent with the findings of previous annual monitoring reports, and with the modelled groundwater plume progression, including decreasing (although still above the adopted guideline values) concentrations at bores D106, D107 and D119, and slightly increasing concentrations at bore D3.

The solutes in groundwater at times impact on water quality within Wangcol Creek due to the discharge of impacted groundwater to surface water. The higher solute concentrations in surface water in Wangcol Creek occur predominantly in areas of former mine disturbance (Areas D, E, F and G) compared to upstream areas and are most apparent during and following extended periods of low rainfall. This is due to the lower surface water flows in Wangcol Creek resulting in lower surface water to groundwater volume ratios, and therefore groundwater conditions having a greater influence on surface water quality. The lower concentrations of target analytes observed at midstream and downstream surface water monitoring locations during the reporting period are considered to reflect the influence of above-average rainfall between January and March 2026; it is anticipated that concentrations of target analytes in surface water may increase again in periods of lower rainfall and reduced stream flow.

Consistent with these observations and with the CSM (see Section 2), a complete SPR linkage is present for Wangcol Creek; however, no other potentially complete SPR linkages have been identified in relation to groundwater that is impacted by BCA leachate from the MPAR.

Implementation of the MPAR Phase 1 Capping and Drainage and the MPAR Zone 2 LBMS will improve the design of surface water drainage from the MPAR and substantially reduce the amount of recharge in BCA areas of the MPAR. Reduced infiltration over areas where BCA was placed in the MPAR will reduce the rate of leachate production and seepage from these areas to the underlying groundwater system. The improved recharge control and drainage arrangements will also increase the volume of clean water flows from the MPAR to Wangcol Creek, ultimately resulting in improved water quality in Wangcol Creek in the medium to longer term. This source control approach is the primary means of mitigating the discharge of BCA impacted groundwater from MPAR to Wangcol Creek, and is currently being implemented.

Based on the above, water quality results from the LNAR cannot be directly compared with the adopted guideline values for the purpose of determining compliance. However, based on the demonstrated performance of the LBMS and management infrastructure throughout the reporting period, the LNAR has complied with the LNAR Project Approval and the objectives of the OEMP as related to groundwater, surface water and leachate management.

The effectiveness of the currently approved mitigation measures will continue to be assessed as part of the routine monitoring and reporting required by the WMP, the OEMP, and the EPL. Based on the review of the surface water and groundwater quality data obtained in accordance with the WMP, the OEMP, and the EPL, and the outcomes presented in this report, it is considered that the reporting requirements of the Mt Piper Consent (Conditions 44 and 45), the LNAR Project Approval (Conditions A10, E15 and E16), and the EPL (Condition R5.8) have been met. Appendix B presents a summary of the specific requirements of each of the Mt Piper Consent and the WMP, the LNAR Project Approval and the OEMP, and the EPL, and where they are addressed in this report.

13. REFERENCES

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14. STATEMENT OF LIMITATIONS

1. This report is based solely on the scope of work described in the ERM proposal P0740122 dated 3 June 2026 (**Scope of Work**) and performed by Environmental Resources Management Australia Pty Ltd (**ERM**) for EnergyAustralia Pty Ltd (EnergyAustralia) (the **Client**). The Scope of Work was governed by a contract between ERM and the Client (**Contract**);
2. No limitation, qualification or caveat set out below is intended to derogate from the rights and obligations of ERM and the Client under the Contract;
3. The findings of this report are solely based on, and the information provided in this report is strictly limited to that required by, the Scope of Work. Except to the extent stated otherwise, in preparing this report ERM has not considered any question, nor provides any information, beyond that required by the Scope of Work;
4. This report was prepared between July and 24 September 2026 and is based on conditions encountered and information reviewed at the time of preparation. The report does not, and cannot, take into account changes in law, factual circumstances, applicable regulatory instruments or any other future matter. ERM does not, and will not, provide any on-going advice on the impact of any future matters unless it has agreed with the Client to amend the Scope of Work or has entered into a new engagement to provide a further report;
5. Unless this report expressly states to the contrary, ERM's Scope of Work was limited strictly to identifying typical environmental conditions associated with the subject site(s) and does not evaluate the condition of any structure on the subject site nor any other issues. Although normal standards of professional practice have been applied, the absence of any identified hazardous or toxic materials or any identified impacted soil or groundwater on the Site(s) should not be interpreted as a guarantee that such materials or impacts do not exist;
6. This report is based on one or more site inspections conducted by ERM personnel, the sampling and analyses described in the report, and information provided by the Client or third parties (including regulatory agencies). All conclusions and recommendations made in the report are the professional opinions of the ERM personnel involved. Whilst normal checking of data accuracy was undertaken, except to the extent expressly set out in this report ERM:
   a) did not, nor was able to, make further enquiries to assess the reliability of the information or independently verify information provided by; and
   b) assumes no responsibility or liability for errors in data obtained from, the Client, any third parties or external sources (including regulatory agencies).
7. Although the data that has been used in compiling this report is generally based on actual circumstances, if the report refers to hypothetical examples those examples may, or may not, represent actual existing circumstances;
8. Only the environmental conditions and or potential contaminants specifically referred to in this report have been considered. To the extent permitted by law and except as is specifically stated in this report, ERM makes no warranty or representation about:
   a) the suitability of the Site(s) for any purpose or the permissibility of any use;

b) the presence, absence or otherwise of any environmental conditions or contaminants at the Site(s) or elsewhere; or

c) the presence, absence or otherwise of asbestos, asbestos containing materials or any hazardous materials on the Site(s).

9. Use of the Site for any purpose may require planning and other approvals and, in some cases, environmental regulator and accredited site auditor approvals. ERM offers no opinion as to the likelihood of obtaining any such approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environment works;

10. The ongoing use of the Site or use of the Site for a different purpose may require the management of or remediation of site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this report;

11. This report should be read in full and no excerpts are to be taken as representative of the whole report. To ensure its contextual integrity, the report is not to be copied, distributed or referred to in part only. No responsibility or liability is accepted by ERM for use of any part of this report in any other context;

12. Except to the extent that ERM has agreed otherwise with the Client in the Scope of Work or the Contract, this report:

    a) has been prepared and is intended only for the exclusive use of the Client;

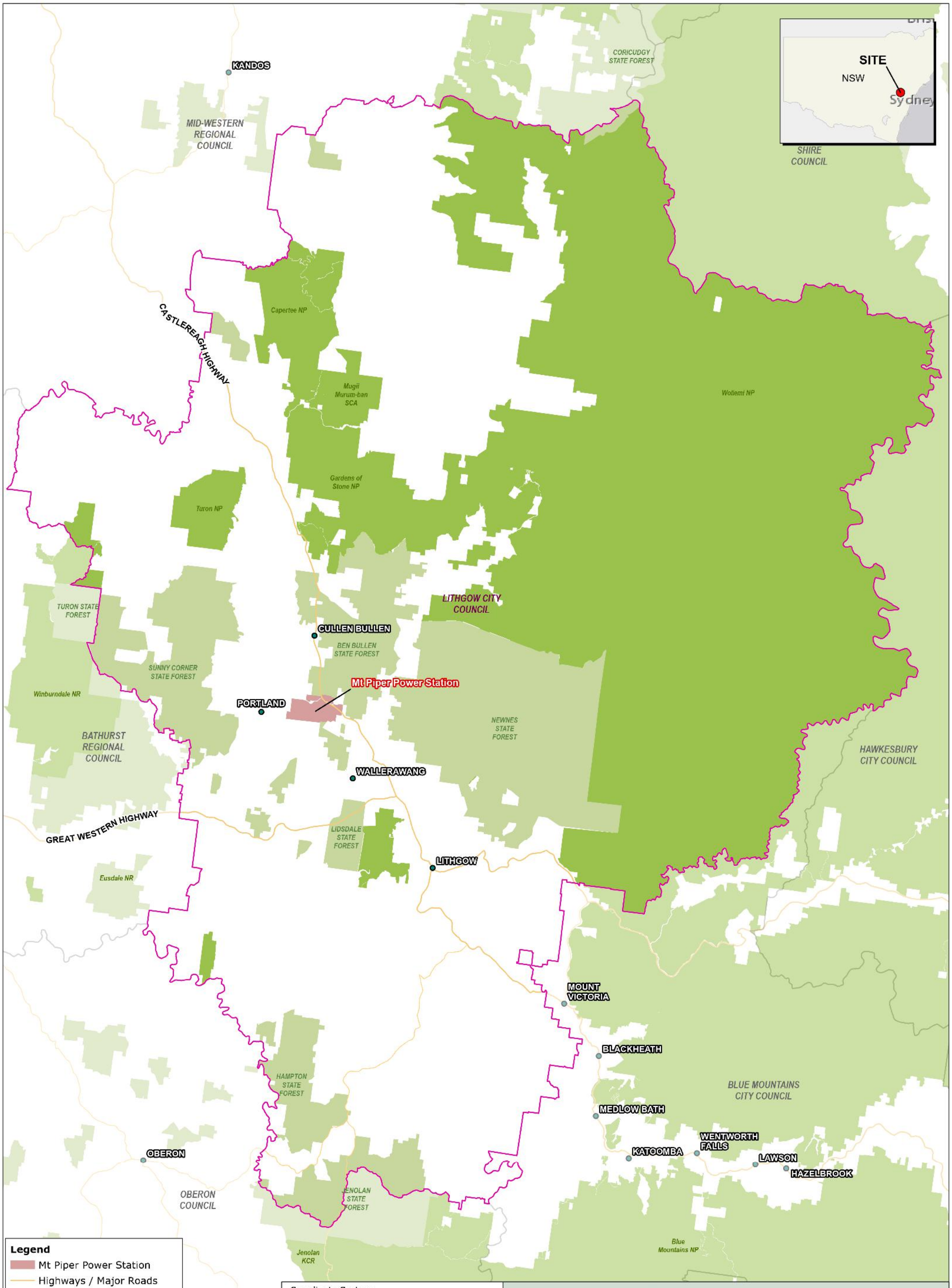
    b) must not to be relied upon or used by any other party;

    c) has not been prepared nor is intended for the purpose of advertising, sales, promoting or endorsing any Client interests including raising investment capital, recommending investment decisions, or other publicity purposes;

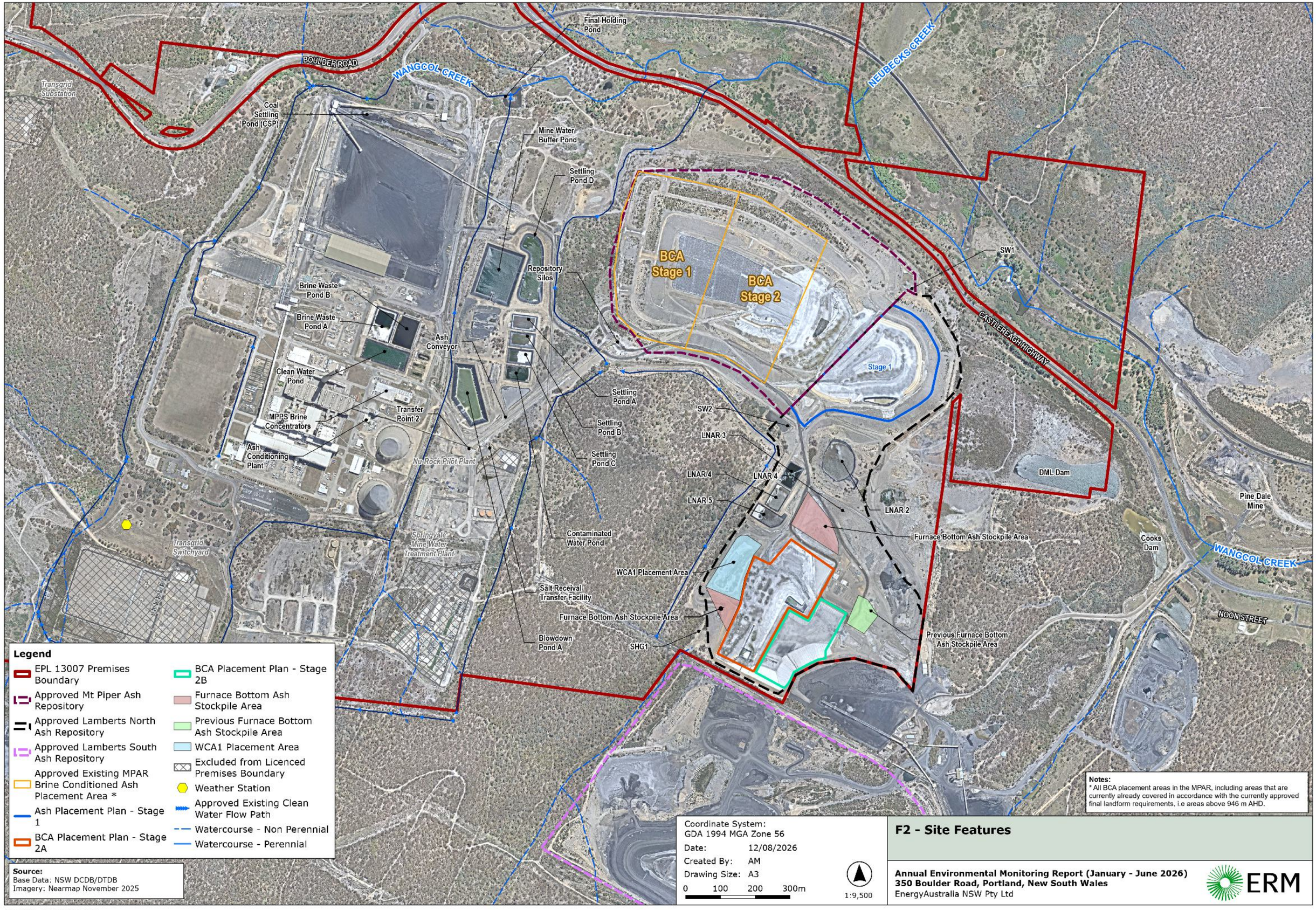
    d) does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise in or in relation to the Site(s); and

    e) does not purport to provide, nor should be construed as, legal advice.

APPENDIX A FIGURES



0810778 AEM 2026.aprx



Legend

- EPL 13007 Premises Boundary
- Approved Mt Piper Ash Repository
- Approved Lamberts North Ash Repository
- Approved Lamberts South Ash Repository
- Approved Existing MPAR Brine Conditioned Ash Placement Area *
- Ash Placement Plan - Stage 1
- BCA Placement Plan - Stage 2A
- BCA Placement Plan - Stage 2B
- Furnace Bottom Ash Stockpile Area
- Previous Furnace Bottom Ash Stockpile Area
- WCA1 Placement Area
- Excluded from Licenced Premises Boundary
- Weather Station
- Approved Existing Clean Water Flow Path
- Watercourse - Non Perennial
- Watercourse - Perennial

Source:
Base Data: NSW DCDB/DTDB
Imagery: Nearmap November 2025

Notes:
* All BCA placement areas in the MPAR, including areas that are currently already covered in accordance with the currently approved final landform requirements, i.e areas above 946 m AHD.

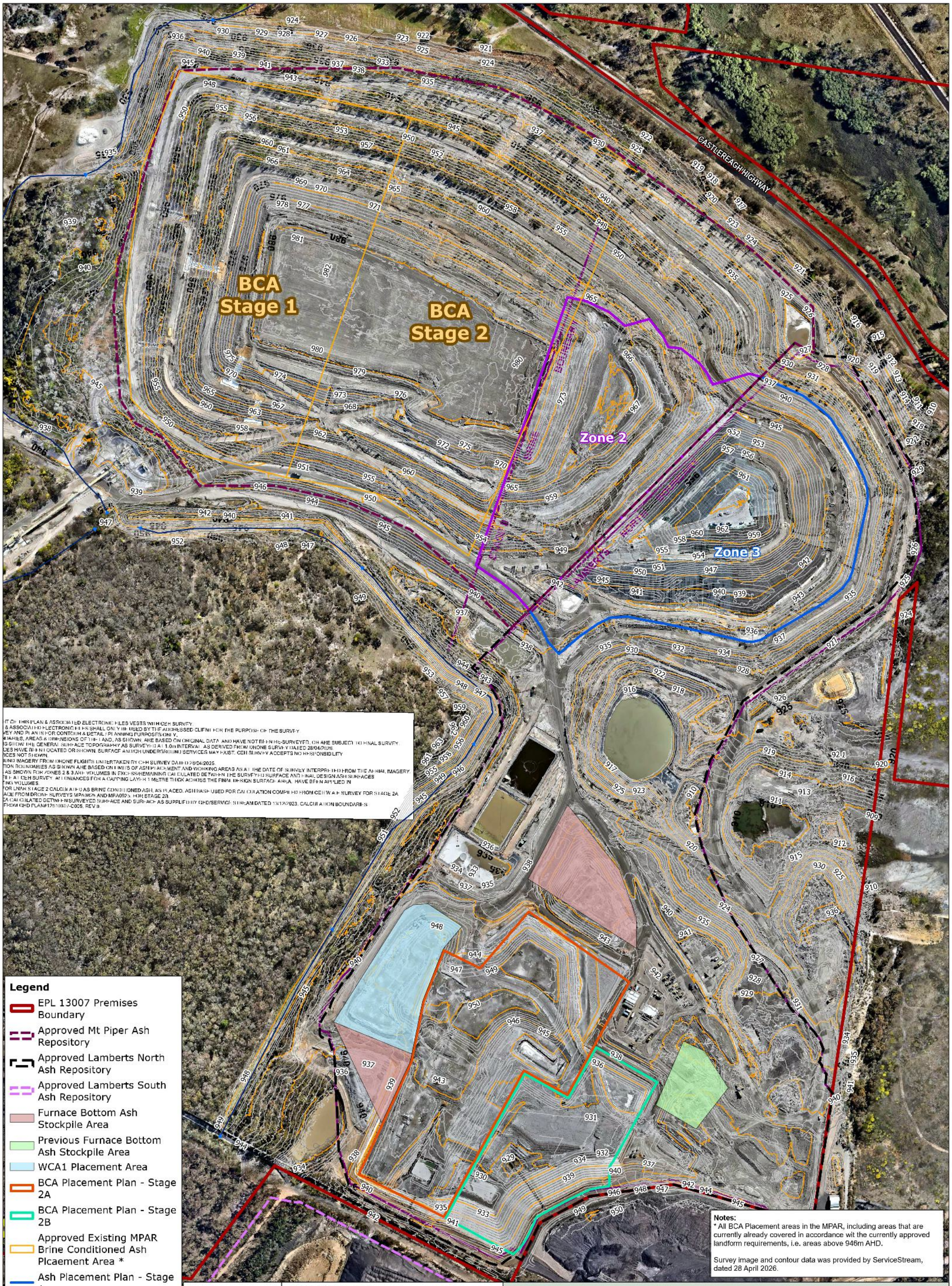
Coordinate System:
GDA 1994 MGA Zone 56
Date: 12/08/2026
Created By: AM
Drawing Size: A3
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1:9,500

F2 - Site Features

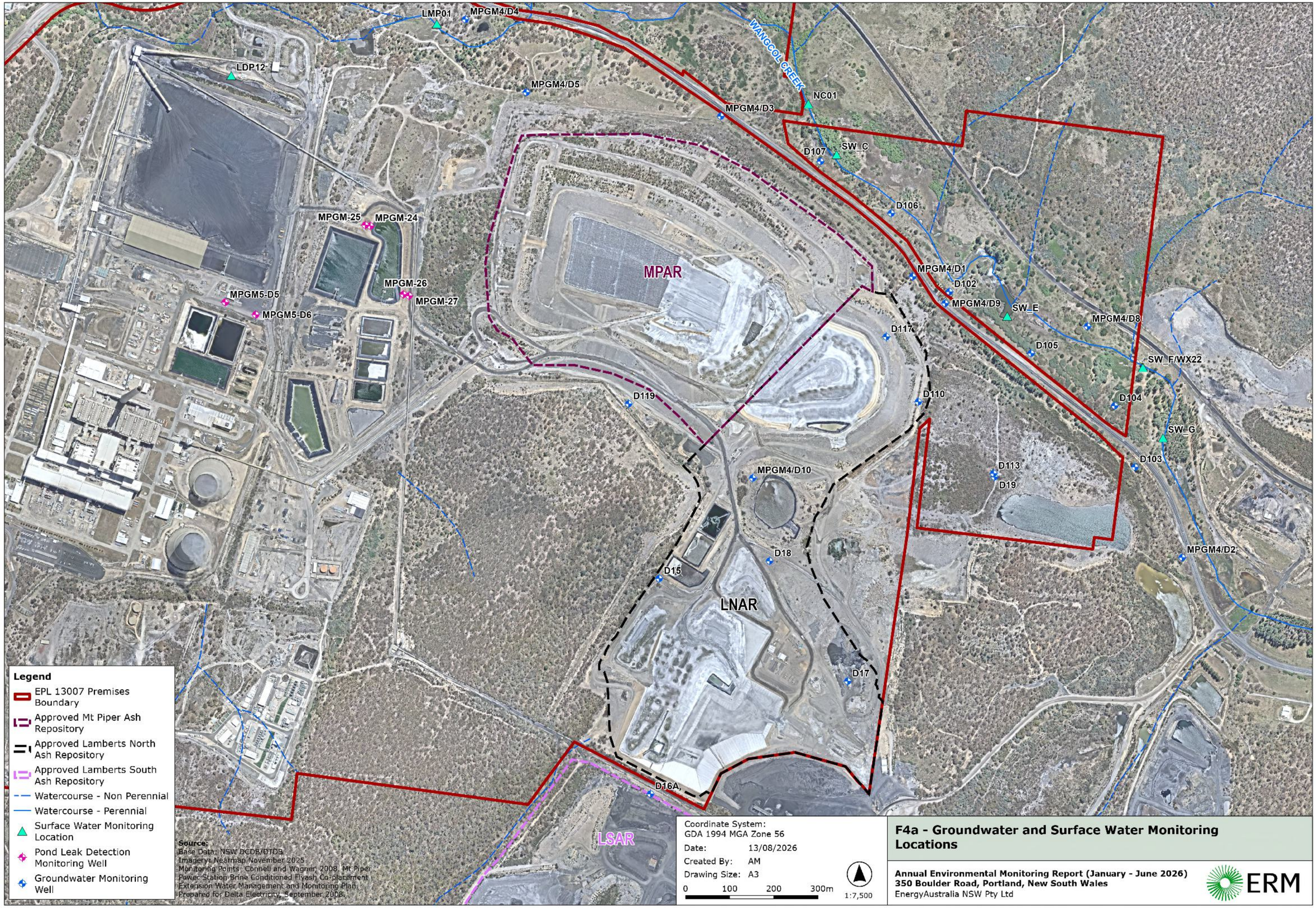
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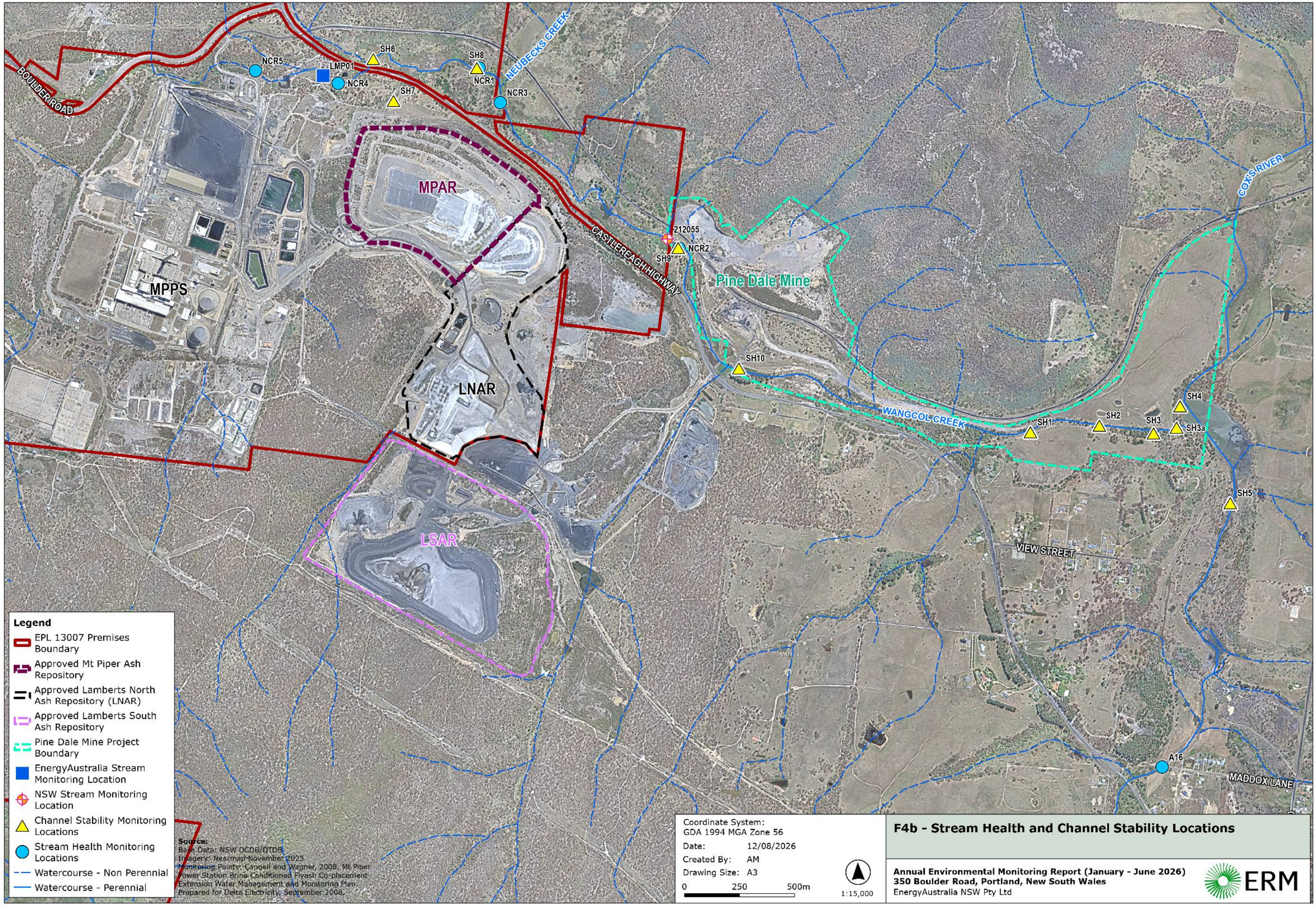


F4a - Groundwater and Surface Water Monitoring Locations

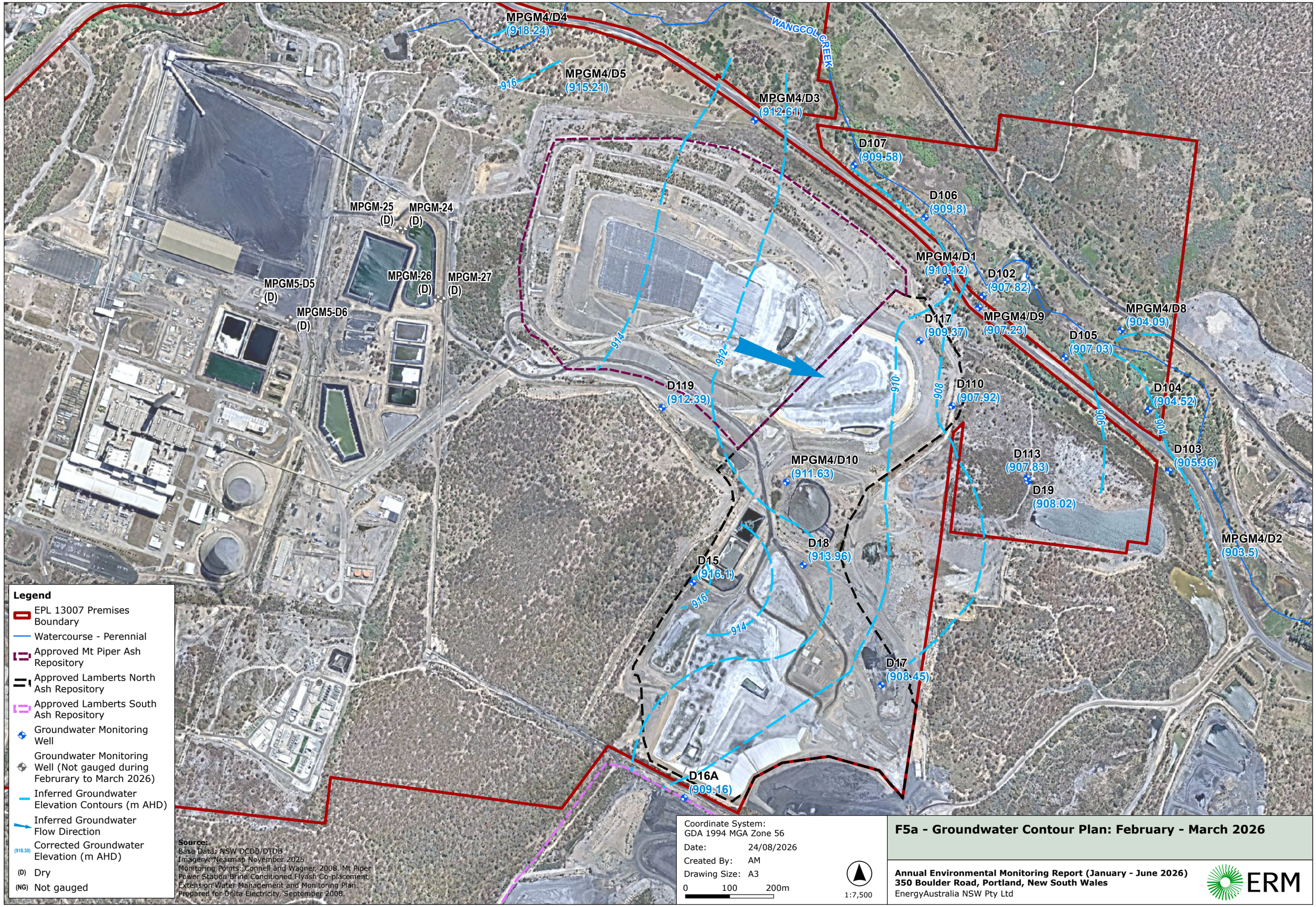
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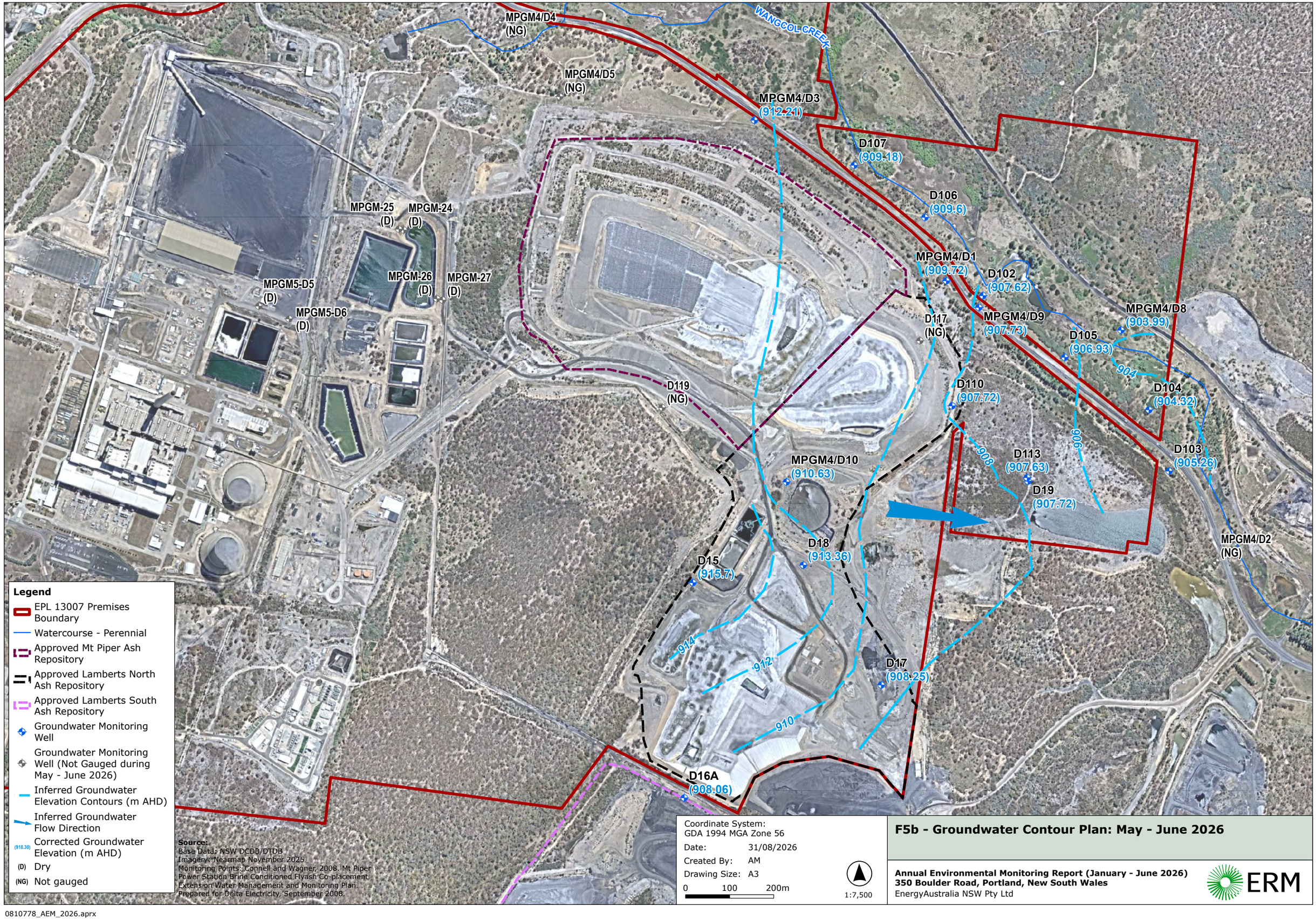


F5a - Groundwater Contour Plan: February - March 2026

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Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Groundwater	2600	6.5-8	350	1.5	1000	2000	24	700	370	2	5	5	664	664	5	5704	0.06	10	550.9	5	908

D5	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
18/02/2026	1191	5.89	86.3	0.473	1550	1010	2	19	70	< 0.1	< 1	< 1	36300	35800	< 1	7410	< 0.04	< 1	42	< 0.2	10	18/02/2026 - 23/04/2026	2
23/04/2026	1167	5.9	22.1	0.173	471	891	1	17	< 50	< 0.1	< 1	< 1	27000	23700	< 1	6800	< 0.04	< 1	42	0.2	5		

D4	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
18/02/2026	610	3.51	45.5	0.103	567	603	31	15	< 50	0.2	< 1	2	57900	56200	10	598	< 0.04	< 1	12	< 0.2	112	18/02/2026 - 23/04/2026	2
23/04/2026	624	3.5	17	0.074	245	496	31	15	< 50	0.2	< 1	1	55600	53200	14	608	< 0.04	< 1	12	0.2	116		

MPGM4/D4
MPGM4/D5
MPGM4/D3
D107
MPGM5-D5
MPGM5-D6
MPGM4/D1
D102
MPGM4/D9
MPGM4/D8
D117
D105
D119
D110
D104
D19
D18
D15
MPGM4/D2
WANGCOL CREEK
D17
D16A

Legend

- EPL 13007 Premises Boundary
- Approved Mt Piper Ash Repository
- Approved Lamberts North Ash Repository
- Approved Lamberts South Ash Repository
- Watercourse - Perennial
- Groundwater Monitoring Well
- Pond Leak Detection Monitoring Well

Source:
Base Data: NSW DCDB/DTDB
Imagery: Nearmap November 2025
Monitoring Points: Connell and Wagner, 2008. Mt Piper Power Station Brine Conditioned Flyash Co-placement Extension Water Management and Monitoring Plan. Prepared for Delta Electricity, September 2008.

Coordinate System:
GDA 1994 MGA Zone 56
Date: 20/08/2026
Created By: AM
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0 100 200m
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F6a - Groundwater Results Summary - Upgradient MPAR/ Background

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350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

ERM

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Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Groundwater	2600	6.5-8	350	1.5	1000	2000	24	700	370	2	5	5	664	664	5	5704	0.06	10	550.9	5	908

D107	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
25/03/2026	10212	6.08	808	< 0.5	4770	9800	6	15	5780	0.8	< 1	21	18800	18600	10	9270	< 0.04	< 1	1390	< 0.2	301	25/03/2026 - 20/05/2026	2
20/05/2026	11040	6.12	687	< 0.5	4210	8620	6	17	4750	1	< 1	< 1	30200	18800	10	9310	< 0.04	< 1	1380	0.5	305		

D106	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
25/03/2026	9150	6.04	864	< 0.5	4390	8760	< 1	17	2970	0.4	< 1	6	12300	9720	< 1	8740	< 0.04	< 1	1330	1.8	236	25/03/2026 - 20/05/2026	2
20/05/2026	10044	6.02	734	< 0.2	3860	8090	2	20	2710	0.2	< 1	< 1	25800	17500	< 1	10800	< 0.04	< 1	1530	2.2	179		

D3	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	1044	6.34	95.7	0.088	188	714	< 1	106	< 50	< 0.1	< 1	< 1	8480	6000	< 1	455	< 0.04	< 1	6	< 0.2	11	26/03/2026 - 10/06/2026	2
10/06/2026	869	6.14	42.7	< 0.5	231	572	< 1	31	< 50	< 0.1	< 1	< 1	9280	7550	< 1	689	< 0.04	< 1	6	< 0.2	< 5		

D119	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/02/2026	2112	6.17	98.9	0.245	803	1430	8	18	320	< 0.1	< 1	3	19200	15200	2	1640	< 0.04	6	181	0.8	389	26/02/2026 - 30/04/2026	2
30/04/2026	2089	5.99	73.8	0.105	667	1550	5	14	440	< 0.1	< 1	< 1	20100	14600	< 1	1740	< 0.04	3	166	0.4	141		

MPGM4/D5
MPGM4/D3
D107
D106
MPGM4/D9
D119
D110
D104
D18
D15
MPGM4/D2
WANGCOL CREEK
D17
D16A

Legend
- EPL 13007 Premises Boundary
- Approved Mt Piper Ash Repository
- Approved Lamberts North Ash Repository
- Approved Lamberts South Ash Repository
- Watercourse - Perennial
- Groundwater Monitoring Well
- Pond Leak Detection Monitoring Well

Source:
Base Data: NSW DCDB/DTDB
Imagery: Nearmap November 2025
Monitoring Points: Connell and Wagner, 2008. Mt Piper Power Station Brine Conditioned Flyash Co-placement Extension Water Management and Monitoring Plan. Prepared for Delta Electricity, September 2008.

Coordinate System: GDA 1994 MGA Zone 56
Date: 20/08/2026
Created By: AM
Drawing Size: A3
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F6b - Groundwater Results Summary - Cross-gradient MPAR / adjacent MPAR to the North and Adjacent Wangcol Creek

Annual Environmental Monitoring Report (January - June 2026)
350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

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Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Groundwater	2600	6.5-8	350	1.5	1000	2000	24	700	370	2	5	5	664	664	5	5704	0.06	10	550.9	5	908

D102	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	8751	6.54	904	< 0.5	3780	8660	< 1	18	1660	< 0.1	< 1	< 1	47200	37700	< 1	12600	< 0.04	< 1	1500	< 0.2	52	26/03/2026 - 21/05/2026	2
21/05/2026	9520	6.13	896	< 0.5	3690	7530	< 1	21	1170	0.2	< 1	30	67700	45600	< 1	12900	< 0.04	< 1	1530	0.3	133		

D1	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
25/03/2026	8759	5.99	707	< 0.5	4100	8590	6	19	3230	< 0.1	< 1	7	34100	31800	< 1	14600	< 0.04	< 1	1540	< 0.2	121	25/03/2026 - 11/06/2026	2
11/06/2026	8640	6.02	734	0.105	4100	7390	3	21	3280	< 0.1	< 1	< 1	37600	24300	< 1	15900	< 0.04	< 1	1570	< 0.2	112		

D9	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
25/03/2026	9326	6.17	83.7	< 0.05	417	8980	4	20	2520	< 0.1	< 1	< 1	46900	41300	< 1	12300	< 0.04	< 1	1580	0.3	54	25/03/2026 - 10/06/2026	2
10/06/2026	9259	6.14	879	0.119	4230	8000	3	30	2580	< 0.1	< 1	< 1	48100	32200	< 1	12500	< 0.04	< 1	1540	< 0.2	42		

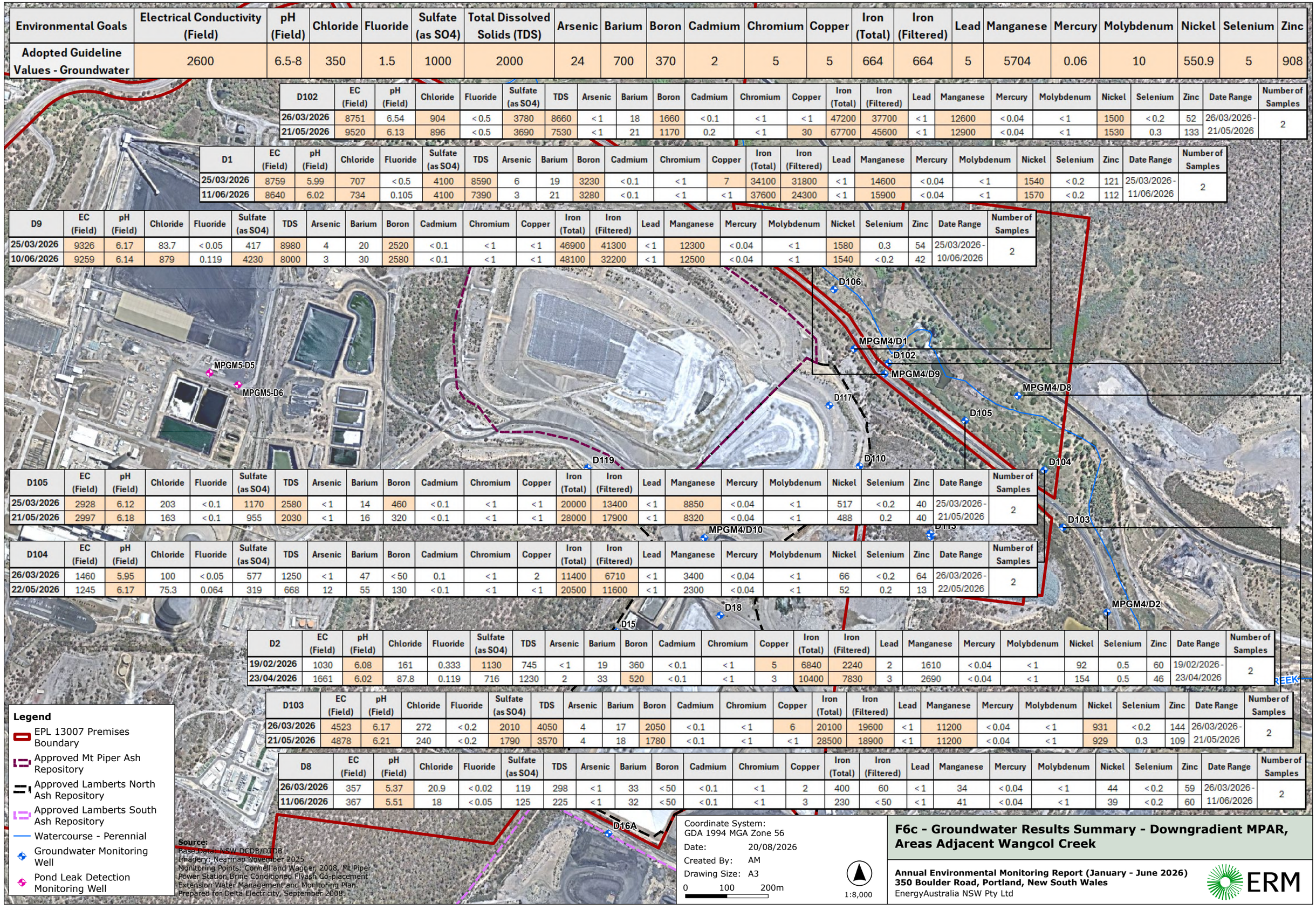
D105	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
25/03/2026	2928	6.12	203	< 0.1	1170	2580	< 1	14	460	< 0.1	< 1	< 1	20000	13400	< 1	8850	< 0.04	< 1	517	< 0.2	40	25/03/2026 - 21/05/2026	2
21/05/2026	2997	6.18	163	< 0.1	955	2030	< 1	16	320	< 0.1	< 1	< 1	28000	17900	< 1	8320	< 0.04	< 1	488	0.2	40		

D104	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	1460	5.95	100	< 0.05	577	1250	< 1	47	< 50	0.1	< 1	2	11400	6710	< 1	3400	< 0.04	< 1	66	< 0.2	64	26/03/2026 - 22/05/2026	2
22/05/2026	1245	6.17	75.3	0.064	319	668	12	55	130	< 0.1	< 1	< 1	20500	11600	< 1	2300	< 0.04	< 1	52	0.2	13		

D2	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
19/02/2026	1030	6.08	161	0.333	1130	745	< 1	19	360	< 0.1	< 1	5	6840	2240	2	1610	< 0.04	< 1	92	0.5	60	19/02/2026 - 23/04/2026	2
23/04/2026	1661	6.02	87.8	0.119	716	1230	2	33	520	< 0.1	< 1	3	10400	7830	3	2690	< 0.04	< 1	154	0.5	46		

D103	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	4523	6.17	272	< 0.2	2010	4050	4	17	2050	< 0.1	< 1	6	20100	19600	< 1	11200	< 0.04	< 1	931	< 0.2	144	26/03/2026 - 21/05/2026	2
21/05/2026	4878	6.21	240	< 0.2	1790	3570	4	18	1780	< 0.1	< 1	< 1	28500	18900	< 1	11200	< 0.04	< 1	929	0.3	109		

D8	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	357	5.37	20.9	< 0.02	119	298	< 1	33	< 50	< 0.1	< 1	2	400	60	< 1	34	< 0.04	< 1	44	< 0.2	59	26/03/2026 - 11/06/2026	2
11/06/2026	367	5.51	18	< 0.05	125	225	< 1	32	< 50	< 0.1	< 1	3	230	< 50	< 1	41	< 0.04	< 1	39	< 0.2	60		



Source:
Base Data: NSW DCDB/DTDB
Imagery: Nearmap November 2025
Monitoring Points: Connell and Wagner, 2008. Mt Piper Power Station Brine Conditioned Flyash Co-placement Extension Water Management and Monitoring Plan. Prepared for Delta Electricity, September 2008.

Coordinate System:
GDA 1994 MGA Zone 56
Date: 20/08/2026
Created By: AM
Drawing Size: A3
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F6c - Groundwater Results Summary - Downgradient MPAR, Areas Adjacent Wangcol Creek

Annual Environmental Monitoring Report (January - June 2026)
350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

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Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Groundwater	2600	6.5-8	350	1.5	1000	2000	24	700	370	2	5	5	664	664	5	5704	0.06	10	550.9	5	908

D117	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
18/03/2026	4671	6.12	125	1.74	2240	4580	1	11	13700	25.1	< 1	5	19500	< 50	1	8160	< 0.04	288	301	123	762	24/03/2026 - 11/06/2026	2
30/04/2026	4118	6.15	82.5	0.553	1350	3600	< 1	12	10600	8.1	< 1	< 1	1770	1230	< 1	17800	< 0.04	97	368	50.2	315		

D110	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	9213	6.11	943	< 0.5	4270	9070	4	10	2320	< 0.1	2	36	55000	39600	2	13600	< 0.04	7	1690	0.4	189	26/03/2026 - 21/05/2026	2
21/05/2026	9966	6.07	884	< 0.5	4110	7870	2	14	2090	< 0.1	< 1	< 1	66300	11700	< 1	13100	< 0.04	3	1690	0.9	167		

D10	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	5709	5.91	354	0.335	2510	4890	6	15	2300	0.8	< 1	< 1	8600	8650	6	4020	< 0.04	4	550	0.2	388	26/03/2026 - 11/06/2026	2
11/06/2026	7530	5.9	498	0.731	3410	6090	3	17	3210	1.5	< 1	< 1	9000	7570	6	5800	< 0.04	6	763	0.5	532		

D19	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
24/03/2026	4552	6.02	267	< 0.2	1950	3560	1	16	1830	< 0.1	< 1	< 1	15200	12900	3	5270	< 0.04	< 1	573	< 0.2	205	24/03/2026 - 11/06/2026	2
11/06/2026	4183	6.11	246	0.32	1740	3220	1	15	1690	< 0.1	1	< 1	18200	15200	3	5250	< 0.04	< 1	537	0.8	177		

D113	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	4656	6.01	262	< 0.2	1920	3850	1	27	2000	0.3	< 1	< 1	13500	12700	4	5320	< 0.04	< 1	566	< 0.2	254	18/03/2026 - 30/04/2026	2
21/05/2026	4808	6.13	212	0.256	1600	3290	< 1	20	1700	0.2	< 1	1	17100	8860	< 1	4940	< 0.04	1	519	0.7	301		

MPGM4/D5
D106
MPGM4/D1
D102
MPGM4/D9
D20
D117
MPGM4/D8
D105
D104
MPGM5-D5
MPGM5-D6
D119
D110
D103
D113
D19
MPGM4/D10
D15
M4/D2
D17
D16A
REEK

Legend

- EPL 13007 Premises Boundary
- Approved Mt Piper Ash Repository
- Approved Lamberts North Ash Repository
- Approved Lamberts South Ash Repository
- Watercourse - Perennial
- Groundwater Monitoring Well
- Pond Leak Detection Monitoring Well

Source:
Base Data: NSW DCDB/DTDB
Imagery: Nearmap November 2025
Monitoring Points: Connell and Wagner, 2008. Mt Piper Power Station Brine Conditioned Flyash Co-placement Extension Water Management and Monitoring Plan. Prepared for Delta Electricity, September 2008.

Coordinate System:
GDA 1994 MGA Zone 56
Date: 20/08/2026
Created By: AM
Drawing Size: A3
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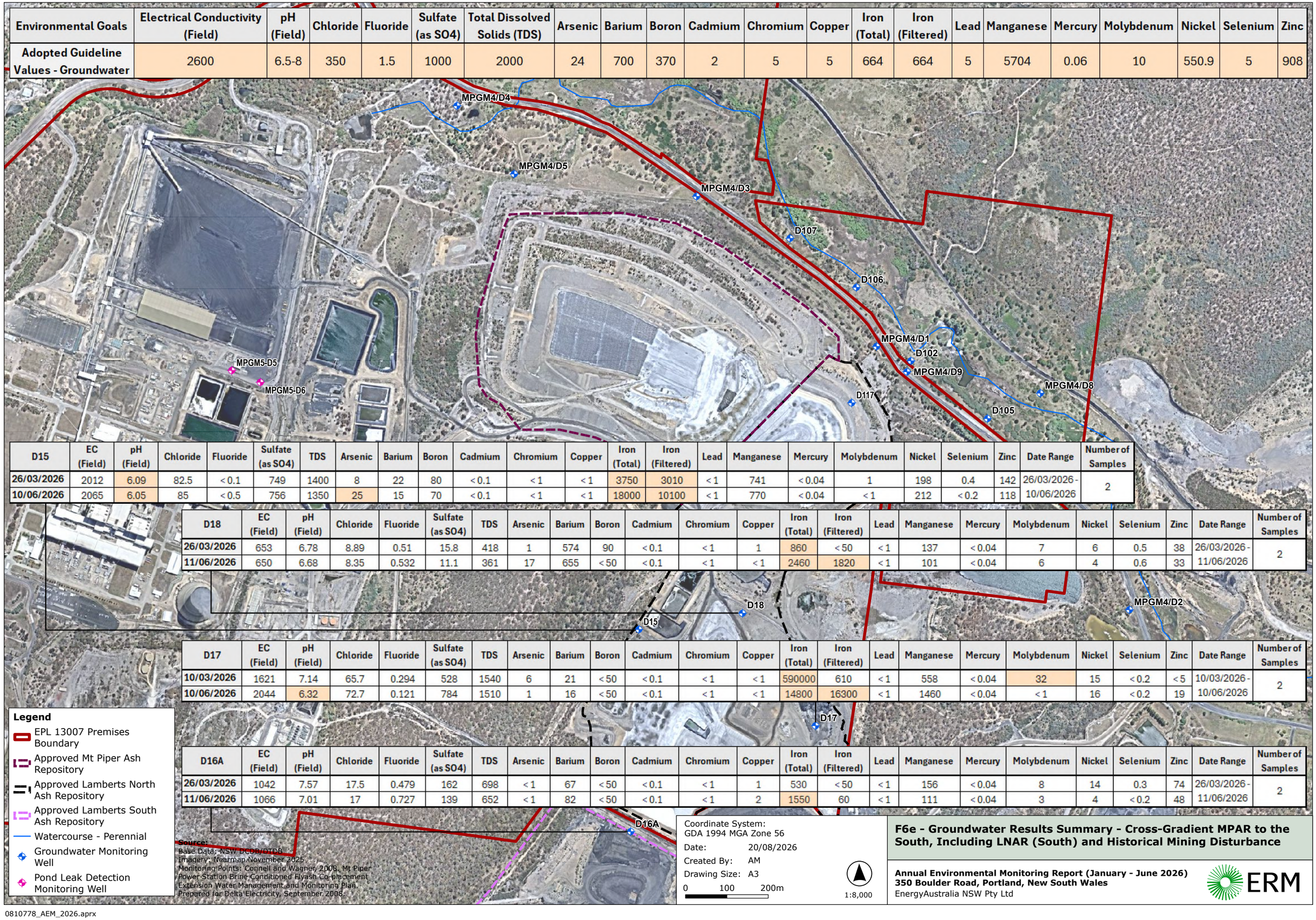
F6d - Groundwater Results Summary - Downgradient MPAR, Including LNAR (North) and Historical Mining Disturbance (East)

Annual Environmental Monitoring Report (January - June 2026)
350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

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Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Groundwater	2600	6.5-8	350	1.5	1000	2000	24	700	370	2	5	5	664	664	5	5704	0.06	10	550.9	5	908



D15	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	2012	6.09	82.5	< 0.1	749	1400	8	22	80	< 0.1	< 1	< 1	3750	3010	< 1	741	< 0.04	1	198	0.4	142	26/03/2026 - 10/06/2026	2
10/06/2026	2065	6.05	85	< 0.5	756	1350	25	15	70	< 0.1	< 1	< 1	18000	10100	< 1	770	< 0.04	< 1	212	< 0.2	118		

D18	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	653	6.78	8.89	0.51	15.8	418	1	574	90	< 0.1	< 1	1	860	< 50	< 1	137	< 0.04	7	6	0.5	38	26/03/2026 - 11/06/2026	2
11/06/2026	650	6.68	8.35	0.532	11.1	361	17	655	< 50	< 0.1	< 1	< 1	2460	1820	< 1	101	< 0.04	6	4	0.6	33		

D17	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
10/03/2026	1621	7.14	65.7	0.294	528	1540	6	21	< 50	< 0.1	< 1	< 1	590000	610	< 1	558	< 0.04	32	15	< 0.2	< 5	10/03/2026 - 10/06/2026	2
10/06/2026	2044	6.32	72.7	0.121	784	1510	1	16	< 50	< 0.1	< 1	< 1	14800	16300	< 1	1460	< 0.04	< 1	16	< 0.2	19		

D16A	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
26/03/2026	1042	7.57	17.5	0.479	162	698	< 1	67	< 50	< 0.1	< 1	1	530	< 50	< 1	156	< 0.04	8	14	0.3	74	26/03/2026 - 11/06/2026	2
11/06/2026	1066	7.01	17	0.727	139	652	< 1	82	< 50	< 0.1	< 1	2	1550	60	< 1	111	< 0.04	3	4	< 0.2	48		

F6e - Groundwater Results Summary - Cross-Gradient MPAR to the South, Including LNAR (South) and Historical Mining Disturbance

Annual Environmental Monitoring Report (January - June 2026)
350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

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Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Groundwater	2600	6.5-8	350	1.5	1000	2000	24	700	370	2	5	5	664	664	5	5704	0.06	10	550.9	5	908

MPGM5/D5	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
19/02/2026	38306	6.77	17100	5.7	59200	35700	21	95	3910	21.2	7	47	3720	4050	113	100000	0.08	1070	20900	3.8	2140	19/02/2026 - 23/04/2026	2
23/04/2026	34539	6.8	3460	< 2	16300	32000	< 10	60	1790	5.3	< 10	11	2890	3050	45	44300	0.11	272	8310	4	872		

MPGM5/D6	EC (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
19/02/2026	9550	6.71	8940	2	16300	7160	3	64	< 50	0.2	< 1	2	9880	6810	1	4620	< 0.04	39	948	0.6	47	19/02/2026 - 23/04/2026	2
23/04/2026	6297	6.69	636	< 0.5	1510	4230	1	57	< 50	< 0.1	< 1	1	3310	1420	< 1	3300	< 0.04	31	580	0.5	48		

MPGM4/D4
MPGM4/D5
MPGM4/D3
D107
NEUBEC
MPGM5-D5
MPGM5-D6
MPGM4/D1
D102
MPGM4/D9
MPGM4/D8
D117
D105
creek
MPGM4/D10
D113
D19
D103
D18
D15
MPGM4/D2
D17
WANGCOL CREEK
D16A

Legend

- EPL 13007 Premises Boundary
- Approved Mt Piper Ash Repository
- Approved Lamberts North Ash Repository
- Approved Lamberts South Ash Repository
- Watercourse - Non Perennial
- Watercourse - Perennial
- Groundwater Monitoring Well
- Pond Leak Detection Monitoring Well

Source:
Base Data: NSW DCDB/DTDB
Imagery: Nearmap November 2025
Monitoring Points: Connell and Wagner, 2008. Mt Piper Power Station Brine Conditioned Flyash Co-placement Extension Water Management and Monitoring Plan. Prepared for Delta Electricity, September 2008.

Coordinate System:
GDA 1994 MGA Zone 56
Date: 20/08/2026
Created By: AM
Drawing Size: A3
0 100 200m
1:8,000

F6f - Water Results Summary - Brine Leak Detection Bores

Annual Environmental Monitoring Report (January - June 2026)
350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

ERM

0810778_AEM_2026.aprx

Environmental Goals	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc
Adopted Guideline Values - Surface Water	2200	6.5-8	350	1.5	1000	1500	24	700	370	0.85	2	3.5	300	300	5	1900	0.06	10	17	5	116

LMP01

LMP01	Electrical Conductivity (Lab)	pH (Lab)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
Min	346	7.86	5.68	0.173	55	214	<1	16	<50	<0.1	<1	<1	190	<50	<1	<1	<0.04	5	3	0.3	<5	5/01/2026 - 1/06/2026	6
Max	548	8.01	18.2	0.413	111	319	<1	24	<50	<0.1	<1	2	2430	<50	<1	91	<0.04	9	4	1.1	7		
Mean	412.17	7.93	10.37	0.25	76.73	264.17	0.50	18.33	25.00	0.05	0.50	1.25	771.67	25.00	0.50	54.58	0.02	7.00	3.50	0.60	3.67		

NC01

SW_C

SW_C	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
Min	192	7.26	5.71	0.17	29.7	146	<1	12	<50	<0.1	<1	<1	410	<50	<1	43	<0.04	3	2	0.2	<5	22/01/2026 - 3/06/2026	6
Max	488	8.3	16.8	0.299	103	344	<1	20	50	<0.1	<1	2	990	220	<1	172	<0.04	4	3	0.6	<5		
Mean	332.00	7.76	10.25	0.22	65.57	224.67	0.50	17.00	29.17	0.05	0.50	1.33	566.67	125.83	0.50	123.67	0.02	3.33	2.83	0.37	2.50		

SW_E	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
Min	391	7.15	15.3	0.079	70.9	240	<1	13	<50	<0.1	<1	<1	730	110	<1	166	<0.04	<1	9	<0.2	<5	22/01/2026 - 3/06/2026	6
Max	1191	8.28	65.6	0.222	334	746	<1	27	230	<0.1	<1	2	1730	730	<1	1400	<0.04	2	107	0.4	12		
Mean	736.17	7.71	35.97	0.17	215.32	479.83	0.50	19.83	119.17	0.05	0.05	0.75	1120.00	343.33	0.50	756.83	0.02	1.17	45.33	0.22	4.08		

SW_E

SW_F/WX22

SW_G

SW_G	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
Min	536	7.65	29.6	0.081	171	364	<1	10	80	<0.1	<1	<1	160	<50	<1	205	<0.04	<1	23	<0.2	<5	22/01/2026 - 3/06/2026	6
Max	1420	8.1	90.8	0.248	440	968	<1	21	270	<0.1	<1	2	1120	110	<1	419	<0.04	2	90	0.3	<5		
Mean	890.83	7.82	48.20	0.17	254.17	585.50	0.50	14.33	160.00	0.05	0.50	0.83	468.33	70.83	0.50	295.33	0.02	1.17	48.17	0.13	2.50		

WX22	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
Min	535	7.61	33.4	0.121	171	382	<1	10	110	<0.1	<1	<1	180	<50	<1	212	<0.04	<1	24	<0.2	<5	22/01/2026 - 3/06/2026	6
Max	1409	8.1	92.2	0.225	443	972	<1	22	270	<0.1	<1	1	1030	100	<1	448	<0.04	2	91	0.3	6		
Mean	892.50	7.83	50.28	0.17	267.67	592.67	0.50	14.83	161.67	0.05	0.50	0.67	451.67	69.17	0.50	308.83	0.02	1.25	47.83	0.15	3.08		

NC01	Electrical Conductivity (Field)	pH (Field)	Chloride	Fluoride	Sulfate (as SO4)	Total Dissolved Solids (TDS)	Arsenic	Barium	Boron	Cadmium	Chromium	Copper	Iron (Total)	Iron (Filtered)	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Zinc	Date Range	Number of Samples
Min	249	7.22	5.86	0.174	31.1	150	<1	11	<50	<0.1	<1	<1	630	<50	<1	<1	<0.04	2	2	0.3	<5	25/03/2026 - 3/06/2026	4
Max	497	8.17	18.2	0.31	103	350	<1	22	<50	<0.1	<1	2	1030	160	<1	298	<0.04	4	3	0.3	6		
Mean	363.75	7.83	11.42	0.23	63.05	234.50	0.50	16.25	25.00	0.05	0.50	1.00	792.50	116.25	0.50	124.13	0.02	3.00	2.75	0.30	3.38		

Legend

- Approved Mt Piper Ash Repository
- Approved Lamberts North Ash Repository
- Approved Lamberts South Ash Repository
- EPL 13007 Premises Boundary
- Watercourse - Non Perennial
- Watercourse - Perennial
- Surface Water Monitoring Location

Source:
Base Data: NSW SCDB/DTDB
Imagery: Nearmap November 2025
Monitoring Points: Connell and Wagner, 2008. Mt Piper Power Station Brine Conditioned Flyash Coplacement Extension Water Management and Monitoring Plan. Prepared for Delta Electricity, September 2008.

Coordinate System:
GDA 1994 MGA Zone 56
Date: 13/08/2026
Created By: AM
Drawing Size: A3
0 100 200m
1:8,000

F7 - Surface Water Results Summary

Annual Environmental Monitoring Report (January - June 2026)
350 Boulder Road, Portland, New South Wales
EnergyAustralia NSW Pty Ltd

ERM

0810778_AEM_2026.aprx

APPENDIX B REGULATORY REQUIREMENTS

TABLE B-1 SUMMARY OF MT PIPER CONSENT AND WMP REQUIREMENTS

Project Approval Doc	Condition	Consent Requirements	How addressed by the EMR	Compliance Status
Mt Piper Consent (Modification 9, dated 24 June 2025)	38A	*38A. The brine and ash co-placement area may be extended and shall be undertaken generally in accordance with the Statement of Environmental Effects: Mount Piper Power Station Extension of Brine Conditioned Ash Placement Area, prepared by Connell Wagner Pty Ltd and dated June 2007. This includes:* *(i) The extended area must lie within the existing ash placement area;* *(ii) Co-placement activities in the proposed extended area must use existing facilities and methods;* *(iii) The placement of brine conditioned ash may only occur between the levels of RL 946 metres (the endpoint of the water conditioned ash layer) and RL 980 metres.*	Refer to Appendix A, Appendix C and Section 3 of the EMR.	Compliant
	43	*43. Prior to commencing the works as described in Modification 9, or as otherwise agreed by the Secretary, the Applicant must prepare a Water Management Plan for the MPAR to the satisfaction of the Secretary. The Water Management Plan must be prepared by a suitably qualified and experienced person/s, and in consultation with DCCEEW Water, WaterNSW and the EPA. The Water Management Plan must include, and not be limited to: (a) details of the monitoring programs for surface water and groundwater:* *(a) details of the monitoring programs for surface water and groundwater:* *• detailed baseline data and monitoring programs presented in the Statement of Environmental Effects of Modification 5 (as updated by subsequent modifications), including baseline data on surface water flows and quality in creeks and waterbodies that could be affected by the MPAR (including Wangcol Creek);* *• monitoring of surface water flows and quality, stream health and channel stability in Wangcol Creek, and downstream of the energy dissipater as described in Modification 9; and* *• water quality testing at a minimum frequency of every three months, including details of water quality management criteria and measures to manage surface water and groundwater impacts, including trigger action response plans.* *(b) a site water balance, including details of:* *• water management on site, including measures to be employed to control and/or capture surface water run-off from the site; and* *• off-site water discharges.* *(c) contingency plans for the mitigation of environmental impacts should run-off or leachate from the site be found to be negatively impacting on natural surface water or groundwater.* *(d) brine management objectives and strategies, with specific reference to measures aimed at reducing the volume of brine produced at the Mount Piper Power Station.* *(e) a program for the ongoing verification and refinement of the groundwater model for the MPAR.* *(f) Identification of activities that could cause soil erosion and generate sediment and describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters.*	Condition is met by the WMP dated 28 July 2026 (*Water Management Plan, Mt Piper Power Station, DA80/10060, Mt Piper Ash Repository*, 28 July 2026, ERM; the WMP), as outlined in Section 1.2.1 of the EMR.	Compliant
	43A	*43A. The Applicant must implement the approved Water Management Plan.*	Condition is met by the WMP dated 28 July 2026 and the EMR from Section 3 onwards.	Compliant
	43B	*The Applicant must provide a copy of the approved Water Management Plan to the EPA, WaterNSW, DCCEEW Water and Council.*	Condition was met as evidenced by the regulatory stakeholder communications included as Appendix C of the WMP, following DPHI approval	Compliant
	43C	*Prior to the approval of the revised Water Management Plan as detailed in condition 43, the project's Water Management Plan, as approved following Modification 9, must continue to be implemented, to the satisfaction of the Secretary.*	Condition is met by the development of this report in its entirety.	Compliant
	44	*44. The Applicant must provide to the Secretary, EPA, DCCEEW Water, WaterNSW and Council, an Environmental Monitoring Report for the MPAR on a yearly basis, to the satisfaction of the Secretary. The Environmental Monitoring Report must be prepared by a suitably qualified and experienced person/s approved by the Secretary.*	Condition is met by the development of this report in its entirety, along with the regulatory stakeholder communications dated 08 December 2025 endorsing the signatories of this report as suitably qualified and experienced persons.	Compliant

Project Approval Doc	Condition	Consent Requirements	How addressed by the EMR	Compliance Status
	45	*45. The Environmental Monitoring Report shall include, but not be limited to:* *(a) a comprehensive review of the monitoring results from the Water Management Plan over the previous calendar year and identify any trends in the water monitoring data over the life of the project;* *(b) a discussion of the aims of the Water Management Plan and to what degree these aims have been attained in the context of results and analyses of the Water Monitoring Program, as part of the Water Management Plan;* *(c) actions taken, or intended to be taken, if any, to mitigate any adverse environmental impacts and to meet the reasonable requirements of the Secretary, EPA, DCCEEW Water, WaterNSW or Council;* *(d) a revised groundwater modelling report to include any potential and/ or the progressive improvements to the existing batters and benches that may contribute towards reducing the impacts from MPAR to the surrounding environment;* *(e) identification of any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; and* *(f) complaints record of the project's water related impacts (quality and quantity) over the previous calendar year.*	Refer to Section 5 to Section 11, along with Appendix G through to Appendix O of the EMR. Note that (d) is addressed by Section 10 of the EMR, in accordance with the approach detailed in the WMP.	Compliant
	58	*58.Prior to the commencement of construction of the leachate barrier management system in Zone 2 of the MPAR, as detailed in Modification 9, the Applicant must demonstrate to the satisfaction of the EPA that the design of the leachate management system is generally consistent with the relevant requirements of the Environmental Guidelines, Solid Waste Landfills (EPA, 2016), including:* *(a) the leachate barrier system, including liner and leachate collection system; and* *(b)the leachate storage dam/s including freeboard, appropriate sizing based on site water balance modelling and liner.*	Not addressed in the EMR. EnergyAustralia will prepare separate documentation to demonstrate that the design of MPAR Zone 2 LBMS is generally consistent with the relevant requirements of the Environmental Guidelines, Solid Waste Landfills (EPA, 2016). This will be completed manner as required to align with the planned installation timelines.	Compliant
	59	*59. Within six months of approval of Modification 9, or other timeframe agreed by the Secretary, the Applicant must develop a capping strategy for the entire MPAR to the satisfaction of the EPA. The design for the MPAR capping strategy must provide details of:* *(a) short, medium and long-term solutions for control of migration of the solutes from the entire MPAR and into the receiving environment, including consideration of post-closure measures; and* *(b) additional works required and assessment of measures to reduce water infiltration on the batter slopes of the MPAR.*	The Capping Strategy was initially provided to the DPHI on 12 March 2026. The Capping Strategy was endorsed by the NSW EPA on 05 March 2026. A final version of the Capping Strategy was provided to the Department on 17 April 2026.	Compliant
	60	*60. Within three months of approval of the capping strategy in condition 59, the Applicant must review and revise the Water Management Plan in condition 43 and condition 43A, incorporating any outcomes.*	The WMP was updated on 29 May 2026 following EPA endorsement of The Capping Strategy.	Compliant
	64	*64. Within three months, unless the Secretary agrees otherwise of:* *(a) the submission of the Environmental Monitoring Report under condition 44 above;* *(b) the submission of an incident report under condition 66 or 67 below;* *(c) any modification of this consent; or* *(e) a direction of the Secretary under condition 61 above;* *the Applicant must review and, if necessary, revise the studies, strategies or plans required under the conditions of consent to the satisfaction of the Secretary.* *Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary.*	Condition 64 is not addressed by this EMR, which is separately required to be prepared under Condition 45.	Compliant
	66	*66. The Applicant must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including:* *(a) date, time and location;* *(b) a brief description of what occurred and why it has been classified as an incident;* *(c) a description of what immediate steps were taken in relation to the incident; and* *(d) identifying a contact person for further communication regarding the incident.*	This is addressed by Section 3.4 of the EMR.	Compliant

Project Approval Doc	Condition	Consent Requirements	How addressed by the EMR	Compliance Status
	67	*67. The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 1 (Incident Notification and Reporting Requirements).*	Not applicable.	Compliant
	68	*68. Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing and must be submitted via the NSW planning portal (Major Projects). The notification must identify the development (including the development application number and name), set out the condition of this consent that the development is noncompliant with, why it does not comply, the reasons for the non-compliance (if known), and what actions have been undertaken, or will be undertaken, and when, to address the non-compliance.*	Not applicable.	Compliant
	69	*69. Within three months of approval of Modification 9 and until the completion of all rehabilitation required under this consent, the applicant must:* *(a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:* • *the Environmental Impact Statement;* • *all current statutory approvals for the project;* • *all approved strategies, plans and programs required under the conditions of this consent;* • *contact details to enquire about the project or to make a complaint;* • *a complaints register, updated monthly;* • *the Environmental Monitoring Reports of the project and the Applicant's response to the recommendations in any Environmental Monitoring Report;* • *any other matter required by the Secretary; and* *(b) keep such information up to date.*	Condition 64 is not addressed by this EMR, though the required information is available on EnergyAustralia's website. Mt Piper Power Station | EnergyAustralia.	Compliant
The WMP (ERM, 2026)	N/A	Section 10.8 of the WMP outlines the following approach to preparation of the EMR to address Condition 45 (a): • Review of surface water and groundwater quality data, including the spatial distribution of water quality parameters; • Review of long-term water quality concentration trends, with reference to statistical assessment of concentration trends and triggers; • Assessment of the data to evaluate potential interactions with Wangcol Creek and potential changes to water quality; • Reporting when the Environmental Goals have not been achieved; • Interpretation and discussion of results; • A summary of the Wangcol Creek EMP and Wangcol Creek Stream Stability Survey results; • Update on the TARPs and contingency measures currently being implemented in accordance with this WMP; and • Provision of the final report to the Planning Secretary, EPA, DCCEEW Water, WaterNSW and Council. *Commentary regarding any exceedances of the Environmental Goals will form a part of the EMR. The data assessment and reporting will also consider where changes in water quality are attributable to seepage from the MPAR, and particularly where changes in water quality may differ to those anticipated based on the current understanding of the CSM.* *Noting the management mitigation measures and the TARPs (Section 11), the EMR will also include a review of the water quality monitoring program every 3 years to confirm whether, based on the data review, any updates are required to monitoring locations (added or removed), frequency, and/or analytes so that the monitoring program* continues to meet the overall purpose of this WMP.	• Requirement is met by Sections 6 and 7 of the EMR. • Requirement is met by Sections 6 and 7 of the EMR. • Requirement is met by Sections 6, 7 and 10 of the EMR. • Requirement is met by Sections 6 and 7 of the EMR. • Requirement is met by Sections 6 and 7 of the EMR. • The Wangcol Creek EMP and Stream Stability Survey results are presented in ERM (2026a). • Requirement is met by Section 11 of the EMR. • A copy of the final EMR will be distributed accordingly. • Requirement is met by the EMR from Section 6 onwards. Data review and continuous improvement forms part of the approach to preparing the EMR. This will be formally addressed in 2028 in accordance with the 3-year timeframe. Deviations from the WMP monitoring program are described in Section 9 of the EMR.	Compliant

TABLE B-2 SUMMARY EPL 13007 REQUIREMENTS

Project Approval Doc	Consent Requirements	How addressed by the EMR	Compliance Status
EPL 13007	Surface Water and Groundwater Monitoring Reporting R5.8 The licensee must prepare an annual report detailing the results of all surface water and groundwater monitoring required by the licence (the Water Monitoring Report), including condition M2.6, condition M8.1 and Special Condition E10. The Water Monitoring Report must include, but is not limited to the following: 1. An executive summary that summarises the monitoring results, any potential water pollution risks, and where relevant, includes recommended actions to address these risks. 2. All monitoring data collected during the reporting period. 3. Analysis and graphical representation of temporal trends and patterns in monitoring data collected during the reporting period and over the entire historical dataset, including concentrations and discharge frequencies and volumes. 4. Comparison of data against current guideline values to identify potential water pollution risks. 5. Identification of any potential water pollution risks. 6. Identification of relevant hydrogeological parameters, i.e., groundwater levels, flow direction, gradient, seepage velocity. 7. Assessment of the effectiveness of measures to reduce water discharges and associated water pollution impacts, and recommendations for improvements where necessary to address these; and *Assessment of the effectiveness of measures to mitigate potential off-site impacts and identification of any associated recommendations.*	• Requirement is met by the Executive Summary of the Report. • Requirement is met by the Report in its entirety. • Requirement is met by Appendix G of the report onwards. Historical baseline data is presented and discussed in the WMP. • Requirement is met by Appendix H and Appendix I of the Report. • Requirement is met by Sections 11 and 12 of the Report. • Requirement is met by Sections 6.3.1 and 6.3.2 of the Report. • Requirement is met by Sections 11 and 12 of the Report. • A copy of the final Report will be distributed accordingly. • Requirement is met by the Report from Section 6 onwards. Deviations from the EPL monitoring program are described in Section 9 of the Report.	Compliant
	Condition R5.9 The licensee must provide a copy of the Water Monitoring Report as required by condition R5.8 to the EPA at info@epa.nsw.gov.au by no later than 1 May of each year.	Pending confirmation of EPL variation.	Compliant
	Condition 5.10 The licensee must notify the EPA in the event the leak detection system surrounding the leachate ponds has been triggered. The notification must include the location of any potential leak along with an analysis of dispersion and any potential impacts.	Not applicable.	Compliant

TABLE B-3 SUMMARY OF LAMBERTS NORTH PROJECT APPROVAL AND OEMP REQUIREMENTS

Project Approval Doc	Condition	Consent Requirements	How addressed by the EMR	Compliance Status
Project Approval 09_0186	A10	Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Requirements outlined in the Compliance Reporting Post Approval Requirements (2020).	Condition is met by the development of this report in its entirety.	Compliant
	E15 (During Operations).	The Proponent shall prepare and implement a Groundwater Monitoring Program to monitor the impacts of ash placement activities on local groundwater quality and hydrology. The Program shall be developed in consultation with WaterNSW, and shall describe the location, frequency, rationale and procedures and protocols for collecting groundwater samples as well as the parameters analysed and methods of analysis. The monitoring program shall be ongoing for the operation of the project and for a minimum of 5 years following project completion and include, but not be limited to:	Refer to Section 5.5 of OEMP	Compliant Observation of laboratory LORs were reported for fluoride, aluminium (filtered), antimony (filtered), chromium (filtered), hexavalent chromium, trivalent chromium, silver (dissolved), 'nitrite and nitrate (as N)', total nitrogen, and total phosphorus as described in Section 9 of this report. These laboratory LORs do not impact upon the conclusions of this report, as these are not considered to represent primary constituents of concern for groundwater monitoring in accordance with the OEMP.
		a) monitoring at established bore sites (or replacement bore sites in the event that existing sites are damaged or lost) as described in the Groundwater Management Plan as per condition D3(b); and	Refer to Section 6 of this report	Compliant
		b) a schedule for periodic monitoring of groundwater quality, depth and flow at all monitoring sites, at an initial frequency of no less than once every month for the first 12 months of operation. The monitoring program shall form part of the Groundwater Management Plan referred to in condition D3(b) of this approval.	Refer to Section 6 of this report	Compliant
	E16 (During Operations).	The Proponent shall prepare and implement a surface water quality monitoring program to monitor the impacts of the ash placement activities on Wangcol Creek and Lamberts Gully. The Program shall be developed in consultation with WaterNSW, and shall describe the location, frequency, rationale and the procedures and protocols for collecting water samples as well as the parameters analysed and methods of analysis. The program shall include, but not necessarily be limited to:	Refer to Section 5.6 of OEMP	Compliant Laboratory LORs above the adopted guideline value were reported consistently for silver, as described in Section 9 of this report. These laboratory LORs do not impact upon the conclusions of this report, as these are not considered to represent primary constituents of concern for groundwater monitoring in accordance with the OEMP.
		a) monitoring at the existing water quality monitoring sites as described in the document referred to under condition A1c);	Refer to Section 7 of this report	Compliant
		b) monitoring at surface water discharge points from Lamberts Gully Creek;	Refer to Section 7 of this report	Compliant

Project Approval Doc	Condition	Consent Requirements	How addressed by the EMR	Compliance Status
		c) monitoring at surface water discharge points into Wangcol Creek;	Refer to Section 7 of this report	Compliant
		d) wet weather monitoring with a minimum of two events recorded within the first 12 months operation of the project; and	Not relevant, completed as required at the time.	Compliant
		e) a schedule for periodic monitoring of surface quality at all sites throughout the life of the project, at an initial frequency of no less than once every month for the first 12 months and must include, but not be limited to, monitoring of dissolved oxygen, turbidity, sulfate, salinity, boron, manganese, iron chloride, total phosphorus and total nitrogen.	Refer to Section 7 of this report	Compliant
Operational Environmental Management Plan	Not applicable	Section 5.5.3 Groundwater Monitoring Program - Guidelines	Refer to Section 6 of this report	Compliant
	Not applicable	Section 5.5.3.1 Groundwater Monitoring Program – Water Quality Criteria	Refer to Appendix H and Section 6 of this report	Compliant
	Not applicable	Section 5.5.4 Monitoring (Table 5-12 – Groundwater Monitoring Schedule)	Refer to Section 6.2 of this report	Compliant
	Not applicable	Section 5.5.4 Monitoring (Table 5-13 – Procedures and Protocols for Monitoring)	Refer to Appendix H and Sections 5, 6.2, and 9 of this report	Compliant. Laboratory LORs above the adopted guideline values were reported for fluoride, aluminium (filtered), antimony (filtered), chromium (filtered), hexavalent chromium, trivalent chromium, silver (dissolved), 'nitrite and nitrate (as N)', total nitrogen, and total phosphorus as described in Section 9 of this report. These laboratory LORs do not impact upon the conclusions of this report, as these are not considered to represent primary constituents of concern for groundwater monitoring in accordance with the OEMP.
	Not applicable	Section 5.5.4 Monitoring (Table 5-14 – Groundwater contamination contingency plan for Lamberts North)	Refer to Sections 2, 6.3.3, 10, and 11 of this report	Compliant
	Not applicable	Section 5.5.4 Monitoring (Table 5-15 – Investigation protocol)	Refer to Sections 2, 6.3.3, 10, and 11 of this report	Compliant
	Not applicable	Section 5.5.4 Monitoring (Table 5-16 Reporting Requirements, Item 2)	This report	Compliant
	Not applicable	Section 5.6.5 (Table 5-20 Soil and Surface Water Monitoring Measures – Items 3 to 5)	Refer to Appendix I and Section 7 of this report	Compliant

APPENDIX C ASH REPOSITORY SURVEY



SERVICESTREAM

MOUNT PIPER - ASH PLACEMENT

SURVEY : 28th APRIL 2026

SCALE - 1:5000 (A3 SHEET) DATUM: MGA (ZONE56)

GRID NORTH

CEH SURVEY
CONSULTING AND CIVIL ENGINEERING AND MINING SURVEYORS
"Astrolabe" 1 Hubbard Lane,
L NSW 2290
ABN: 68 058 544 661 Office: (02) 4951 2281
Email: surveyor@ceh.com.au Website: www.ceh.com.au

PROFESSIONAL STANDARDS SCHEME Liability limited by a scheme approved under Professional Standards Legislation.

DATE	28-04-2026
AMENDED	14-05-2026
SURVEYOR	TH/BN
DRAWN	GM/TH
CHECKED	

DRAWING No:

MPA0426
(as surveyed)

CCAD6 JOB & DWG:
MPA0426_gm - MPA0426 as survey

APPENDIX D BRINE COMPOSITION DATA

Parameter	Values from 1999 SEE Average[b]	2003 – 2006 Average[b]	July 2017 - Dec 2017 Average[a]	July 2019 – June 2020 Average[c]	July 2020 – June 2021 Average[d]	July 2021 – June 2022 Average Waste Pond A[e]	July 2021 – June 2022 Average Waste Pond B[e]	July 2022 – June 2023 Average Waste Pond A[f]	July 2022 – June 2023 Average Waste Pond B[f]	July 2023 – June 2024 Average Waste Pond A[g]	July 2023 – June 2024 Average Waste Pond B[g]	July 2024 – December 2025 Average Waste Pond A[h]	July 2024 – December 2025 Average Waste Pond B[h]	January 2026 – June 2026 Average Waste Pond A[i]	January 2026 – June 2026 Average Waste Pond B[i]
pH	7.9	8.1	7.9	9.3	8.75	10	10	10	9.82	11	11	10.5	10.7	10.31	10.66
Cond (us/cm)	63,664	127,982	88,556	61,320	73,196	58,797	51,302	68,118	67,757	69,253	64,596	68,330	66,702	63,460	76,967
Cl (mg/L)	19,864	23,889	10,390	7,776	8,270	10,298	7,905	9,700	8,887	7567	4927	7,452	4,763	6,590	7,125
F	21.178*	125.66	65	55	73	38	48	46	72.00	62	62	71	79	128	106
SO_4 (mg/L)	49,670	66,767	67,378	28,302	47,395	19,172	7,943	12,934	10,602	22,171	16,308	22,949	17,208	22,603	24,981
Na (mg/L)	25,678	30,103	37,400	23,475	28,694	19,797	17,305	26,418	28,685	28,456	26,724	26,470	27,659	20,900	30,800
K (mg/L)	4,258	7,362	3,460	1,721	2,518	1,738	1,498	2,380	2,045	1938	1580	1683	1750	1,315	2,155
Ca (mg/L)	645	606	780	696	458	146	29	164	22	25	26	43	26	21	31
Mg (mg/L)	5,480	9,010	4,010	1,540	2,541	88	57	194	71	43	50	76	34	18	22
ug/L															
As	409^^^	143	438	522	199	209	209	225	255	663	310	2688	449	11,800	3631
Ag	1.4^^	<50	10	<1	<1	4.7	6.6	5.5	5.7	5.7	4.9	<10	<10	< 10	< 10
Ba	272*	30	1,000	6.43	116	95	5.9	136	11	14	5.3	37.6	14	95	23
Be	17^	5.8	-	<10	<10	5	5	5.5	5.7	5.7	5	<10	<10	< 10	< 10
B	73,560*	115,000	35,800	41,500	9,570	4,738	2,847	6,897	3,612	4841	3152	9022	4178	24,750	12,710
Cd	19+	42	5.3	2.3	3.58	4	2.7	4.5	4.1	4	2.5	12.5	1.7	42	13
Cr ***	49+	<50	1,050	50	40.4	34	48	26	53	79	97	146.5	209.5	164	120
Cu	7,858*	7,197	12,400	5,991	4,626	764	237	1,746	245	422	365	698.7	448	1,285	576
Fe	833*	-	1,580	151	340	884	201	172	234	160	113	380	876	110	138
Hg	1.35^^	-	0.04	0.11	0.23	0.23	0.23	0.19	0.14	0.14	0.4	< 0.4	0.7	0.14	< 0.4
Mn	17,530*	34,000	7,210	5,170	231	427	17	639	20	59	16	275	60.8	158	45
Mo	2,600^^	-	-	2,625	2,490	5,146	4,877	8,505	8,602	7096	6317	9413	7355	17,500	12,090
Ni	4,187*	4,017	3,880	348	1,570	492	309	808	455	367	307	553	276.7	642	606
Pb	6^^	-	10	<10	11.6	7.2	5	25	6.1	7.4	5.3	24	13	39	12
Se	245*	-	130	115	114	99	50	166	68	564	119	2789	264.5	9,425	2578
Zn	2,020*	-	1,050	2,180	1,373	1,477	223	3,679	336	493	377	779	288	782.5	311.5

a. Brine composition data provided by EnergyAustralia on 01 August 2018;
b. Connell Wagner (2007). Statement of Environmental Effects, Mount Piper Power Station, Extension of Brine Conditions Ash Placement Area. Prepared by Environmental Services, Pacific Power International for Delta Electricity, 21 June 2007.
c. data based on Nalco monitoring point reference 1050, EA BC Waste Pond
Notations relate to Average Trace element values, from 1999 Statement of Environmental Effects including:
* mostly 10 – 15 analyses (sources Hodgson, 1999) – AWT, 1996
** EPA (1999a) ^ one analysis ^^ 3 analyses ^^^ 5 analyses + 6 analyses
*** Total chromium reported (CrVI <25ug/l)
d. Brine composition data provided by EnergyAustralia in July 2021 – combined data of BC Waste Pond A & B.
e. Brine composition data provided by EnergyAustralia in August 2022 – averages of data for BC Waste Pond A & BC Pond B.
f. Brine composition data provided by EnergyAustralia on July 2023 – averages of data for BC Waste Pond A & BC Pond B.
g. Brine composition data provided by EnergyAustralia on July 2024 - averages of data for BC Waste Pond A & BC Pond B.
h. Brine composition data provided by EnergyAustralia on January 2026 - averages of data for BC Waste Pond A & BC Pond B.
i. Brine composition data provided by EnergyAustralia on July 2026 - averages of data for BC Waste Pond A & BC Pond B.

APPENDIX E STORMWATER FLOW VOLUME DATA

Mt Piper Power Station - LDP12 (formerly LDP01) discharge volumes

Date	Kilolitres / day	Start Pump (hh.mm)	Cease Pumping (hh.mm)	Pump Duration (hrs)	Pump Rate (L/sec)
7/01/2026	995.31	1449	1700	2.050	134.87
8/01/2026	2354.42	745	1407	5.317	123.01
21/01/2026	2055.04	1245	1704	4.333	131.73
22/01/2026	1229.01	733	1027	2.917	117.05
13/03/2026	3044.10	1047	1651	6.083	139.00
25/03/2026	1652.22	1346	1701	3.267	140.50
26/03/2026	2576.05	905	1426	5.367	133.34
9/06/2026	2520.48	1145	1701	4.880	143.37
10/06/2026	4329.30	803	1640	8.633	139.30
25/06/2026	1605.57	1255	1637	3.267	136.53
26/06/2026	659.86	752	912	1.350	135.77
TOTAL	**23021**	**-**	**-**	**-**	**-**



APPENDIX F NALCO

6 Giffnock Avenue
Macquarie Park 2113
Phone: +61 (0) 2 8870 8433

ABN: 41 000 424 788

Ecolab | Nalco Water - Global Analytical & Microbiology

Quality assurance/quality control program (2026)

The laboratory's Quality assurance/quality control program ensures that sampling activities and analytical data is accurate, reliable and acceptable.

The Quality assurance/quality control program consists of both internal and external measures.

Internal

- Laboratory instrumentation and field equipment are calibrated at the correct intervals, as prescribed in the relevant NATA 'General equipment table'.
- Regular preventative maintenance is carried out on all key laboratory instrumentation and field equipment.
- Trip blanks (where appropriate) are supplied to monitor contamination.
- Certified reference materials are analysed routinely.
- Duplicate analysis is conducted to check precision.
- Laboratory blanks are analysed to monitor contamination.
- Quality control checks on media are performed.
- All records and subsequent reports are systematically checked.
- Quality control charts are used to statistically monitor trends in data.
- The laboratory is regularly internally audited.

External

- Ecolab Global Analytical & Microbiology laboratory participates in regular chemical and microbiological external proficiency testing programs as well as NATA audits as per their surveillance program.

Sampling and Data Collection

- All sampling is performed by trained personnel in accordance with procedure A-2.18 and relevant parts of Australian Standard 5667, for which NATA accreditation is held.
- Site measurements (Dissolved Oxygen, pH, Turbidity, Temperature and Conductivity) and sampling observations (water depth) are recorded and reported in accordance with procedure CA12125.

Sample Bottles

- Pre-labeled sample containers are used for routine sampling and testing.
- The sample bottles are prepared so that samples are preserved in accordance with Australian Standard 5667.1:1998 and Standard Methods for the Examination of Water and Wastewater, 22nd Edition (APHA).

Delivery of Samples

- Eskies and freezer packs are used to maintain the integrity of the samples during transport from the sampling sites to our preferred 3rd party lab ALS (Smithfield) and Sydney Water (West Ryde).

National Association of Testing Authorities, Australia

Scope of Accreditation

Ecolab Pty Ltd

Site

Global Analytical & Microbiology (GAM) – Mount Piper

Accreditation No.	Site No.	Date of Accreditation
1099	15339	22 Jul 2003

Address

350 Boulder Road
Portland, NSW 2847
Australia

ecolab.com/nalco-water

Contact

Mr Hoang Le
P: +61 0421158995
thle@ecolab.com

Availability

Services conditionally available to external clients

Global Analytical & Microbiology (GAM) – Mount Piper

ISO/IEC 17025 (2017)

Environment

SERVICE	PRODUCT	DETERMINANT	TECHNIQUE	PROCEDURE
Analysis for nutrients	Bore waters; Industrial waters - Treated; Potable waters; Surface waters	Silica - Molybdate reactive	UV-vis spectrophotometry	in-house method CA13430
Analysis for physical and chemical characteristics	Bore waters; Industrial waters - Treated; Potable waters; Surface waters	Hardness - Calcium	Titration	in-house method CA11046
		Hardness - Total	Titration	in-house method CA11046
		Alkalinity	Titration	in-house method CA11113
	Industrial waters - Treated; Potable waters	Chloride	Titration	in-house method CA11047

SERVICE	PRODUCT	DETERMINANT	TECHNIQUE	PROCEDURE
		Conductivity	Electrometric	APHA 2510 B in-house method CA11116
		pH	Electrometric	APHA 4500 H^+ B in-house method CA10004
		Sulfate	UV-vis spectrophotometry	in-house method CA11120
		Fluoride	Ion selective electrode (ISE)	APHA 4500 F^- C in-house method CA11145
		Solids - Suspended	Gravimetric	APHA 2540 D in-house method CA12119
		Turbidity	Nephelometry	APHA 2130 B in-house method CA10002
Analysis for physical and chemical characteristics Field analysis; In-situ analysis	Industrial waters - Treated; Potable waters	pH	Electrometric	APHA 4500 H^+ B in-house method CA12125
Analysis for physical and chemical characteristics Field analysis; In-situ analysis	Industrial waters - Treated; Potable waters	Conductivity - In situ	Electrometric	APHA 2510 B in-house method CA12125
		Temperature	Manual	APHA 2550 B in-house method CA12125
Sample collection	Bore waters; Surface waters	Not applicable	Grab	AS/NZS 5667.1 AS/NZS 5667.4 AS/NZS 5567.6 AS/NZS 5667.11 in-house method A-2.18

The only data displayed is that deemed relevant and necessary for the clear description of the activities and services covered by the scope of accreditation.

Grey text appearing in a SoA is additional freetext providing further refinement or information on the data in the preceding line entry.

Accreditation No.	Site No.	Print date
1099	15339	06 Jul 2026

END OF SCOPE

APPENDIX G HYDROGRAPHS

Figure G-1. Water Levels Over Time - Upgradient / Background Wells
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



Figure G-2. Water Levels Over Time - Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778

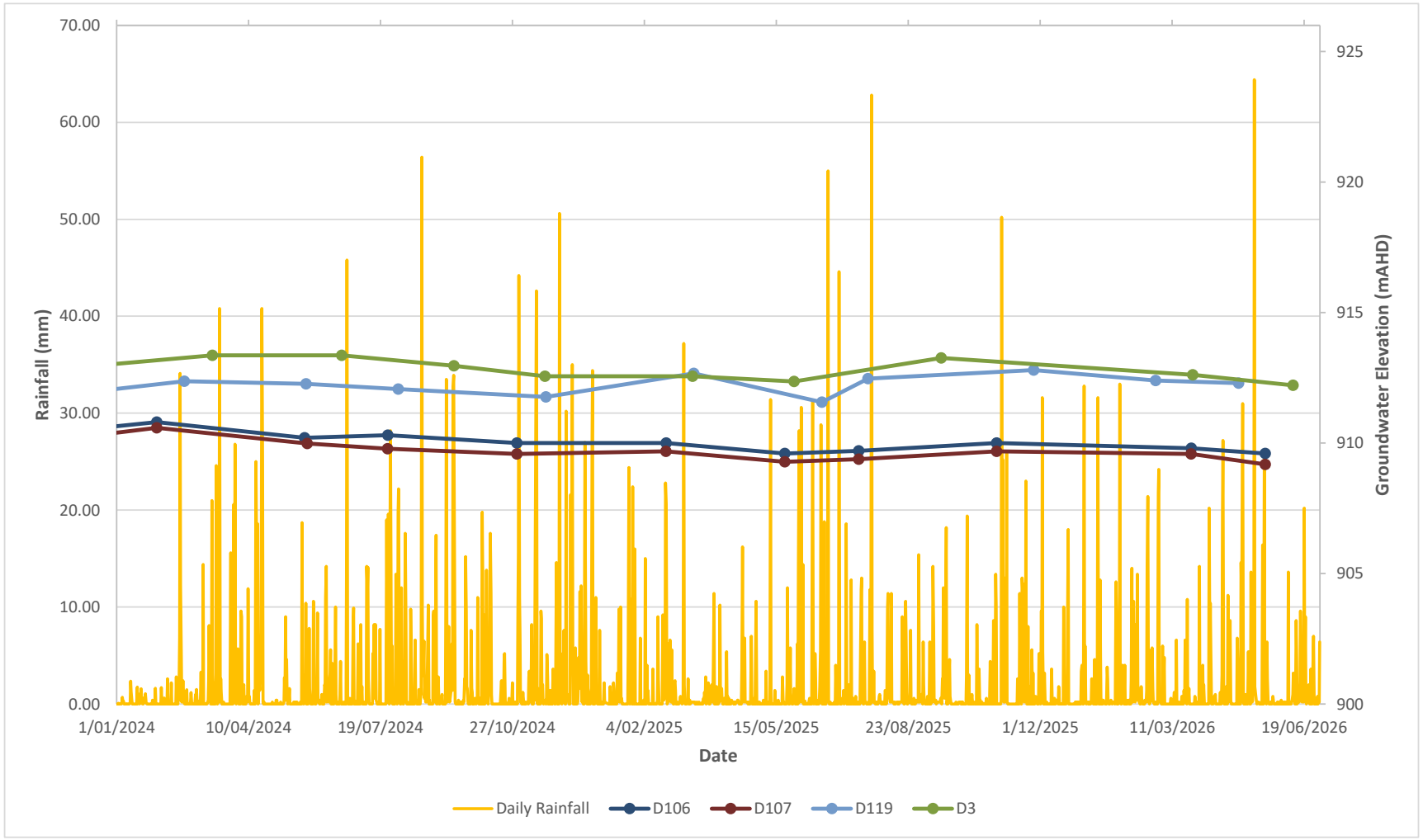
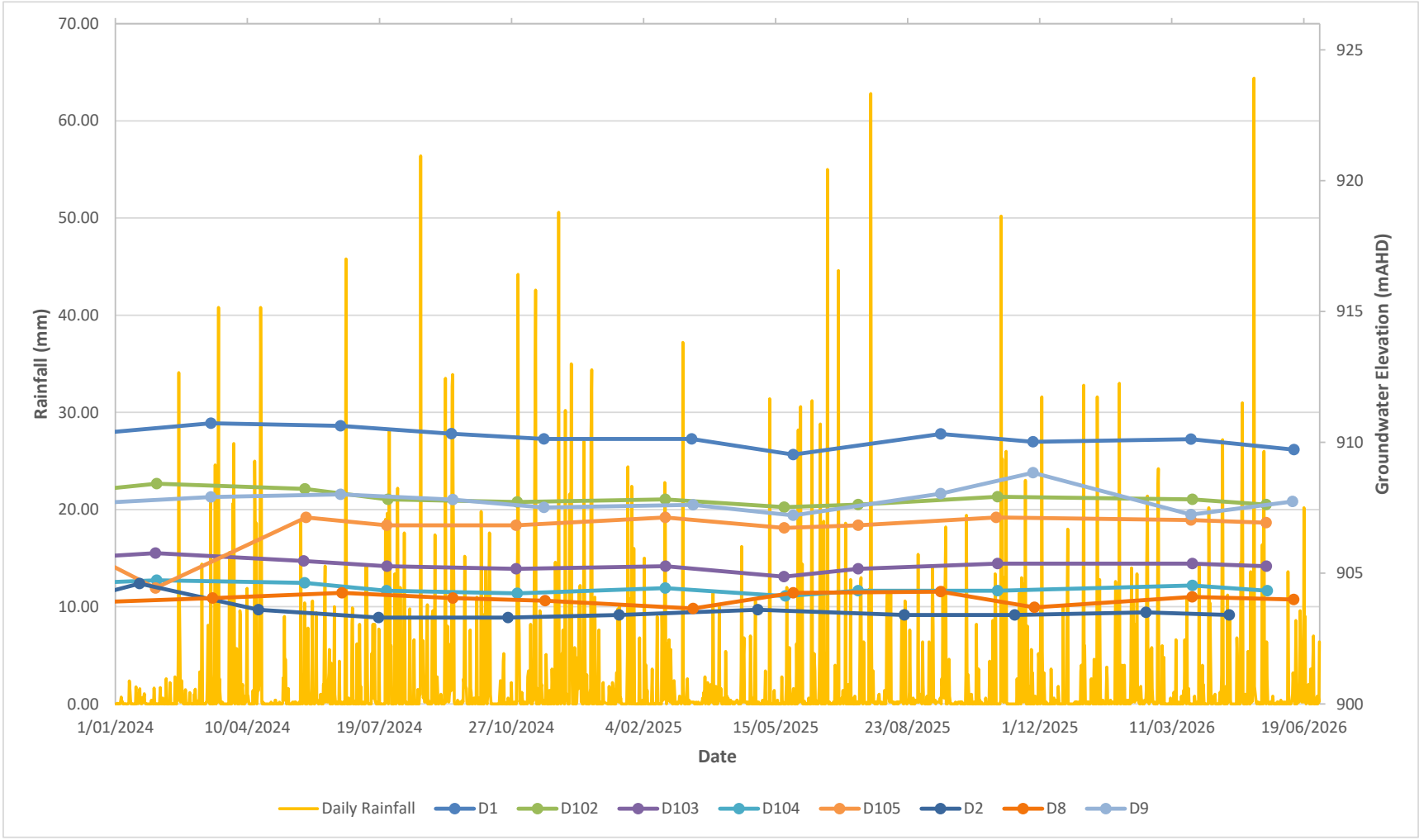


Figure G-3. Water Levels Over Time - Downgradient MPAR, areas Adjacent to Wangcol Creek
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



*

Figure G-4. Water Levels Over Time - Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East)
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778

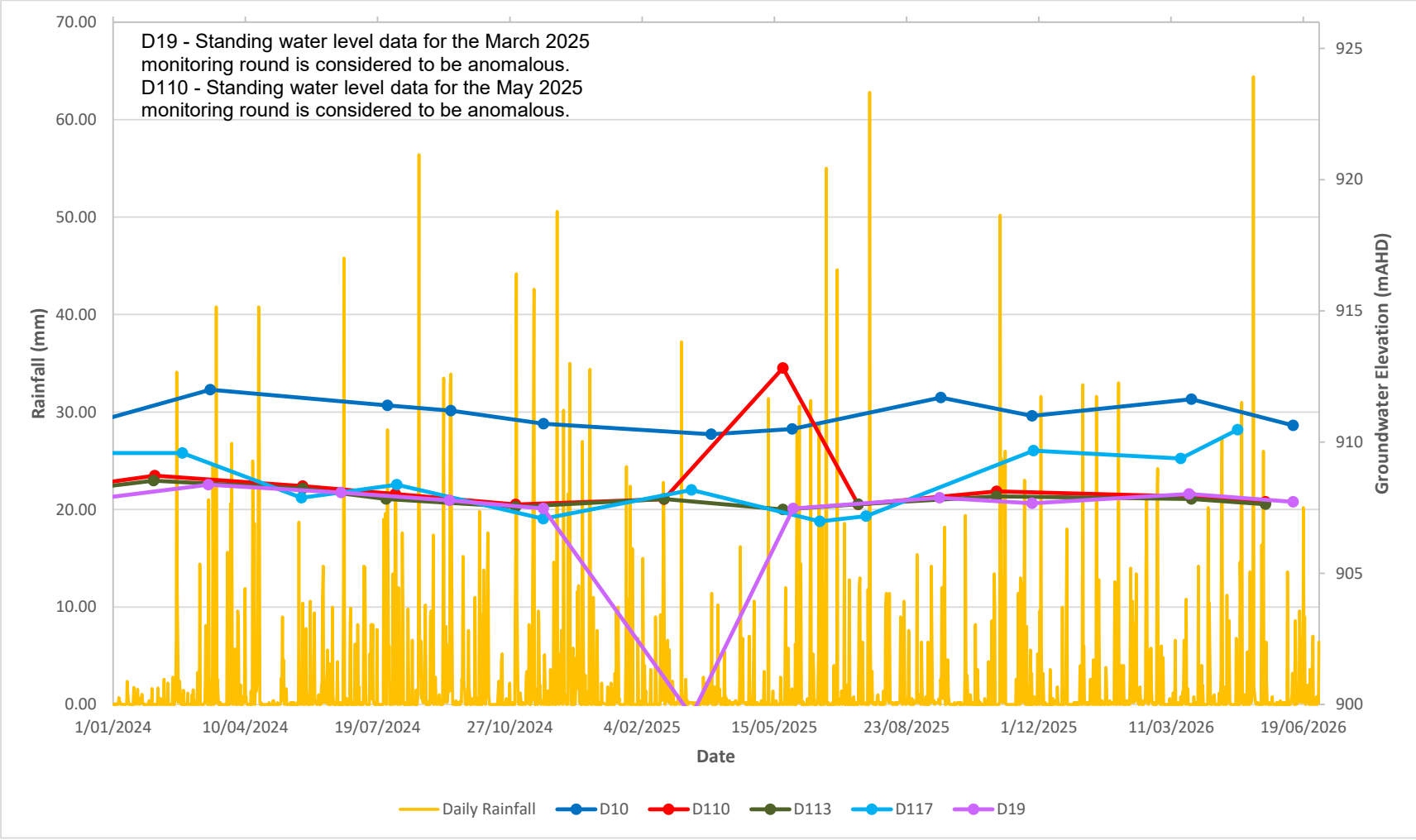


Figure G-5. Water Levels Over Time - Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778

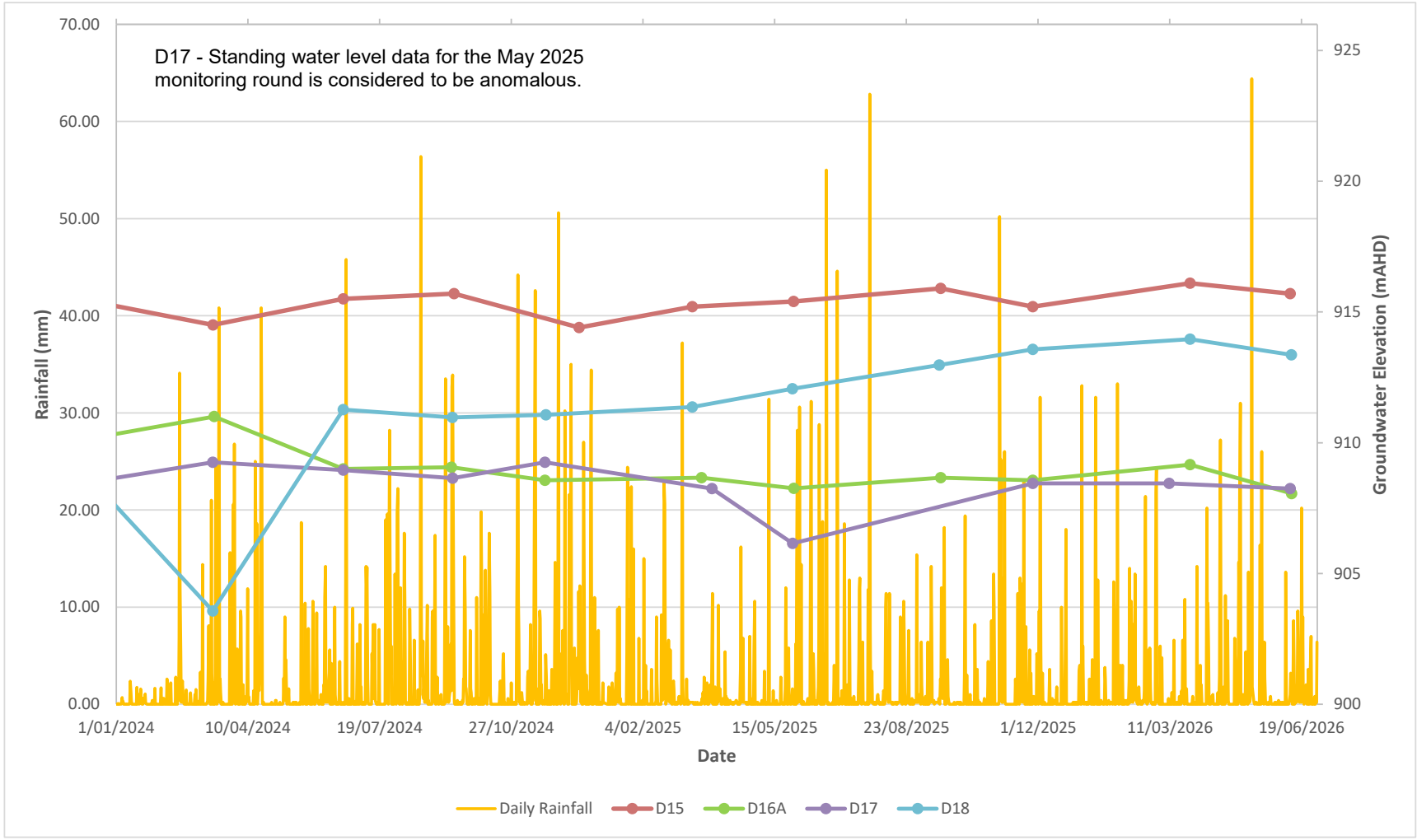
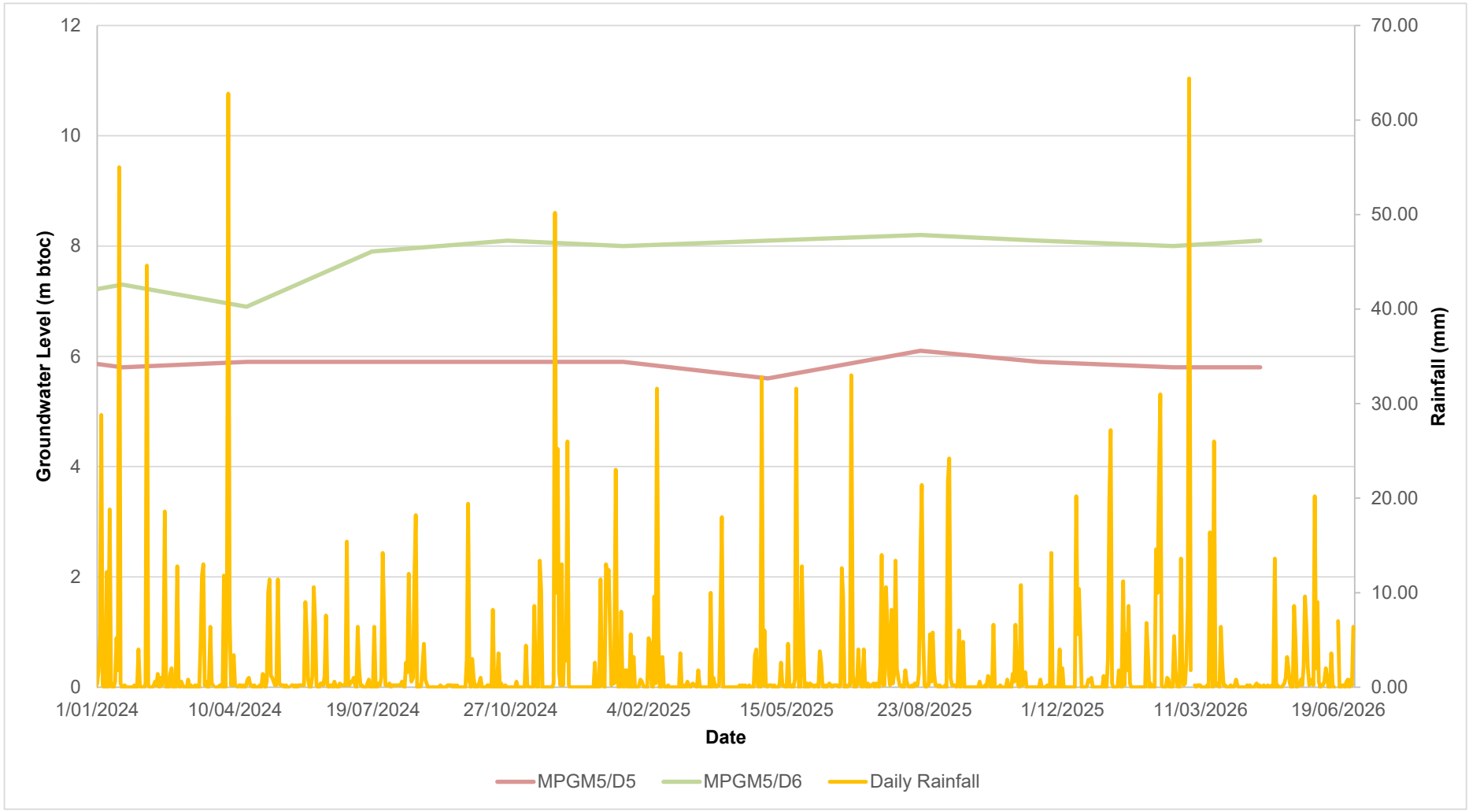


Figure G-6. Water Levels Over Time - Brine Waste Pond Leak Detection Bores
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



APPENDIX G – HYDROGEOLOGICAL PARAMETERS

Seepage velocities were estimated based on Darcy flux using the following equation.

$$\bar{v} = (K\ dh/dl)/n_{eff}$$

where:
- $\bar{v}$ is the seepage velocity (m/d);
- K is hydraulic conductivity (m/d) (ERM, 2023a);
- dh/dl is hydraulic gradient along the water table during the reporting period (m/m) (see below); and
- n_{eff} is the effective porosity (assumed based on the host geology and derived from the calibrated groundwater model).

Data for this assessment and its sources include:

- Groundwater elevation data, as presented in Figure 5a and Figure 5b;
- For the fill / mine spoil geological units, representative porosity (n_{eff}) and horizontal hydraulic conductivity (K, m/day) values were taken from the calibrated groundwater flow model in ERM (2023a). Although hydraulic conductivity values estimated from slug testing previously conducted at individual wells in this area indicated higher and lower values respectively (ERM, 2019), the field values likely represent localised conditions around each bore. By contrast, the K value from the calibrated model is likely to be more representative of conditions throughout the highly heterogeneous fill / mine spoil geological units; and
- For the host geological unit (overburden / Bunnyong sandstone), representative porosity (n_{eff}) and hydraulic conductivity values based on the calibrated groundwater flow model in ERM (2023a). The hydraulic conductivity value derived from slug testing of bore D102 (ERM, 2019) was similar to the model-based values.

The seepage velocity calculations are presented in Table G-1 and Table G-2, below.

INPUTS										
				K (m/day)						
Time Period	*Groundwater Wells*	*Transect (m)*	*Gological Unit*	*Upper*	*Lower*	*K (m/day)*	*Porosity*	*Groundwater Elevation D110 (mAHD)*	*Groundwater Elevation D103 (mAHD)*	*Comment*
Mar-26	D110-D103	550	Fill (mine spoil)	-	-	40	0.2	907.92	905.364	The most likely K value and porosity value obtained from the calibrated groundwater flow model (ERM, 2023).
May-26								907.72	905.264	

Mar-26				
Parameter	Unit	Upper	Lower	Model based
Hydraulic Conductivity (K)				
Calibrated Model Value	m/day	-	-	40
Effective Porosity (n_{eff})				
Calibrated Model Value	(0-1)	0.2		
Hydraulic Gradient (dh/dl)				
Calculated along inferred groundwater flow line from groundwater elevation data	m/m	-	-	0.0046

Seepage Velocity (v)		
Derived from $v=K((dh/dl)/n_{eff})$	Unit	**Seepage Velocity**
Upper	m/year	-
Lower		-
Estimated seepage velocity		339

May-26				
Parameter	Unit	Upper	Lower	Model based
Hydraulic Conductivity (K)				
Calibrated Model Value	m/day	-	-	40
Effective Porosity (n_{eff})				
Calibrated Model Value	(0-1)	0.2		
Hydraulic Gradient (dh/dl)				
Calculated along inferred groundwater flow line from groundwater elevation data	m/m	-	-	0.0045

Seepage Velocity (v)		
Derived from $v=K((dh/dl)/n_{eff})$	Unit	**Seepage Velocity**
Upper	m/year	-
Lower		-
Estimated seepage velocity		326

INPUTS										
				K (m/day)						
Time Period	*Groundwater Wells*	*Transect (m)*	*Gological Unit*	*Upper*	*Lower*	*K (m/day)*	*Porosity*	*Groundwater Elevation D110 (mAHD)*	*Groundwater Elevation D105 (mAHD)*	*Comment*
Mar-26	D110-D105	240	Bunnyong Sandston / Overburden	-	-	4	0.15	907.92	907.031	K and porosity values obtained from the calibrated groundwater flow model (ERM, 2023).
May-26								907.72	906.931	

Mar-26				
Parameter	Unit	Upper	Lower	Model based
Hydraulic Conductivity (K)				
Calibrated Model Value	m/day	-	-	4
Effective Porosity (n_{eff})				
Calibrated Model Value	(0-1)	0.15		
Hydraulic Gradient (dh/dl)				
Calculated along inferred groundwater flow line from groundwater elevation data	m/m	-	-	0.0037
Seepage Velocity (v)				
Derived from $v=K((dh/dl)/n_{eff})$	Unit	**Seepage Velocity**		
Upper	m/year	-		
Lower		-		
Estimated seepage velocity		36		

May-26				
Parameter	Unit	Upper	Lower	Model based
Hydraulic Conductivity (K)				
Calibrated Model Value	m/day	-	-	4
Effective Porosity (n_{eff})				
Calibrated Model Value	(0-1)	0.15		
Hydraulic Gradient (dh/dl)				
Calculated along inferred groundwater flow line from groundwater elevation data	m/m	-	-	0.0033
Seepage Velocity (v)				
Derived from $v=K((dh/dl)/n_{eff})$	Unit	**Seepage Velocity**		
Upper	m/year	-		
Lower		-		
Estimated seepage velocity		32		

APPENDIX H TABULATED GROUNDWATER DATA

				ANZ-Field Water Quality Parameters					Z-General Chemis		ANZ-Alkalinity					ANZ-Cations and Anions											
				pH - Field	Redox - Field	Dissolved Oxygen - Field	Volume Purged	Electrical Conductivity Field (non-compensated)	Dissolved Organic Carbon	Hardness as CaCO3	Alkalinity - P	Alkalinity - Total as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Sulphate as SO4 2-	Chloride	Fluoride	Total Dissolved Solids	Magnesium - Dissolved	Magnesium - Total	Potassium - Dissolved	Potassium - Total	Sodium - Dissolved	Sodium - Total	Calcium - Total	Calcium - Dissolved
			LOR	0	0	0.1	0	1	0.001	0.01	1	1	1	1	1	1	0.01	0.02	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
			Units	pH units	mV	mg/L	l	uS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Action Levels																							
			MOUNT-PIPER-ANZECC/LOCAL SSTL-WG[1]	6.5 - 8				2600		200						1000	350	1.5	2000					180	180	1000	1000
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																							
D1	25/03/2026	D1_20260325	N	**5.99**	**52.9**	**1.6**	**123**	**8759**	**23**	**2520**	< 1	**195**	**195**	< 1	< 1	**4100**	**707**	< 0.5	**8590**	**373**	**388**	**126**	**126**	**1380**	**1320**	**408**	**396**
	11/06/2026	D1_20260611	N	**6.02**	**244.1**	**2.5**	**117**	**8640**	**6**	**2350**	< 1	**190**	**190**	< 1	< 1	**4100**	**734**	**0.105**	**7390**	**351**	**375**	**114**	**122**	**1250**	**1350**	**391**	**364**
D10	26/03/2026	D10_20260326	N	**5.91**	**171.6**	**1**	**164**	**5709**	**2**	**1150**	< 1	**146**	**146**	< 1	< 1	**2510**	**354**	**0.335**	**4890**	**170**	**171**	**120**	**117**	**976**	**901**	**182**	**182**
	11/06/2026	D10_20260611	N	**5.9**	**319.2**	**1.3**	**149**	**7530**	**4**	**1460**	< 1	**155**	**155**	< 1	< 1	**3410**	**498**	**0.731**	**6090**	**219**	**227**	**150**	**153**	**1190**	**1270**	**232**	**224**
D102	26/03/2026	D102_20260326	N	**6.54**	**-45.7**	**5.9**	**15**	**8751**	**6**	**3180**	< 1	**83**	**83**	< 1	< 1	**3780**	**904**	< 0.5	**8660**	**453**	**462**	**75.4**	**72.4**	**1210**	**1140**	**535**	**528**
	21/05/2026	D102_20260521	N	**6.13**	**27.6**	**2.5**	**10**	**9520**	**9**	**3000**	< 1	**76**	**76**	< 1	< 1	**3690**	**896**	< 0.5	**7530**	**439**	**434**	**71.6**	**65.6**	**1150**	**1130**	**476**	**479**
D103	26/03/2026	D103_20260326	N	**6.17**	**92.9**	**2.6**	**36**	**4523**	**1**	**1400**	< 1	**178**	**178**	< 1	< 1	**2010**	**272**	< 0.2	**4050**	**203**	**211**	**39.8**	**39.6**	**597**	**564**	**228**	**227**
	21/05/2026	D103_20260521	N	**6.21**	**99.8**	**3.1**	**35**	**4878**	**3**	**1290**	< 1	**189**	**189**	< 1	< 1	**1790**	**240**	< 0.2	**3570**	**193**	**184**	**38.7**	**34.5**	**570**	**532**	**194**	**200**
D104	26/03/2026	D104_20260326	N	**5.95**	**28.9**	**3.6**	**7**	**1460**	< 1	**589**	< 1	**61**	**61**	< 1	< 1	**577**	**100**	< 0.05	**1250**	**75**	**73.7**	**10.9**	**10.5**	**102**	**93.5**	**107**	**112**
	22/05/2026	D104_20260522	N	**6.17**	**15.7**	**2.5**	**5**	**1245**	**4**	**372**	< 1	**84**	**84**	< 1	< 1	**319**	**75.3**	**0.064**	**668**	**49**	**46.4**	**10.3**	**8.97**	**79.5**	**75.5**	**64.7**	**68.1**
D105	25/03/2026	D105_20260325	N	**6.12**	**10.2**	**1.7**	**30**	**2928**	< 1	**1050**	< 1	**170**	**170**	< 1	< 1	**1170**	**203**	< 0.1	**2580**	**153**	**153**	**20.7**	**19.9**	**288**	**263**	**164**	**167**
	21/05/2026	D105_20260521	N	**6.18**	**18.5**	**1.2**	**29**	**2997**	**3**	**909**	< 1	**174**	**174**	< 1	< 1	**955**	**163**	< 0.1	**2030**	**137**	**133**	**19.3**	**17.7**	**259**	**247**	**133**	**138**
D106	25/03/2026	D106_20260325	N	**6.04**	**50.4**	**3.1**	**19**	**9150**	**6**	**2590**	< 1	**132**	**132**	< 1	< 1	**4390**	**864**	< 0.5	**8760**	**392**	**402**	**113**	**114**	**1530**	**1440**	**393**	**389**
	20/05/2026	D106_20260520	N	**6.02**	**47.2**	**2.4**	**17**	**10044**	**6**	**2410**	< 1	**171**	**171**	< 1	< 1	**3860**	**734**	< 0.2	**8090**	**374**	**370**	**118**	**111**	**1480**	**1430**	**342**	**348**
D107	25/03/2026	D107_20260325	N	**6.08**	**120.9**	**1.9**	**40**	**10212**	**5**	**2470**	< 1	**248**	**248**	< 1	< 1	**4770**	**808**	< 0.5	**9800**	**385**	**393**	**261**	**260**	**1780**	**1650**	**352**	**354**
	20/05/2026	D107_20260520	N	**6.12**	**1.9**	**2.3**	**39**	**11040**	**8**	**2300**	< 1	**249**	**249**	< 1	< 1	**4210**	**687**	< 0.5	**8620**	**364**	**361**	**248**	**232**	**1670**	**1630**	**318**	**321**
D110	26/03/2026	D110_20260326	N	**6.11**	**26.4**	**2.3**	**48**	**9213**	**8**	**3180**	< 1	**119**	**119**	< 1	< 1	**4270**	**943**	< 0.5	**9070**	**446**	**449**	**96**	**88.2**	**1380**	**1270**	**533**	**536**
	21/05/2026	D110_20260521	N	**6.07**	**16.6**	**2.3**	**47**	**9966**	**6**	**2920**	< 1	**149**	**149**	< 1	< 1	**4110**	**884**	< 0.5	**7870**	**419**	**407**	**88.1**	**78.6**	**1310**	**1260**	**467**	**479**
D113	26/03/2026	D113_20260326	N	**6.01**	**4.4**	**0.9**	**50**	**4656**	**2**	**1020**	< 1	**162**	**162**	< 1	< 1	**1920**	**262**	< 0.2	**3850**	**145**	**146**	**92.2**	**85.2**	**732**	**672**	**169**	**171**
	21/05/2026	D113_20260521	N	**6.13**	**22.3**	**2.5**	**49**	**4808**	**6**	**898**	< 1	**170**	**170**	< 1	< 1	**1600**	**212**	**0.256**	**3290**	**129**	**126**	**84.1**	**78.4**	**670**	**654**	**147**	**147**
D117	18/03/2026	D117_20260318	N	**6.12**	**294.7**	**5.2**	**132**	**4671**	< 1	**1570**	< 1	**116**	**116**	< 1	< 1	**2240**	**125**	**1.74**	**4580**	**132**	**130**	**141**	**140**	**497**	**487**	**412**	**413**
	30/04/2026	D117_20260430	N	**6.15**	**86.9**	**3.5**	**232**	**4118**	**1**	**1570**	< 1	**191**	**191**	< 1	< 1	**1350**	**82.5**	**0.553**	**3600**	**186**	**194**	**88.5**	**89.5**	**427**	**446**	**338**	**324**
D119	26/02/2026	D119_20260226	N	**6.17**	**-18.2**	**2.4**	**28**	**2112**	**6**	**444**	< 1	**124**	**124**	< 1	< 1	**803**	**98.9**	**0.245**	**1430**	**52.1**	**52.2**	**32.3**	**31.1**	**261**	**255**	**92.8**	**91.7**
	30/04/2026	D119_20260430	N	**5.99**	**80.7**	**2**	**27**	**2089**	**2**	**457**	< 1	**127**	**127**	< 1	< 1	**667**	**73.8**	**0.105**	**1550**	**60.9**	**63.3**	**36.3**	**37**	**260**	**270**	**85.5**	**82.4**
D15	26/03/2026	D15_20260326	N	**6.09**	**216.8**	**1.8**	**35**	**2012**	< 1	**348**	< 1	**160**	**160**	< 1	< 1	**749**	**82.5**	< 0.1	**1400**	**35.8**	**36.3**	**27**	**27.1**	**303**	**285**	**79.7**	**80.3**
	10/06/2026	D15_20260610	N	**6.05**	**92.1**	**1.9**	**32**	**2065**	**2**	**348**	< 1	**145**	**145**	< 1	< 1	**756**	**85**	< 0.5	**1350**	**35.9**	**36.7**	**26**	**29.6**	**281**	**292**	**81.2**	**80**
D16a	26/03/2026	D16A_20260326	N	**7.57**	**53.8**	**6.3**	**130**	**1042**	< 1	**459**	< 1	**421**	**421**	< 1	< 1	**162**	**17.5**	**0.479**	**698**	**40.5**	**40.7**	**23.5**	**23**	**67.7**	**61.5**	**117**	**117**
	11/06/2026	D16A_20260611	N	**7.01**	**235.7**	**2.6**	**123**	**1066**	**1**	**411**	< 1	**453**	**453**	< 1	< 1	**139**	**17**	**0.727**	**652**	**36.2**	**36**	**21.1**	**22.5**	**74.9**	**75.3**	**104**	**105**
D17	10/03/2026	D17_20260310	N	**7.14**	**196.9**	**4.8**	**1**	**1621**	**3**	**669**	< 1	**398**	**398**	< 1	< 1	**528**	**65.7**	**0.294**	**1540**	**77**	**143**	**16.6**	**43**	**101**	**113**	**245**	**141**
	10/06/2026	D17_20260610	N	**6.32**	**58.4**	**2.3**	**31**	**2044**	**1**	**832**	< 1	**242**	**242**	< 1	< 1	**784**	**72.7**	**0.121**	**1510**	**99.5**	**96.9**	**18**	**19.2**	**140**	**136**	**166**	**169**
D18	26/03/2026	D18_20260326	N	**6.78**	**139.8**	**2.1**	**5**	**653**	< 1	**321**	< 1	**343**	**343**	< 1	< 1	**15.8**	**8.89**	**0.51**	**418**	**29.1**	**29.3**	**18.7**	**18.4**	**19.2**	**18.3**	**80.2**	**80.4**
	11/06/2026	D18_20260611	N	**6.68**	**289.1**	**3**	**35**	**650**	**1**	**308**	< 1	**354**	**354**	< 1	< 1	**11.1**	**8.35**	**0.532**	**361**	**28.1**	**28.1**	**17.8**	**19.1**	**15.8**	**16.8**	**76.6**	**77**
D19	24/03/2026	D19_20260324	N	**6.02**	**-24**	**1.9**	**14**	**4552**	**2**	**992**	< 1	**165**	**165**	< 1	< 1	**1950**	**267**	< 0.2	**3560**	**142**	**145**	**83.7**	**80.3**	**701**	**656**	**165**	**163**
	11/06/2026	D19_20260611	N	**6.11**	**194.2**	**2.6**	**12.6**	**4183**	**3**	**867**	< 1	**171**	**171**	< 1	< 1	**1740**	**246**	**0.32**	**3220**	**125**	**125**	**70.7**	**70.6**	**606**	**636**	**140**	**141**
D2	19/02/2026	D2_20260219	N	**6.08**	**-61.3**	**1.7**		**1030**	**45**	**256**	< 1	**36**	**36**	< 1	< 1	**1130**	**161**	**0.333**	**745**	**35**	**32.1**	**11.4**	**9.89**	**118**	**107**	**42.5**	**45**
	23/04/2026	D2_20260423	N	**6.02**	**106.8**	**2.6**	**57**	**1661**	**31**	**400**	< 1	**35**	**35**	< 1	< 1	**716**	**87.8**	**0.119**	**1230**	**54.7**	**57.2**	**16.7**	**15.6**	**177**	**180**	**72.1**	**70.1**
D3	26/03/2026	D3_20260326	N	**6.34**	**-3.5**	**2.2**	**208**	**1044**	**3**	**398**	< 1	**215**	**215**	< 1	< 1	**188**	**95.7**	**0.088**	**714**	**51**	**52.6**	**9.48**	**9.15**	**71.2**	**69.6**	**77.7**	**75.2**
	10/06/2026	D3_20260610	N	**6.14**	**196.5**	**2.3**	**199**	**869**	**2**	**354**	< 1	**157**	**157**	< 1	< 1	**231**	**42.7**	< 0.5	**572**	**41.1**	**40.8**	**9.86**	**11.1**	**39.8**	**38.2**	**72.5**	**73.8**
D4	18/02/2026	D4_20260218	N	**3.51**	**260.8**	**3.9**	**81**	**610**	**6**	**61.1**	< 1	< 1	< 1	< 1	< 1	**567**	**45.5**	**0.103**	**603**	**7.38**	**6.7**	**8.88**	**7.98**	**19.5**	**18.5**	**11.4**	**12.3**
	23/04/2026	D4_20260423	N	**3.5**	**509.1**	**0.8**	**126**	**624**	**2**	**54.6**	< 1	< 1	< 1	< 1	< 1	**245**	**17**	**0.074**	**496**	**6.53**	**7.12**	**9.51**	**9.21**	**18.5**	**20.2**	**11.8**	**11.1**
D5	18/02/2026	D5_20260218	N	**5.89**	**-94.8**	**1.1**	**267**	**1191**	**2**	**533**	< 1	**69**	**69**	< 1	< 1	**1550**	**86.3**	**0.473**	**1010**	**67.6**	**61.1**	**10.6**	**9.31**	**33.6**	**30.8**	**93.2**	**102**
	23/04/2026	D5_20260423	N	**5.9**	**92.9**	**1.7**	**262**	**1167**	**2**	**479**	< 1	**88**	**88**	< 1	< 1	**471**	**22.1**	**0.173**	**891**	**60.4**	**63.2**	**11**	**10.3**	**31.9**	**33.4**	**94.4**	**92.4**
D8	26/03/2026	D8_20260326	N	**5.37**	**94.3**	**5.5**	**50**	**357**	**2**	**139**	< 1	**8**	**8**	< 1	< 1	**119**	**20.9**	< 0.02	**298**	**18.5**	**18.6**	**2.86**	**2.79**	**14.1**	**12.9**	**25.5**	**25.3**
	11/06/2026	D8_20260611	N	**5.51**	**245.7**	**6.7**	**40**	**367**	**2**	**140**	< 1	**9**	**9**	< 1	< 1	**125**	**18**	< 0.05	**225**	**18.9**	**18.2**	**2.69**	**3.13**	**15.4**	**13.7**	**24.5**	**24.9**
D9	25/03/2026	D9_20260325	N	**6.17**	**8.4**	**1.8**	**12**	**9326**	**6**	**3040**	< 1	**148**	**148**	< 1	< 1	**417**	**83.7**	< 0.05	**8980**	**426**	**424**	**97.2**	**99.7**	**1420**	**1300**	**511**	**515**
	10/06/2026	D9_20260610	N	**6.14**	**114.4**	**2.6**	**15**	**9259**	**6**	**2710**	< 1	**156**	**156**	< 1	< 1	**4230**	**879**	**0.119**	**8000**	**387**	**411**	**95.1**	**101**	**1290**	**1390**	**477**	**446**
MPGM5-D5	19/02/2026	MPGM5-D5_20260219	N	**6.77**	**-23.1**	**1.1**	**32**	**38306**	**160**	**3530**	< 1	**3040**	**3040**	< 1	< 1	**59200**	**17100**	**5.7**	**35700**	**651**	**685**	**426**	**442**	**11200**	**11200**	**364**	**342**
	23/04/2026	MPGM5-D5_20260423	N	**6.8**	**62.6**	**1.5**	**15**	**34539**	**59**	**3630**	< 1	**2790**	**2790**	< 1	< 1	**16300**	**3460**	**< 2**	**32000**	**670**	**677**	**397**	**397**	**9900**	**9830**	**356**	**350**
MPGM5-D6	19/02/2026	MPGM5-D6_20260219	N	**6.71**	**-102**	**1.7**	**10**	**9550**	**31**	**1110**	< 1	**1680**	**1680**	< 1	< 1	**16300**	**8940**	**2**	**7160**	**222**	**207**	**29.2**	**25.8**	**2180**	**2060**	**72.3**	**77.1**
	23/04/2026	MPGM5-D6_20260423	N	**6.69**	**69.8**	**2.6**	**5**	**6297**	**21**	**677**	< 1	**1140**	**1140**	< 1	< 1	**1510**	**636**	< 0.5	**4230**	**134**	**142**	**22.2**	**21.5**	**1220**	**1310**	**52.3**	**50.1**

				ANZ-Field Wate		ANZ-Metals																								ANZ-Nutrients								Cyanide
				pH - Field	Redox - Field	Aluminium - Dissolved	Antimony - Dissolved	Arsenic - Dissolved	Barium - Dissolved	Beryllium - Dissolved	Boron - Dissolved	Cadmium - Dissolved	Chromium - Dissolved	Cobalt - Dissolved	Copper - Dissolved	Iron - Dissolved	Lead - Dissolved	Manganese - Dissolved	Mercury - Dissolved	Molybdenum - Dissolved	Nickel - Dissolved	Selenium - Dissolved	Silver - Dissolved	Vanadium - Dissolved	Zinc - Dissolved	Arsenic (V) - Total	Chromium (III) - Total	Chromium (VI) - Total	Iron - Total	Arsenic (III) - Total	Ammonia as N	Nitrate as N	Nitrite as N	Nitrite + Nitrate as N	Total Kjeldahl Nitrogen as N	Total Nitrogen	Total Phosphorus	Orthophosphate as P	Cyanide CN-
			LOR	0	0	5	1	1	1	1	50	0.1	1	1	1	50	1	1	0.04	1	1	0.2	0.1	0.2	5	1	1	1	50	1	0.01	0.01	0.01	0.01	0.0001	0.0001	0.01	0.01	0.002
			Units	pH units	mV	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Action Levels																																				
			MOUNT-PIPER-ANZECC/LOCAL SSTL-WG[1]	6.5 - 8		0.8	9	24	700	100	370	2	5	1.4	5	664	5	5704	0.06	10	550.9	5	0.05	6	908	13	3.3	1	664	24	0.9	2.6 | 29	10	0.015		0.25	0.02	0.015	0.007
Sample Location	Date Sampled	Sample ID	Sample Type																																				
D1	25/03/2026	D1_20260325	N	6.12	10.2	< 5	< 1	< 1	14	< 1	3230	< 0.1	< 1	248	7	31800	< 1	14600	< 0.04	< 1	1540	< 0.2	< 0.1	1.1	121	1.1	< 1	< 1	34100	6.7	0.64	< 0.01	< 0.01	< 0.01	1.2	1.2	< 0.01	< 0.01	< 0.002
	11/06/2026	D1_20260611	N	6.02	244.1	7	5	3	21	< 1	3280	< 0.1	< 1	254	< 1	24300	< 1	15900	< 0.04	< 1	1570	< 0.2	< 0.1	1	112				37600		0.47	< 0.01	< 0.01	< 0.01	1.2	1.2	< 0.01	< 0.01	< 0.002
D10	26/03/2026	D10_20260326	N	5.91	171.6	79	< 1	6	15	1	2300	0.8	< 1	138	< 1	8650	6	4020	< 0.04	4	550	0.2	< 0.1	0.4	388	1.5	< 1	< 1	8600	3.9	0.47	< 0.01	< 0.01	< 0.01	1.1	1.1	0.02	< 0.01	< 0.002
	11/06/2026	D10_20260611	N	5.9	319.2	74	< 1	3	17	< 1	3210	1.5	< 1	192	< 1	7570	6	5800	< 0.04	6	763	0.5	< 0.1	0.3	532				9000		0.38	< 0.01	< 0.01	< 0.01	1	1	0.01	0.01	< 0.002
D102	26/03/2026	D102_20260326	N	6.54	-45.7	< 5	< 1	< 1	18	< 1	1660	< 0.1	< 1	177	< 1	37700	< 1	12600	< 0.04	< 1	1500	< 0.2	< 0.1	0.8	52	< 1	< 1	< 1	47200	< 1	0.47	< 0.01	< 0.01	< 0.01	1.4	1.4	< 0.01	< 0.01	< 0.002
	21/05/2026	D102_20260521	N	6.13	27.6	< 5	< 1	< 1	21	< 1	1170	0.2	< 1	185	30	45600	< 1	12900	< 0.04	< 1	1530	0.3	< 0.1	0.5	133				67700		0.39	< 0.01	< 0.01	< 0.01	1.6	1.6	< 0.01	< 0.01	< 0.002
D103	26/03/2026	D103_20260326	N	6.17	92.9	< 5	2	4	17	< 1	2050	< 0.1	< 1	219	6	19600	< 1	11200	< 0.04	< 1	931	< 0.2	< 0.1	< 0.2	144	< 1	< 1	< 1	20100	3.2	0.21	< 0.01	< 0.01	< 0.01	0.5	0.5	< 0.01	< 0.01	< 0.002
	21/05/2026	D103_20260521	N	6.21	99.8	< 5	< 1	4	18	< 1	1780	< 0.1	< 1	222	< 1	18900	< 1	11200	< 0.04	< 1	929	0.3	< 0.1	< 0.2	109				28500		0.23	< 0.01	< 0.01	< 0.01	0.6	0.6	0.03	< 0.01	< 0.002
D104	26/03/2026	D104_20260326	N	5.95	28.9	< 5	< 1	< 1	47	< 1	< 50	0.1	< 1	16	2	6710	< 1	3400	< 0.04	< 1	66	< 0.2	< 0.1	< 0.2	64	< 1	< 1	< 1	11400	< 1	0.11	0.02	< 0.01	0.02	0.3	0.3	< 0.01	< 0.01	< 0.002
	22/05/2026	D104_20260522	N	6.17	15.7	6	< 1	12	55	< 1	130	< 0.1	< 1	10	< 1	11600	< 1	2300	< 0.04	< 1	52	0.2	< 0.1	< 0.2	13				20500		0.14	< 0.01	< 0.01	< 0.01	0.6	0.6	0.06	0.02	< 0.002
D105	25/03/2026	D105_20260325	N	6.12	10.2	< 5	< 1	< 1	14	< 1	460	< 0.1	< 1	121	< 1	13400	< 1	8850	< 0.04	< 1	517	< 0.2	< 0.1	< 0.2	40	< 1	< 1	< 1	20000	< 1	0.12	< 0.01	< 0.01	< 0.01	0.3	0.3	0.05	< 0.01	< 0.002
	21/05/2026	D105_20260521	N	6.18	18.5	< 5	< 1	< 1	16	< 1	320	< 0.1	< 1	113	< 1	17900	< 1	8320	< 0.04	< 1	488	0.2	< 0.1	< 0.2	40				28000		0.12	0.01	< 0.01	0.01	0.3	0.3	0.01	< 0.01	< 0.002
D106	25/03/2026	D106_20260325	N	6.04	50.4	< 5	< 1	< 1	17	< 1	2970	0.4	< 1	161	6	9720	< 1	8740	< 0.04	< 1	1330	1.8	< 0.1	0.5	236	< 1	< 1	< 1	12300	< 1	0.29	1.51	0.04	1.55	1.2	2.8	< 0.01	< 0.01	< 0.002
	20/05/2026	D106_20260520	N	6.02	47.2	< 5	< 1	2	20	< 1	2710	0.2	< 1	222	< 1	17500	< 1	10800	< 0.04	< 1	1530	2.2	< 0.1	0.8	179				25800		0.32	0.5	< 0.01	0.5	1.1	1.6	< 0.01	< 0.01	< 0.002
D107	25/03/2026	D107_20260325	N	6.08	120.9	< 5	< 1	6	15	< 1	5780	0.8	< 1	226	21	18600	10	9270	< 0.04	< 1	1390	< 0.2	< 0.1	0.9	301	1.2	< 1	< 1	18800	4.1	0.32	< 0.01	< 0.01	< 0.01	1.3	1.3	0.01	< 0.01	< 0.002
	20/05/2026	D107_20260520	N	6.12	1.9	< 5	< 1	6	17	< 1	4750	1	< 1	228	< 1	18800	10	9310	< 0.04	< 1	1380	0.5	< 0.1	1	305				30200		0.34	< 0.01	< 0.01	< 0.01	1.2	1.2	< 0.01	< 0.01	< 0.002
D110	26/03/2026	D110_20260326	N	6.11	26.4	6	< 1	4	16	< 1	2320	< 0.1	2	226	36	39600	2	13600	< 0.04	7	1690	0.4	< 0.1	1.5	189	1.3	2	< 1	55000	5.6	0.41	0.04	< 0.01	0.04	1.5	1.5	0.01	< 0.01	< 0.002
	21/05/2026	D110_20260521	N	6.07	16.6	< 5	< 1	2	15	< 1	2090	< 0.1	< 1	229	< 1	11700	< 1	13100	< 0.04	3	1690	0.9	< 0.1	1.3	167				66300		0.43	0.03	< 0.01	0.03	1.4	1.4	0.02	< 0.01	< 0.002
D113	26/03/2026	D113_20260326	N	6.01	4.4	8	< 1	1	10	< 1	2000	0.3	< 1	144	< 1	12700	4	5320	< 0.04	< 1	566	< 0.2	< 0.1	0.4	254	< 1	< 1	< 1	13500	< 1	0.23	< 0.01	< 0.01	< 0.01	0.6	0.6	0.01	< 0.01	< 0.002
	21/05/2026	D113_20260521	N	6.13	22.3	< 5	< 1	< 1	14	< 1	1700	0.2	< 1	131	1	8860	< 1	4940	< 0.04	1	519	0.7	< 0.1	0.4	301				17100		0.31	0.05	< 0.01	0.05	1.1	1.2	0.04	< 0.01	0.003
D117	18/03/2026	D117_20260318	N	6.12	294.7	897	4	1	27	2	13700	25.1	< 1	96	5	< 50	1	8160	< 0.04	288	301	123	< 0.1	1.4	762	1.1	< 1	< 1	19500	< 1	0.28	2.74	< 0.01	2.74	1.4	4.1	0.06	< 0.01	< 0.002
	30/04/2026	D117_20260430	N	6.15	86.9	432	2	< 1	20	1	10600	8.1	< 1	142	< 1	1230	< 1	17800	< 0.04	97	368	50.2	< 0.1	0.3	315				1770		0.27	0.72	< 0.01	0.72	0.6	1.3	< 0.01	< 0.01	< 0.002
D119	26/02/2026	D119_20260226	N	6.17	-18.2	< 5	< 1	8	18	< 1	320	< 0.1	< 1	87	3	15200	2	1640	< 0.04	6	181	0.8	< 0.1	0.3	389	< 1	< 1	< 1	19200	< 1	0.67	0.35	< 0.01	0.35	50.5	50.8	2.45	< 0.01	< 0.002
	30/04/2026	D119_20260430	N	5.99	80.7	13	< 1	5	14	< 1	440	< 0.1	< 1	83	< 1	14600	< 1	1740	< 0.04	3	166	0.4	< 0.1	0.2	141				20100		0.43	0.04	< 0.01	0.04	1	1	< 0.01	< 0.01	< 0.002
D15	26/03/2026	D15_20260326	N	6.09	216.8	< 5	< 1	8	22	< 1	80	< 0.1	< 1	136	< 1	3010	< 1	741	< 0.04	1	198	0.4	< 0.1	< 0.2	142	1.6	< 1	< 1	3750	6	0.53	0.05	< 0.01	0.05	0.8	0.8	< 0.01	< 0.01	< 0.002
	10/06/2026	D15_20260610	N	6.05	92.1	7	< 1	25	15	< 1	70	< 0.1	< 1	149	< 1	10100	< 1	770	< 0.04	< 1	212	< 0.2	< 0.1	< 0.2	118				18000		0.4	0.06	< 0.01	0.06	12.3	12.4	0.61	< 0.01	< 0.002
D16a	26/03/2026	D16A_20260326	N	7.57	53.8	< 5	< 1	< 1	67	< 1	< 50	< 0.1	< 1	3	1	< 50	< 1	156	< 0.04	8	14	0.3	< 0.1	< 0.2	74	< 1	< 1	< 1	530	< 1	0.4	0.25	< 0.01	0.25	0.7	1	0.02	< 0.01	< 0.002
	11/06/2026	D16A_20260611	N	7.01	235.7	< 5	< 1	< 1	82	< 1	< 50	< 0.1	< 1	< 1	2	60	< 1	111	< 0.04	3	4	< 0.2	< 0.1	< 0.2	48				1550		0.32	0.02	< 0.01	0.02	0.5	0.5	< 0.01	< 0.01	< 0.002
D17	10/03/2026	D17_20260310	N	7.14	196.9	< 5	9	6	21	< 1	< 50	< 0.1	< 1	< 1	< 1	610	< 1	558	< 0.04	32	15	< 0.2	< 0.1	0.5	< 5	< 1	< 1	< 1	590000	6	1.25	0.04	< 0.01	0.04	32.6	32.6	7.65	< 0.01	< 0.002
	10/06/2026	D17_20260610	N	6.32	58.4	< 5	< 1	1	16	< 1	< 50	< 0.1	< 1	3	< 1	16300	< 1	1460	< 0.04	< 1	16	< 0.2	< 0.1	0.5	19				14800		0.12	< 0.01	< 0.01	< 0.01	0.3	0.3	< 0.01	< 0.01	< 0.002
D18	26/03/2026	D18_20260326	N	6.78	139.8	< 5	< 1	1	574	< 1	90	< 0.1	< 1	2	1	< 50	< 1	137	< 0.04	7	6	0.5	< 0.1	< 0.2	38	< 1	< 1	< 1	860	1.6	0.24	0.18	< 0.01	0.18	0.6	0.8	0.01	< 0.01	< 0.002
	11/06/2026	D18_20260611	N	6.68	289.1	< 5	8	17	655	< 1	< 50	< 0.1	< 1	< 1	< 1	1820	< 1	101	< 0.04	6	4	0.6	< 0.1	< 0.2	33				2460		0.25	0.04	< 0.01	0.04	0.4	0.4	0.03	< 0.01	< 0.002
D19	24/03/2026	D19_20260324	N	6.02	-24	5	< 1	1	11	< 1	1830	< 0.1	< 1	145	< 1	12900	3	5270	< 0.04	< 1	573	< 0.2	< 0.1	0.3	205	< 1	< 1	< 1	15200	1	0.25	< 0.01	< 0.01	< 0.01	0.8	0.8	0.02	< 0.01	< 0.002
	11/06/2026	D19_20260611	N	6.11	194.2	6	< 1	1	12	< 1	1690	< 0.1	1	134	< 1	15200	3	5250	< 0.04	< 1	537	0.8	< 0.1	0.3	177				18200		0.25	< 0.01	< 0.01	< 0.01	0.7	0.7	< 0.01	< 0.01	< 0.002
D2	19/02/2026	D2_20260219	N	6.08	-61.3	1180	< 1	< 1	19	< 1	360	< 0.1	< 1	27	5	2240	2	1610	< 0.04	< 1	92	0.5	< 0.1	2.2	60		< 10	< 10	6840		0.16	< 0.1	< 0.1	< 0.1	< 2	< 2	< 0.1	< 0.1	< 0.002
	23/04/2026	D2_20260423	N	6.02	106.8	815	< 1	2	33	< 1	520	< 0.1	< 1	44	3	7830	3	2690	< 0.04	< 1	154	0.5	< 0.1	1.4	46	< 1	< 10	< 10	10400	< 1	0.1	< 0.01	< 0.01	< 0.01	1.4	1.4	0.04	< 0.01	< 0.002
D3	26/03/2026	D3_20260326	N	6.34	-3.5	< 5	< 1	< 1	106	< 1	< 50	< 0.1	< 1	< 1	< 1	6000	< 1	455	< 0.04	< 1	6	< 0.2	< 0.1	< 0.2	11	< 1	< 1	< 1	8480	< 1	0.05	0.05	< 0.01	0.05	0.3	0.4	0.01	< 0.01	< 0.002
	10/06/2026	D3_20260610	N	6.14	196.5	< 5	2	< 1	31	< 1	< 50	< 0.1	< 1	1	< 1	7550	< 1	689	< 0.04	< 1	6	< 0.2	< 0.1	< 0.2	< 5				9280		0.09	< 0.01	< 0.01	< 0.01	0.3	0.3	< 0.01	< 0.01	< 0.002
D4	18/02/2026	D4_20260218	N	3.51	260.8	7260	< 1	31	15	2	< 50	0.2	< 1	3	2	56200	10	598	< 0.04	< 1	12	< 0.2	< 0.1	4	112		< 10	< 10	57900		0.33	< 0.01	< 0.01	< 0.01	0.7	0.7	< 0.01	< 0.01	< 0.002
	23/04/2026	D4_20260423	N	3.5	509.1	7300	< 1	31	15	2	< 50	0.2	< 1	3	1	53200	14	608	< 0.04	< 1	12	0.2	< 0.1	3.8	116	11	< 1	< 1	55600	18.9	0.19	< 0.01	< 0.01	< 0.01	0.8	0.8	< 0.01	< 0.01	< 0.002
D5	18/02/2026	D5_20260218	N	5.89	-94.8	15	< 1	2	19	2	70	< 0.1	< 1	19	< 1	35800	< 1	7410	< 0.04	< 1	42	< 0.2	< 0.1	< 0.2	10		< 1	< 1	36300		0.3	< 0.01	0.01	0.01	0.5	0.5	< 0.01	< 0.01	< 0.002
	23/04/2026	D5_20260423	N	5.9	92.9	25	< 1	1	17	2	< 50	< 0.1	< 1	19	< 1	23700	< 1	6800	< 0.04	< 1	42	0.2	< 0.1	< 0.2	5	1.4	< 1	< 1	27000	< 1	0.1	< 0.01	< 0.01	< 0.01	0.5	0.5	< 0.01	< 0.01	< 0.002
D8	26/03/2026	D8_20260326	N	5.37	94.3	62	< 1	< 1	33	< 1	< 50	< 0.1	< 1	< 1	2	60	< 1	34	< 0.04	< 1	44	< 0.2	< 0.1	< 0.2	59	< 1	< 1	< 1	400	< 1	0.01	0.11	< 0.01	0.11	0.3	0.4	0.03	< 0.01	< 0.002
	11/06/2026	D8_20260611	N	5.51	245.7	79	< 1	< 1	32	< 1	< 50	< 0.1	< 1	< 1	3	< 50	< 1	41	< 0.04	< 1	39	< 0.2	< 0.1	< 0.2	60				230		< 0.01	0.15	< 0.01	0.15	0.3	0.4	0.01	0.01	< 0.002
D9	25/03/2026	D9_20260325	N	6.17	8.4	< 5	< 1	4	20	< 1	2520	< 0.1	< 1	198	< 1	41300	< 1	12300	< 0.04	< 1	1580	0.3	< 0.1	2.9	54	< 1	< 1	< 1	46900	4	0.37	< 0.01	< 0.01	< 0.01	1.9	1.9	0.08	< 0.01	< 0.002
	10/06/2026	D9_20260610	N	6.14	114.4	7	< 1	3	30	< 1	2580	< 0.1	< 1	197	< 1	32200	< 1	12500	< 0.04	< 1	1540	< 0.2	< 0.1	2.9	42				48100		0.46	< 0.01	< 0.01	< 0.01	1.4	1.4	0.02	< 0.01	< 0.002
MPGM5-D5	19/02/2026	MPGM5-D5_20260219	N	6.77	-23.1	18	2	21	95	< 1	3910	21.2	7	5250	47	4050	113	100000	0.08	1070	20900	3.8	< 0.1	1.4	2140		< 10	< 10	3720		5.11	< 0.1	< 0.1	< 0.1	17.5	17.5	0.47	< 0.1	< 0.002
	23/04/2026	MPGM5-D5_20260423	N	6.8	62.6	11	< 10	< 10	60	< 10	1790	5.3	< 10	1980	11	3050	45	44300	0.11	272	8310	4	< 0.1	1.2	872	< 1	< 10	< 1	2890	< 1	4.33	< 0.1	< 0.1	< 0.1	18.4	18.4	0.2	< 0.1	< 0.002
MPGM5-D6	19/02/2026	MPGM5-D6_20260219	N	6.71	-102	6	< 1	3	64	< 1	< 50	0.2	< 1	45	2	6810	1	4620	< 0.04	39	948	0.6	< 0.1	0.4	47		< 1	< 1	9880		2.1	0.34	0.07	0.41	4.5	4.9	0.46	< 0.01	< 0.002
	23/04/2026	MPGM5-D6_20260423	N	6.69	69.8	< 5	< 1	1	57	< 1	< 50	< 0.1	< 1	28	1	1420	< 1	3300	< 0.04	31	580	0.5	< 0.1	0.2	48	< 1	< 1	< 1	3310	< 1	1.23	0.35	0.02	0.37	2.4	2.8	0.04	< 0.01	< 0.002

APPENDIX I TABULATED SURFACE WATER DATA

				ANZ-Field Water Quality Parameters				ANZ-Laboratory Parameters				ANZ-General Chemistr		ANZ-Alkalinity					ANZ-Cations and Anions											
				pH - Field	Redox - Field	Dissolved Oxygen - Field	Temperature - Field	Electrical Conductivity - Lab	Turbidity	pH - Lab	Electrical Conductivity Field (non-compensated)	Dissolved Organic Carbon	Hardness as CaCO3	Alkalinity - P	Alkalinity - Total as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Sulphate as SO4 2-	Chloride	Fluoride	Total Dissolved Solids	Total suspended solids	Calcium - Total	Calcium - Dissolved	Magnesium - Total	Magnesium - Dissolved	Sodium - Total	Sodium - Dissolved	Potassium - Total	Potassium - Dissolved
			LOR	0	0	0.1	0	1	0.01	0	1	0.0000001	0.01	1	1	1	1	1	1	0.01	0.001	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001
			Units	pH units	mV	mg/L	deg C	uS/cm	NTU	pH units	uS/cm	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Action Levels																											
			MOUNT-PIPER-ANZECC/LOCAL SSTL-WS[1]	6.5 - 8				2200	2 - 25	6.5 - 8	2200		200						1000	350	1.5	1500		1000	1000			180	180		
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																											
C	22/01/2026	C_20260122	N	**7.4**	**141.3**	**5.6**	**20.4**		**5.2**		**316**	**0.0004**	**90.1**	< 1	**82**	**82**	< 1	< 1	**97.9**	**8.92**	**0.299**	**207**	< 5	**22.3**	**19.6**	**11.2**	**10**	**30.9**	**29.3**	**3.99**	**3.79**
	12/02/2026	C_20260212	N	**7.26**	**249.8**	**5.3**	**22**		**73.3**		**192**	**0.0005**	**61.7**	< 1	**61**	**61**	< 1	< 1	**29.7**	**5.71**	**0.191**	**146**	**28**	**15.2**	**14.5**	**6.41**	**6.19**	**18.6**	**17.2**	**5.15**	**4.1**
	18/03/2026	C_20260318	N	**7.43**	**227.6**	**5.4**	**19.4**		**4.4**		**338**	**0.0005**	**79**	< 1	**103**	**103**	< 1	< 1	**52.6**	**11.1**	**0.186**	**226**	< 5	**18.6**	**17.7**	**8.76**	**8.46**	**40.7**	**39.5**	**4.14**	**4.32**
	8/04/2026	C_20260408	N	**7.98**	**108.6**	**7.1**	**18.4**	**376**	**2.4**		**376**	**0.0003**	**101**	< 1	**103**	**103**	< 1	< 1	**61.2**	**10.5**	**0.271**	**225**	< 5	**21.6**	**21.9**	**11.5**	**11.2**	**40.6**	**38.2**	**4.72**	**5.15**
	5/05/2026	C_20260505	N	**8.3**	**61.4**	**10.3**	**10.2**	**488**	**31.3**		**488**	**0.0006**	**138**	< 1	**118**	**118**	< 1	< 1	**103**	**16.8**	**0.17**	**344**	**16**	**28.7**	**28.1**	**16.6**	**16.4**	**50.2**	**48**	**9.39**	**9.21**
	3/06/2026	C_20260603	N	**8.18**	**214.8**	**10.6**	**8.9**		**134**		**282**	**0.0006**	**73.9**	< 1	**75**	**75**	< 1	< 1	**49**	**8.47**	**0.194**	**200**	**58**	**20.5**	**16.2**	**10.3**	**8.12**	**35.1**	**29.8**	**6.69**	**5.91**
E	22/01/2026	E_20260122	N	**7.15**	**50.4**	**6.9**	**19.9**		**2.1**		**657**	**0.0004**	**183**	< 1	**43**	**43**	< 1	< 1	**181**	**17.4**	**0.079**	**460**	< 5	**38.1**	**35.4**	**24.7**	**23**	**61.2**	**61.5**	**6.32**	**5.99**
	12/02/2026	E_20260212	N	**7.43**	**219.6**	**7.7**	**21.4**		**6.1**		**481**	**0.0003**	**122**	< 1	**45**	**45**	< 1	< 1	**227**	**26.2**	**0.202**	**341**	< 5	**24.2**	**23.6**	**15.6**	**15.4**	**50.9**	**50.2**	**6.95**	**6.56**
	18/03/2026	E_20260318	N	**7.2**	**37.8**	**8.2**	**19.6**		**5.9**		**1078**	**0.0005**	**236**	< 1	**120**	**120**	< 1	< 1	**331**	**60.7**	**0.149**	**676**	< 5	**41.2**	**39.8**	**33.5**	**33.1**	**122**	**122**	**12.7**	**13**
	8/04/2026	E_20260408	N	**8.13**	**116.2**	**9.2**	**17.8**	**1191**	**6.9**		**1191**	**0.0008**	**256**	< 1	**115**	**115**	< 1	< 1	**334**	**65.6**	**0.222**	**746**	< 5	**44.4**	**43.3**	**37.1**	**35.8**	**137**	**136**	**13.9**	**15**
	5/05/2026	E_20260505	N	**8.05**	**74.2**	**12.1**	**10.5**	**619**	**8.1**		**619**	**0.0005**	**152**	< 1	**114**	**114**	< 1	< 1	**148**	**30.6**	**0.159**	**416**	**11**	**30.7**	**29**	**20.3**	**19.4**	**71.5**	**66.8**	**11.1**	**10.9**
	3/06/2026	E_20260603	N	**8.28**	**179.8**	**10.8**	**8.9**		**45.1**		**391**	**0.0005**	**86.4**	< 1	**81**	**81**	< 1	< 1	**70.9**	**15.3**	**0.193**	**240**	**15**	**18**	**17.6**	**10.6**	**10.3**	**39.2**	**39.5**	**6.74**	**7.36**
G	22/01/2026	G_20260122	N	**7.65**	**127.5**	**7.3**	**19.8**		**1**		**1274**	**0.0004**	**316**	< 1	**59**	**59**	< 1	< 1	**356**	**54.6**	**0.081**	**876**	< 5	**64.4**	**55.7**	**48.9**	**43**	**145**	**134**	**13.7**	**13.4**
	12/02/2026	G_20260212	N	**7.65**	**163.5**	**6.6**	**21.5**		**59**		**536**	**0.0005**	**134**	< 1	**57**	**57**	< 1	< 1	**188**	**29.6**	**0.248**	**364**	**10**	**25**	**25**	**17.1**	**17.3**	**56.9**	**57.4**	**7.82**	**7.75**
	19/03/2026	G_20260319	N	**7.79**	**212.4**	**7.1**	**18.3**		**1.8**		**713**	**0.0004**	**165**	< 1	**100**	**100**	< 1	< 1	**191**	**39.1**	**0.152**	**450**	< 5	**31.1**	**29.9**	**22.3**	**22**	**79.8**	**79.8**	**8.69**	**8.87**
	8/04/2026	G_20260408	N	**7.92**	**108.5**	**9.7**	**18.2**	**729**	**1.2**		**729**	**0.0004**	**163**	< 1	**105**	**105**	< 1	< 1	**171**	**38.4**	**0.223**	**432**	< 5	**30.9**	**29.5**	**22.7**	**21.7**	**80.3**	**77.1**	**8.75**	**9.34**
	5/05/2026	G_20260505	N	**8.1**	**89.3**	**9.8**	**12.6**	**1420**	**4**		**1420**	**0.0005**	**326**	< 1	**123**	**123**	< 1	< 1	**440**	**90.8**	**0.129**	**968**	< 5	**57.2**	**55.4**	**46.7**	**45.5**	**172**	**168**	**18.5**	**18**
	3/06/2026	G_20260603	N	**7.83**	**252.7**	**11**	**9**		**35**		**673**	**0.0006**	**151**	< 1	**88**	**88**	< 1	< 1	**179**	**36.7**	**0.175**	**423**	**13**	**28.6**	**27.6**	**20.4**	**19.9**	**75.9**	**73.9**	**10.3**	**11.1**
LMP01	5/01/2026	LMP01_20260105	N		**232.6**	**6.8**	**21**	**346**	**292**	**7.87**		**0.001**	**100**	< 1	**76**	**76**	< 1	< 1	**71.5**	**5.68**	**0.173**	**214**	**92**	**25.8**	**23.4**	**10.8**	**10.2**	**27.3**	**28.2**	**5.16**	**4.83**
	2/02/2026	LMP01_20260202	N		**267.6**	**6.6**	**20.6**	**410**	**36.3**	**7.97**		**0.0003**	**109**	< 1	**113**	**113**	< 1	< 1	**67.3**	**9.45**	**0.413**	**276**	**23**	**26.6**	**25.5**	**13.4**	**11.1**	**47.6**	**47.5**	**6.17**	**5.82**
	2/03/2026	LMP01_20260302	N		**163.2**	**6.4**	**20.4**	**352**	**11.9**	**8.01**		**0.0007**	**91.9**	< 1	**113**	**113**	< 1	< 1	**55**	**8.13**	**0.275**	**254**	**22.67**	**21.1**	**21.4**	**9.18**	**9.35**	**36.7**	**36.8**	**4.62**	**5.22**
	7/04/2026	LMP01_20260407	N		**135.7**	**5.4**	**18.7**	**443**	**7.6**	**7.86**		**0.0008**	**112**	< 1	**111**	**111**	< 1	< 1	**88.5**	**11.1**	**0.183**	**280**	**0.33**	**22.9**	**22.3**	**13.7**	**13.6**	**38.9**	**40**	**5.69**	**6.12**
	4/05/2026	LMP01_20260504	N		**109**	**9.9**	**16.2**	**548**	**5.98**	**7.93**		**0.0004**	**154**	< 1	**145**	**145**	< 1	< 1	**111**	**18.2**	**0.221**	**319**	**8**	**30.6**	**29.1**	**20.3**	**19.8**	**55**	**52.9**	**9.66**	**10.2**
	1/06/2026	LMP01_20260601	N		**378.3**	**8.3**	**15.4**	**374**	**38.6**	**7.96**		**0.0005**	**95.5**	< 1	**98**	**98**	< 1	< 1	**67.1**	**9.64**	**0.233**	**242**	**12**	**21.4**	**20.6**	**11.3**	**10.7**	**44.6**	**40.6**	**6.47**	**6.4**
NC01	25/03/2026	NC01_20260325	N	**7.22**	**92.5**	**4.4**	**18.7**		**34.6**		**249**	**0.0006**	**78.6**	< 1	**88**	**88**	< 1	< 1	**31.1**	**5.86**	**0.174**	**150**	**40**	**17.6**	**18**	**8.05**	**8.17**	**22**	**24.3**	**3.93**	**4.02**
	8/04/2026	NC01_20260408	N	**7.81**	**101.2**	**6**	**17.9**	**382**	**6.4**		**382**	**0.0004**	**99.6**	< 1	**101**	**101**	< 1	< 1	**66.2**	**10.8**	**0.31**	**226**	**13**	**21.8**	**21.4**	**11.6**	**11.2**	**40.7**	**37.8**	**4.77**	**5.25**
	5/05/2026	NC01_20260505	N	**8.11**	**82.4**	**8.3**	**10.7**	**497**	**20.1**		**497**	**0.001**	**136**	< 1	**126**	**126**	< 1	< 1	**103**	**18.2**	**0.234**	**350**	**16**	**29.1**	**27.6**	**17.4**	**16.4**	**53.5**	**47.2**	**11.1**	**10.2**
	3/06/2026	NC01_20260603	N	**8.17**	**232.4**	**6.6**	**8.8**		**103**		**327**	**0.0009**	**87.9**	< 1	**88**	**88**	< 1	< 1	**51.9**	**10.8**	**0.202**	**212**	**56**	**18.7**	**18.4**	**10.2**	**10.2**	**32.5**	**34.3**	**6.76**	**7.31**
WX22	22/01/2026	WX22_20260122	N	**7.61**	**130.5**	**7.3**	**20.3**		**0.9**		**1277**	**0.0004**	**320**	< 1	**62**	**62**	< 1	< 1	**393**	**60.8**	**0.121**	**902**	< 5	**62.6**	**55.9**	**47.1**	**43.7**	**142**	**136**	**14.2**	**13.6**
	12/02/2026	WX22_20260212	N	**7.66**	**172.5**	**6.7**	**21.7**		**57.4**		**535**	**0.0007**	**129**	< 1	**57**	**57**	< 1	< 1	**221**	**33.4**	**0.22**	**382**	**12**	**25.2**	**24**	**17.2**	**16.7**	**57.7**	**55.7**	**8.24**	**7.73**
	19/03/2026	WX22_20260319	N	**7.77**	**222.4**	**6.8**	**18.2**		**1.7**		**722**	**0.0007**	**161**	< 1	**101**	**101**	< 1	< 1	**199**	**40.1**	**0.156**	**472**	< 5	**31.6**	**29**	**22.4**	**21.4**	**79.9**	**78.5**	**8.88**	**9.05**
	8/04/2026	WX22_20260408	N	**8.02**	**104.5**	**10.9**	**18.2**	**735**	**1.2**		**735**	**0.0003**	**168**	< 1	**105**	**105**	< 1	< 1	**171**	**38.2**	**0.225**	**440**	< 5	**30.9**	**30.6**	**22.8**	**22.3**	**80.7**	**79.1**	**8.72**	**9.51**
	5/05/2026	WX22_20260505	N	**7.84**	**106.5**	**9.3**	**12.9**	**1409**	**3.5**		**1409**	**0.0004**	**324**	< 1	**123**	**123**	< 1	< 1	**443**	**92.2**	**0.131**	**972**	< 5	**57.4**	**55.2**	**46.9**	**45.1**	**175**	**167**	**18.8**	**17.9**
	3/06/2026	WX22_20260603	N	**8.1**	**230.5**	**10.6**	**9**		**33.2**		**677**	**0.0006**	**154**	< 1	**89**	**89**	< 1	< 1	**179**	**37**	**0.183**	**388**	**15**	**28.3**	**28.1**	**20.2**	**20.4**	**76.4**	**76.3**	**10.4**	**11.7**

				ANZ-Field Water Qu																				ANZ-Me
				pH - Field	Redox - Field	Aluminium - Dissolved	Antimony - Dissolved	Arsenic - Dissolved	Barium - Dissolved	Beryllium - Dissolved	Boron - Dissolved	Cadmium - Dissolved	Chromium - Dissolved	Cobalt - Dissolved	Copper - Dissolved	Iron - Dissolved	Lead - Dissolved	Manganese - Dissolved	Mercury - Dissolved	Molybdenum - Dissolved	Nickel - Dissolved	Selenium - Dissolved	Silver - Dissolved	Vanadium - Dissolved	Zinc - Dissolved
			LOR	0	0	5	1	1	1	1	1	0.1	1	1	1	50	1	1	0.04	1	1	1	0.1	0.2	5
			Units	pH units	mV	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
			Action Levels																						
MOUNT-PIPER-ANZECC/LOCAL SSTL-WS[1]				6.5 - 8		0.8 | 55	9	24	700	100	370	0.85	2	1.4	3.5	300	5	1900	0.06	10	17	5	0.05	6	116
Sample Location	Date Sampled	Sample ID	Sample Type																						
C	22/01/2026	C_20260122	N	**7.4**	**141.3**	**24**	< 1	< 1	**20**	< 1	**50**	< 0.1	< 1	< 1	**1**	**100**	< 1	**119**	< 0.04	**4**	**3**	**0.4**	**< 0.1**	< 0.2	< 5
	12/02/2026	C_20260212	N	**7.26**	**249.8**	**117**	< 1	< 1	**15**	< 1	< 50	< 0.1	< 1	< 1	**2**	**220**	< 1	**143**	< 0.04	**3**	**3**	**0.2**	**< 0.1**	**0.4**	< 5
	18/03/2026	C_20260318	N	**7.43**	**227.6**	**12**	< 1	< 1	**16**	< 1	< 50	< 0.1	< 1	< 1	**2**	**130**	< 1	**172**	< 0.04	**3**	**3**	**0.6**	**< 0.1**	< 0.2	< 5
	8/04/2026	C_20260408	N	**7.98**	**108.6**	**7**	< 1	< 1	**19**	< 1	< 50	< 0.1	< 1	< 1	< 1	**170**	< 1	**158**	< 0.04	**3**	**3**	**0.3**	**< 0.1**	< 0.2	< 5
	5/05/2026	C_20260505	N	**8.3**	**61.4**	**8**	< 1	< 1	**20**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**107**	< 0.04	**4**	**3**	**0.4**	**< 0.1**	< 0.2	< 5
	3/06/2026	C_20260603	N	**8.18**	**214.8**	**60**	< 1	< 1	**12**	< 1	< 50	< 0.1	< 1	< 1	**2**	**110**	< 1	**43**	< 0.04	**3**	**2**	**0.3**	**< 0.1**	**0.3**	< 5
E	22/01/2026	E_20260122	N	**7.15**	**50.4**	**< 5**	< 1	< 1	**27**	< 1	**110**	< 0.1	< 1	**4**	< 1	**210**	< 1	**840**	< 0.04	< 1	**29**	< 0.2	**< 0.1**	< 0.2	**12**
	12/02/2026	E_20260212	N	**7.43**	**219.6**	**11**	< 1	< 1	**18**	< 1	**90**	< 0.1	< 1	**2**	< 1	**210**	< 1	**298**	< 0.04	< 1	**22**	< 0.2	**< 0.1**	< 0.2	< 5
	18/03/2026	E_20260318	N	**7.2**	**37.8**	**6**	< 1	< 1	**20**	< 1	**200**	< 0.1	< 1	**8**	< 1	**480**	< 1	**1220**	< 0.04	**1**	**83**	**0.3**	**< 0.1**	< 0.2	< 5
	8/04/2026	E_20260408	N	**8.13**	**116.2**	**< 5**	< 1	< 1	**22**	< 1	**230**	< 0.1	< 1	**10**	< 1	**730**	< 1	**1400**	< 0.04	**1**	**107**	< 0.2	**< 0.1**	< 0.2	< 5
	5/05/2026	E_20260505	N	**8.05**	**74.2**	**5**	< 1	< 1	**19**	< 1	**60**	< 0.1	< 1	**3**	< 1	**320**	< 1	**617**	< 0.04	**2**	**22**	**0.4**	**< 0.1**	**0.3**	< 5
	3/06/2026	E_20260603	N	**8.28**	**179.8**	**21**	< 1	< 1	**13**	< 1	< 50	< 0.1	< 1	< 1	**2**	**110**	< 1	**166**	< 0.04	**2**	**9**	**0.3**	**< 0.1**	< 0.2	< 5
G	22/01/2026	G_20260122	N	**7.65**	**127.5**	**< 5**	< 1	< 1	**21**	< 1	**270**	< 0.1	< 1	< 1	< 1	**60**	< 1	**326**	< 0.04	< 1	**64**	< 0.2	**< 0.1**	< 0.2	< 5
	12/02/2026	G_20260212	N	**7.65**	**163.5**	**33**	< 1	< 1	**10**	< 1	**110**	< 0.1	< 1	< 1	**2**	**90**	< 1	**205**	< 0.04	< 1	**23**	< 0.2	**< 0.1**	< 0.2	< 5
	19/03/2026	G_20260319	N	**7.79**	**212.4**	**7**	< 1	< 1	**10**	< 1	**130**	< 0.1	< 1	< 1	< 1	**110**	< 1	**207**	< 0.04	**2**	**38**	**0.3**	**< 0.1**	< 0.2	< 5
	8/04/2026	G_20260408	N	**7.92**	**108.5**	**< 5**	< 1	< 1	**13**	< 1	**130**	< 0.1	< 1	< 1	< 1	**70**	< 1	**410**	< 0.04	**2**	**41**	< 0.2	**< 0.1**	< 0.2	< 5
	5/05/2026	G_20260505	N	**8.1**	**89.3**	**< 5**	< 1	< 1	**21**	< 1	**240**	< 0.1	< 1	< 1	< 1	< 50	< 1	**419**	< 0.04	**1**	**90**	< 0.2	**< 0.1**	< 0.2	< 5
	3/06/2026	G_20260603	N	**7.83**	**252.7**	**16**	< 1	< 1	**11**	< 1	**80**	< 0.1	< 1	< 1	**1**	**70**	< 1	**205**	< 0.04	**1**	**33**	< 0.2	**< 0.1**	< 0.2	< 5
LMP01	5/01/2026	LMP01_20260105	N		**232.6**	**16**	< 1	< 1	**16**	< 1	< 50	< 0.1	< 1	< 1	**2**	< 50	< 1	**63**	< 0.04	**8**	**4**	**0.6**	**< 0.1**	**0.3**	< 5
	2/02/2026	LMP01_20260202	N		**267.6**	**16**	< 1	< 1	**16**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**66**	< 0.04	**9**	**3**	**1.1**	**< 0.1**	**0.3**	**5**
	2/03/2026	LMP01_20260302	N		**163.2**	**20**	< 1	< 1	**16**	< 1	< 50	< 0.1	< 1	< 1	**2**	< 50	< 1	**76**	< 0.04	**5**	**4**	**0.5**	**< 0.1**	**0.2**	< 5
	7/04/2026	LMP01_20260407	N		**135.7**	**5**	< 1	< 1	**21**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	< 1	< 0.04	**6**	**4**	**0.6**	**< 0.1**	< 0.2	< 5
	4/05/2026	LMP01_20260504	N		**109**	**6**	< 1	< 1	**24**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**91**	< 0.04	**8**	**3**	**0.3**	**< 0.1**	< 0.2	< 5
	1/06/2026	LMP01_20260601	N		**378.3**	**23**	< 1	< 1	**17**	< 1	< 50	< 0.1	< 1	< 1	**2**	< 50	< 1	**31**	< 0.04	**6**	**3**	**0.5**	**< 0.1**	< 0.2	**7**
NC01	25/03/2026	NC01_20260325	N	**7.22**	**92.5**	**26**	< 1	< 1	**14**	< 1	< 50	< 0.1	< 1	< 1	**1**	< 50	< 1	< 1	< 0.04	**3**	**2**	**0.3**	**< 0.1**	< 0.2	< 5
	8/04/2026	NC01_20260408	N	**7.81**	**101.2**	**5**	< 1	< 1	**18**	< 1	< 50	< 0.1	< 1	< 1	< 1	**140**	< 1	**178**	< 0.04	**3**	**3**	**0.3**	**< 0.1**	< 0.2	< 5
	5/05/2026	NC01_20260505	N	**8.11**	**82.4**	**8**	< 1	< 1	**22**	< 1	< 50	< 0.1	< 1	< 1	< 1	**160**	< 1	**298**	< 0.04	**4**	**3**	**0.3**	**< 0.1**	< 0.2	< 5
	3/06/2026	NC01_20260603	N	**8.17**	**232.4**	**91**	< 1	< 1	**11**	< 1	< 50	< 0.1	< 1	< 1	**2**	**140**	< 1	**20**	< 0.04	**2**	**3**	**0.3**	**< 0.1**	**0.3**	**6**
WX22	22/01/2026	WX22_20260122	N	**7.61**	**130.5**	**< 5**	< 1	< 1	**20**	< 1	**270**	< 0.1	< 1	< 1	< 1	**60**	< 1	**318**	< 0.04	< 1	**61**	< 0.2	**< 0.1**	< 0.2	< 5
	12/02/2026	WX22_20260212	N	**7.66**	**172.5**	**28**	< 1	< 1	**10**	< 1	**110**	< 0.1	< 1	< 1	**1**	**80**	< 1	**220**	< 0.04	< 1	**24**	< 0.2	**< 0.1**	< 0.2	< 5
	19/03/2026	WX22_20260319	N	**7.77**	**222.4**	**11**	< 1	< 1	**12**	< 1	**130**	< 0.1	< 1	< 1	< 1	**100**	< 1	**219**	< 0.04	**2**	**38**	**0.3**	**< 0.1**	< 0.2	**6**
	8/04/2026	WX22_20260408	N	**8.02**	**104.5**	**< 5**	**1**	< 1	**13**	< 1	**110**	< 0.1	< 1	< 1	< 1	**70**	< 1	**448**	< 0.04	**2**	**41**	< 0.2	**< 0.1**	< 0.2	< 5
	5/05/2026	WX22_20260505	N	**7.84**	**106.5**	**< 5**	< 1	< 1	**22**	< 1	**240**	< 0.1	< 1	< 1	< 1	< 50	< 1	**436**	< 0.04	< 1	**91**	< 0.2	**< 0.1**	< 0.2	< 5
	3/06/2026	WX22_20260603	N	**8.1**	**230.5**	**29**	< 1	< 1	**12**	< 1	**110**	< 0.1	< 1	< 1	**1**	**80**	< 1	**212**	< 0.04	**2**	**32**	**0.2**	**< 0.1**	< 0.2	< 5

				ANZ-Field Water Quitals																				ANZ-Nutrients											Cyanide Species
				pH - Field	Redox - Field	Aluminium - Total	Arsenic - Total	Arsenic (V) - Total	Barium - Total	Boron - Total	Cadmium - Total	Chromium - Total	Chromium (III) - Total	Chromium (VI) - Total	Copper - Total	Iron - Total	Lead - Total	Manganese - Total	Mercury - Total	Molybdenum - Total	Nickel - Total	Selenium - Total	Silver - Total	Zinc - Total	Arsenic (III) - Total	Ammonia as N	Nitrate as N	Nitrite as N	Nitrite + Nitrate as N	Total Kjeldahl Nitrogen as N	Total Nitrogen	Total Phosphorus	Phosphorus	Orthophosphate as P	Phosphate as PO4 - Total	Phosphate as PO4 - Dissolved	Cyanide CN-
			LOR	0	0	5	1	1	1	1	0.1	1	1	1	1	50	1	1	0.04	1	1	1	0.1	5	1	0.01	0.0001	0.01	0.0001	0.1	0.1	0.0001	0.01	0.01	0.1	0.1	0.002
			Units	pH units	mV	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Action Levels																																	
		MOUNT-PIPER-ANZECC/LOCAL SSTL-WS[1]		6.5 - 8		0.8 | 55	24	13	700	370	0.85	2	3.3	1	3.5	300	5	1900	0.06	10	17	5	0.05	116	24	0.72	2.6 | 29	10	0.015		0.25	0.02		0.015			0.007
Sample Location	Date Sampled	Sample ID	Sample Type																																	
C	22/01/2026	C_20260122	N	**7.4**	**141.3**	**169**	< 1	< 1	**20**	< 50	< 0.1	< 1	< 1	< 1	**2**	**410**	< 1	**118**	< 0.04	**5**	**4**	**0.5**	**< 0.1**	**10**	< 1	< 0.01	**0.01**	< 0.01	**0.01**	**0.9**	**0.9**	**0.01**	**0.02**	< 0.01	< 0.01	< 0.01	< 0.002
	12/02/2026	C_20260212	N	**7.26**	**249.8**	**585**	**1**		**23**	< 50	**0.1**	< 1			**13**	**990**	**2**	**206**	< 0.04	**4**	**6**	**0.3**	**< 0.1**	**43**		**0.04**	**0.04**	< 0.01	**0.04**	**1.1**	**1.1**	**0.09**	< 0.01	< 0.01	**0.29**	< 0.1	< 0.002
	18/03/2026	C_20260318	N	**7.43**	**227.6**	**85**	< 1		**18**	< 50	< 0.1	< 1			**2**	**570**	< 1	**189**	< 0.04	**4**	**3**	**0.6**	**< 0.1**	**8**		**0.01**	< 0.01	< 0.01	< 0.01	**0.3**	**0.3**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	8/04/2026	C_20260408	N	**7.98**	**108.6**	**65**	< 1		**25**	< 50	< 0.1	< 1			< 1	**430**	< 1	**159**	< 0.04	**3**	**3**	**0.4**	**< 0.1**	< 5		**0.01**	**0.01**	< 0.01	**0.01**	**0.2**	**0.2**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	5/05/2026	C_20260505	N	**8.3**	**61.4**	**699**	< 1		**23**	**100**	< 0.1	< 1			**2**	**550**	< 1	**131**	< 0.04	**6**	**4**	**0.4**	**< 0.1**	**9**		< 0.01	**0.01**	**0.01**	**0.02**	**0.4**	**0.4**	**0.06**	**0.02**	< 0.01	**0.18**	< 0.1	< 0.002
	3/06/2026	C_20260603	N	**8.18**	**214.8**	**3030**	< 1		**18**	< 50	< 0.1	**2**			**5**	**450**	**1**	**80**	< 0.04	**5**	**4**	**0.7**	**< 0.1**	**18**		**0.05**	**0.05**	< 0.01	**0.05**	**0.8**	**0.8**	**0.07**	< 0.01	< 0.01	**0.21**	< 0.1	< 0.002
E	22/01/2026	E_20260122	N	**7.15**	**50.4**	**14**	< 1	< 1	**29**	**120**	< 0.1	< 1	< 1	< 1	**2**	**780**	< 1	**846**	< 0.04	< 1	**32**	< 0.2	**< 0.1**	**22**	< 1	**0.03**	**0.01**	< 0.01	**0.01**	**0.6**	**0.6**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	12/02/2026	E_20260212	N	**7.43**	**219.6**	**143**	< 1		**20**	**90**	< 0.1	< 1			**5**	**730**	< 1	**254**	< 0.04	< 1	**26**	< 0.2	**< 0.1**	**16**		**0.02**	< 0.01	< 0.01	< 0.01	**0.6**	**0.6**	**0.02**	< 0.01	**0.01**	< 0.1	< 0.1	< 0.002
	18/03/2026	E_20260318	N	**7.2**	**37.8**	**29**	< 1		**20**	**180**	< 0.1	< 1			**5**	**1560**	< 1	**1150**	< 0.04	**2**	**81**	**0.3**	**< 0.1**	**25**		**0.04**	**0.01**	< 0.01	**0.01**	**0.4**	**0.4**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	8/04/2026	E_20260408	N	**8.13**	**116.2**	**28**	< 1		**23**	**220**	< 0.1	< 1			< 1	**1730**	< 1	**1440**	< 0.04	**1**	**102**	< 0.2	**< 0.1**	**26**		**0.03**	**0.01**	< 0.01	**0.01**	**0.5**	**0.5**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	5/05/2026	E_20260505	N	**8.05**	**74.2**	**135**	< 1		**23**	**130**	< 0.1	< 1			**3**	**1190**	< 1	**730**	< 0.04	**3**	**27**	**0.5**	**< 0.1**	**26**		< 0.01	< 0.01	< 0.01	< 0.01	**0.5**	**0.5**	**0.08**	**0.01**	< 0.01	**0.23**	< 0.1	< 0.002
	3/06/2026	E_20260603	N	**8.28**	**179.8**	**1380**	< 1		**16**	< 50	< 0.1	**3**			**3**	**730**	< 1	**178**	< 0.04	**3**	**9**	**0.5**	**< 0.1**	**10**		**0.03**	**0.01**	< 0.01	**0.01**	**0.6**	**0.6**	**0.02**	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
G	22/01/2026	G_20260122	N	**7.65**	**127.5**	**14**	< 1	< 1	**23**	**240**	< 0.1	< 1	< 1	< 1	**1**	**190**	< 1	**352**	< 0.04	< 1	**69**	< 0.2	**< 0.1**	**9**	< 1	**0.04**	< 0.01	< 0.01	< 0.01	**0.5**	**0.5**	< 0.01	**0.01**	< 0.01	< 0.1	< 0.1	< 0.002
	12/02/2026	G_20260212	N	**7.65**	**163.5**	**616**	**1**		**14**	**120**	< 0.1	< 1			**4**	**1120**	**1**	**271**	< 0.04	**1**	**28**	**0.2**	**< 0.1**	**13**		**0.02**	< 0.01	< 0.01	< 0.01	**0.5**	**0.5**	**0.04**	< 0.01	< 0.01	**0.13**	< 0.1	< 0.002
	19/03/2026	G_20260319	N	**7.79**	**212.4**	**23**	< 1		**12**	**90**	< 0.1	< 1			< 1	**270**	< 1	**235**	< 0.04	**2**	**36**	**0.3**	**< 0.1**	< 5		**0.02**	< 0.01	< 0.01	< 0.01	**0.3**	**0.3**	**0.03**	**0.01**	< 0.01	< 0.1	< 0.1	< 0.002
	8/04/2026	G_20260408	N	**7.92**	**108.5**	**49**	< 1		**13**	**100**	< 0.1	< 1			< 1	**160**	< 1	**408**	< 0.04	**2**	**40**	**0.4**	**< 0.1**	< 5		< 0.01	< 0.01	< 0.01	< 0.01	**0.2**	**0.2**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	5/05/2026	G_20260505	N	**8.1**	**89.3**	**84**	< 1		**23**	**340**	< 0.1	< 1			**1**	**290**	< 1	**430**	< 0.04	**1**	**108**	**0.2**	**< 0.1**	< 5		< 0.01	< 0.01	< 0.01	< 0.01	**0.4**	**0.4**	**0.03**	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	3/06/2026	G_20260603	N	**7.83**	**252.7**	**701**	< 1		**13**	**90**	< 0.1	**3**			**1**	**780**	< 1	**214**	< 0.04	**2**	**32**	**0.4**	**< 0.1**	< 5		**0.02**	< 0.01	< 0.01	< 0.01	**0.3**	**0.3**	**0.02**	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
LMP01	5/01/2026	LMP01_20260105	N		**232.6**	**1270**	**4**	< 1	**35**	**60**	**0.2**	**3**	< 1	< 1	**15**	**2430**	**6**	**194**	< 0.04	**8**	**13**	**0.8**	**< 0.1**	**88**	< 1	**0.01**	**0.14**	**0.01**	**0.15**	**0.4**	**0.6**	**0.06**	< 0.01	< 0.01	**0.2**	< 0.1	< 0.002
	2/02/2026	LMP01_20260202	N		**267.6**	**308**	**1**		**21**	< 50	< 0.1	< 1			**4**	**690**	< 1	**201**	< 0.04	**13**	**6**	**1.3**	**< 0.1**	**21**		< 0.01	**0.08**	**0.01**	**0.09**	**0.4**	**0.5**	**0.04**	< 0.01	< 0.01	**0.12**	< 0.1	< 0.002
	2/03/2026	LMP01_20260302	N		**163.2**	**575**	**1**		**22**	< 50	< 0.1	< 1			**6**	**510**	< 1	**151**	< 0.04	**9**	**4**	**0.7**	**< 0.1**	**17**		**0.04**	**0.16**	< 0.01	**0.16**	**0.3**	**0.5**	**0.05**	< 0.01	< 0.01	**0.14**	< 0.1	< 0.002
	7/04/2026	LMP01_20260407	N		**135.7**	**37**	< 1		**23**	< 50	< 0.1	< 1			< 1	**190**	< 1	**151**	< 0.04	**7**	**4**	**0.8**	**< 0.1**	**10**		**0.02**	**0.09**	< 0.01	**0.09**	< 0.1	< 0.1	**0.05**	**0.04**	< 0.01	**0.14**	**0.11**	< 0.002
	4/05/2026	LMP01_20260504	N		**109**	**67**	< 1		**28**	< 50	< 0.1	< 1			**2**	**220**	< 1	**205**	< 0.04	**9**	**4**	**0.3**	**< 0.1**	**8**		**0.02**	**0.1**	< 0.01	**0.1**	**0.2**	**0.3**	**0.06**	**0.02**	< 0.01	**0.19**	< 0.1	< 0.002
	1/06/2026	LMP01_20260601	N		**378.3**	**1010**	< 1		**26**	< 50	< 0.1	< 1			**4**	**590**	< 1	**263**	< 0.04	**8**	**4**	**0.7**	**< 0.1**	**28**		**0.04**	**0.08**	< 0.01	**0.08**	**0.4**	**0.5**	**0.03**	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
NC01	25/03/2026	NC01_20260325	N	**7.22**	**92.5**	**399**	< 1	< 1	**17**	**260**	< 0.1	< 1	< 1	< 1	**2**	**880**	< 1	**201**	< 0.04	**4**	**3**	**0.4**	**< 0.1**	**8**	< 1	**0.05**	< 0.01	< 0.01	< 0.01	**0.5**	**0.5**	**0.02**	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	8/04/2026	NC01_20260408	N	**7.81**	**101.2**	**109**	< 1		**23**	< 50	< 0.1	< 1			< 1	**630**	< 1	**276**	< 0.04	**3**	**3**	**0.4**	**< 0.1**	**8**		**0.01**	**0.02**	< 0.01	**0.02**	**0.4**	**0.4**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	5/05/2026	NC01_20260505	N	**8.11**	**82.4**	**255**	**4**		**25**	**160**	< 0.1	< 1			**3**	**630**	< 1	**426**	< 0.04	**8**	**5**	**0.4**	**< 0.1**	**21**		< 0.01	**0.02**	< 0.01	**0.02**	**0.6**	**0.6**	**0.08**	< 0.01	< 0.01	**0.24**	< 0.1	< 0.002
	3/06/2026	NC01_20260603	N	**8.17**	**232.4**	**1890**	**2**		**17**	< 50	< 0.1	**2**			**4**	**1030**	**2**	**88**	< 0.04	**4**	**4**	**0.6**	**< 0.1**	**18**		**0.07**	**0.01**	< 0.01	**0.01**	**0.9**	**0.9**	**0.06**	**0.02**	< 0.01	**0.17**	< 0.1	< 0.002
WX22	22/01/2026	WX22_20260122	N	**7.61**	**130.5**	**13**	< 1	< 1	**23**	**250**	< 0.1	< 1	< 1	< 1	**2**	**180**	< 1	**336**	< 0.04	< 1	**72**	< 0.2	**< 0.1**	**17**	< 1	**0.04**	< 0.01	< 0.01	< 0.01	**0.7**	**0.7**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	12/02/2026	WX22_20260212	N	**7.66**	**172.5**	**499**	< 1		**14**	**110**	< 0.1	< 1			**6**	**1030**	**1**	**300**	< 0.04	**1**	**28**	**0.2**	**< 0.1**	**23**		**0.04**	< 0.01	< 0.01	< 0.01	**1**	**1**	**0.07**	< 0.01	**0.01**	**0.23**	< 0.1	< 0.002
	19/03/2026	WX22_20260319	N	**7.77**	**222.4**	**20**	< 1		**11**	**80**	< 0.1	< 1			**2**	**250**	< 1	**184**	< 0.04	**5**	**37**	**0.3**	**< 0.1**	**10**		**0.02**	< 0.01	< 0.01	< 0.01	**0.3**	**0.3**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	8/04/2026	WX22_20260408	N	**8.02**	**104.5**	**24**	< 1		**14**	**120**	< 0.1	< 1			**2**	**200**	< 1	**496**	< 0.04	**2**	**42**	**0.2**	**< 0.1**	< 5		< 0.01	< 0.01	< 0.01	< 0.01	**0.2**	**0.2**	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002
	5/05/2026	WX22_20260505	N	**7.84**	**106.5**	**32**	**2**		**24**	**390**	< 0.1	< 1			**3**	**420**	< 1	**1110**	< 0.04	**2**	**106**	**0.3**	**< 0.1**	**11**		< 0.01	< 0.01	< 0.01	< 0.01	**0.6**	**0.6**	**0.04**	**0.02**	< 0.01	**0.11**	< 0.1	< 0.002
	3/06/2026	WX22_20260603	N	**8.1**	**230.5**	**765**	< 1		**11**	**80**	< 0.1	**1**			**3**	**630**	< 1	**183**	< 0.04	**2**	**32**	**0.4**	**< 0.1**	**14**		**0.03**	< 0.01	< 0.01	< 0.01	**0.5**	**0.5**	**0.02**	< 0.01	< 0.01	< 0.1	< 0.1	< 0.002

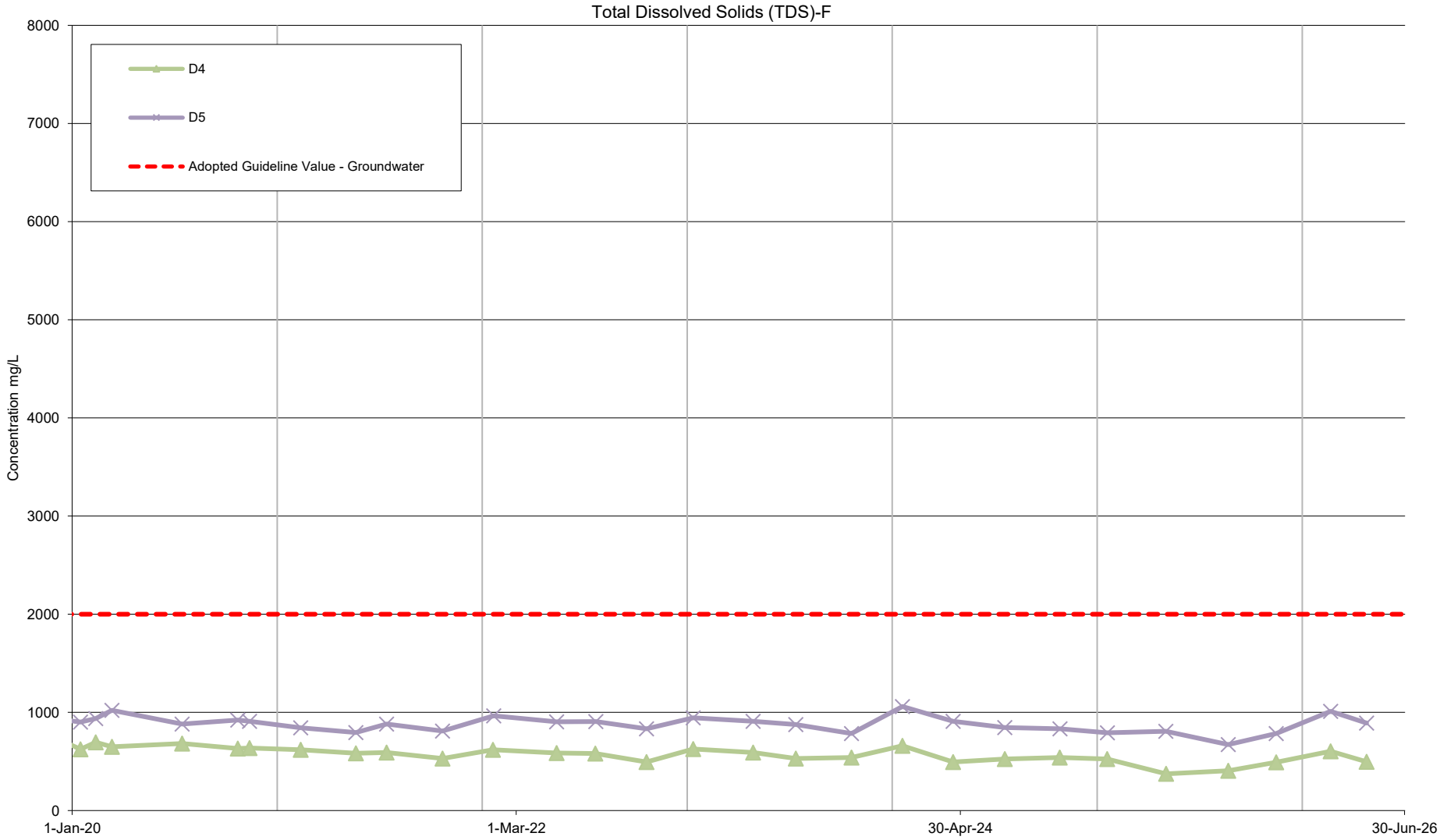
				Field Water Quality Para			ANZ-Laboratory Parameters			NZ-General Chemist		ANZ-Alkalinity					ANZ-Cations and Anions												
				Redox - Field	Dissolved Oxygen - Field	Temperature - Field	Conductivity	Turbidity	pH - Lab	Dissolved Organic Carbon	Hardness as CaCO3	Oil & Grease	Alkalinity - P	Alkalinity - Total as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Sulphate as SO4 2-	Chloride	Fluoride	Total Dissolved Solids	Total suspended solids	Calcium - Total	Calcium - Dissolved	Magnesium - Total	Magnesium - Dissolved	Sodium - Total	Sodium - Dissolved	Potassium - Total	Potassium - Dissolved
LOR				0	0.1	0	1	0.01	0	0.001	0.01	5	1	1	1	1	1	1	0.01	0.001	0.01	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Units				mV	mg/L	deg C	uS/cm	NTU	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Action Levels																														
MOUNT-PIPER-EPL-13007-DISCHARGE[1]							500	2 - 25	6.5 - 8.5			10										50								
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																											
LDP12	7/01/2026	LDP12_20260107	N	**220**	**6.8**	**21.3**	**343**	**9.7**	**7.66**	**3**	**34.5**	< 5	< 1	**43**	**43**	< 1	< 1	**76.4**	**12.4**	**0.16**	**198**	**9.67**	**9.35**	**8.8**	**3.12**	**3.04**	**48.3**	**48.6**	**4.71**	**4.92**
	21/01/2026	LDP12_20260121	N	**212**	**8.7**	**19.7**	**369**	**2.2**	**7.46**	**2**	**37.7**	< 5	< 1	**44**	**44**	< 1	< 1	**137**	**28.5**	**0.187**	**227**	**10.33**	**10.6**	**9.43**	**3.72**	**3.43**	**55**	**52.6**	**4.99**	**5.13**
	13/03/2026	LDP12_20260313	N	**160.9**	**6.8**	**21.7**	**313**	**6.15**	**7.92**	**2**	**13.4**	< 5	< 1	**38**	**38**	< 1	< 1	**71.4**	**18.9**	**0.15**	**182**	**4.6**	**3.1**	**3.17**	**1.26**	**1.32**	**53.6**	**55.2**	**4.55**	**4.96**
	25/03/2026	LDP12_20260325	N	**202.9**	**8**	**20.4**	**341**	**13.4**	**7.84**	**3**	**18.1**	< 5	< 1	**39**	**39**	< 1	< 1	**75.4**	**22**	**0.108**	**210**	**21.67**	**4.51**	**4.56**	**1.57**	**1.63**	**52.7**	**57.7**	**5.06**	**5.09**
	9/06/2026	LDP12_20260609	N	**258.6**	**8.6**	**15.7**	**365**	**4.18**	**7.87**	**1**	**25.1**	< 5	< 1	**63**	**63**	< 1	< 1	**78.7**	**23.2**	**0.123**	**212**	**3**	**6.1**	**6.12**	**2.35**	**2.38**	**58.9**	**63.8**	**5.66**	**6.1**
	25/06/2026	LDP12_20260625	N	**123.6**	**8.7**	**16.8**	**384**	**3.23**	**7.93**	**2**	**31.9**	< 5	< 1	**59**	**59**	< 1	< 1	**89.3**	**26.7**	**0.121**	**232**	**4.4**	**7.02**	**7.41**	**2.96**	**3.26**	**61.3**	**68.2**	**5.11**	**5.67**

				Field Water Quality		ANZ-Metals																																										
				Redox - Field	Dissolved Oxygen - Field	Aluminium - Dissolved	Antimony - Dissolved	Arsenic - Dissolved	Barium - Dissolved	Beryllium - Dissolved	Boron - Dissolved	Cadmium - Dissolved	Chromium - Dissolved	Cobalt - Dissolved	Copper - Dissolved	Iron - Dissolved	Lead - Dissolved	Manganese - Dissolved	Mercury - Dissolved	Molybdenum - Dissolved	Nickel - Dissolved	Selenium - Dissolved	Silver - Dissolved	Vanadium - Dissolved	Zinc - Dissolved	Aluminium - Total	Arsenic - Total	Arsenic (V) - Total	Barium - Total	Boron - Total	Cadmium - Total	Chromium - Total	Chromium (III) - Total	Chromium (VI) - Total	Copper - Total	Iron - Total	Lead - Total	Manganese - Total	Mercury - Total	Molybdenum - Total	Nickel - Total	Selenium - Total	Silver - Total	Zinc - Total	Arsenic (III) - Total
			LOR	0	0.1	1	1	1	1	1	50	0.1	1	1	1	50	1	1	0.04	1	1	1	0.1	0.2	5	1	1	1	1	50	0.1	1	1	1	1	50	1	1	0.04	1	1	1	0.1	5	1
			Units	mV	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
			Action Levels																																												
			MOUNT-PIPER-EPL-13007-DISCHARGE[1]																																											
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																																											
LDP12	7/01/2026	LDP12_20260107	N	**220**	**6.8**	**15**	< 1	< 1	**9**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**43**	< 0.04	**6**	**2**	**5.6**	< 0.1	< 0.2	< 5	**1100**	< 1	< 1	**9**	< 50	< 0.1	< 1	< 1	< 1	< 1	< 50	< 1	**42**	< 0.04	**7**	**2**	**5.5**	< 0.1	< 5	< 1
	21/01/2026	LDP12_20260121	N	**212**	**8.7**	**86**	< 1	< 1	**10**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**37**	< 0.04	**4**	**2**	**5.7**	< 0.1	< 0.2	< 5	**4620**	< 1	< 1	**10**	< 50	< 0.1	< 1	< 1	< 1	< 1	< 50	< 1	**42**	< 0.04	**8**	**2**	**6.4**	< 0.1	< 5	< 1
	13/03/2026	LDP12_20260313	N	**160.9**	**6.8**	**23**	< 1	< 1	**6**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**22**	< 0.04	**3**	**2**	**5.7**	< 0.1	< 0.2	< 5	**163**	< 1	< 1	**5**	< 50	< 0.1	< 1	< 1	< 1	< 1	< 50	< 1	**21**	< 0.04	**3**	**2**	**5.7**	< 0.1	< 5	< 1
	25/03/2026	LDP12_20260325	N	**202.9**	**8**	**24**	< 1	< 1	**6**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**28**	< 0.04	**2**	**2**	**4.3**	< 0.1	< 0.2	< 5	**3020**	< 1	< 1	**8**	**80**	< 0.1	< 1	< 1	< 1	< 1	**120**	< 1	**33**	< 0.04	**3**	**2**	**4.8**	< 0.1	< 5	< 1
	9/06/2026	LDP12_20260609	N	**258.6**	**8.6**	**8**	< 1	< 1	**7**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**37**	< 0.04	**3**	**3**	**5.4**	< 0.1	< 0.2	< 5	**395**	< 1	< 1	**7**	< 50	< 0.1	< 1	< 1	< 1	< 1	< 50	< 1	**41**	< 0.04	**4**	**3**	**5.7**	< 0.1	< 5	< 1
	25/06/2026	LDP12_20260625	N	**123.6**	**8.7**	**25**	< 1	< 1	**10**	< 1	< 50	< 0.1	< 1	< 1	< 1	< 50	< 1	**74**	< 0.04	**3**	**2**	**4.2**	< 0.1	< 0.2	< 5	**1150**	< 1	< 1	**10**	< 50	< 0.1	< 1	< 1	< 1	< 1	< 50	< 1	**76**	< 0.04	**4**	**3**	**4.4**	< 0.1	< 5	< 1

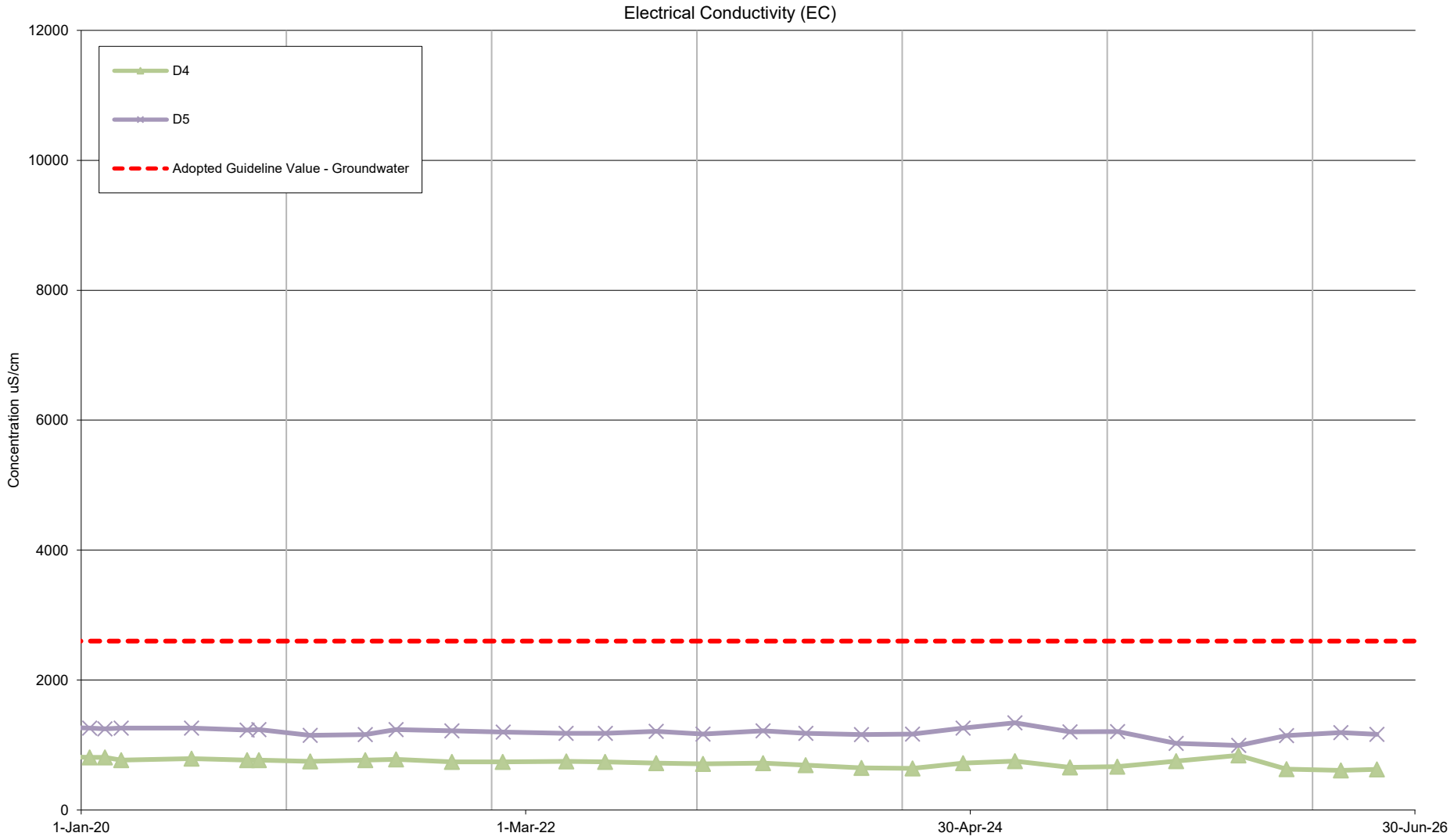
				ield Water Qual		ANZ-Nutrients												ANZ-Cyanide Species
				Redox - Field	Dissolved Oxygen - Field	Ammonia as N	Nitrate as N	Nitrite as N	Nitrite + Nitrate as N	Total Kjeldahl Nitrogen as N	Total Nitrogen	Total Phosphorus	Phosphorus	Phosphate as PO4	Orthophosphate as P	Phosphate as PO4 - Total	Phosphate as PO4 - Dissolved	Cyanide CN-
LOR				0	0.1	0.01	0.0001	0.01	0.0001	0.0001	0.0001	0.01	0.01	0.1	0.01	0.1	0.1	0.002
Units				mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Action Levels																		
MOUNT-PIPER-EPL-13007-DISCHARGE[1]																		
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**															
LDP12	7/01/2026	LDP12_20260107	N	**220**	**6.8**	< 0.01	**0.5**	< 0.01	**0.5**	**0.2**	**0.7**	**0.03**	< 0.01	< 0.1	< 0.01	< 0.1	< 0.1	< 0.002
	21/01/2026	LDP12_20260121	N	**212**	**8.7**	< 0.01	**0.56**	< 0.01	**0.56**	**0.4**	**1**	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	< 0.1	< 0.002
	13/03/2026	LDP12_20260313	N	**160.9**	**6.8**	**0.04**	**0.49**	< 0.01	**0.49**	**0.3**	**0.8**	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	< 0.1	< 0.002
	25/03/2026	LDP12_20260325	N	**202.9**	**8**	**0.08**	**0.59**	< 0.01	**0.59**	**0.4**	**1**	**0.02**	< 0.01	< 0.1	< 0.01	< 0.1	< 0.1	< 0.002
	9/06/2026	LDP12_20260609	N	**258.6**	**8.6**	**0.03**	**0.45**	< 0.01	**0.45**	**0.3**	**0.8**	**0.02**	< 0.01	< 0.1	< 0.01	< 0.1	< 0.1	< 0.002
	25/06/2026	LDP12_20260625	N	**123.6**	**8.7**	**0.08**	**0.4**	< 0.01	**0.4**	**0.4**	**0.8**	**0.03**	**0.02**	< 0.1	< 0.01	< 0.1	< 0.1	< 0.002

APPENDIX J GROUNDWATER TRENDS

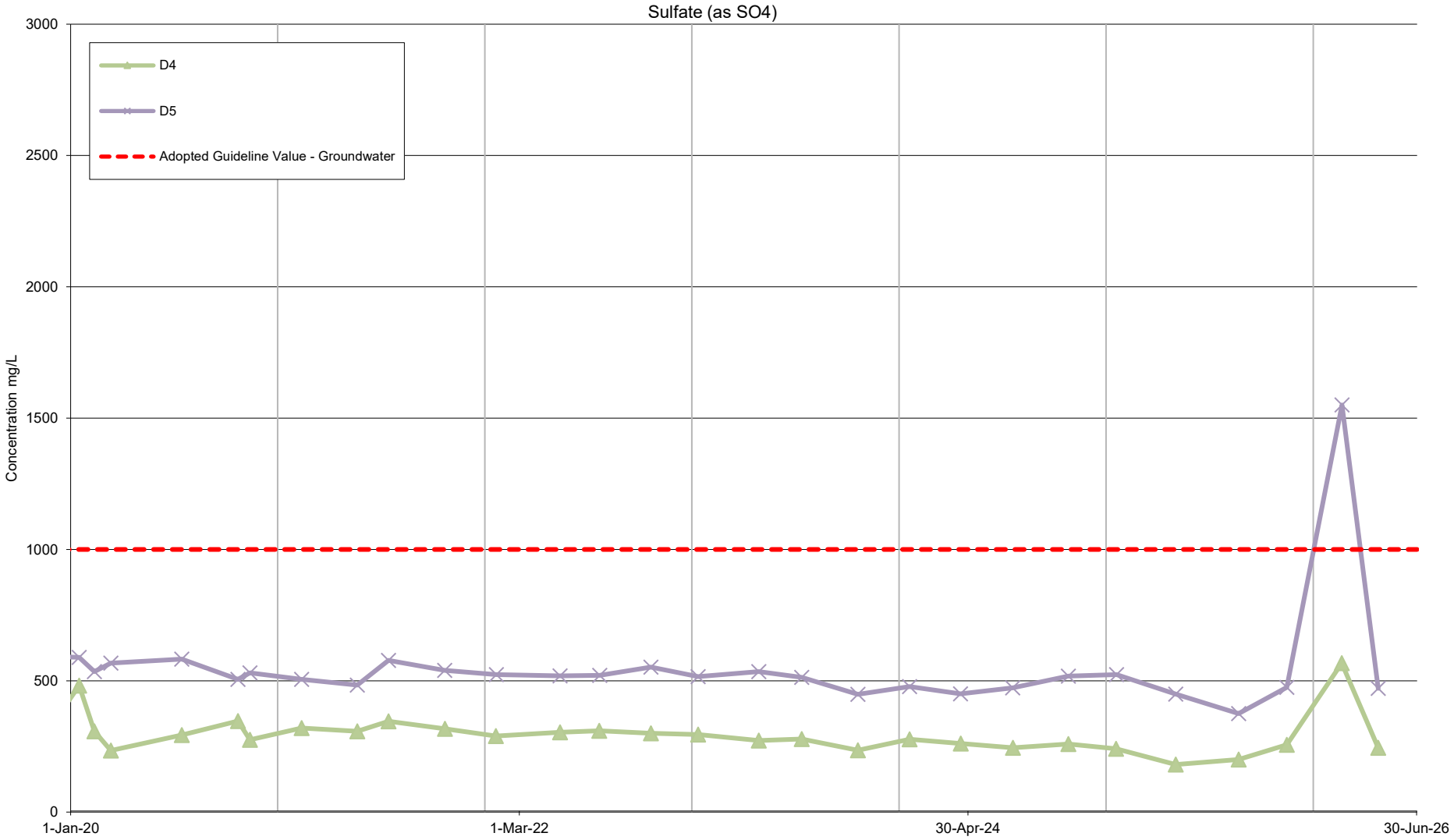
Appendix J. Upgradient MPAR / Background Wells - TDS Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



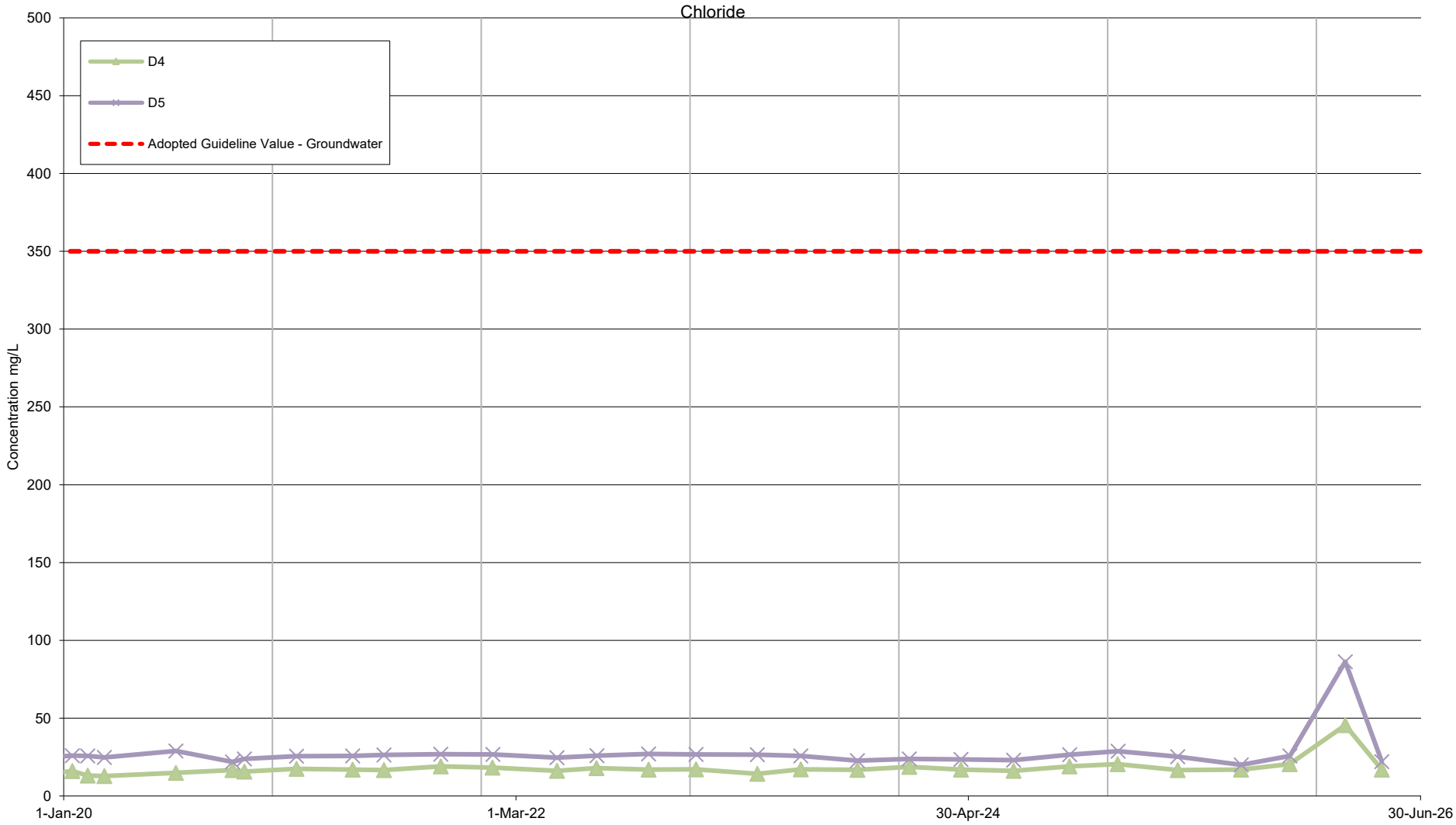
Appendix J. Upgradient / Background Wells - EC Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



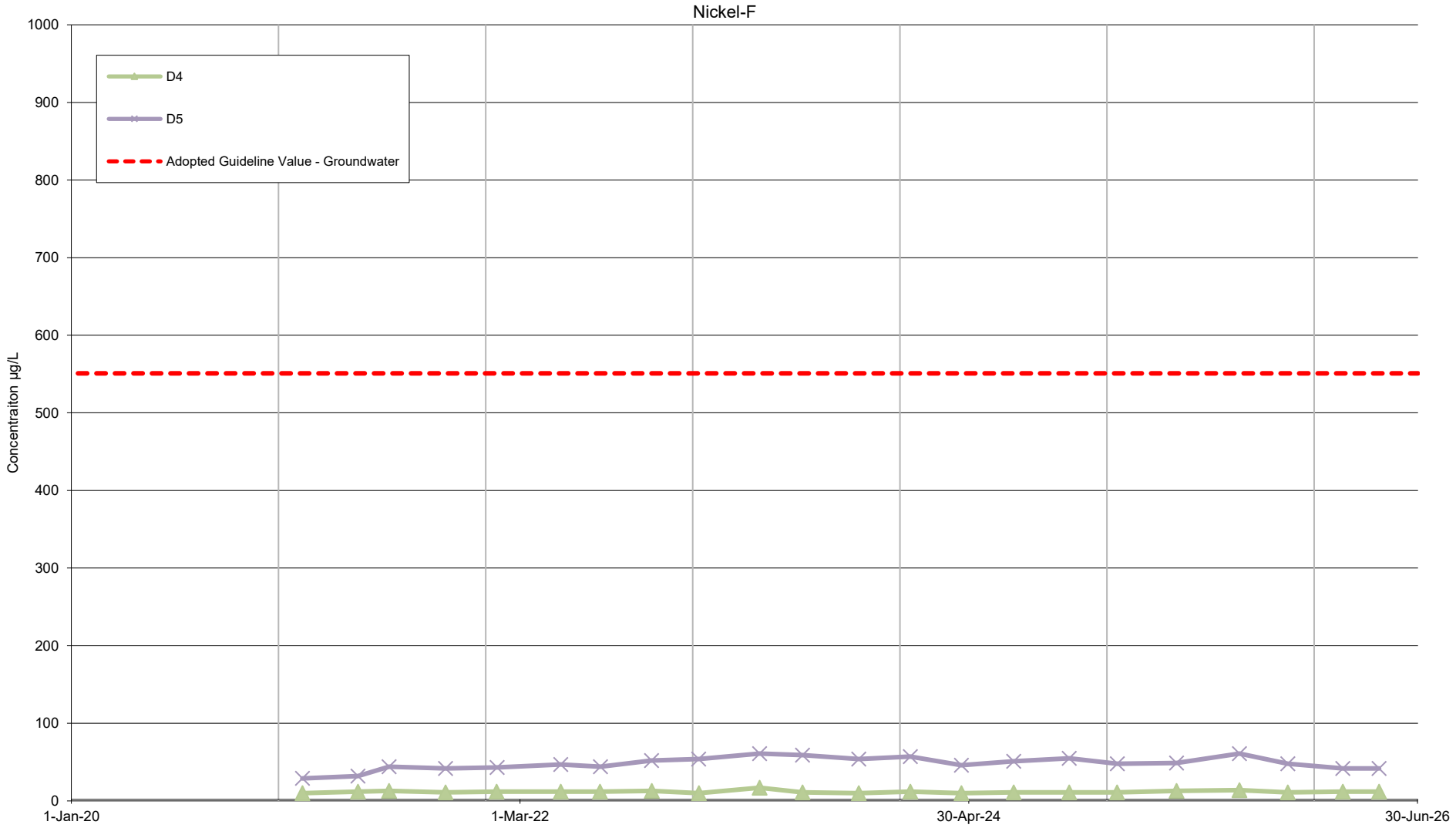
Appendix J. Upgradient / Background Wells - Sulfate (as SO4) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



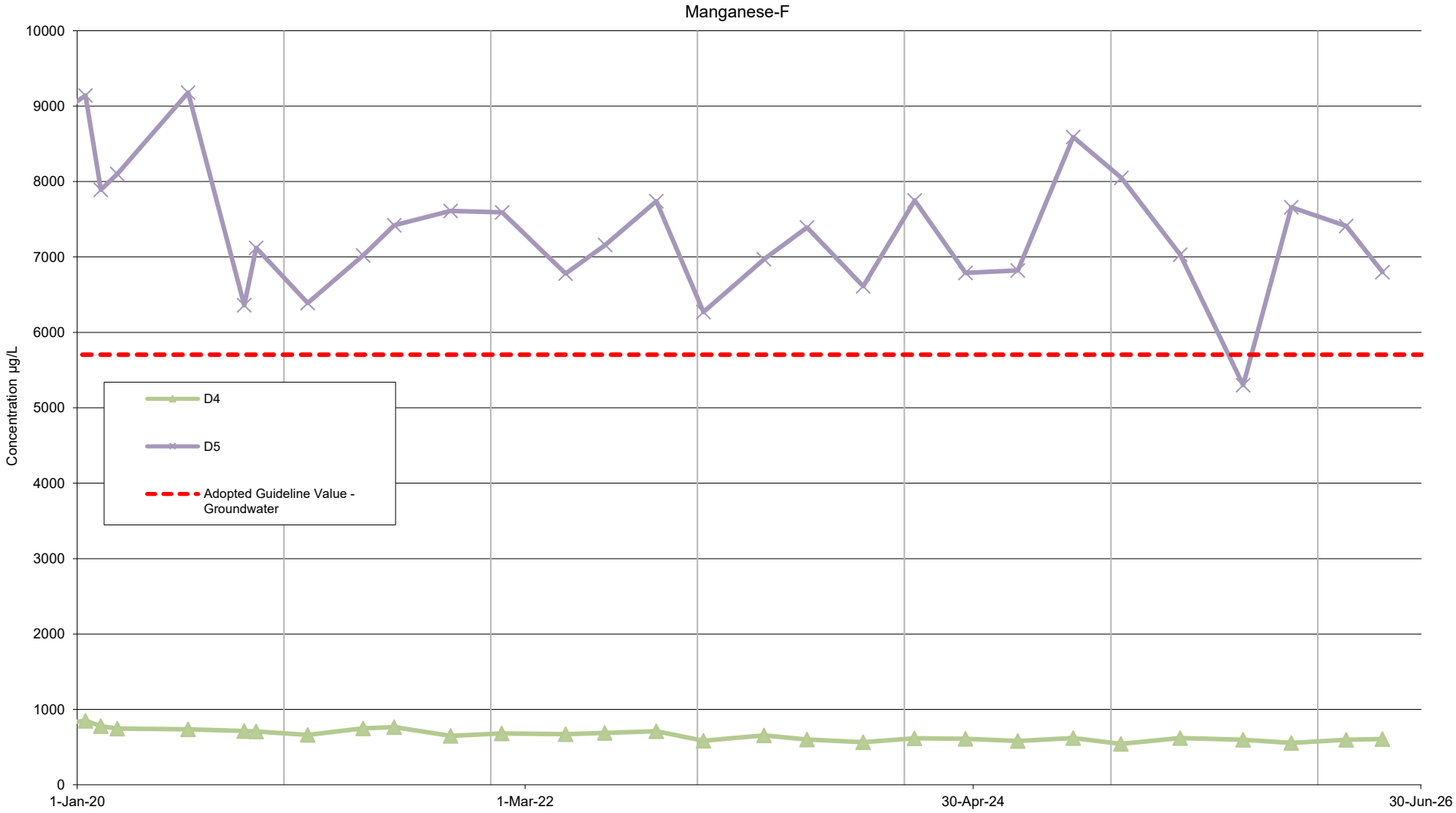
Appendix J. Upgradient / Background Wells - Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



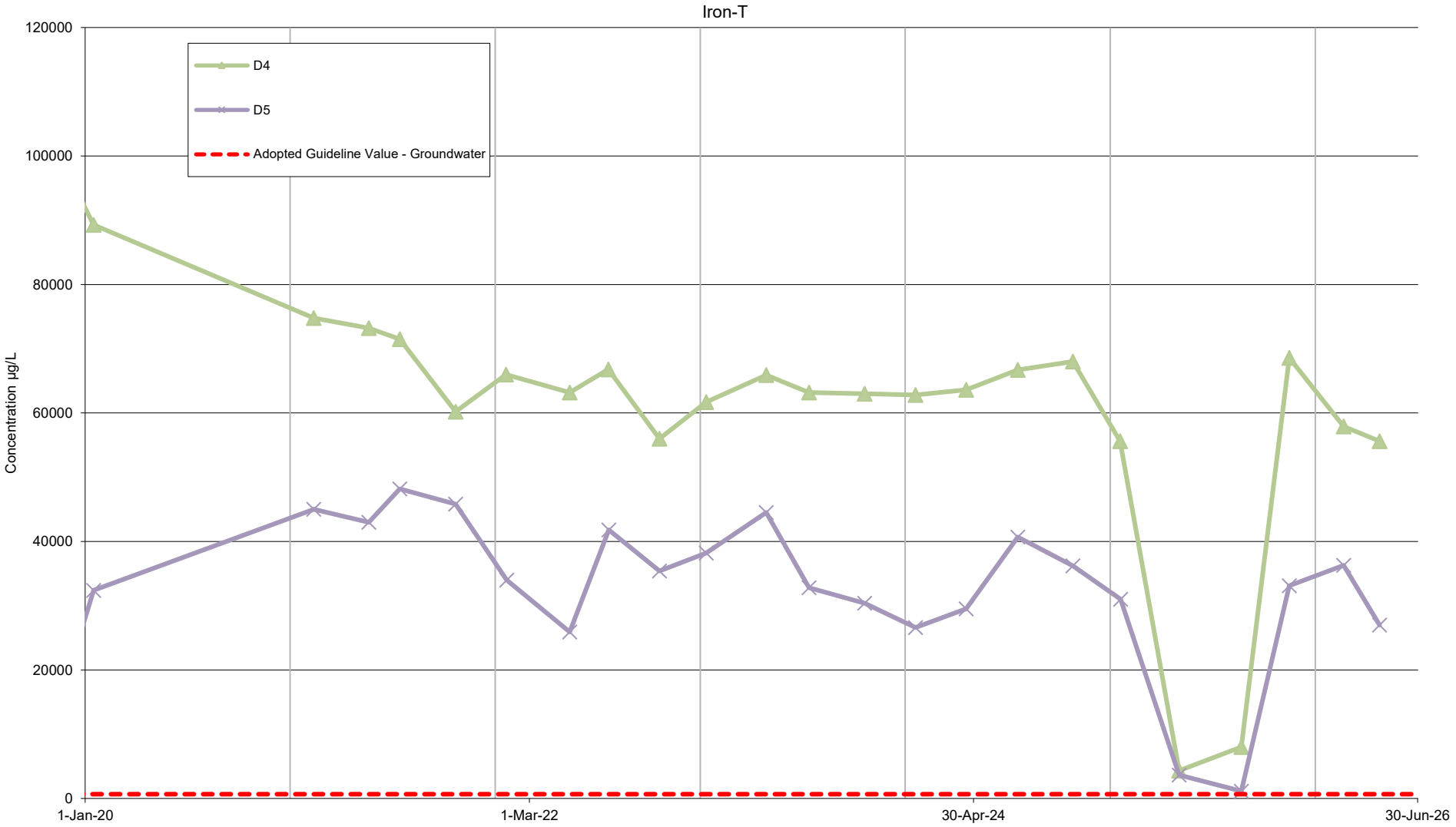
Appendix J. Upgradient / Background Wells - Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



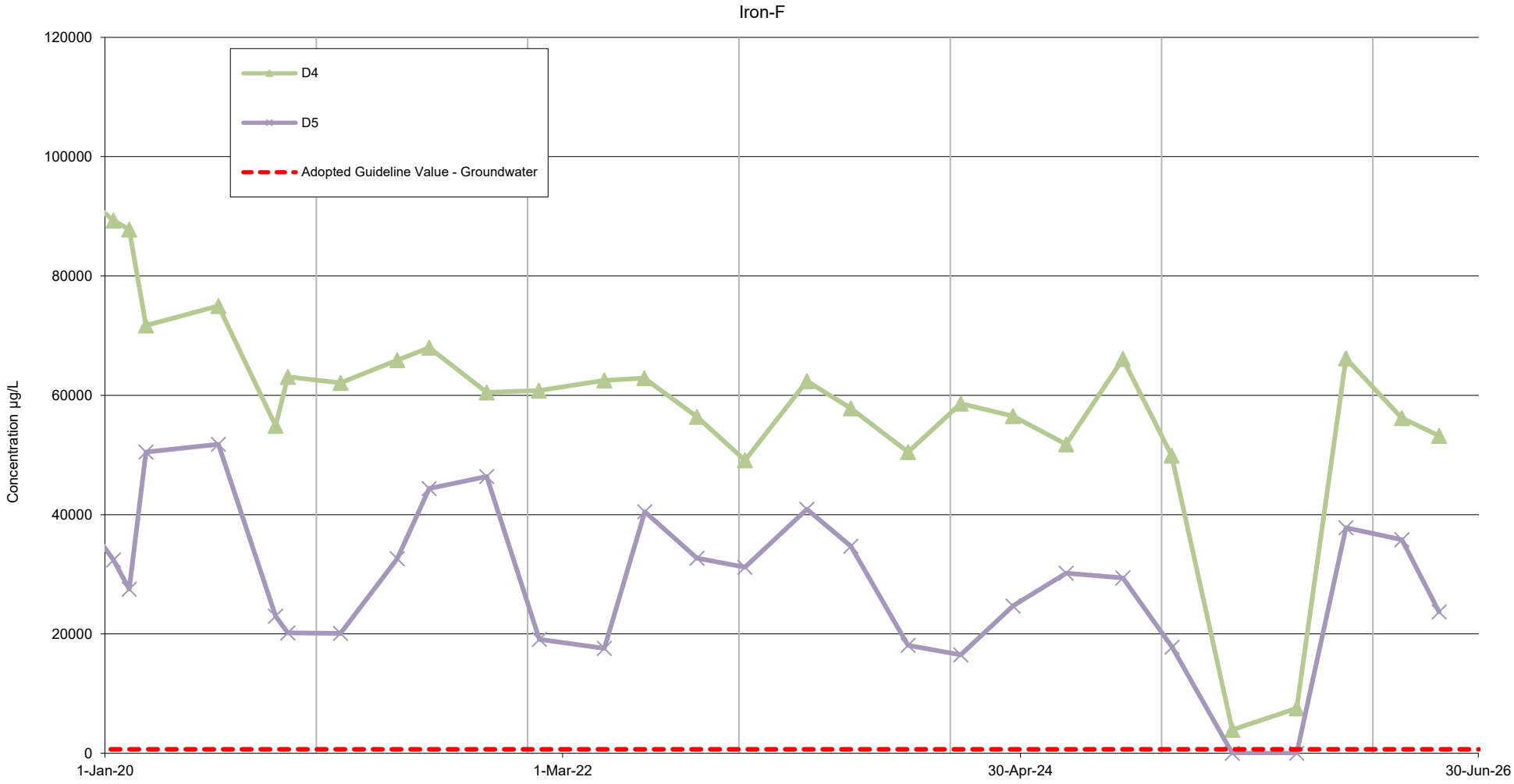
Appendix J. Upgradient / Background Wells - Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



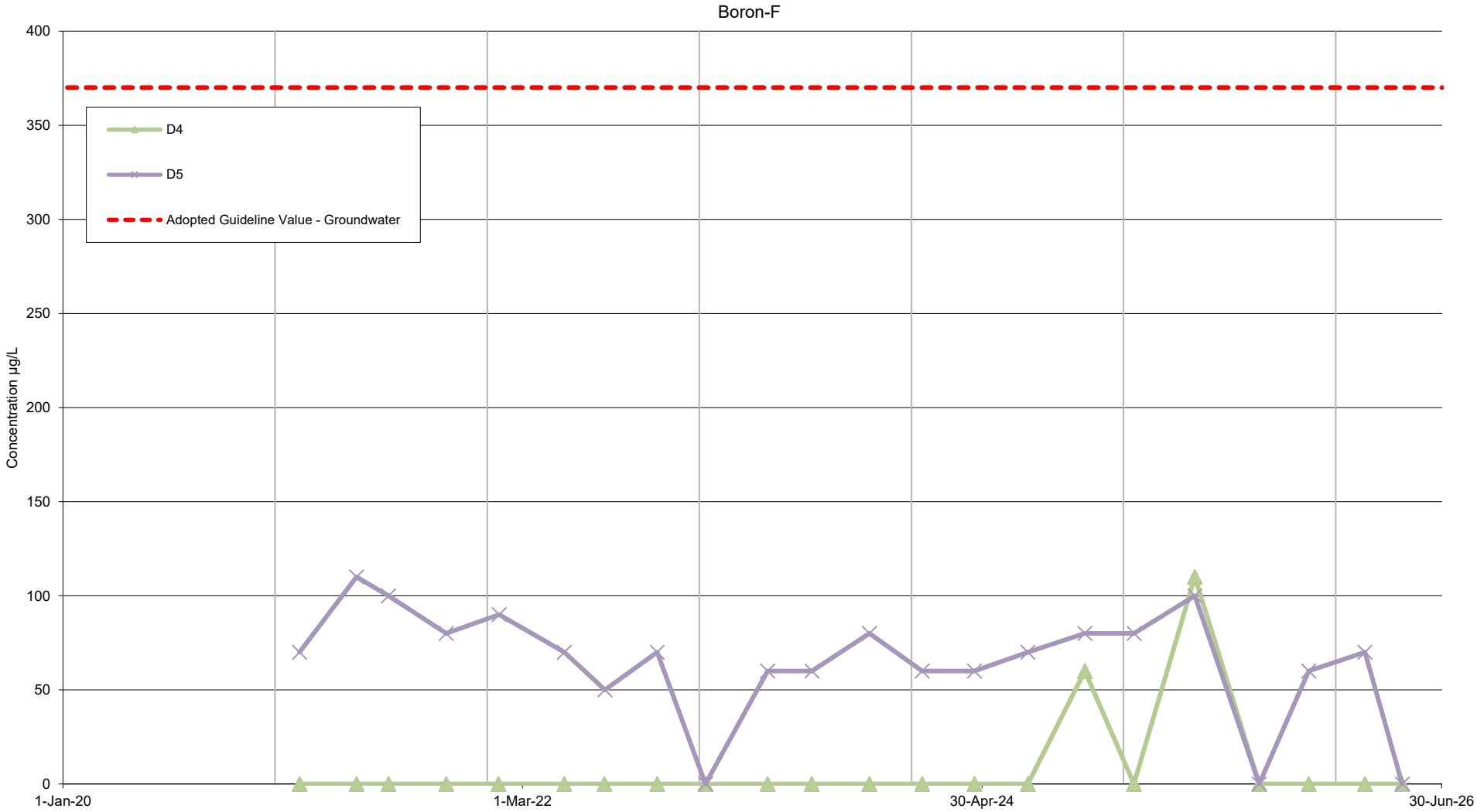
Appendix J.. Upgradient / Background Wells - Iron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



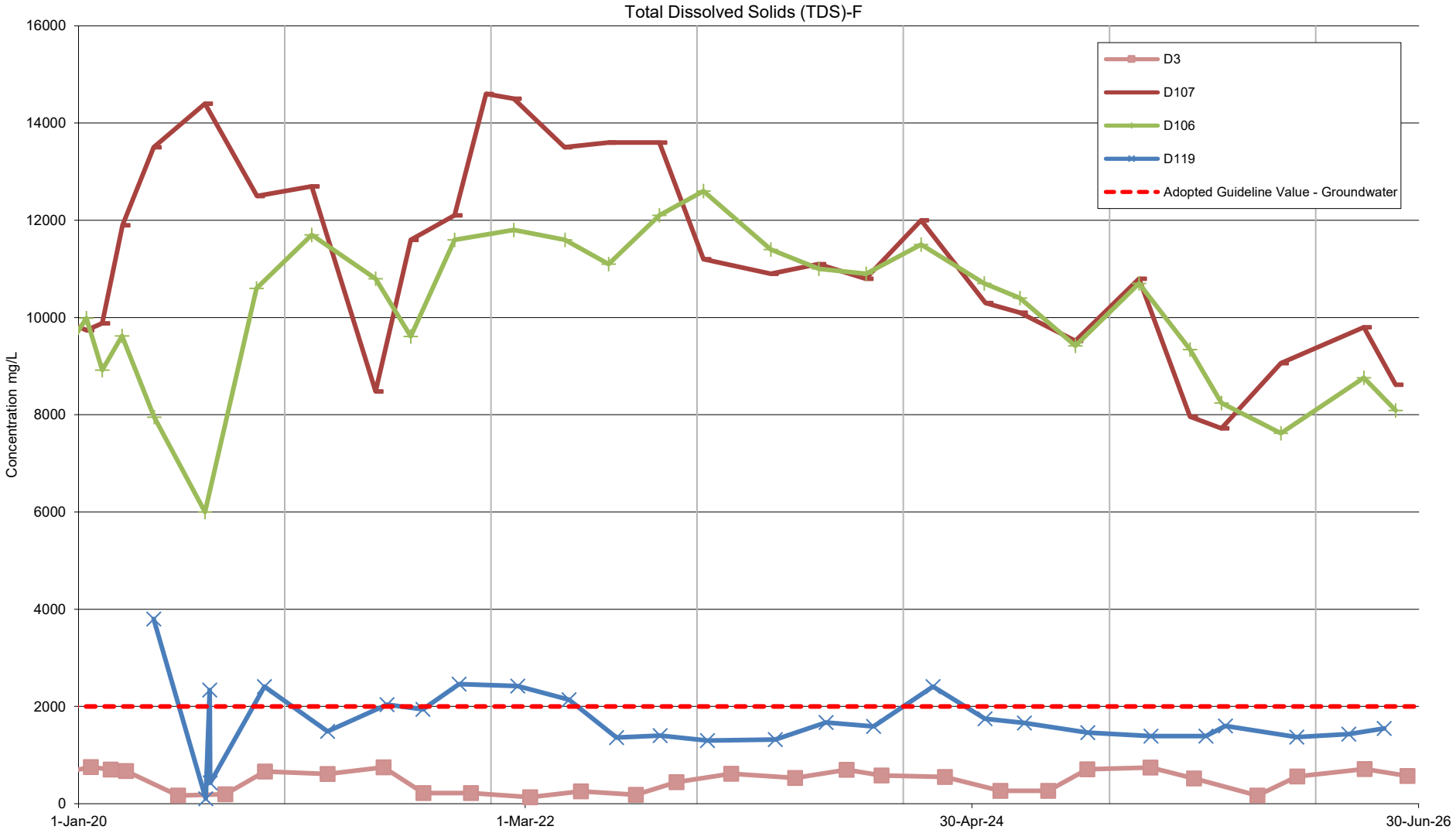
Appendix J. Upgradient / Background Wells - Iron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



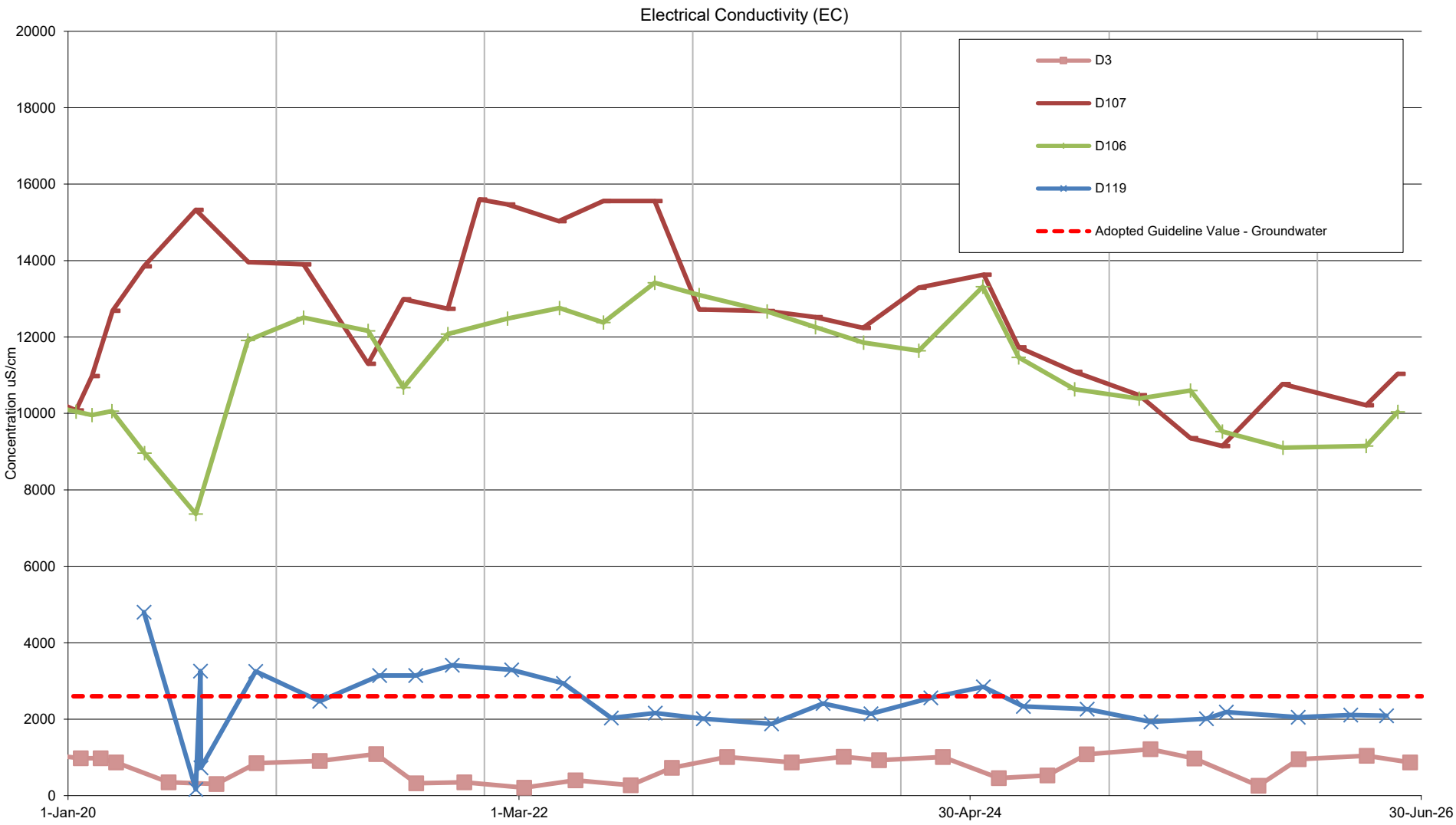
Appendix J. Upgradient / Background Wells - Boron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



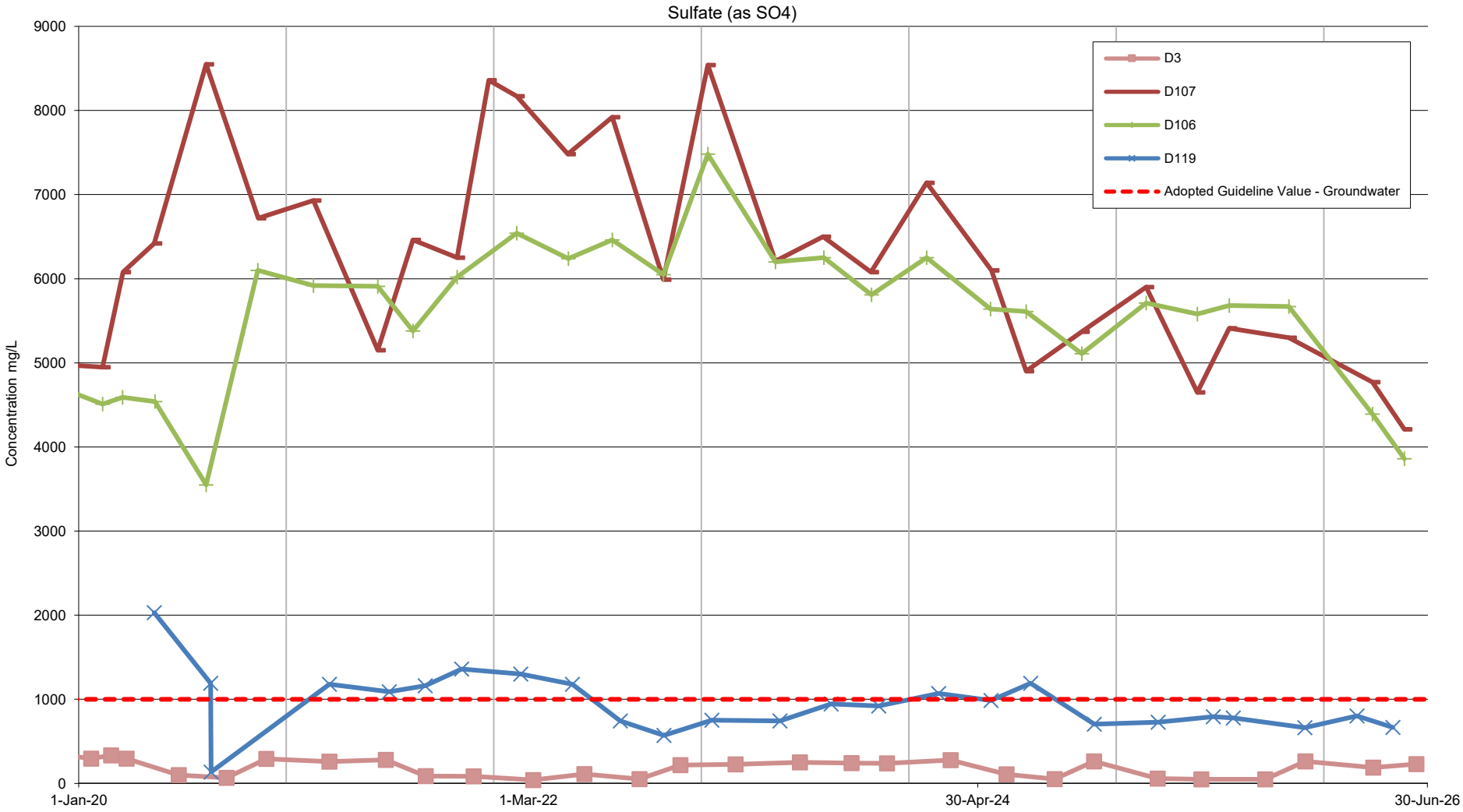
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - TDS Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



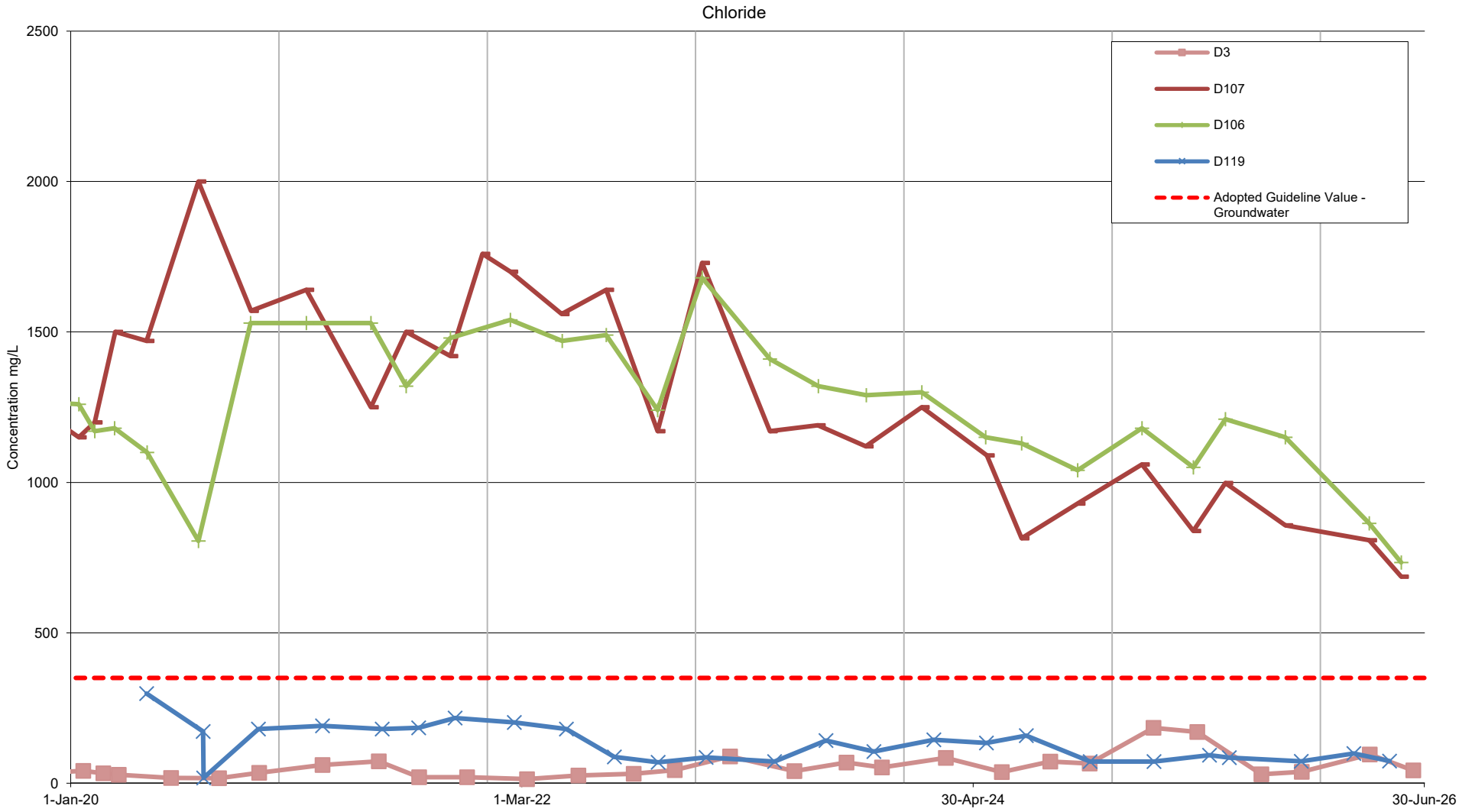
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - EC Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



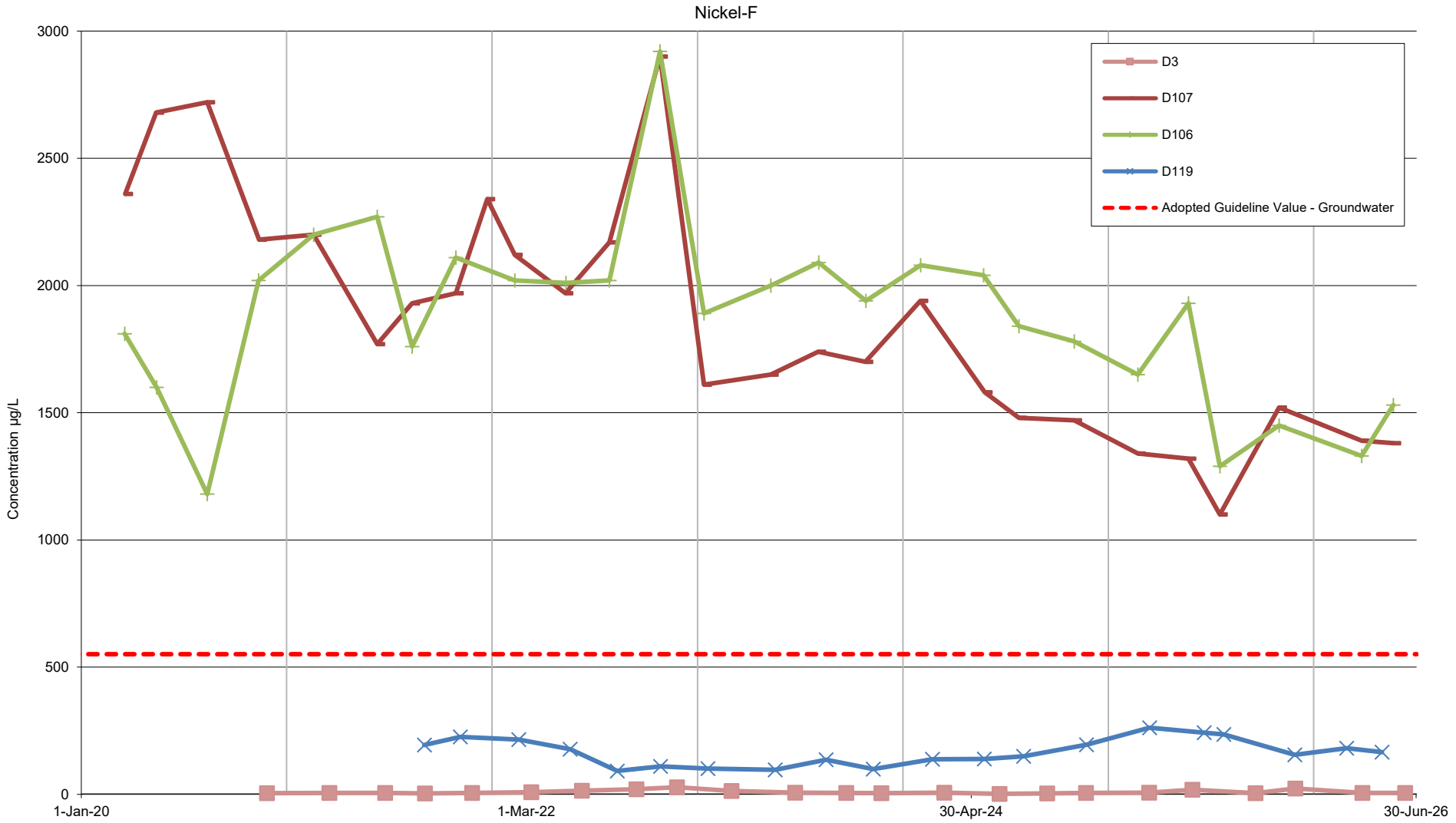
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Sulfate (as SO4) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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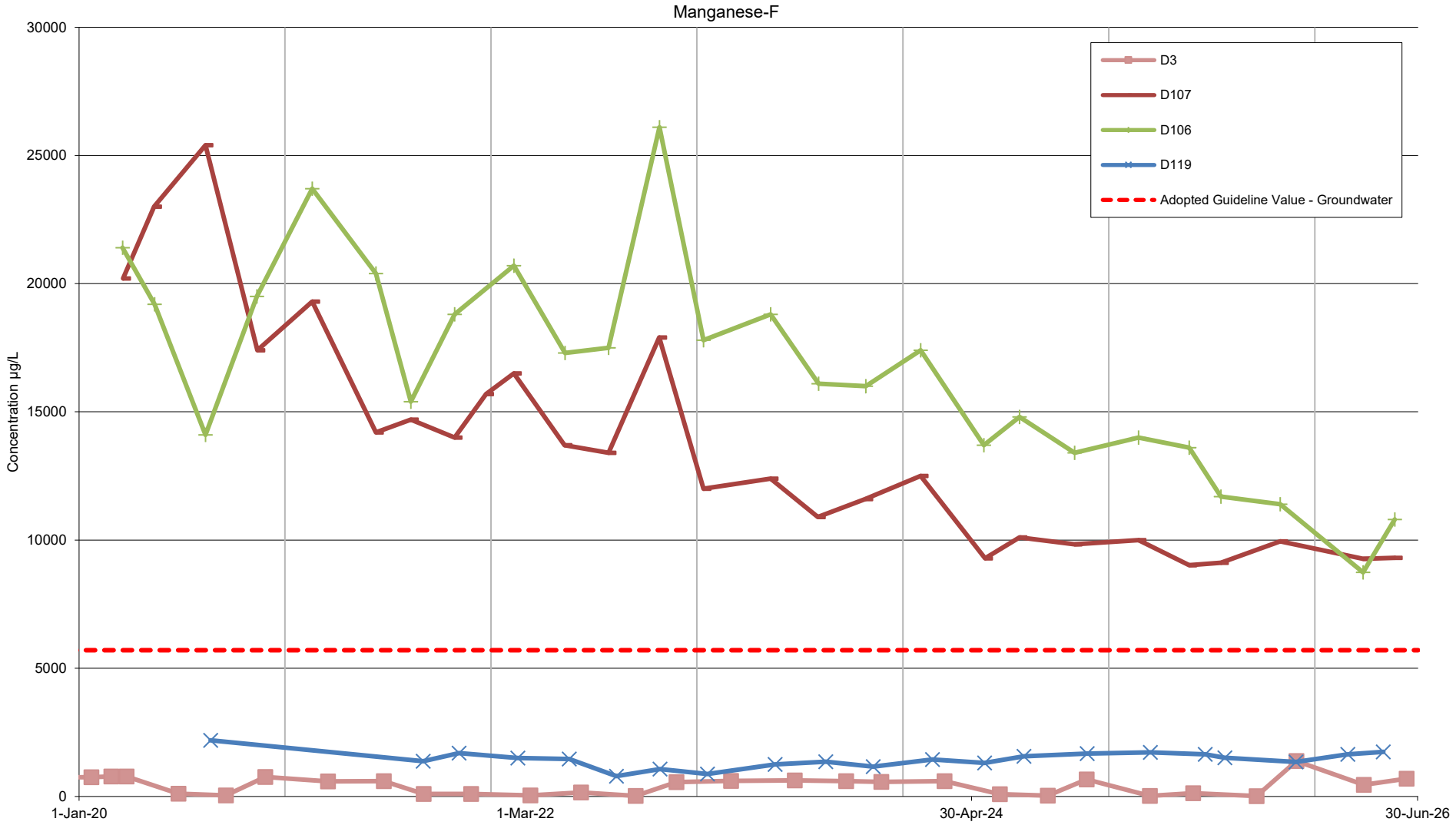
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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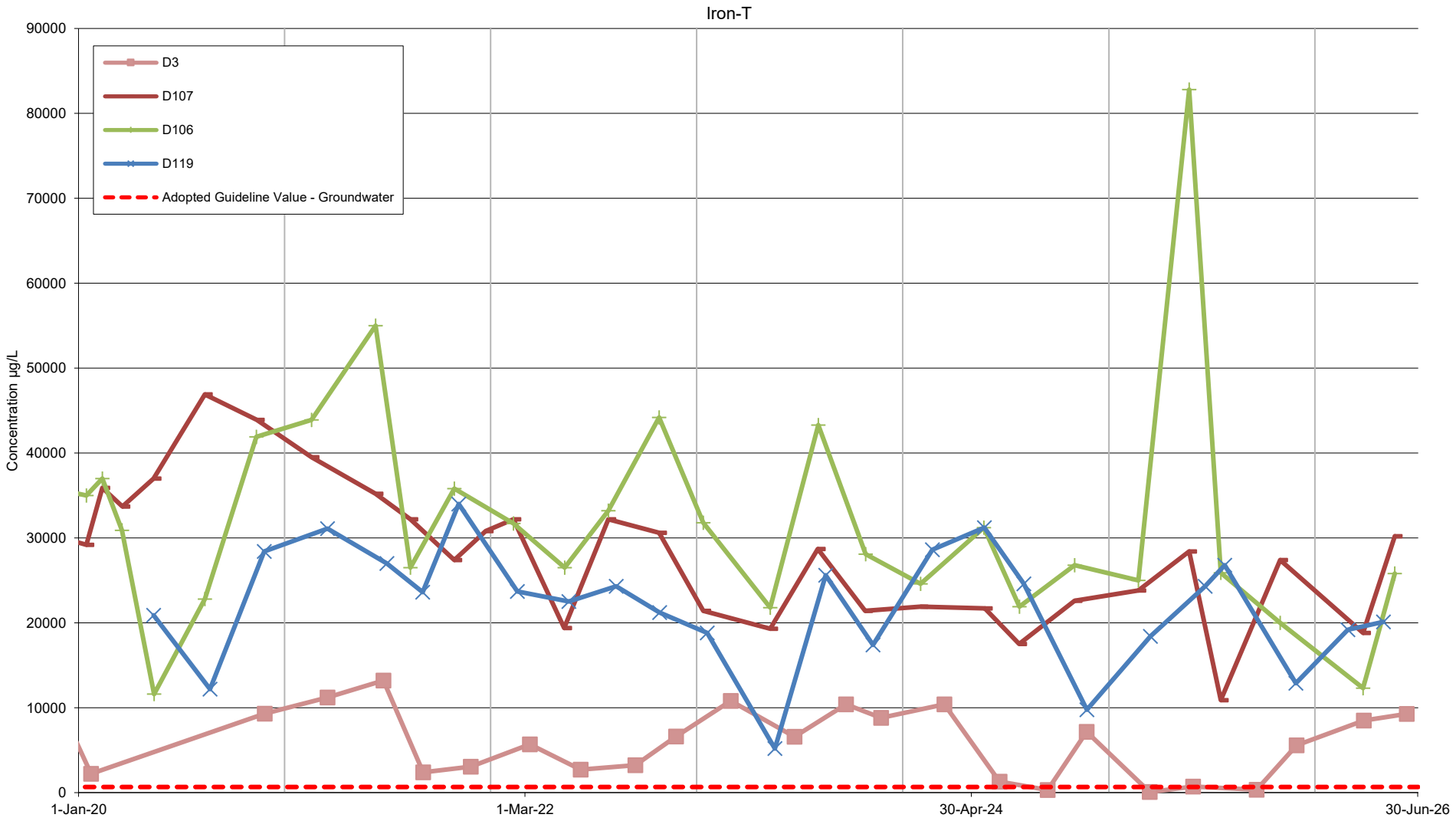
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



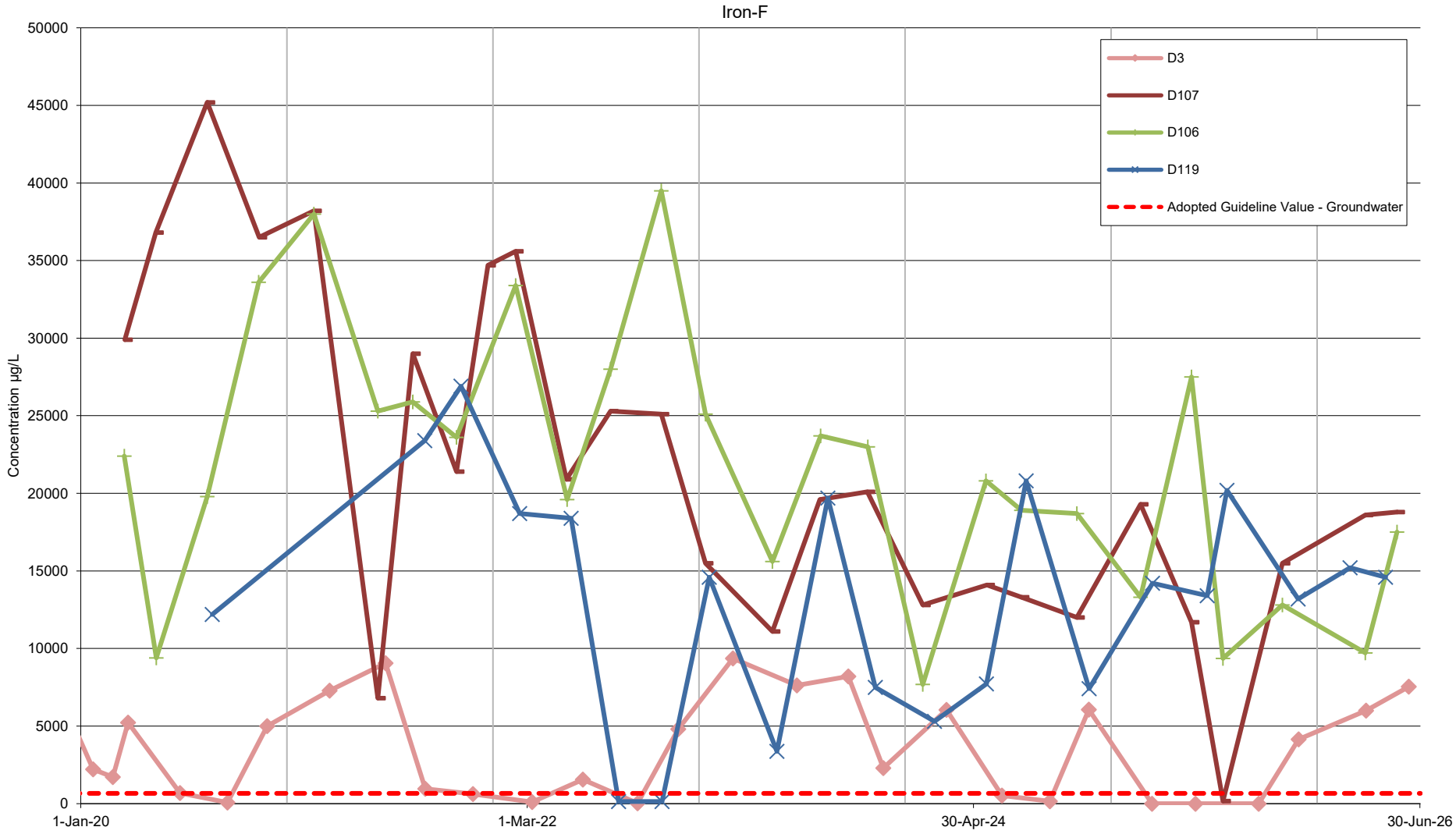
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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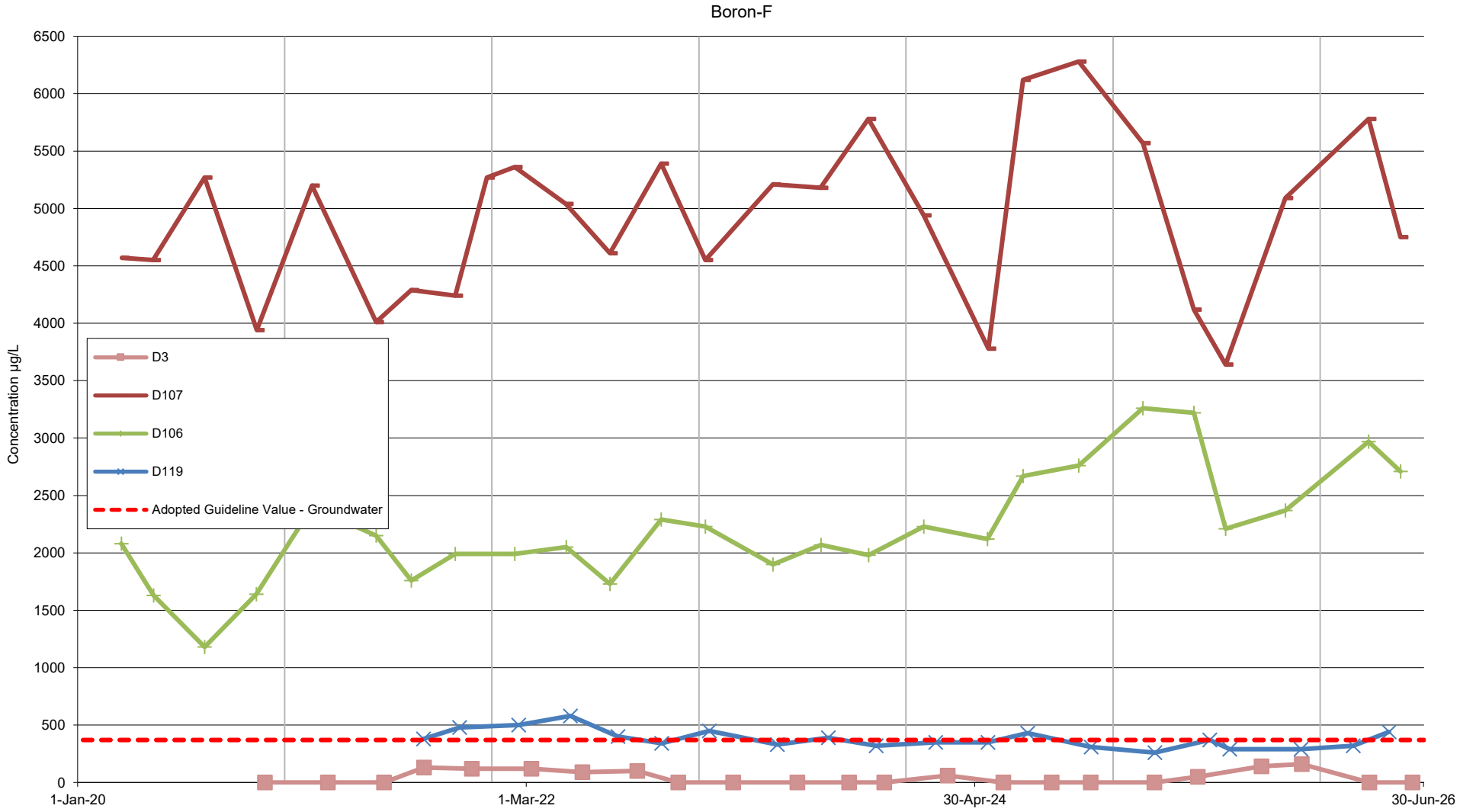
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Iron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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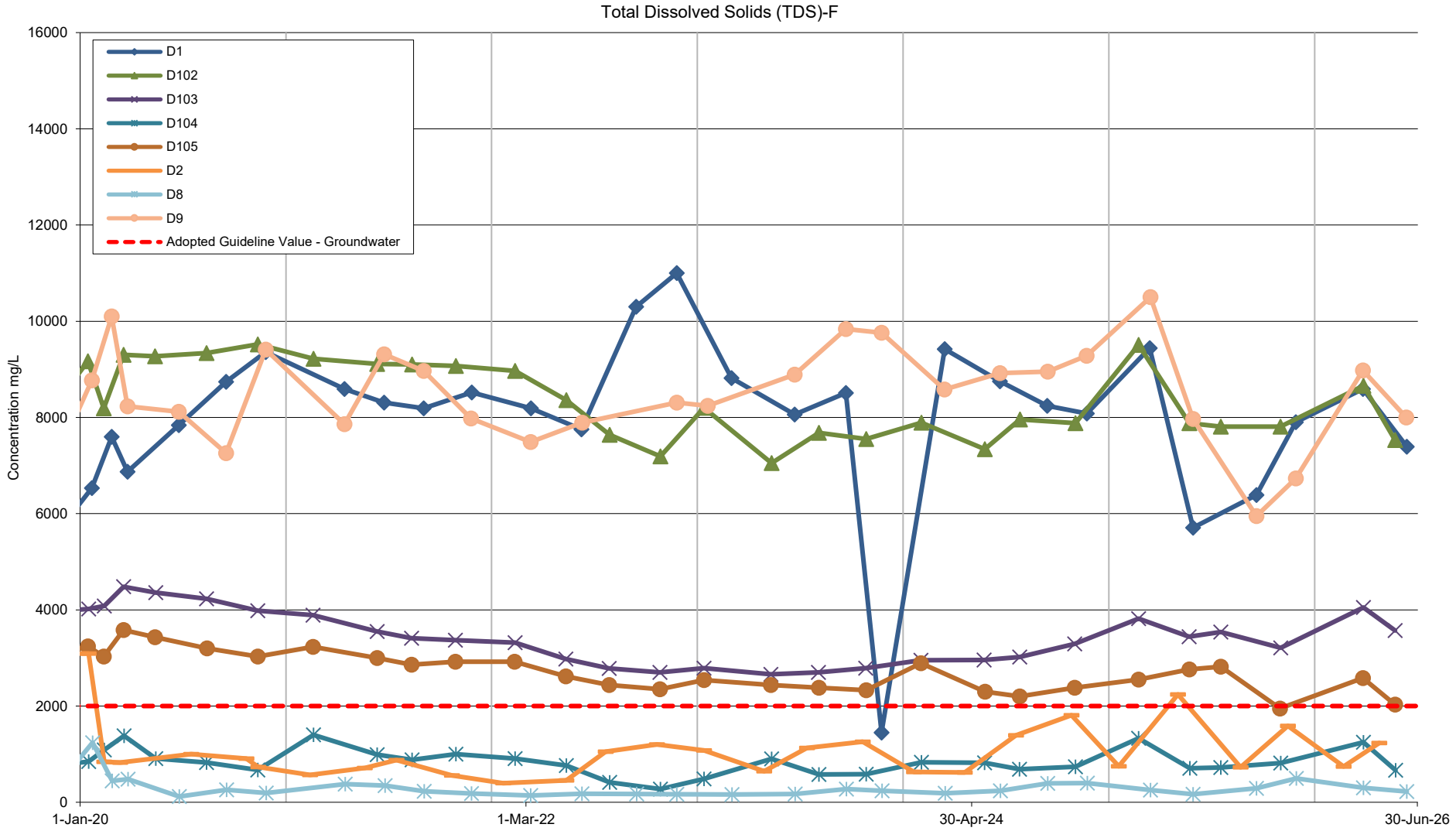
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Iron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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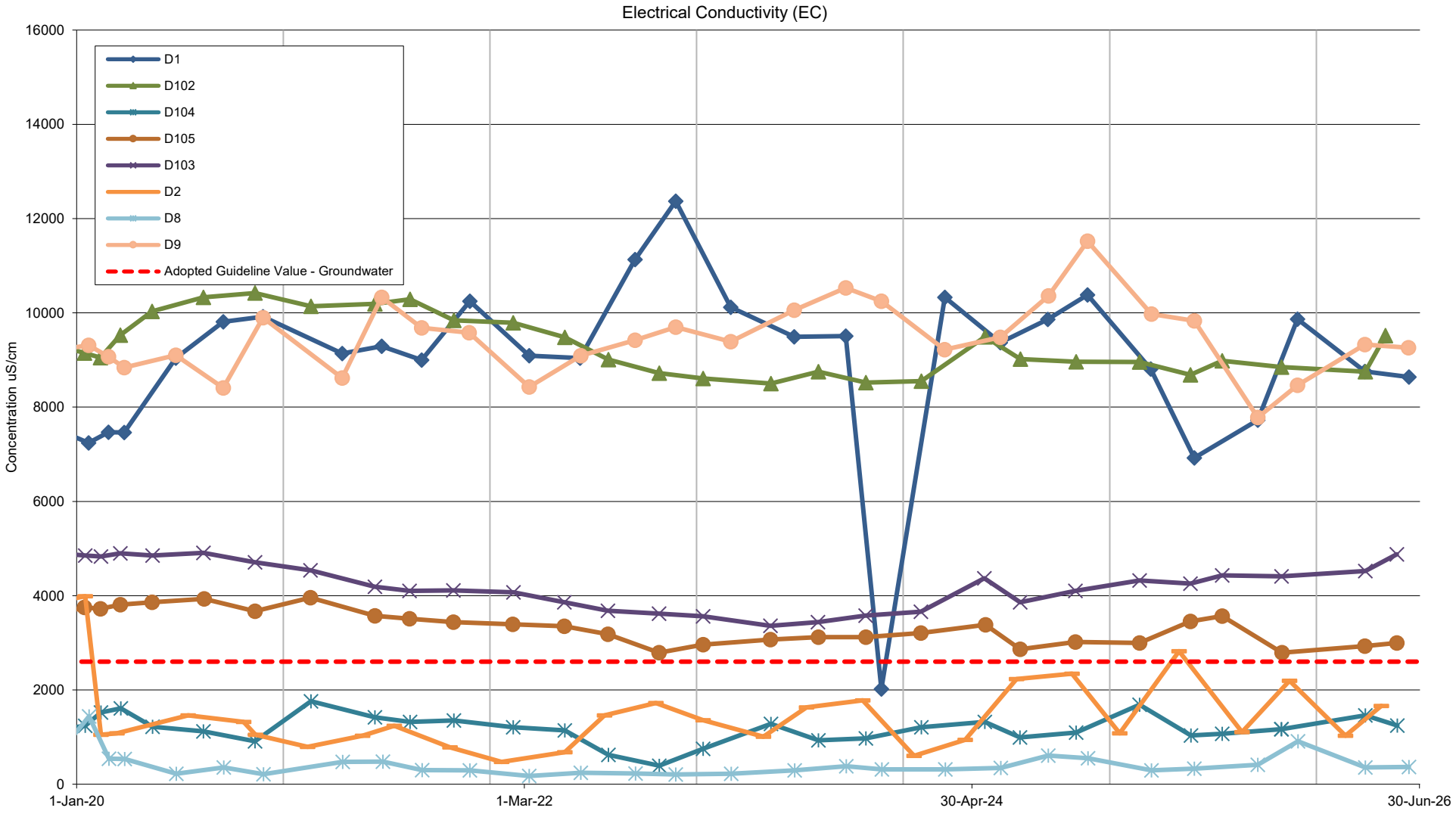
Appendix J. Cross-gradient MPAR / Adjacent MPAR North and Adjacent Wangcol Creek - Boron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



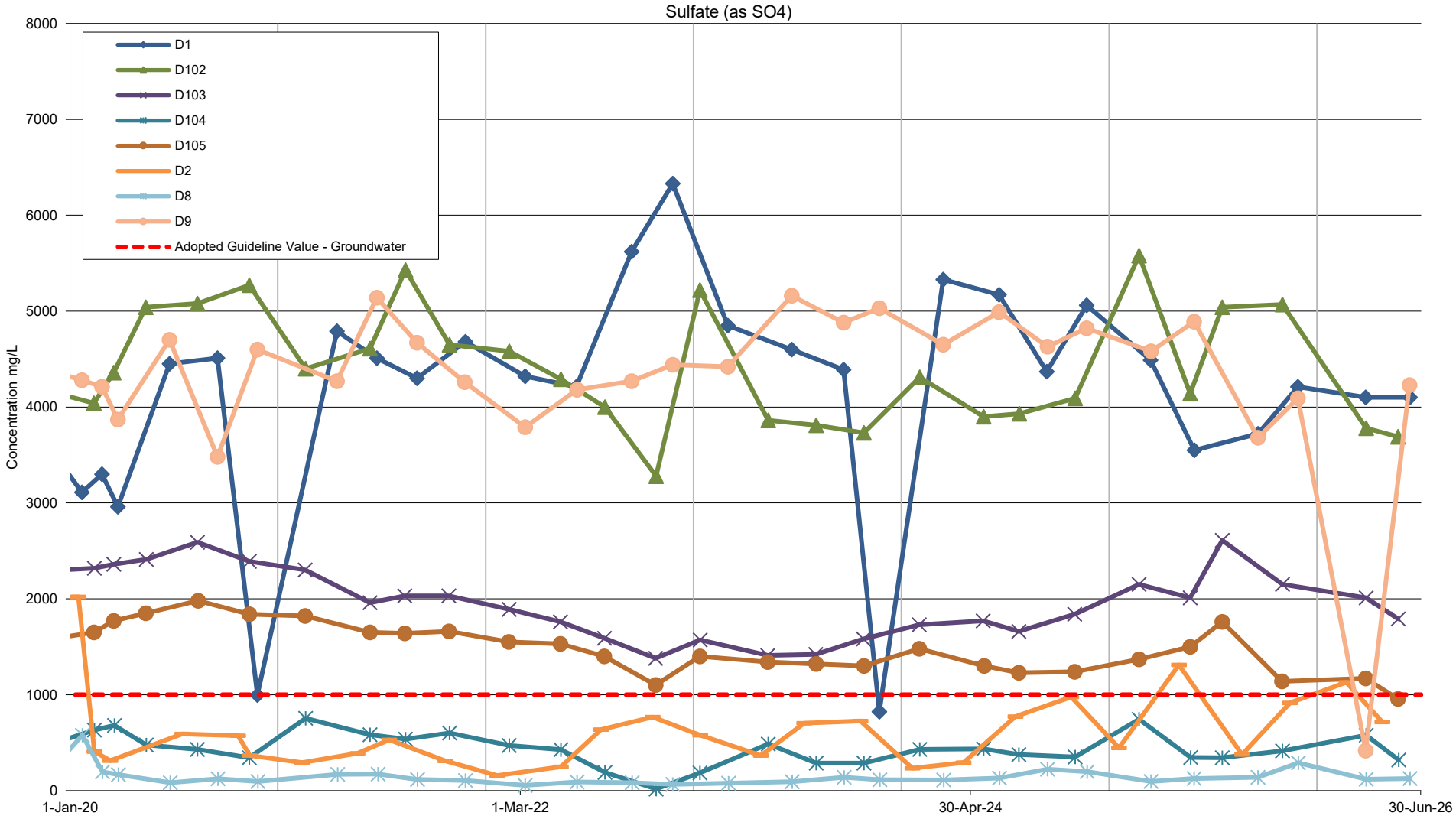
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - TDS Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



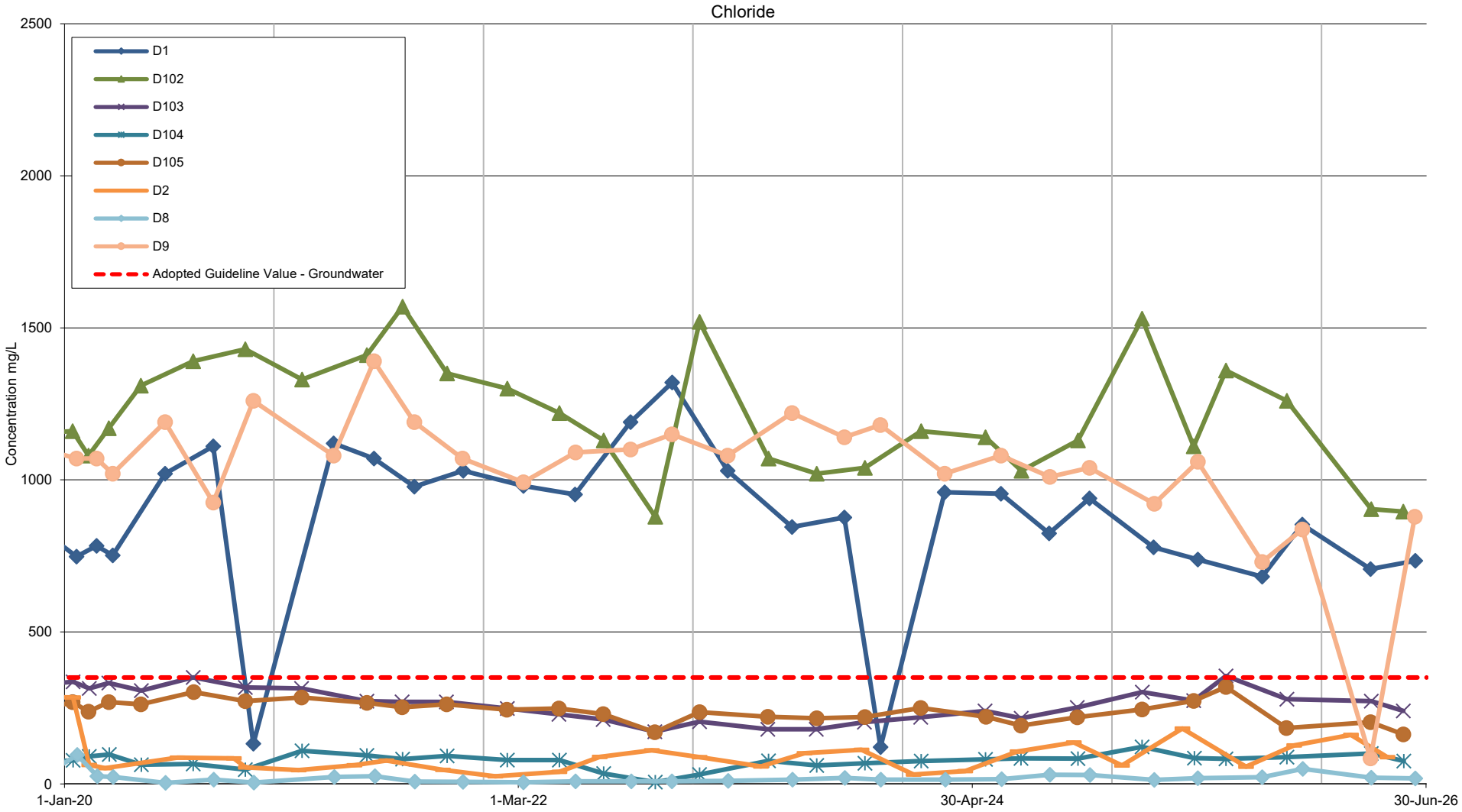
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - EC Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



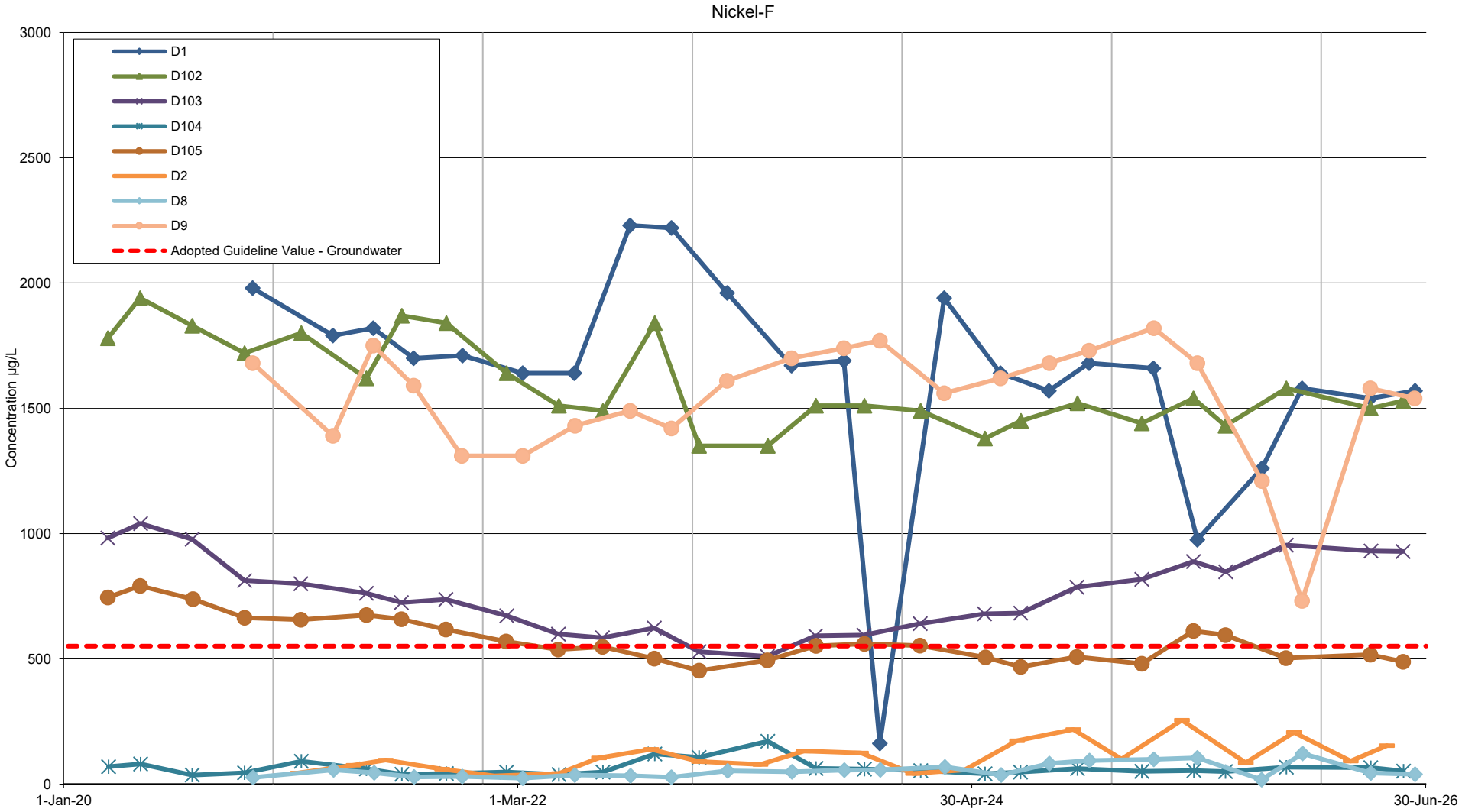
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Sulfate (as SO4) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



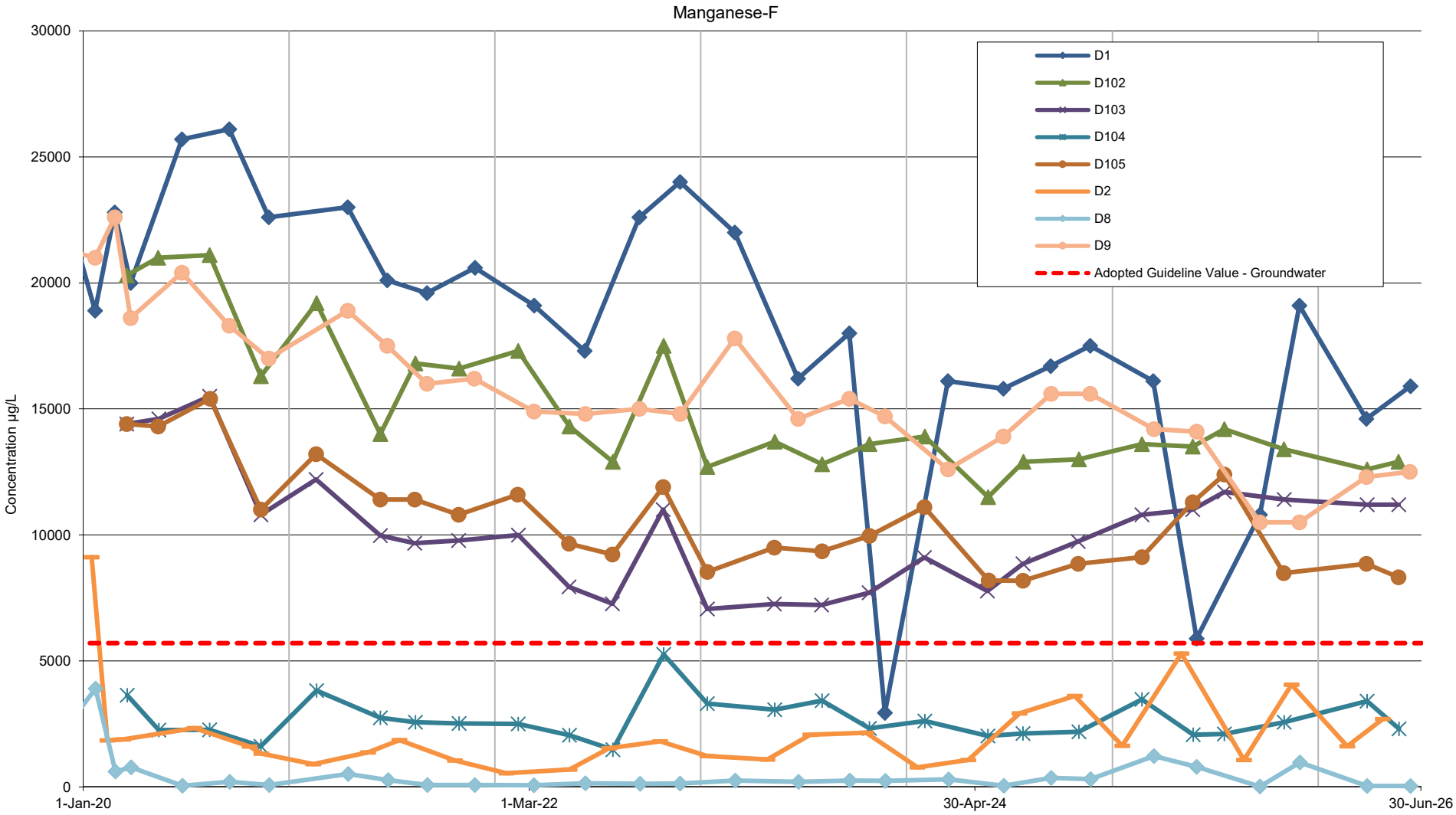
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



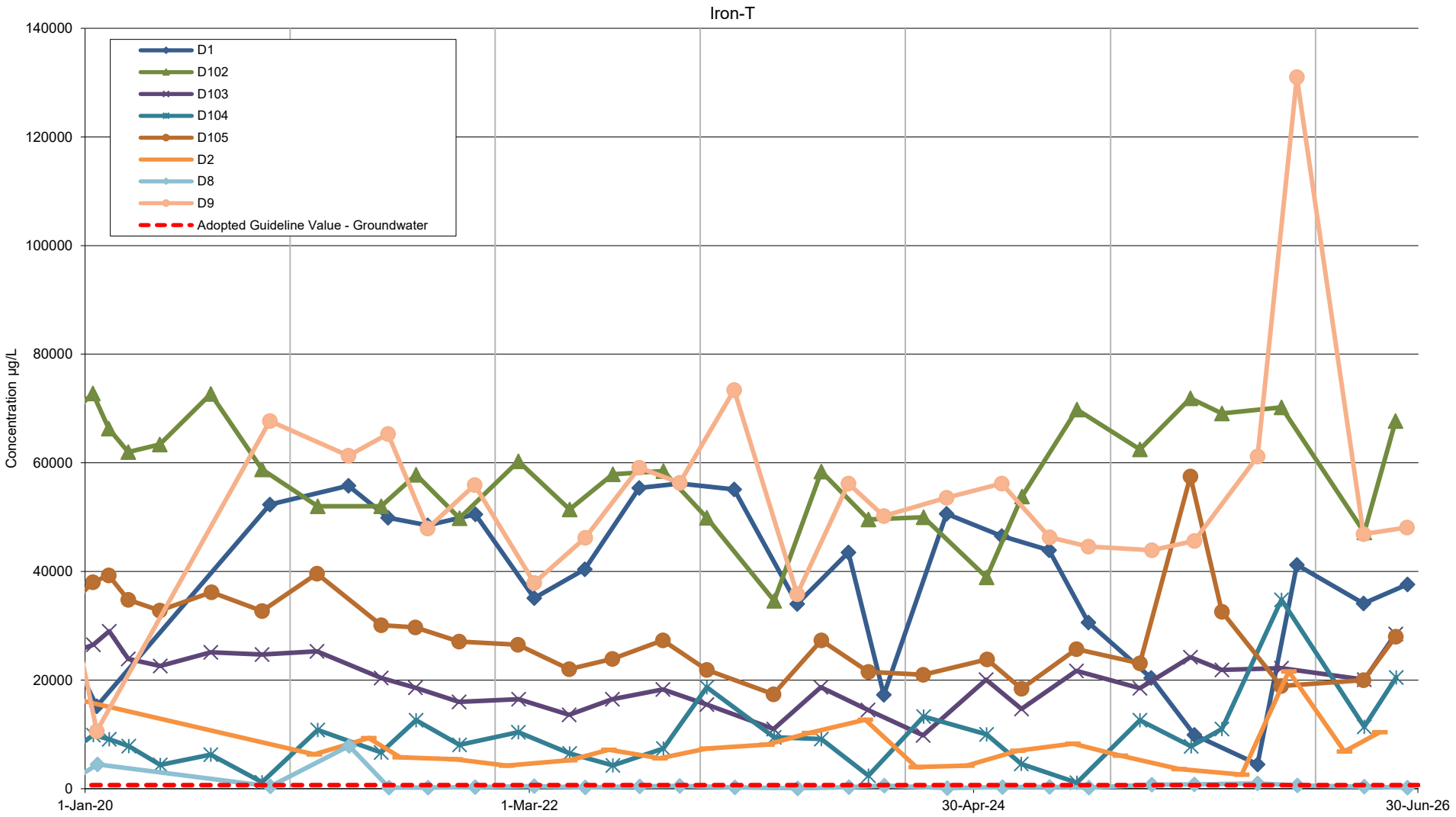
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



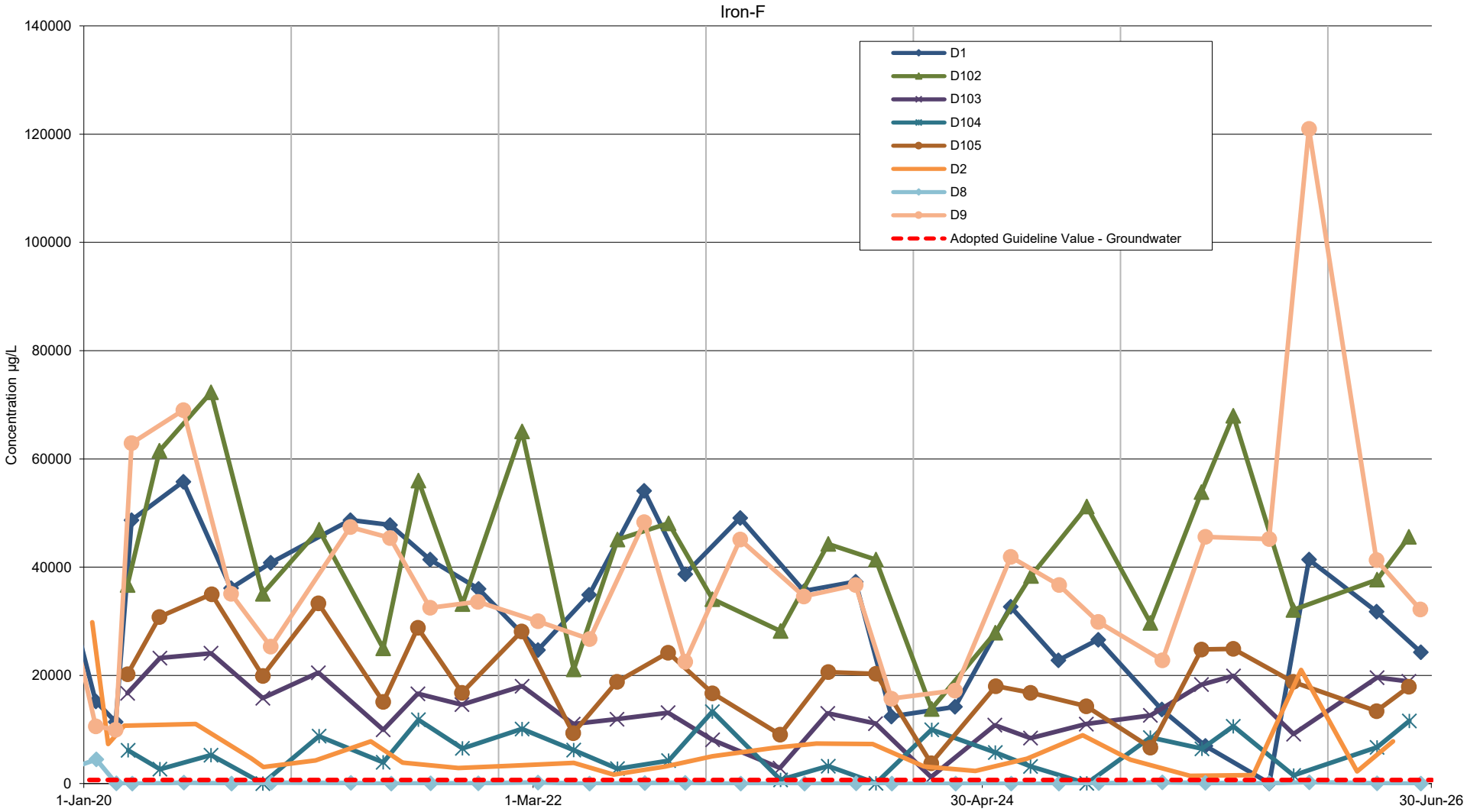
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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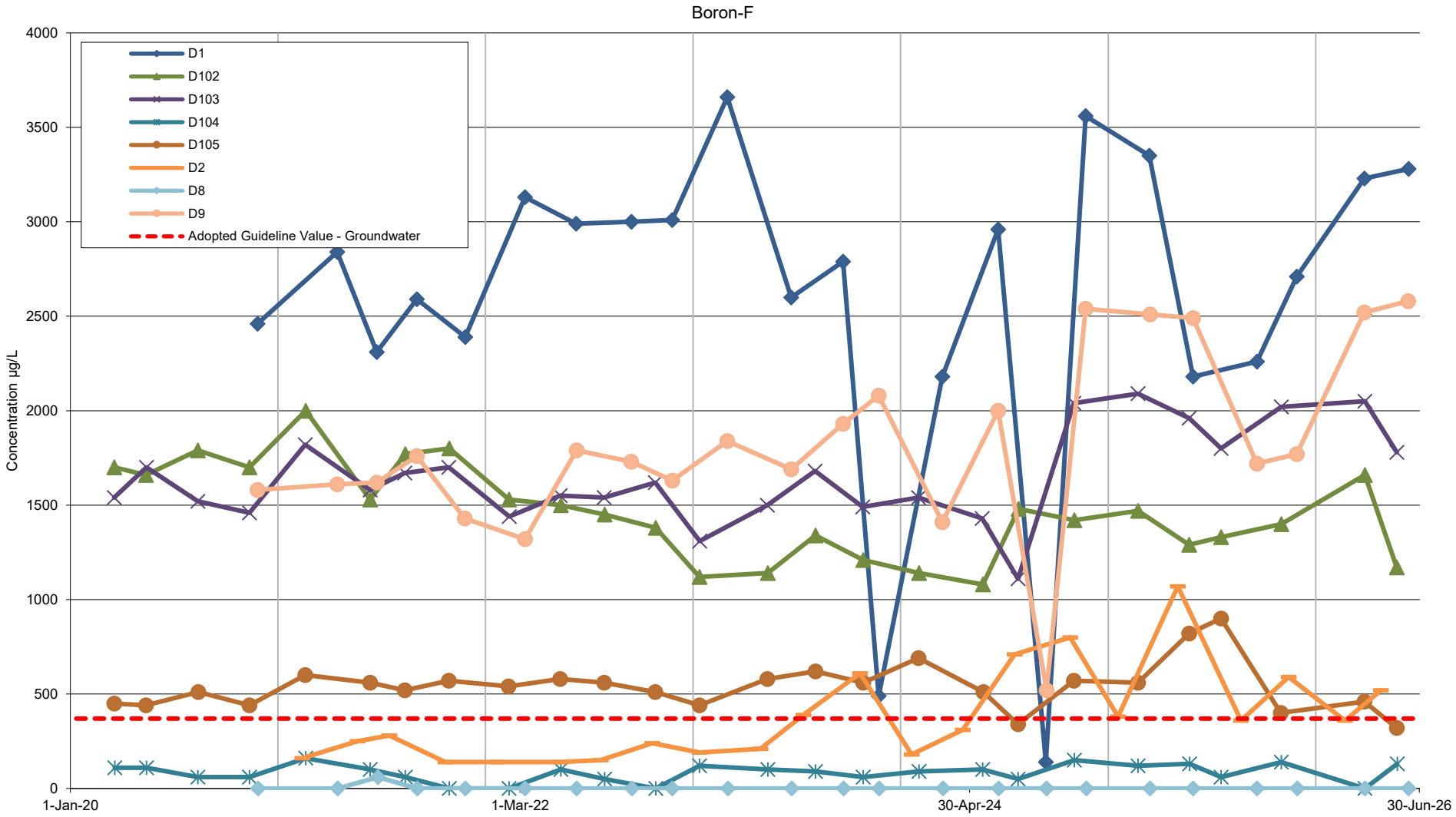
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Iron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



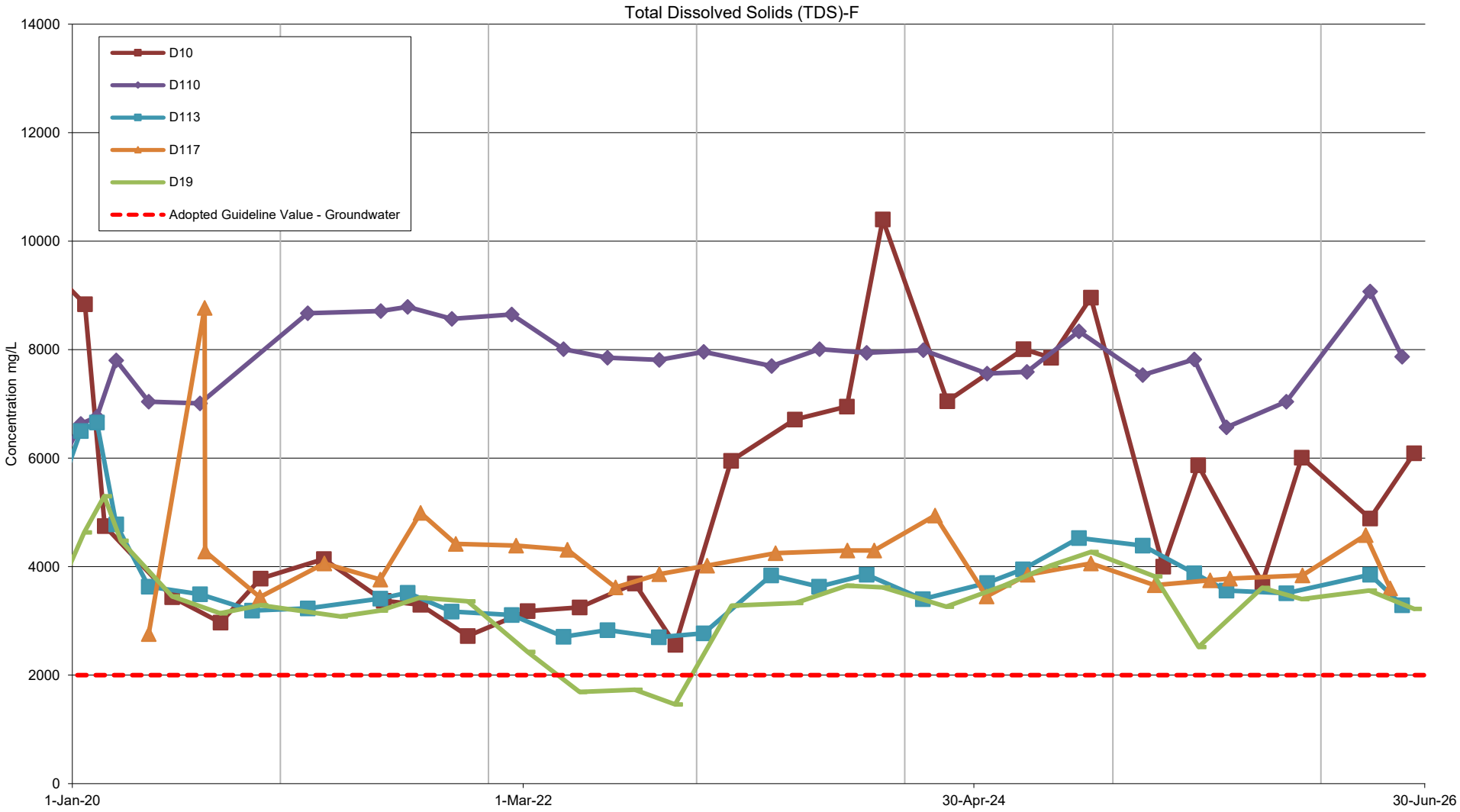
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Iron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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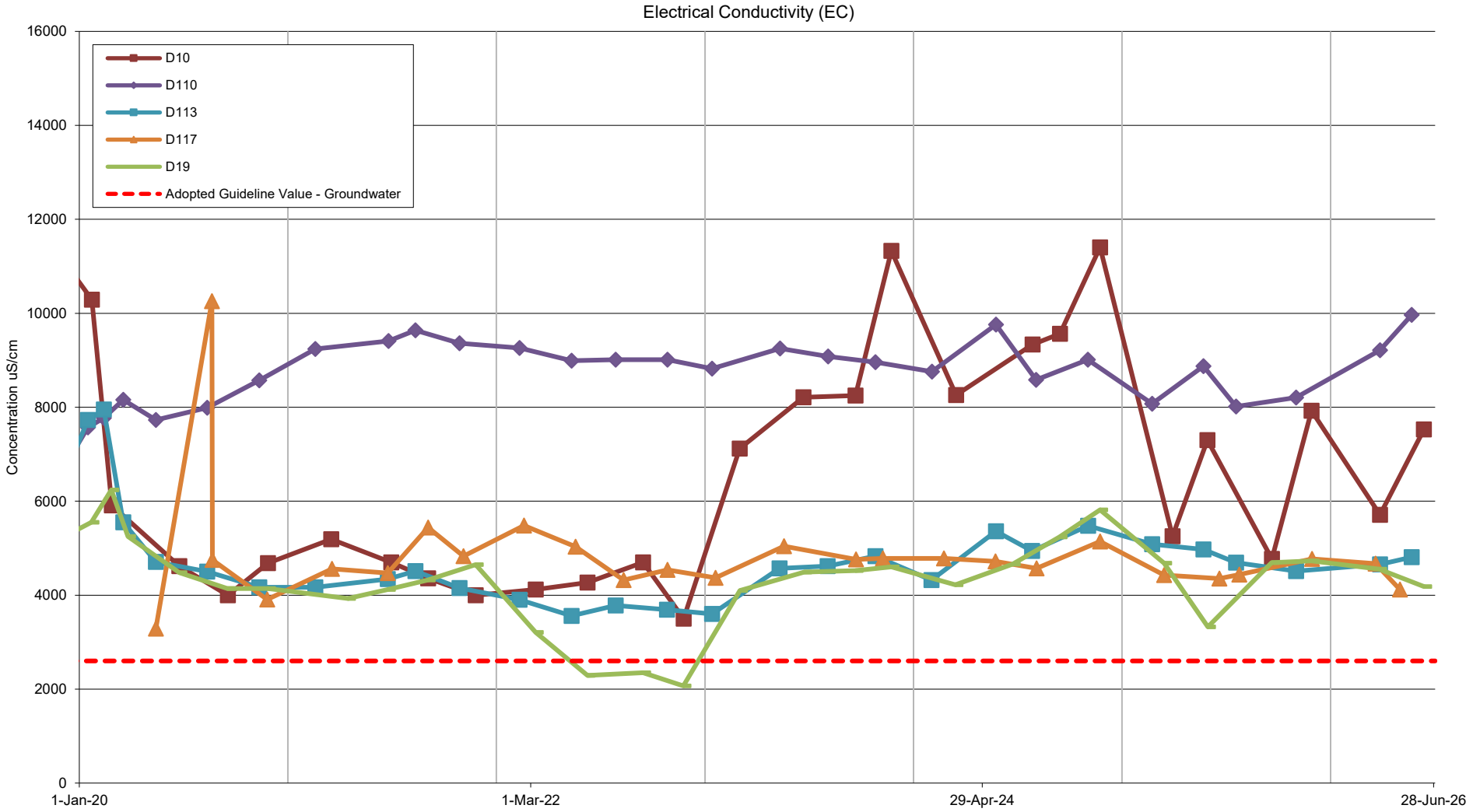
Appendix J. Downgradient MPAR, areas Adjacent to Wangcol Creek - Boron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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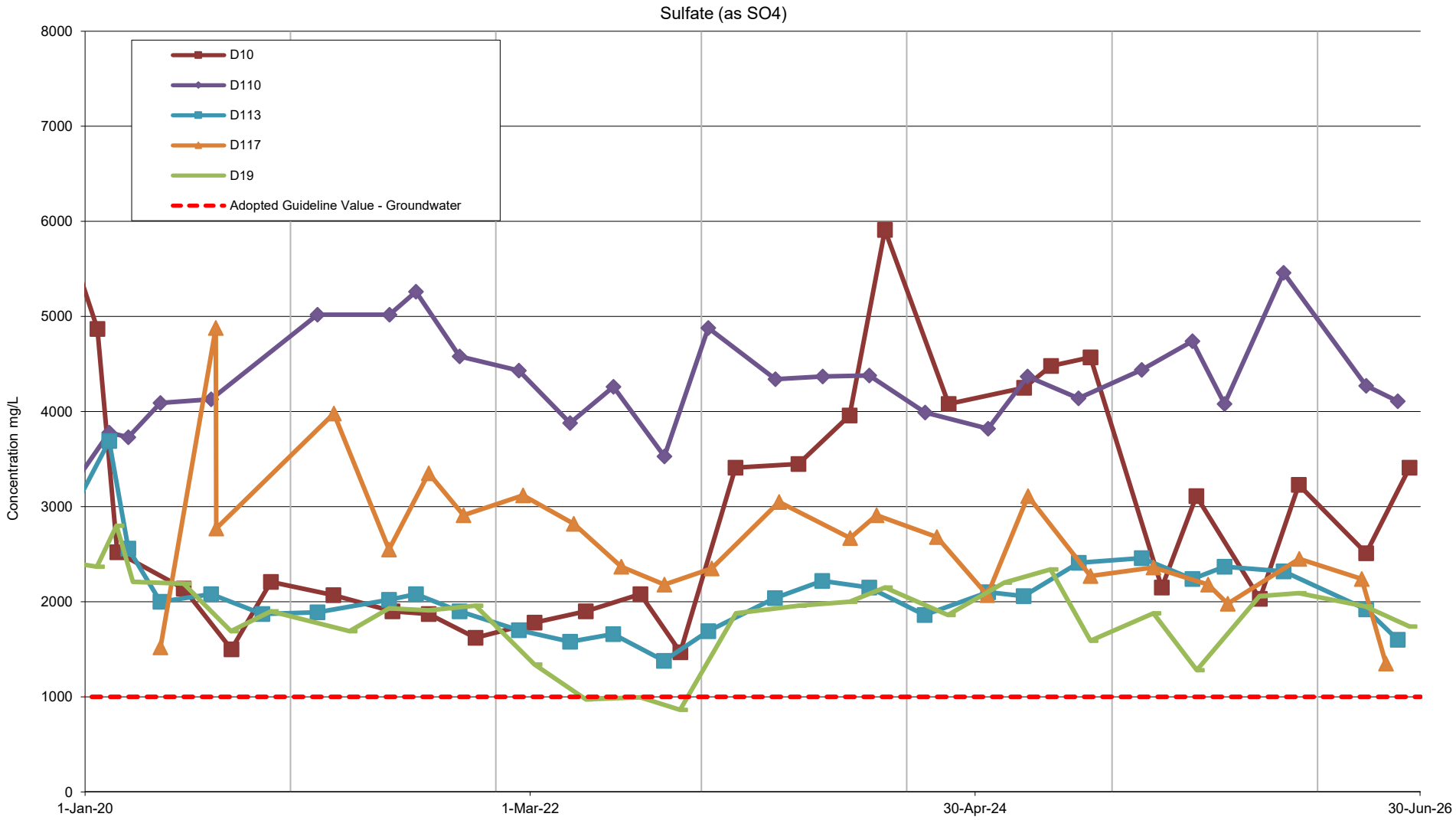
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - TDS Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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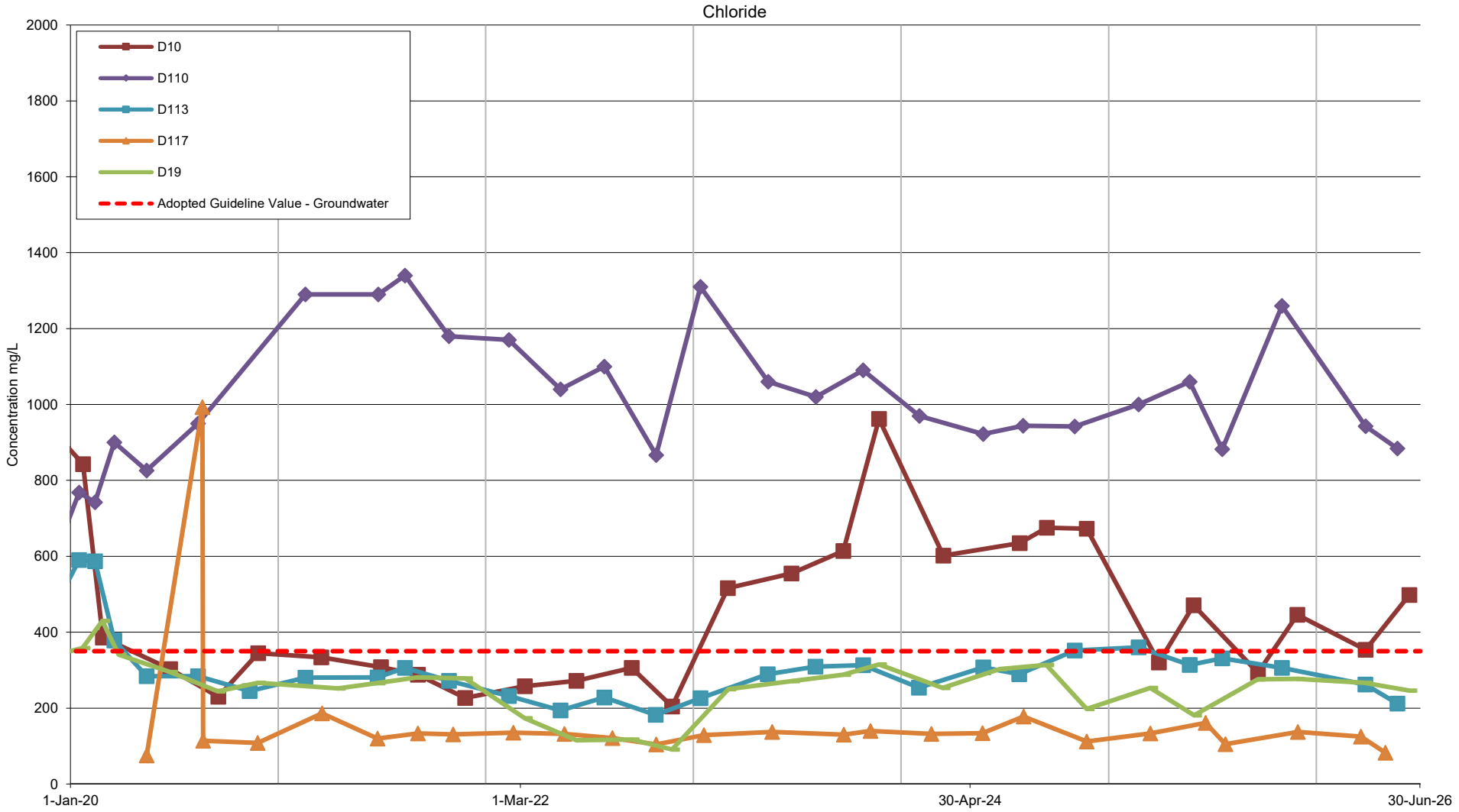
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - EC Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



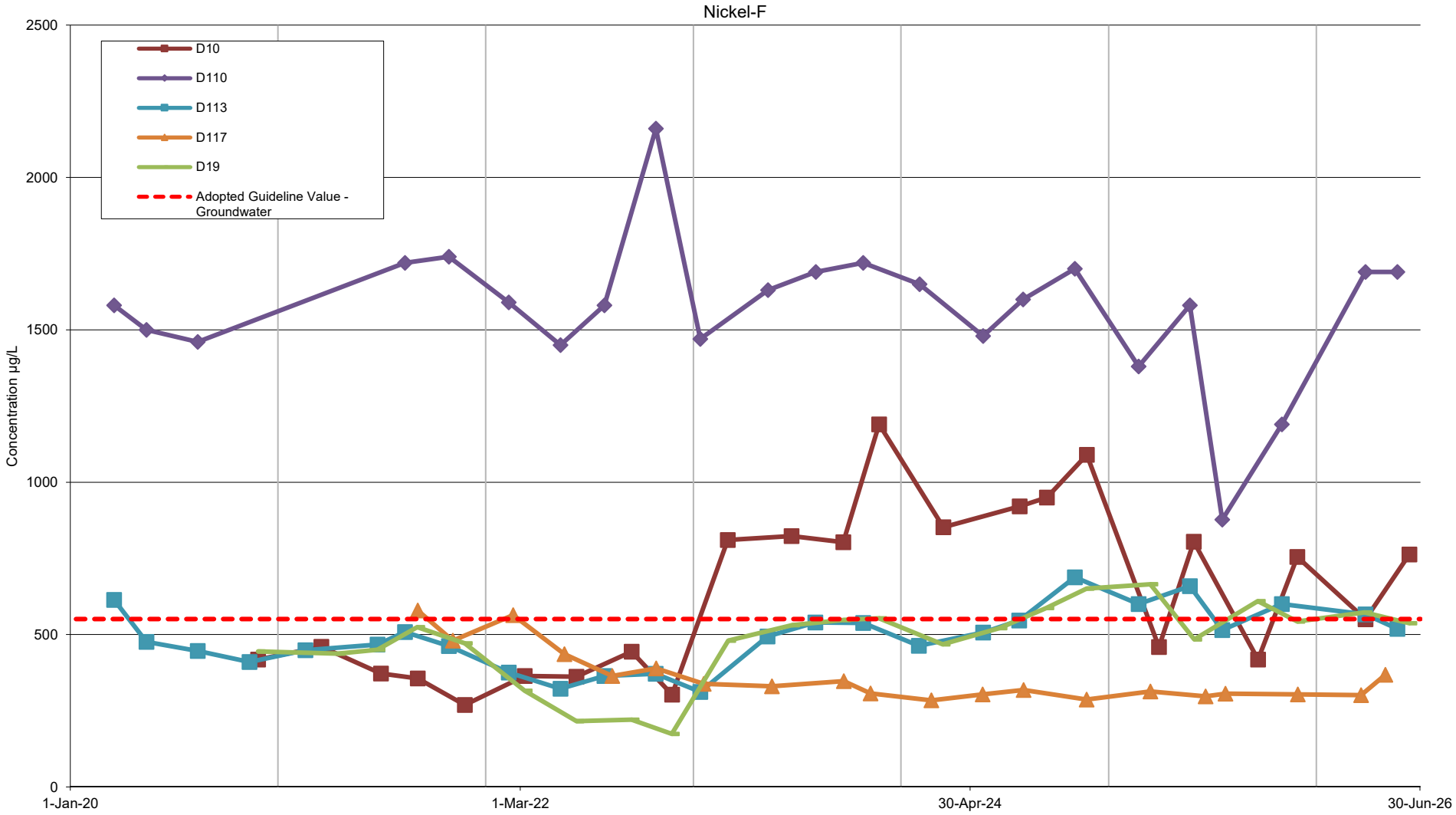
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Sulfate (as SO4) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



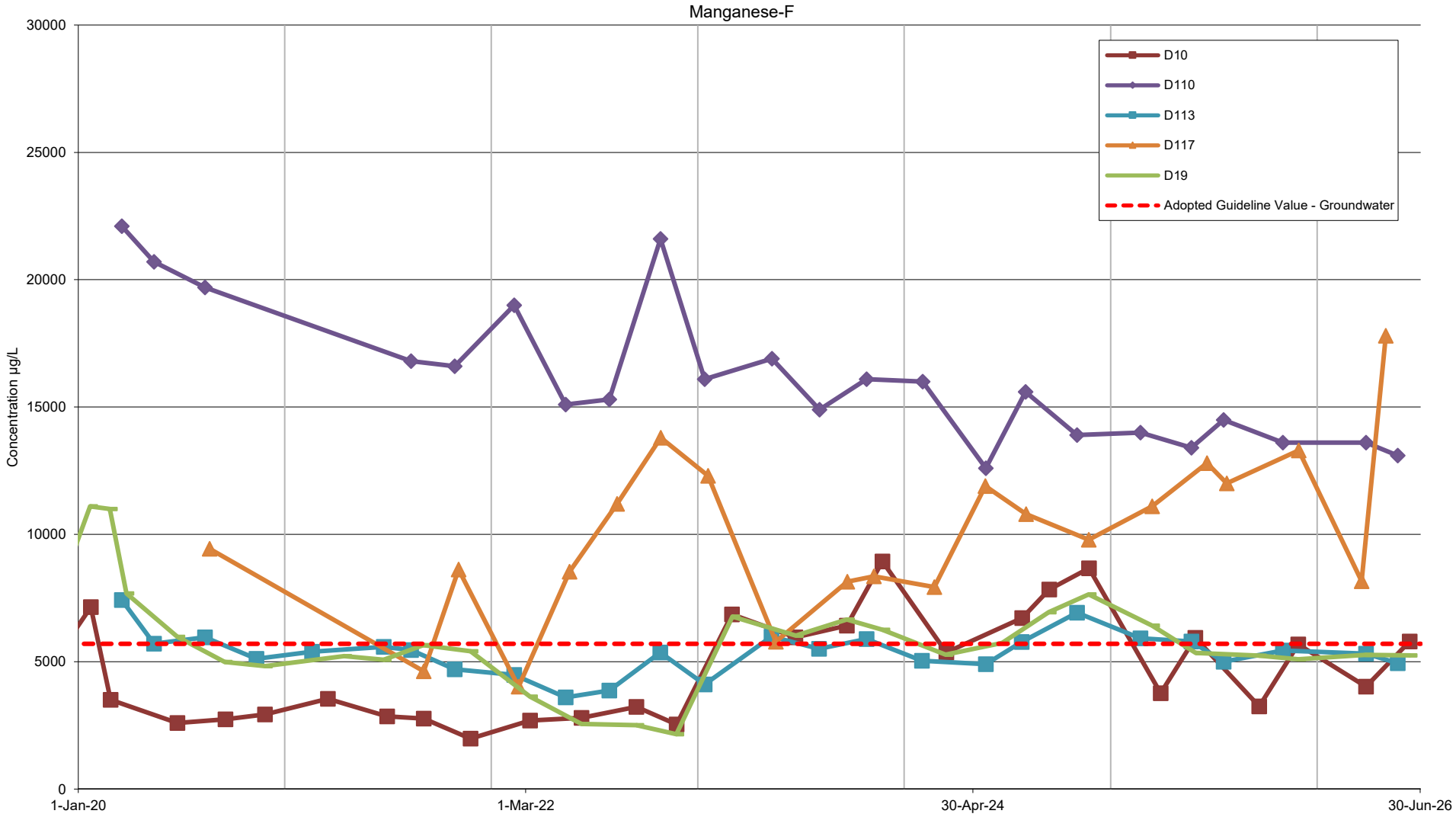
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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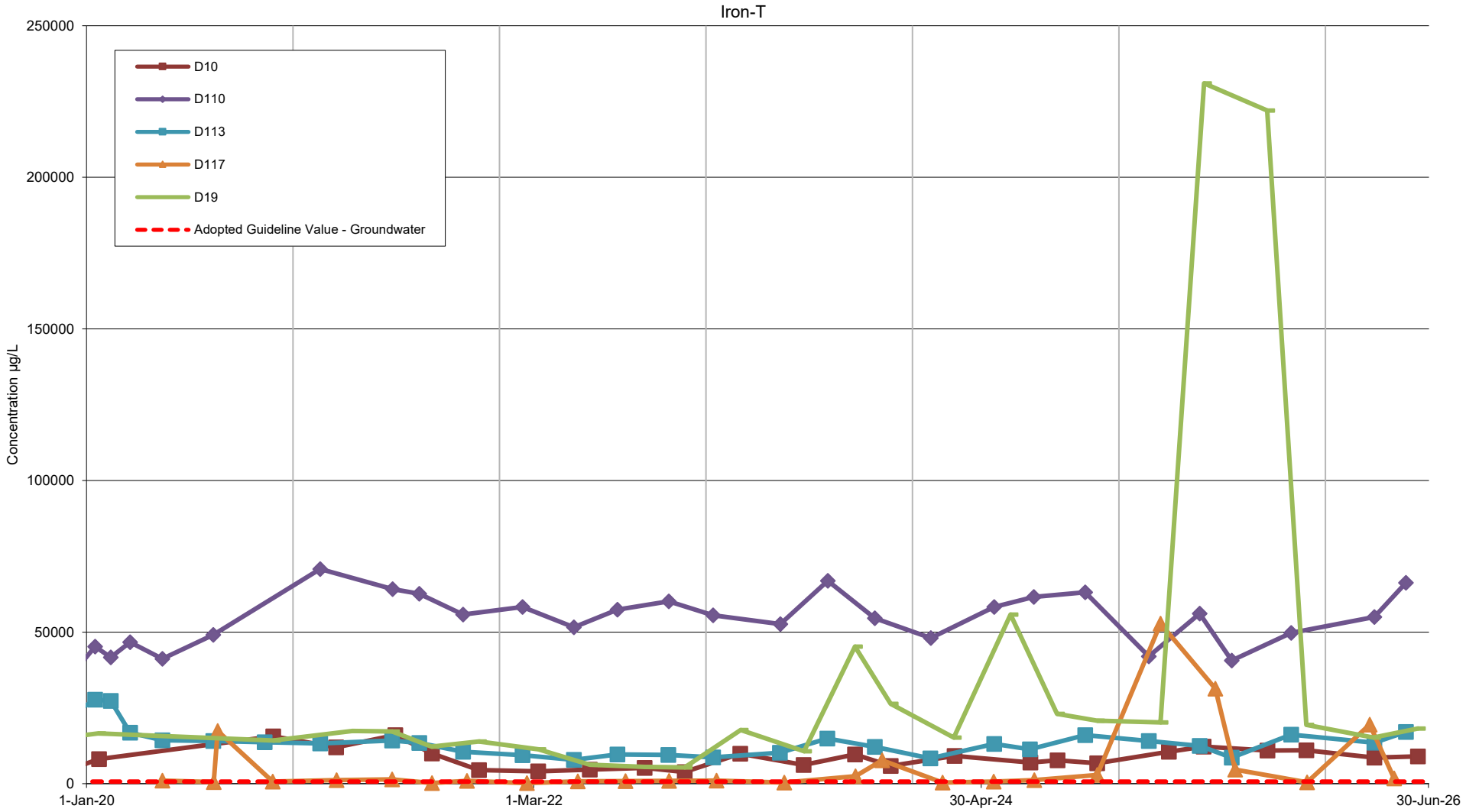
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



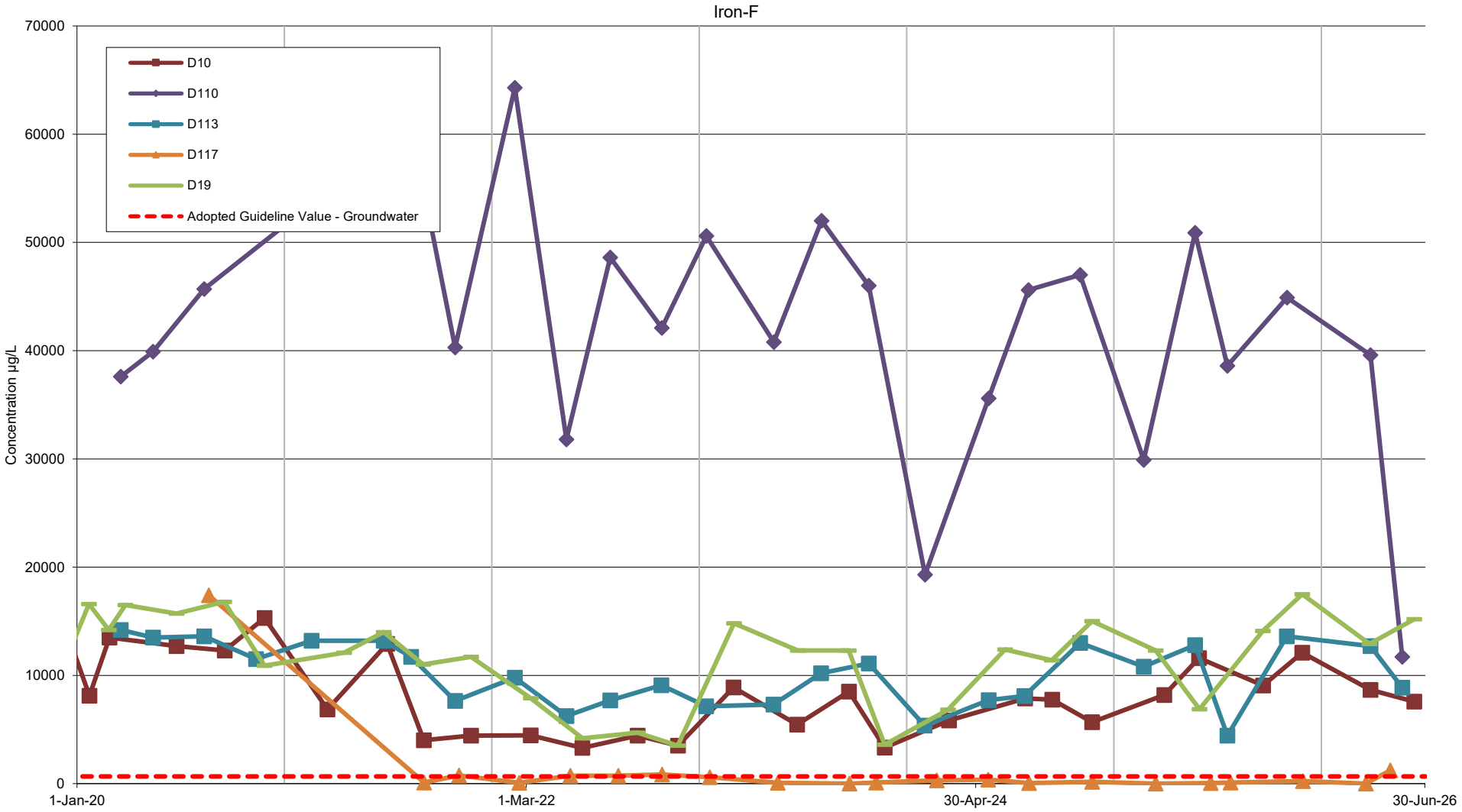
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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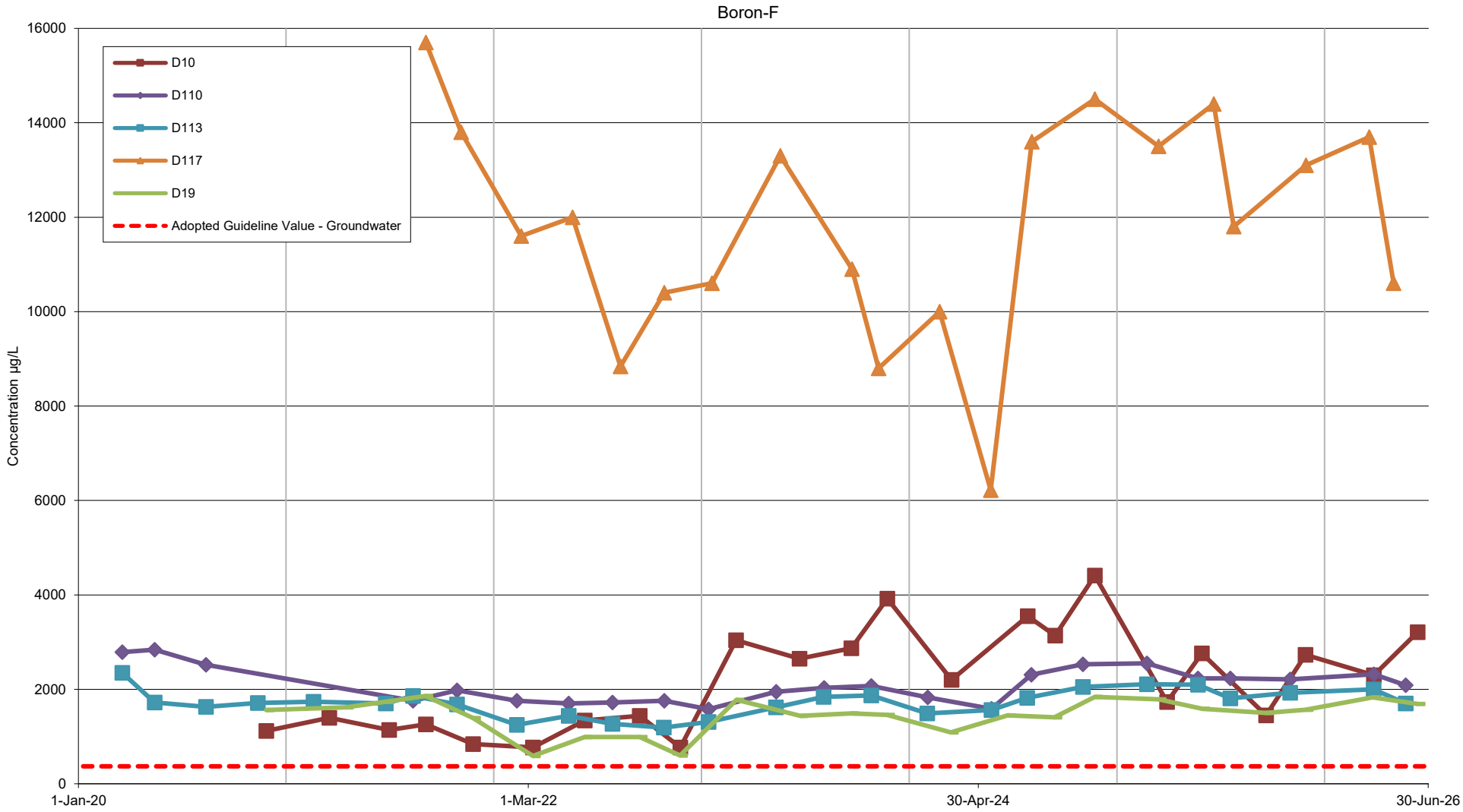
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Iron (Total) Concentrations Over Time
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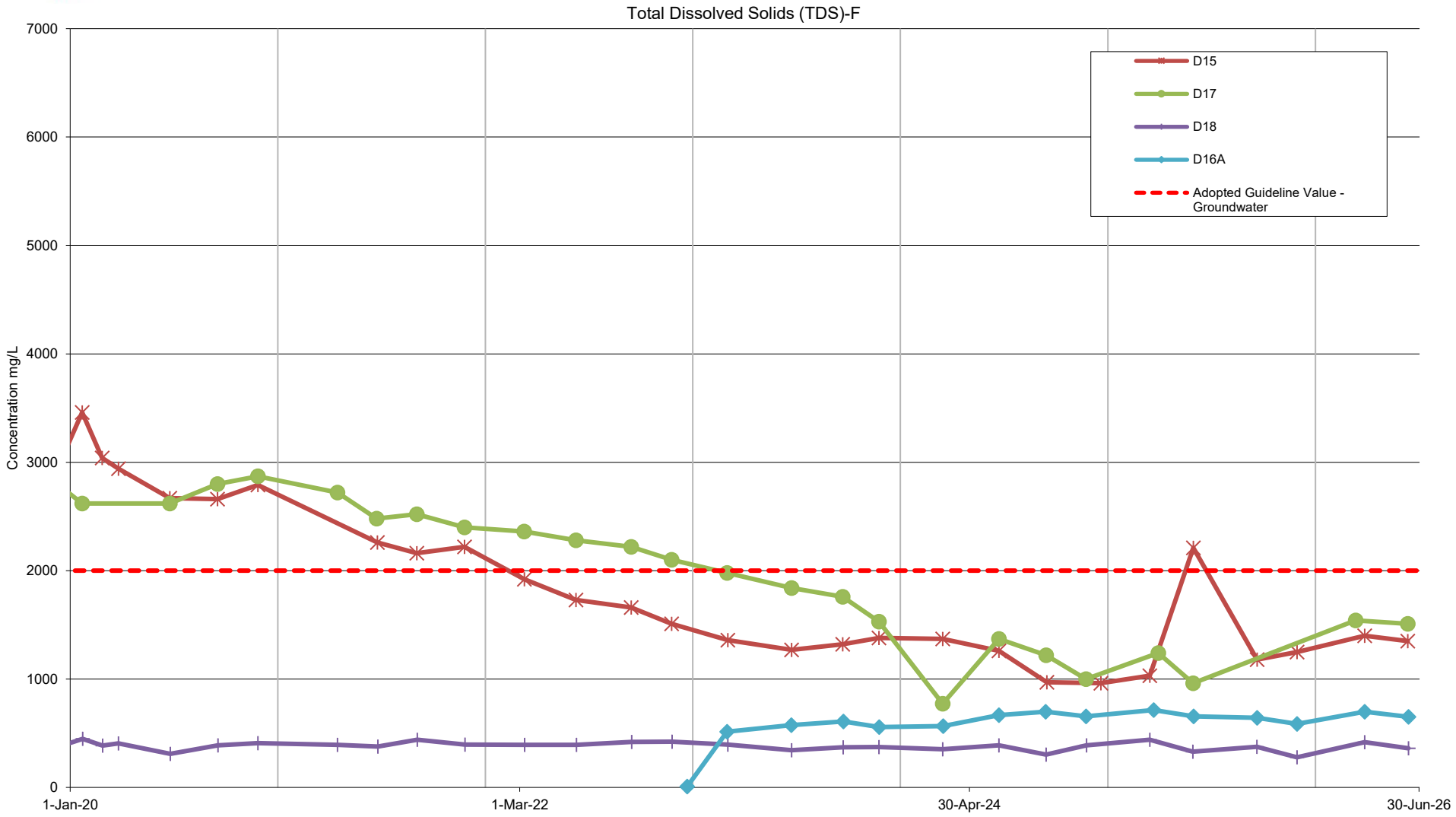
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Iron (Filtered) Concentrations Over Time
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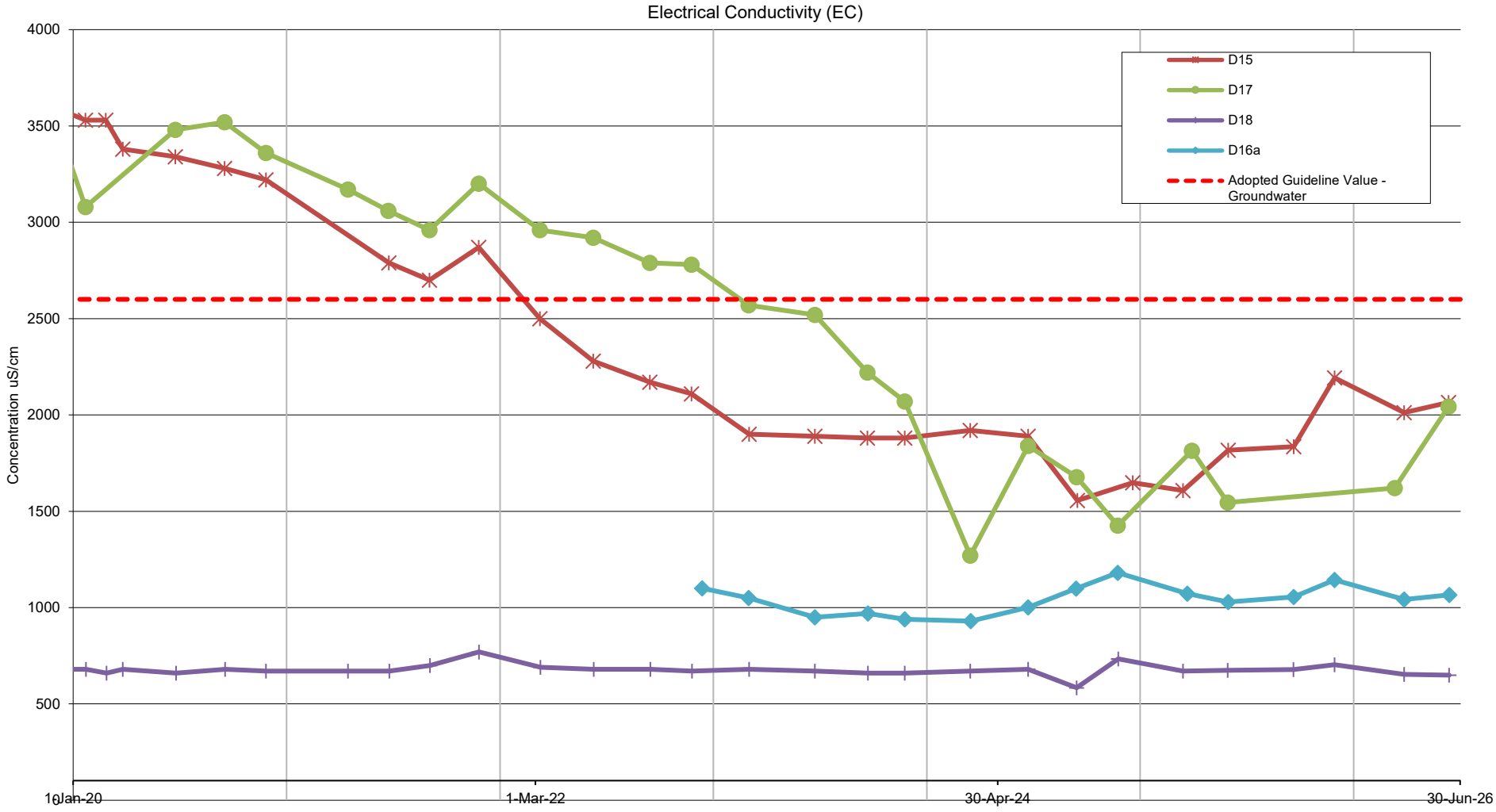
Appendix J. Downgradient MPAR, LNAR (North) and Historical Mining Disturbance (East) - Boron (Filtered) Concentrations Over Time
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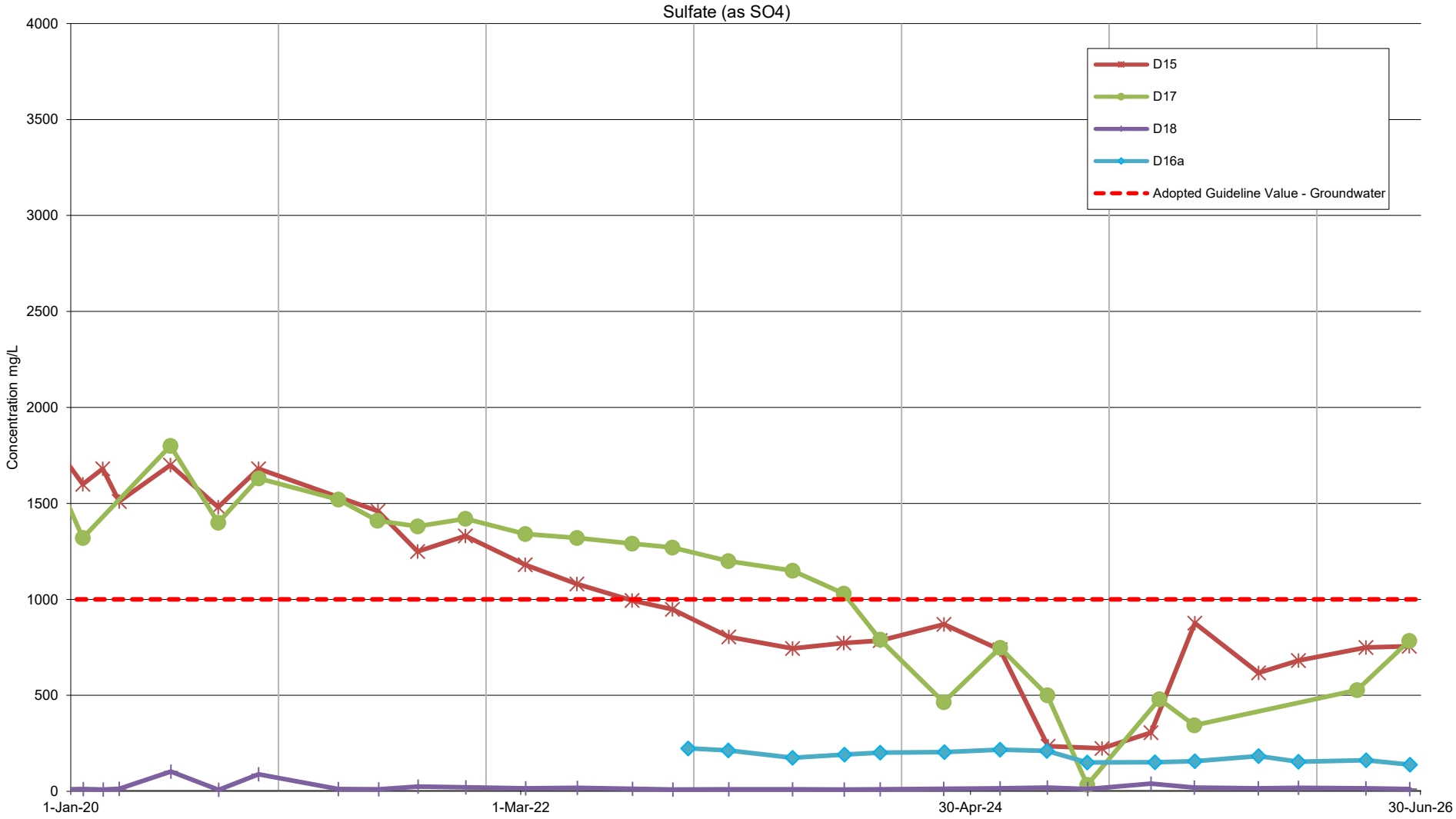
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - TDS Concentrations Over Time
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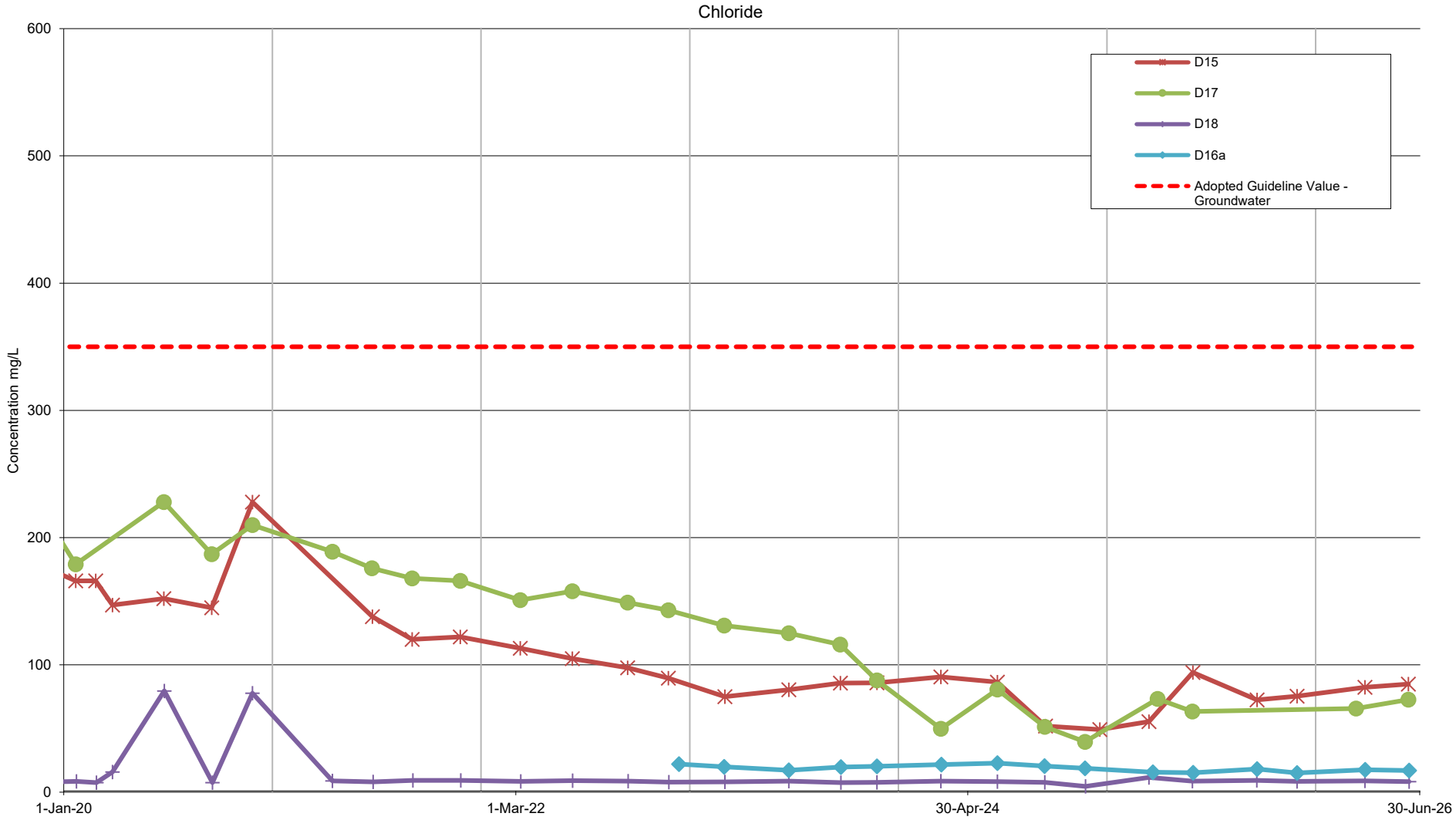
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - EC Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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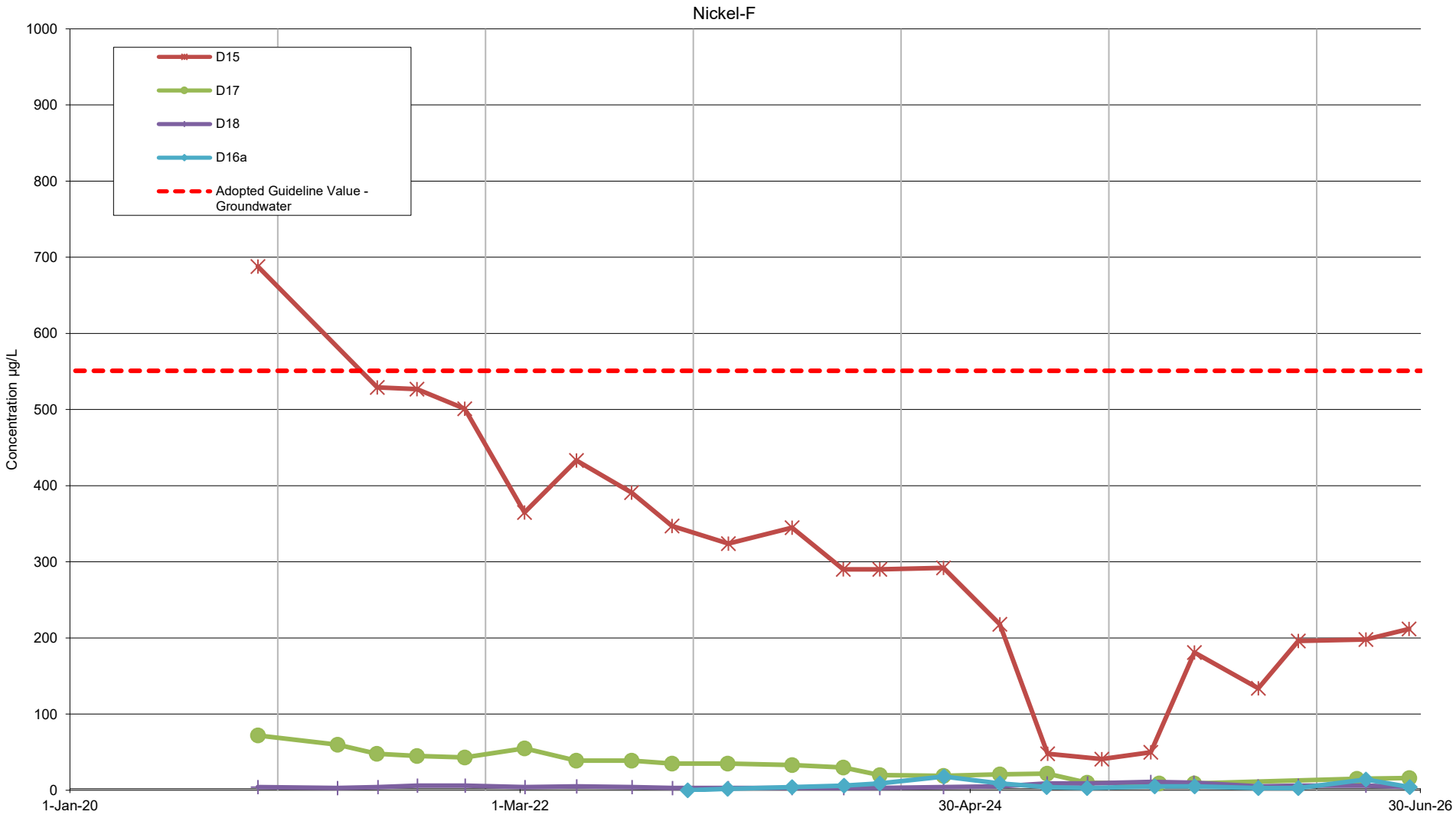
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Sulfate (as SO4) Concentrations Over Time
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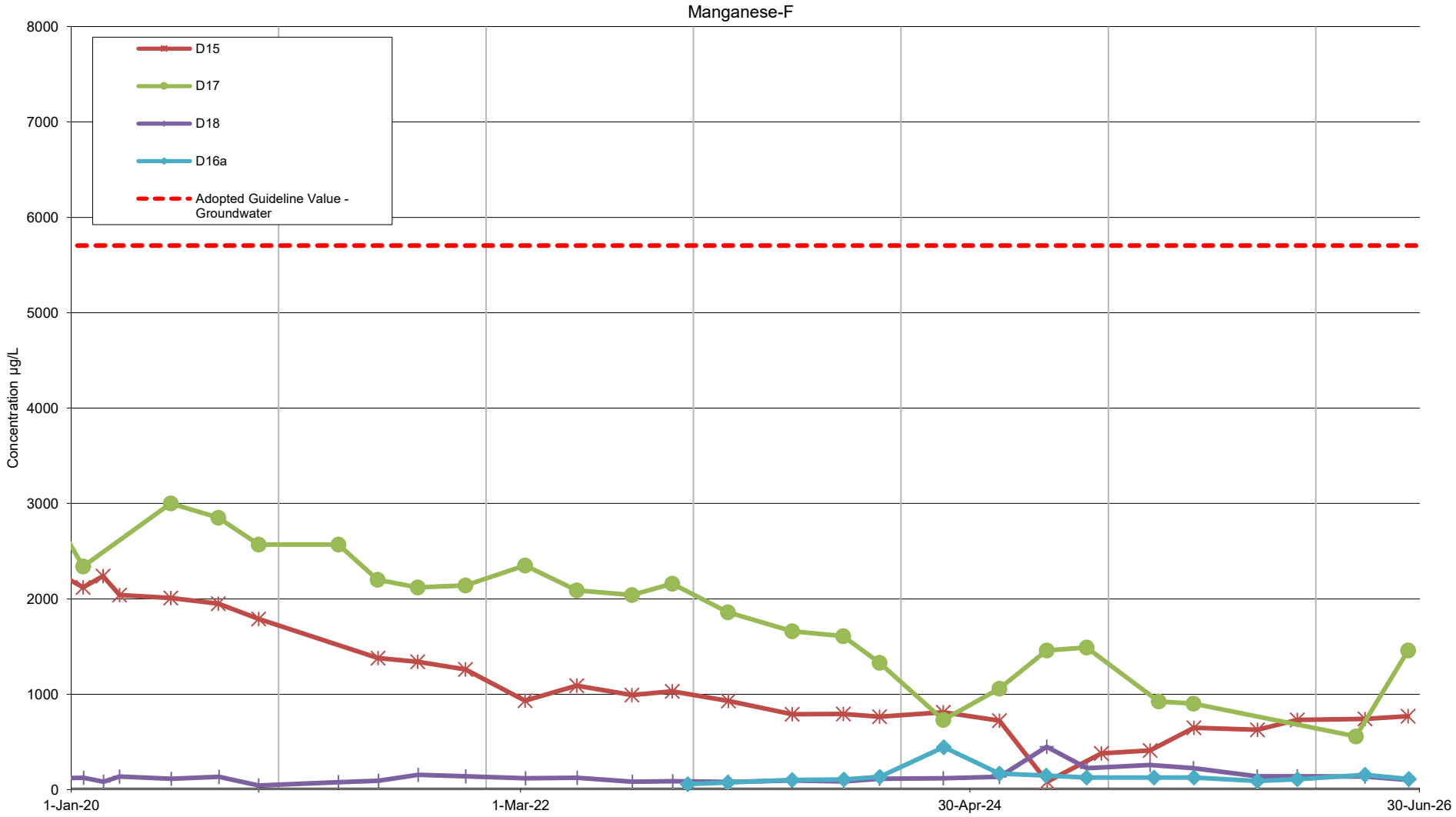
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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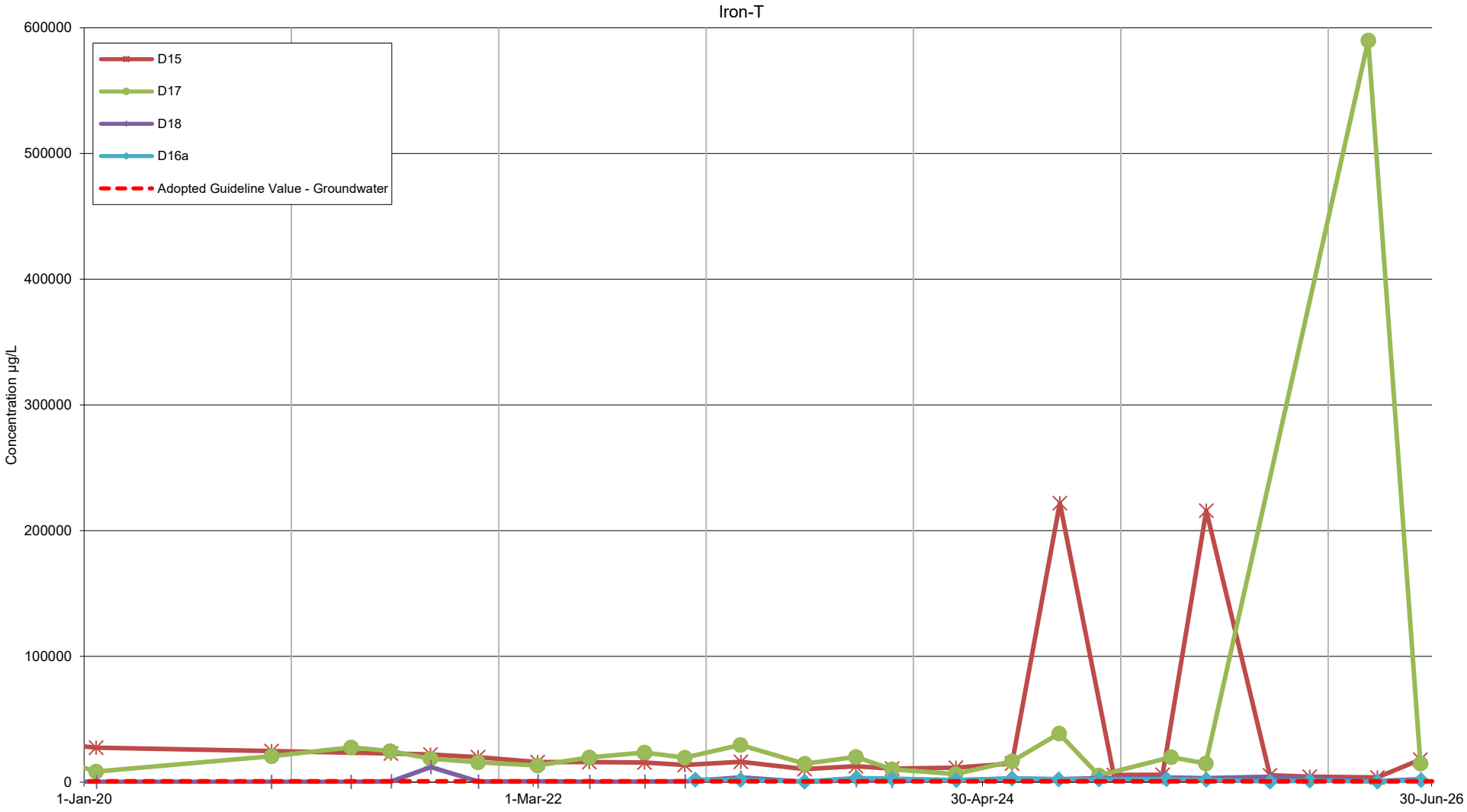
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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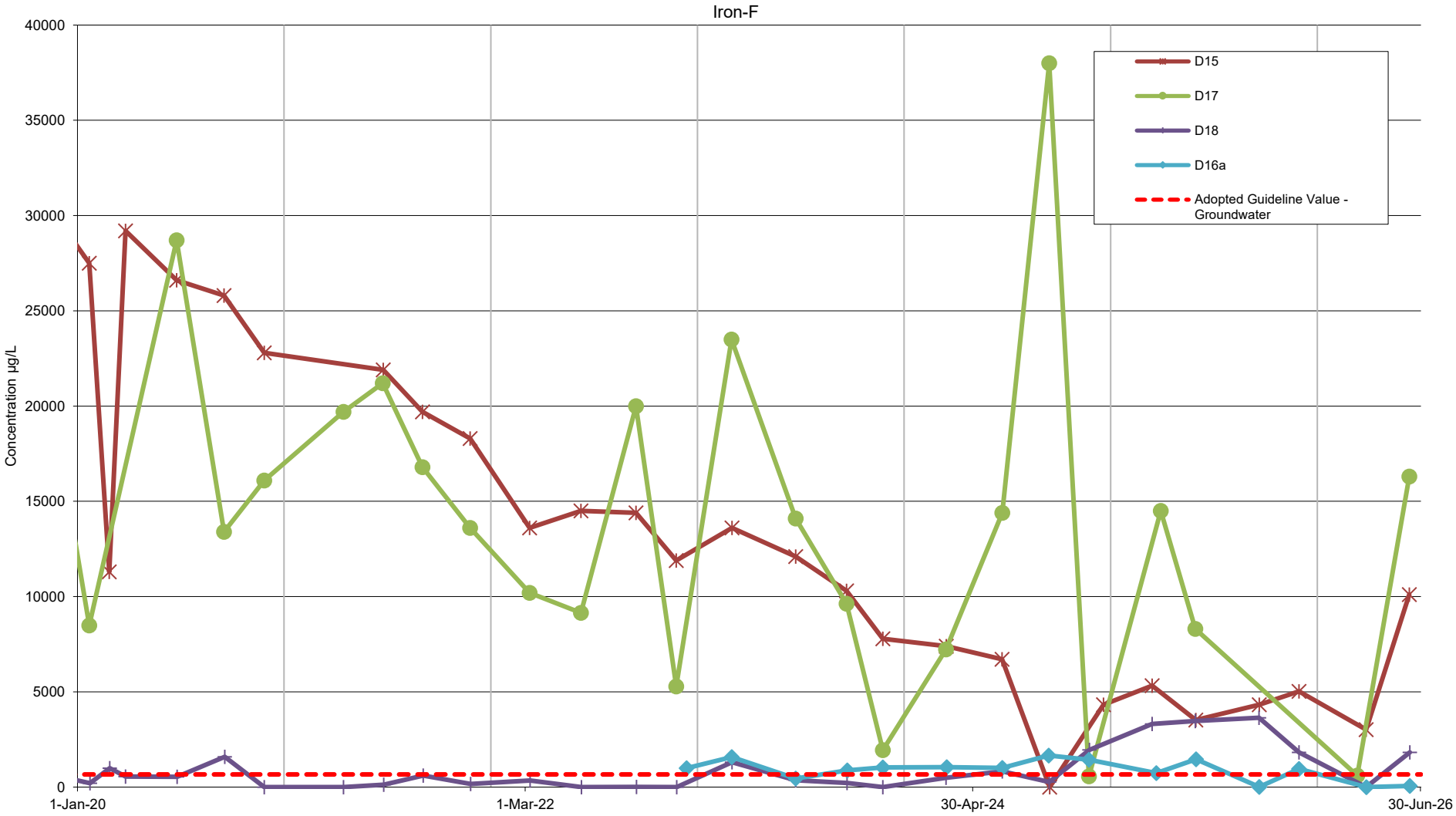
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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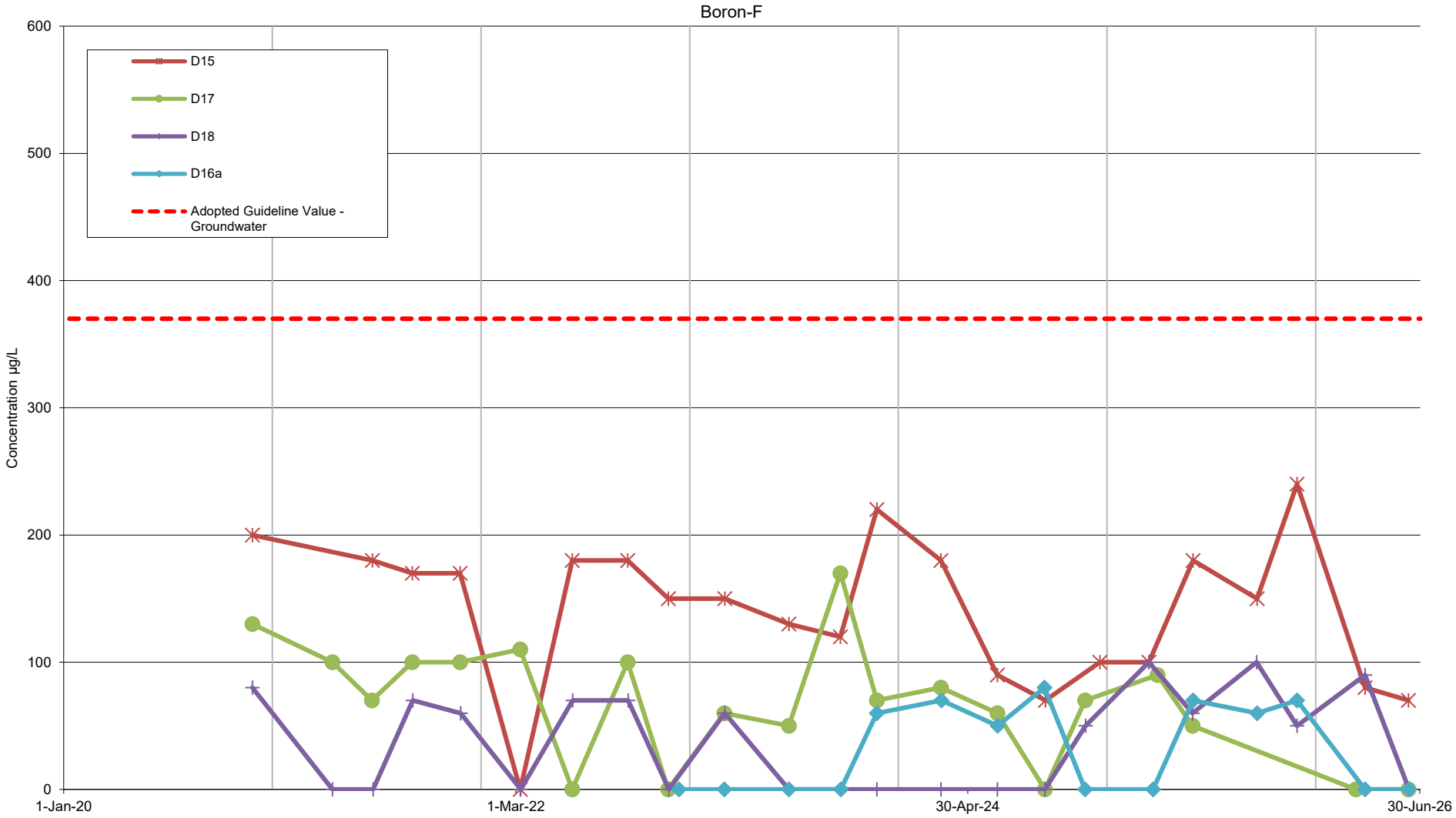
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Iron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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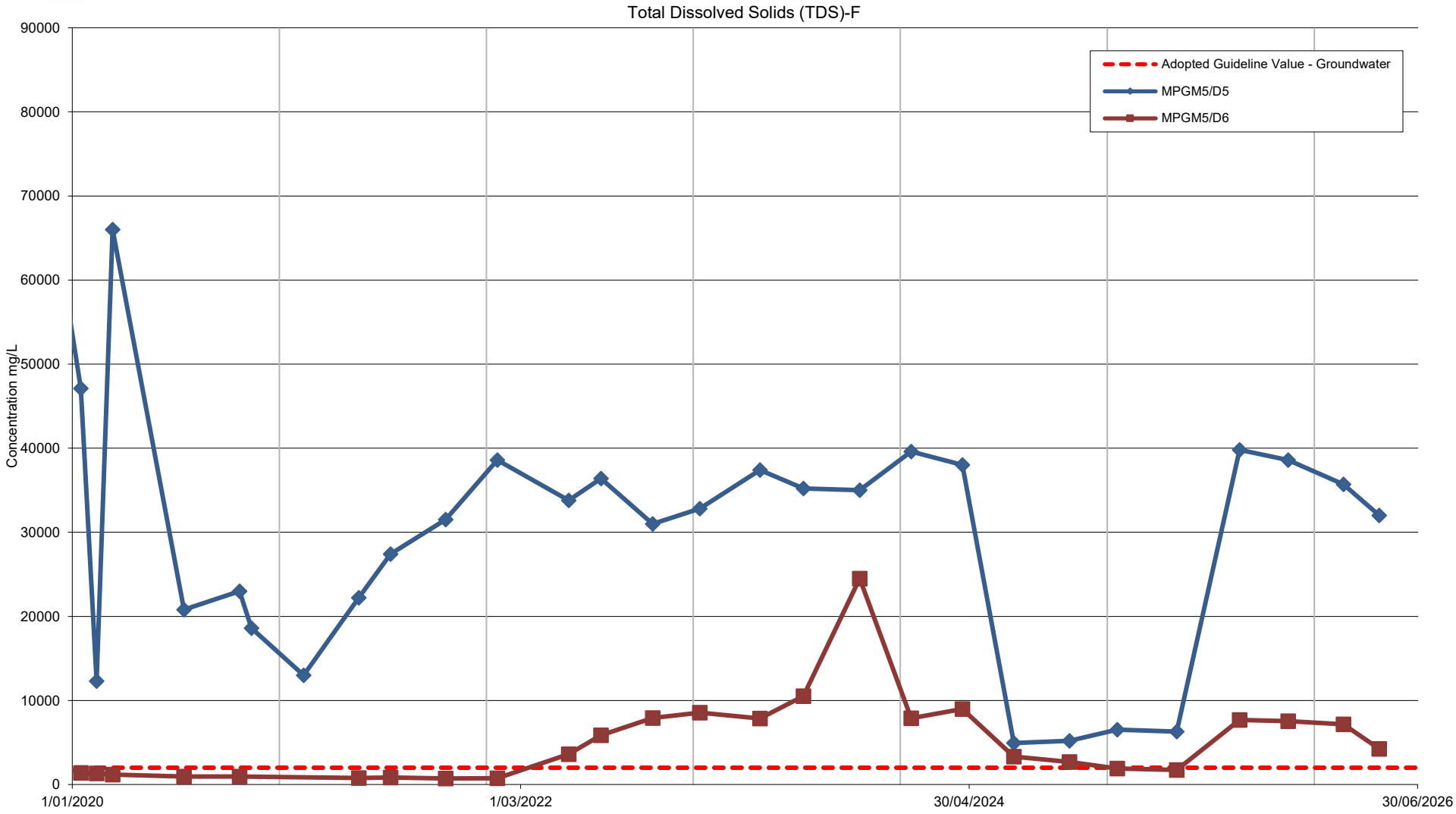
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Iron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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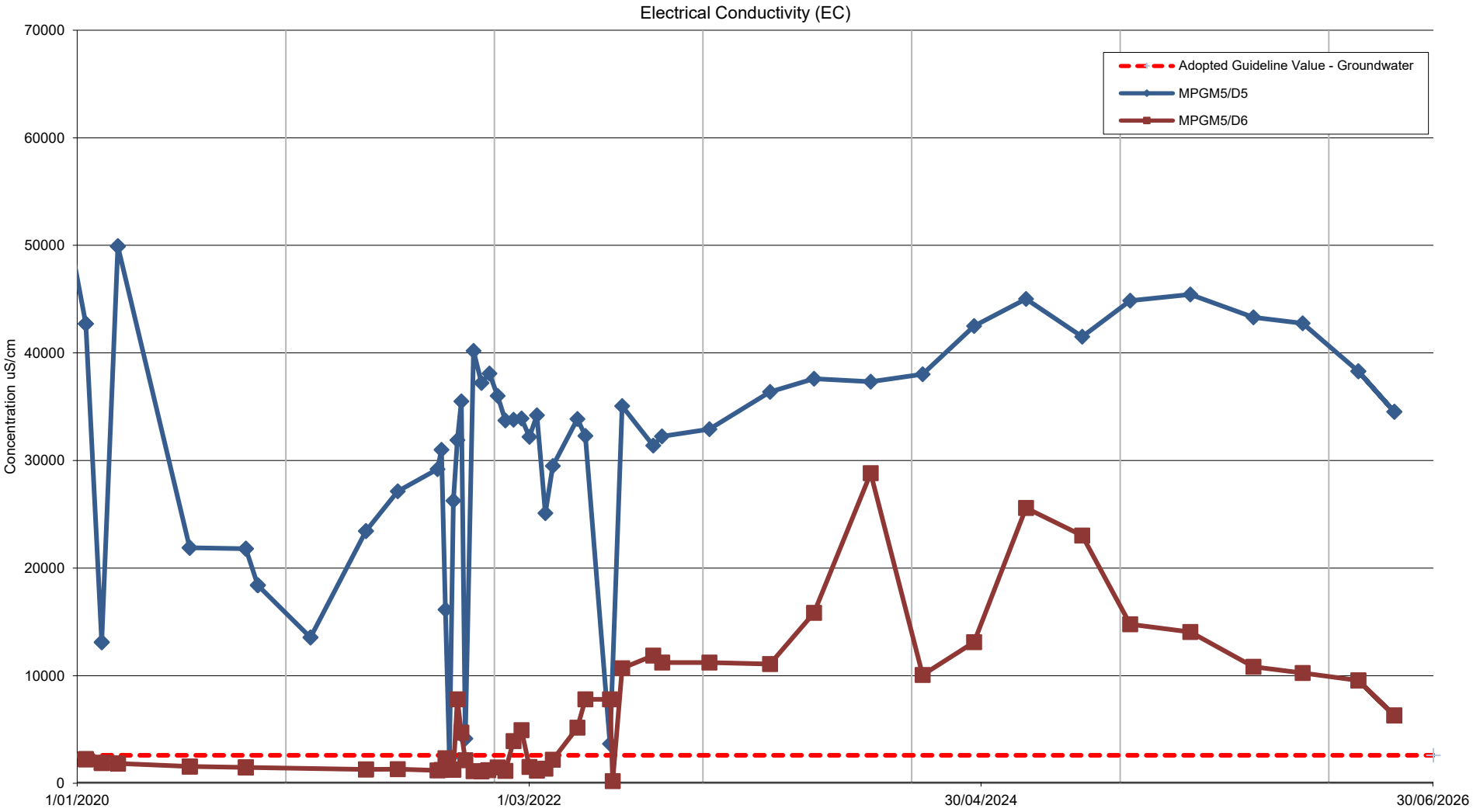
Appendix J. Cross-gradient MPAR to the South, LNAR (South) and Historical Mining Disturbance - Boron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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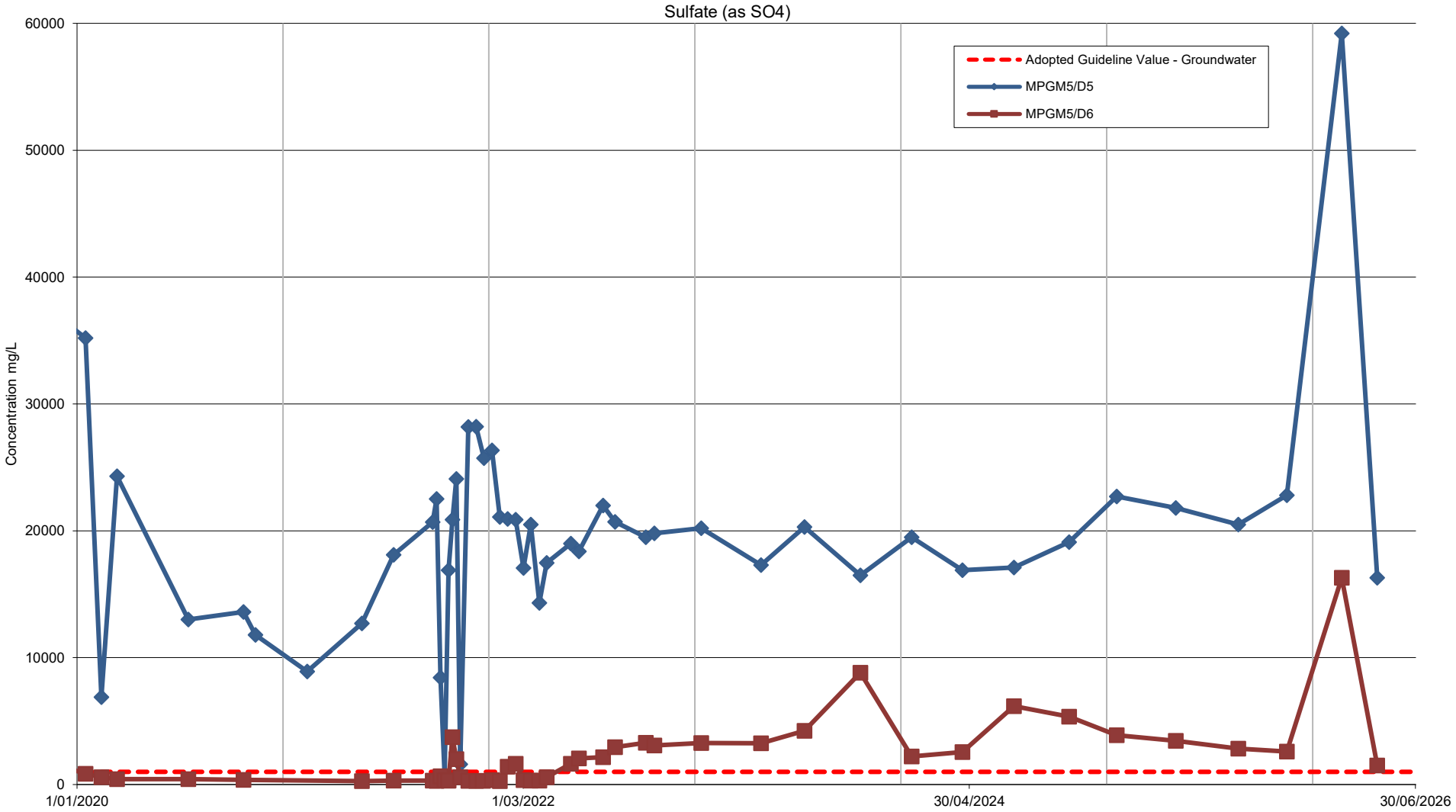
Appendix J. Brine Leak Detection Bores - TDS Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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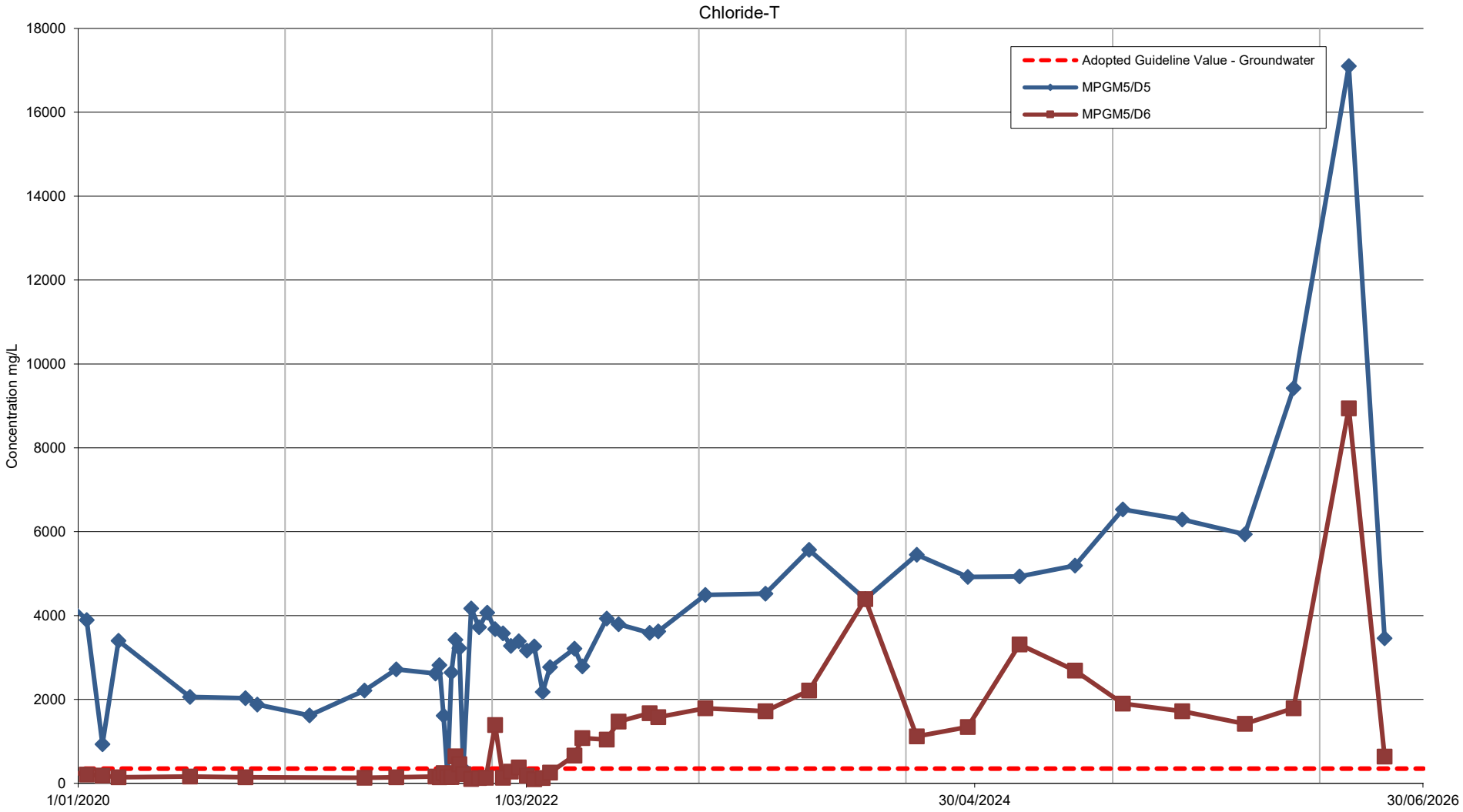
Appendix J. Brine Leak Detection Bores - EC Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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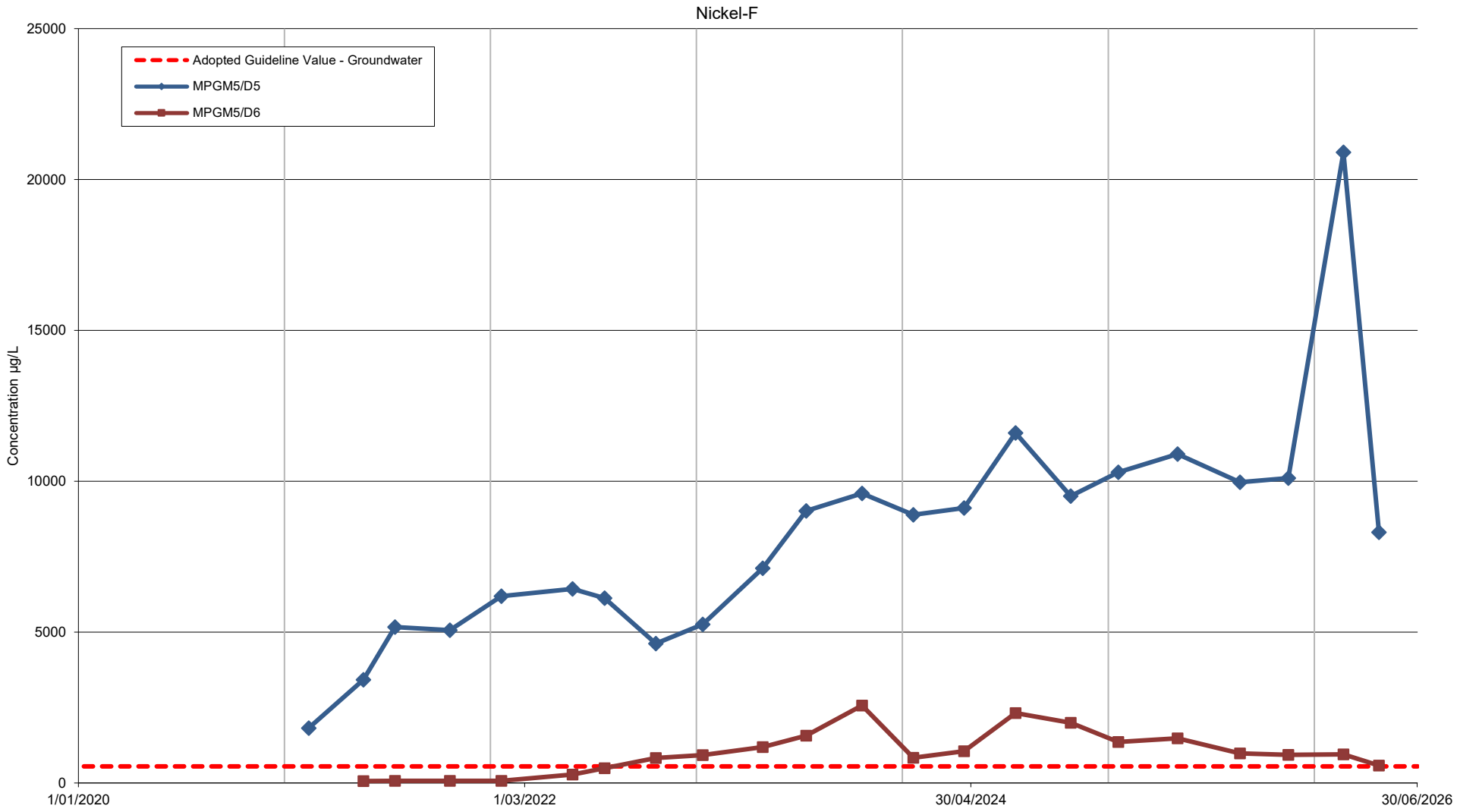
Appendix J. Brine Leak Detection Bores - Sulfate (as SO4) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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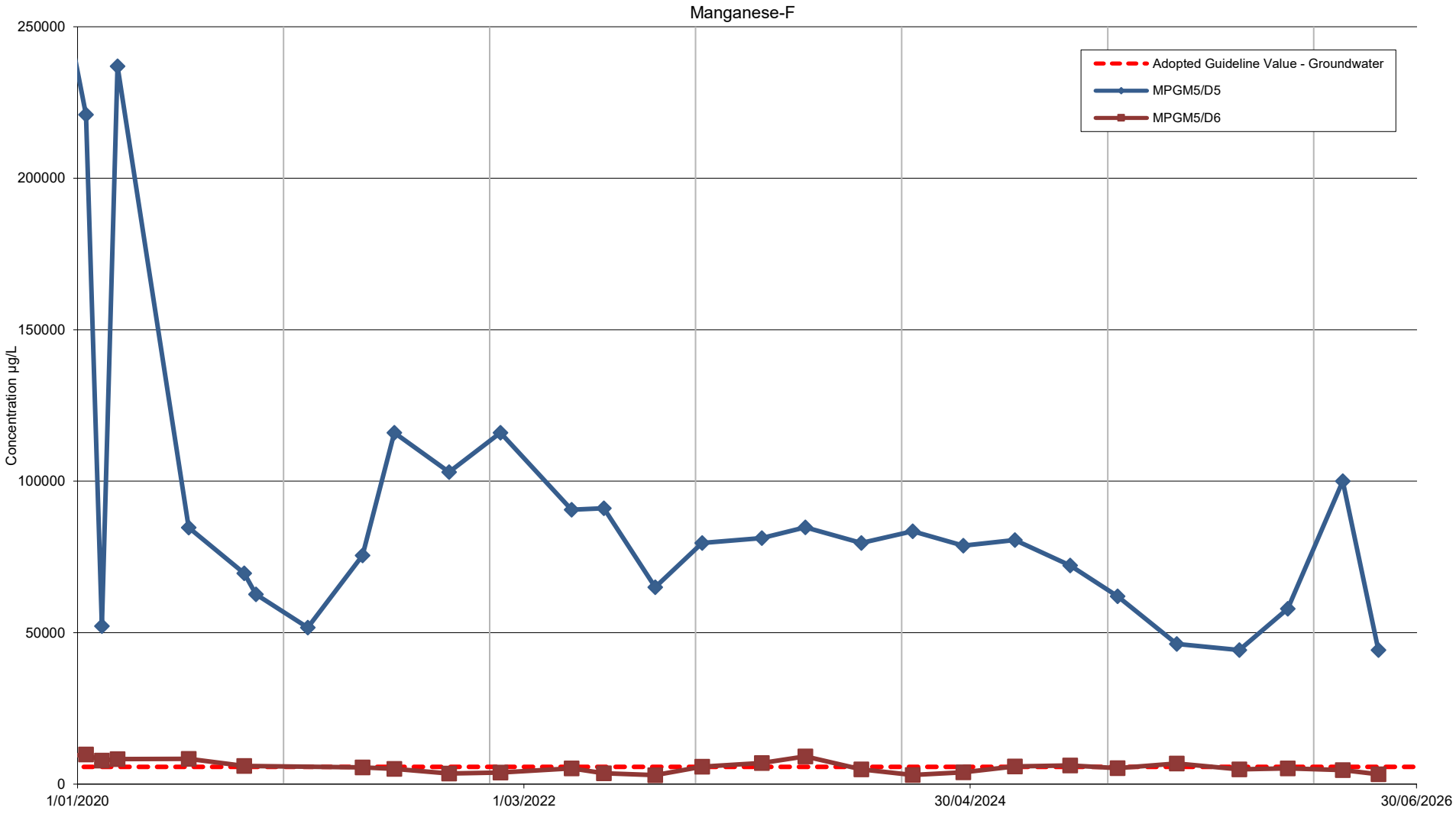
Appendix J. Brine Leak Detection Bores - Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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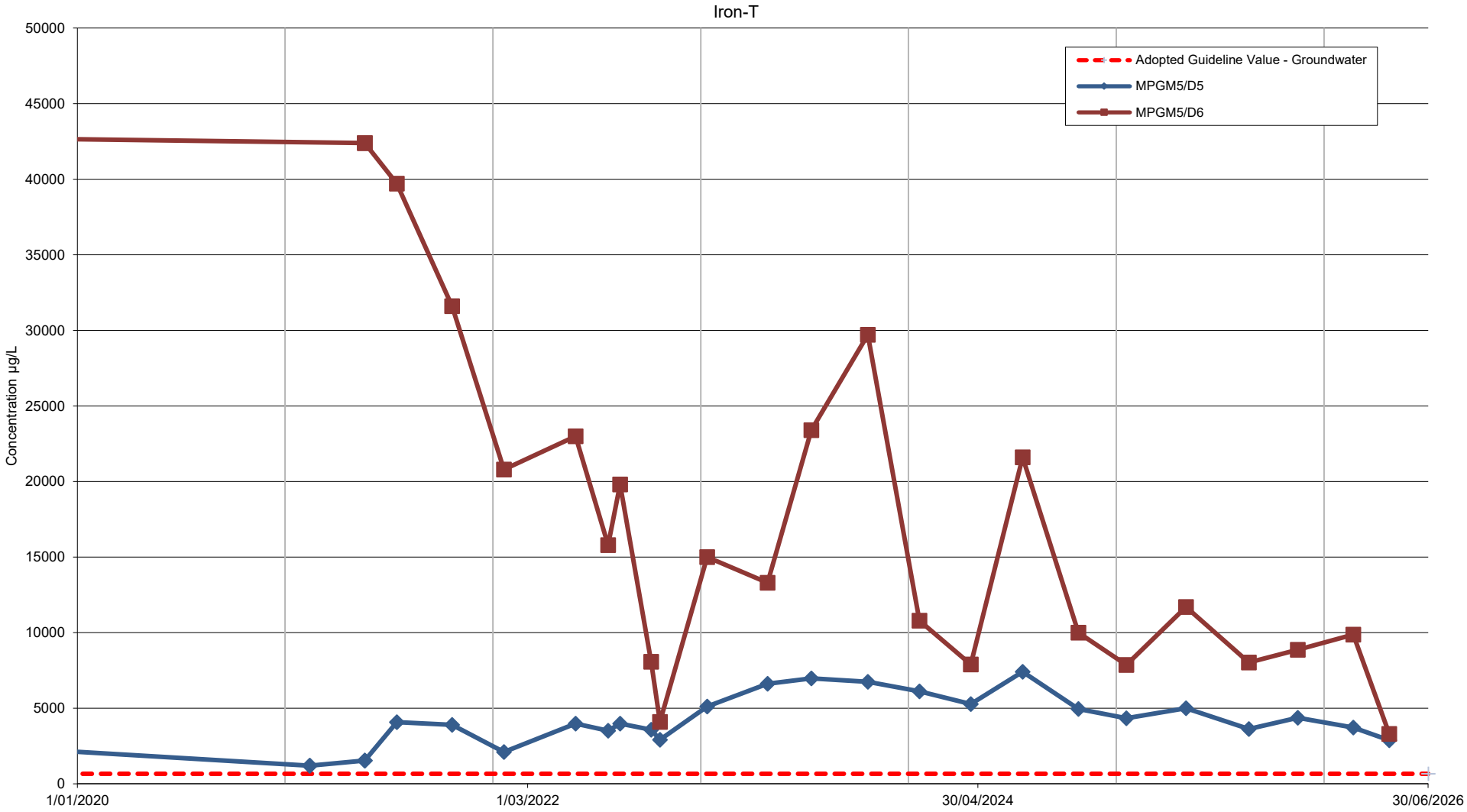
Appendix J. Brine Leak Detection Bores - Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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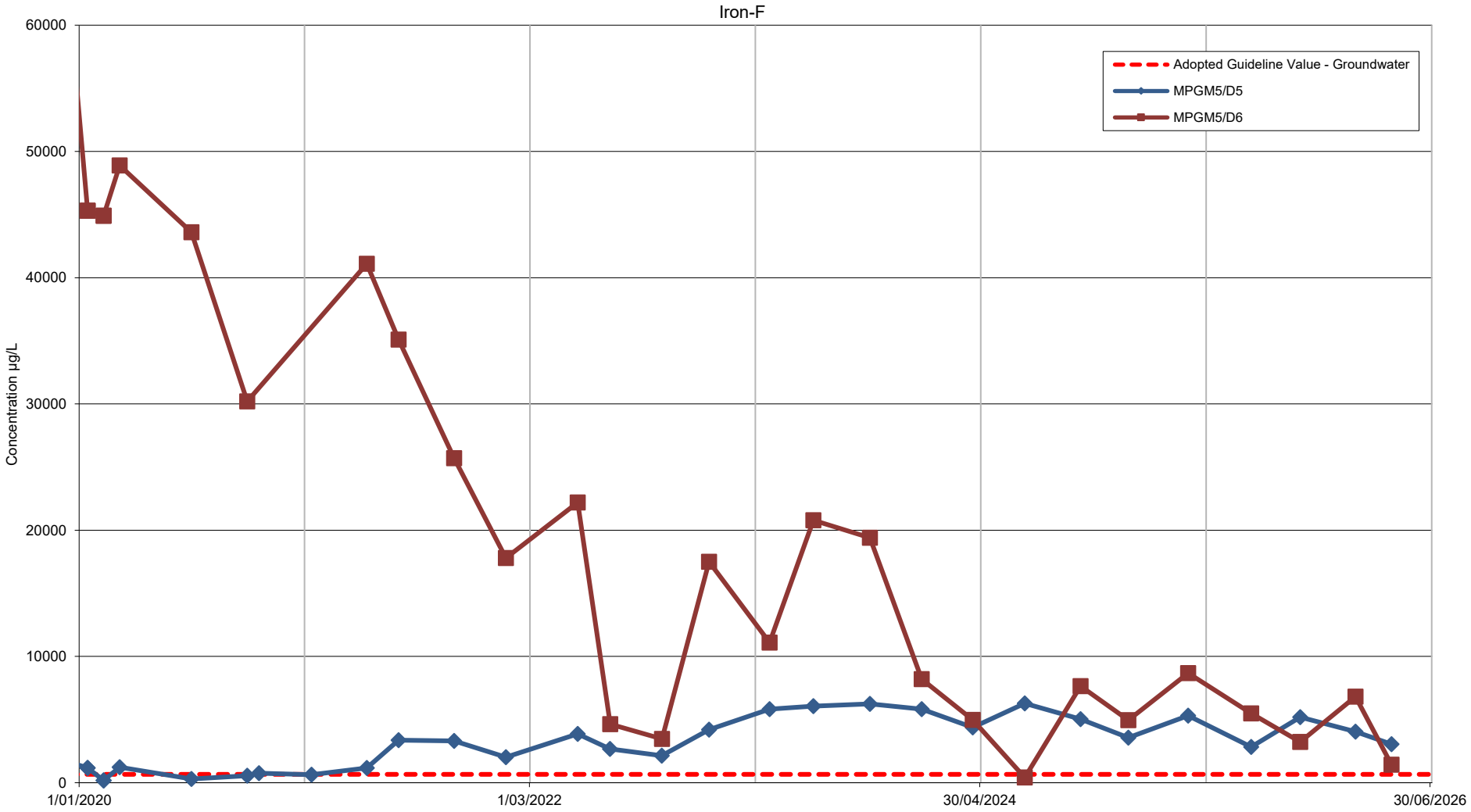
Appendix J. Brine Leak Detection Bores - Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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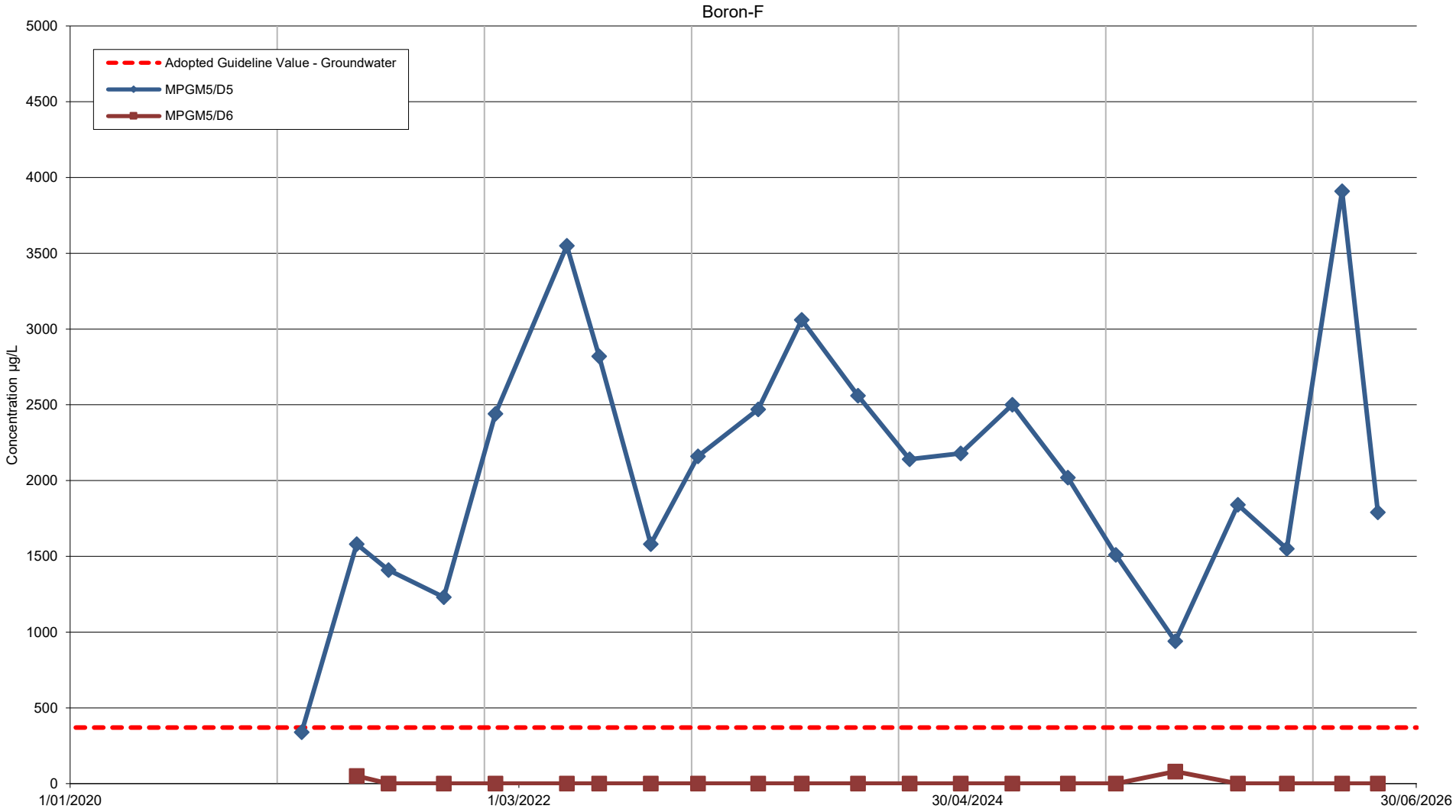
Appendix J. Brine Leak Detection Bores - Iron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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Appendix J. Brine Leak Detection Bores - Iron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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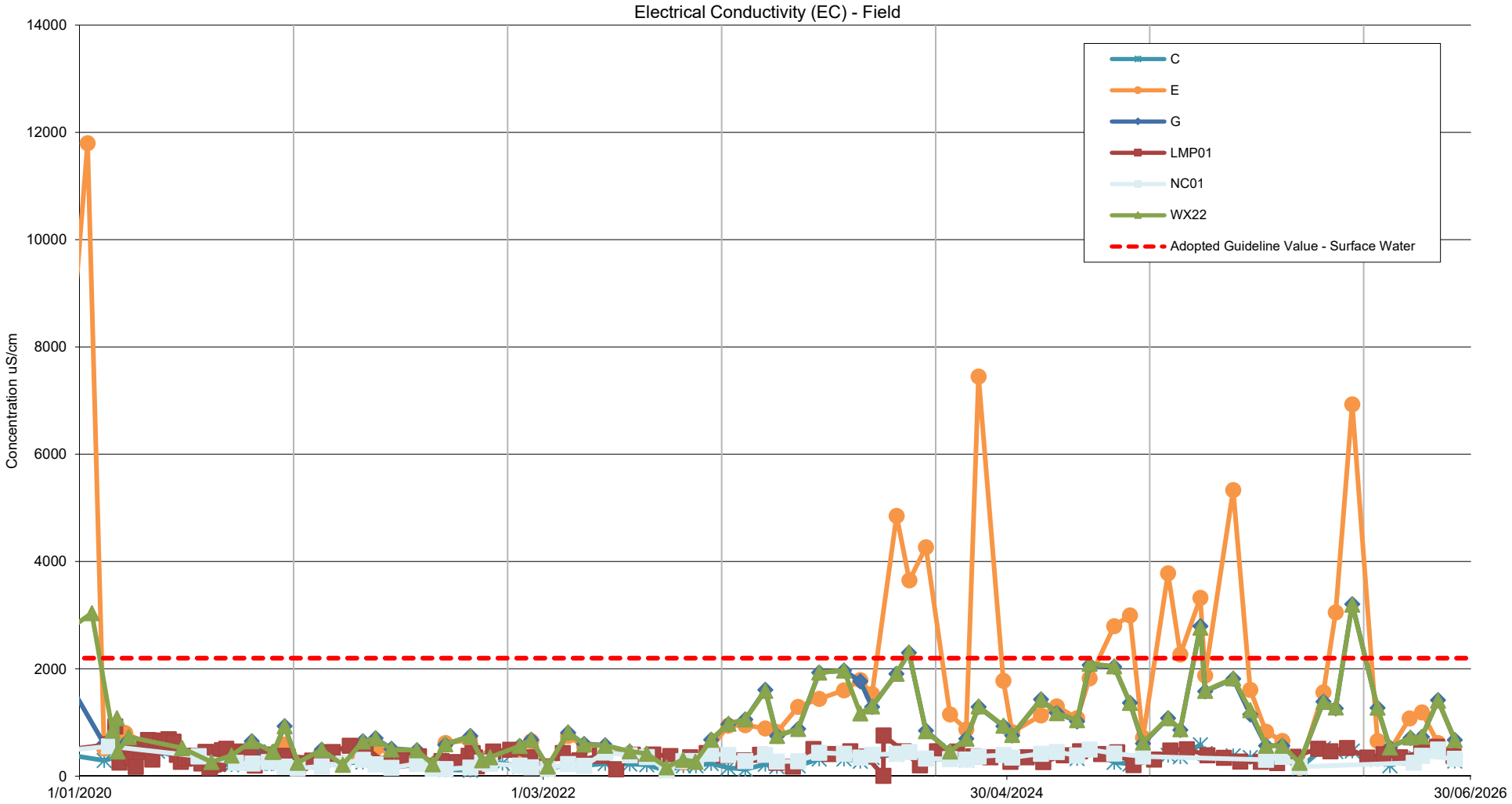


Appendix J. Brine Leak Detection Bores - Boron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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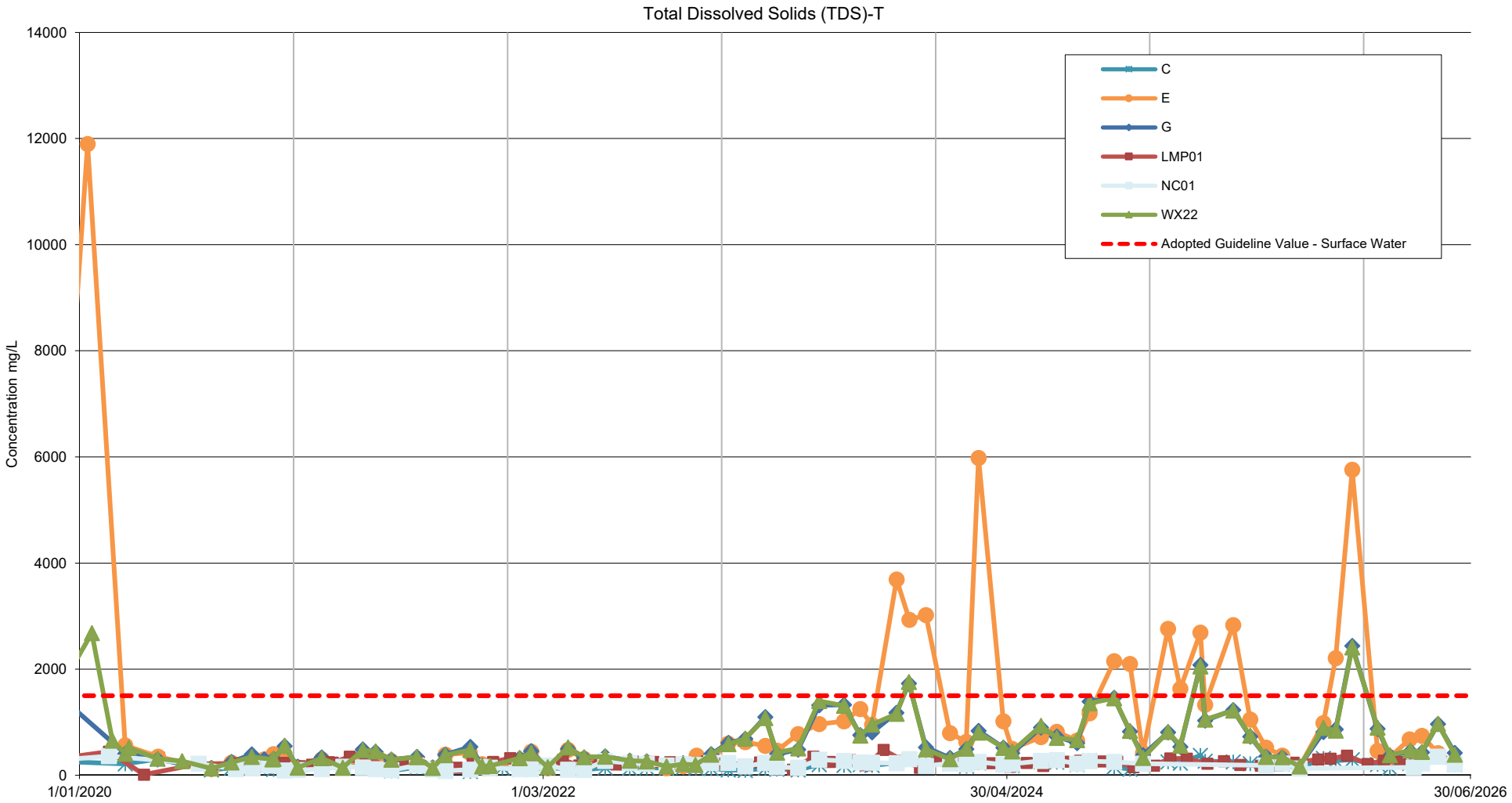


APPENDIX K SURFACE WATER TRENDS

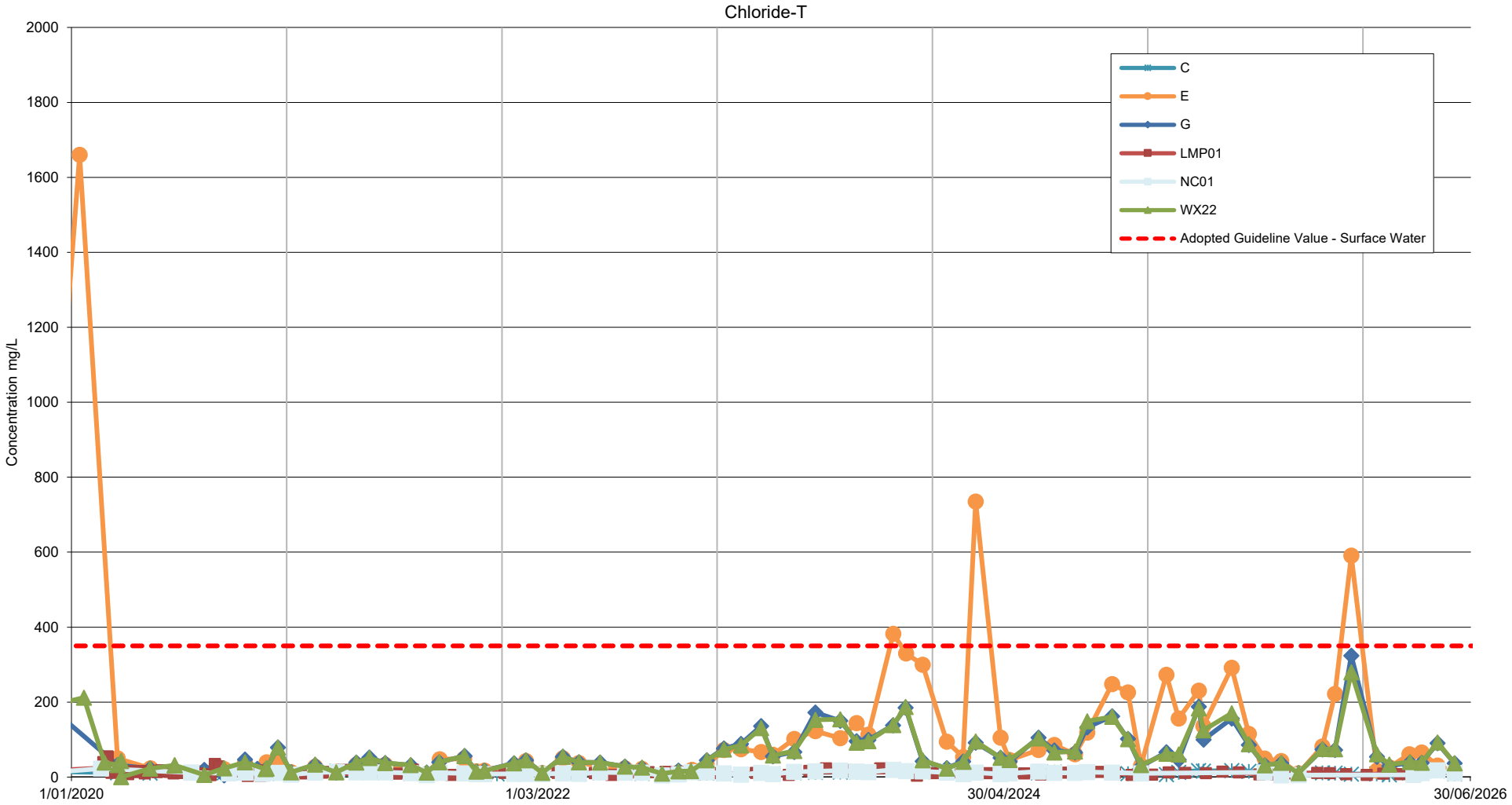
Appendix K. Electrical Conductivity Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



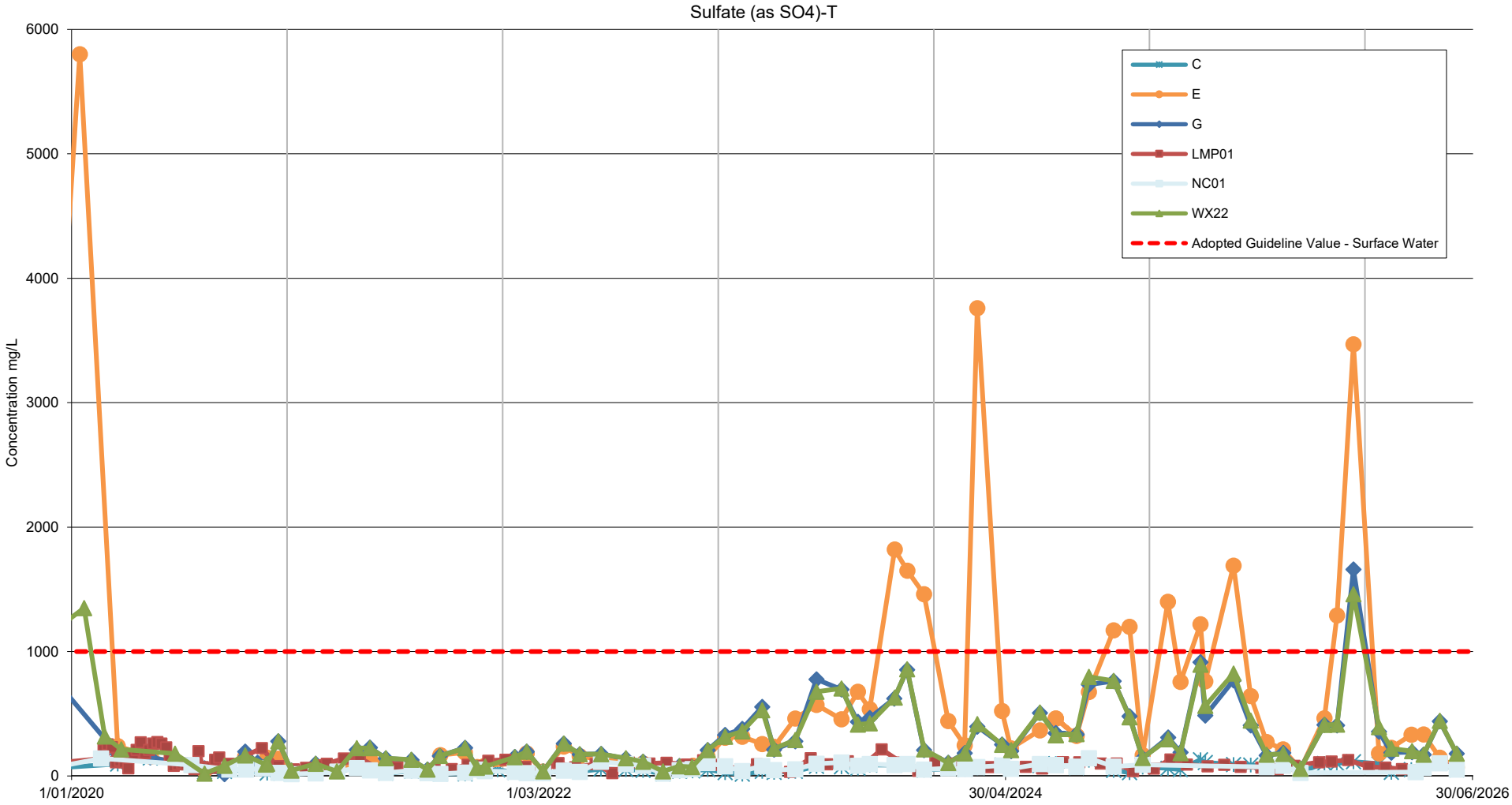
Appendix K. Total Dissolved Solids Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



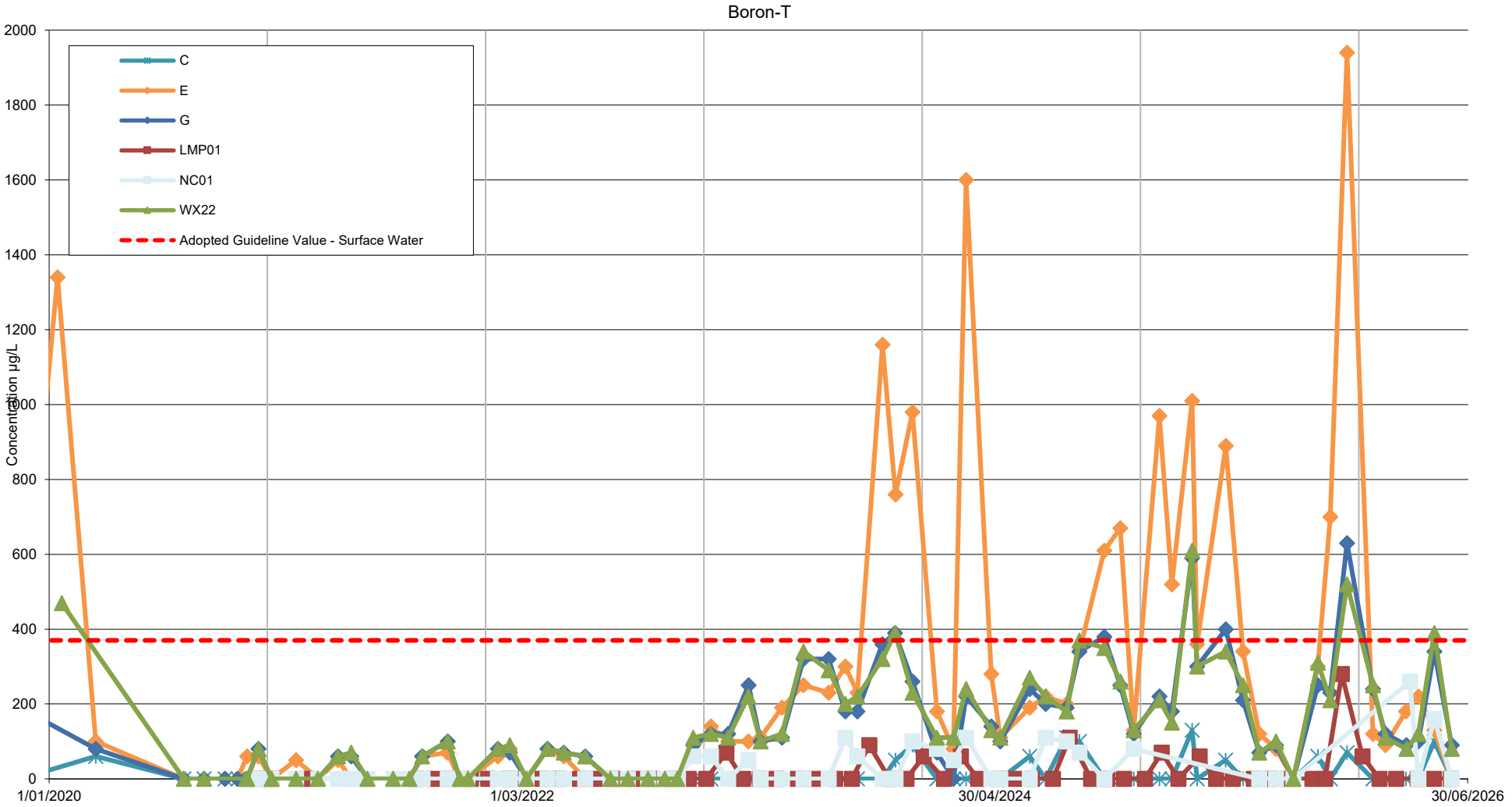
Appendix K. Chloride Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



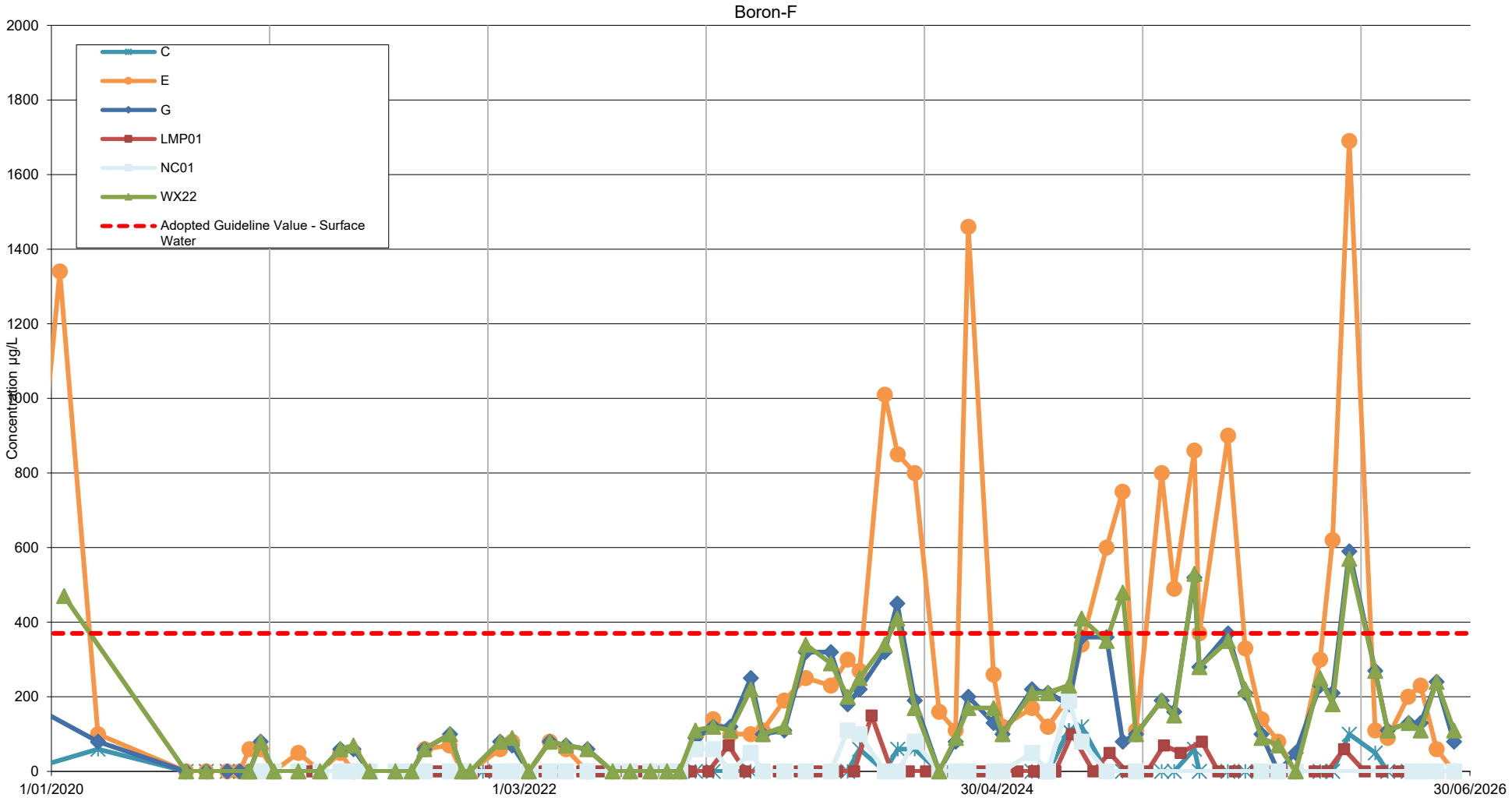
Appendix K. Sulfate as S04 Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



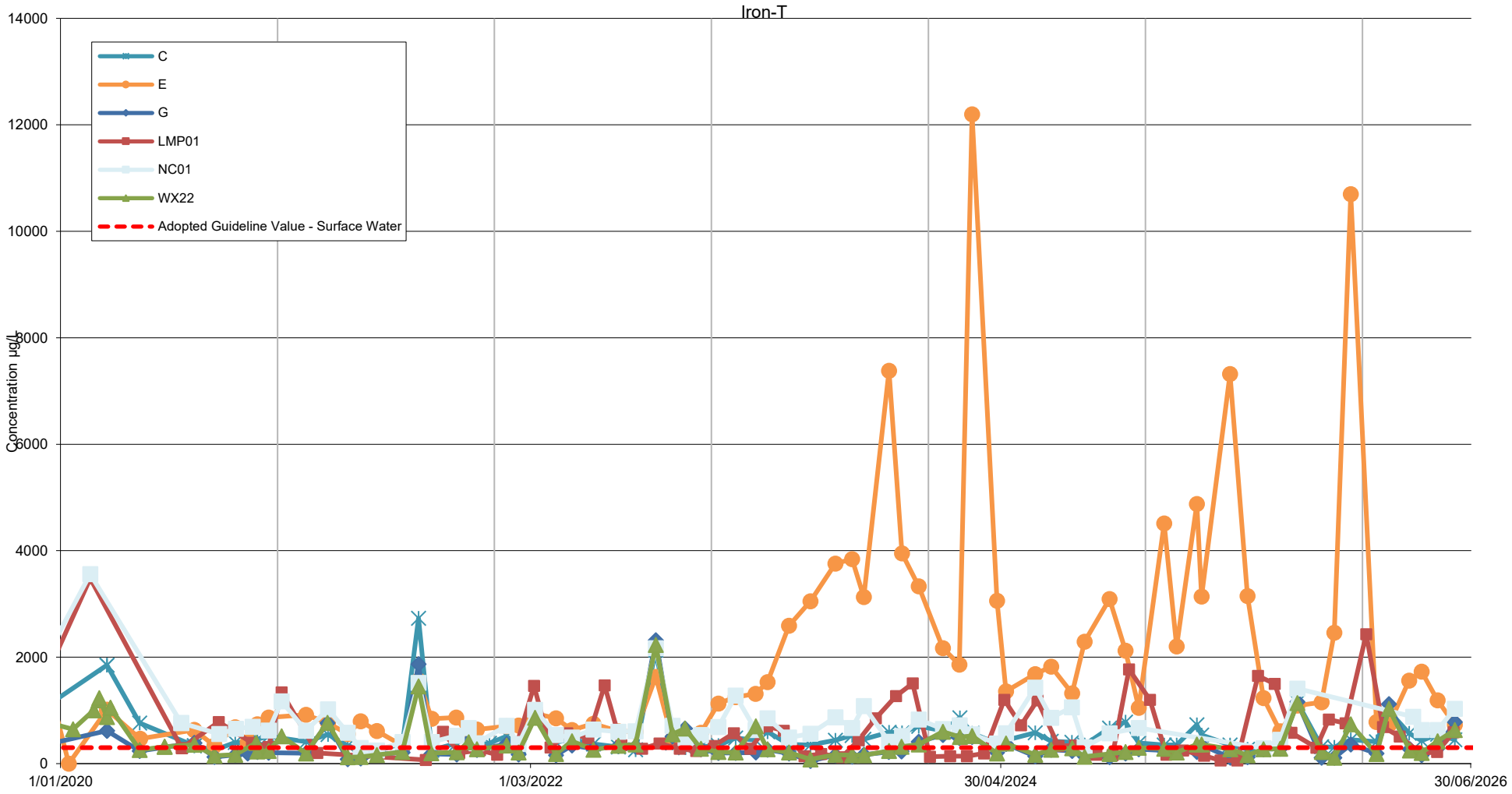
Appendix K. Boron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
0810778



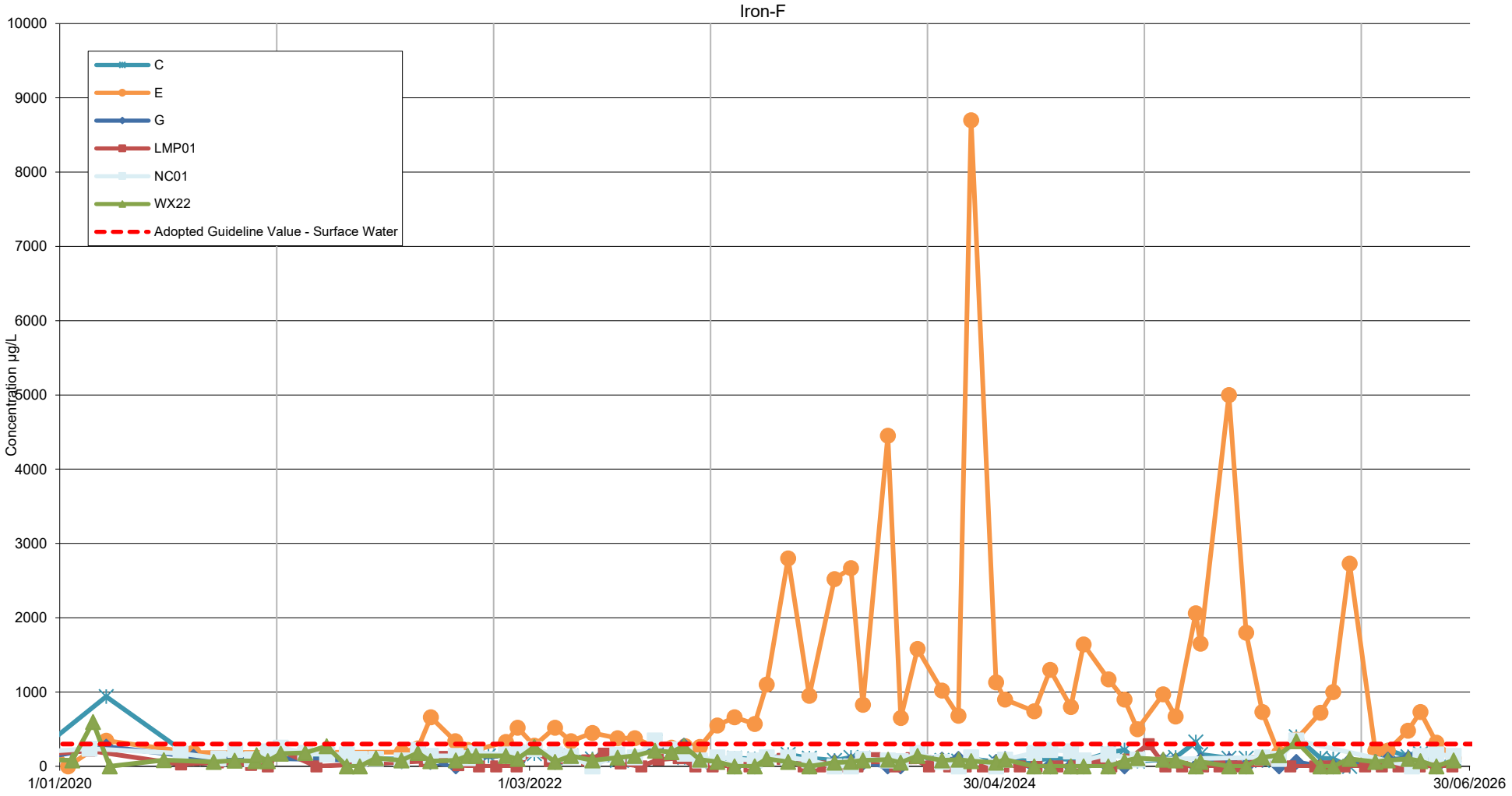
Appendix K. Boron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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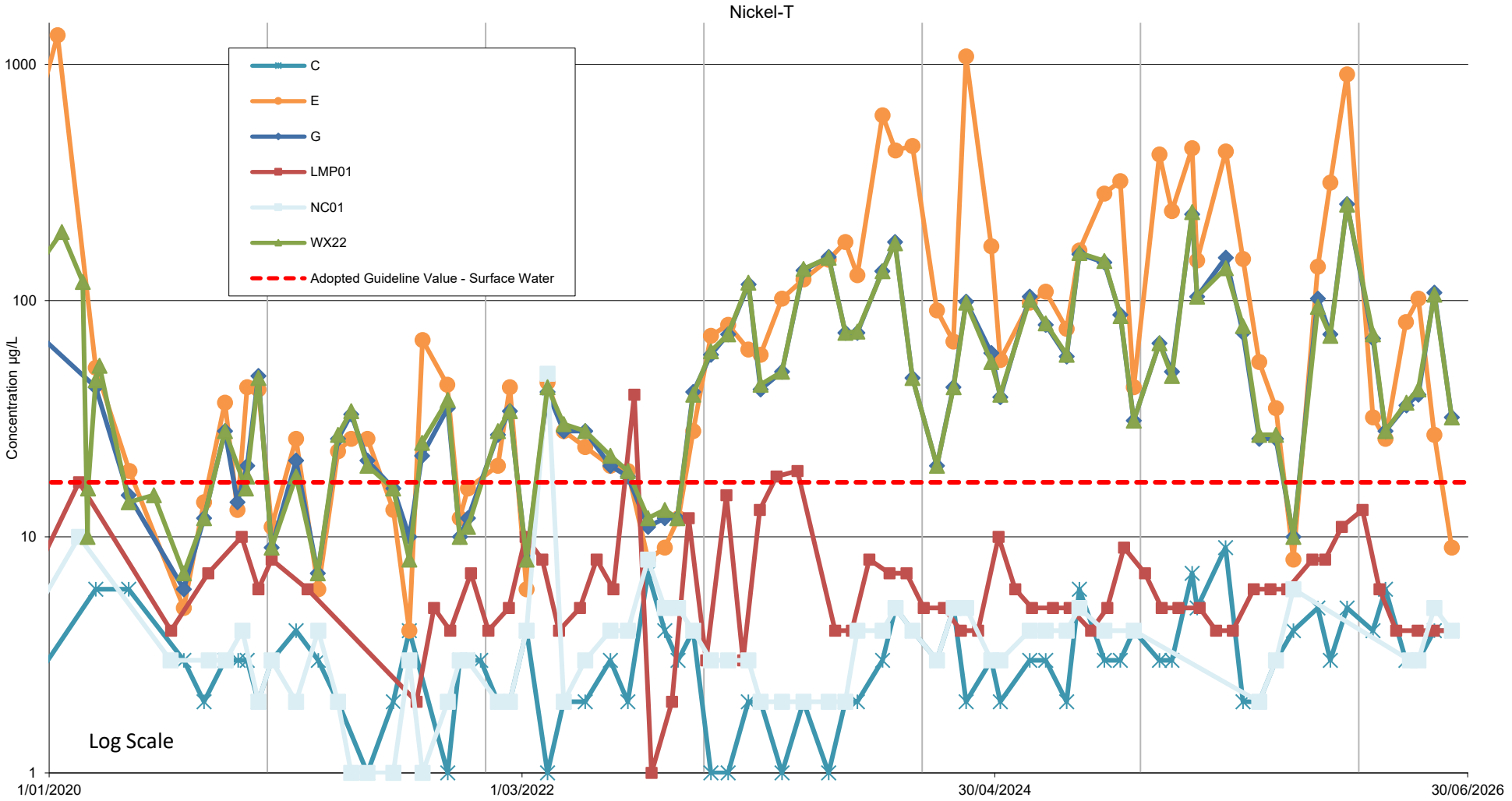
Appendix K. Iron (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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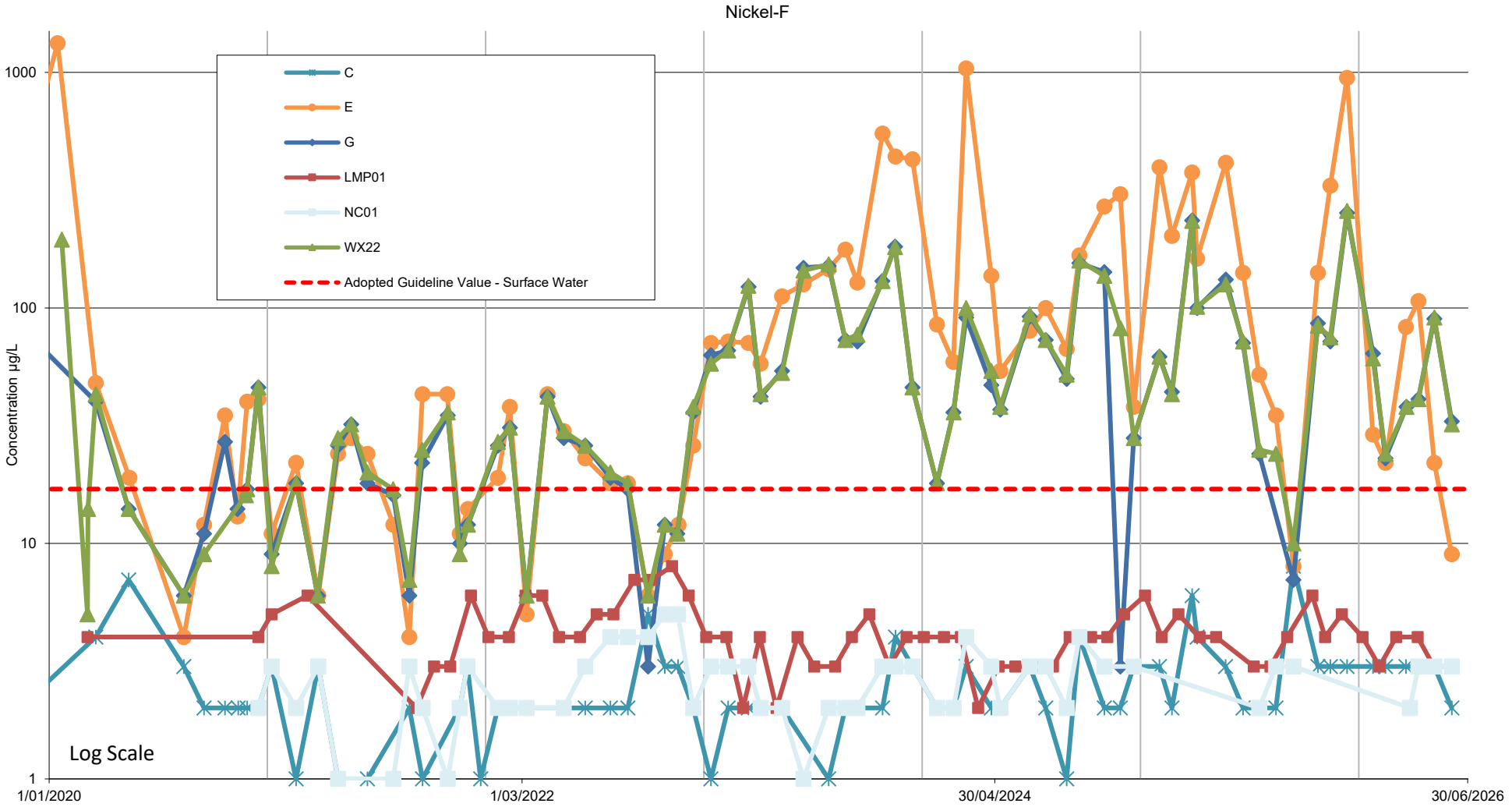
Appendix K. Iron (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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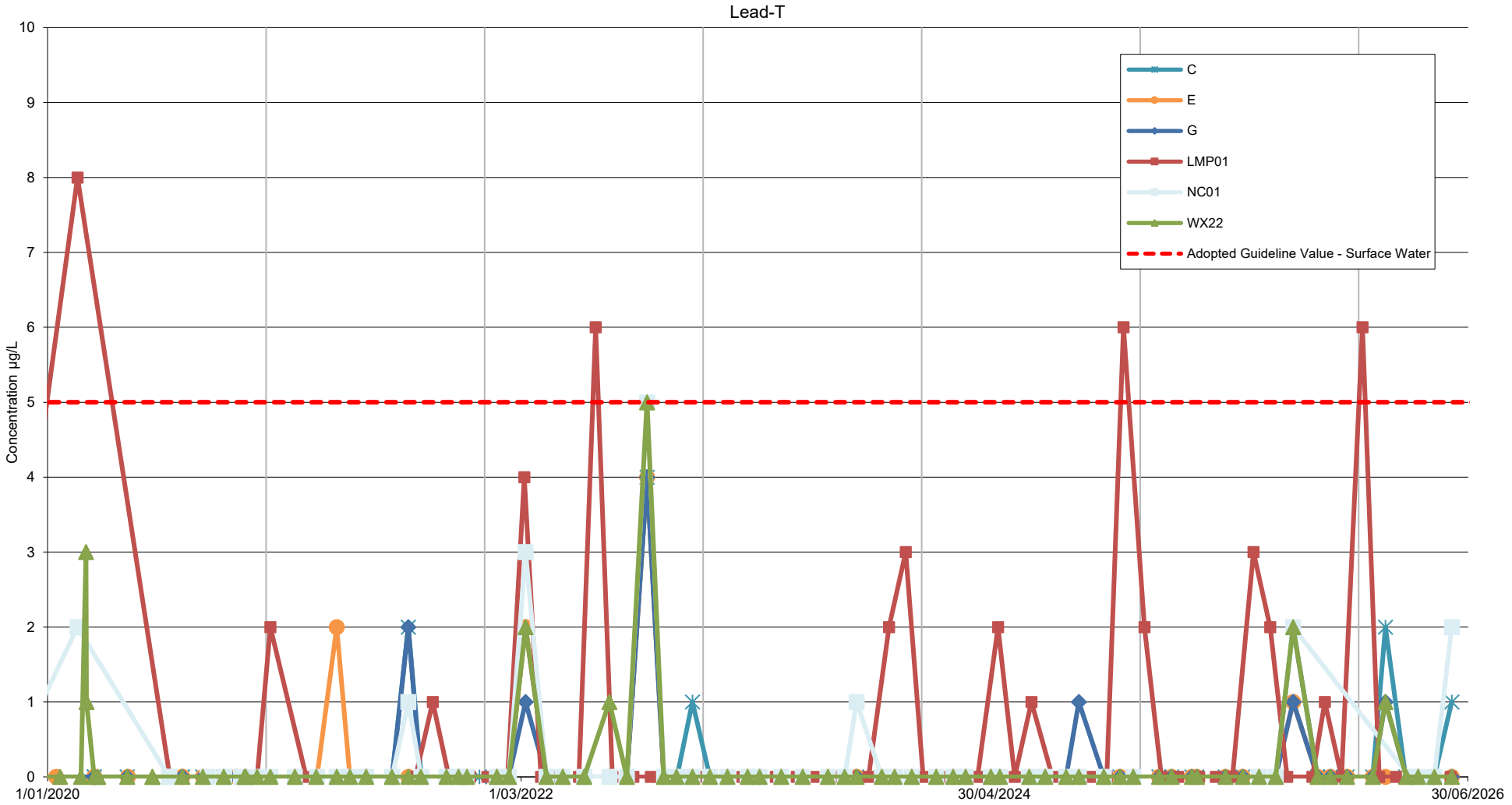
Appendix K. Nickel (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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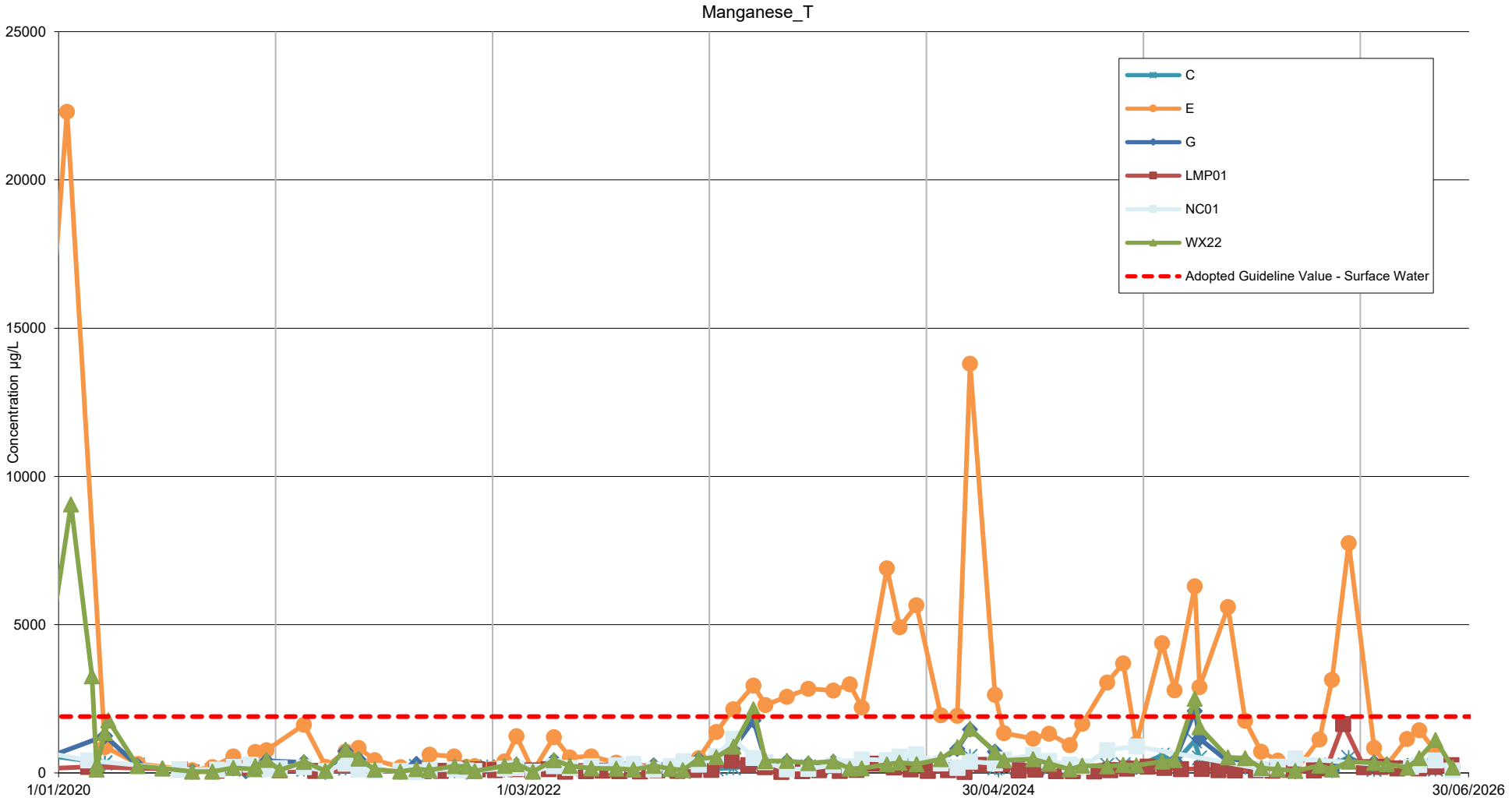
Appendix K. Nickel (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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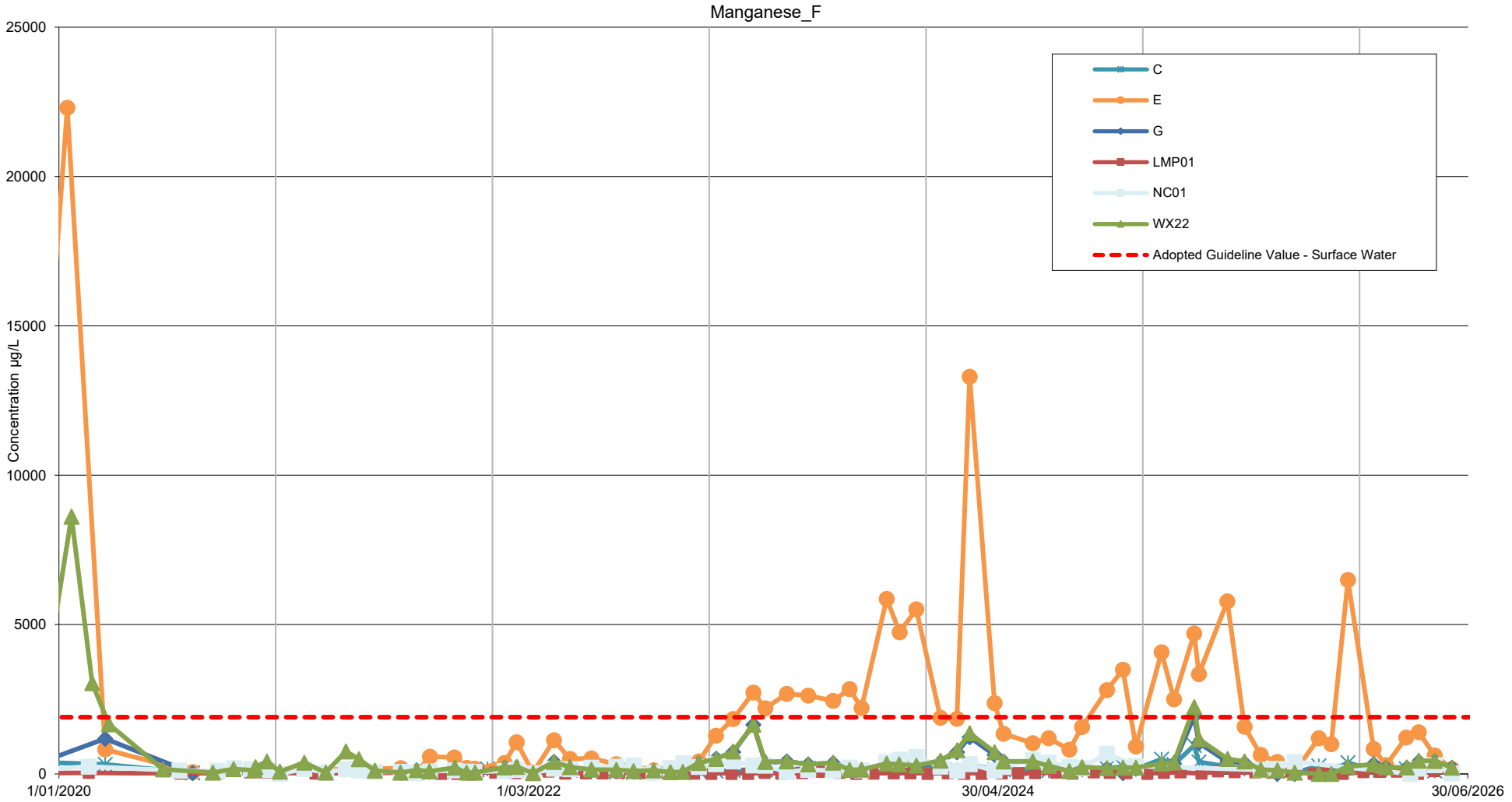
Appendix K. Lead (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
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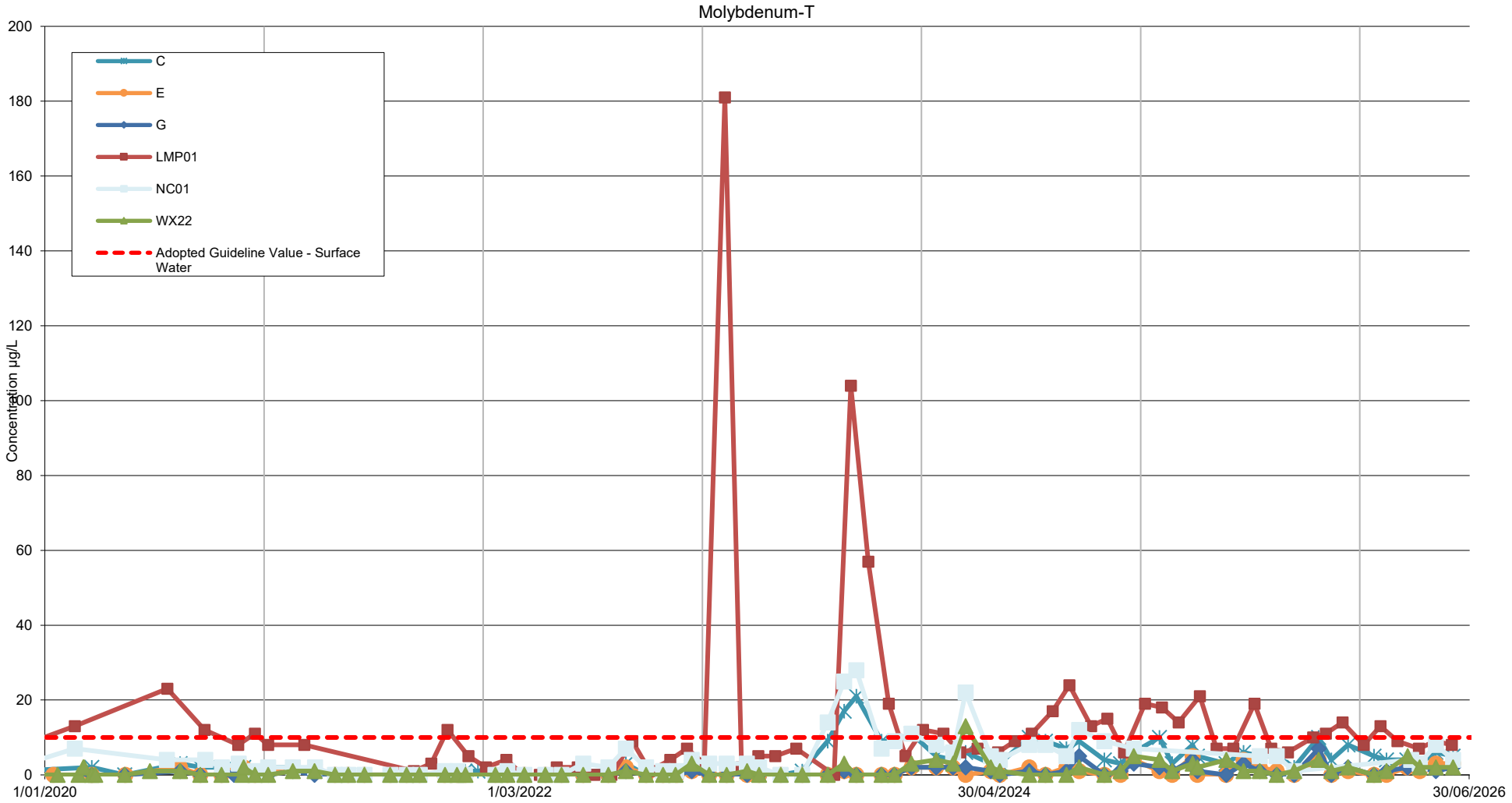
Appendix K. Manganese (Total) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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Appendix K. Manganese (Filtered) Concentrations Over Time
Annual Environmental Monitoring Report (January - June 2026)
Mt Piper Power Station
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Appendix K. Molybdenum (Total) Concentrations Over Time
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APPENDIX L MANN-KENDALL METHODOLOGY

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Trend Analysis Report

August 18, 2026

1. USER WARNINGS

Trend analysis is a commonly used statistical tool for assessing changes in concentration over time. Like most statistical analyses, trend tests involve some assumptions about the data being analyzed. If these assumptions are not met, the results of the test may be wrong or misleading. The final section of this memo discusses scenarios that will likely require the input of a qualified statistician to ensure that the results of the trend test are appropriate for your data. A careful review of the results tables and figures can help identify any anomalies in the data that merit further assessment.

Selection of an appropriate significance level (α): Statistical convention typically uses an α equal to 0.05 which sets the probability of drawing a false positive conclusion (saying there is a trend when one does not exist) in the statistical analysis at 5 percent. The significance level can be adjusted up or down to meet specific programmatic needs or to meet data quality objectives, but changes in α should be made a priori and should not be changed in an attempt to obtain a more 'favorable' result. Often decreasing α will result in a reduction in the probability of finding a false negative result (saying there is no trend when one actually exists).

2. INTRODUCTION

This report addresses data quality, descriptive statistics, and trend analysis for the Mt Piper project.

- The data file used in this report (4. MK_Input_14082026.xlsx) consists of samples from January 2020 to June 2026.
- The analysis includes 25 unique wells and 9 analytes.
- Descriptive statistics and trend analysis are run for every unique combination of: sys_loc_code, chemical_name (referred to as *Group* from hereon). There are 225 unique Groups.
- Trend tests were conducted at 95% confidence with minimum data requirements of at least 4 detected values and 50% detection frequency for each Group.

3. DATA HANDLING

This section describes the data included in this evaluation, the handling of field duplicates, data qualifiers, censored values, and handling of anomalous data points.

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3.1 FIELD DUPLICATES

Only one set of primary and field duplicate measurements are generally retained for statistical evaluation. While field duplicates can provide useful information on the sampling methodology, the duplicates are almost always statistically dependent on the parent sample (USEPA 2009, Page 6-27). Although complicated methods can be used to allow the inclusion of both values in statistical tests, simpler strategies involve keeping the maximum value between the two samples, randomly selecting one of the two samples, or removing the duplicates altogether (USEPA 2009, Page 6-28).

Field duplicates were omitted from this analysis. Only the parent samples were retained.

3.2 DATA QUALIFIERS

Data was qualified by a data validator to ensure the quality of the reported results. Consistent with lab conventions, J-flagged values were estimated quantities. Guidance allows for J-flagged values to be used with reported concentrations but cautions against making regulatory decision based on these values (USEPA 2014).

Measurements that have an R-flag had their concentration rejected; the result is rejected due to serious deficiencies in meeting quality control criteria and the analyte may or may not be present in the sample (USEPA 2014). The data quality review found the results to be valid, reliable and usable for decision making purposes with the listed qualifiers. Any records with validator_qualifiers containing "R" or reportable_result = "N" or "No" in the dataset were removed prior to analysis.

3.3 NON-DETECTS

Non-detects (NDs) commonly reported in water monitoring are statistically known as "left censored" measurements because the concentration of any ND can only be estimated. NDs are assumed to fall between zero and the reporting limit (USEPA 2009). USEPA (2015) offers a number of options for handling non-detected values, including Kaplan-Meier estimators, Regression on Order Statistics, and replacement with surrogate values. The appropriate handling of NDs depends on the statistical test being used and will be discussed in the following sections as appropriate.

Consistent with USEPA guidance, in cases where frequency of detection (FOD) was greater than 50 percent, NDs were substituted with a constant that is below the lowest detected value (Helsel and Hirsch 2002). This ensures that all NDs are "tied" in the analysis and that changing reporting limits have limited influence on whether trends are detected (USEPA 2009, Helsel and Hirsch 2002). NDs were substituted with a value of zero for the trend analysis.

4. DESCRIPTIVE STATISTICS

Descriptive statistics were calculated for all Groups and can be found in Table 1. Non-detects were substituted with a value of half the reporting limit for calculations. The descriptive statistics highlight a number of relevant characteristics about the datasets, including:

- There are a total of 225 Groups.
- 220 Groups have detection rates greater than or equal to 50 percent.
- 0 Groups have 100 percent non-detects.
- 206 Groups have 100 percent detects.
- 104 Groups follow a normal distribution (using Shapiro-Wilks Normality Test) and 38 Groups follow a log-normal distribution. 0 Groups follow a gamma distribution (using Anderson-Darling Normality Test). The remaining 83 Groups have no discernible distribution.

5. TESTING FOR TRENDS

Trend tests are a commonly used tool to assess the effectiveness of remediation efforts. By examining whether concentrations are increasing, decreasing, or not statistically significant, trend tests provide one line of evidence about the directional change in concentrations over time.

5.1 TREND TESTING APPROACH

A Mann-Kendall test was used to detect changes in concentrations over time. The Mann-Kendall test is a non-parametric method that tests the following null hypothesis (USEPA 2009):

- Null Hypothesis (Ho): No monotonic trend exists.
- Alternative Hypothesis (Ha): A monotonic trend exists.

A monotonic upward (downward) trend means that the variable consistently increases (decreases) through time, but the trend may or may not be linear. The Mann-Kendall test is based on the premise that the lack of monotonic trend should correspond to a time series plot fluctuating randomly about a constant median with no visually apparent upward or downward pattern (Helsel and Hirsch 2002). Significantly increasing or decreasing trends (τ) are identified at a significance level (α) of less than or equal to 0.05. τ^2 can be used like an R^2 value to estimate how much variance in y is explained by x (i.e., what proportion of the variability in concentration is explained by time). USEPA 2009 guidance and/or Helsel and Hirsch (2002) may be consulted for further details about trend analysis. With the specified 95% confidence, significantly increasing or decreasing trends are identified with p-values as follows:

Tau	p-value	Conclusion	Trend
Positive	p <= 0.05	Ho Rejected	Increasing
Negative	p <= 0.05	Ho Rejected	Decreasing
Positive or Negative	p > 0.05	Ho Accepted	Not Significant

The Mann-Kendall was run in R v4.5.1 using a two.sided test with the stats::cor.test() function, with 95% confidence.

5.2 DATA CONSTRAINTS

Guidance recommends that trend tests be performed with at least eight detected data points to ensure a reasonable amount of confidence in results (USEPA 2009, p. 17-24). However, it is mathematically possible to carry out the test with five detected samples. The consequences of using the minimum sample size is that there is a greater chance of concluding that there is no trend when, in fact there is a trend (USEPA 2009). If a dataset is comprised of more than 50 percent ND values, the loss of information is considered too great to support a reliable analysis of trends, so no trend test was performed.

5.3 RESULTS

Trend tests were calculated with 95% confidence for all Groups that met the minimum data requirements of at least 4 detected values and 50% detection frequency. A full report of the trend test results and time series plots can be found in Table 2. The following summarize the results of the trend analysis:

- There are a total of 225 Groups in the dataset.
- 220 Groups meet the data requirements of the trend test. Of those:
  - 27 Groups had a significant increasing trend,
  - 69 Groups had a significant decreasing trend,
  - 124 Groups had no significant trend.

Time series scatterplots are provided in Figure 1 for each Group. Detection limits for each sample are also plotted for an easy visual assessment of changing detection limits over time. A Theil-Sen regression line is shown on each figure to provide a visual guide for temporal trends.

6. SPECIAL CONSIDERATIONS

Like most statistical analyses, these trend tests involve some assumptions about the data being analyzed including:

- Observations or data obtained over time are independent.
- The observations obtained over time are representative of the true conditions at sampling times.
- The sample collection, handling, and measurement methods provide unbiased and representative observations of the underlying populations over time.
- There is no requirement that the measurements be normally distributed. The Mann-Kendall test can be computed if there are missing values and varying detection limits, but the performance of the test will be adversely affected by such events. The assumption of independence requires that the time between samples be sufficiently large so that there is no correlation between measurements collected at different times.

The Mann-Kendall test does not assume that the underlying relationship is linear. However, in cases where the data are clearly curvilinear, it may be more appropriate to consult with a statistician to employ different statistical techniques that more accurately characterize the changes in concentration over time.

Special consideration should be given to dataset with clear seasonality and/or NDs. These are considered in the following sections.

6.1 SEASONALITY

Seasonal changes in precipitation and temperature can cause cyclical fluctuations in groundwater concentrations. These seasonal fluctuations functionally add 'noise' to the data. This type of noise is called serial dependence and can make it difficult to determine trends in the data because of a long-term persistent pattern (like seasonality) or whether it represents a true, underlying change. USEPA Guidance (2009) strongly recommends accounting for seasonality when performing linear trends in hydrologic data. Seasonality has not been explicitly handled in the data described herein.

6.2 NON-DETECTS AND DETECTION LIMITS

Non-detects (NDs) commonly reported in water monitoring are statistically known as "left censored" measurements because the concentration of any non-detect either cannot be estimated or is not reported directly. Rather, it is known or assumed only to fall within a certain range of concentration values (USEPA 2009 p. 15-1). With higher detection limits, that uncertainty is greater because the true value lies somewhere in a larger range of possible values.

USEPA (2006) notes that no general procedures exist for the statistical analyses of censored datasets. If a dataset is comprised of more than 50 percent non-detected (ND) values, guidance cautions the user when interpreting the results of statistical tests, especially for relatively small datasets (USEPA 2009). In the context of the trend tests described herein, there is general agreement that substituting a constant below the lowest detected value is the best solution for handling non-detected values.

When detection rates are below 85 percent, however, this simple substitution method may lead to bias in the trend tests. Visually reviewing the data is a key step in interpreting the appropriateness of the statistical results. The time series plots have been generated using the detection limit for non-detects so that detection rates and multiple detection limits can be visualized. Additional statistical testing may be needed to address datasets with low detection rates or elevated detection limits.

7. REFERENCES

Helsel and Hirsch. 2002. *Statistical Methods in Water Resources.* Chapter A3. U.S. Department of the Interior, U.S. Geological Survey.

USEPA. 2006. *Data Quality Assessment: Statistical Methods for Practitioners.* EPA QA/G-9S. Office of Environmental Information. Washington, DC.

USEPA. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.* Unified Guidance. EPA/530/R/09/007. Office of Resource Conservation and Recovery. Washington, D.C.

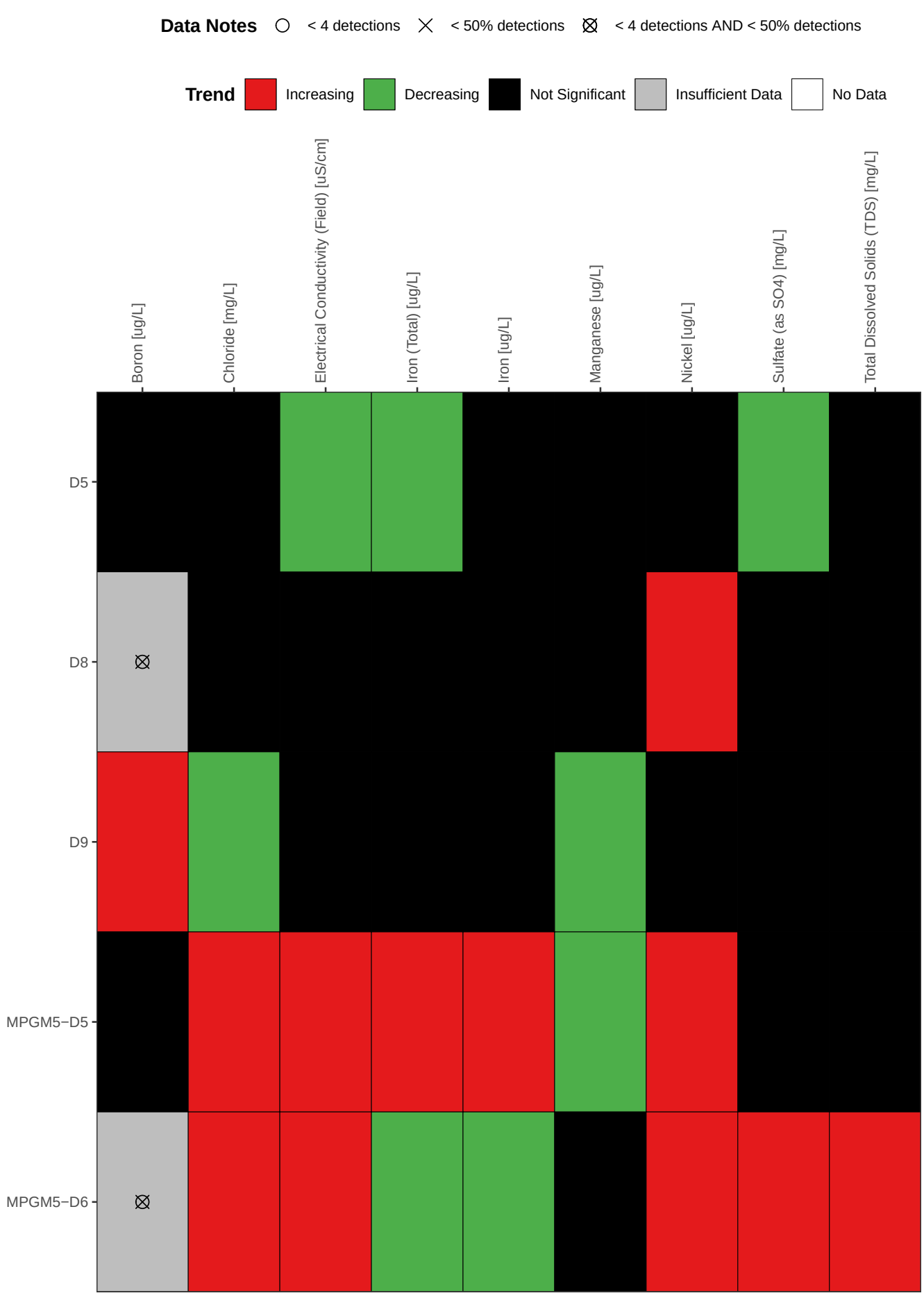
USEPA. 2014. *National Functional Guidelines for Superfund Organic Methods Data Review.* USEPA 540-R-014-002. OSWER 9355.0-132. August.

USEPA. 2022. *ProUCL Version 5.2.0 Technical Guide.* V.04-08-2022_508

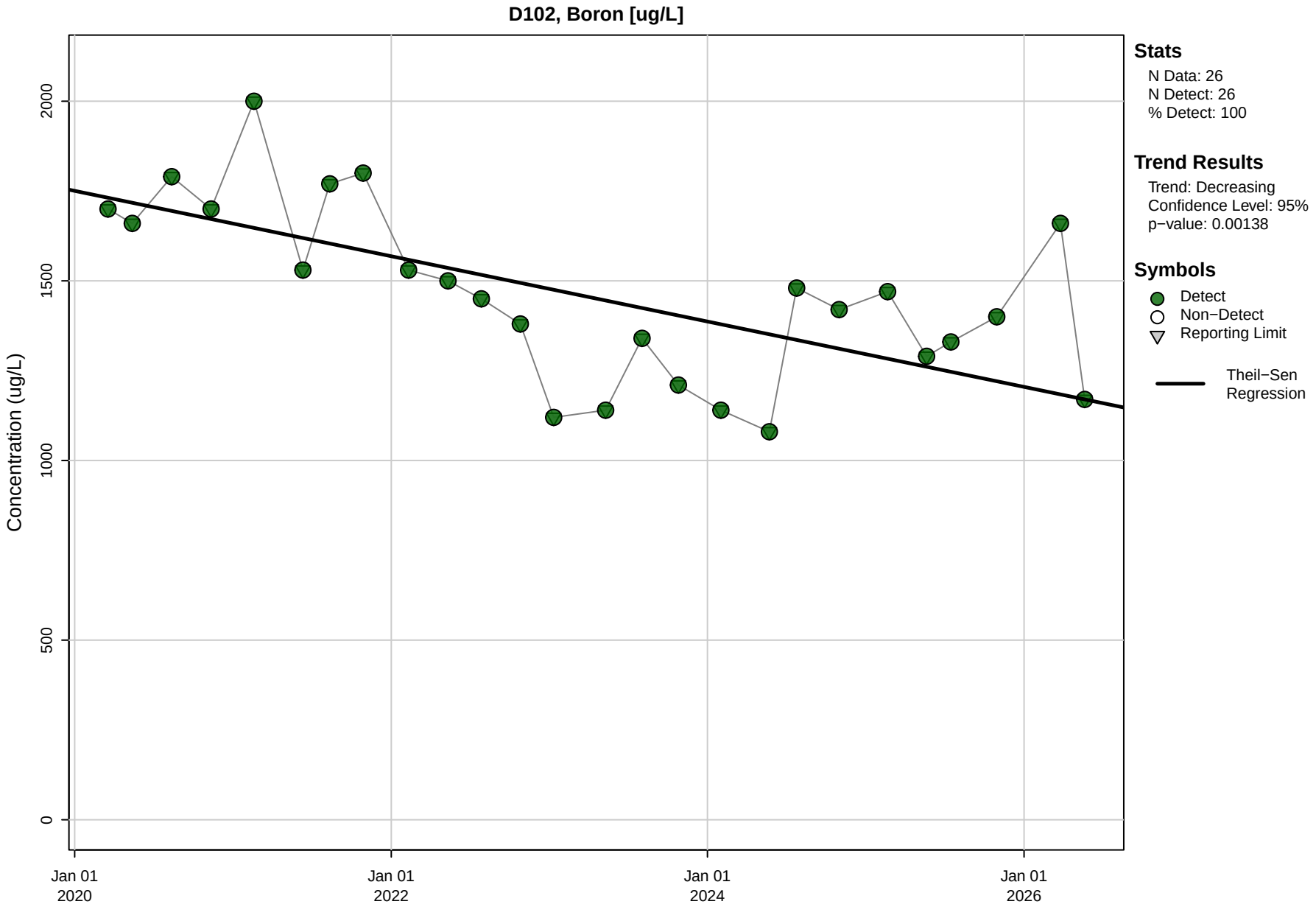
APPENDIX M STATISTICAL ANALYSIS

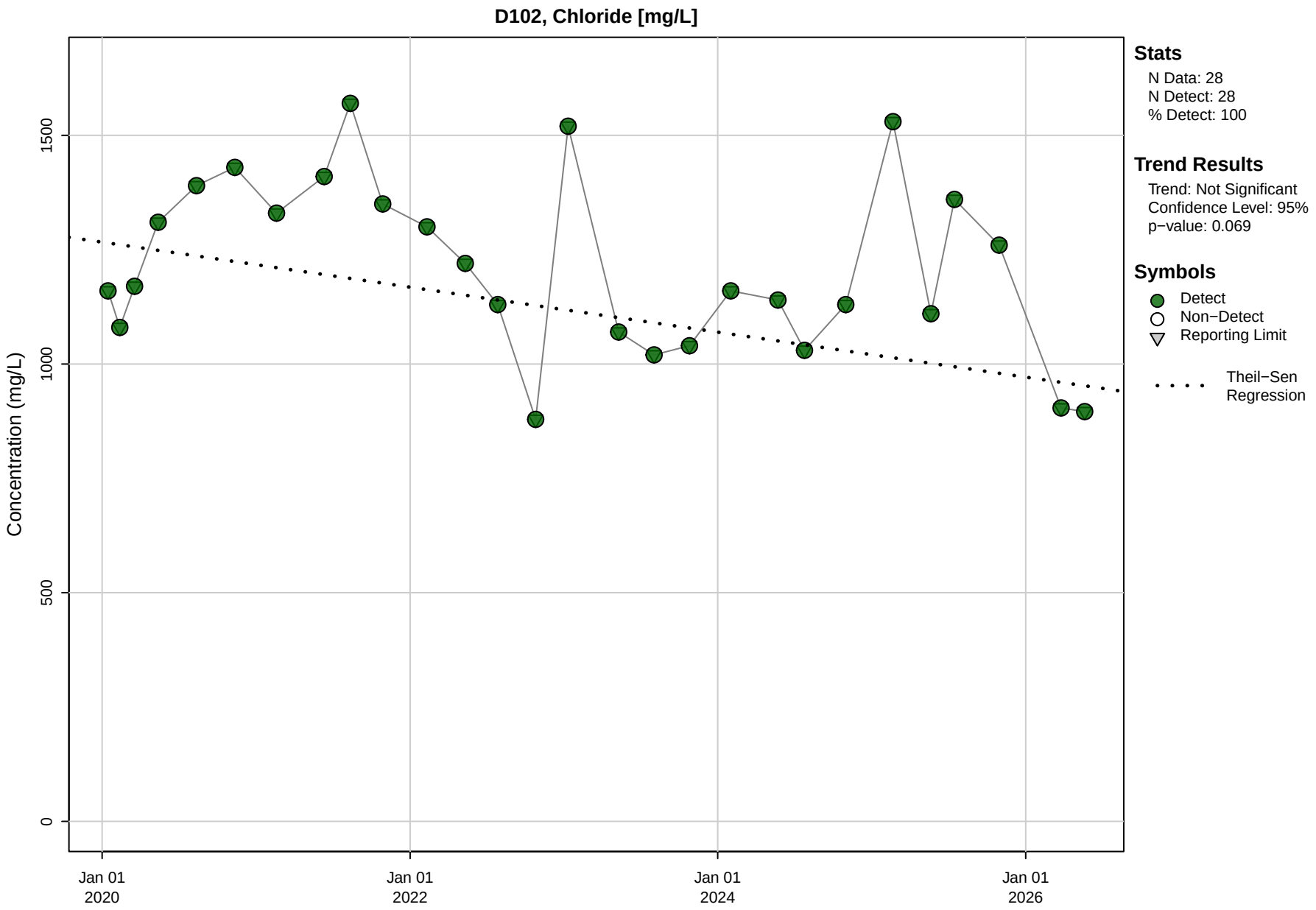
Trend Analysis Summary

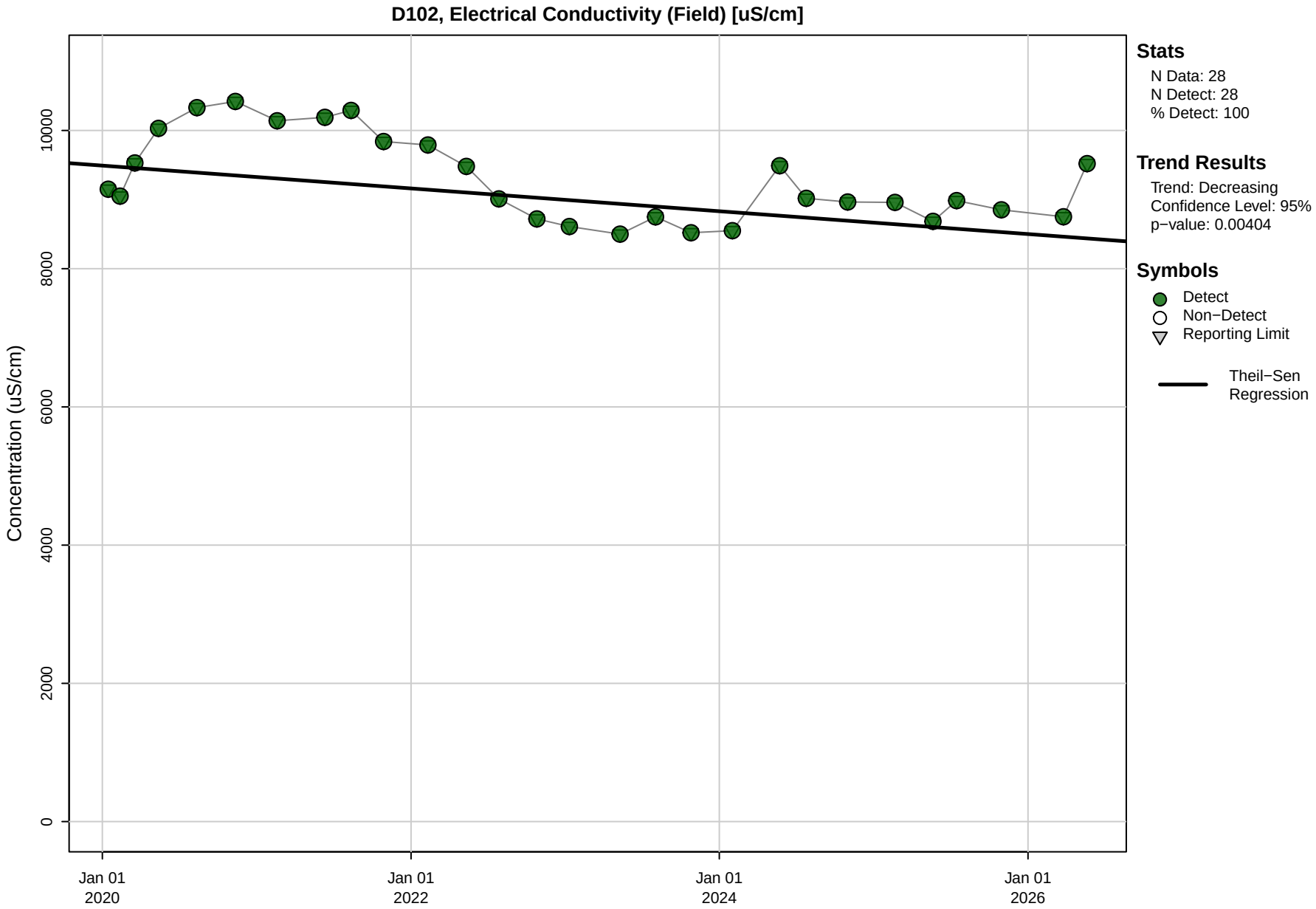

Data Notes
< 4 detections
< 50% detections
< 4 detections AND < 50% detections
Trend
Increasing
Decreasing
Not Significant
Insufficient Data
No Data
Boron [ug/L]
Chloride [mg/L]
Electrical Conductivity (Field) [uS/cm]
Iron (Total) [ug/L]
Iron [ug/L]
Manganese [ug/L]
Nickel [ug/L]
Sulfate (as SO4) [mg/L]
Total Dissolved Solids (TDS) [mg/L]
D1
D10
D102
D103
D104
D105
D106
D107
D110
D113
D117
D119
D15
D16A
D17
D18
D19
D2
D3
D4

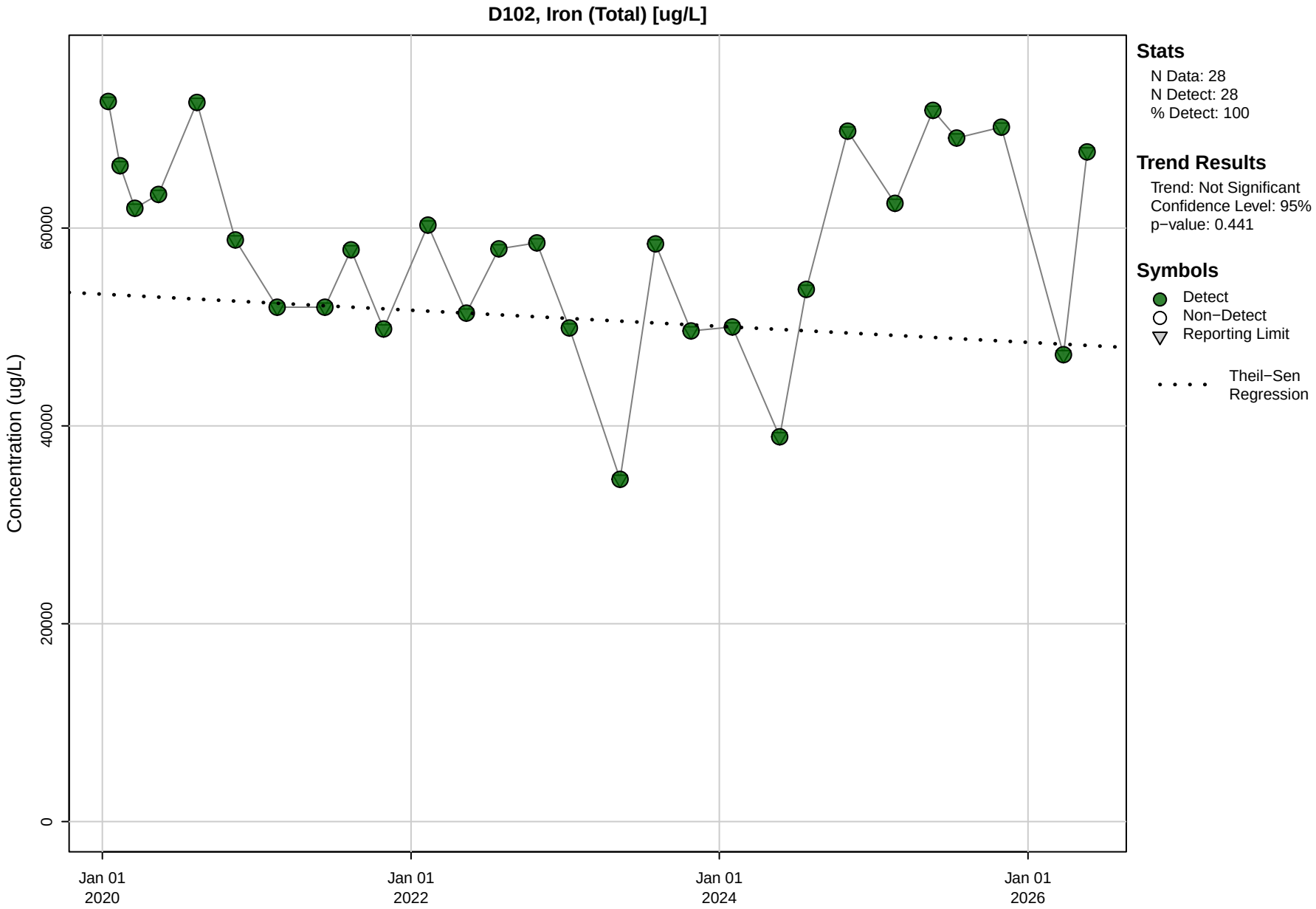

Data Notes
< 4 detections
< 50% detections
< 4 detections AND < 50% detections
Trend
Increasing
Decreasing
Not Significant
Insufficient Data
No Data
Boron [ug/L]
Chloride [mg/L]
Electrical Conductivity (Field) [uS/cm]
Iron (Total) [ug/L]
Iron [ug/L]
Manganese [ug/L]
Nickel [ug/L]
Sulfate (as SO4) [mg/L]
Total Dissolved Solids (TDS) [mg/L]
D5
D8
D9
MPGM5−D5
MPGM5−D6

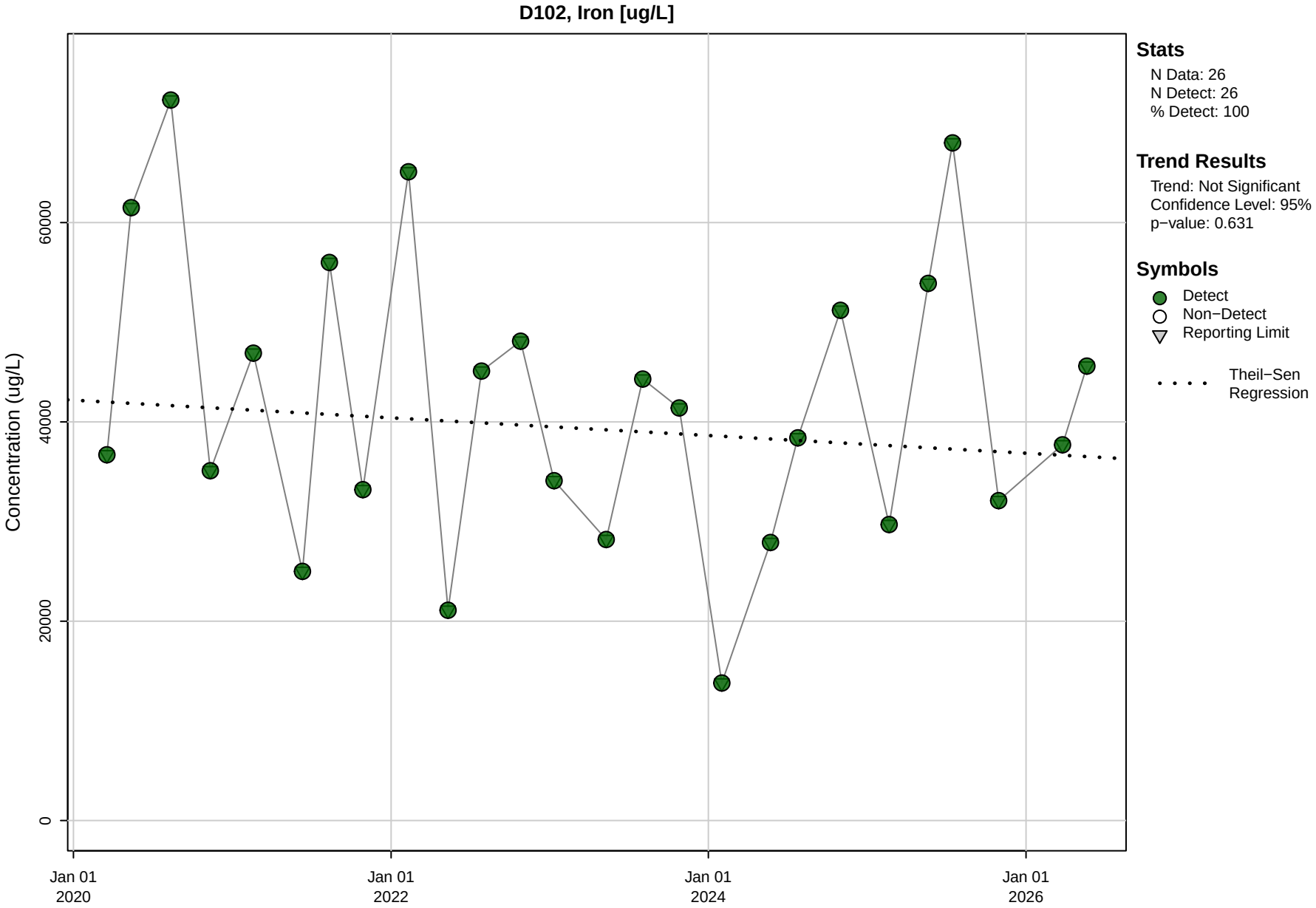
Time Series Figures

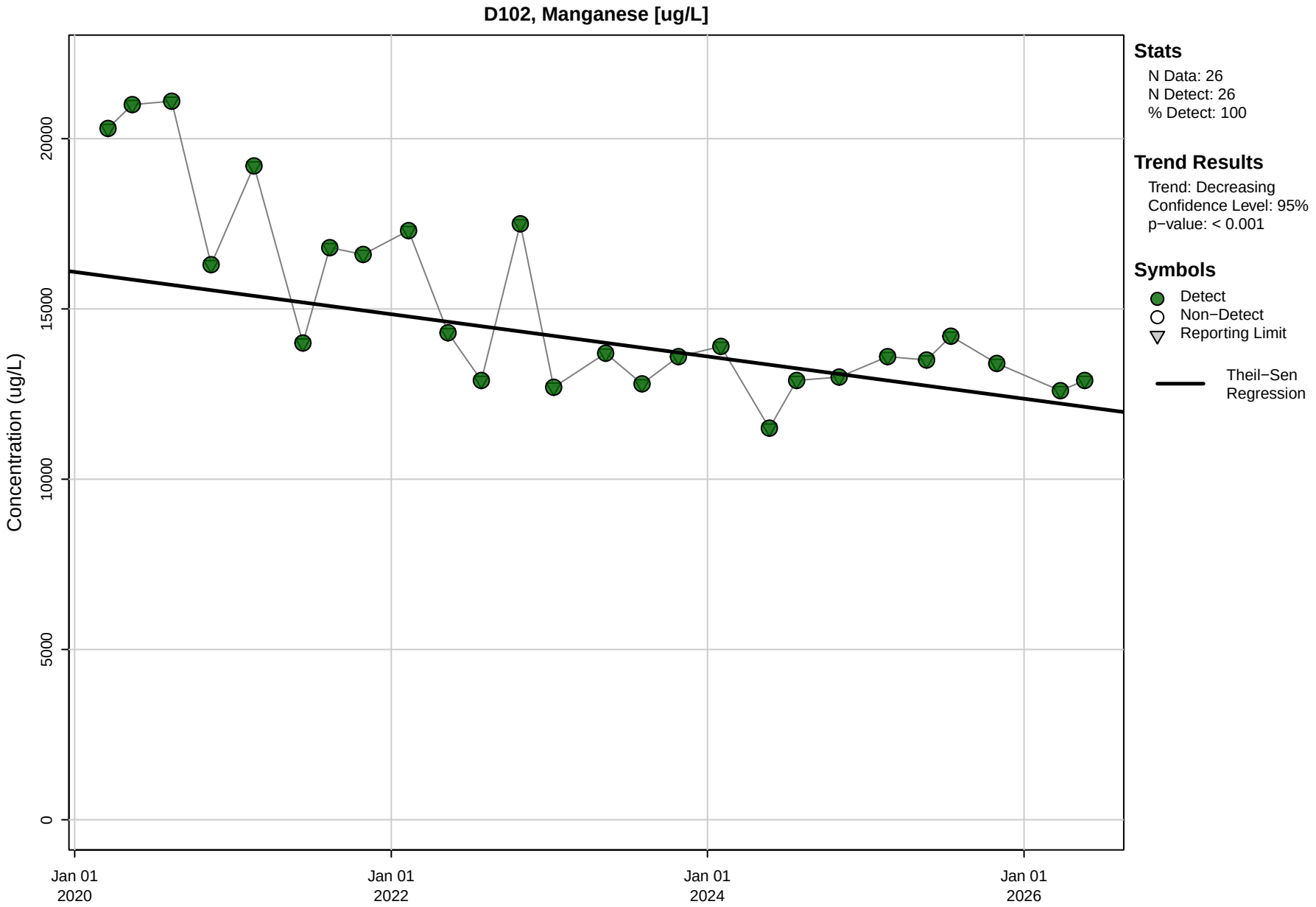

D102, Boron [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00138
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

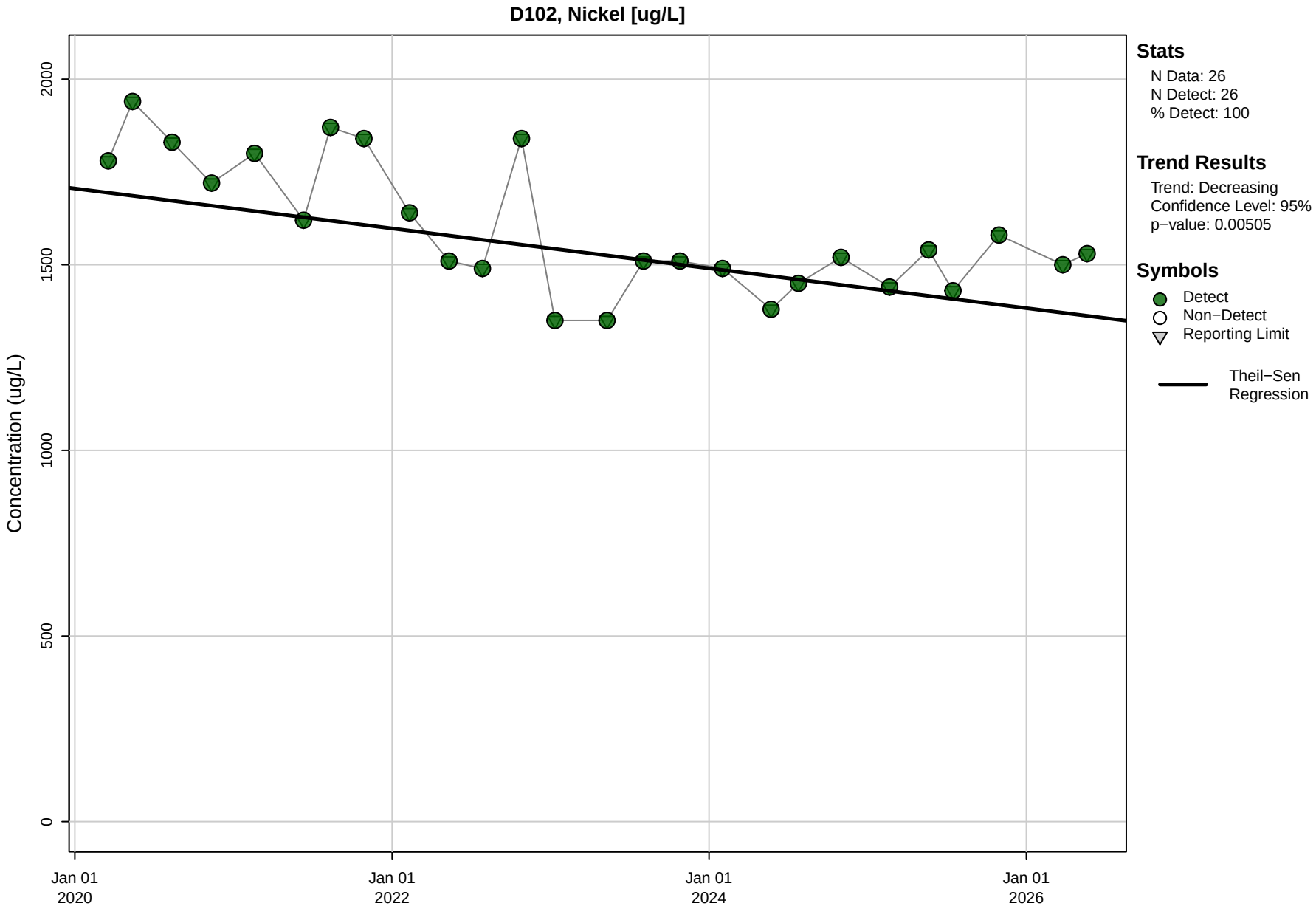

D102, Chloride [mg/L]
Concentration (mg/L)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.069
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

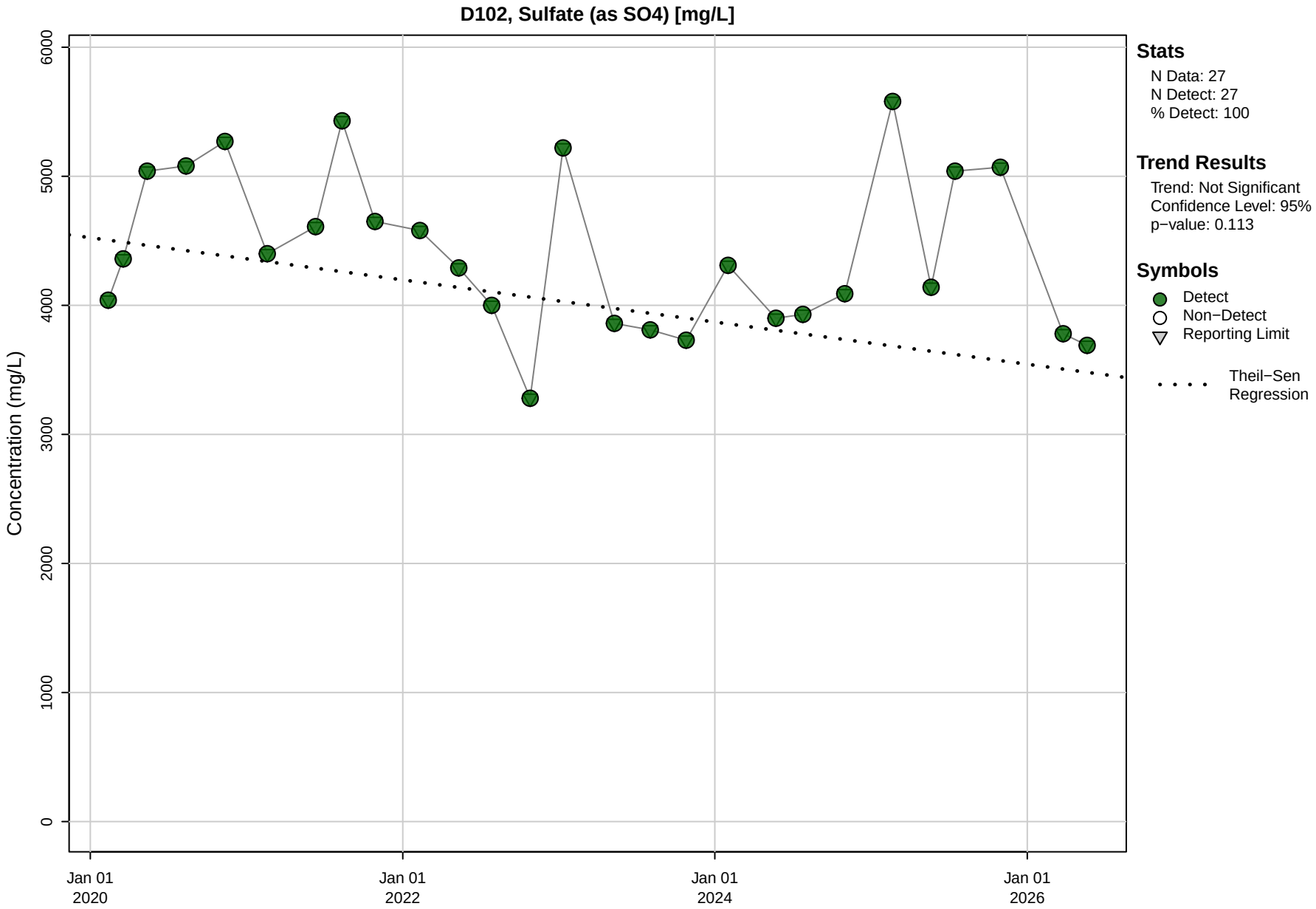

D102, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00404
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

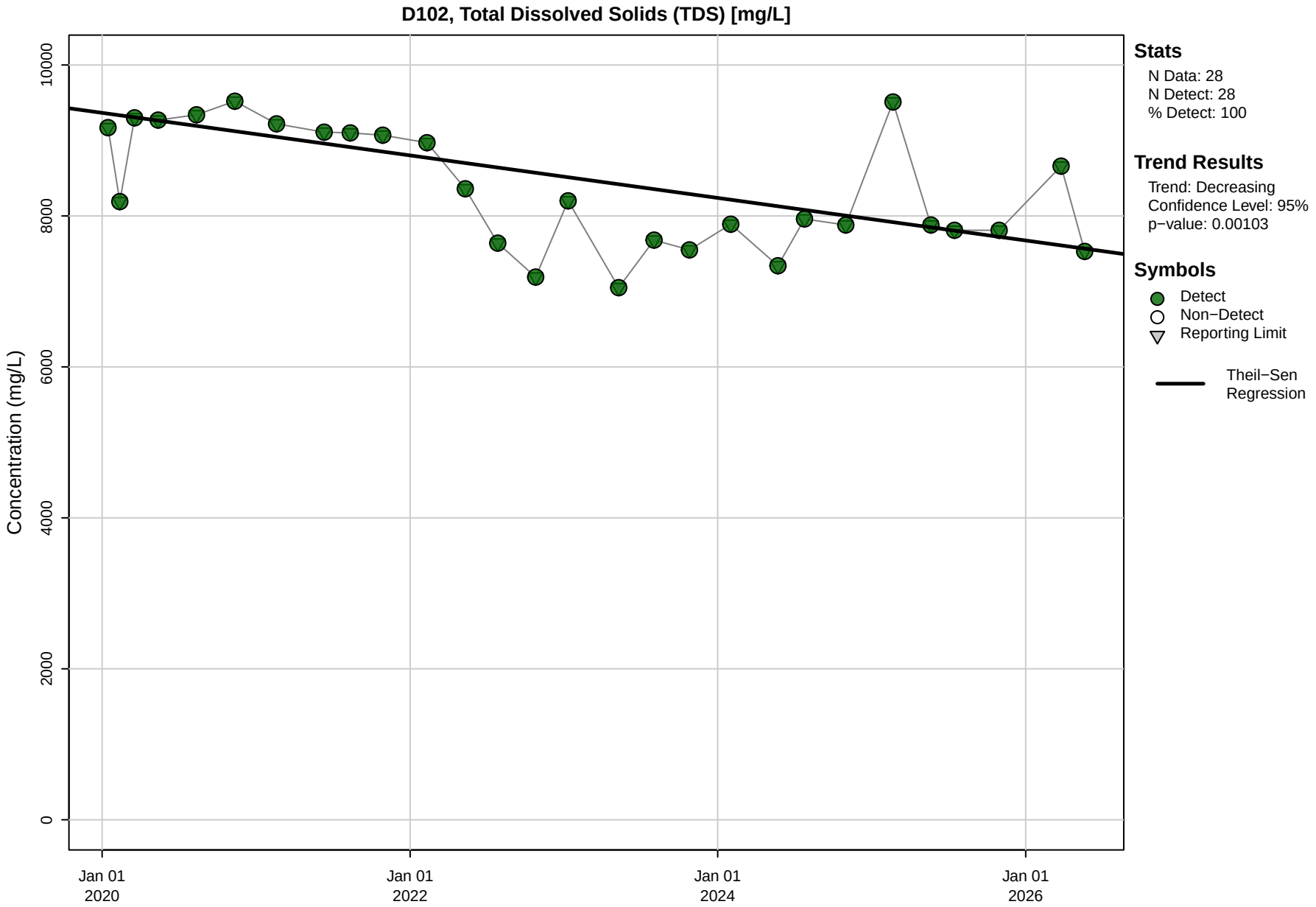

D102, Iron (Total) [ugL]
Concentration (ug/L)
0
20000
40000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.441
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

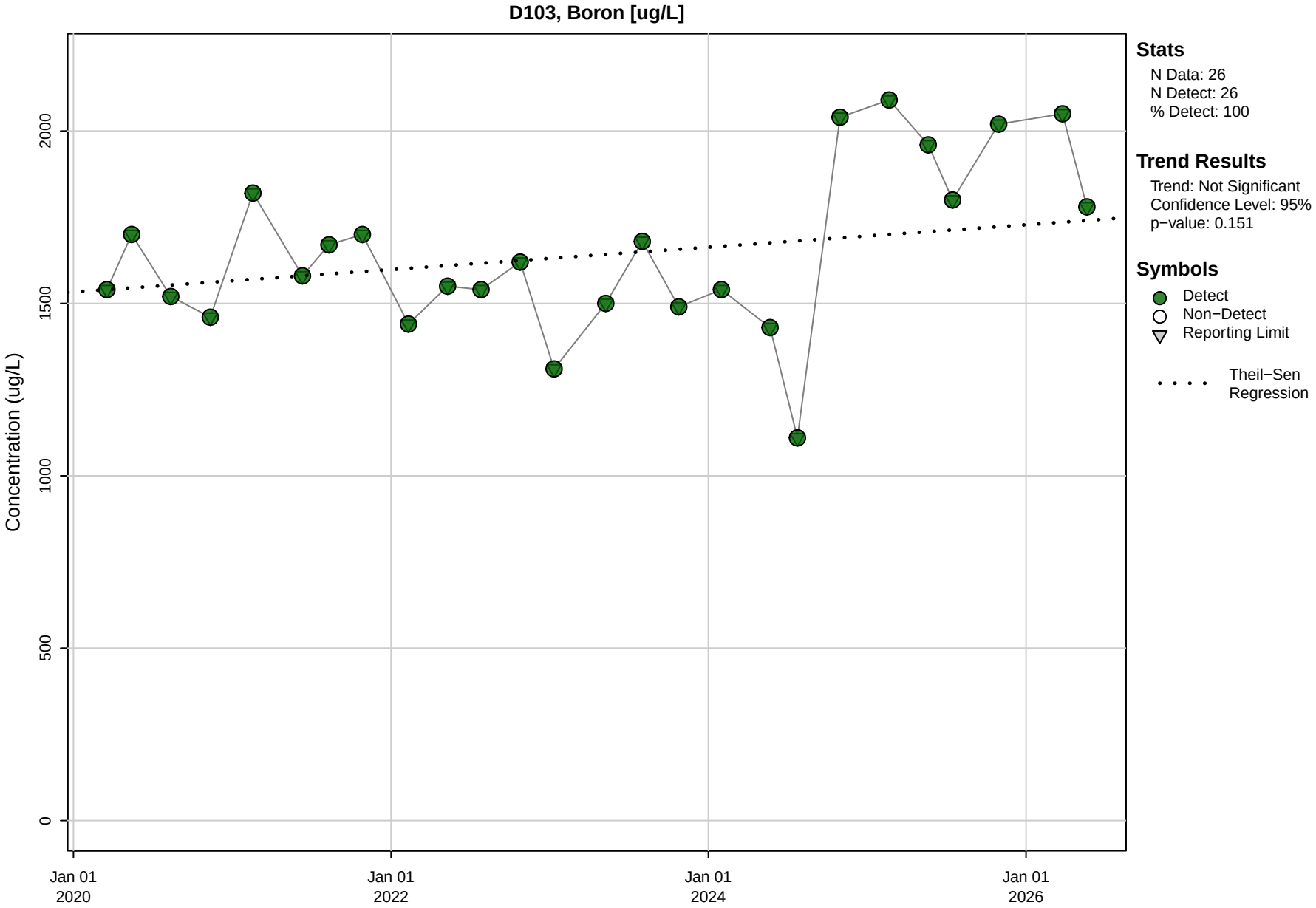

D102, Iron [ug/L]
Concentration (ug/L)
0
20000
40000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.631
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

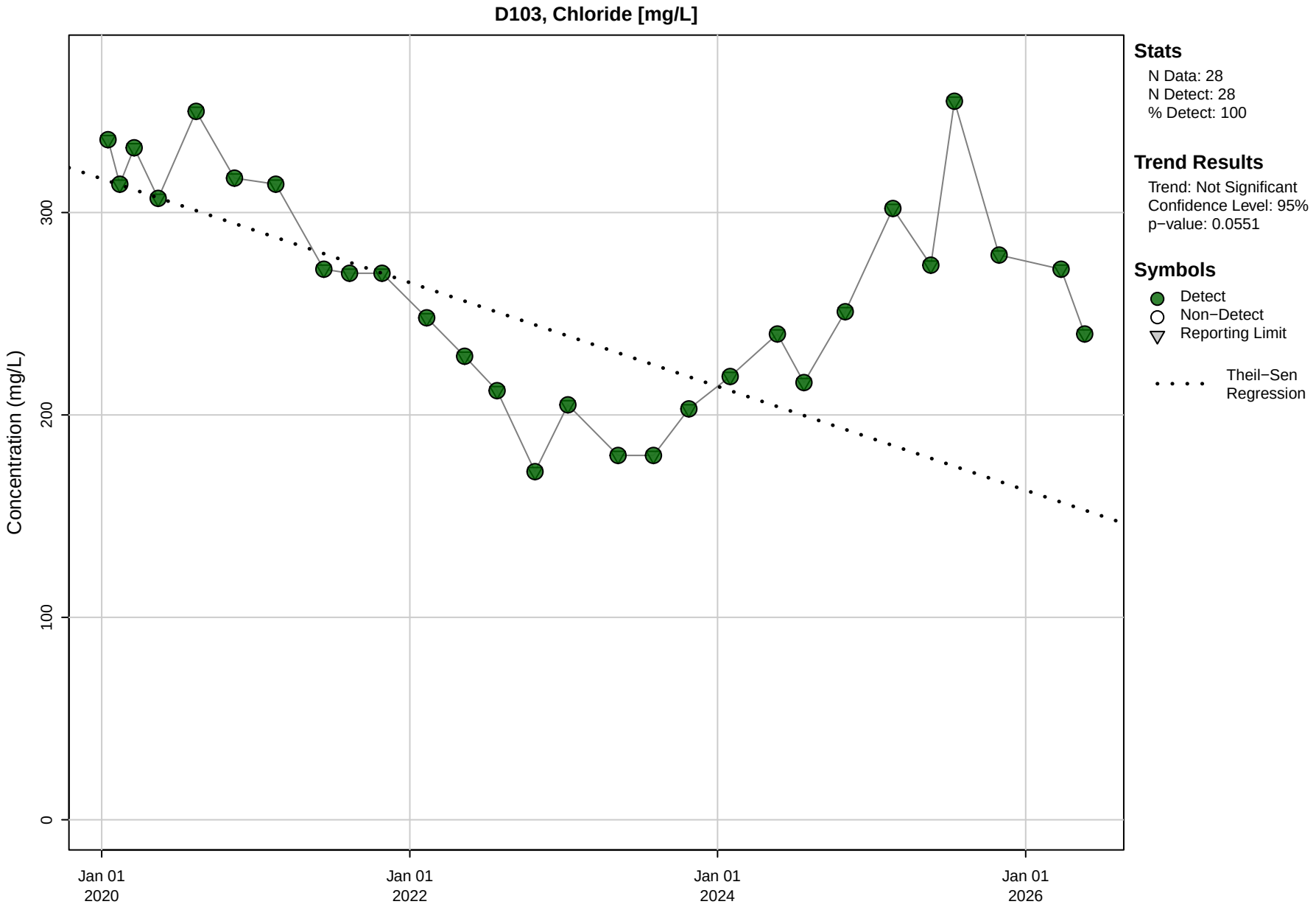

D102, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

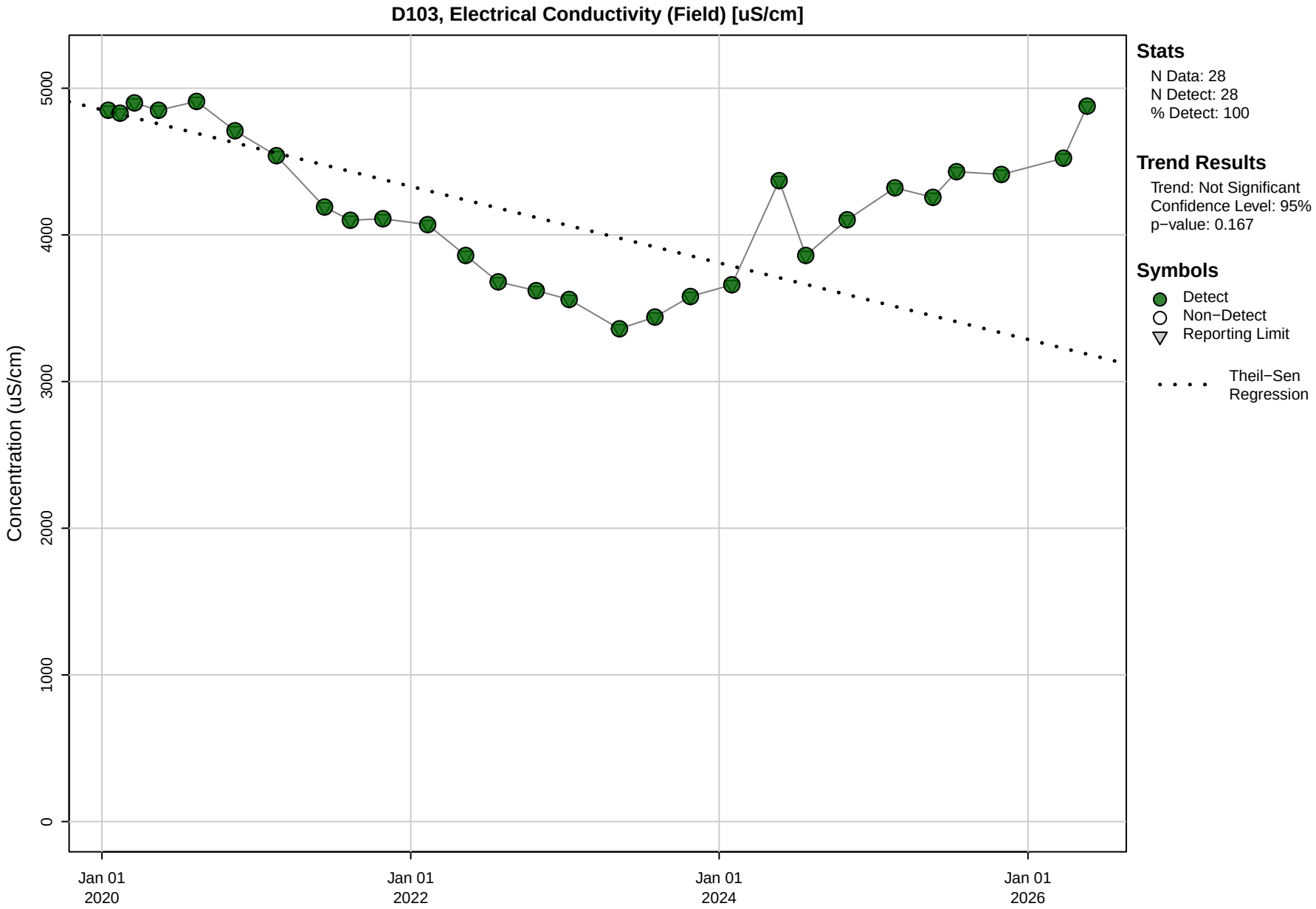

D102, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00505
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

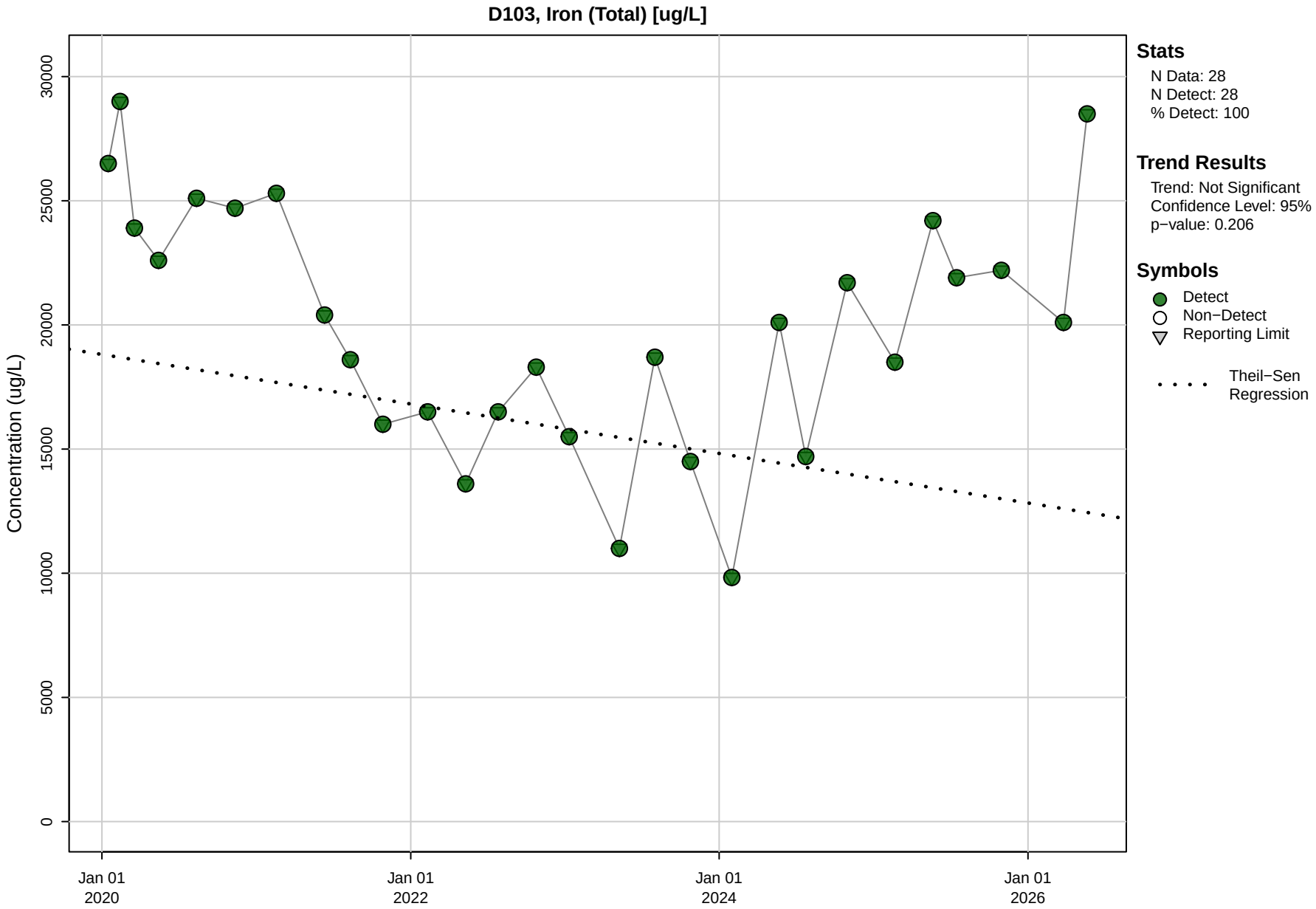

D102, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
6000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.113
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

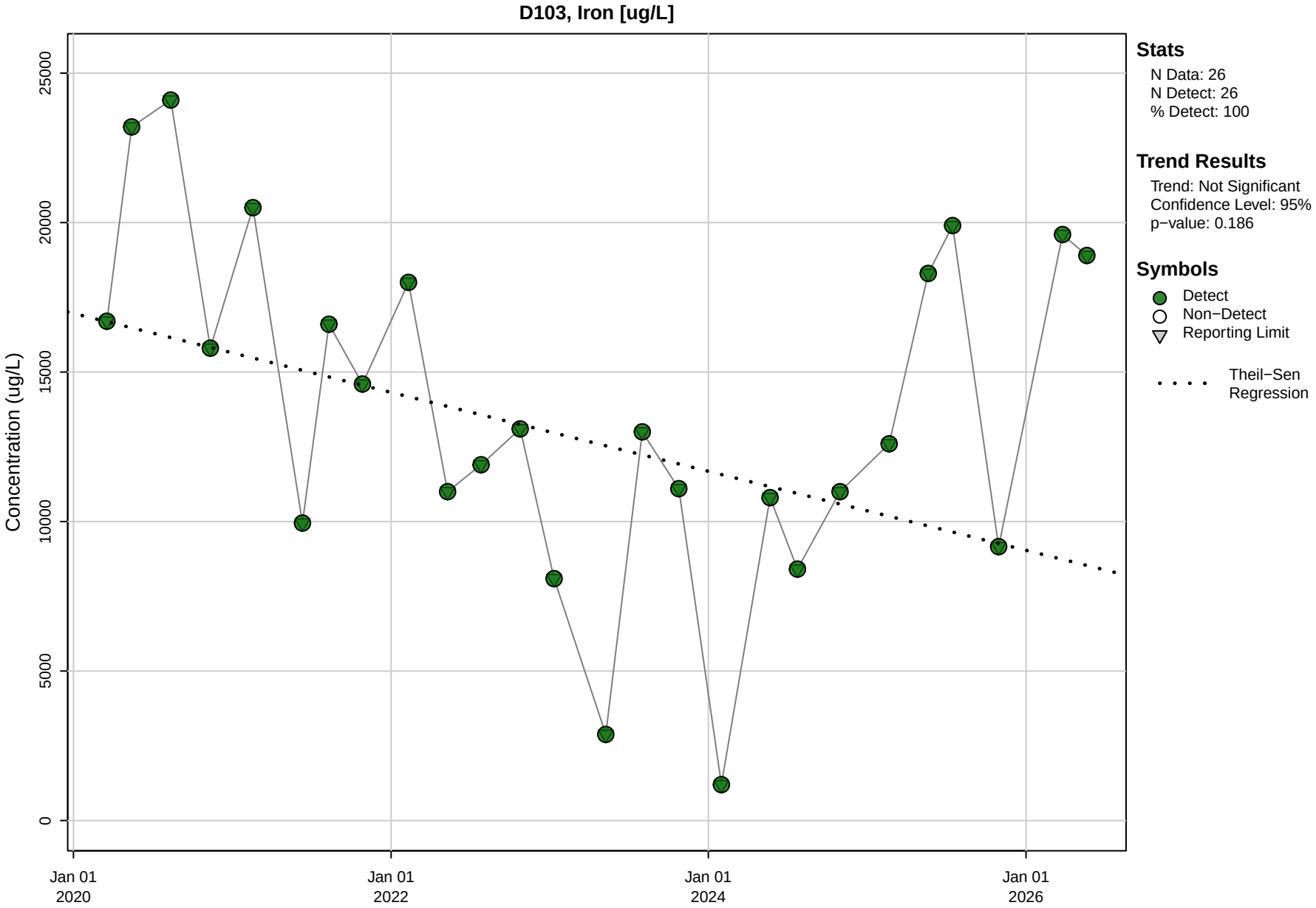

D102, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00103
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

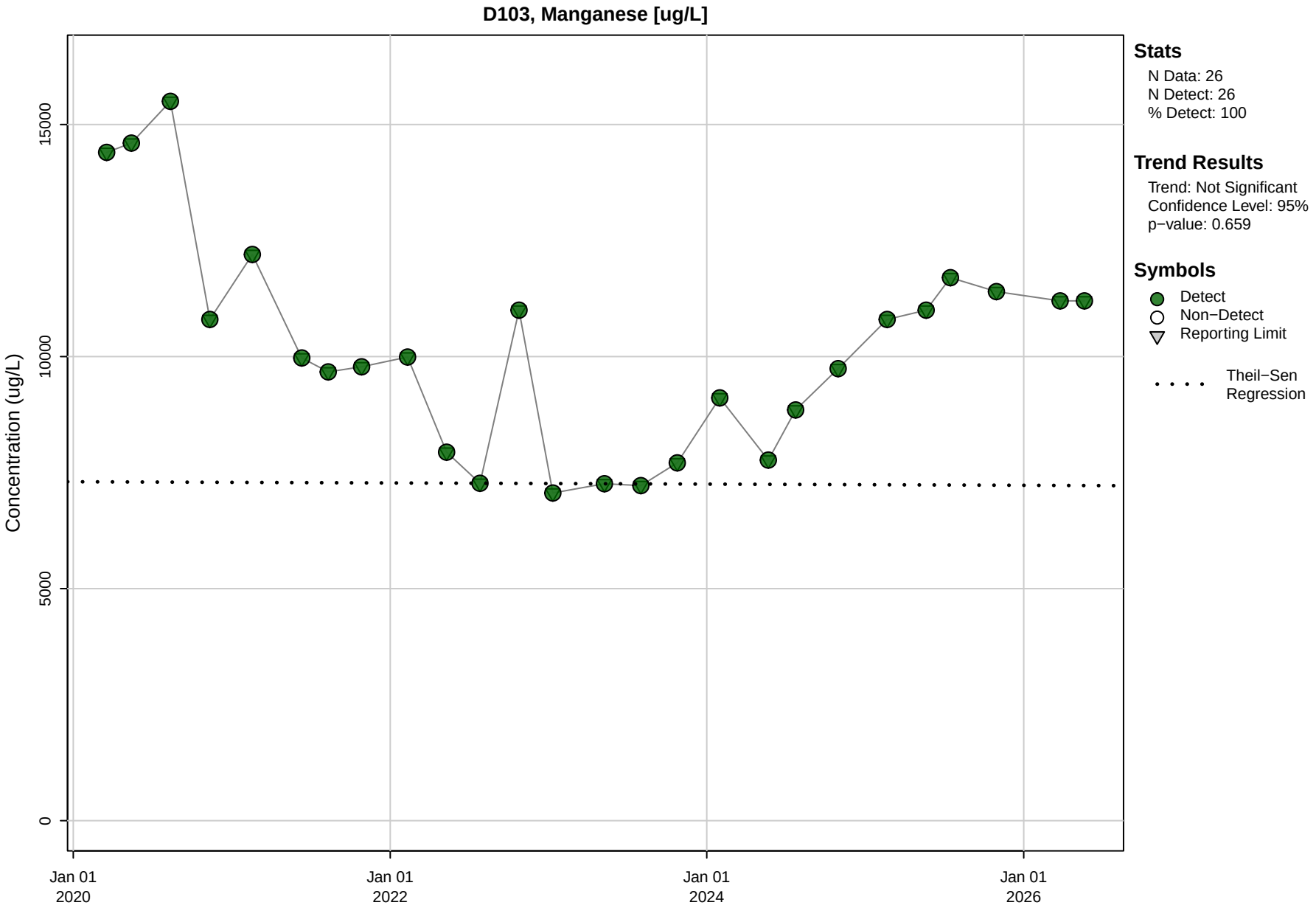

D103, Boron [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.151
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

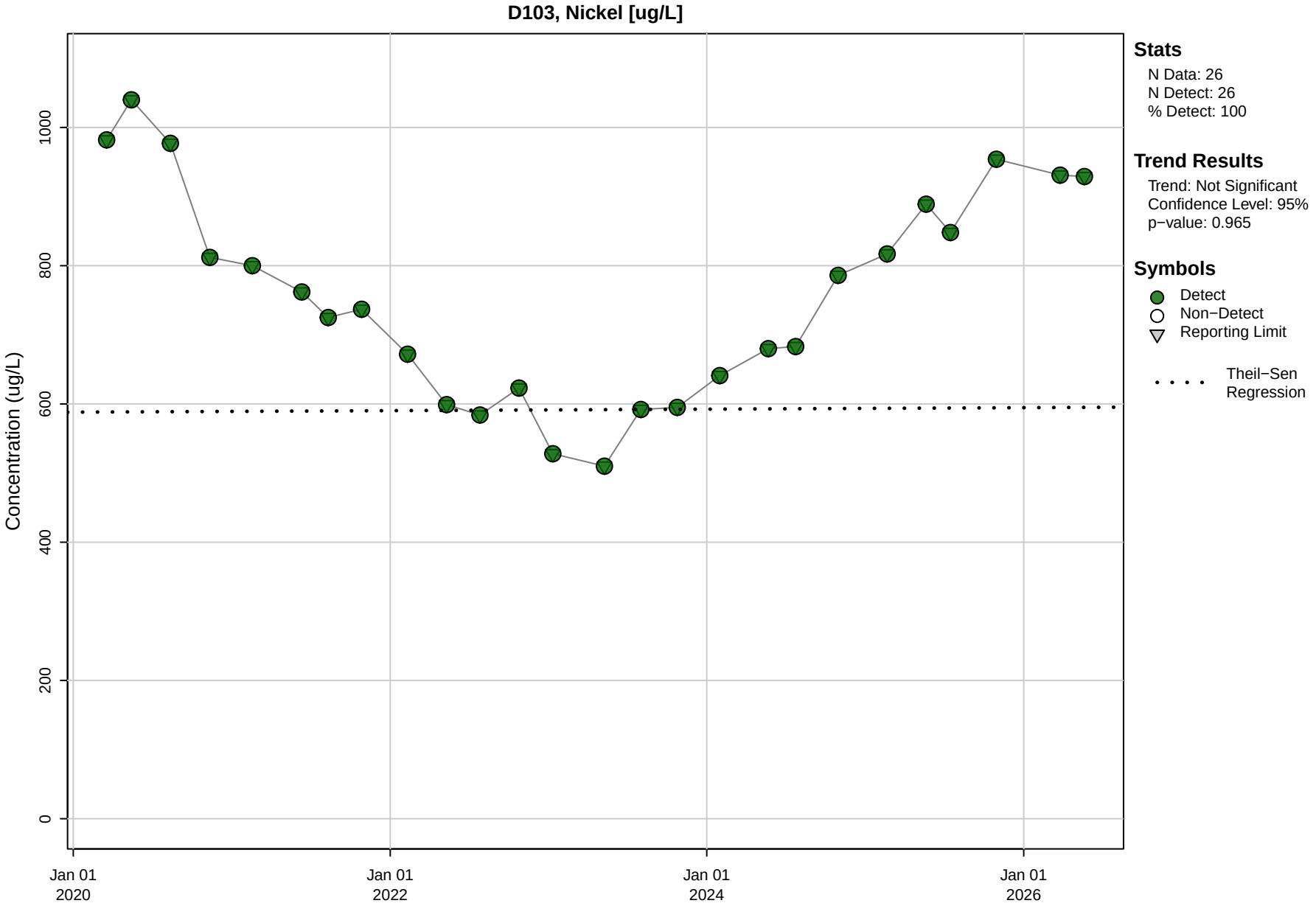

D103, Chloride [mg/L]
Concentration (mg/L)
0
100
200
300
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0551
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

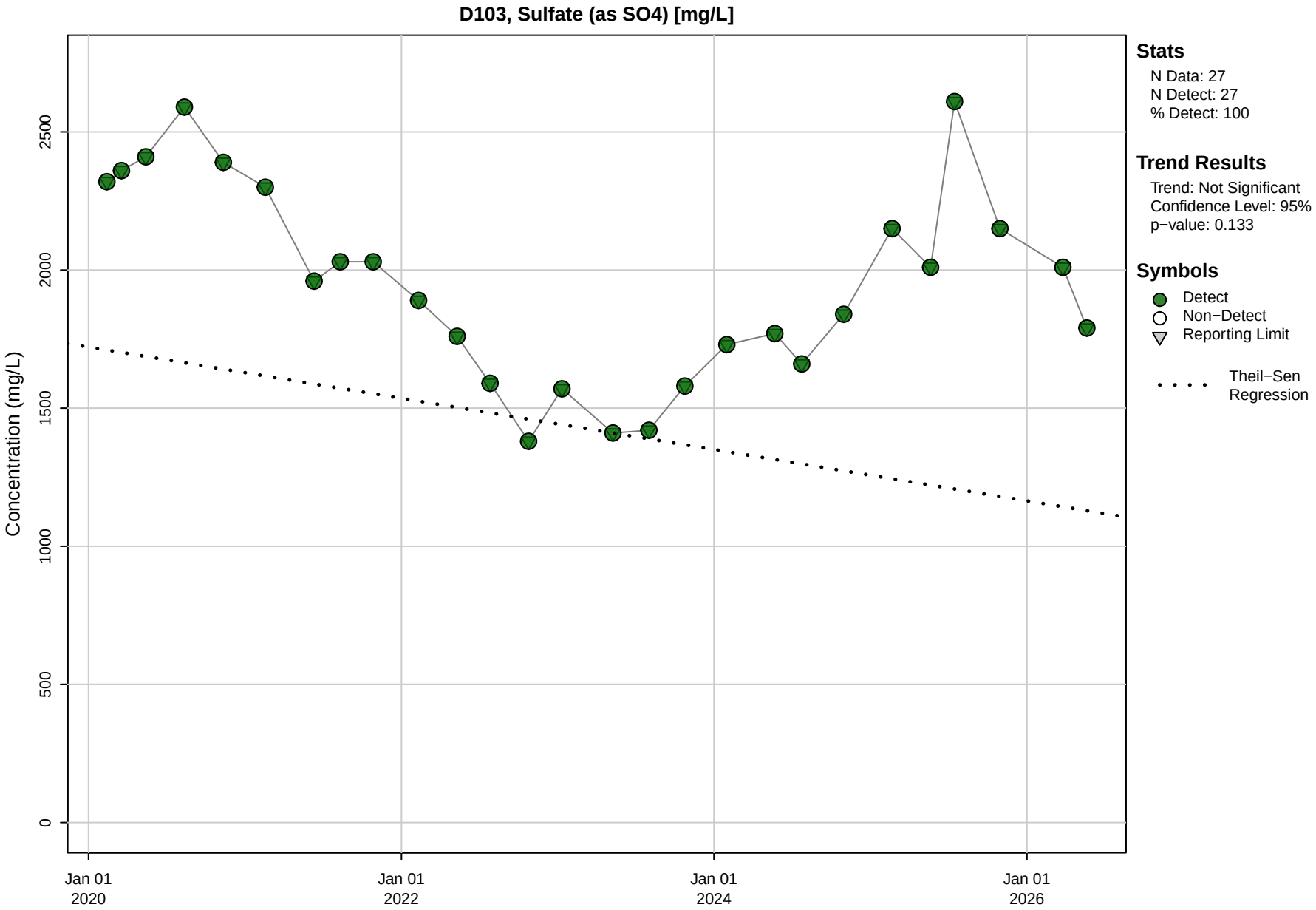

D103, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
4000
5000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.167
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

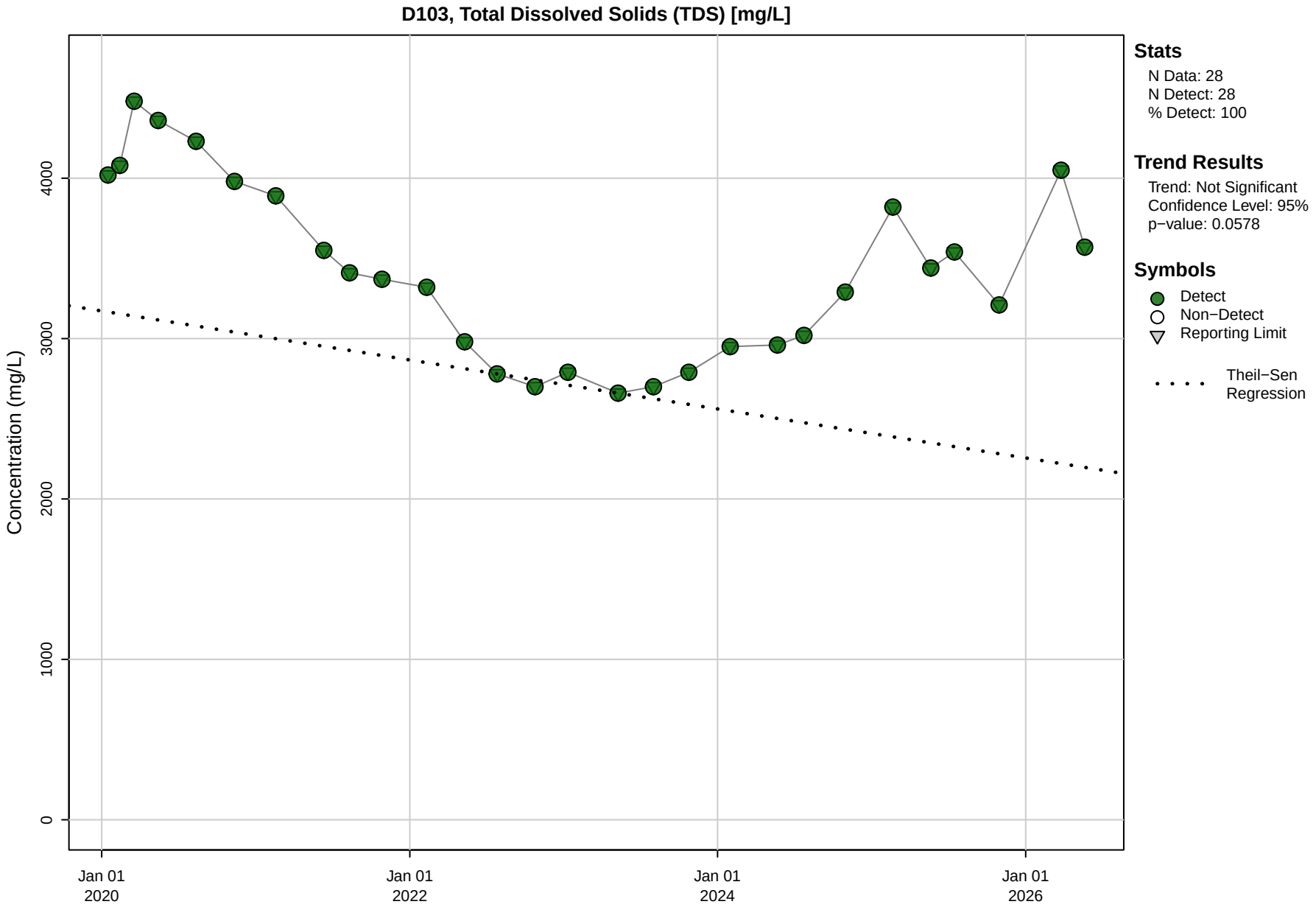

D103, Iron (Total) [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
30000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.206
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

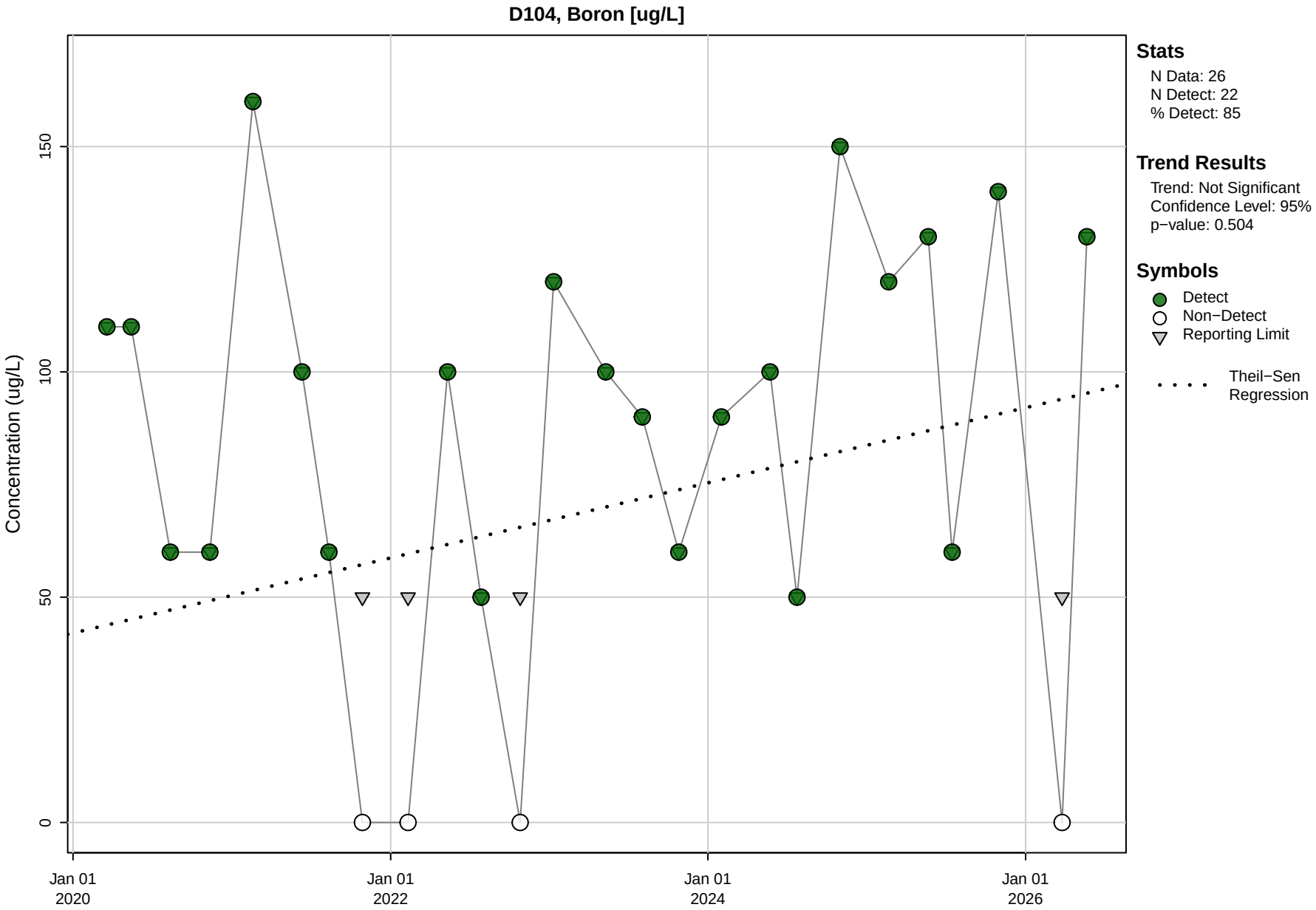

D103, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.186
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

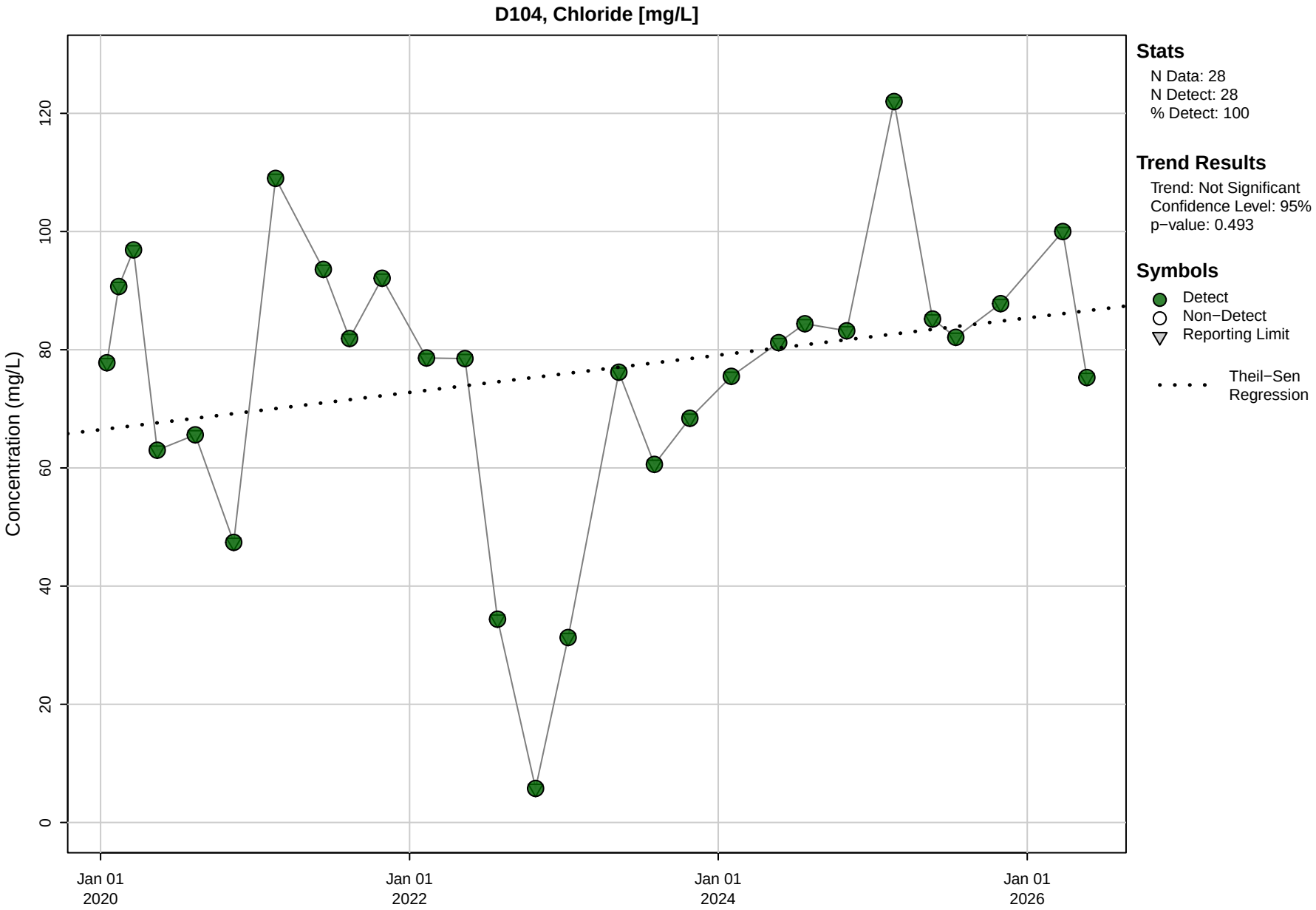

D103, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.659
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

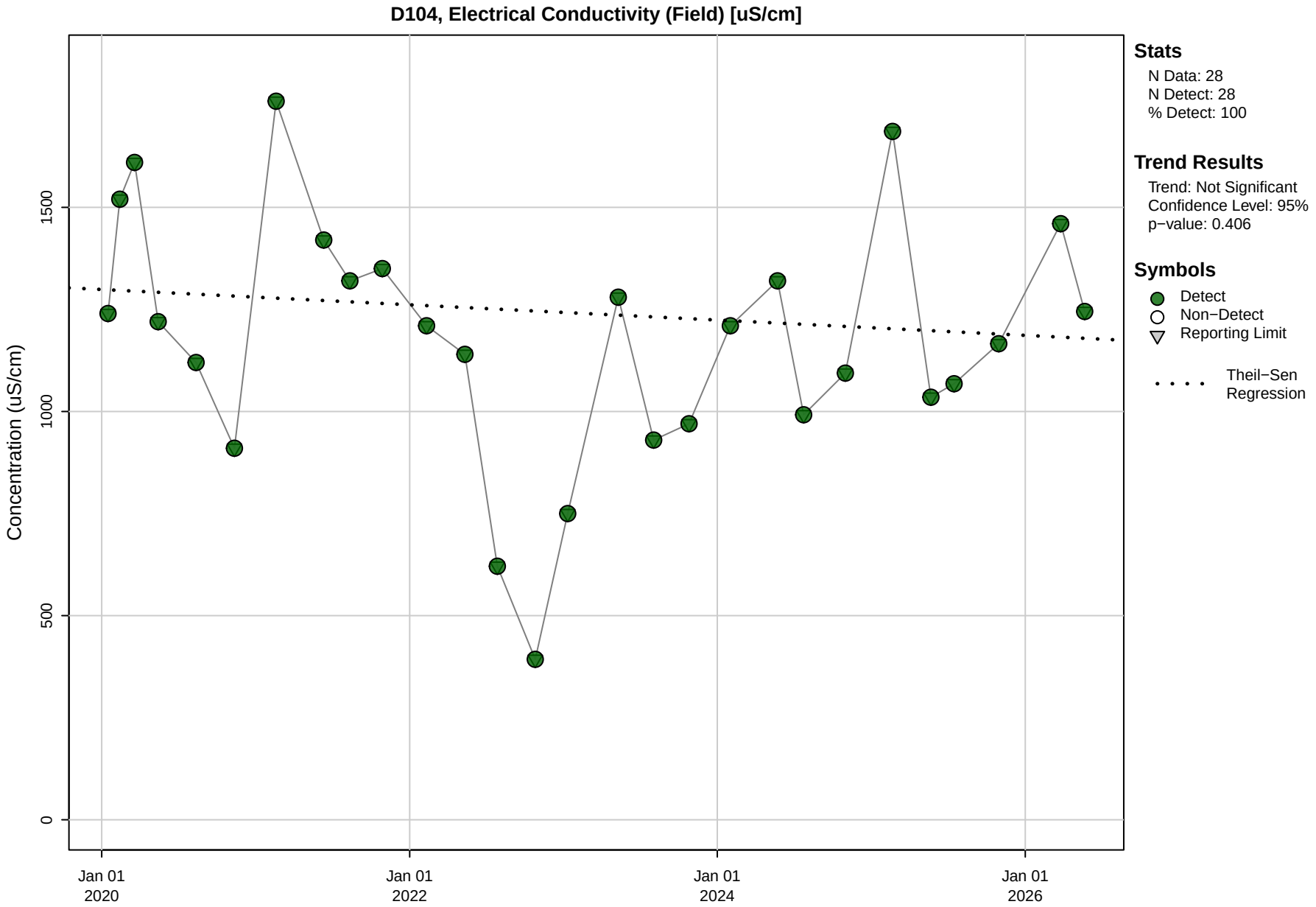

D103, Nickel [ug/L]
Concentration (ug/L)
0
200
400
600
800
1000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.965
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

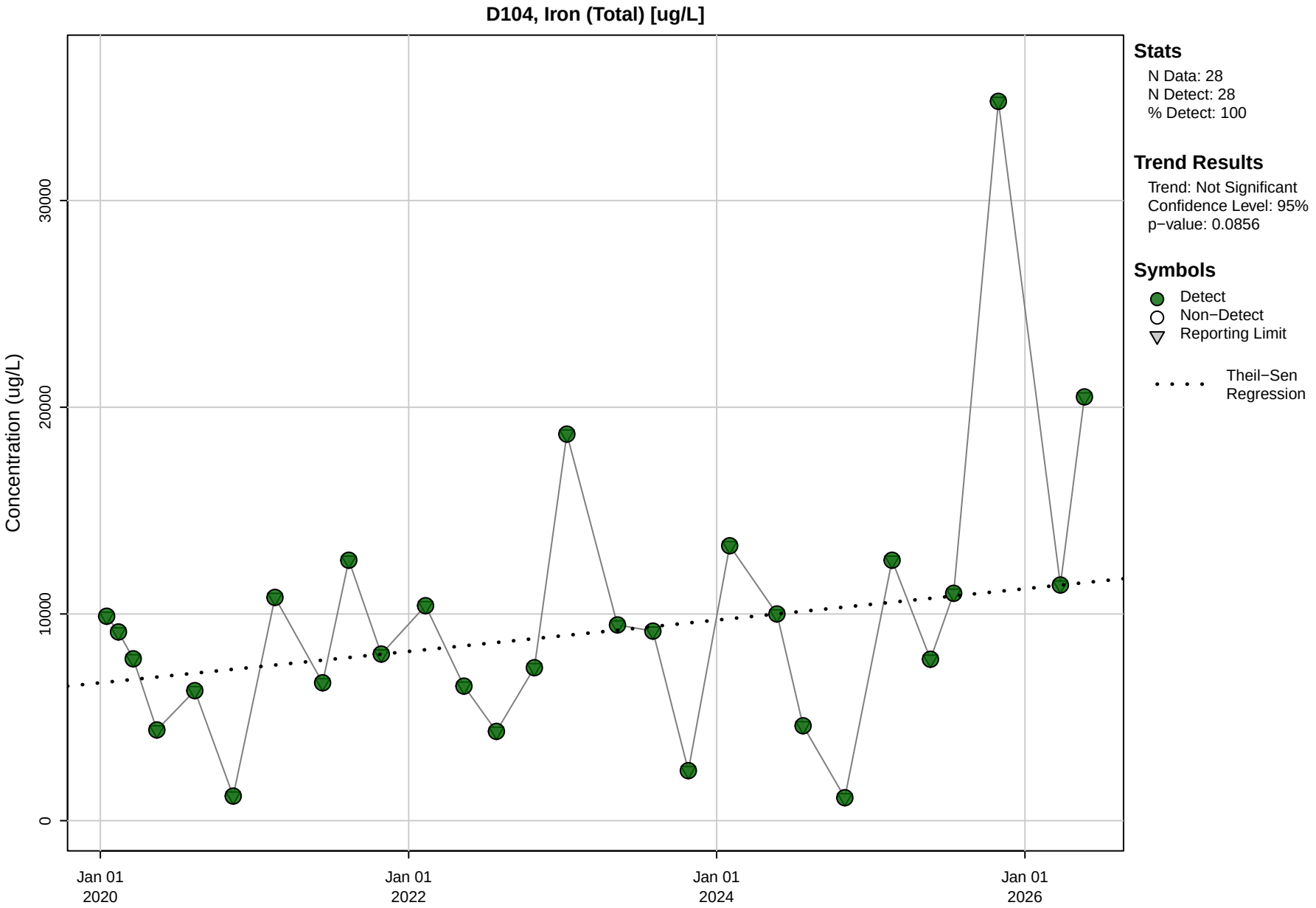

D103, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
2500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.133
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

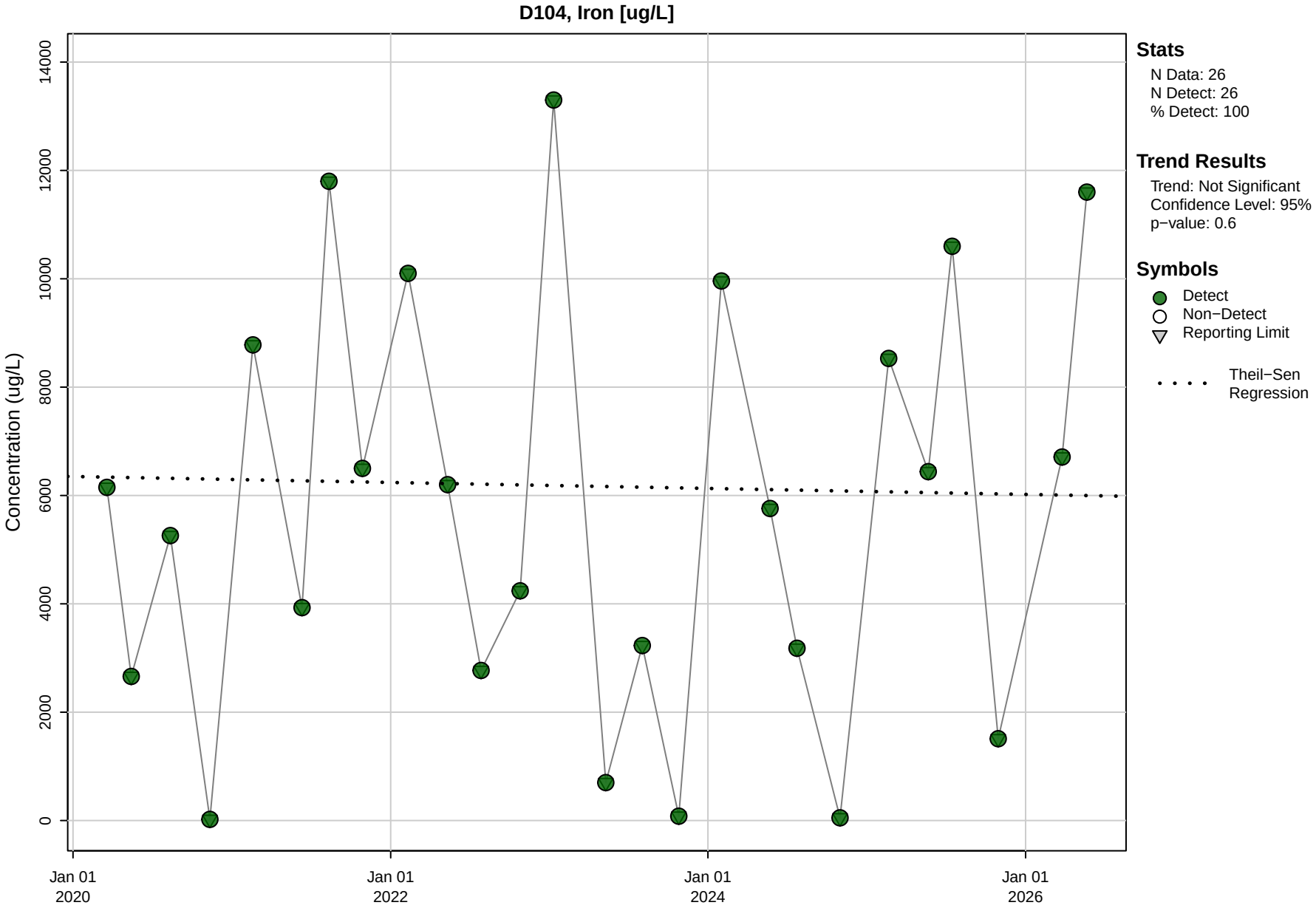

D103, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0578
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

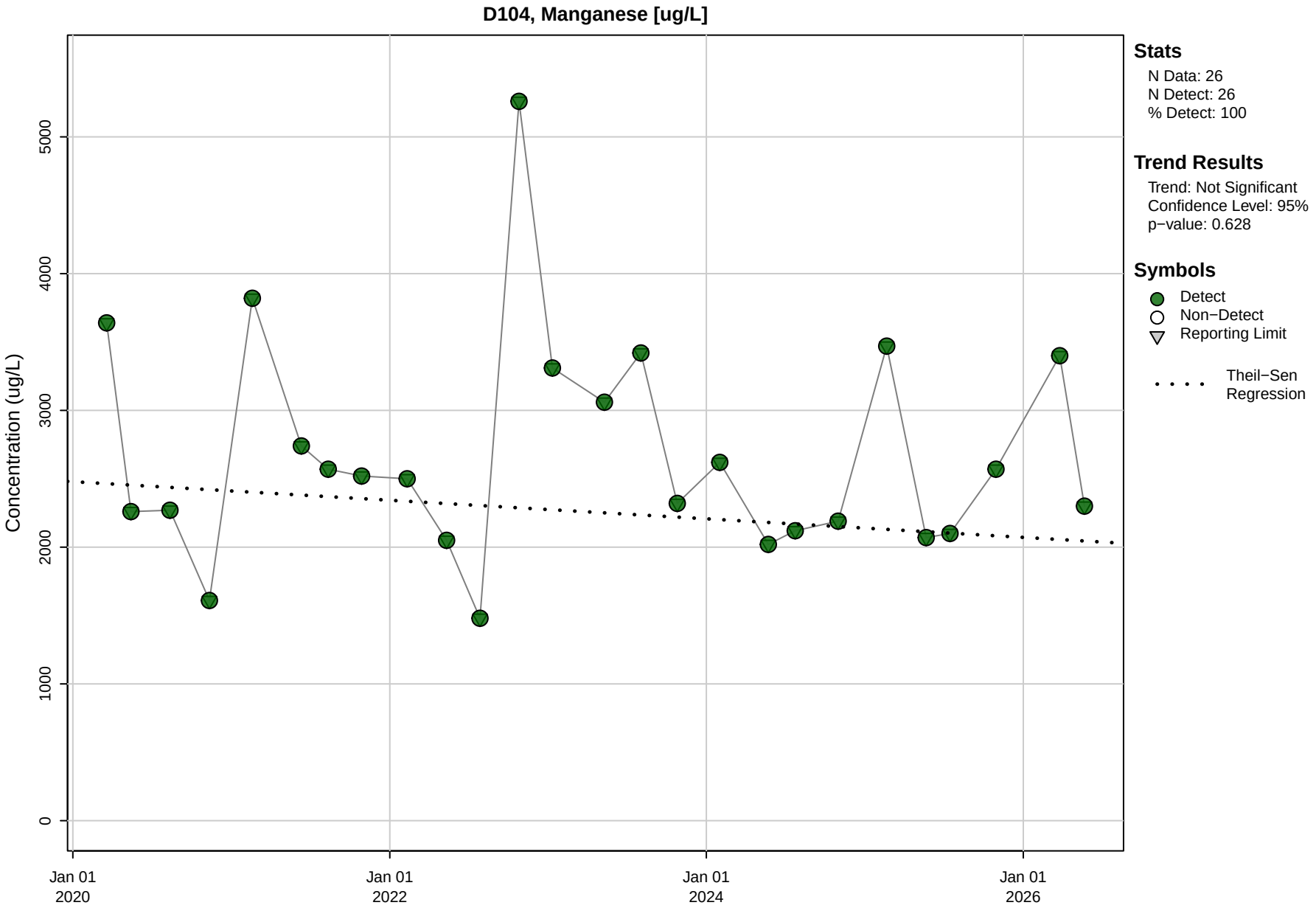

D104, Boron [ug/L]
Concentration (ug/L)
0
50
100
150
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 22
% Detect: 85
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.504
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

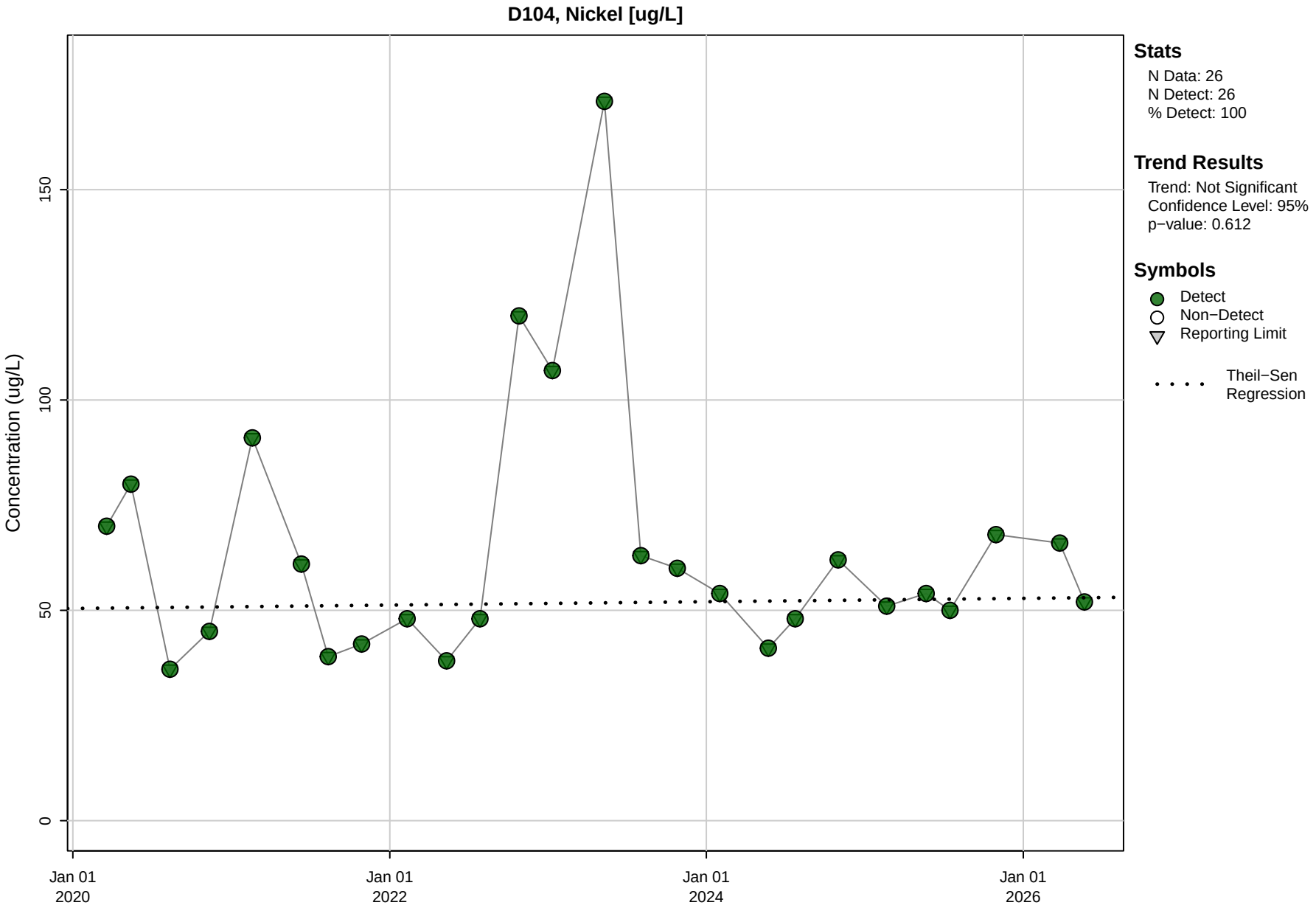

D104, Chloride [mg/L]
Concentration (mg/L)
0
20
40
60
80
100
120
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.493
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

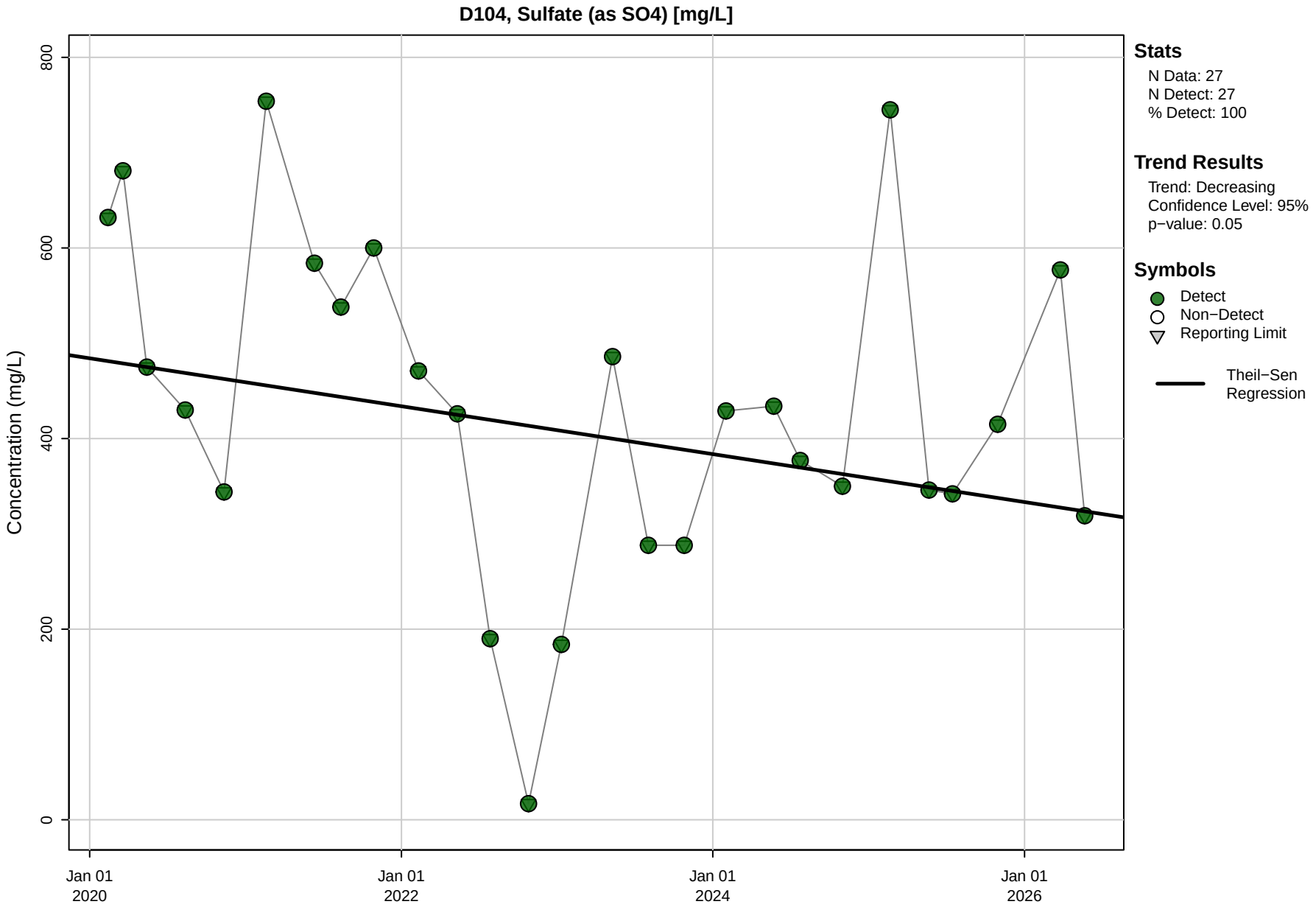

D104, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.406
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

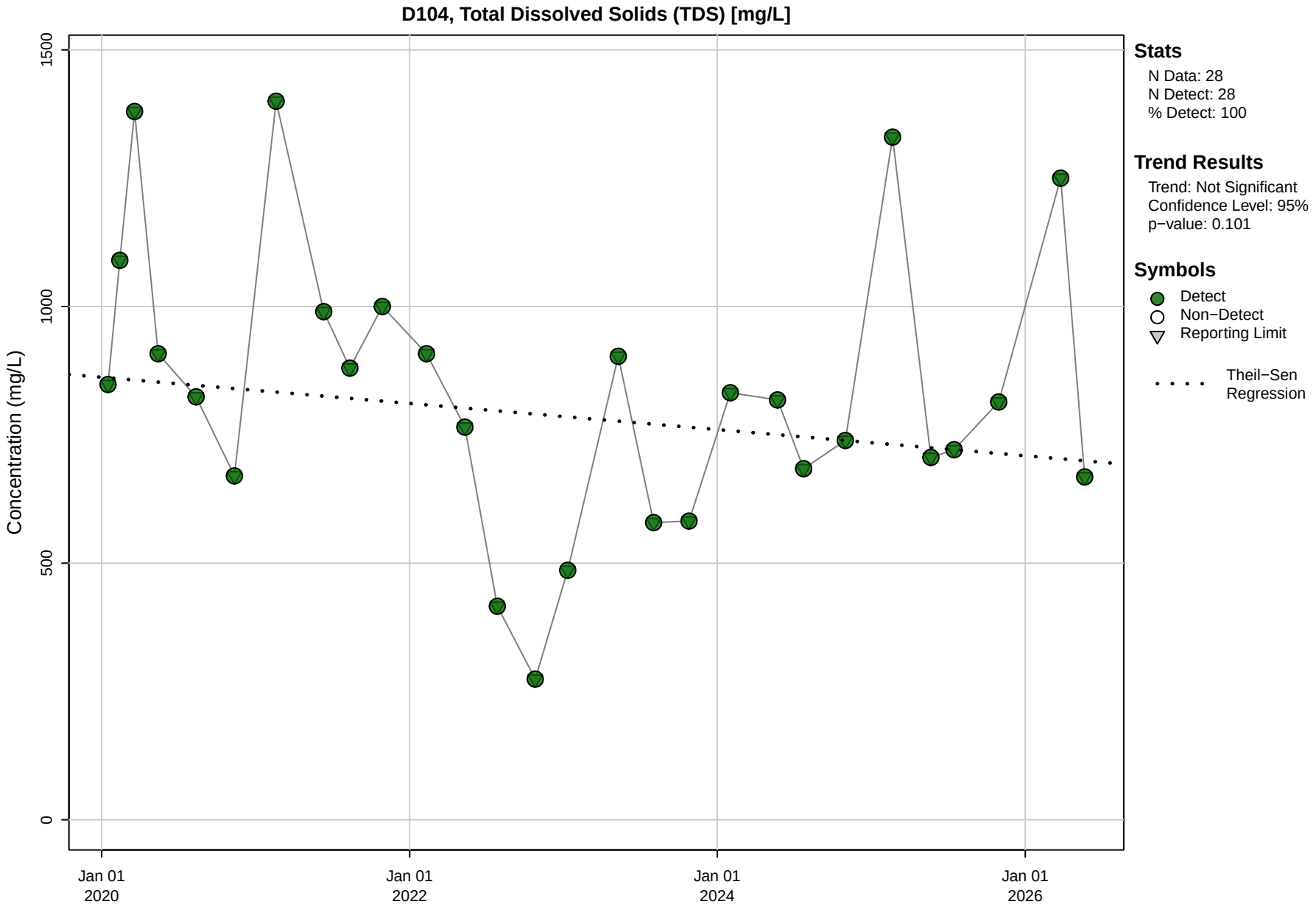

D104, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0856
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

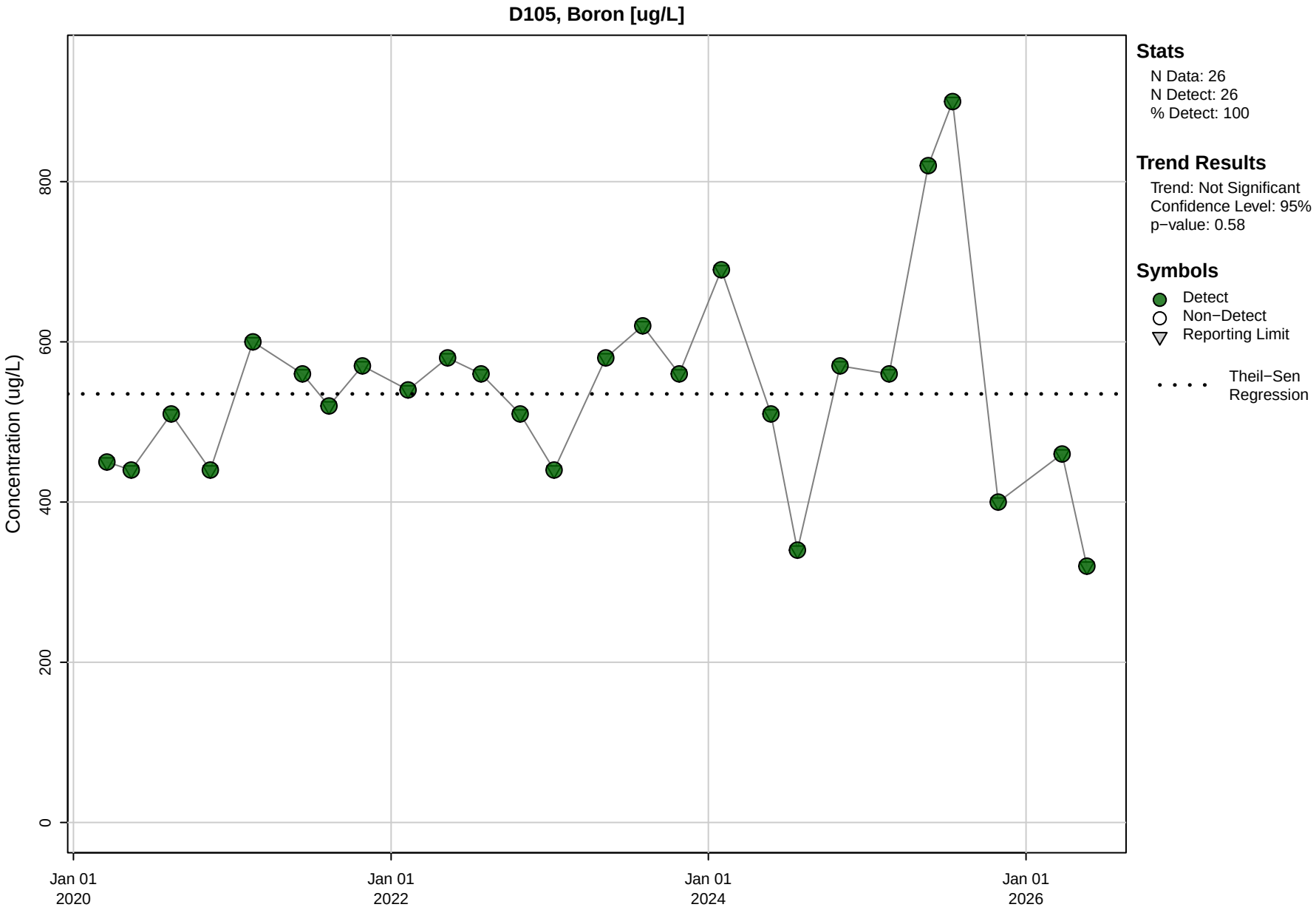

D104, Iron [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
10000
12000
14000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.6
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

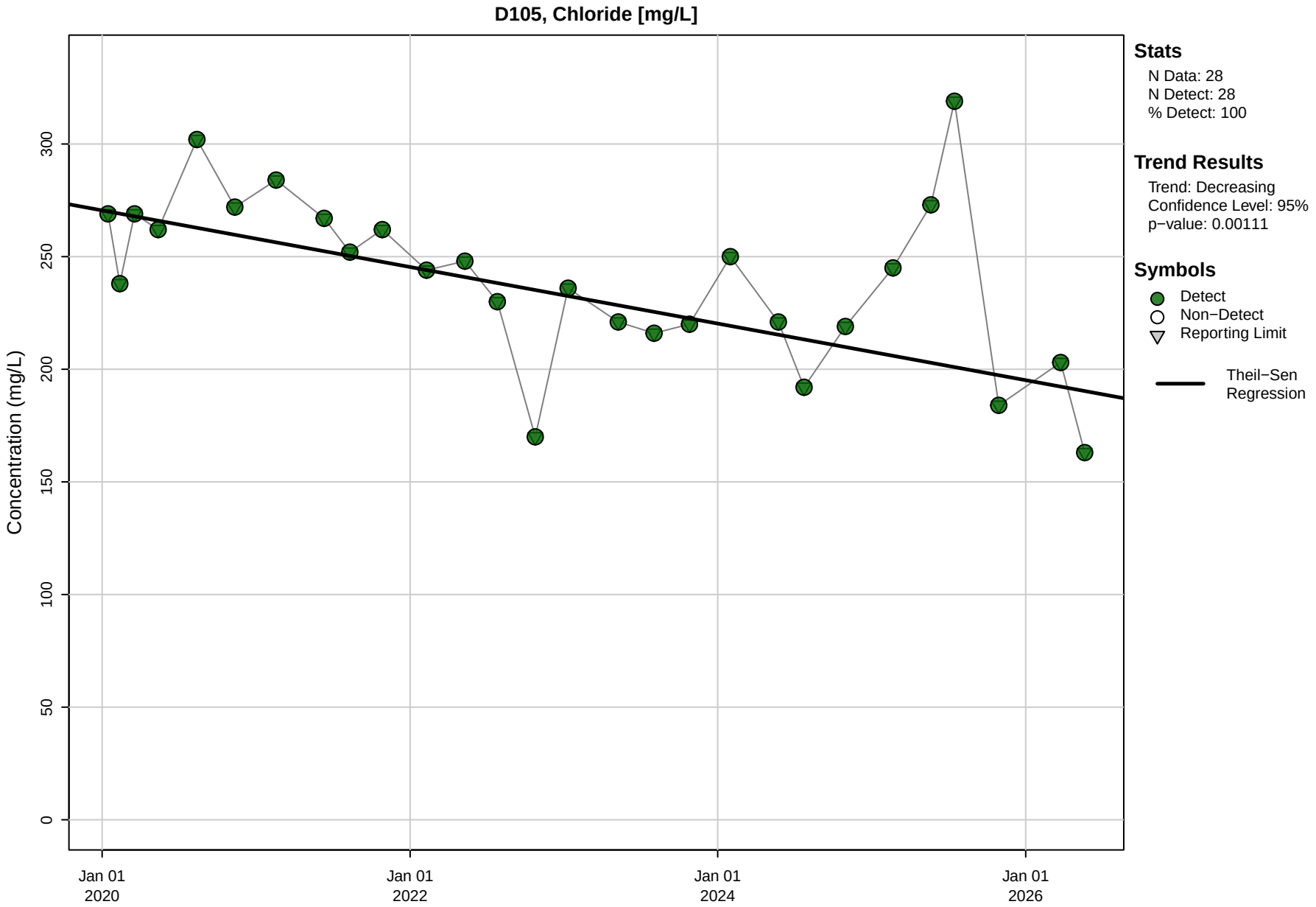

D104, Manganese [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
5000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.628
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

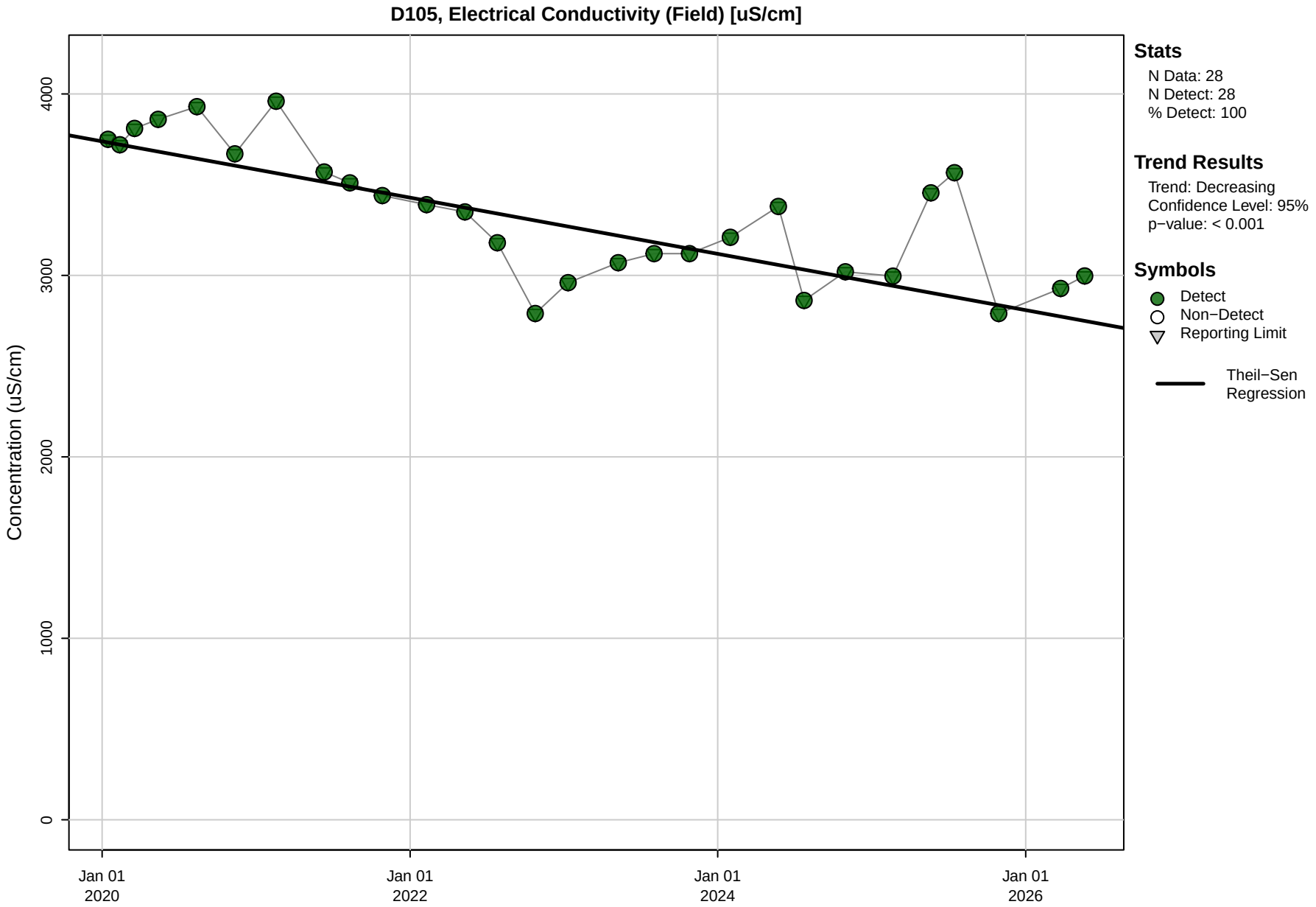

D104, Nickel [ug/L]
Concentration (ug/L)
0
50
100
150
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.612
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

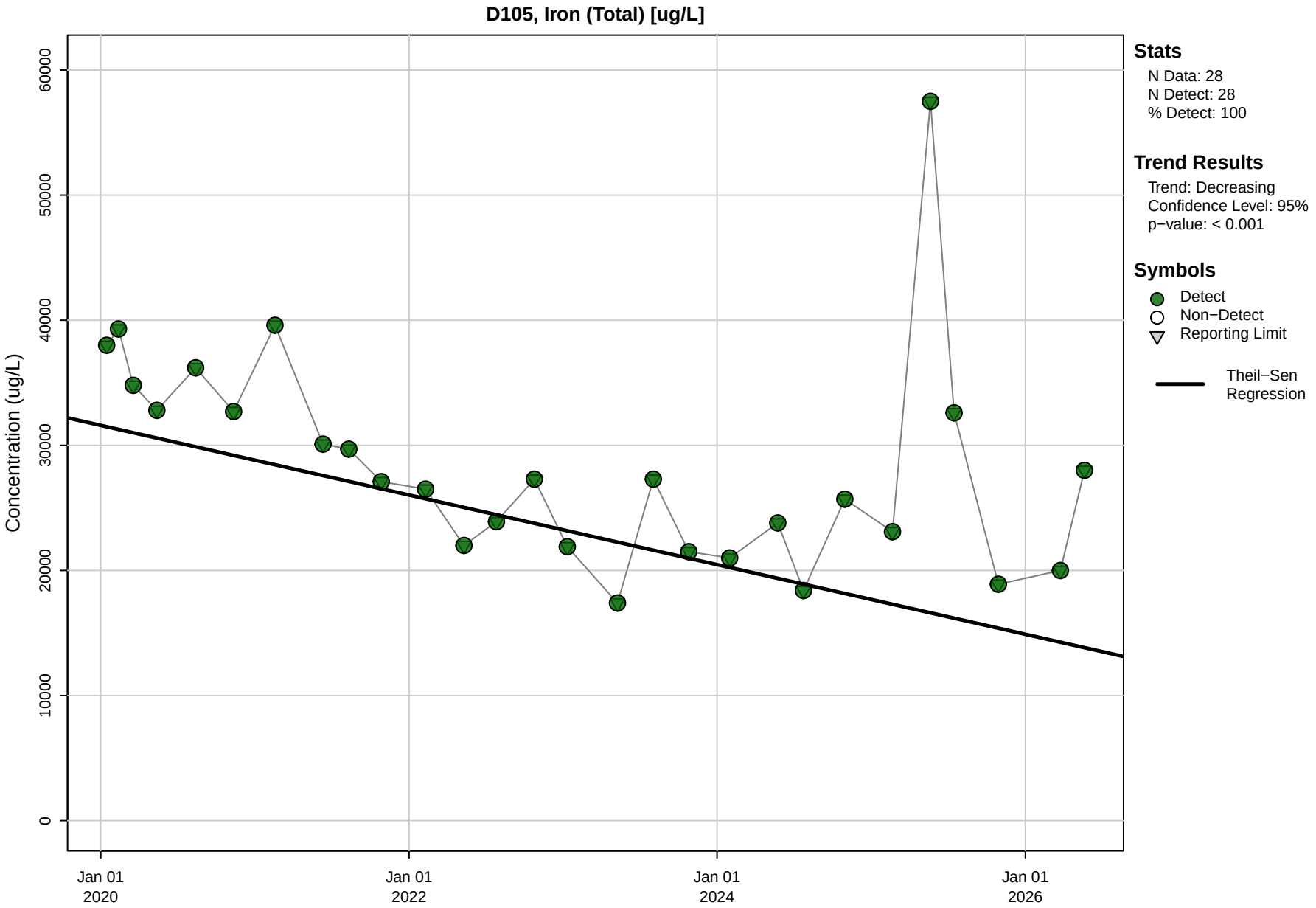

D104, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.05
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

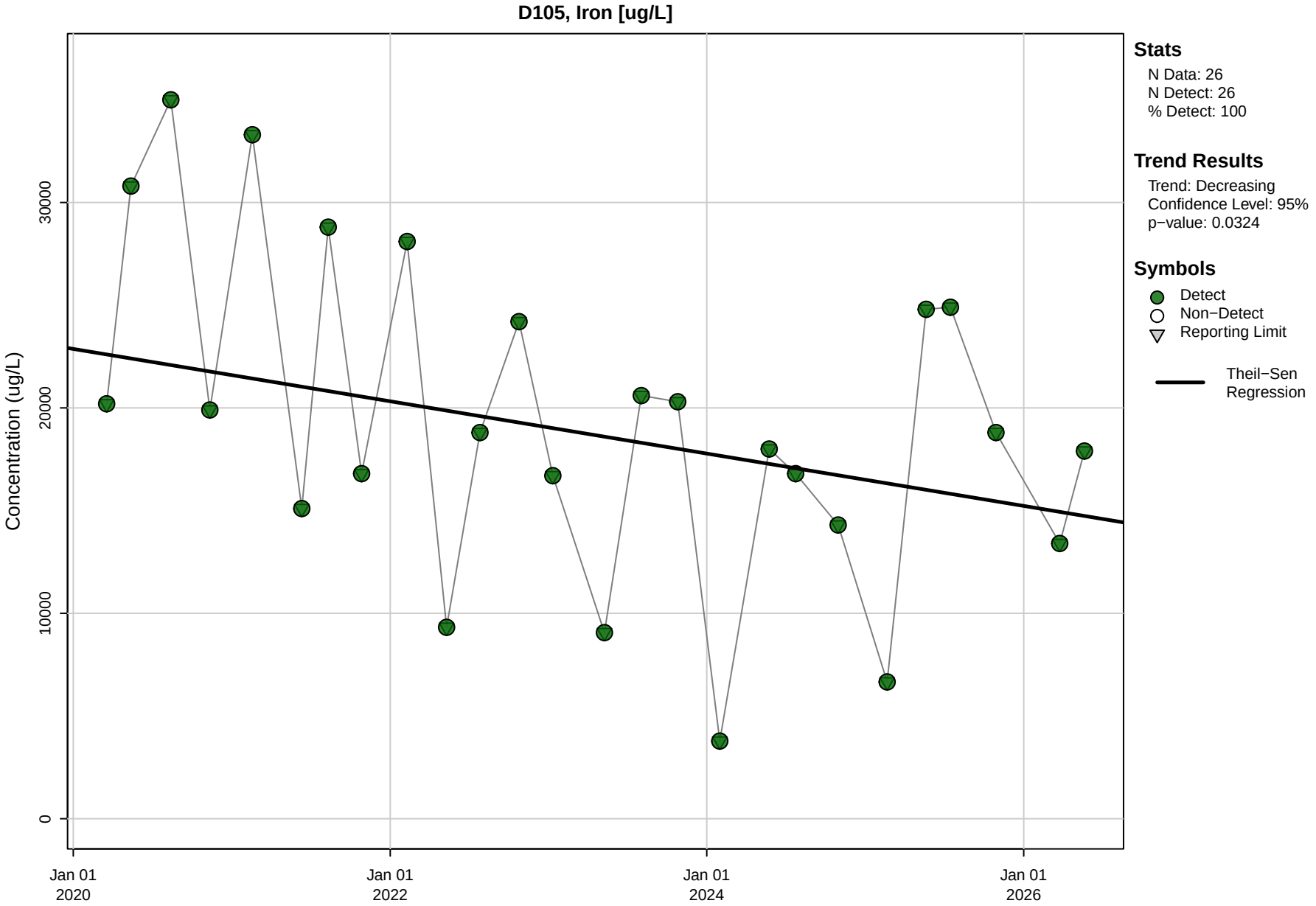

D104, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
1500
1000
500
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.101
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

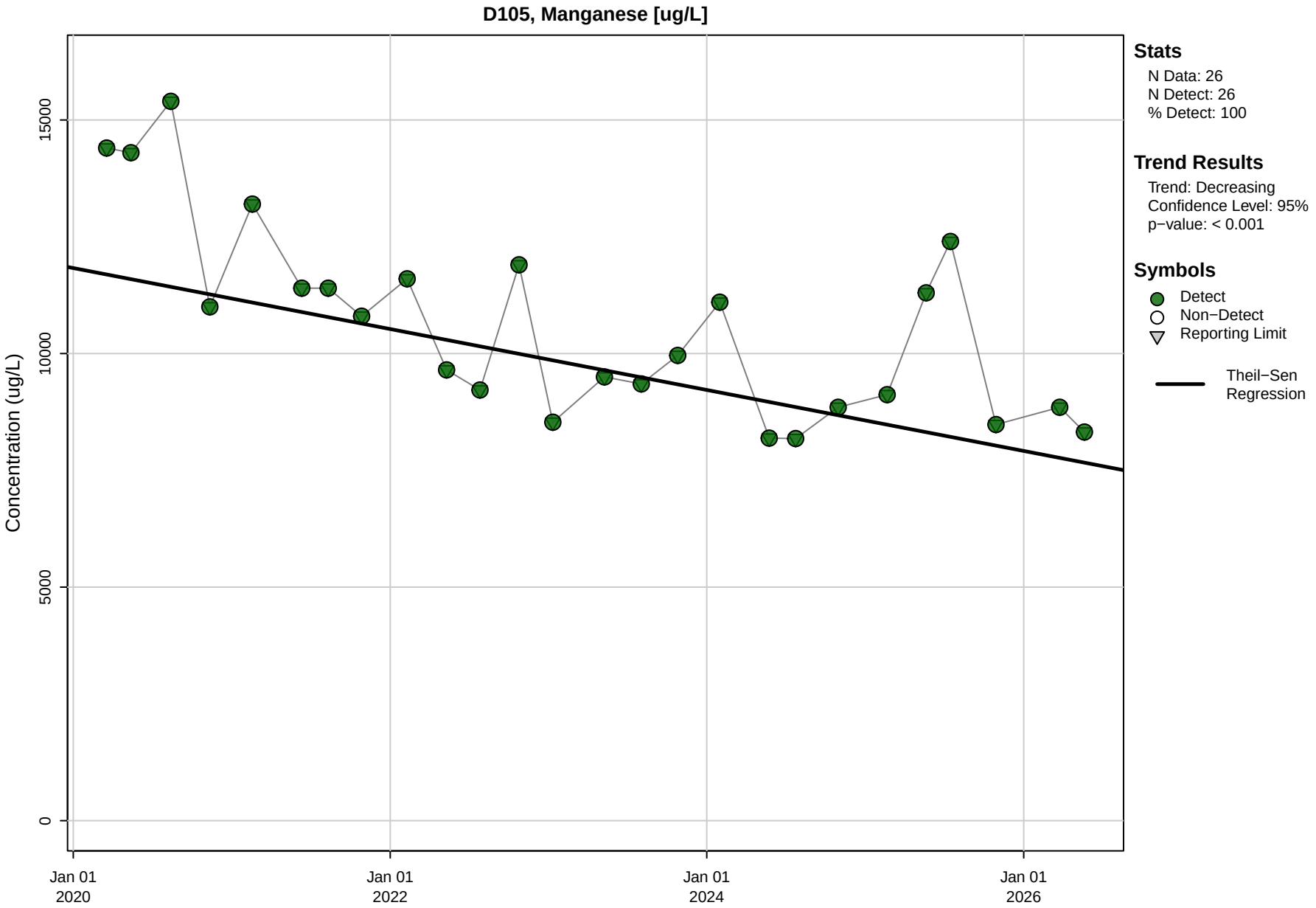

D105, Boron [ug/L]
Concentration (ug/L)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.58
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

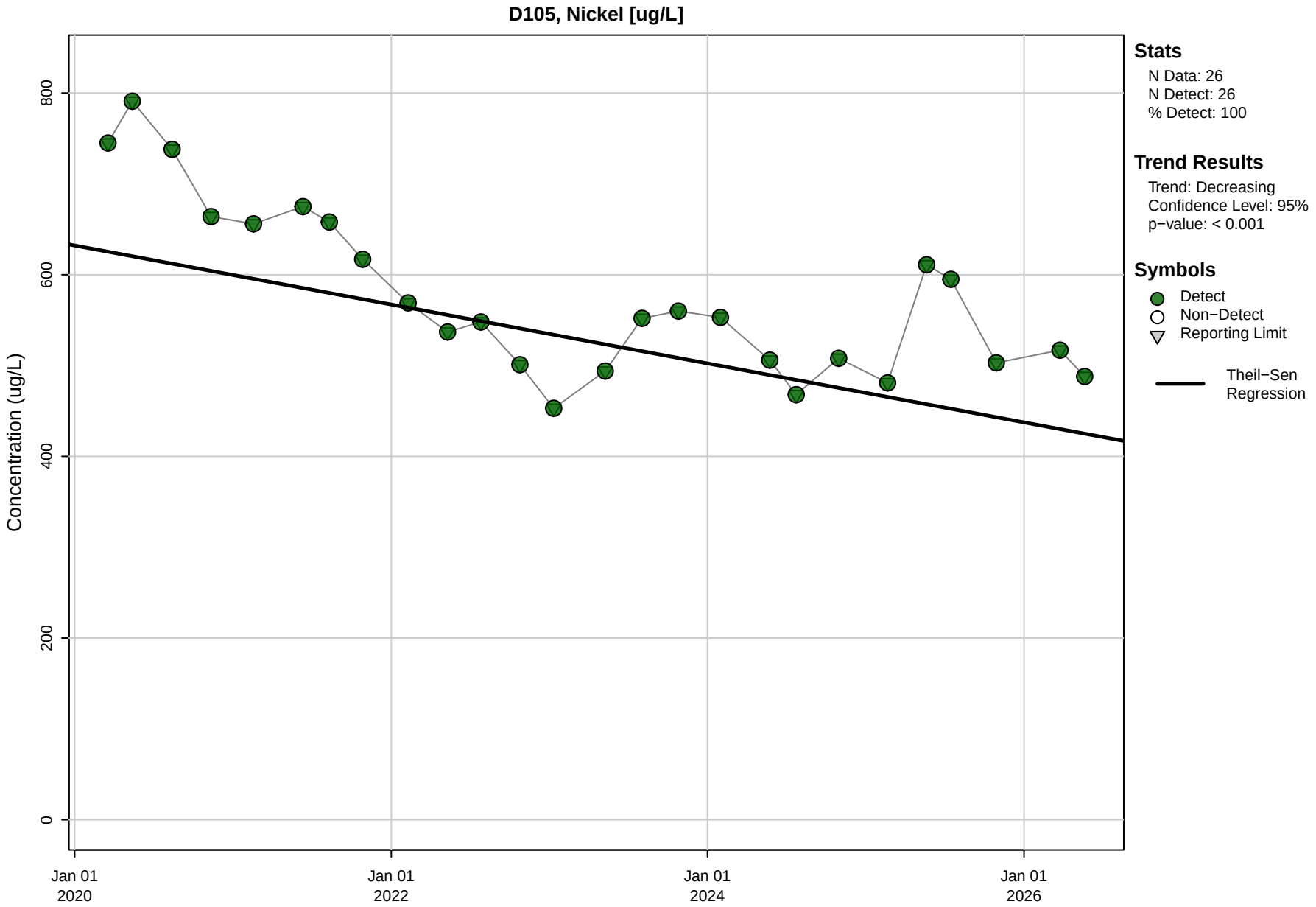

D105, Chloride [mg/L]
Concentration (mg/L)
0
50
100
150
200
250
300
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00111
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

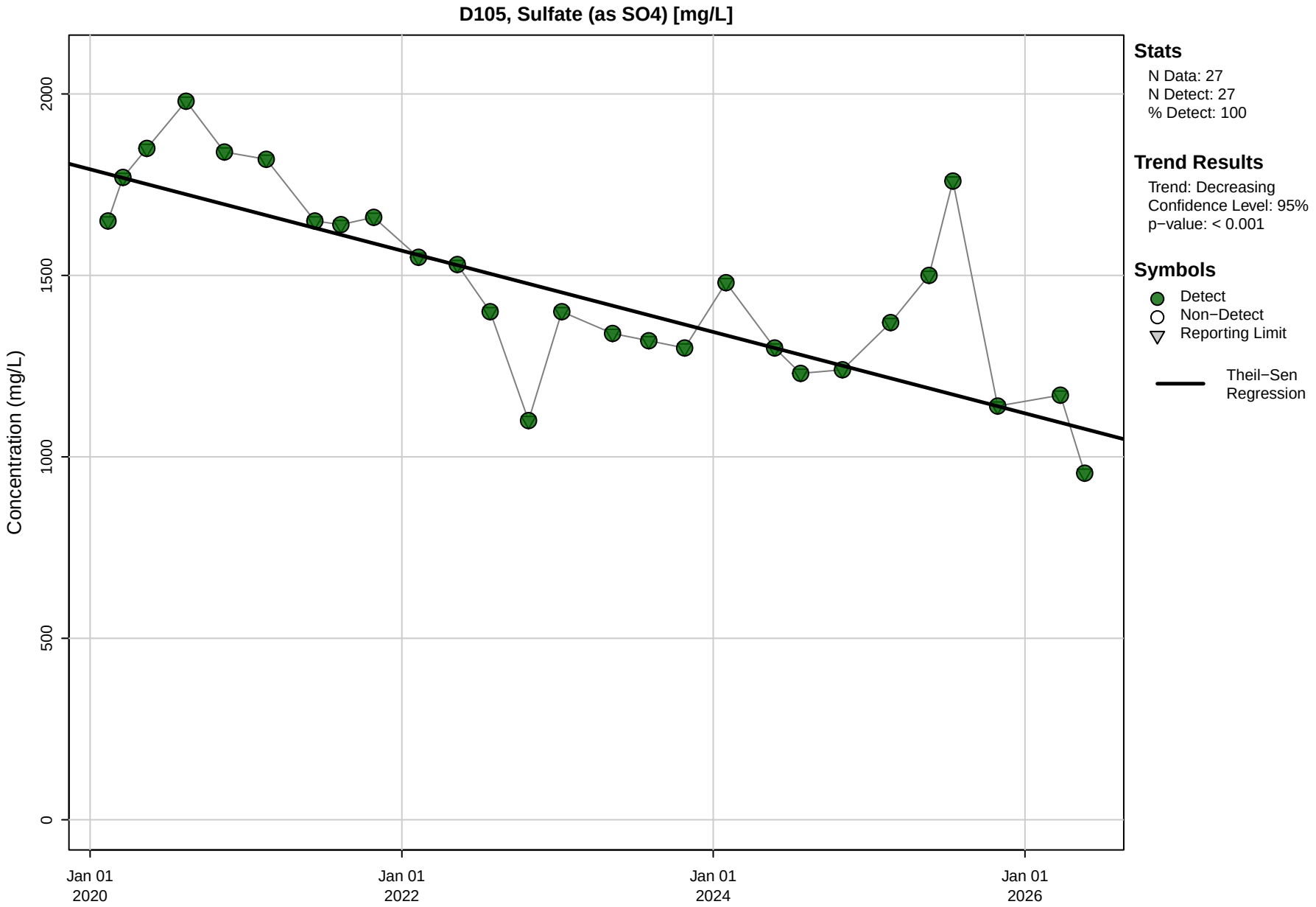

D105, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
4000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

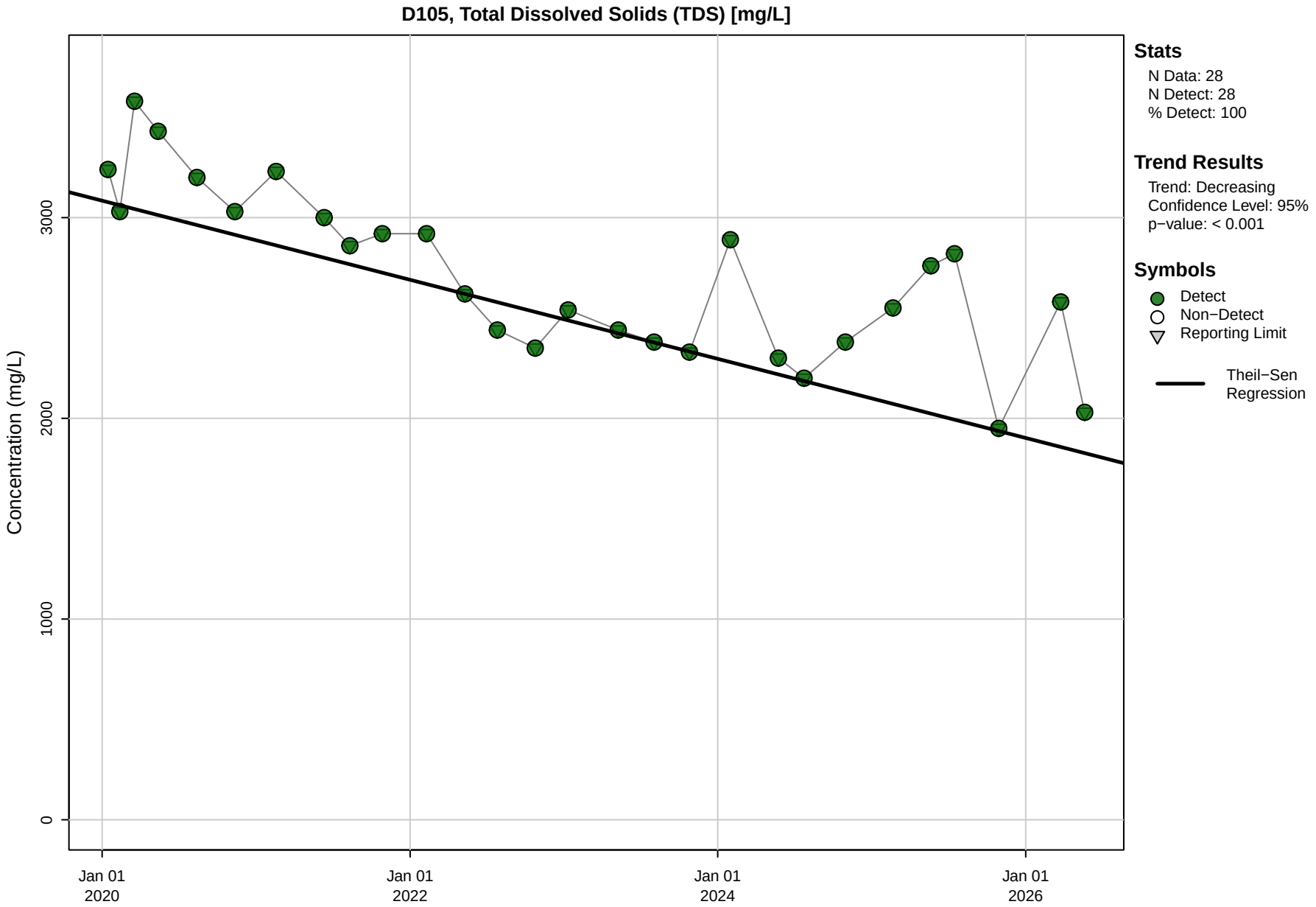

D105, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

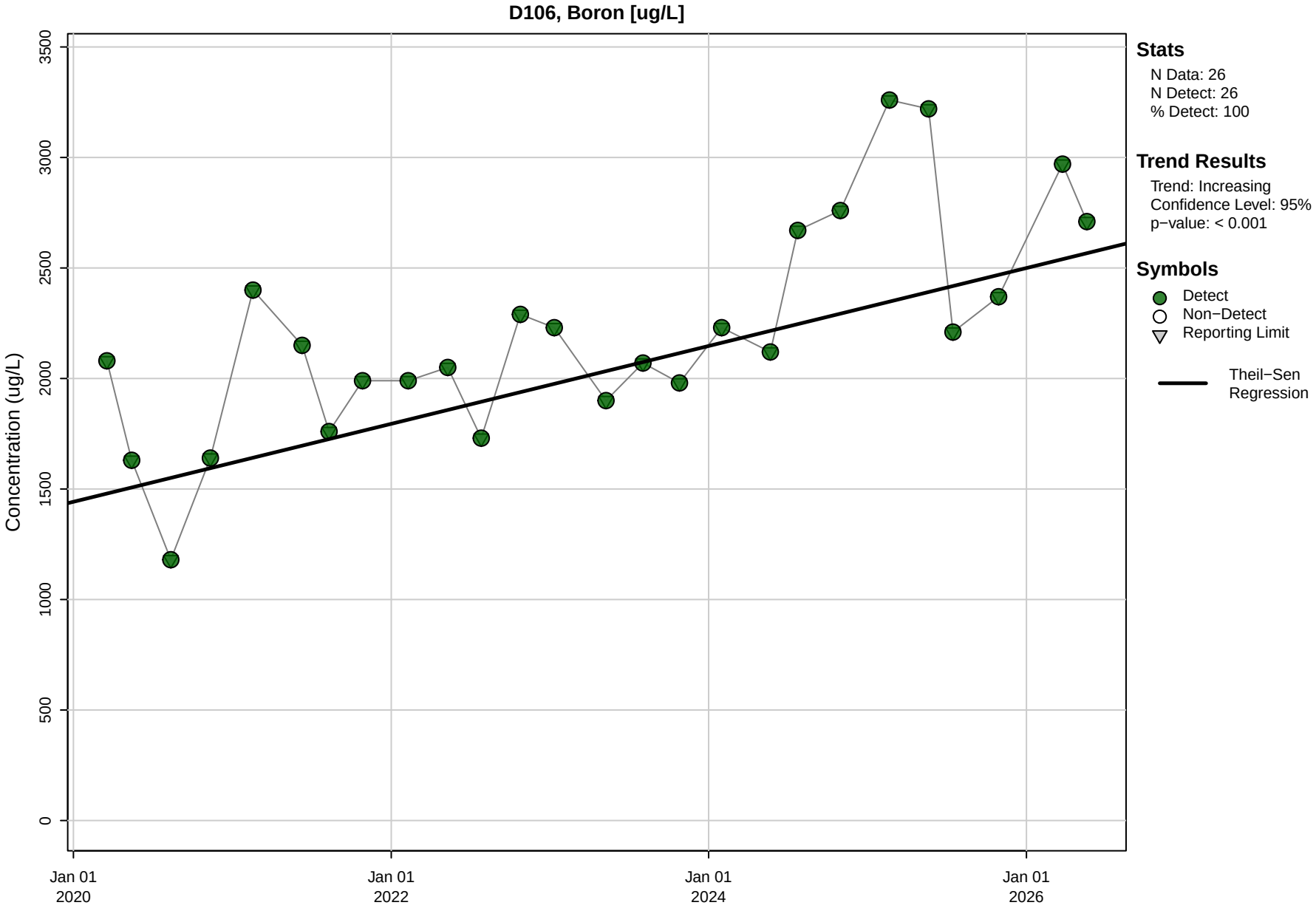

D105, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0324
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

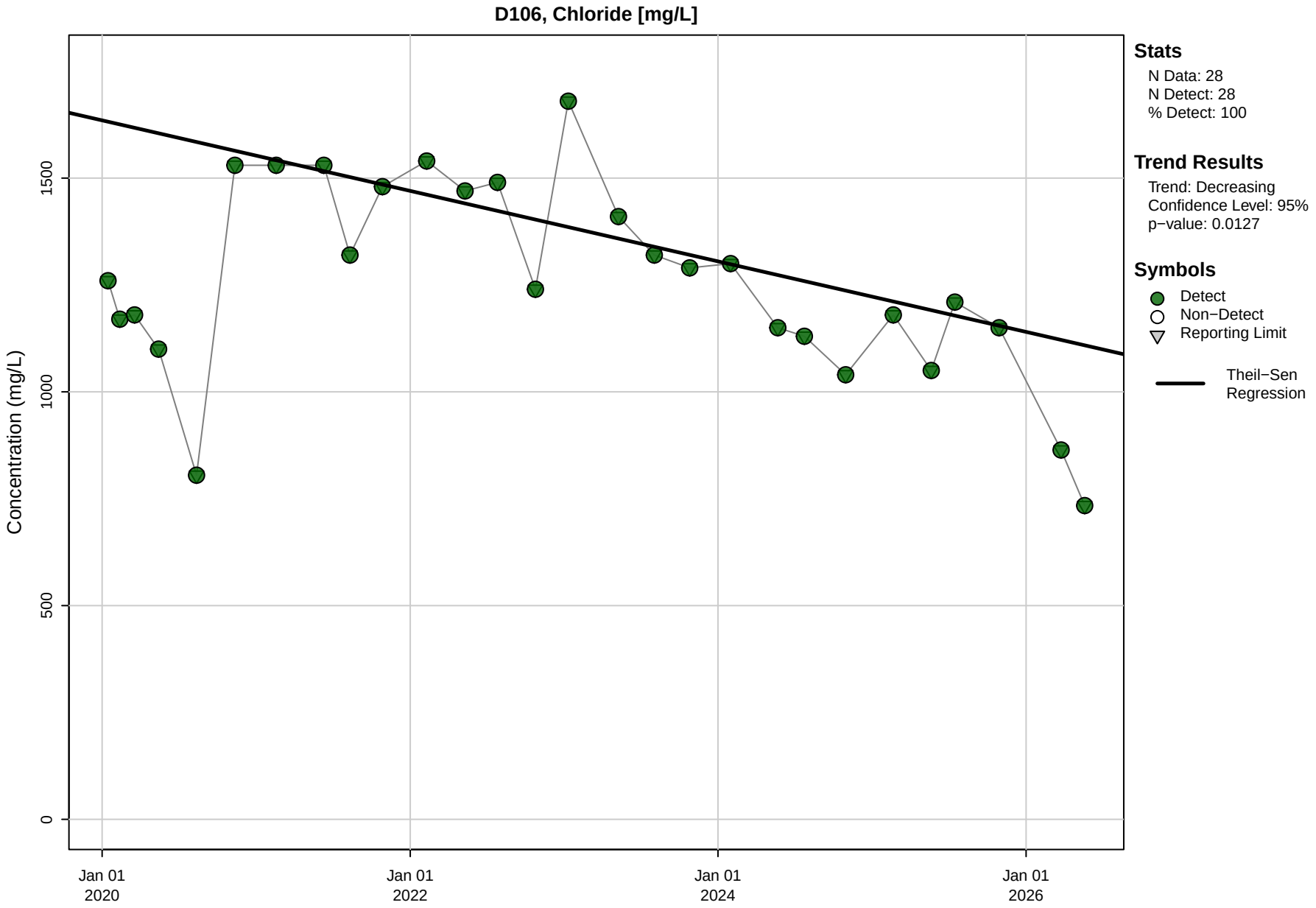

D105, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

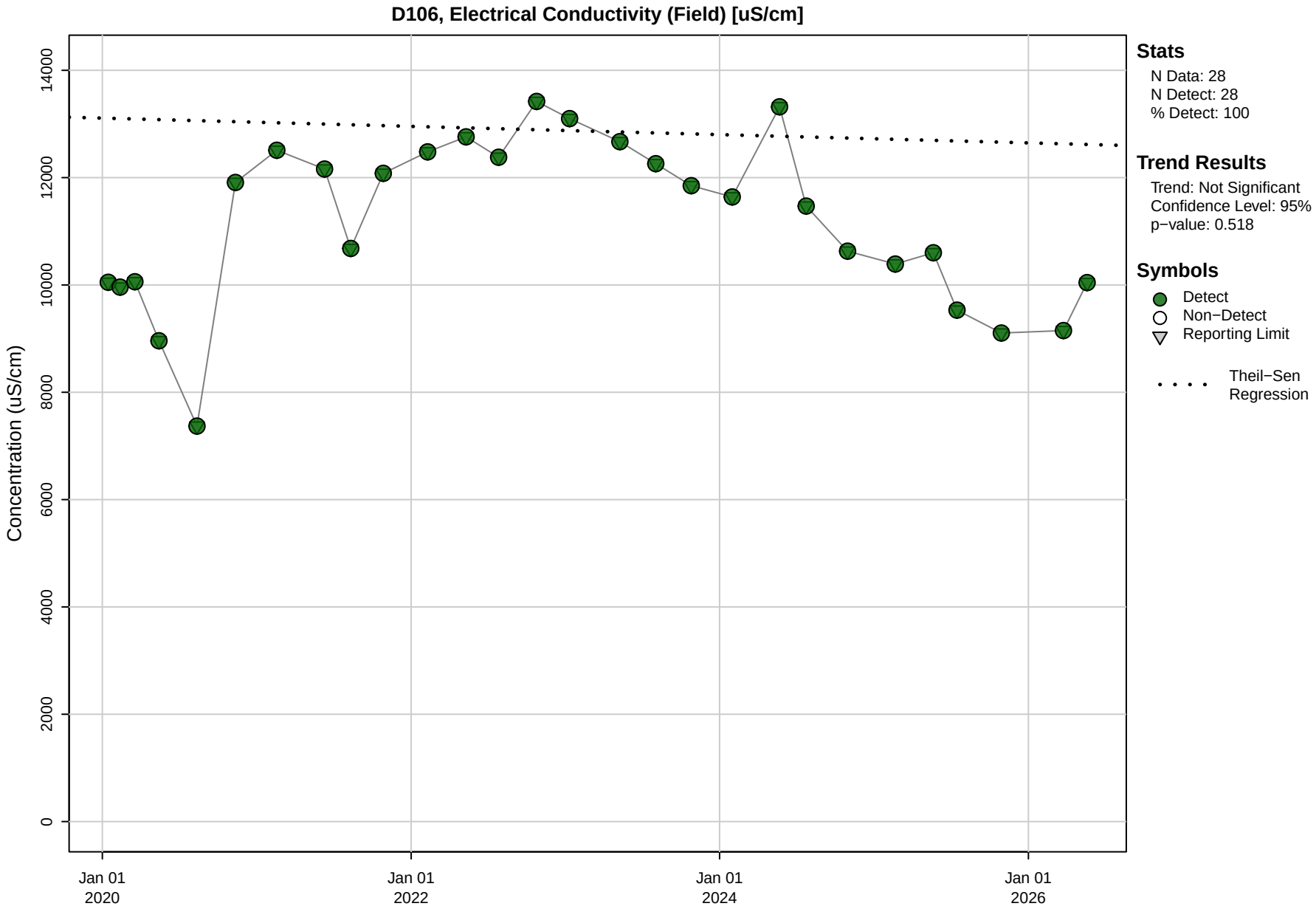

D105, Nickel [ug/L]
Concentration (ug/L)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

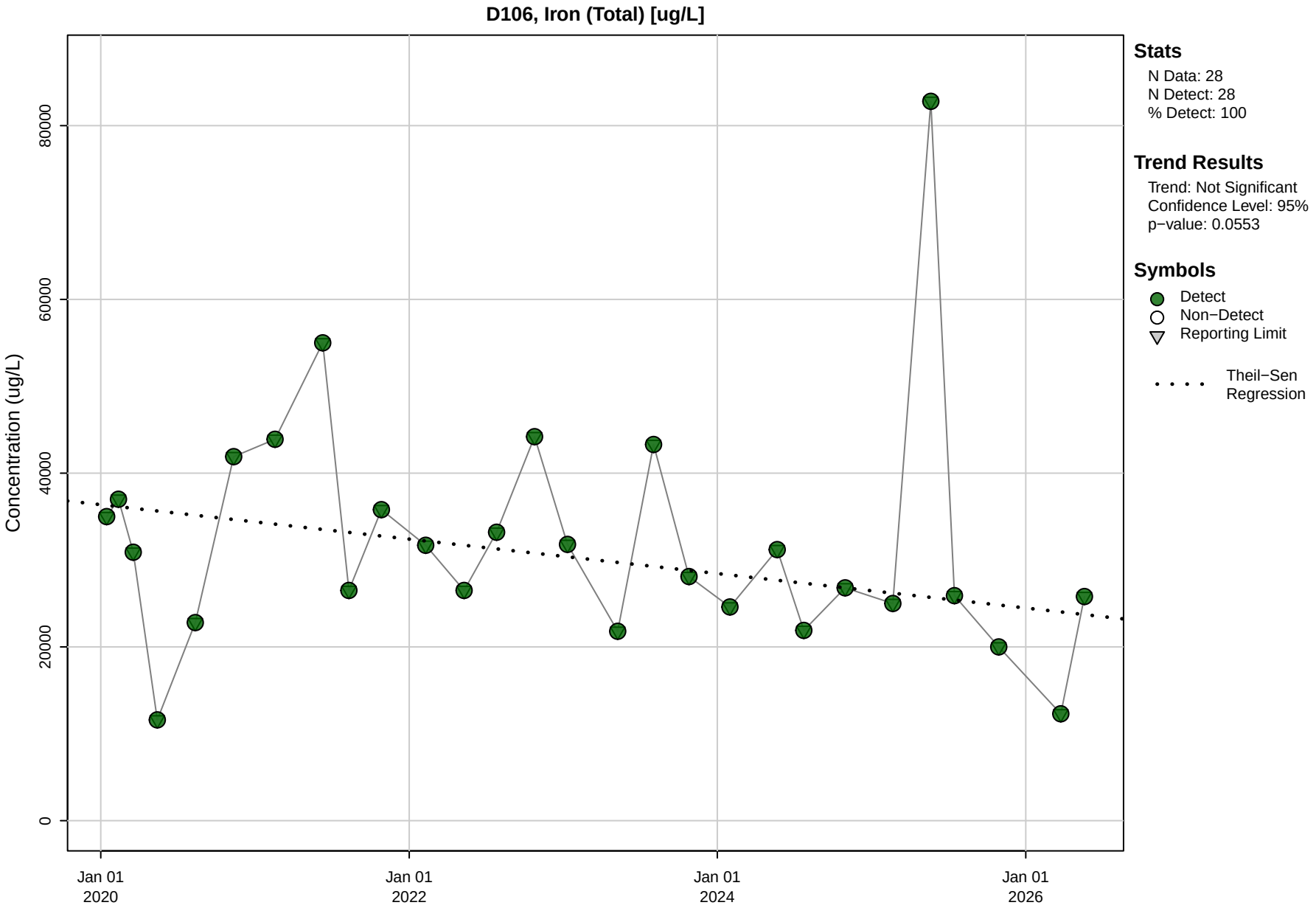

D105, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

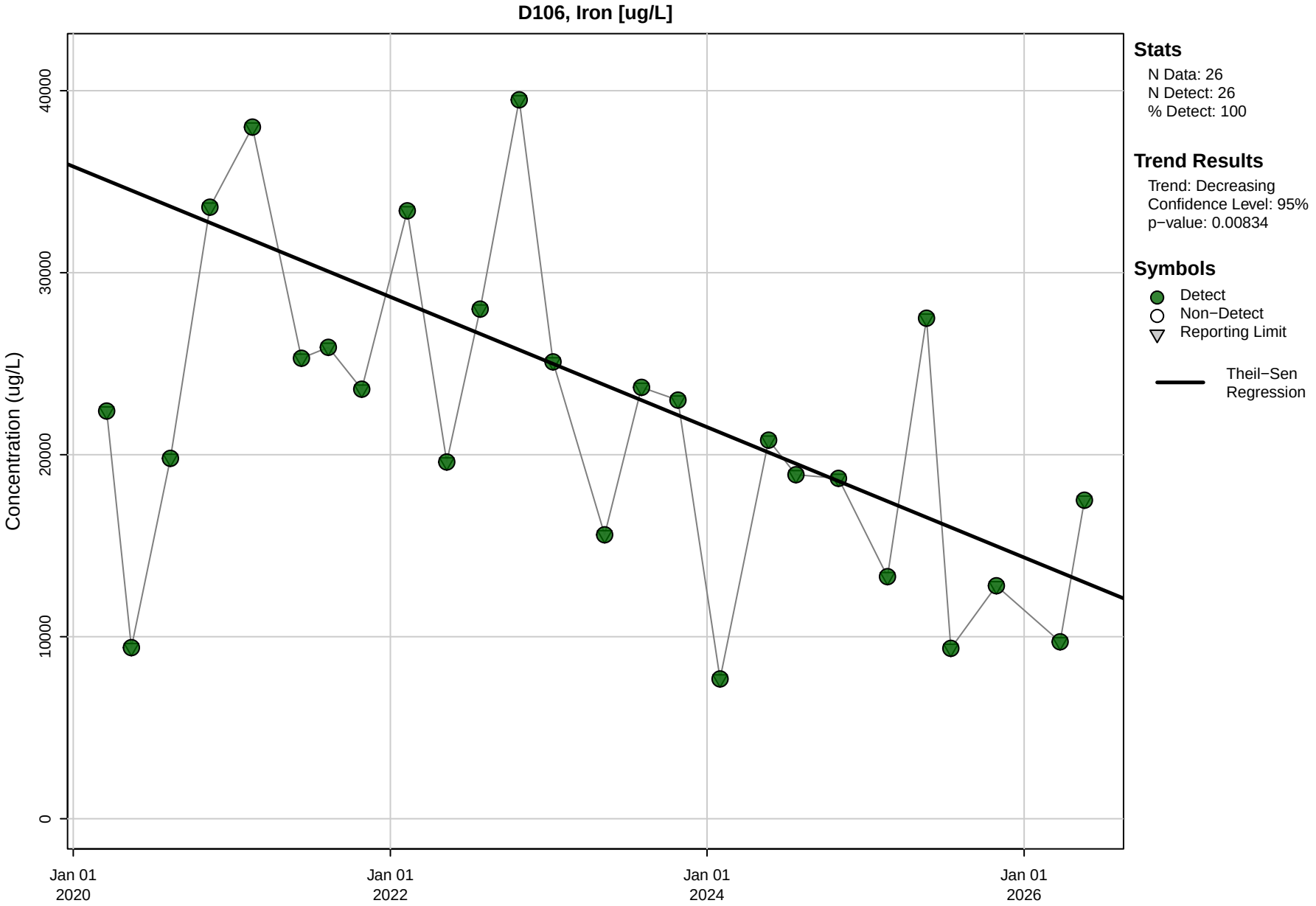

D105, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

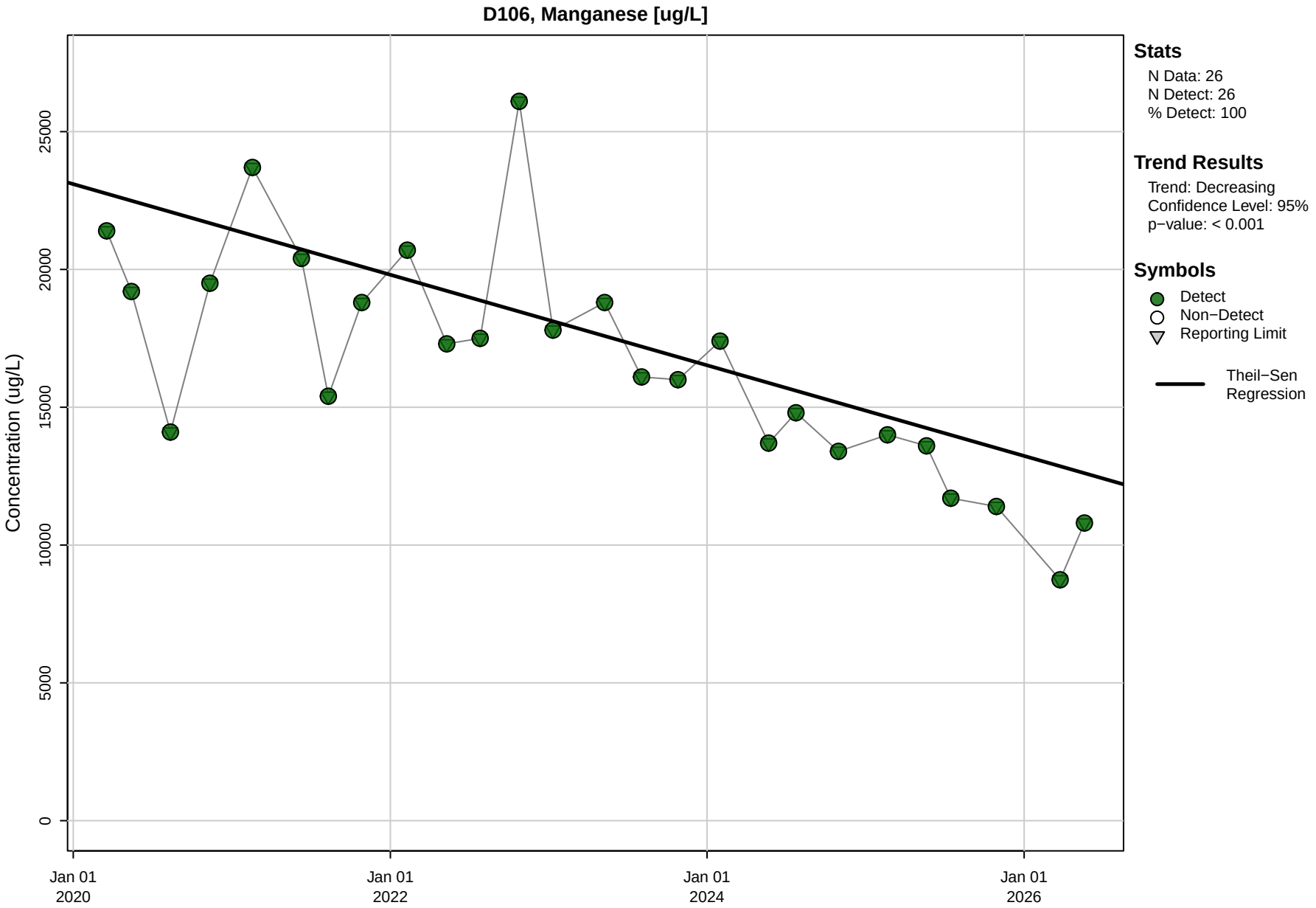

D106, Boron [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
3000
3500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

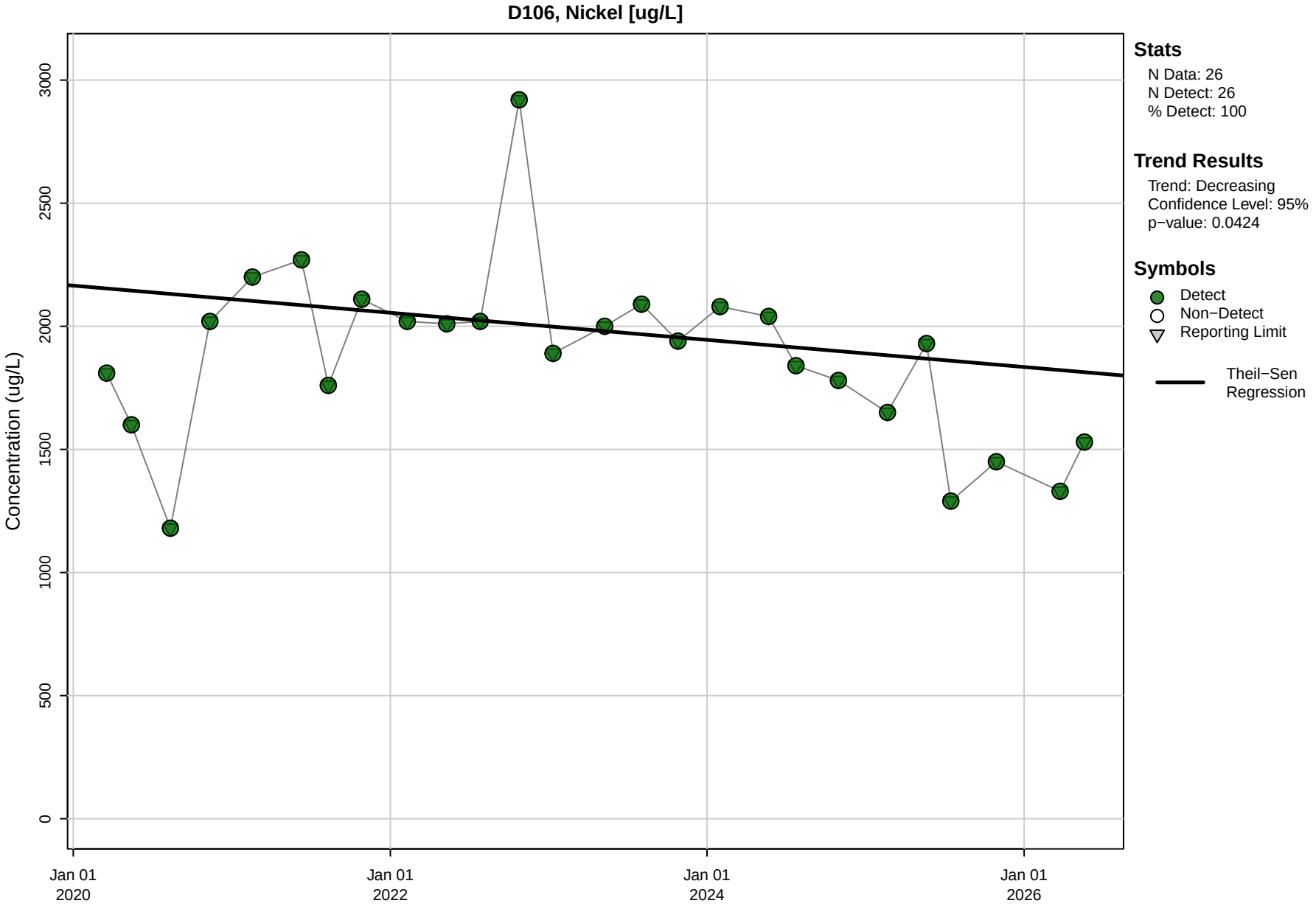

D106, Chloride [mg/L]
Concentration (mg/L)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0127
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

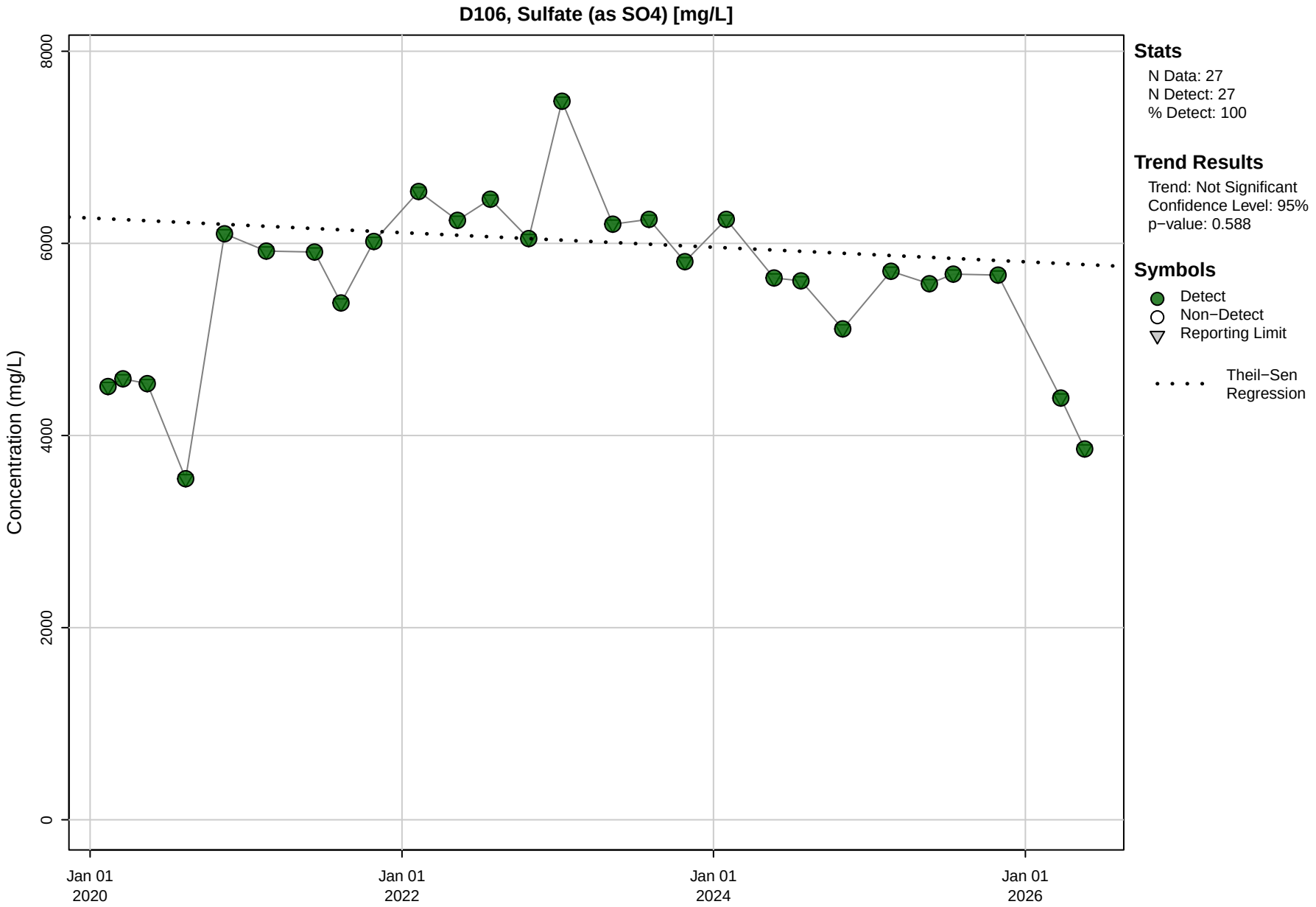

D106, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
12000
14000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.518
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

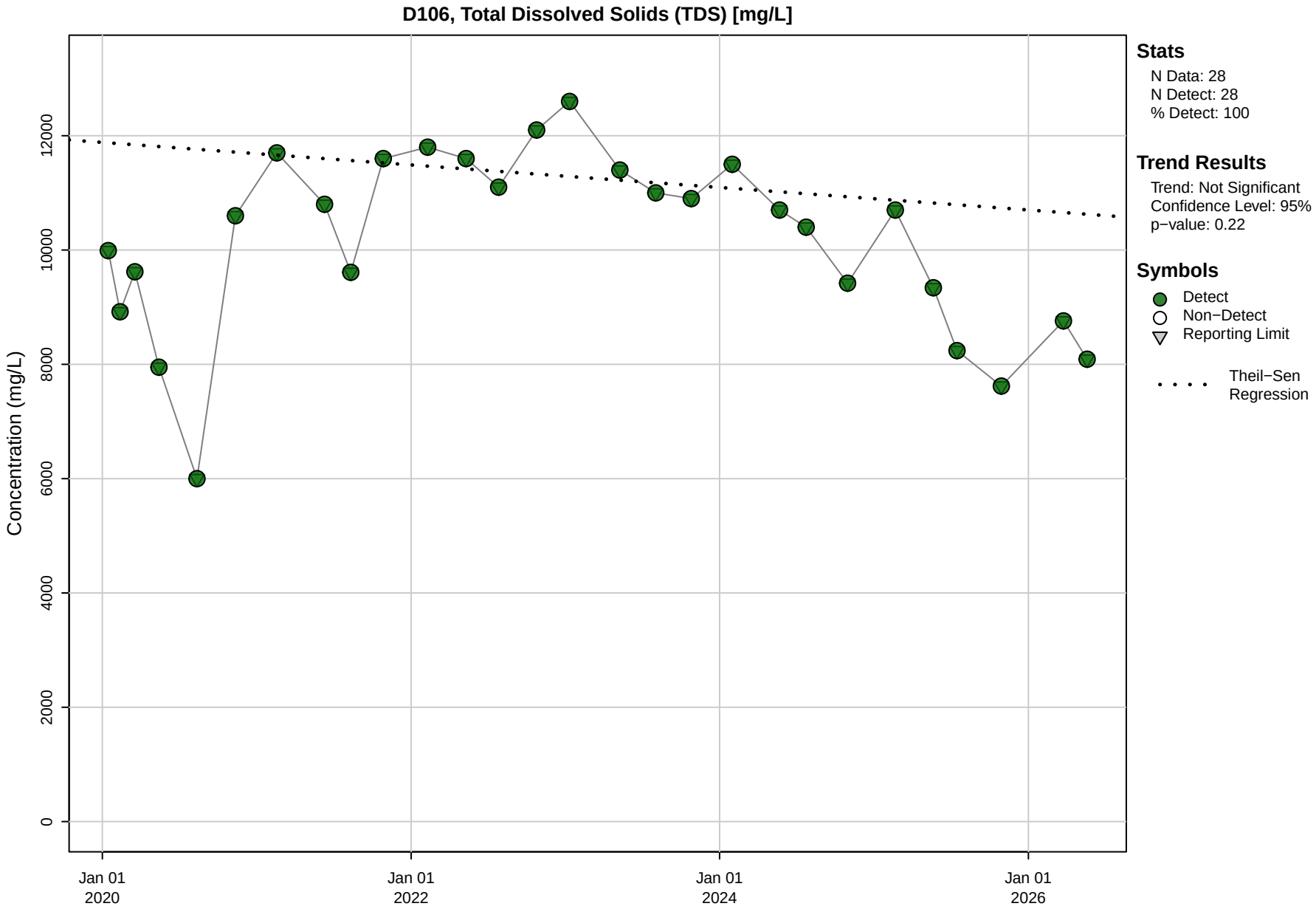

D106, Iron (Total) [ug/L]
Concentration (ug/L)
0
20000
40000
60000
80000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0553
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

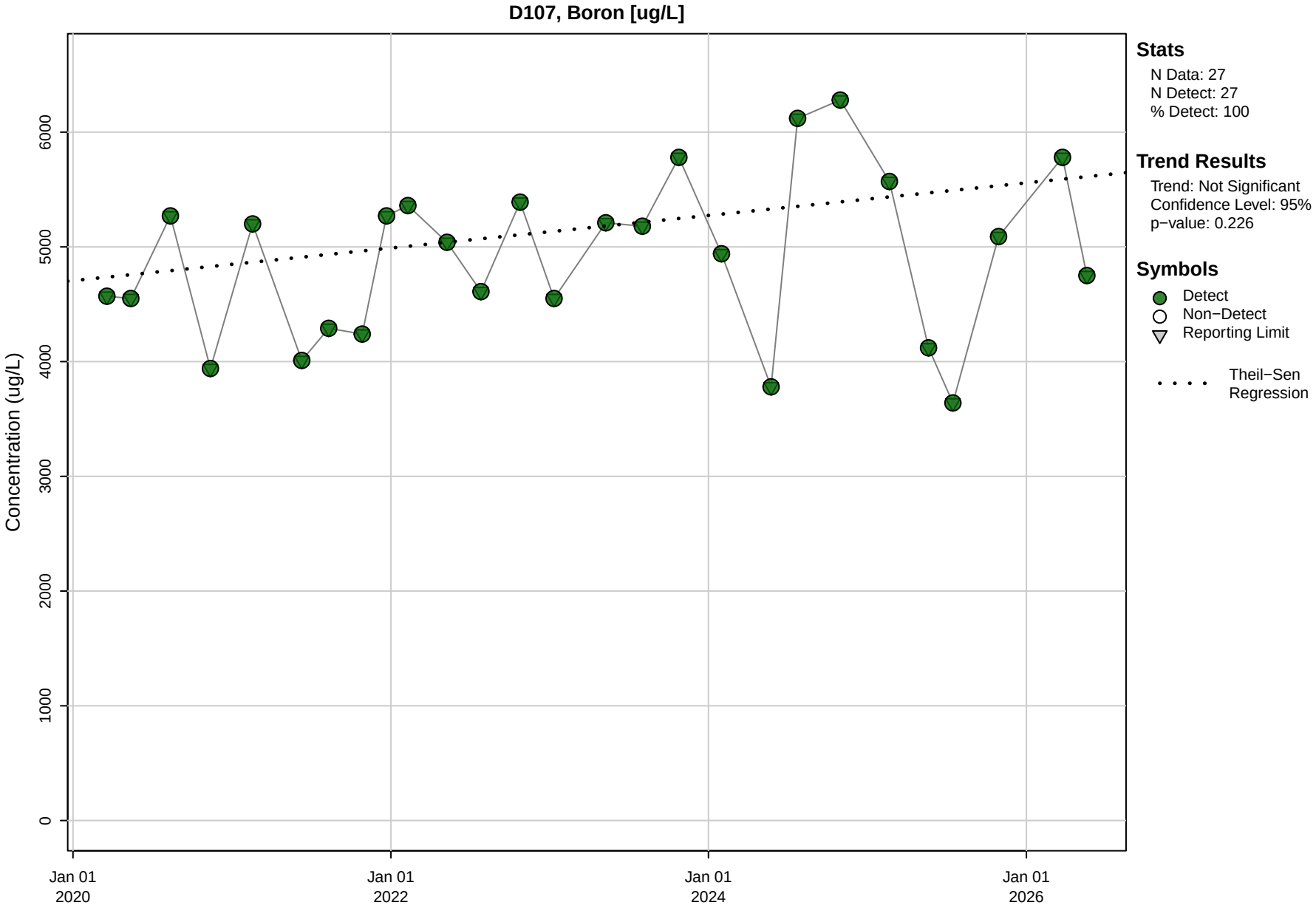

D106, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00834
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

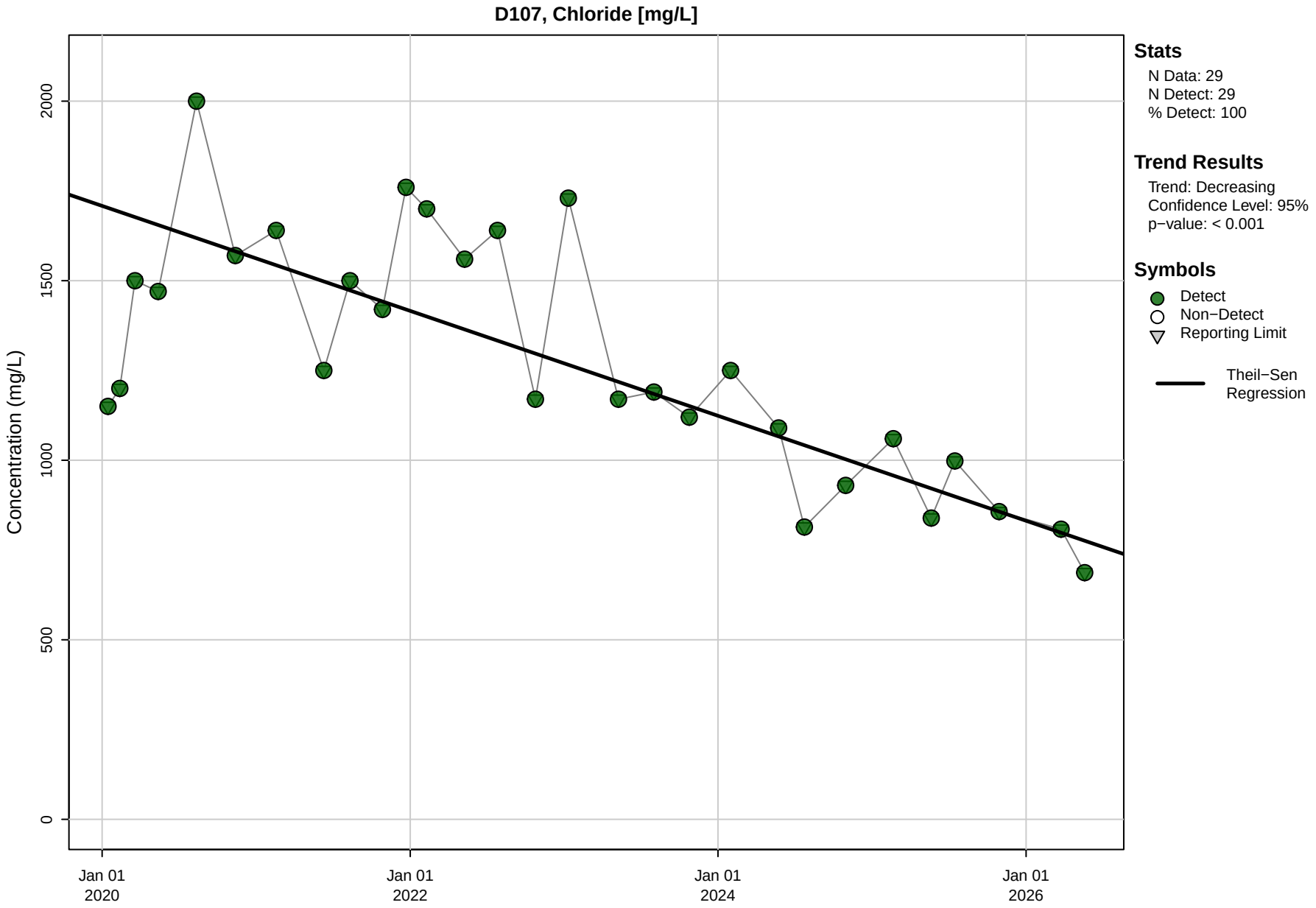

D106, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

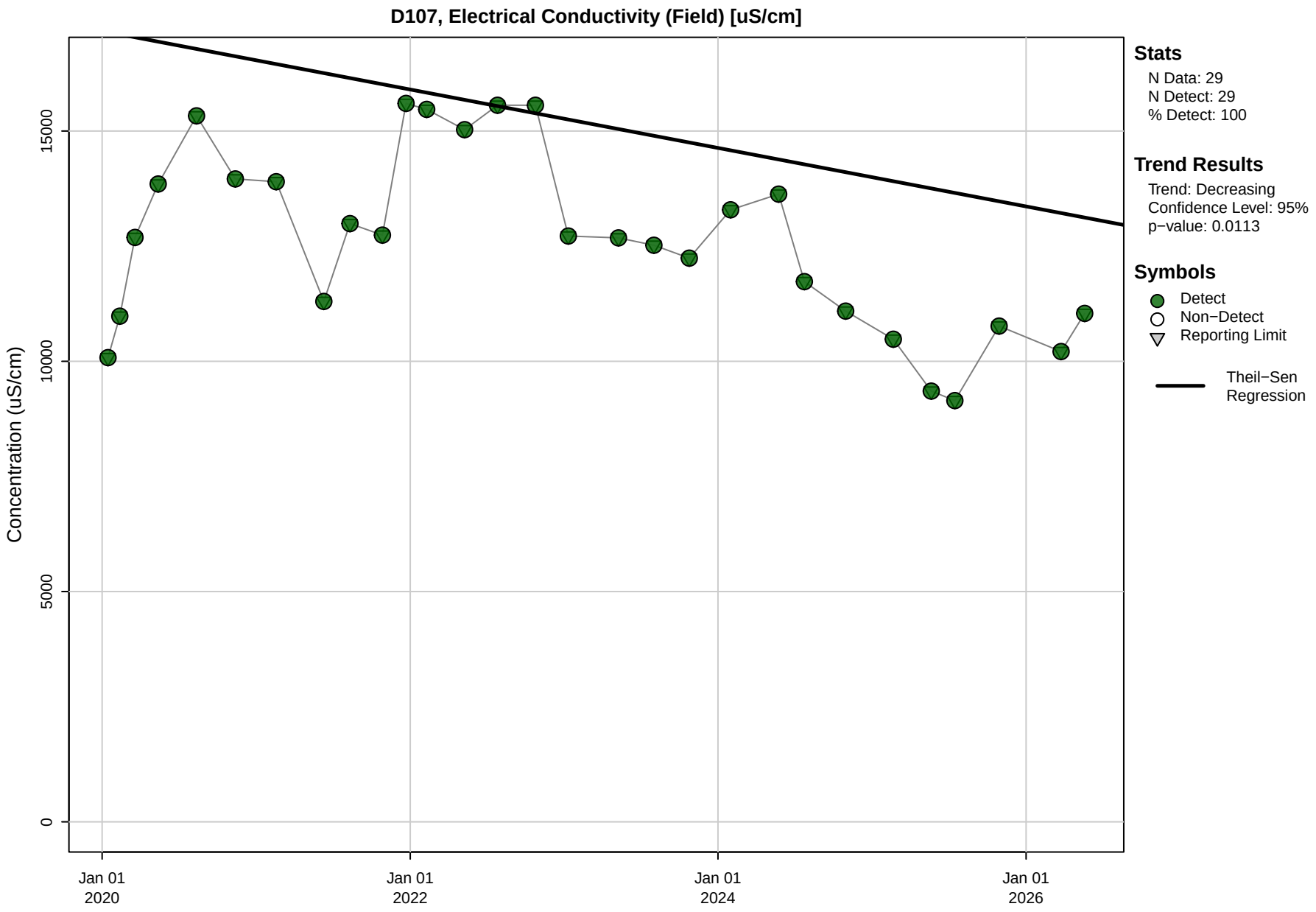

D106, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0424
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

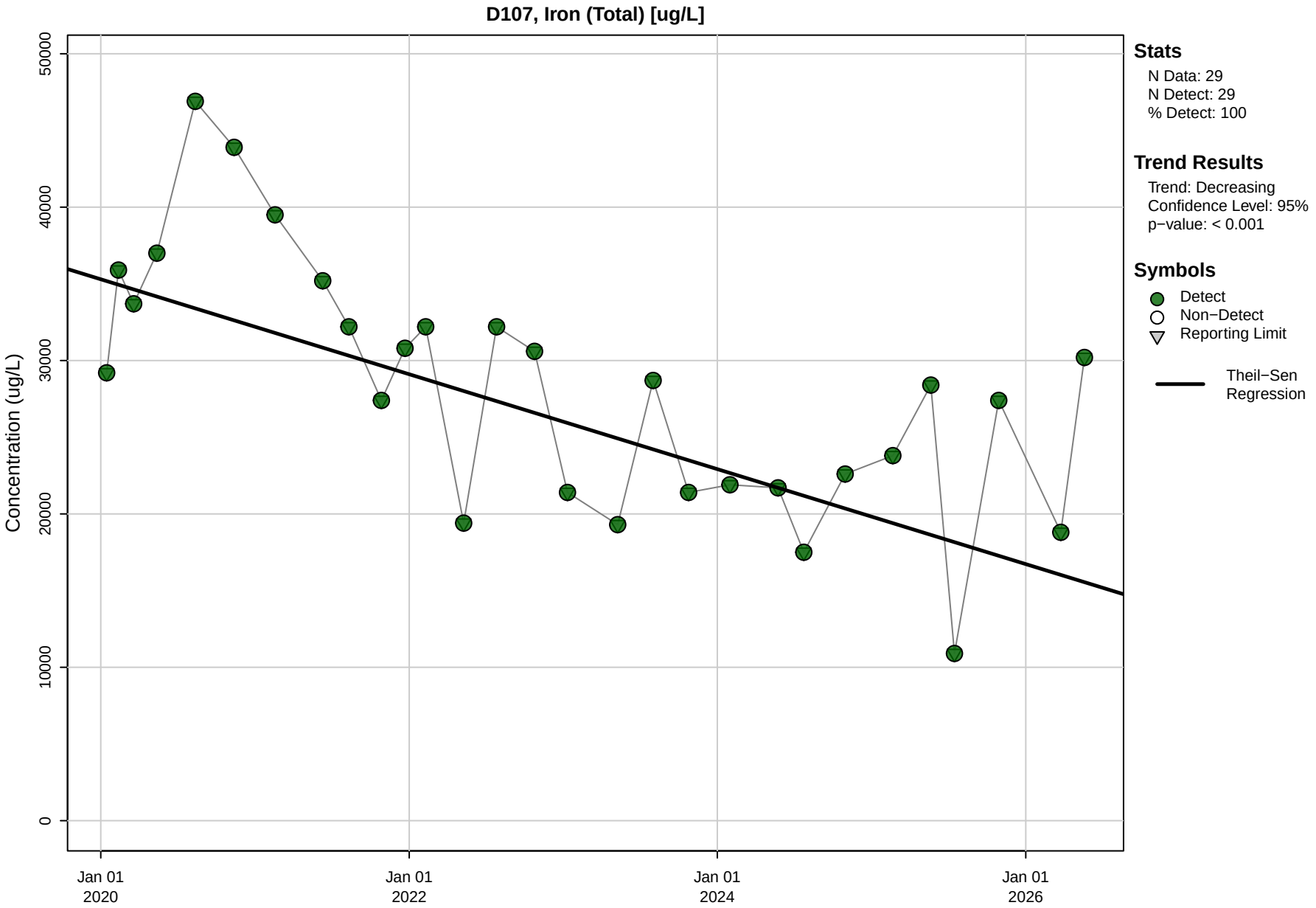

D106, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.588
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

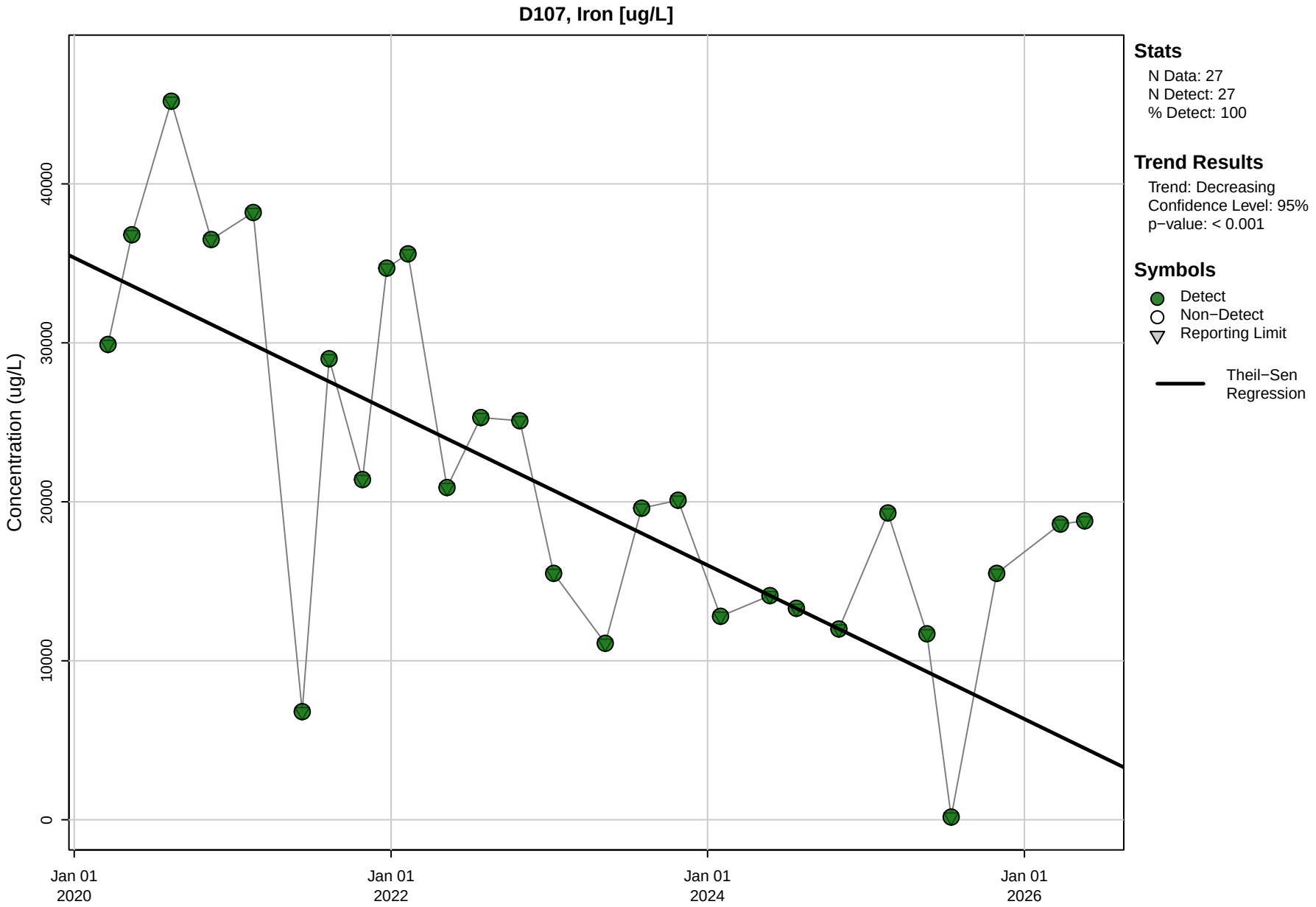

D106, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.22
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

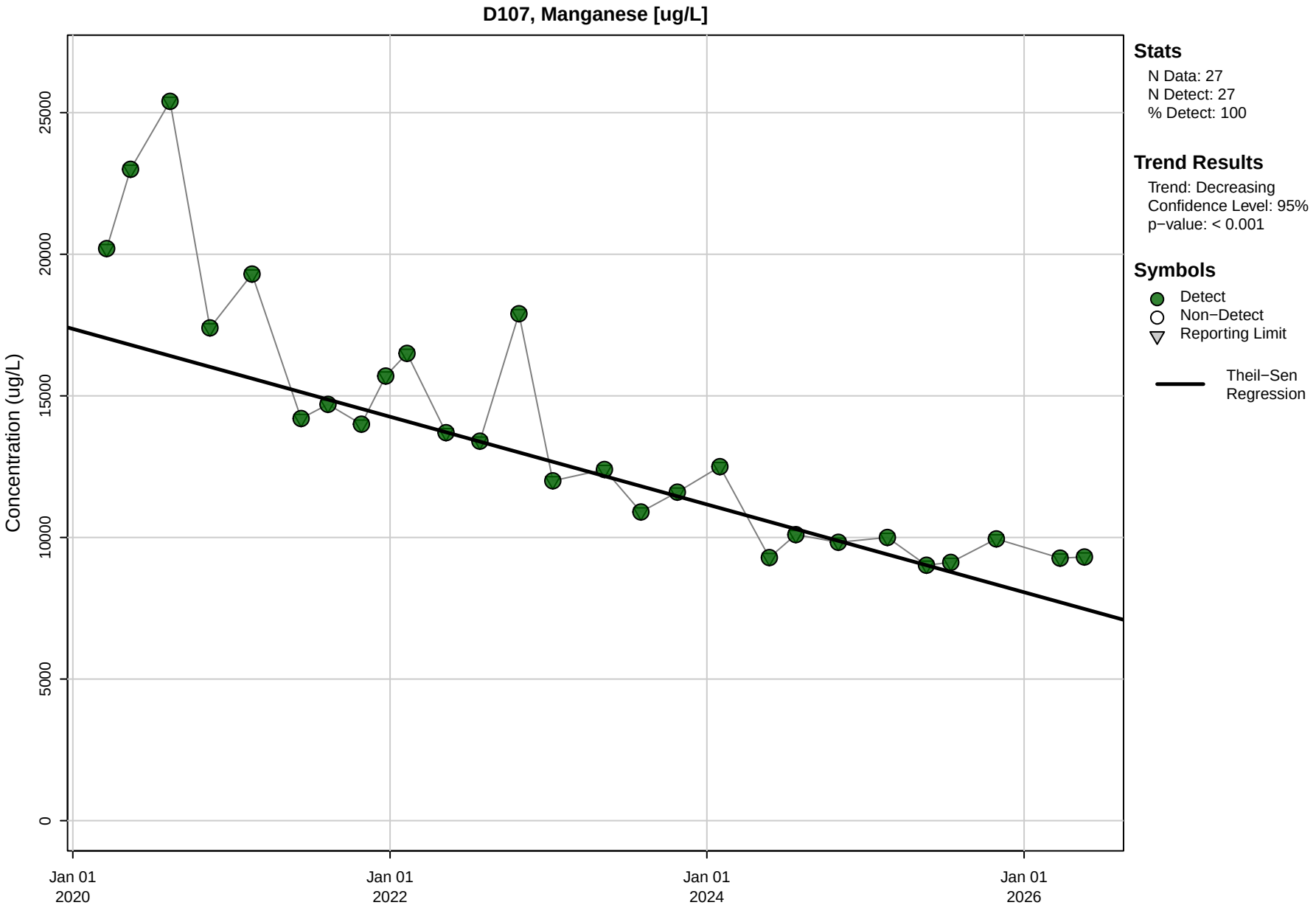

D107, Boron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
5000
6000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.226
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

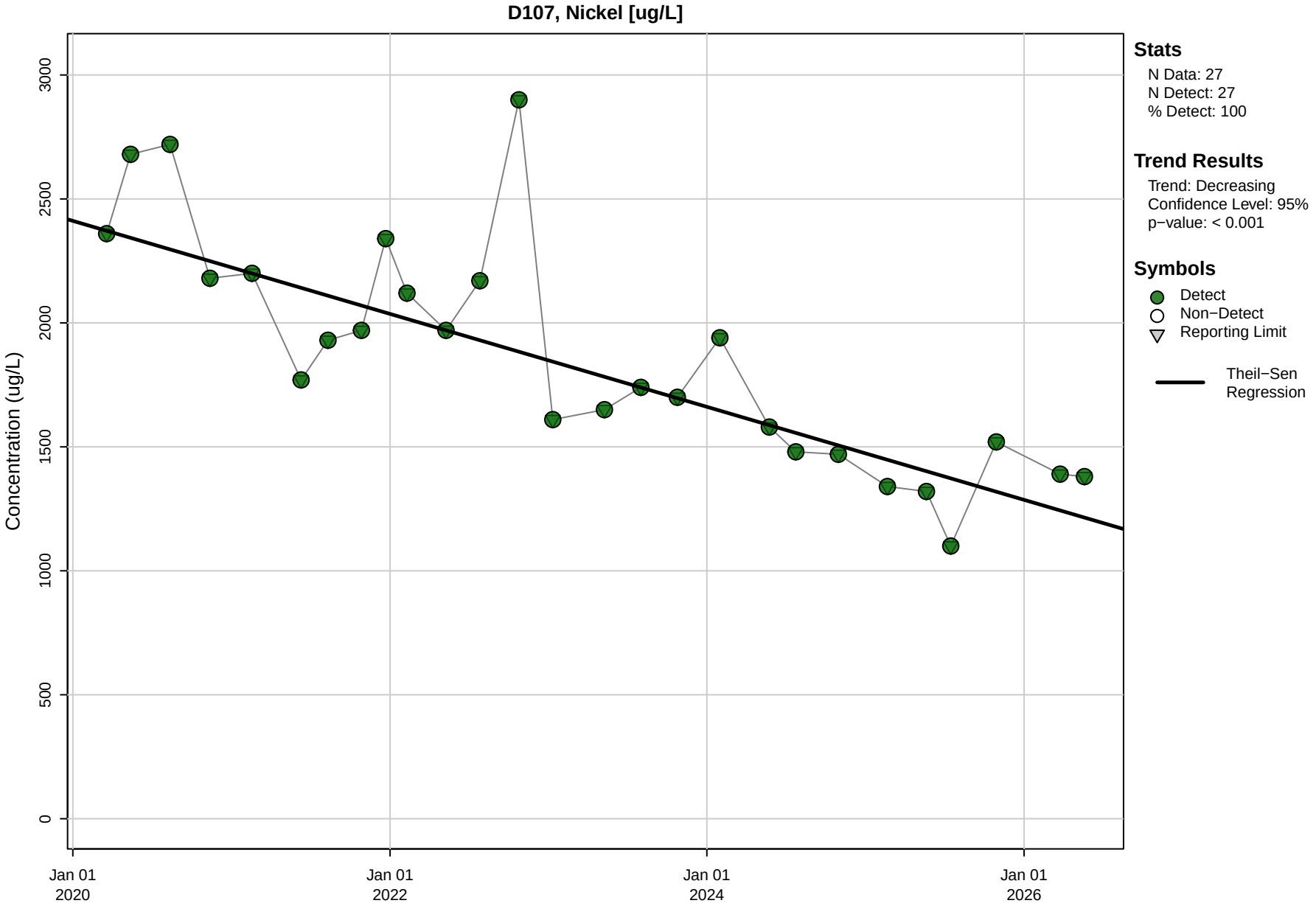

D107, Chloride [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 29
N Detect: 29
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

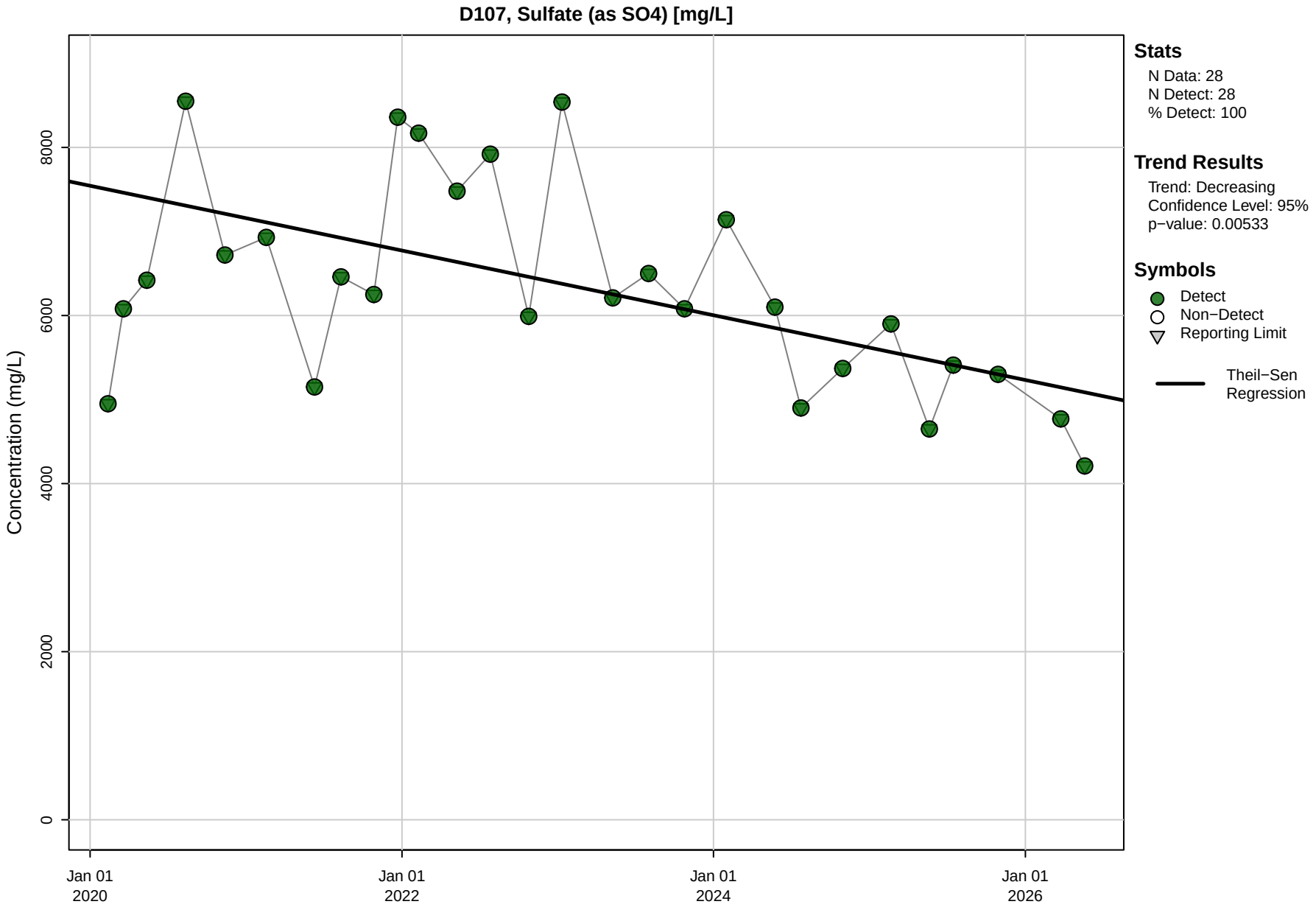

D107, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 29
N Detect: 29
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0113
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

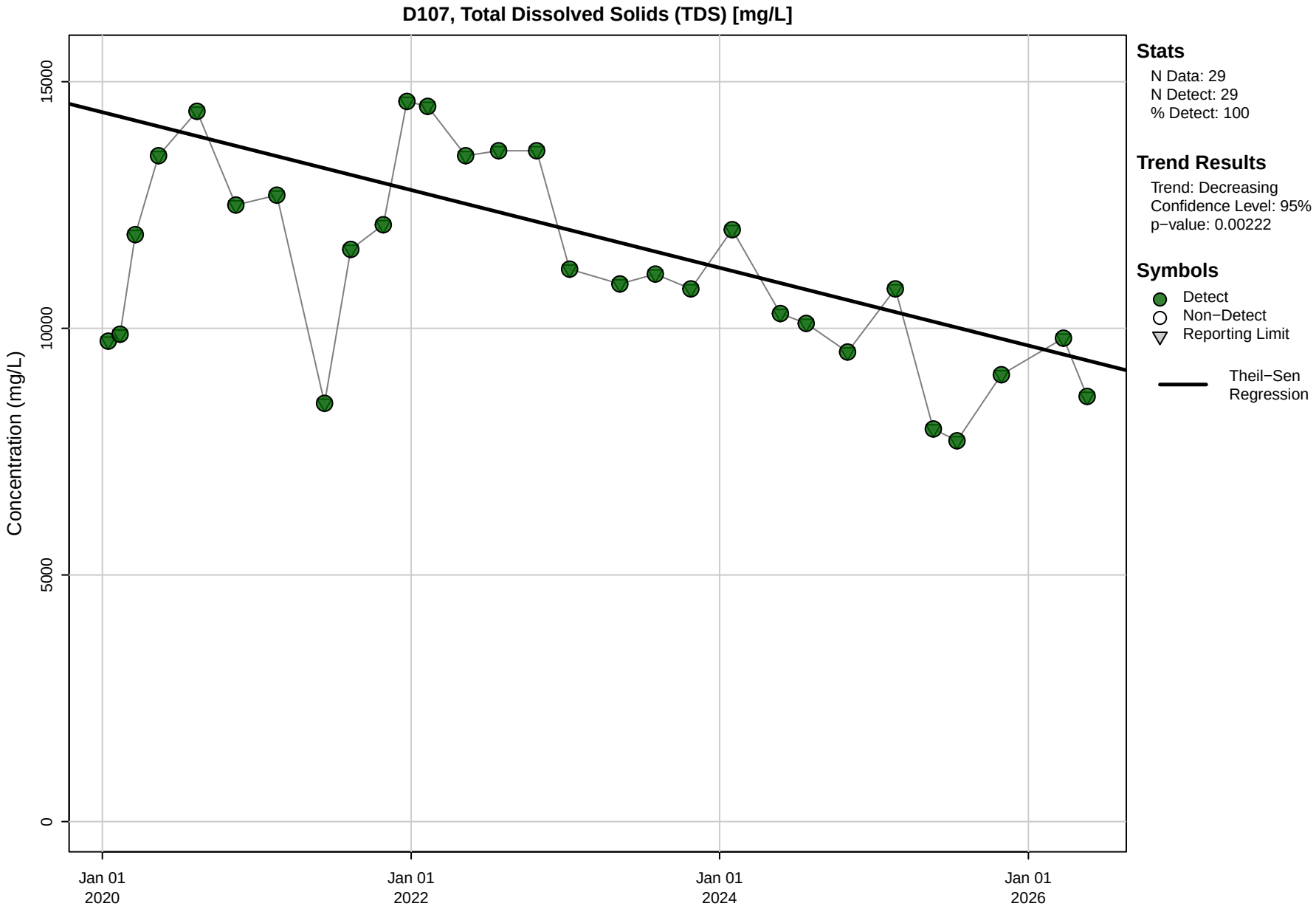

D107, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 29
N Detect: 29
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

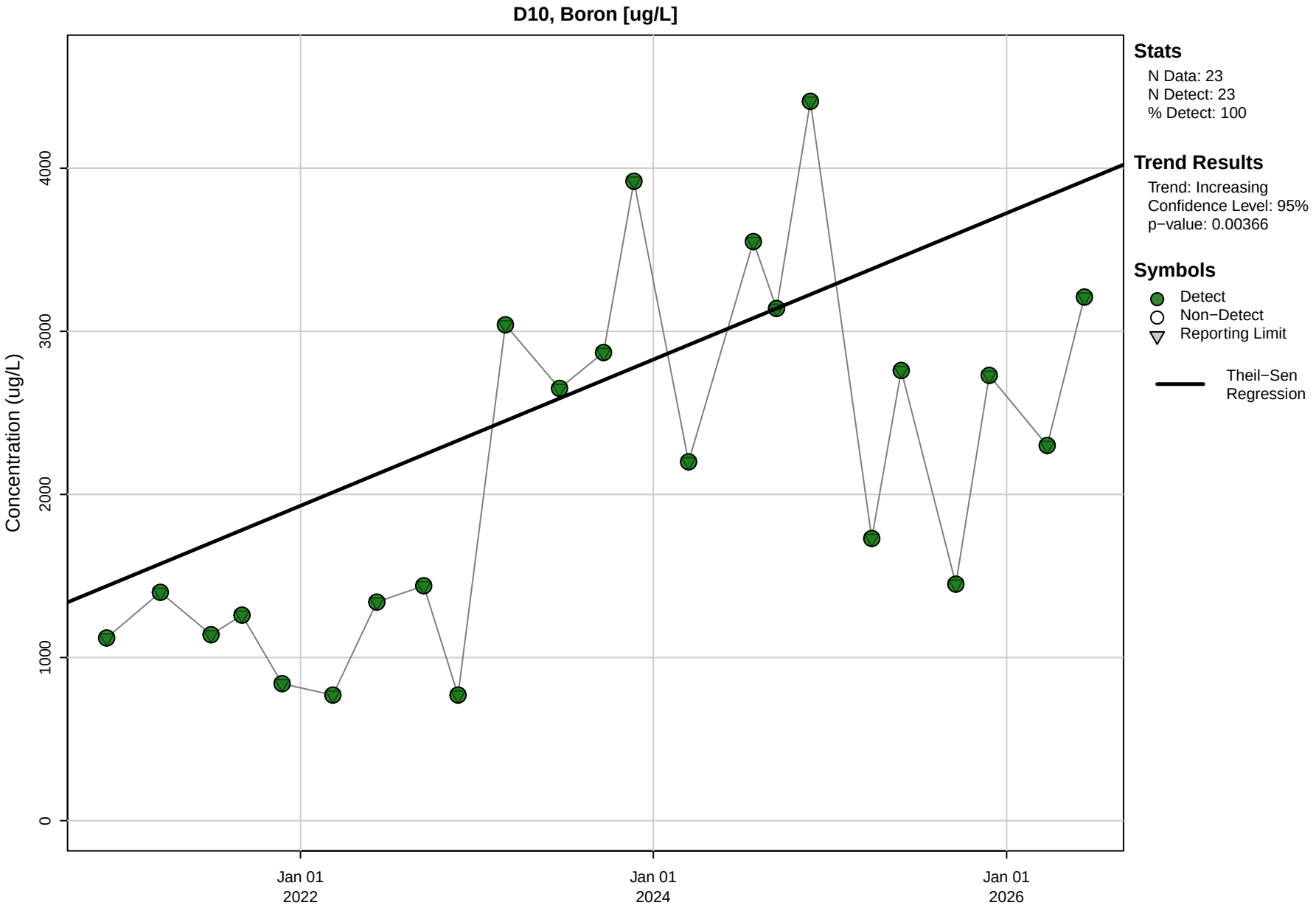

D107, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

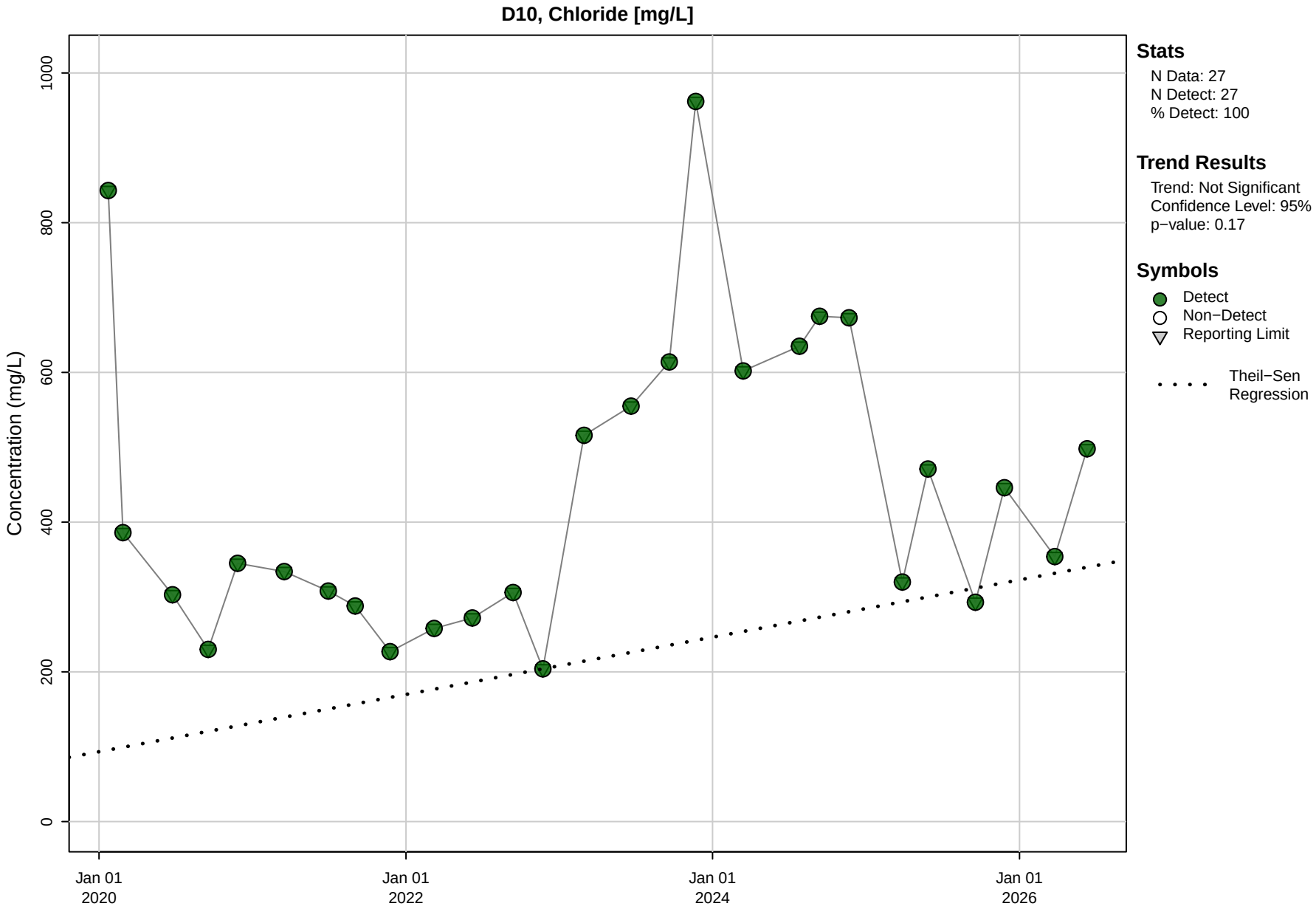

D107, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

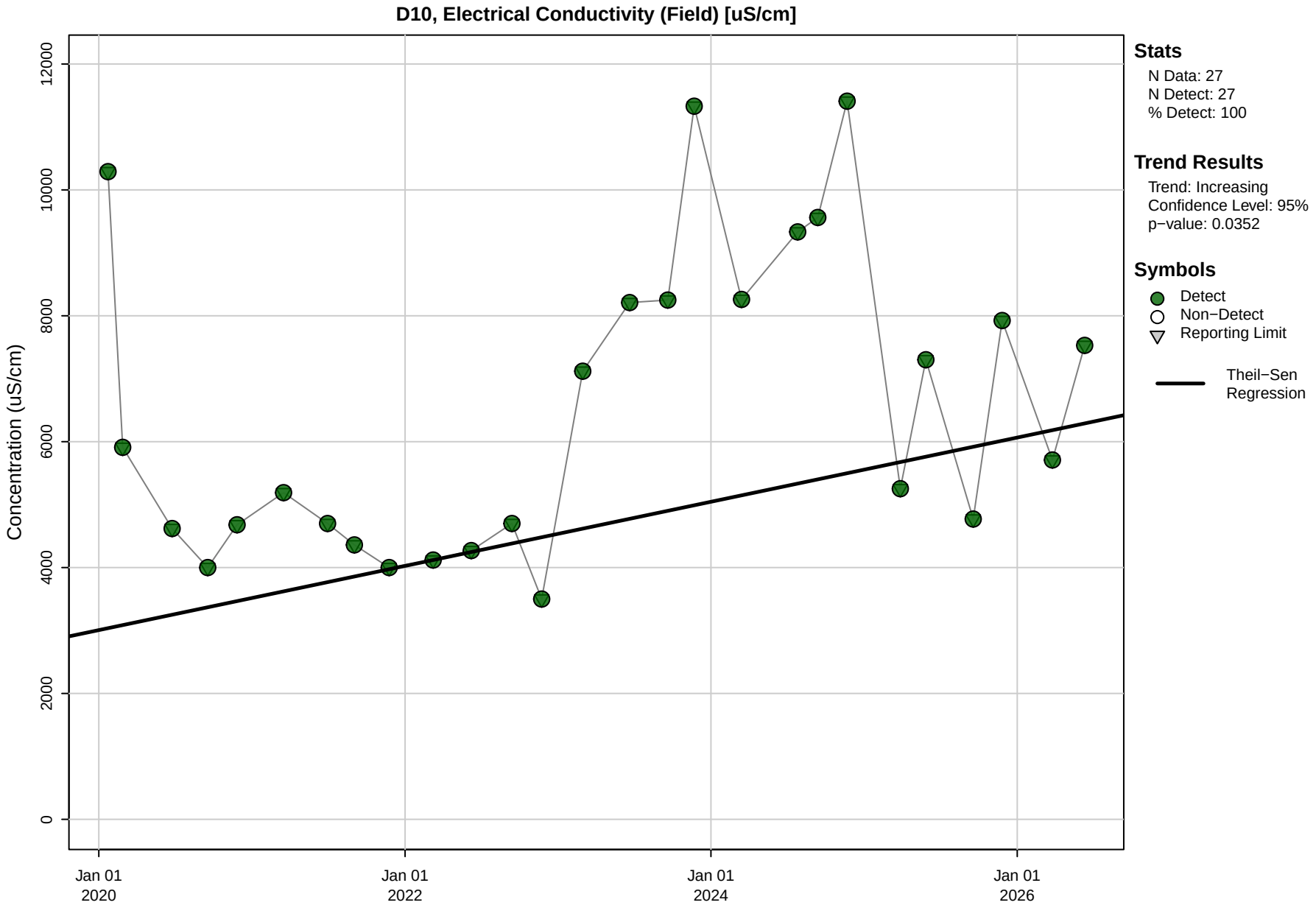

D107, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

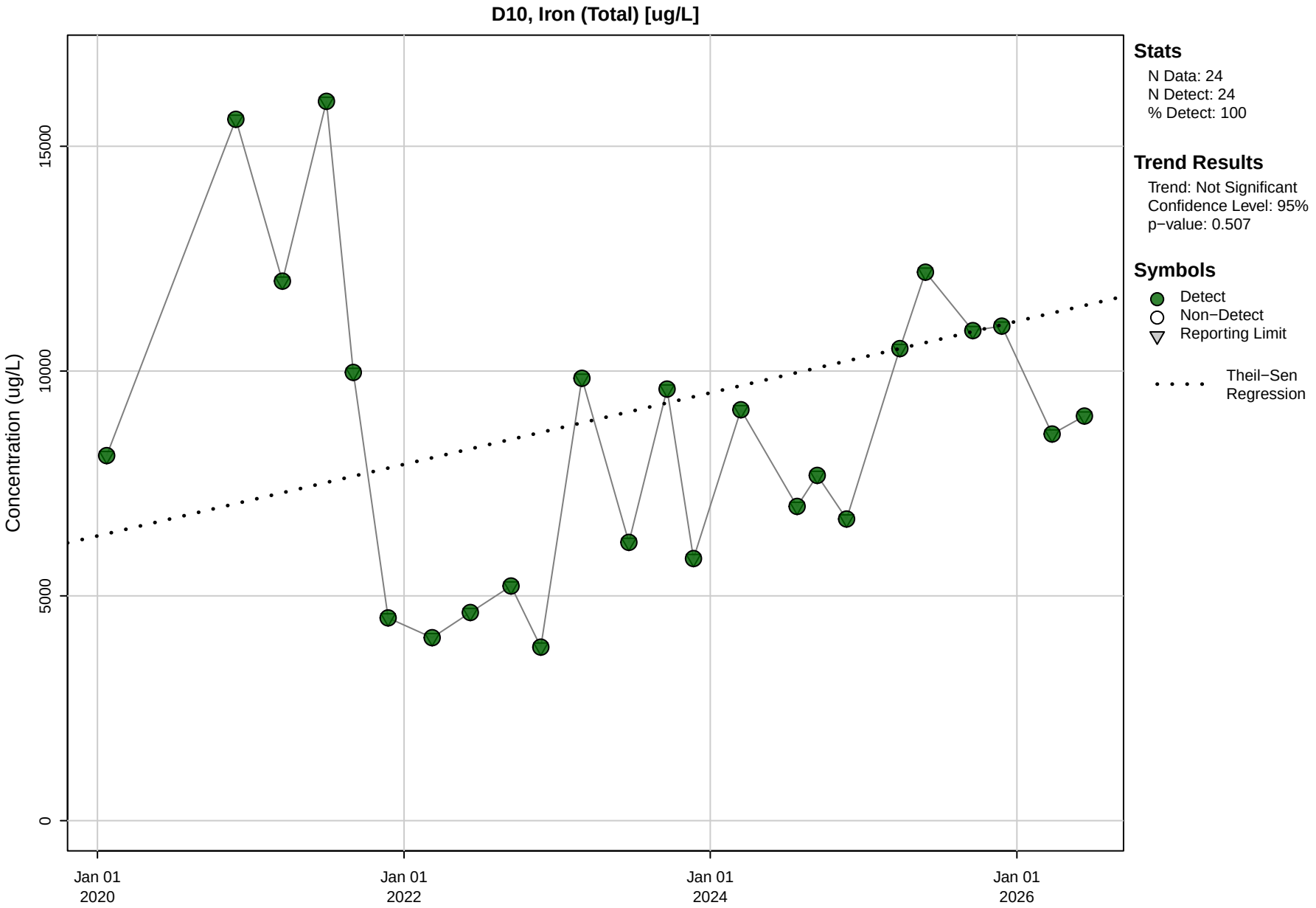

D107, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00533
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

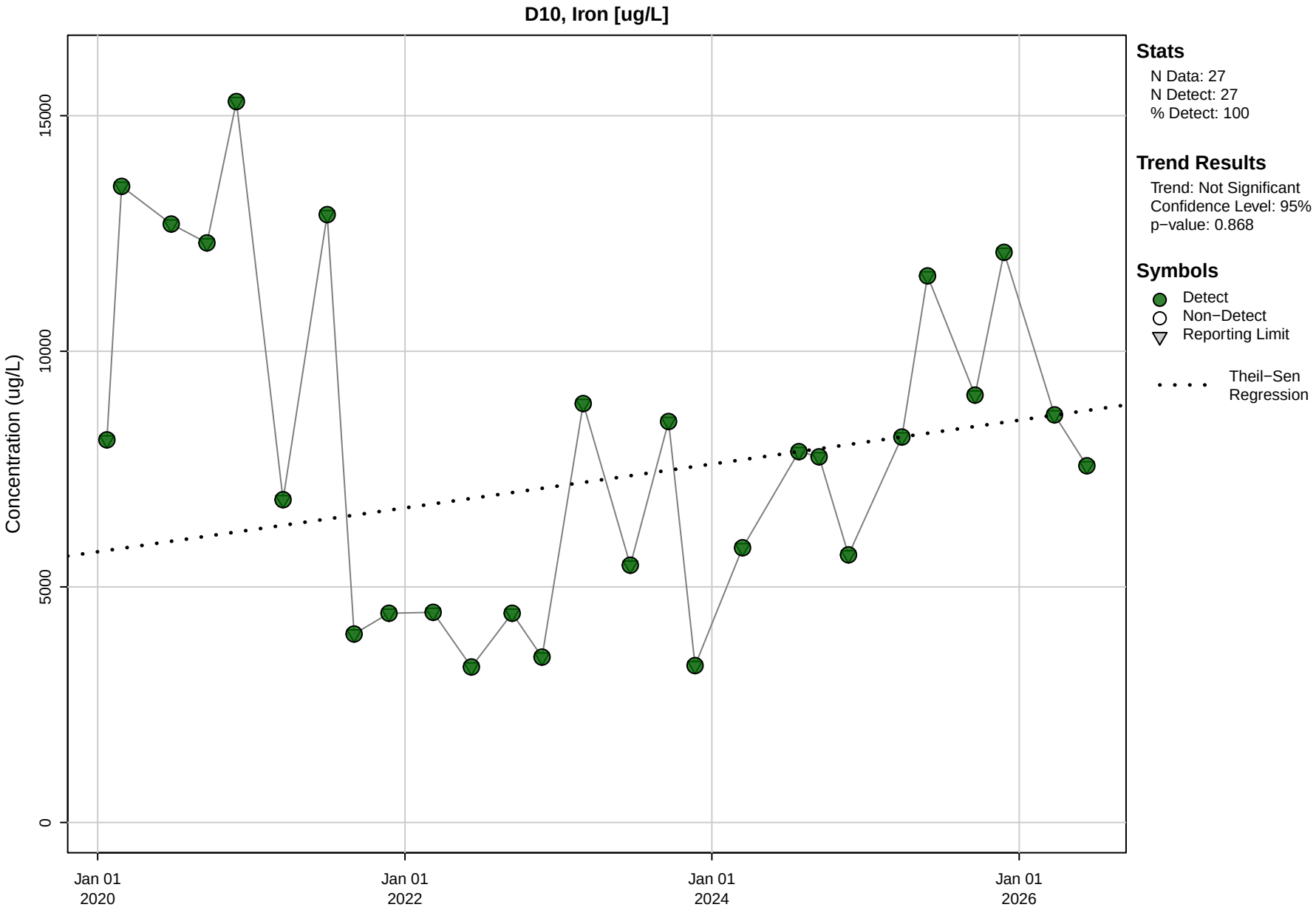

D107, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
15000
10000
5000
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 29
N Detect: 29
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00222
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

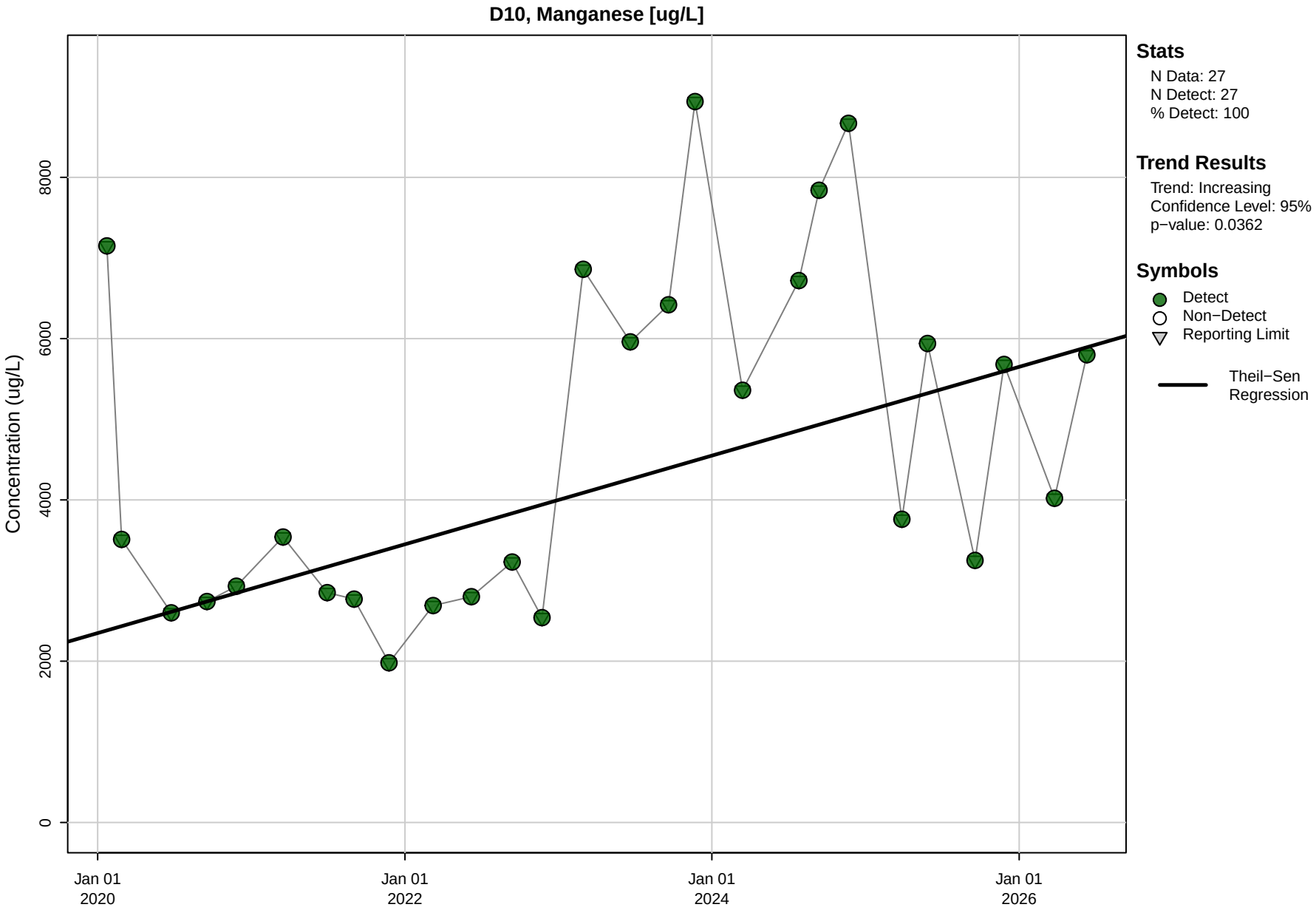

D10, Boron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00366
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

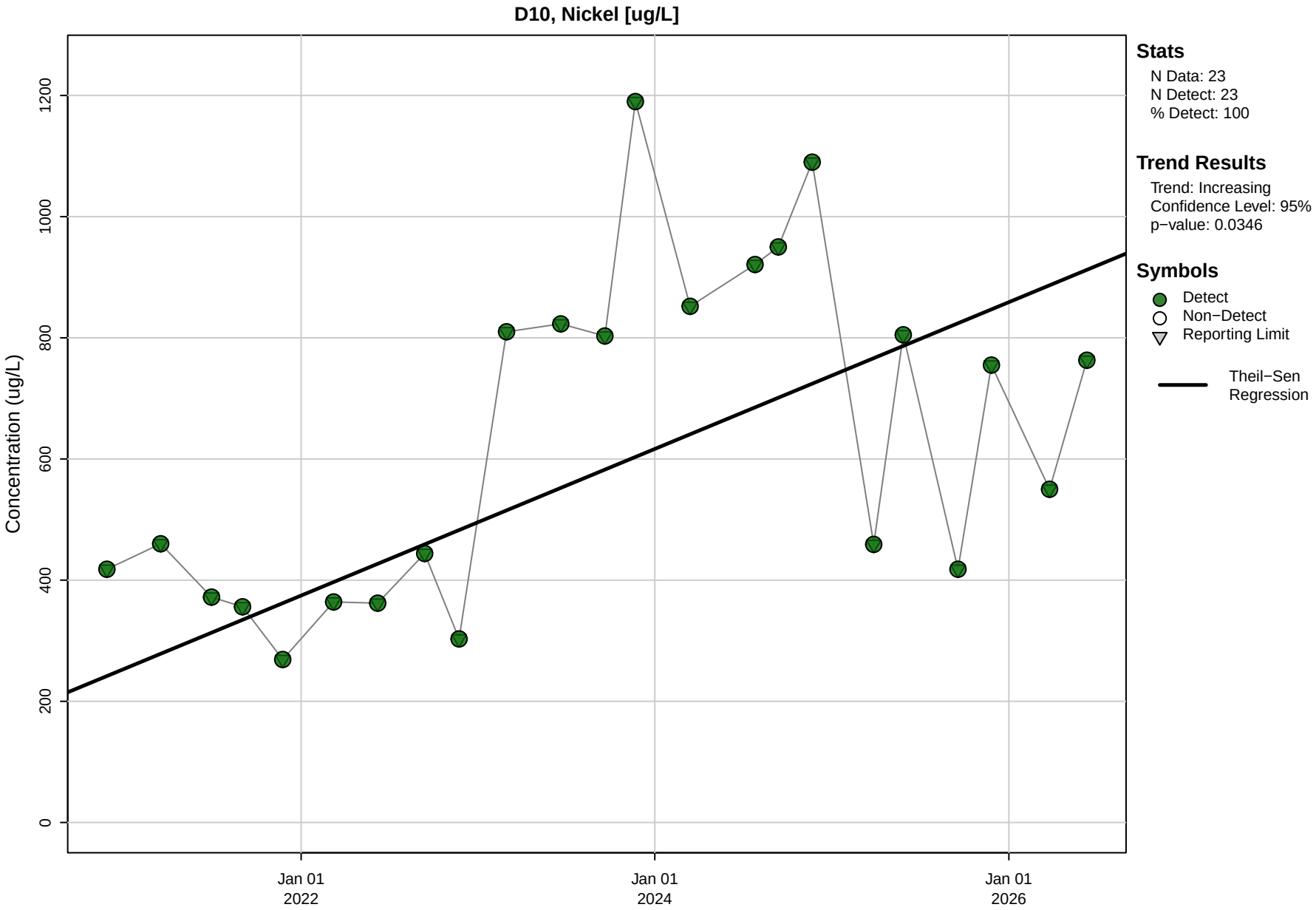

D10, Chloride [mg/L]
Concentration (mg/L)
0
200
400
600
800
1000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.17
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

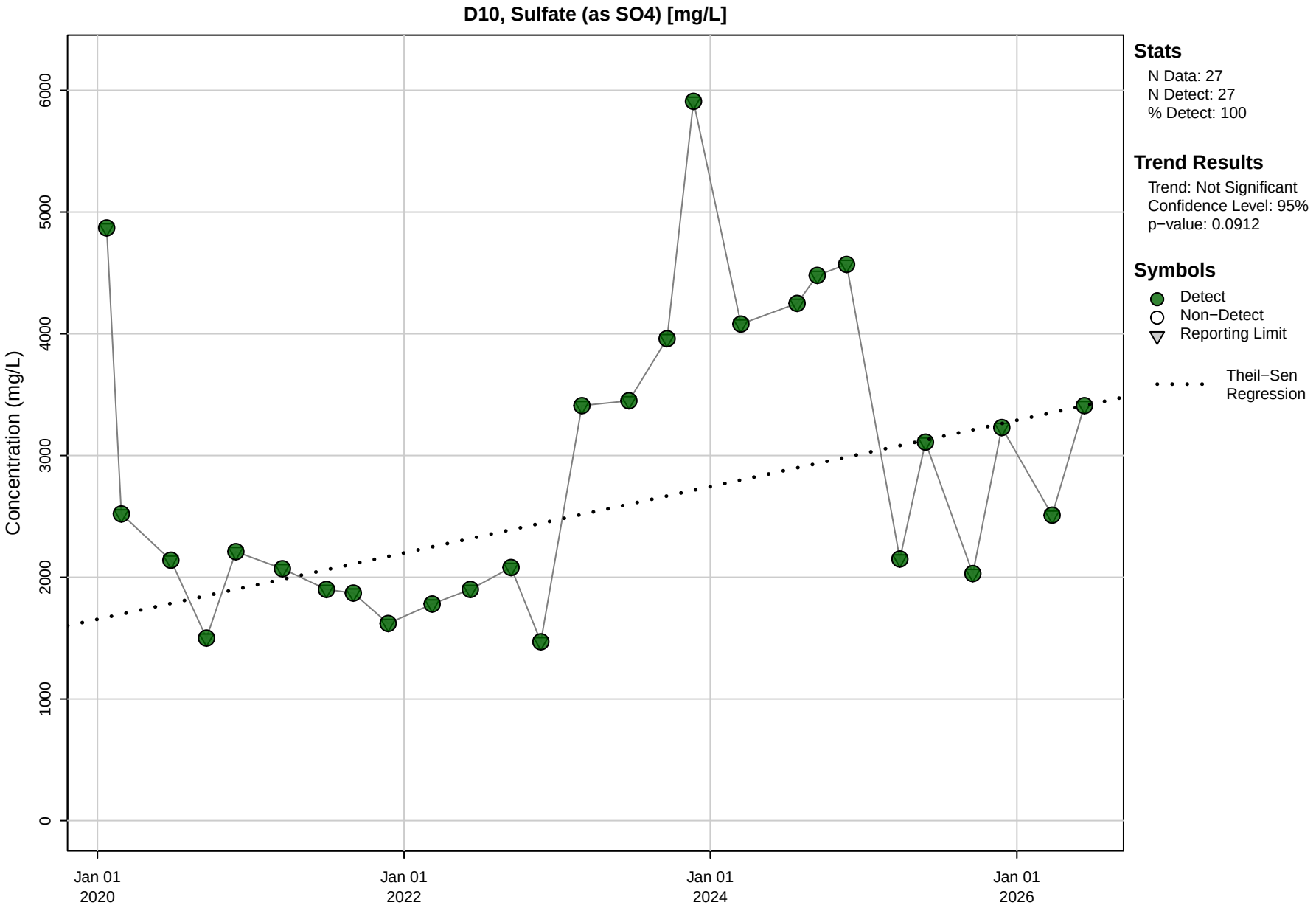

D10, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0352
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

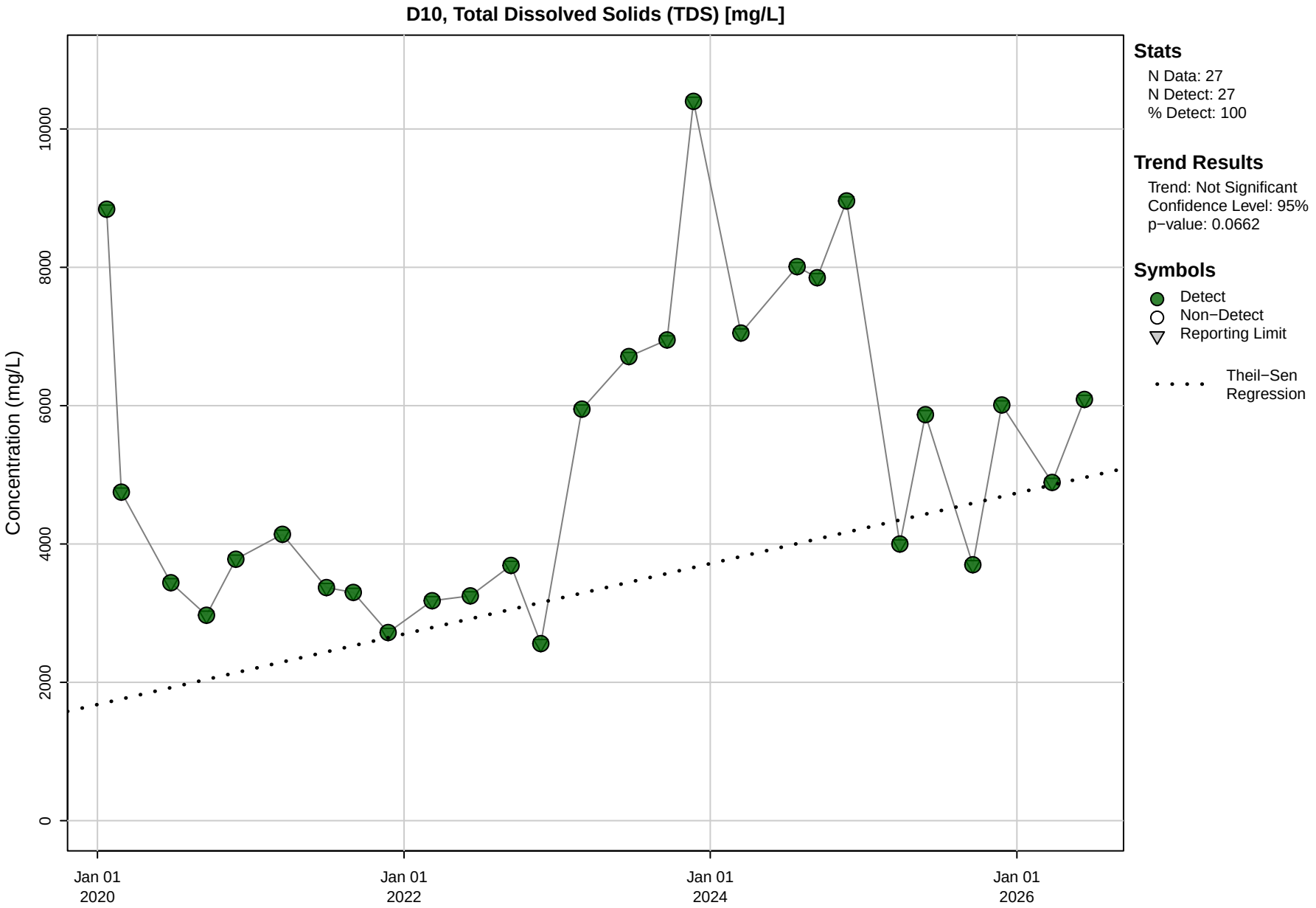

D10, Iron (Total) [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.507
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

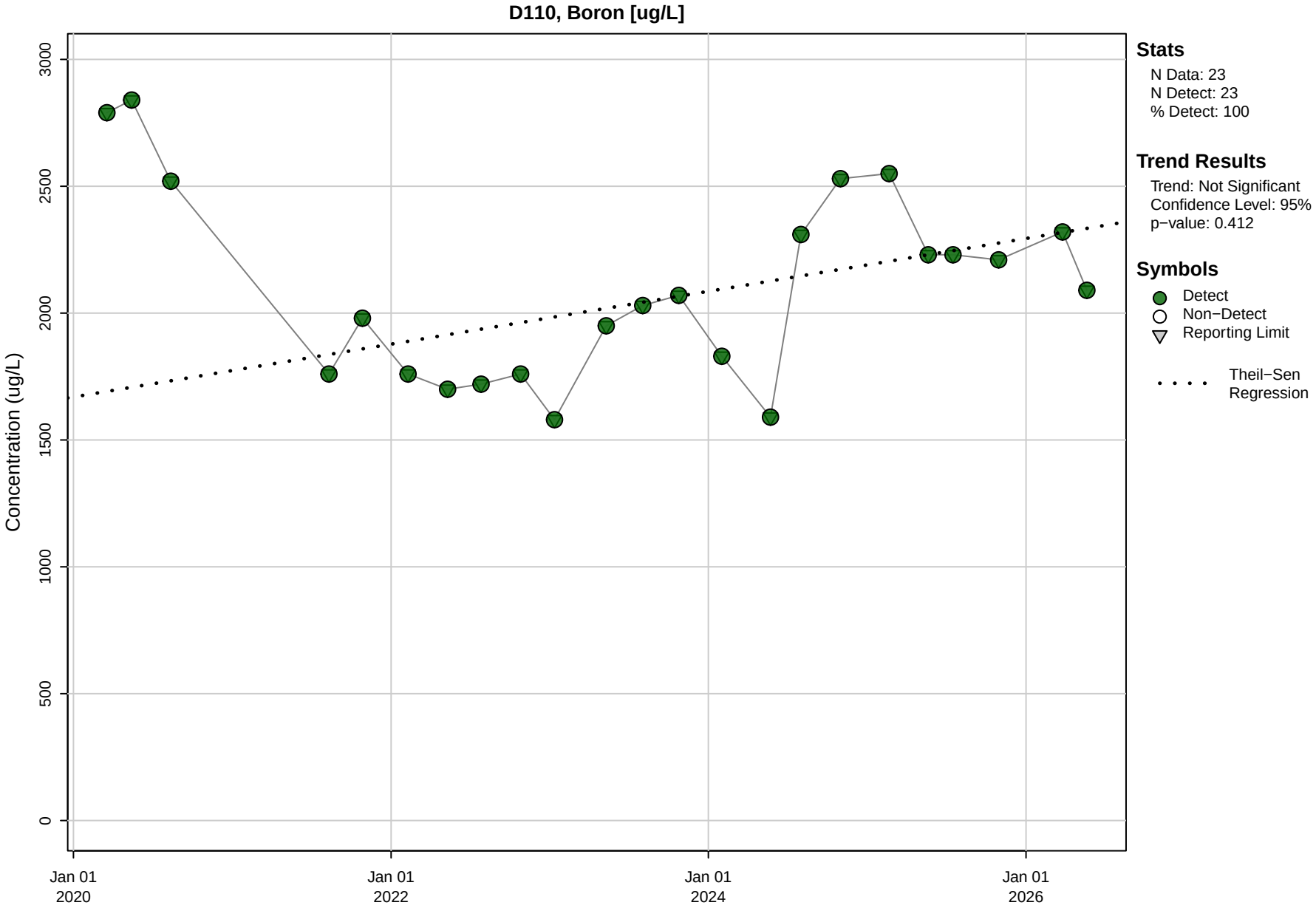

D10, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.868
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

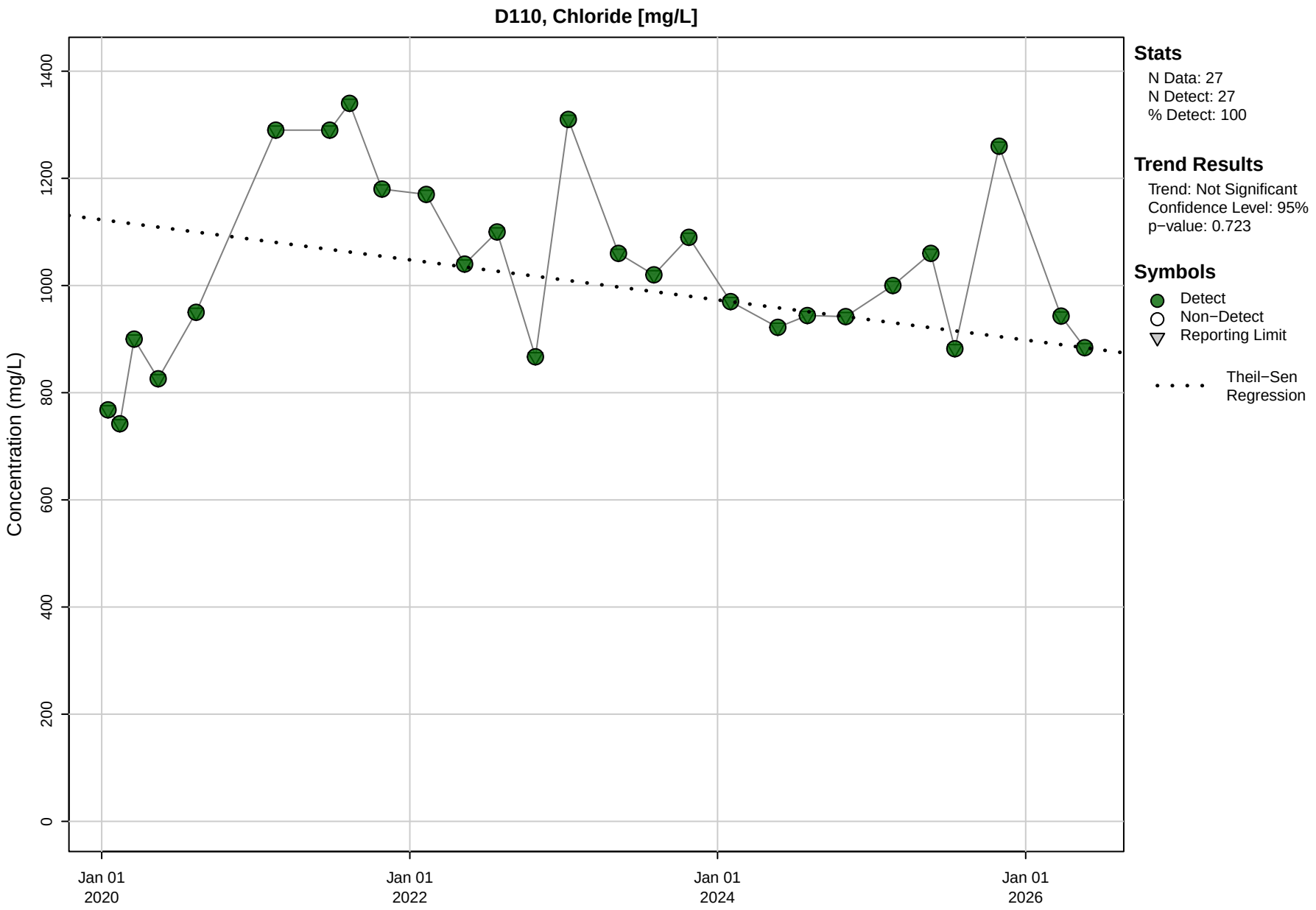

D10, Manganese [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0362
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

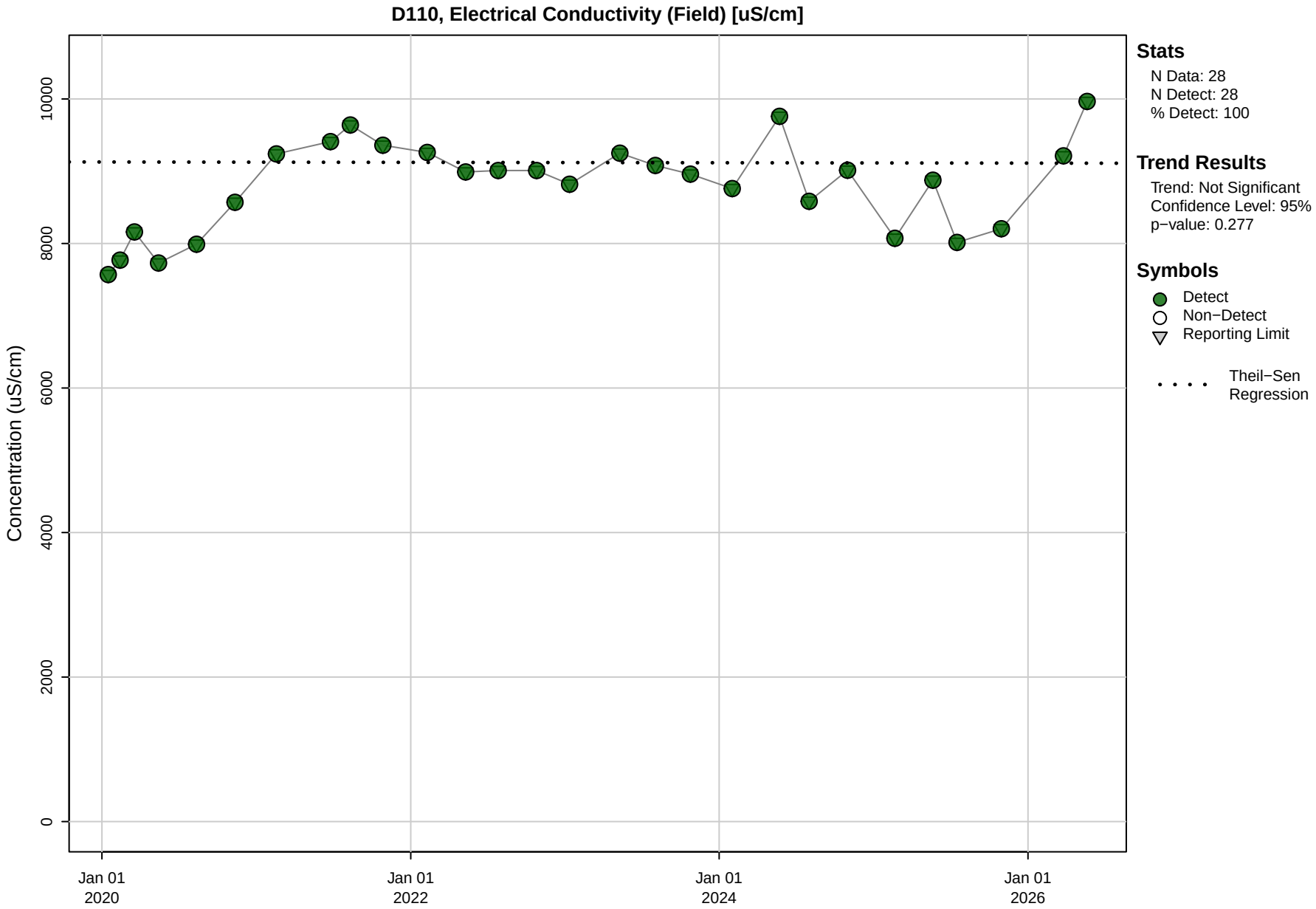

D10, Nickel [ug/L]
Concentration (ug/L)
0
200
400
600
800
1000
1200
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0346
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

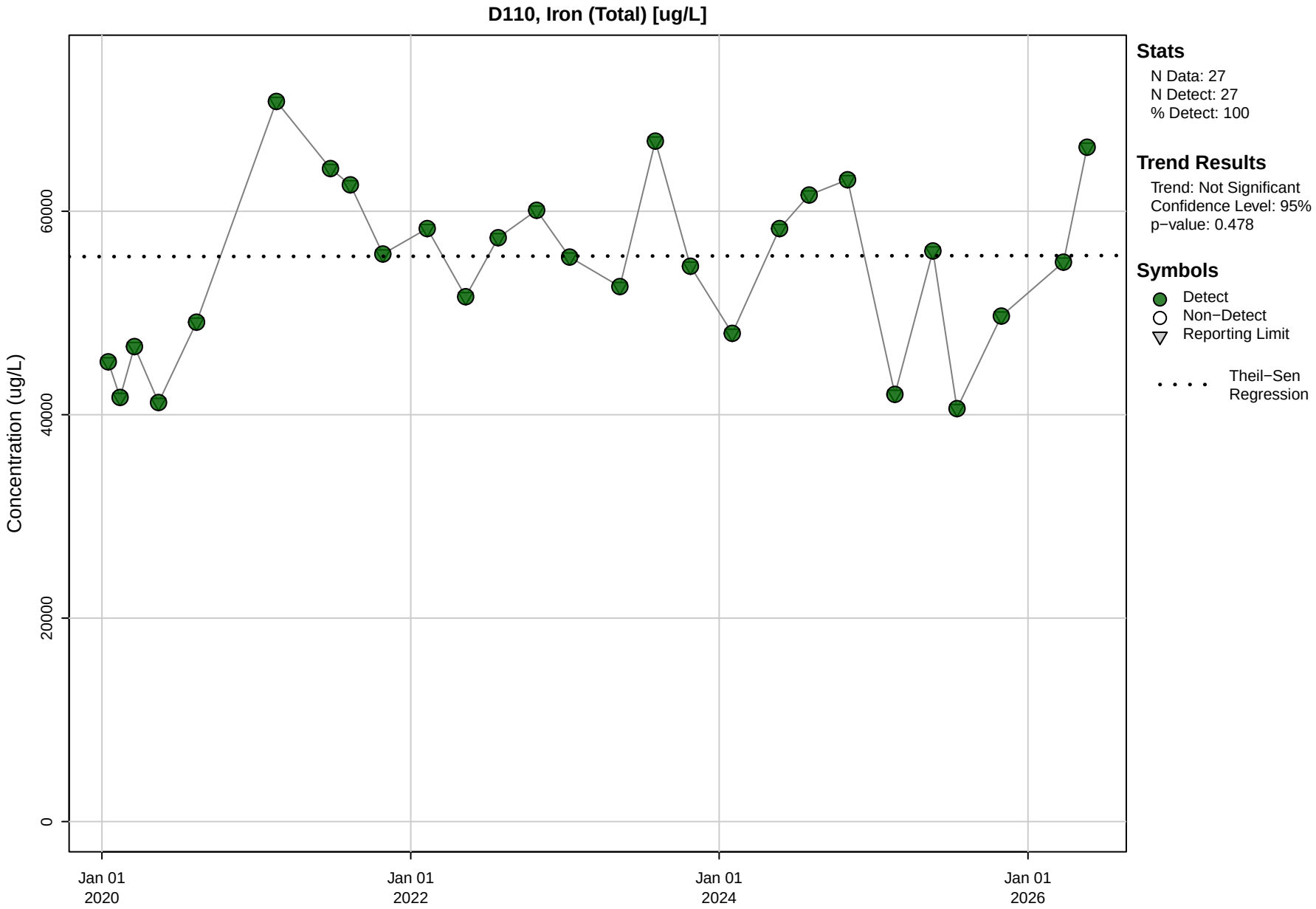

D10, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
6000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0912
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

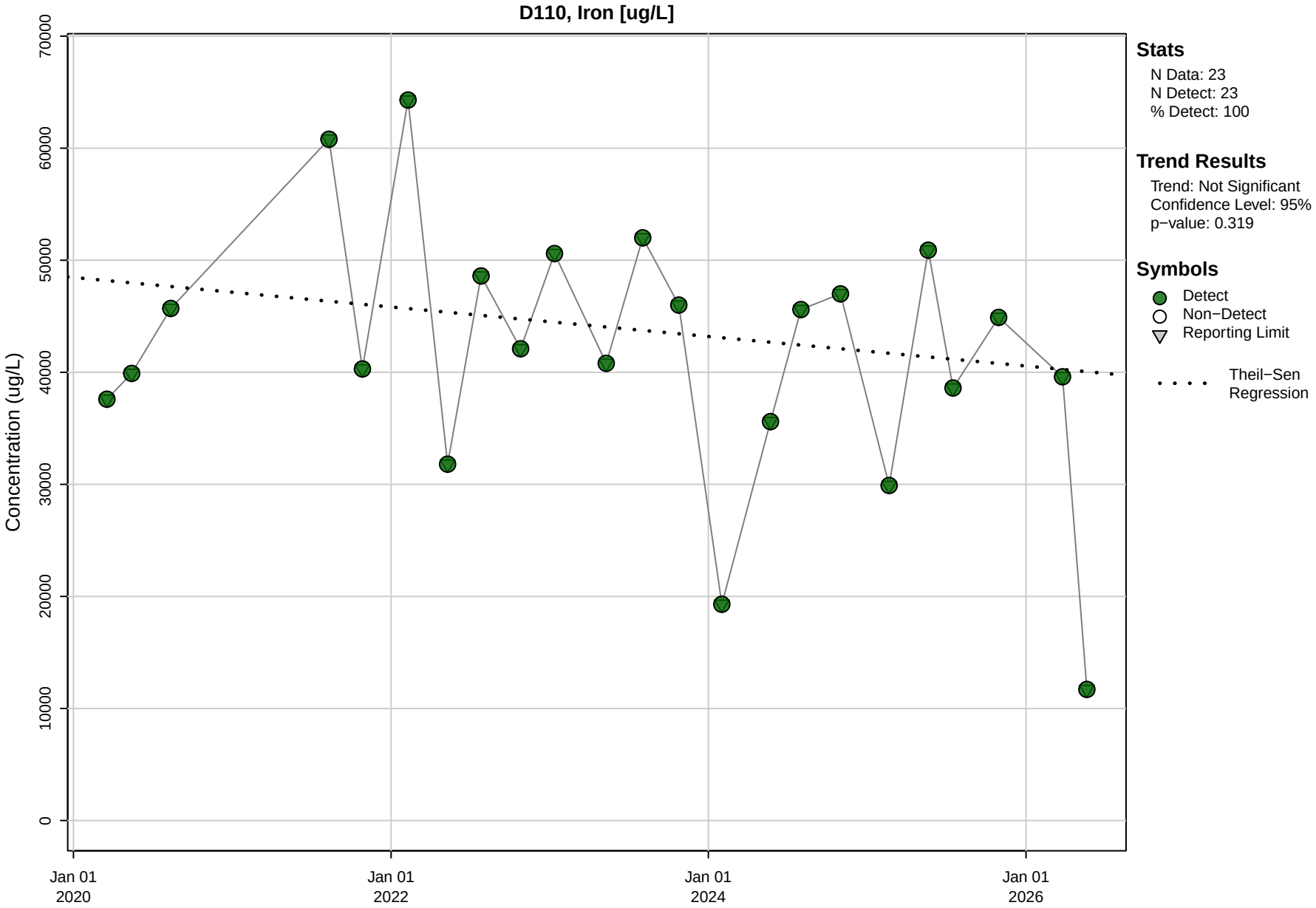

D10, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0662
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

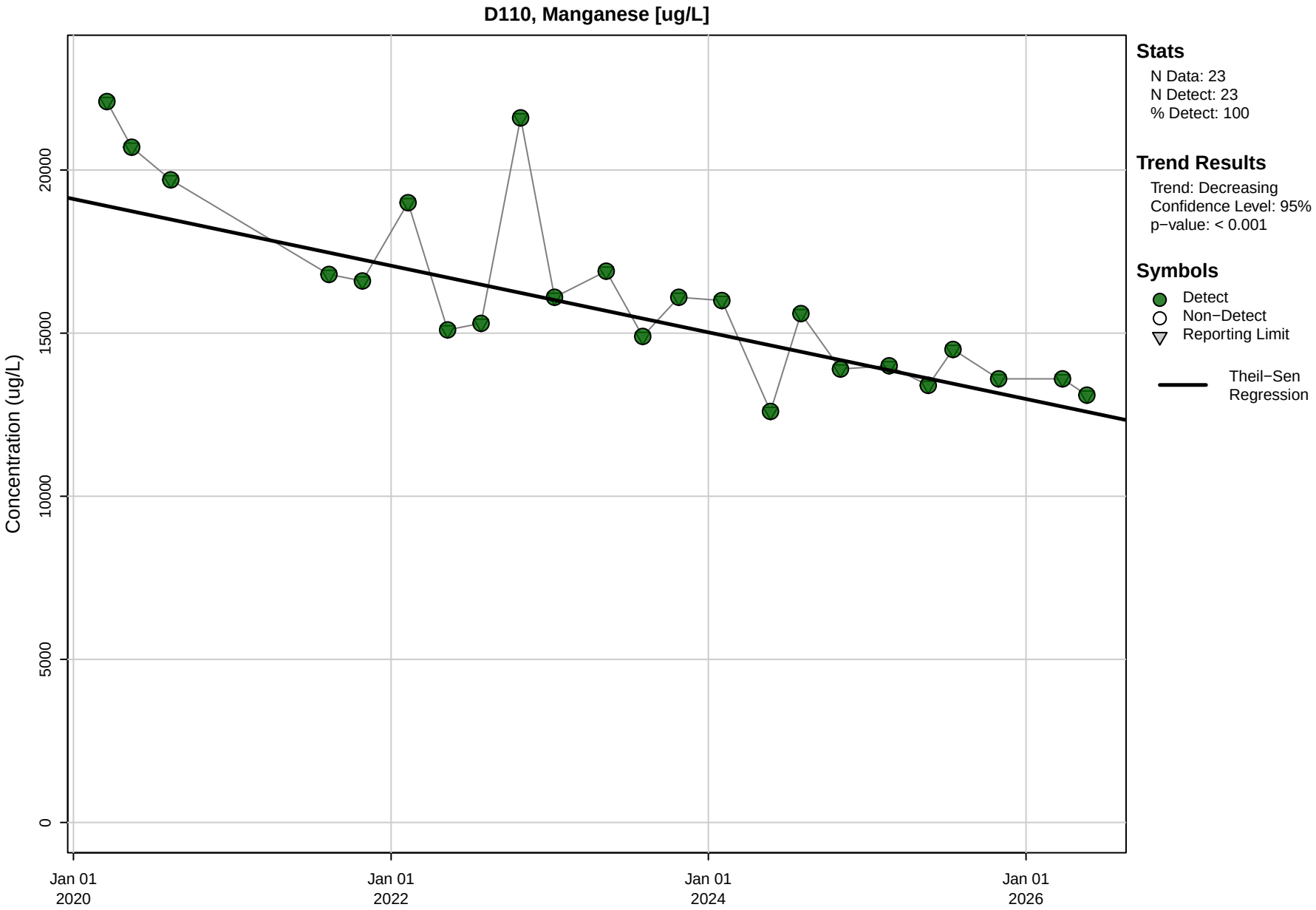

D110, Boron [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.412
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

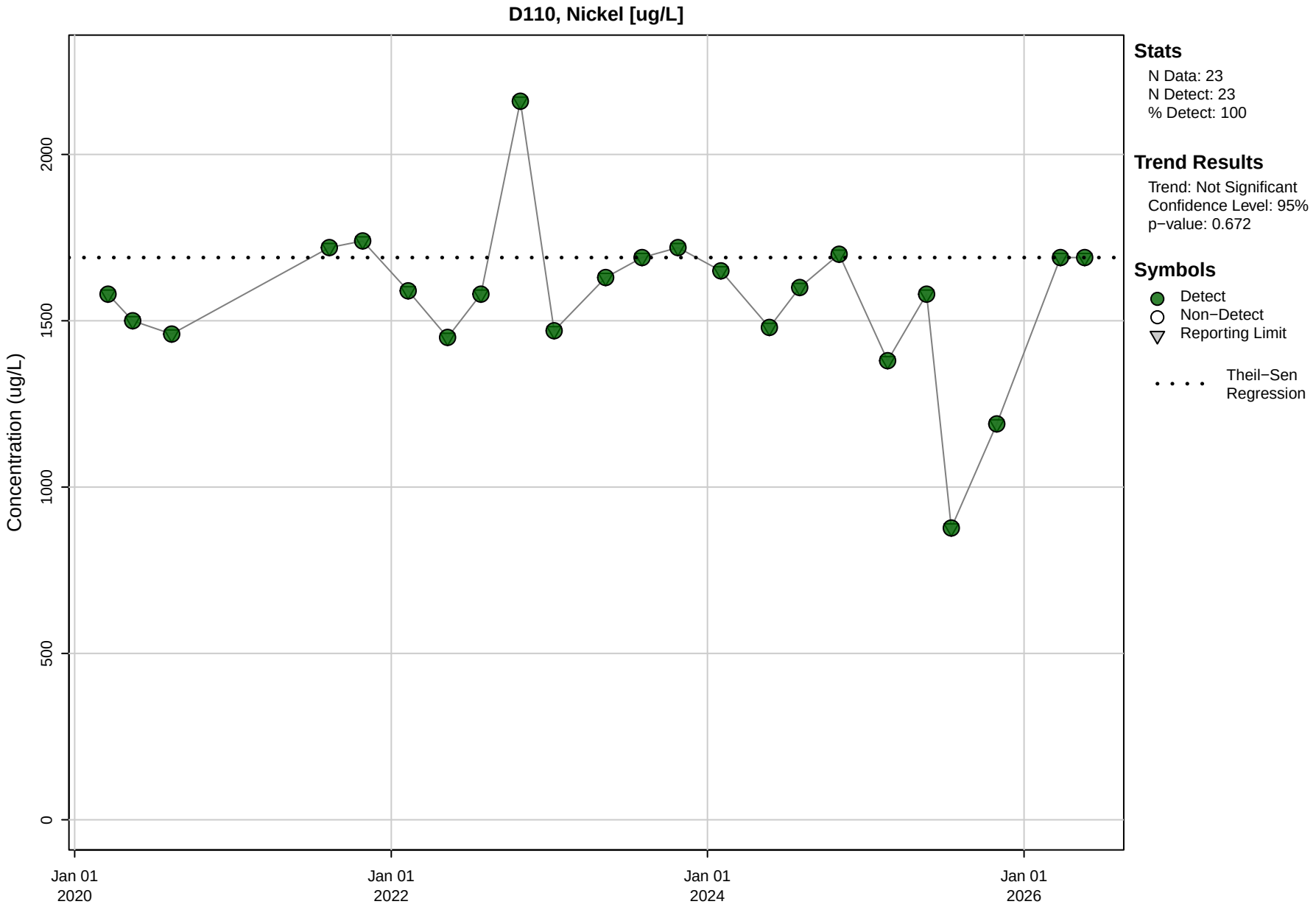

D110, Chloride [mg/L]
Concentration (mg/L)
0
200
400
600
800
1000
1200
1400
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.723
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

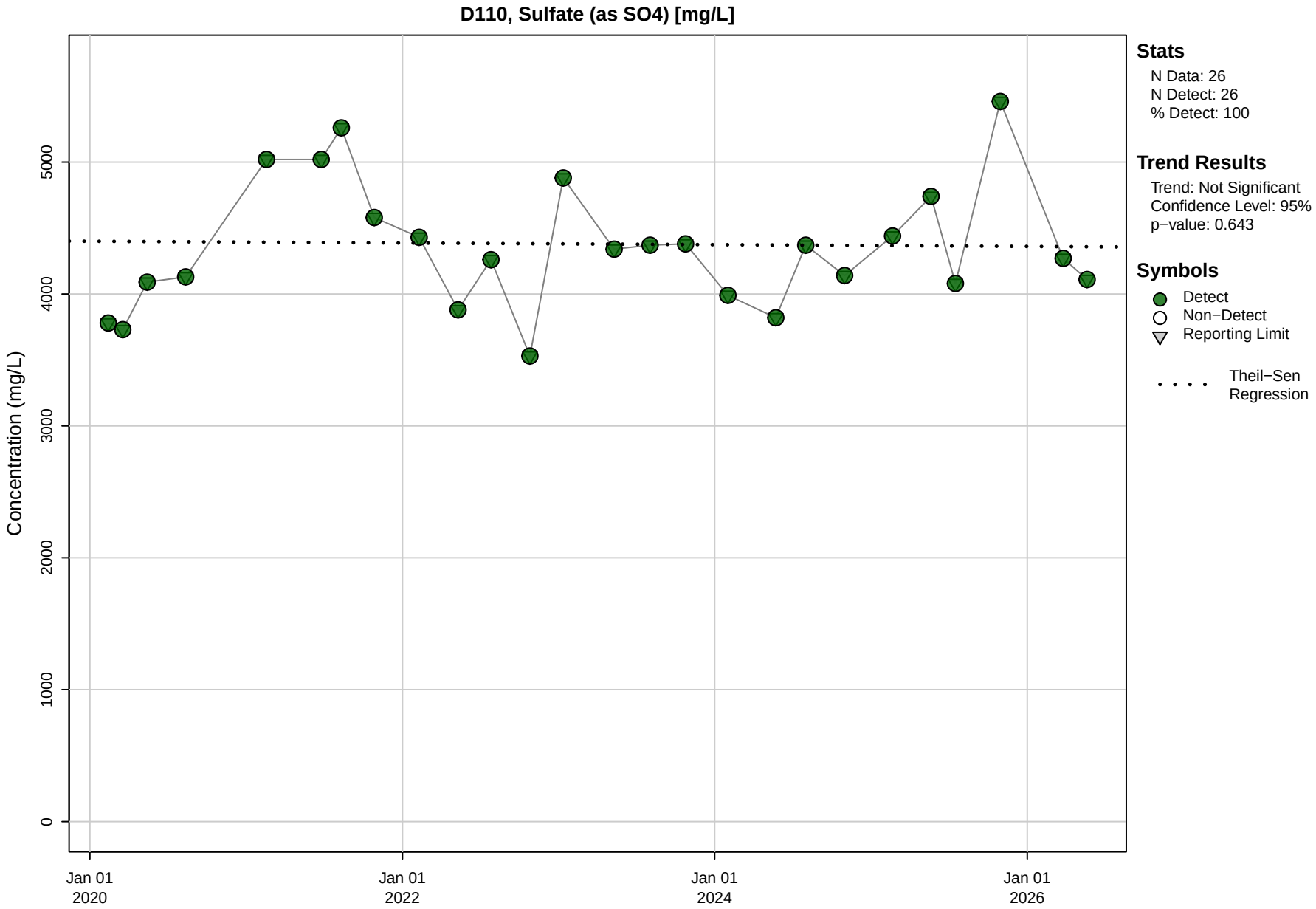

D110, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.277
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

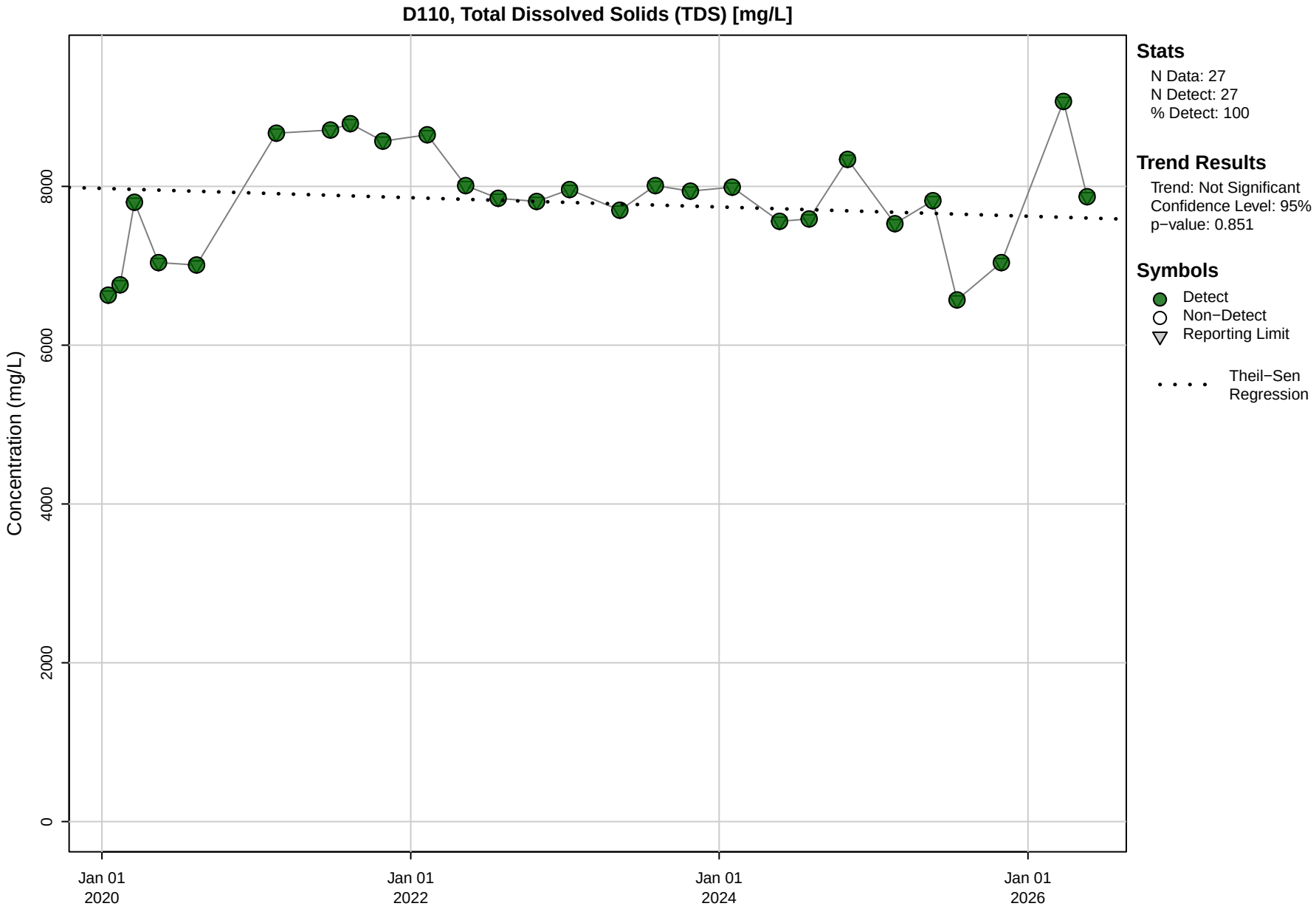

D110, Iron (Total) [ug/L]
Concentration (ug/L)
0
20000
40000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.478
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

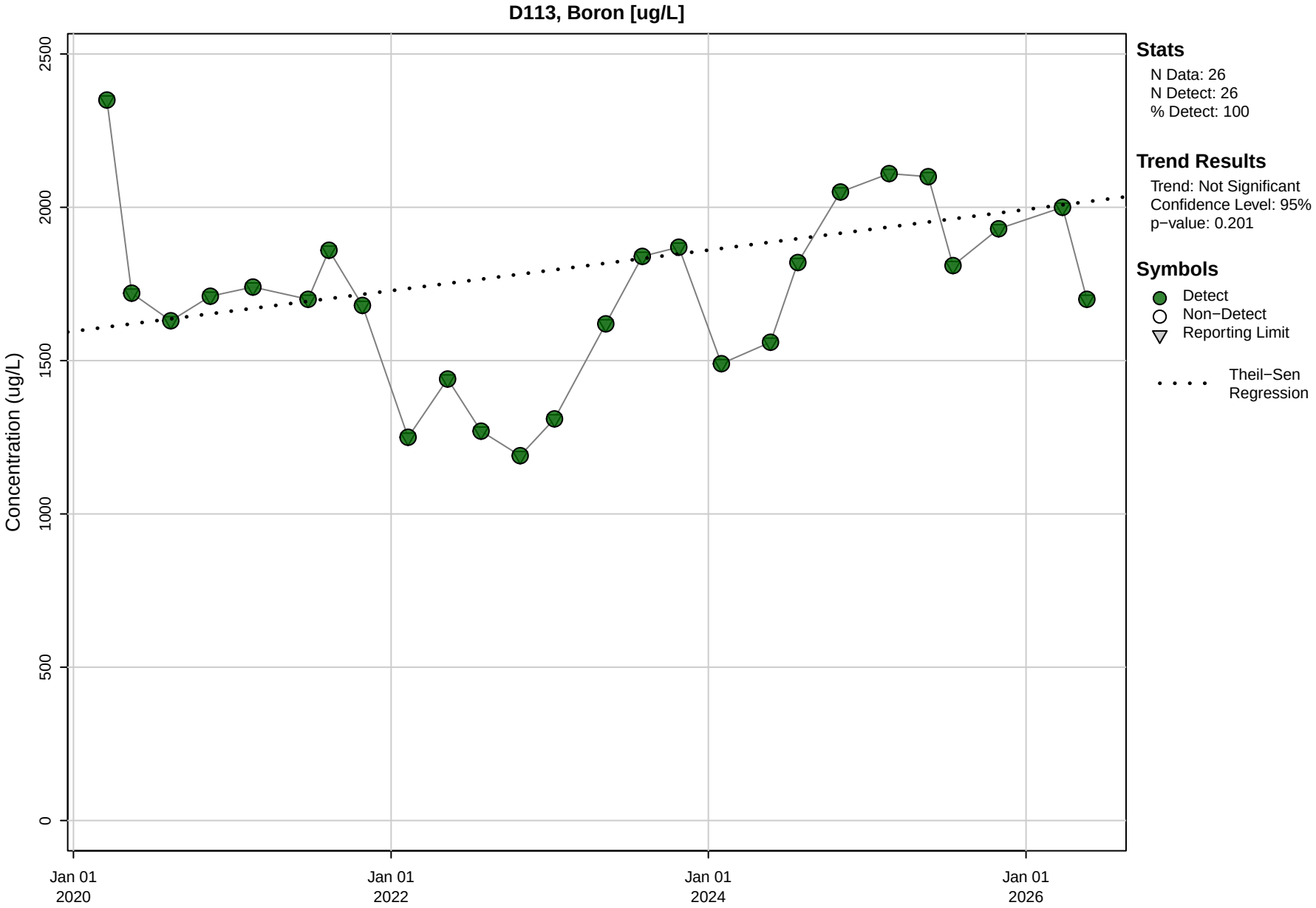

D110, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
60000
70000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.319
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

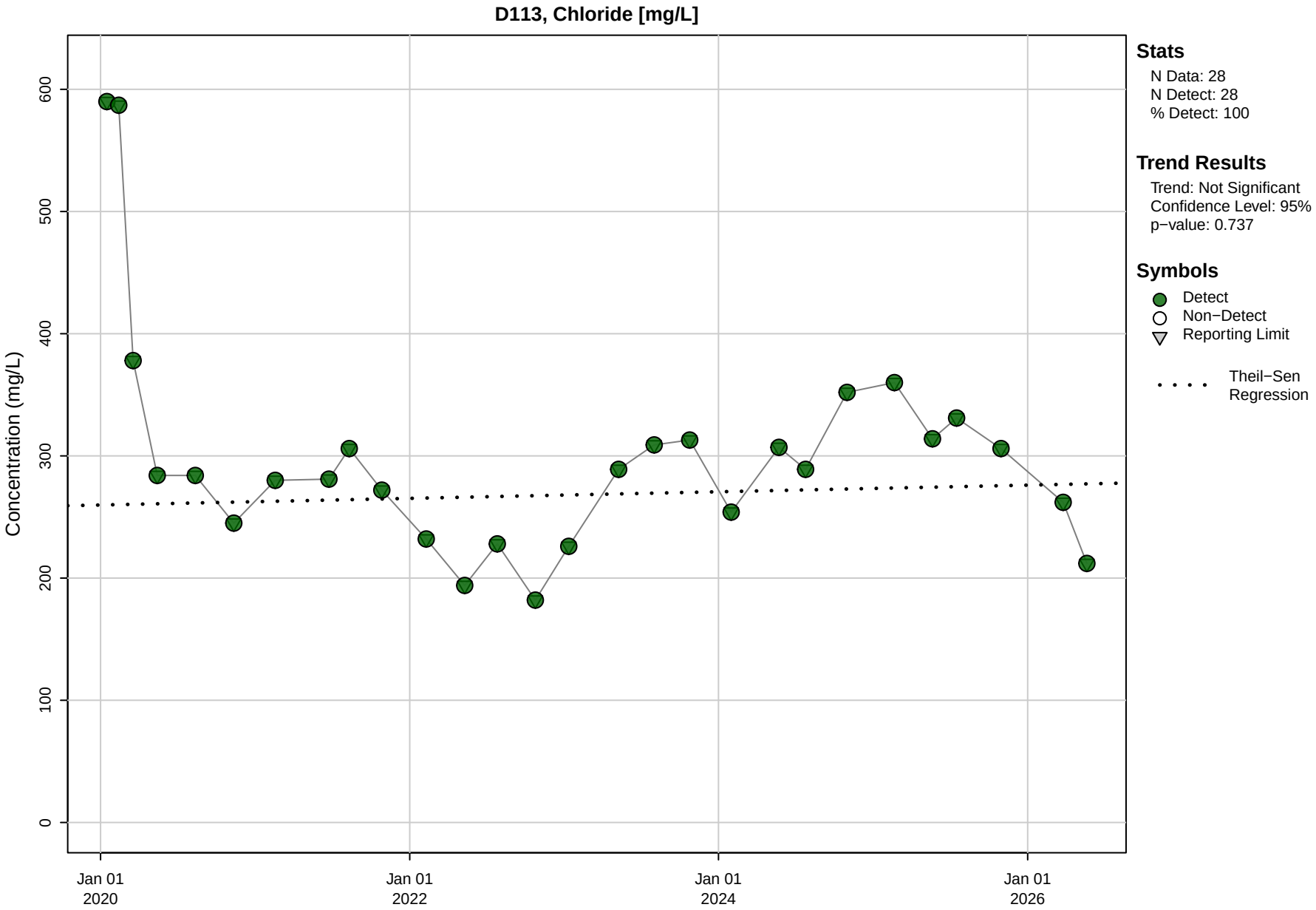

D110, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

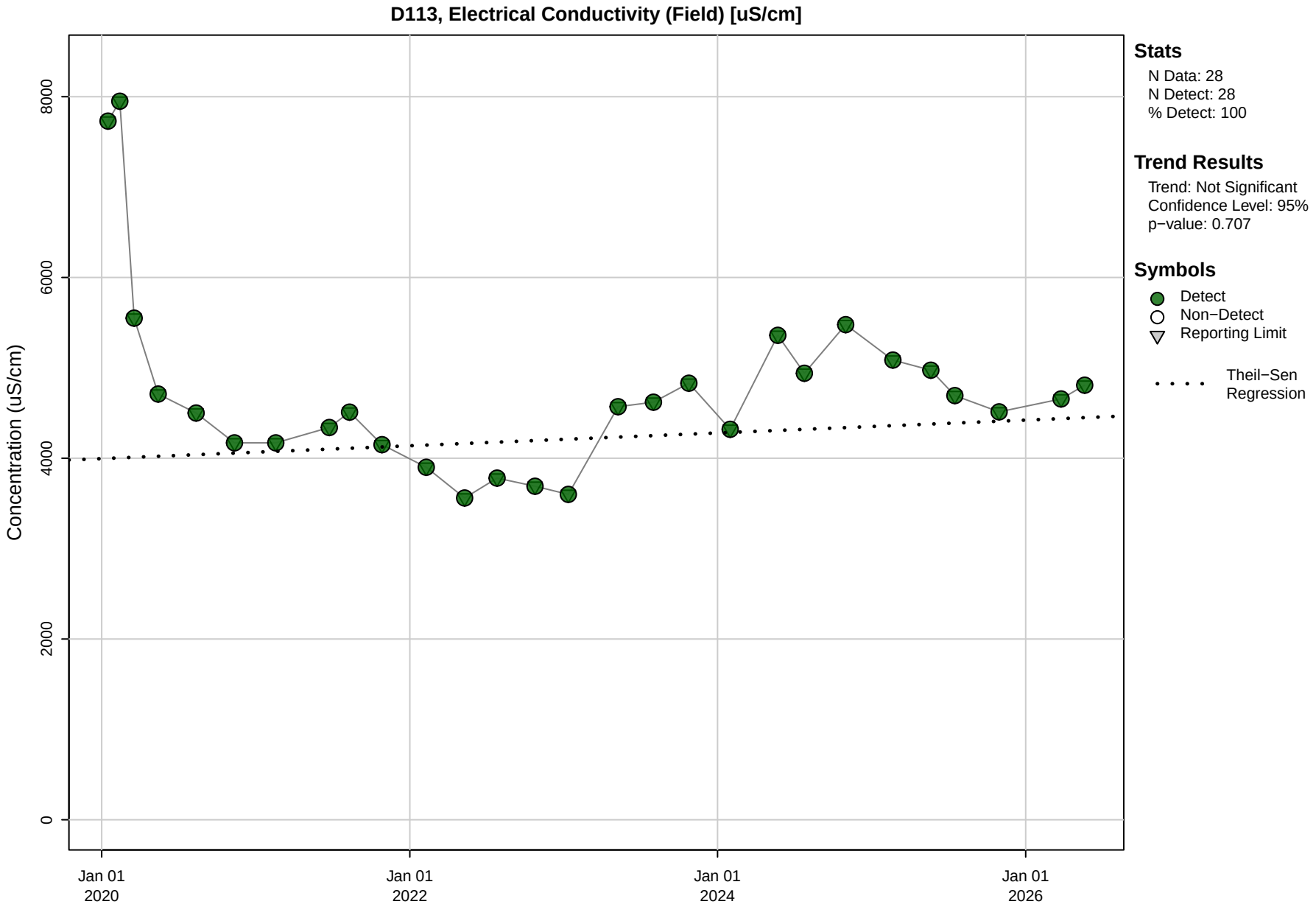

D110, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.672
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

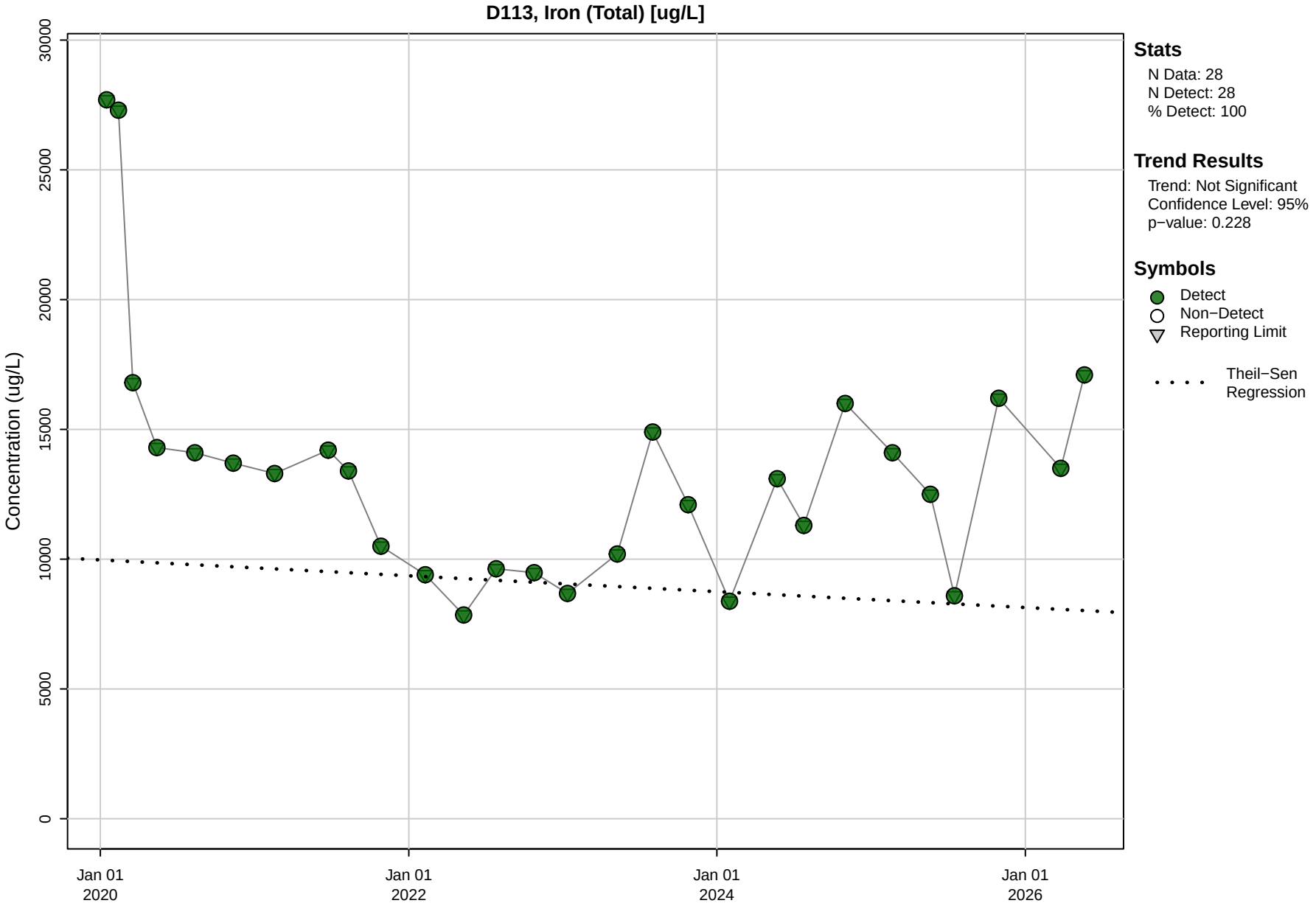

D110, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.643
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

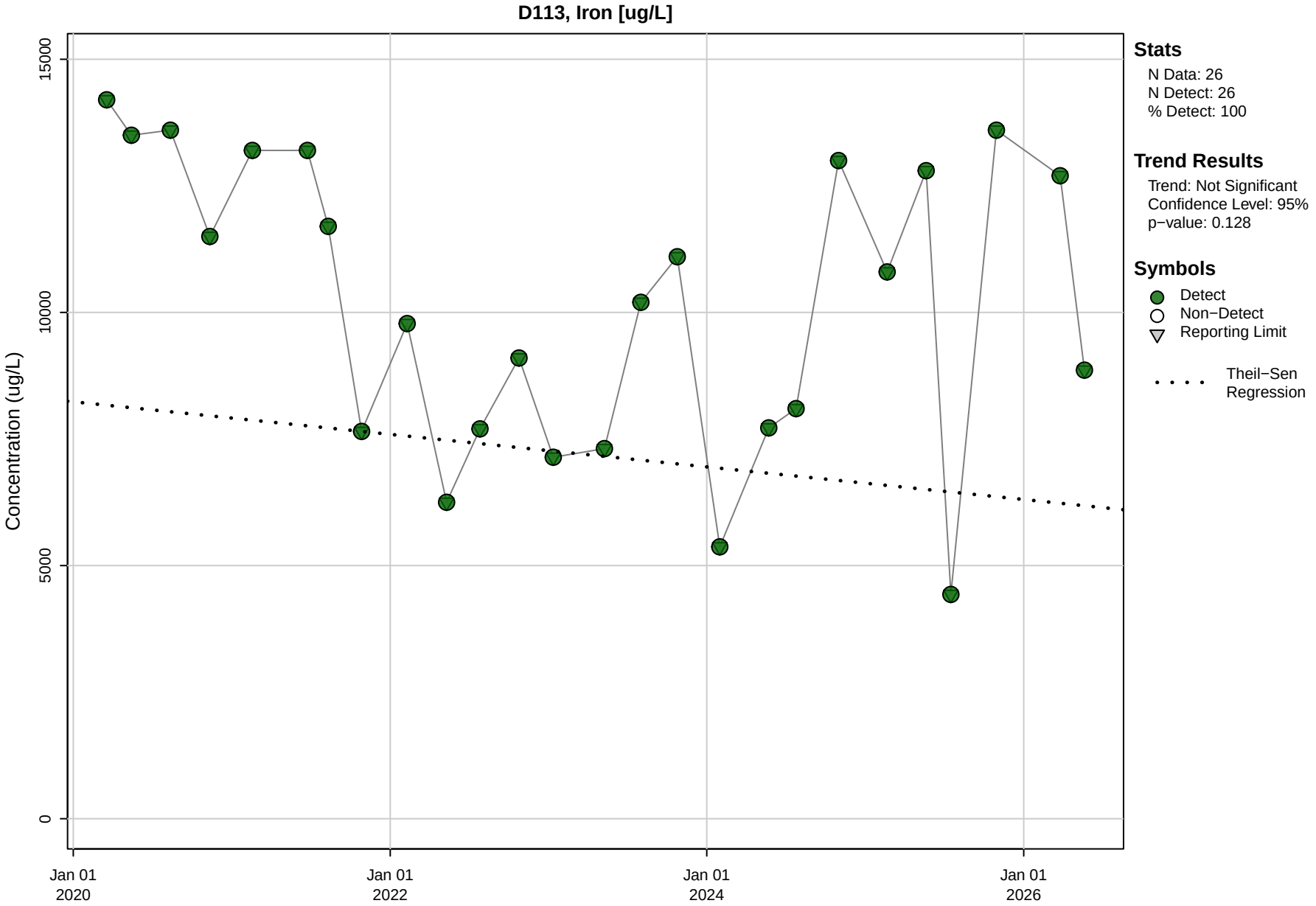

D110, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.851
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

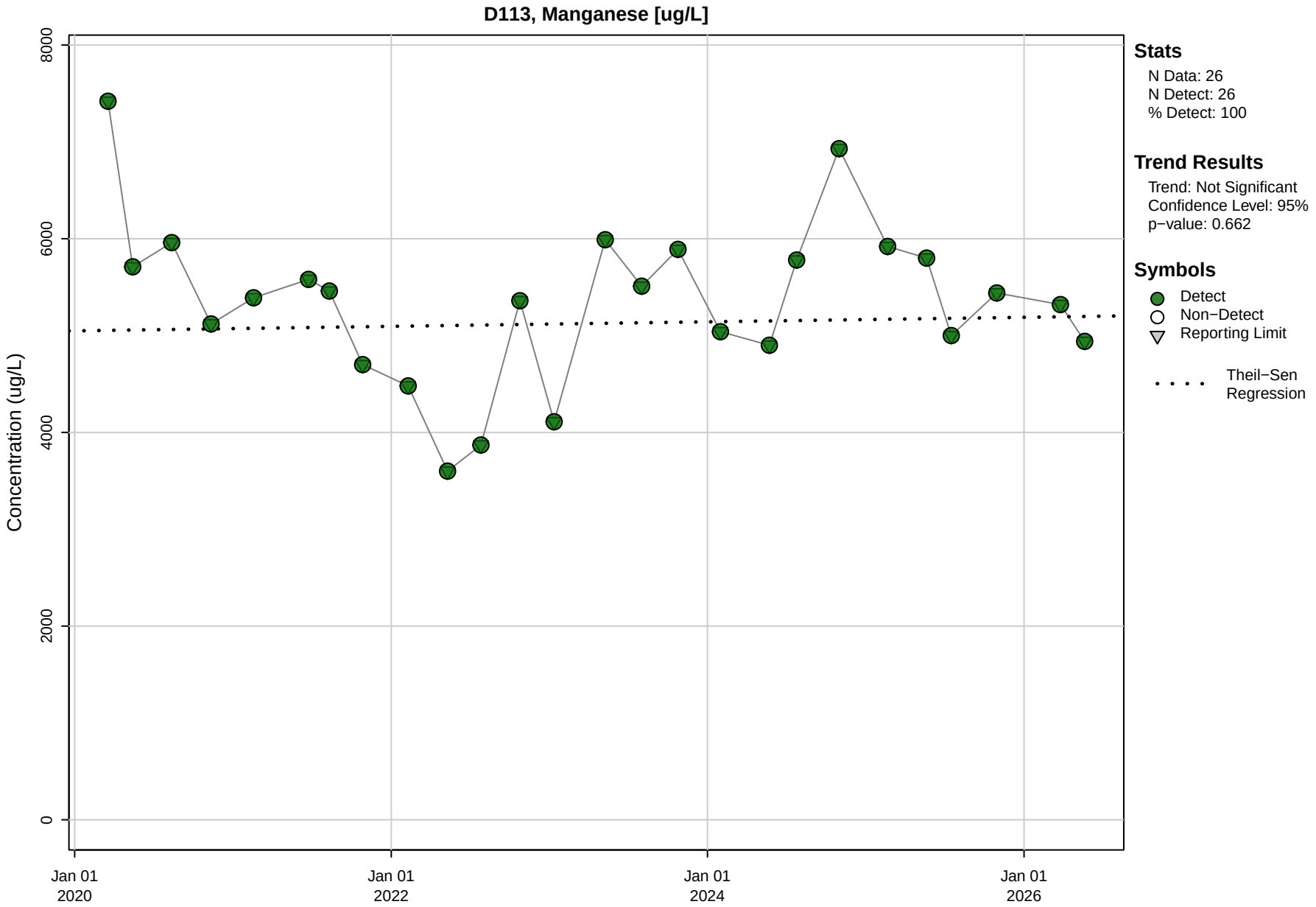

D113, Boron [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.201
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

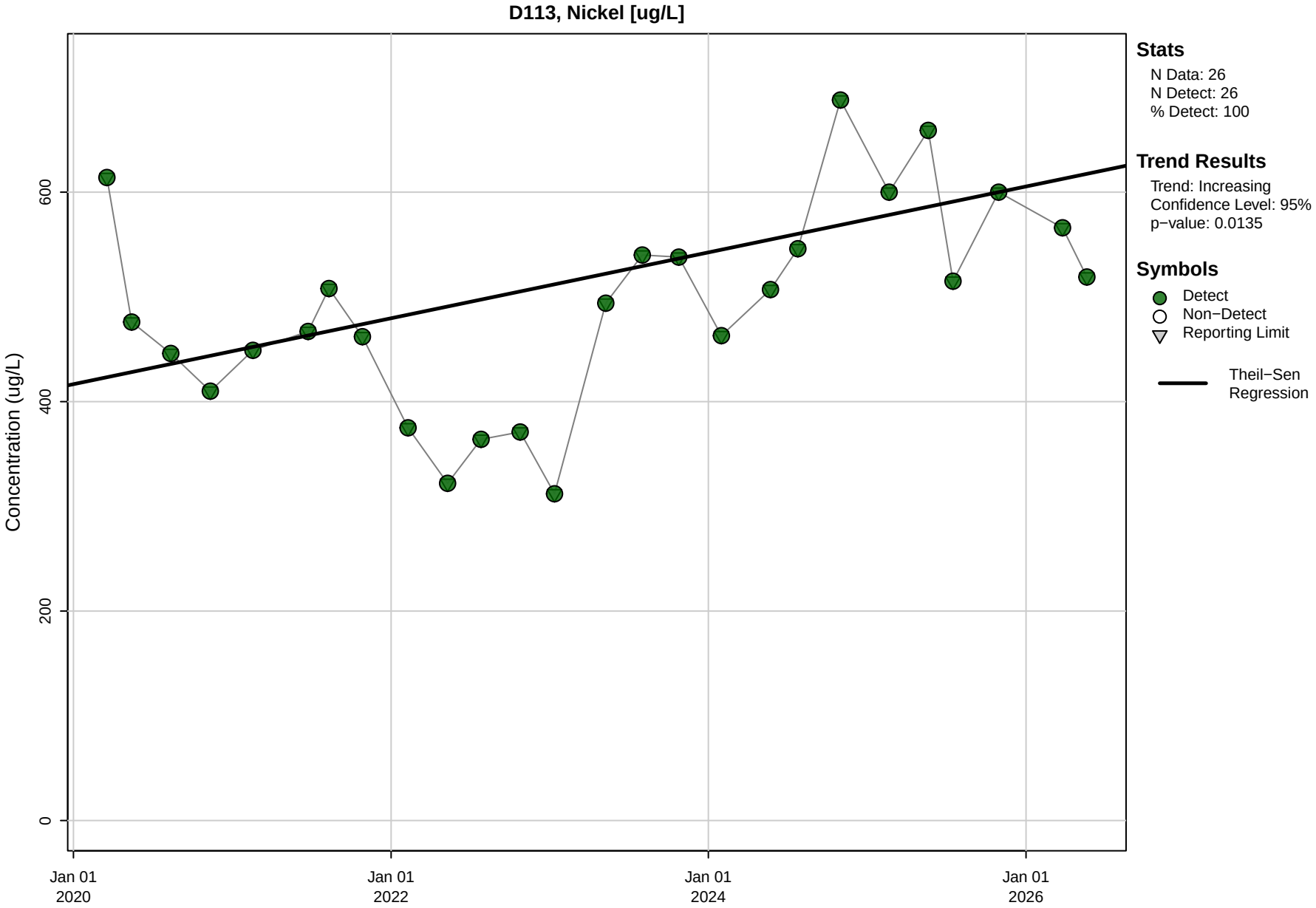

D113, Chloride [mg/L]
Concentration (mg/L)
0
100
200
300
400
500
600
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.737
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

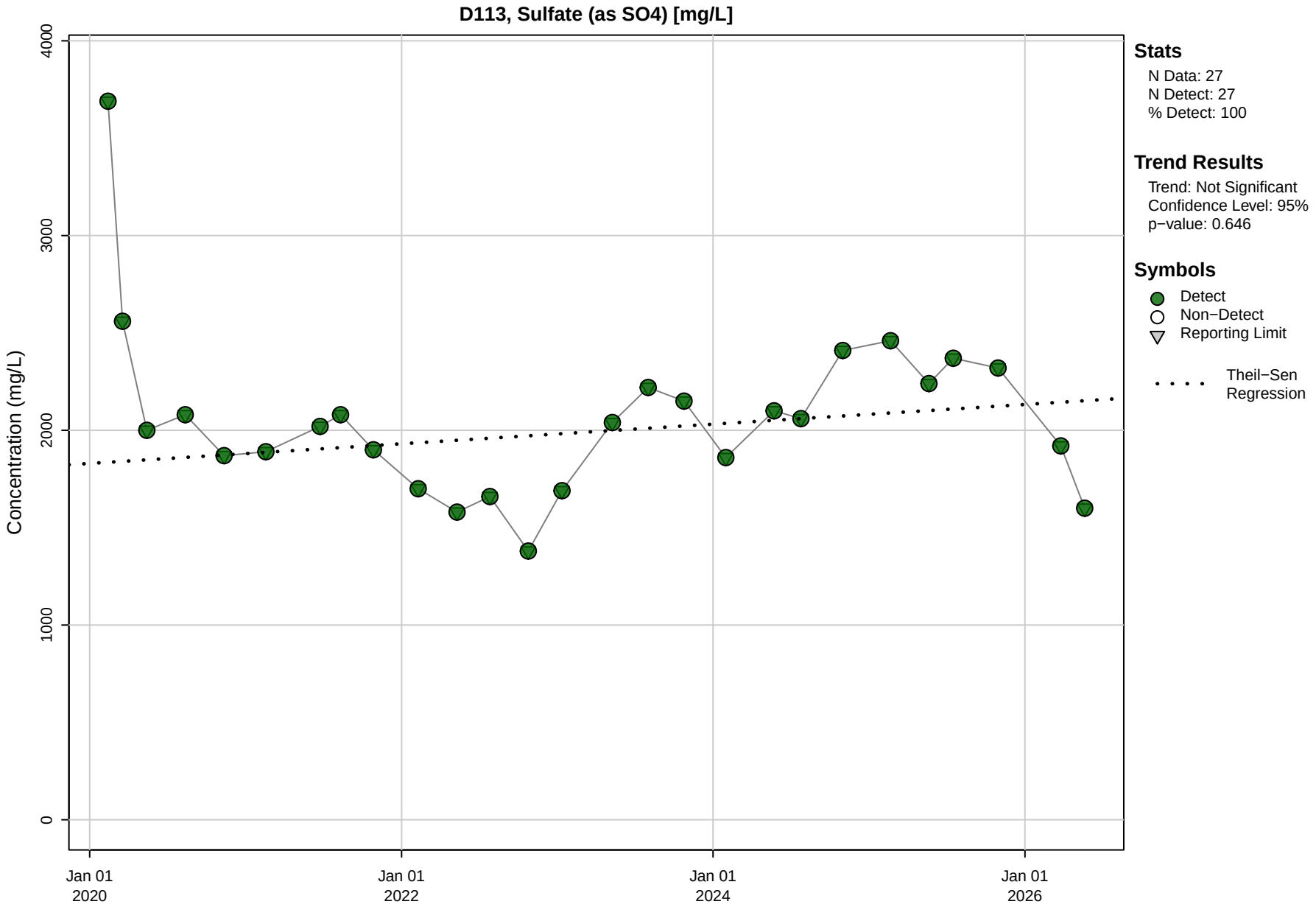

D113, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.707
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

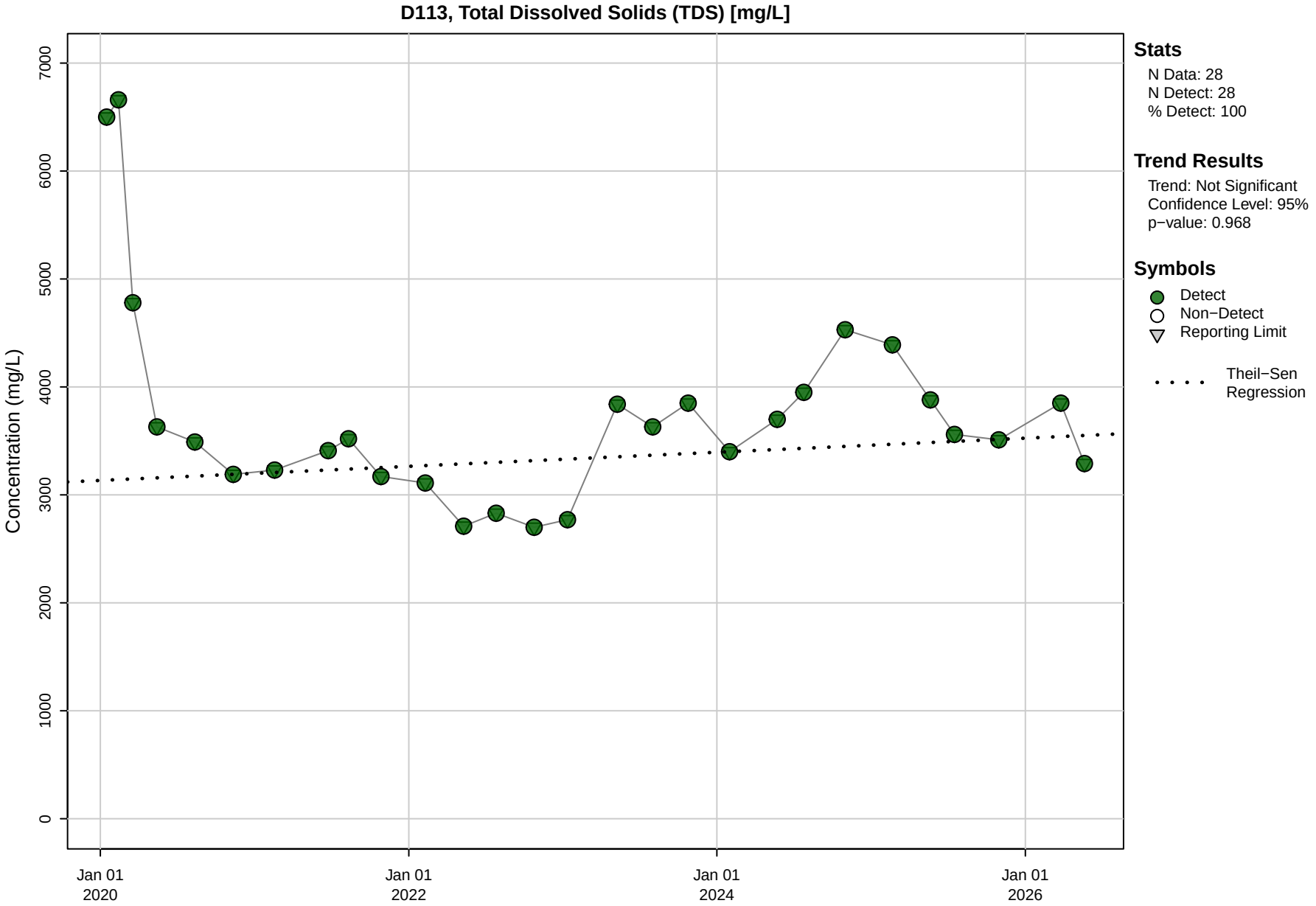

D113, Iron (Total) [ug/L]
Concentration (ug/L)
30000
25000
20000
15000
10000
5000
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.228
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

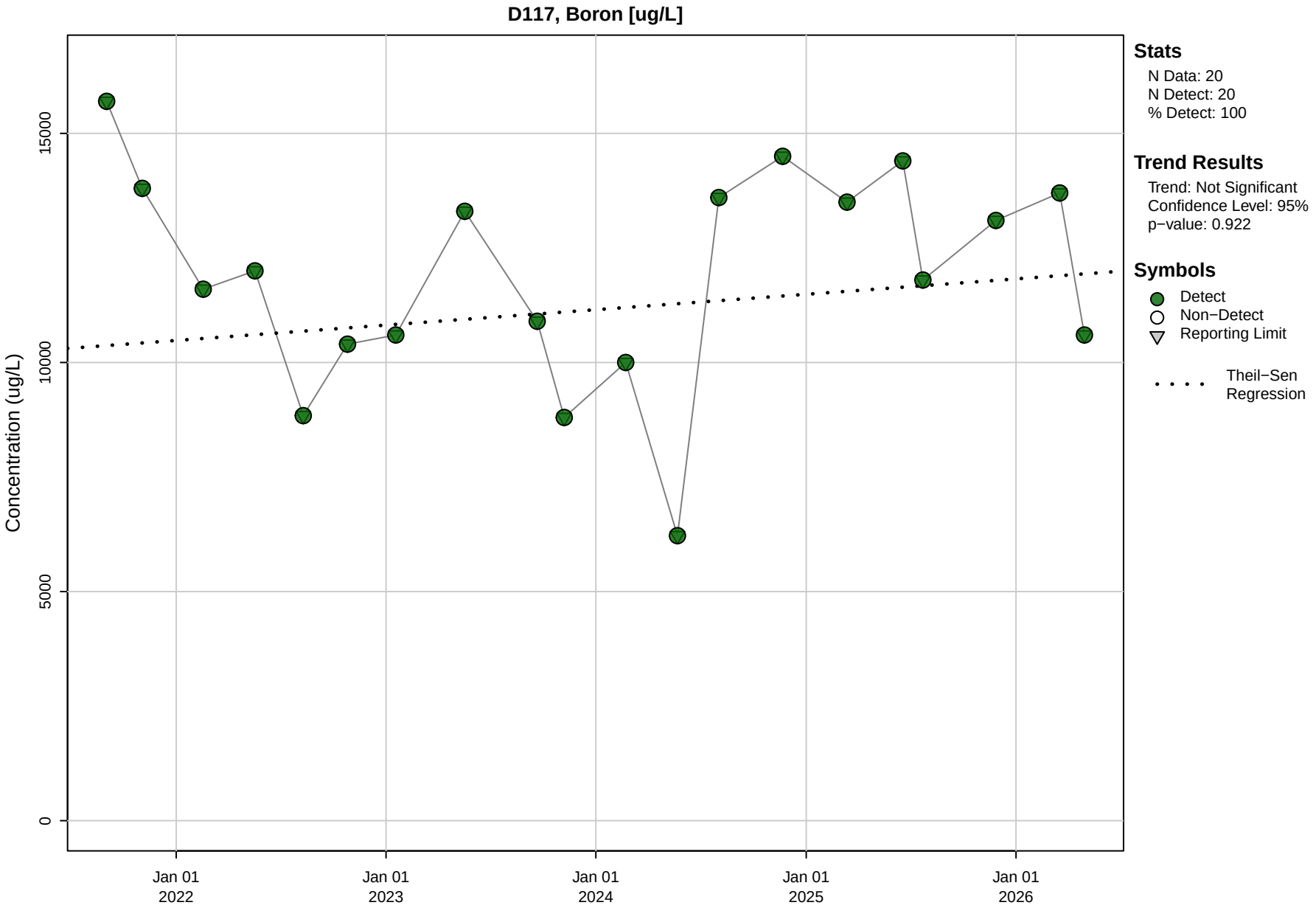

D113, Iron [ug/L]
Concentration (ug/L)
15000
10000
5000
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.128
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

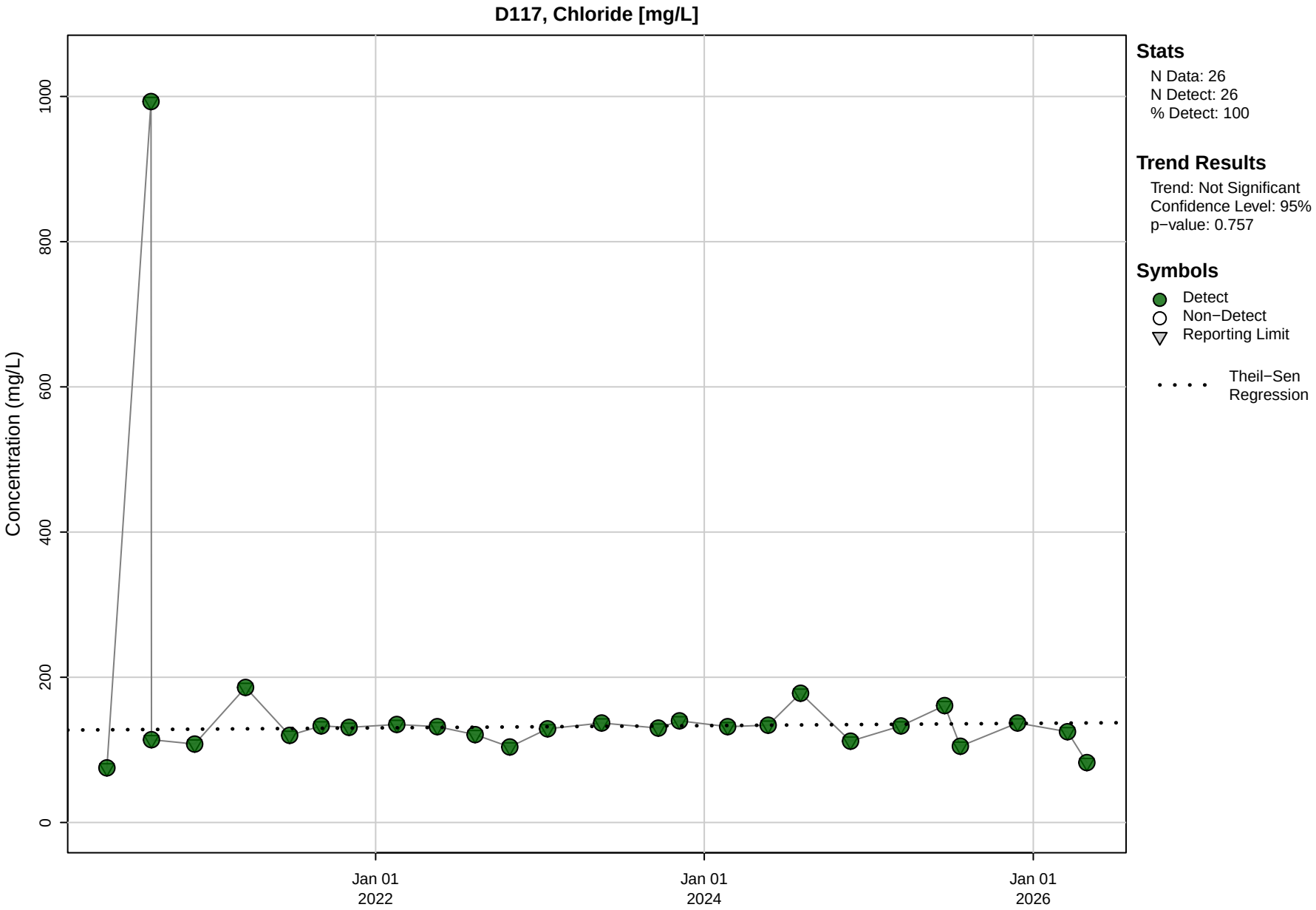

D113, Manganese [ug/L]
Concentration (ug/L)
8000
6000
4000
2000
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.662
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

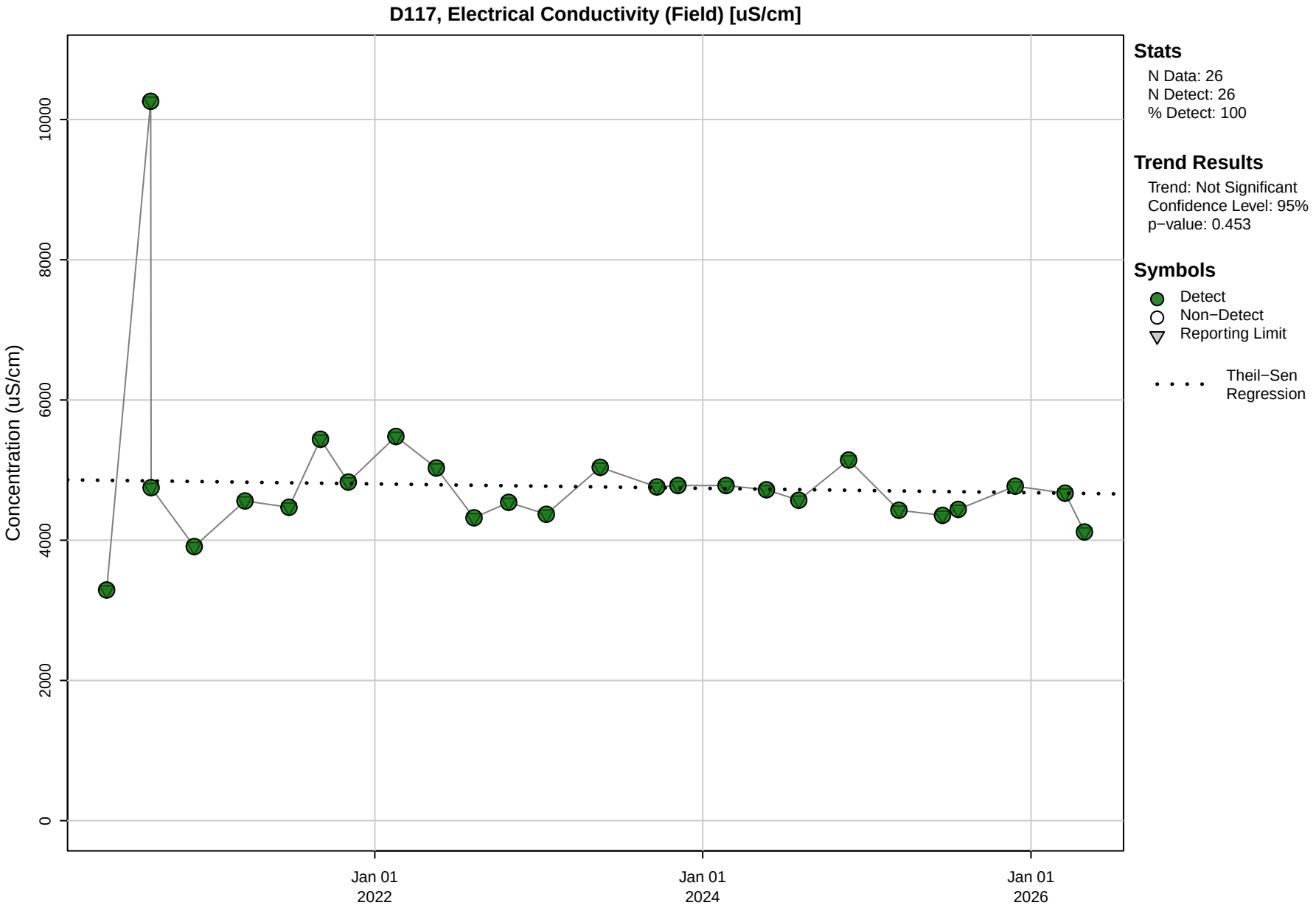

D113, Nickel [ug/L]
Concentration (ug/L)
0
200
400
600
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0135
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

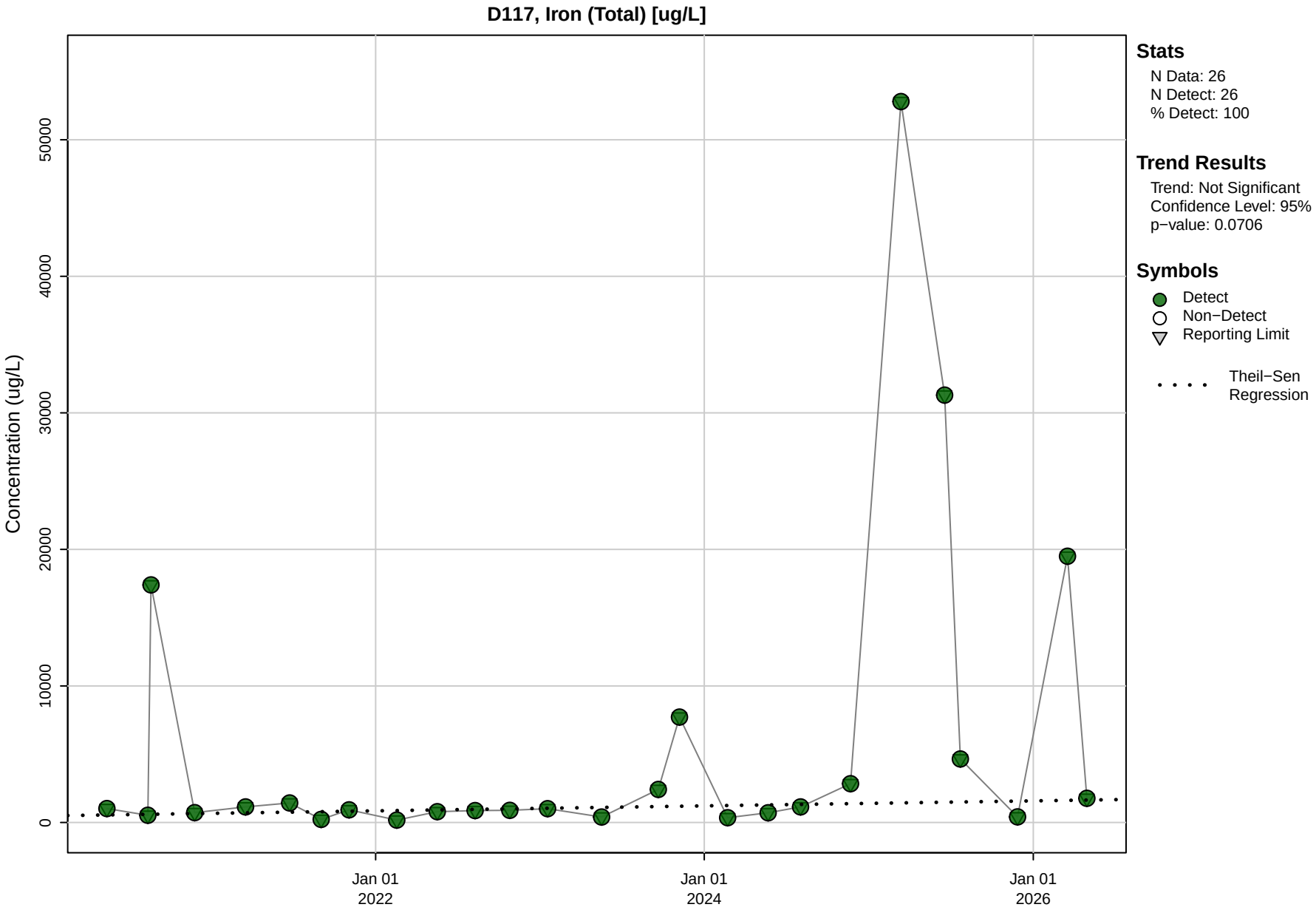

D113, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.646
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

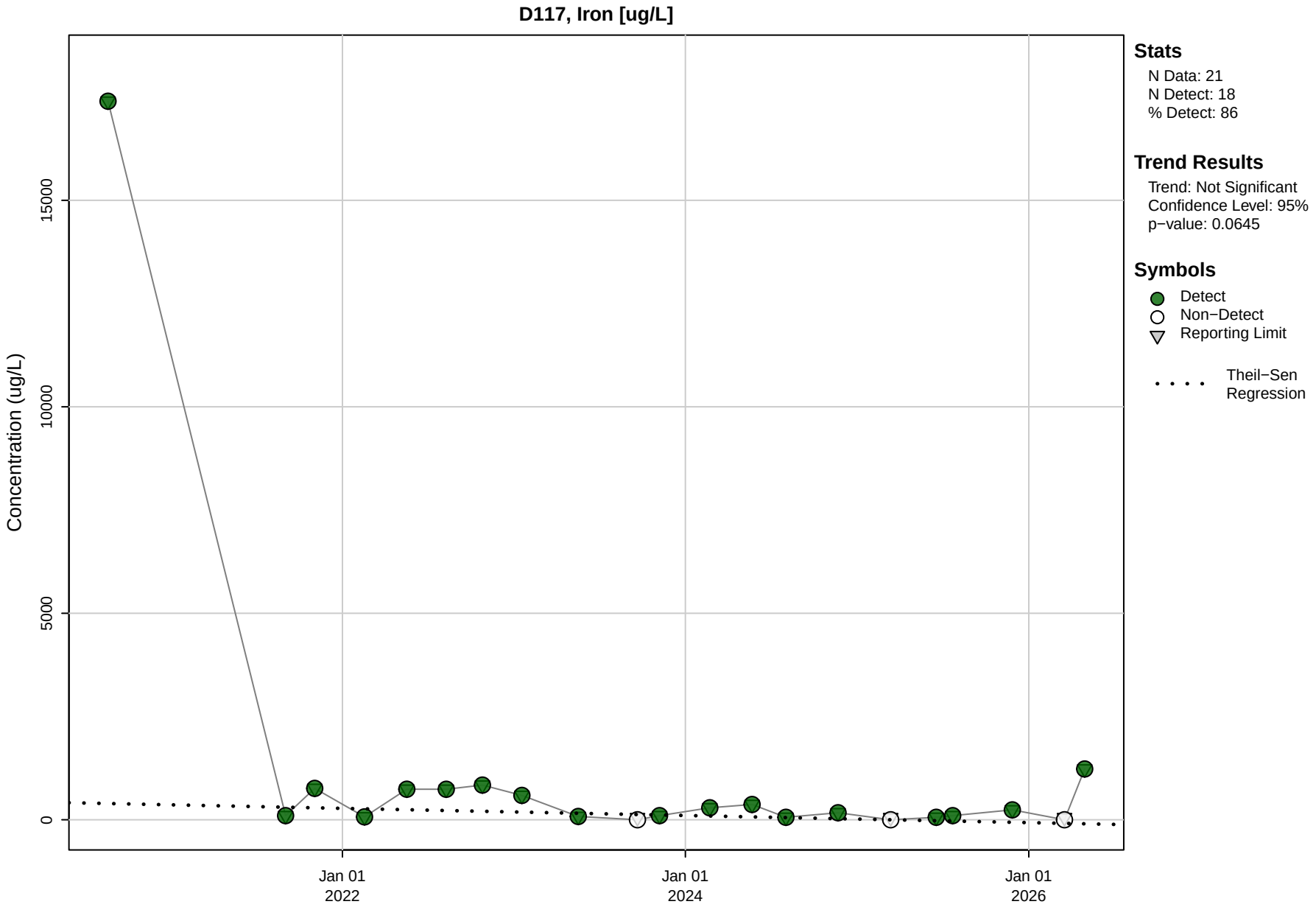

D113, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
6000
7000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.968
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

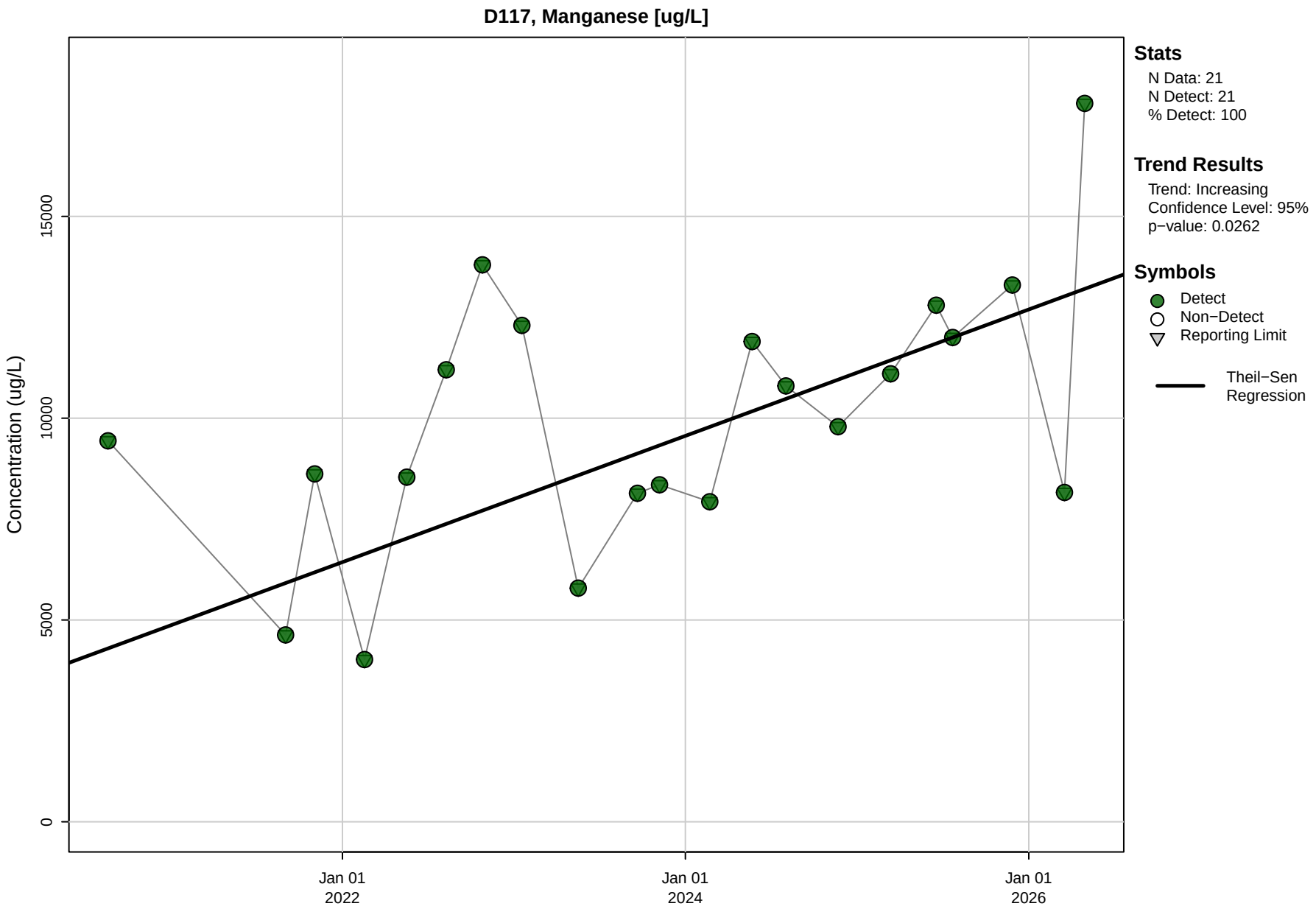

D117, Boron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 20
N Detect: 20
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.922
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

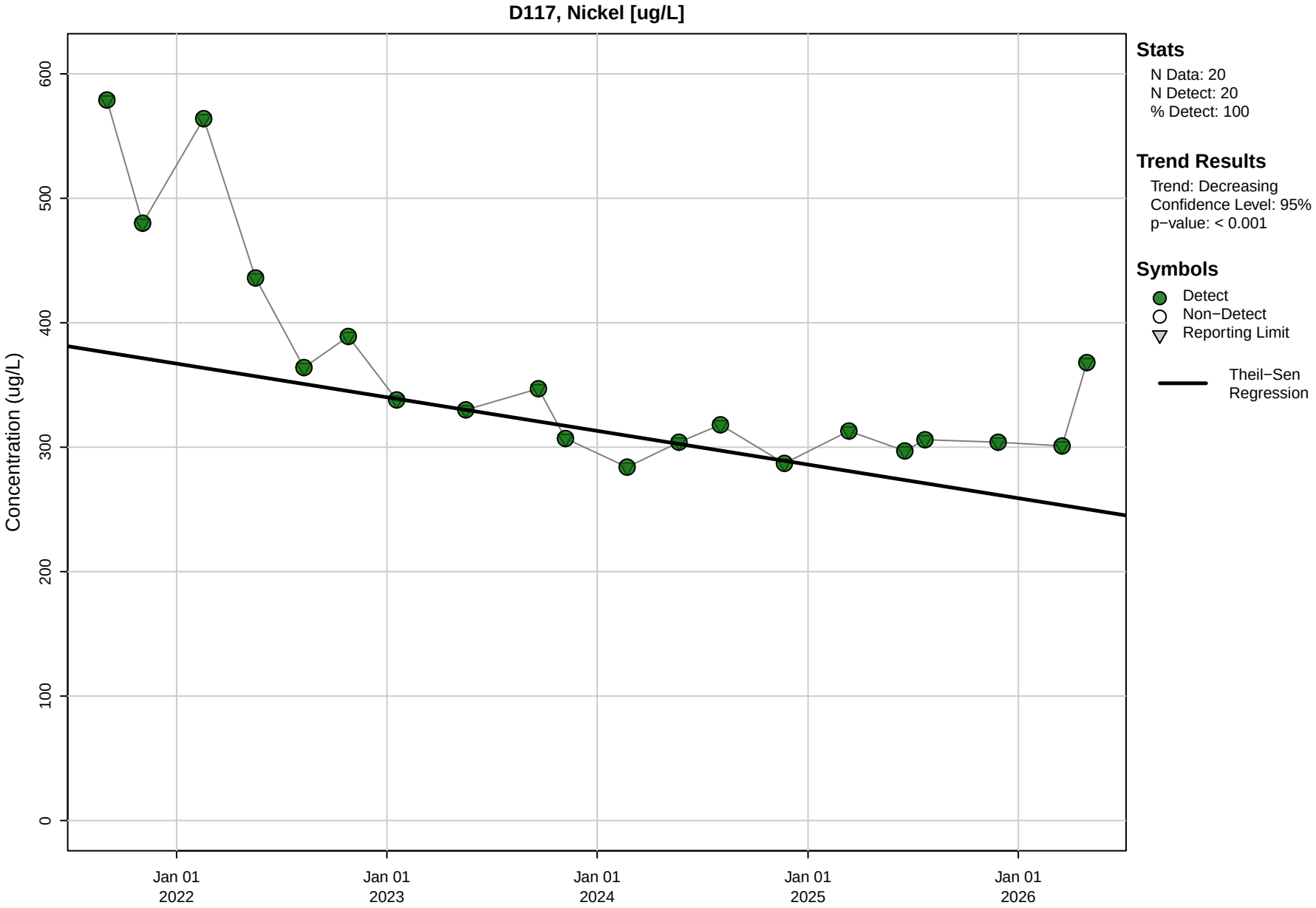

D117, Chloride [mg/L]
Concentration (mg/L)
0
200
400
600
800
1000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.757
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

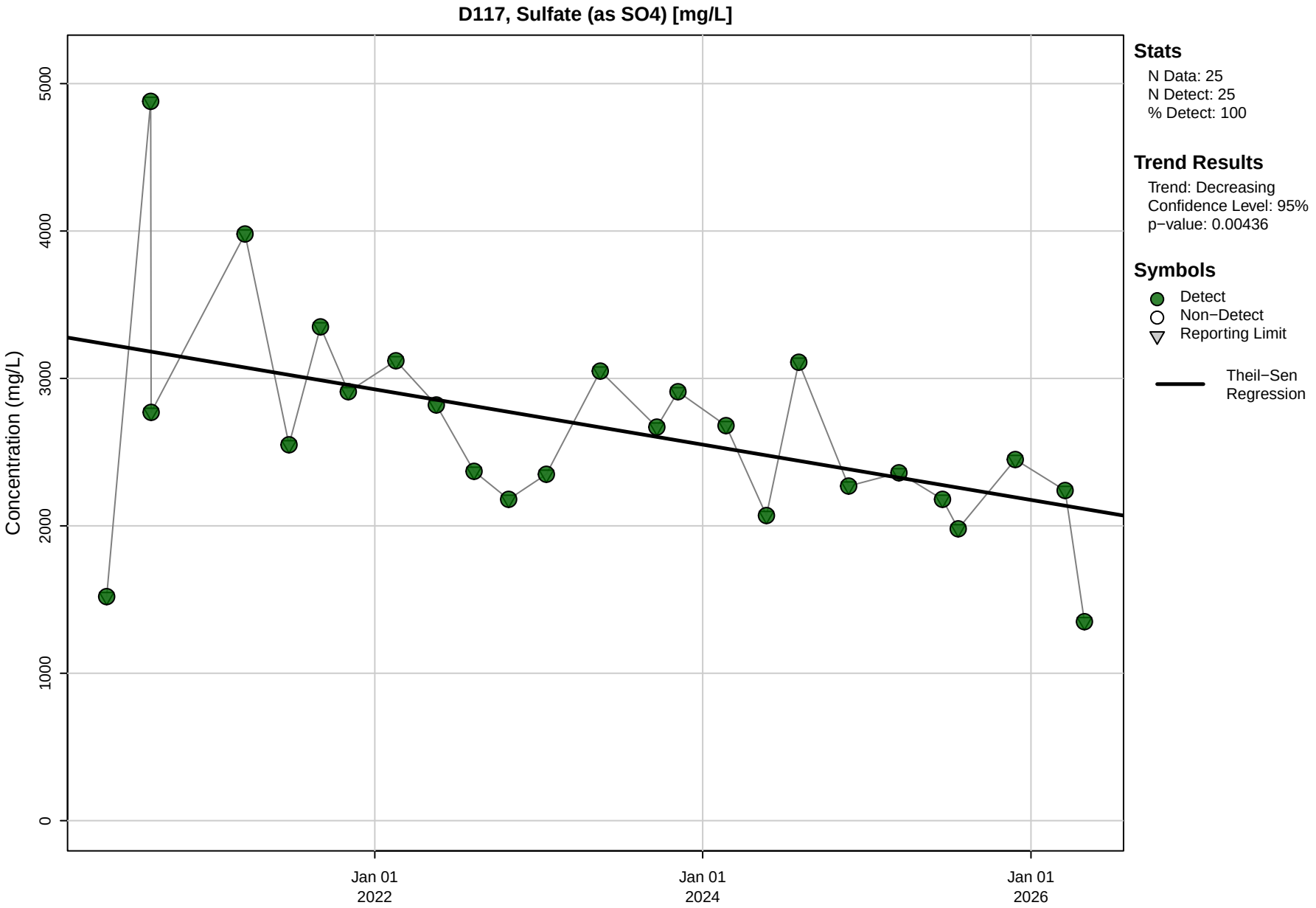

D117, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.453
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

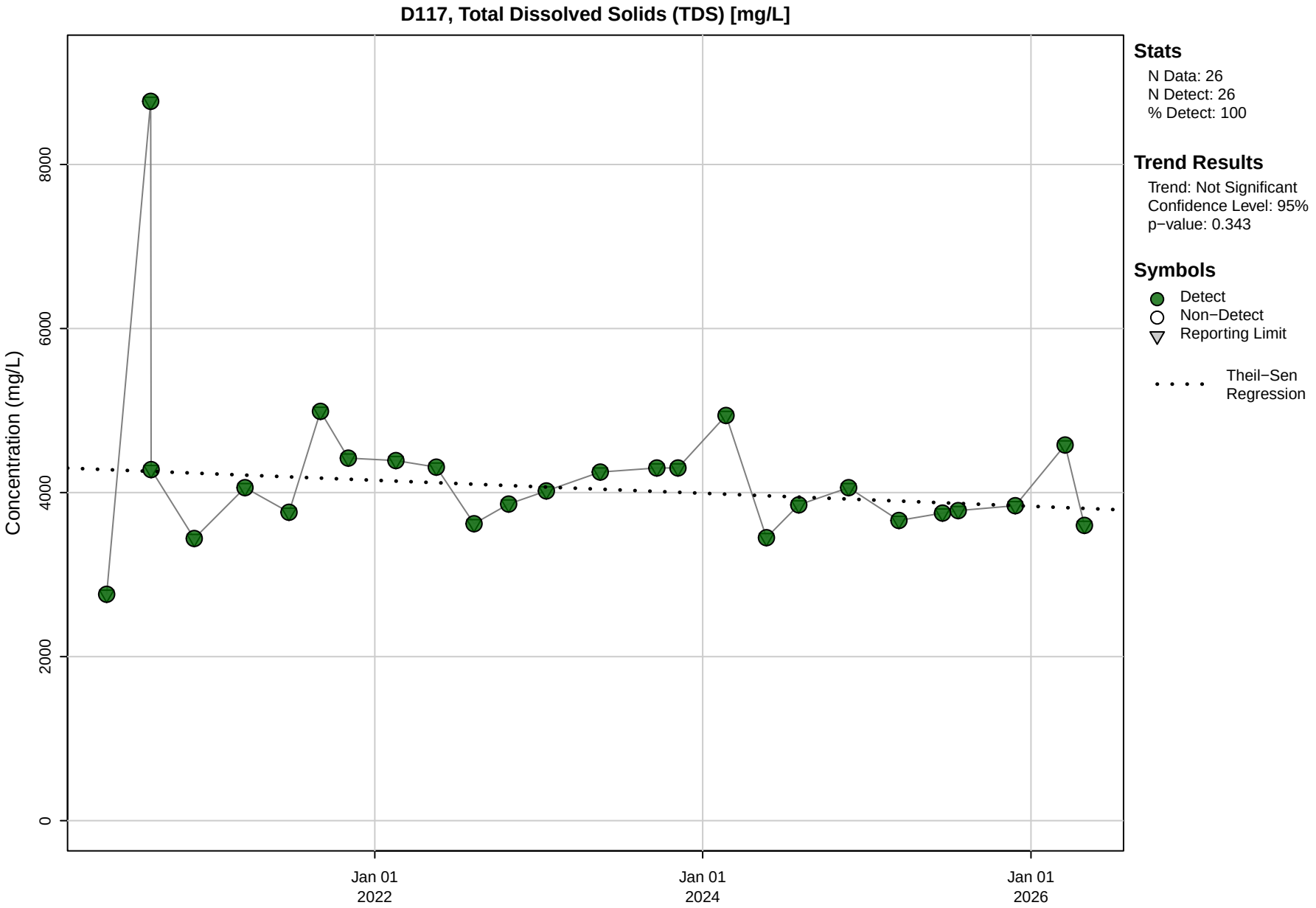

D117, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0706
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

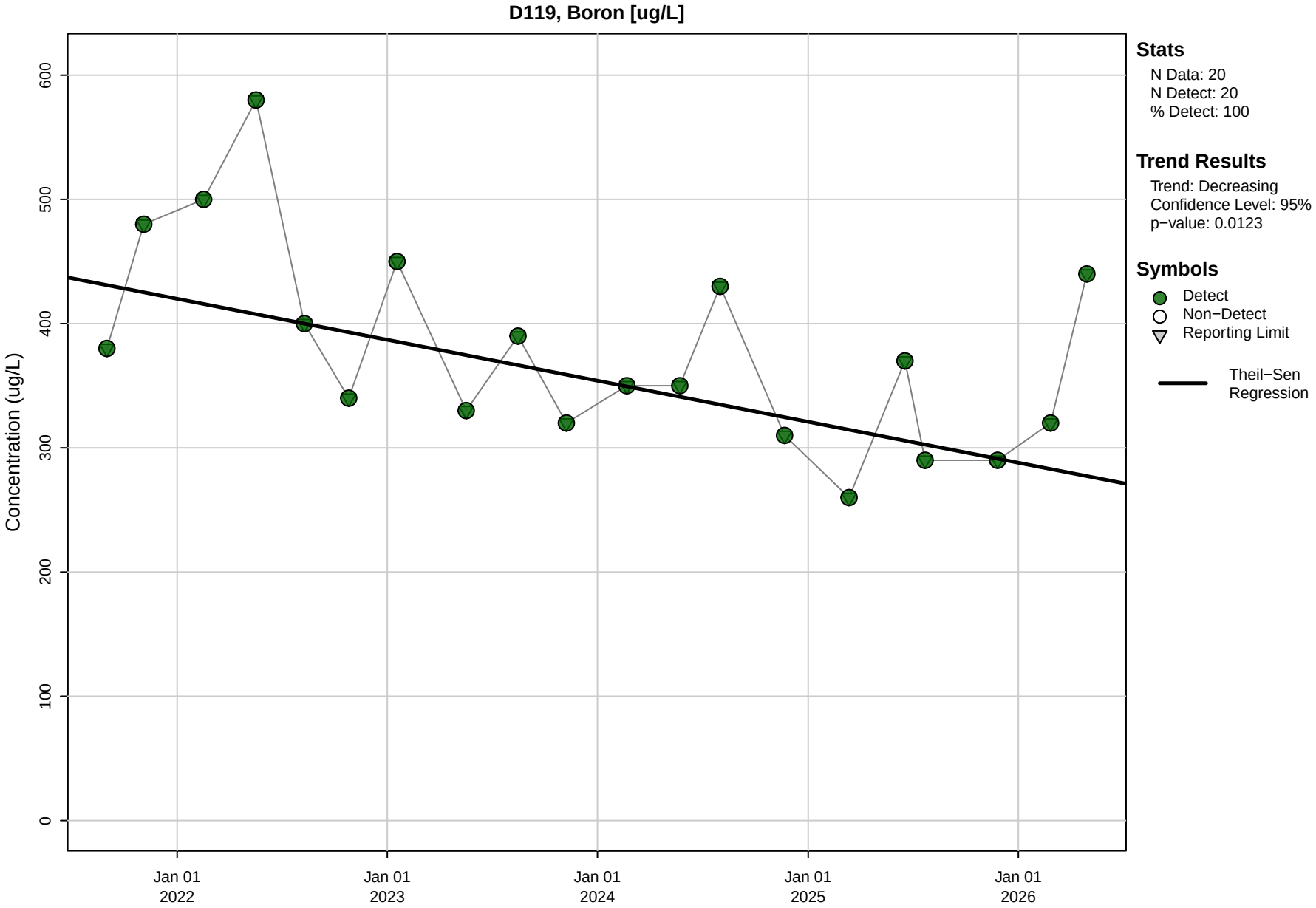

D117, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 21
N Detect: 18
% Detect: 86
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0645
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

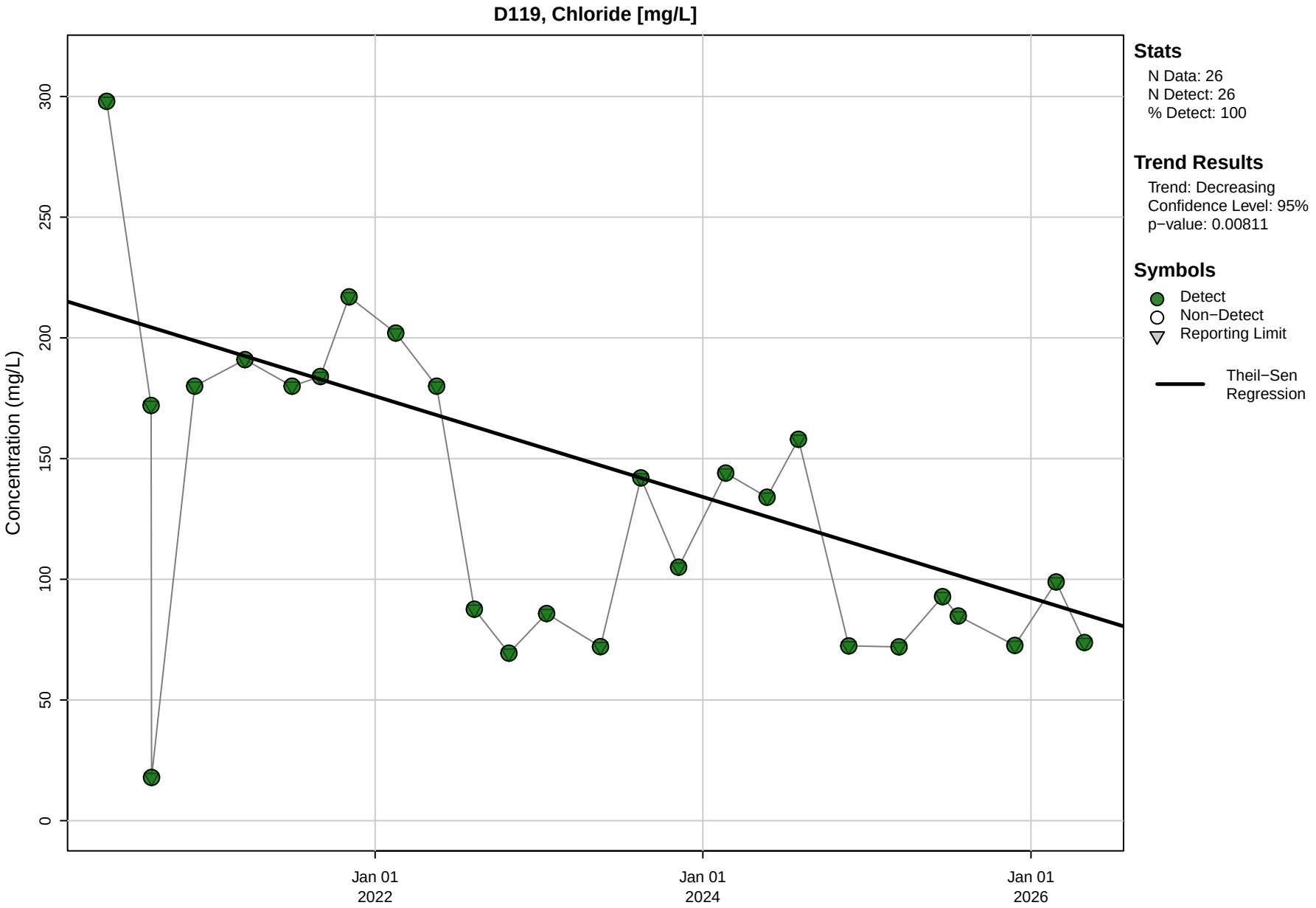

D117, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 21
N Detect: 21
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0262
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

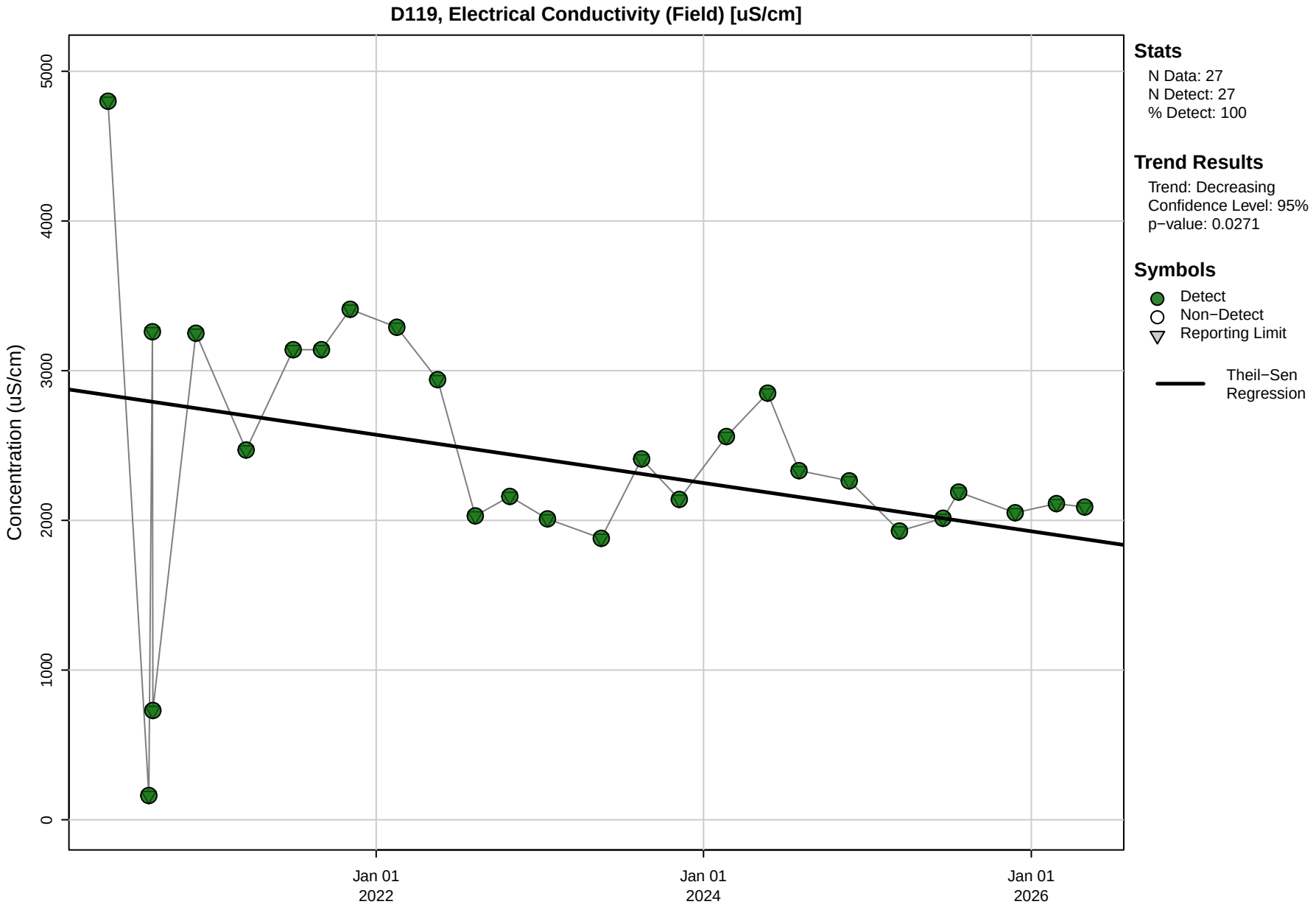

D117, Nickel [ug/L]
Concentration (ug/L)
0
100
200
300
400
500
600
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 20
N Detect: 20
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

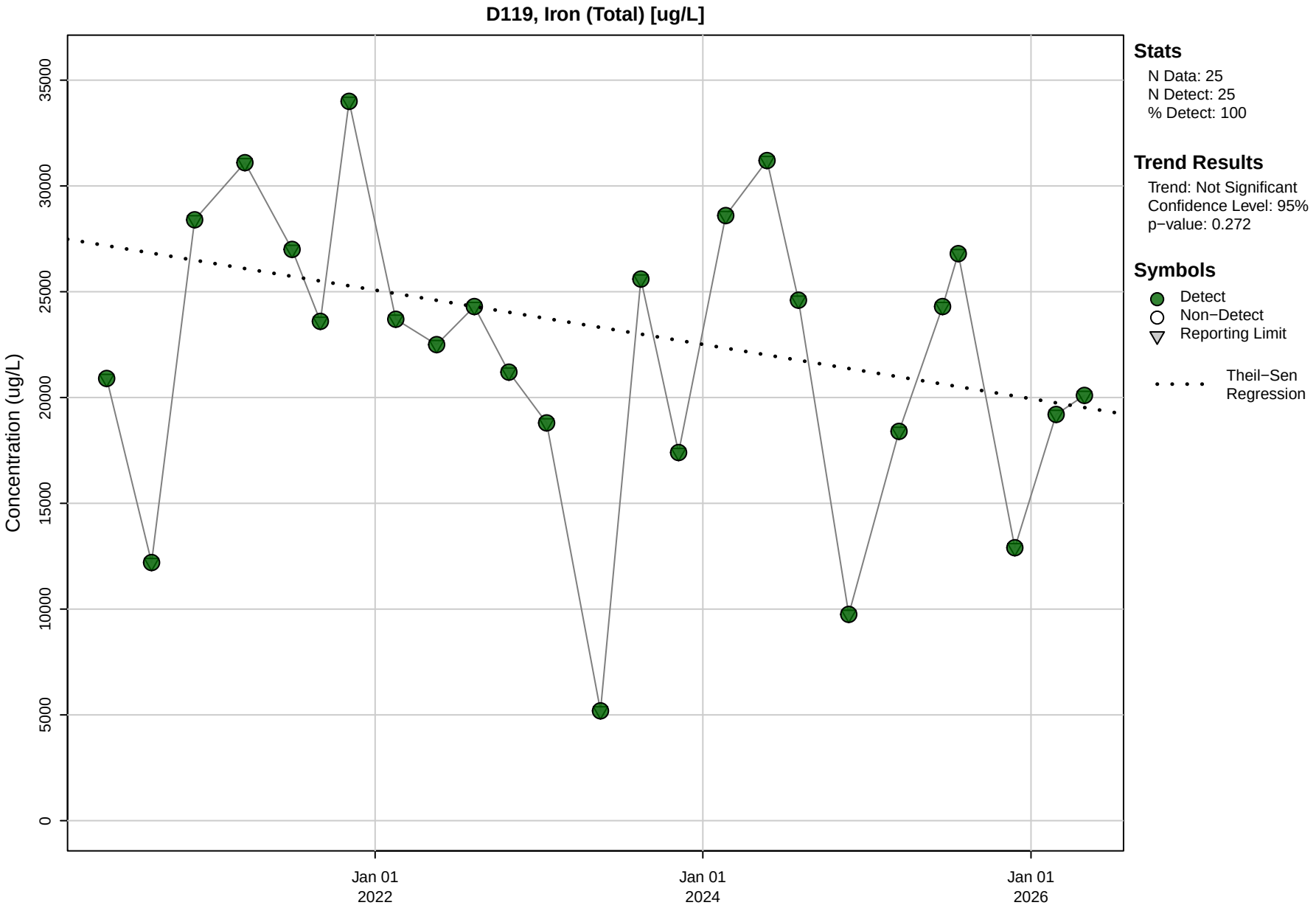

D117, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 25
N Detect: 25
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00436
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

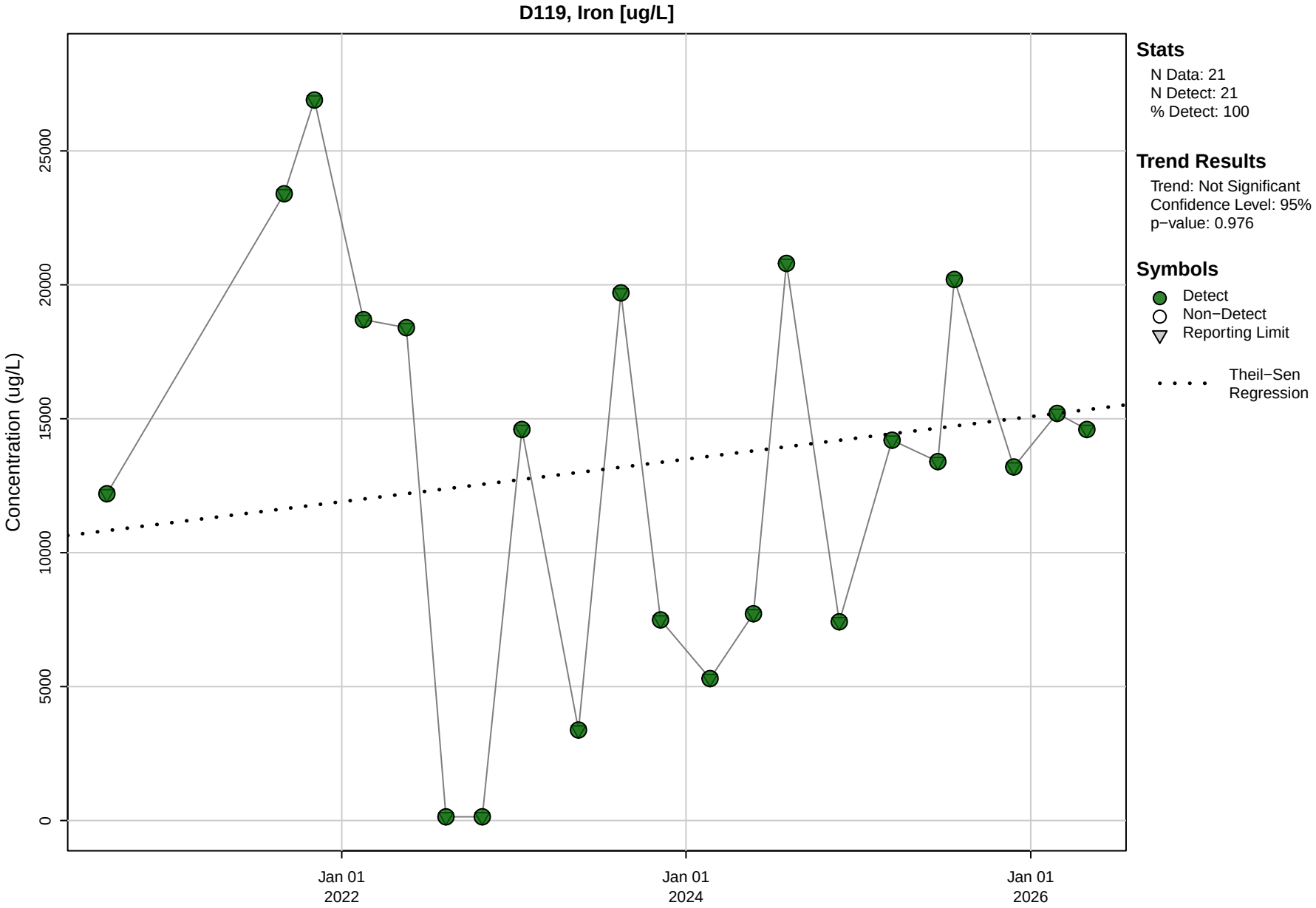

D117, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.343
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

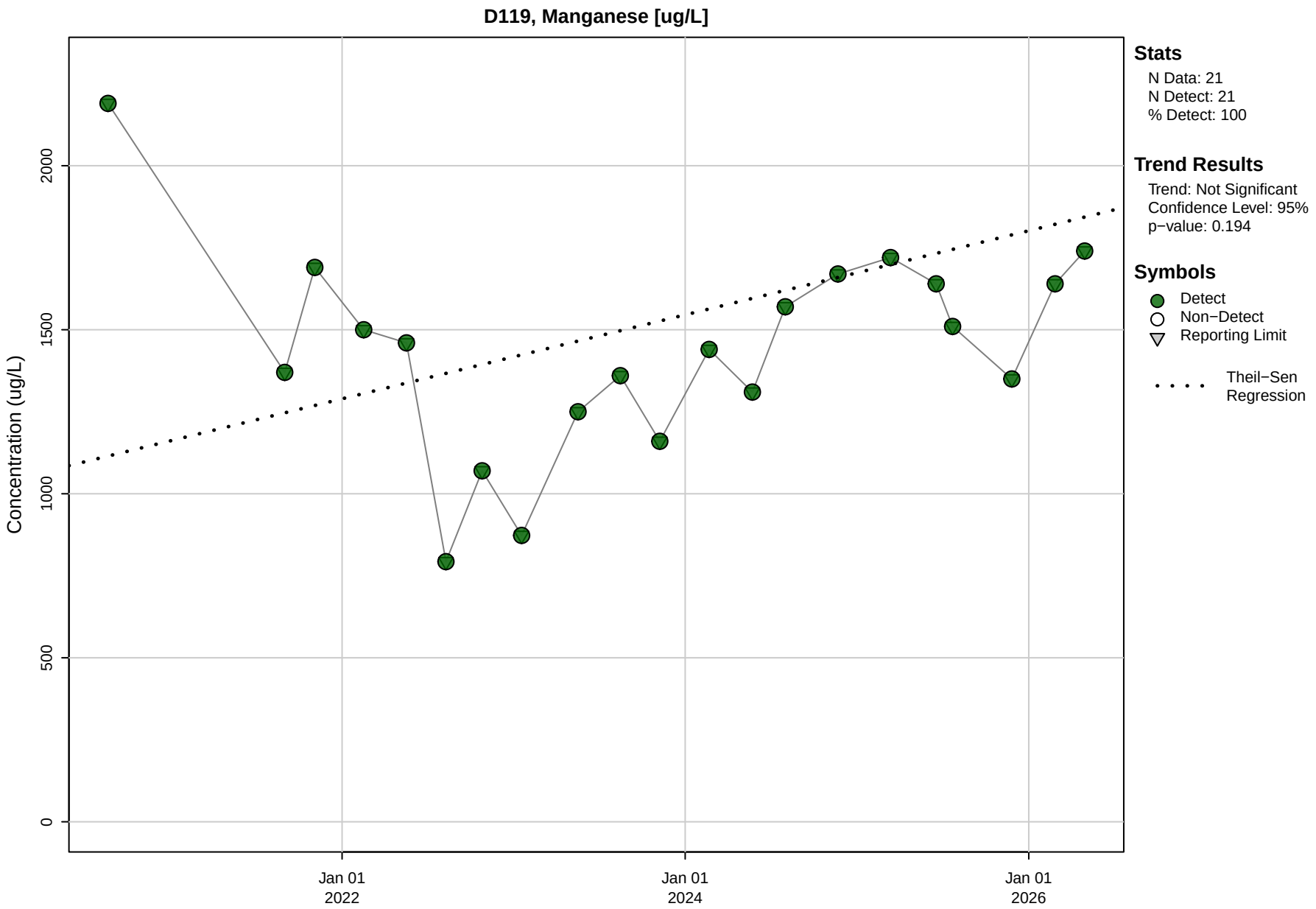

D119, Boron [ug/L]
Concentration (ug/L)
0
100
200
300
400
500
600
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 20
N Detect: 20
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0123
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

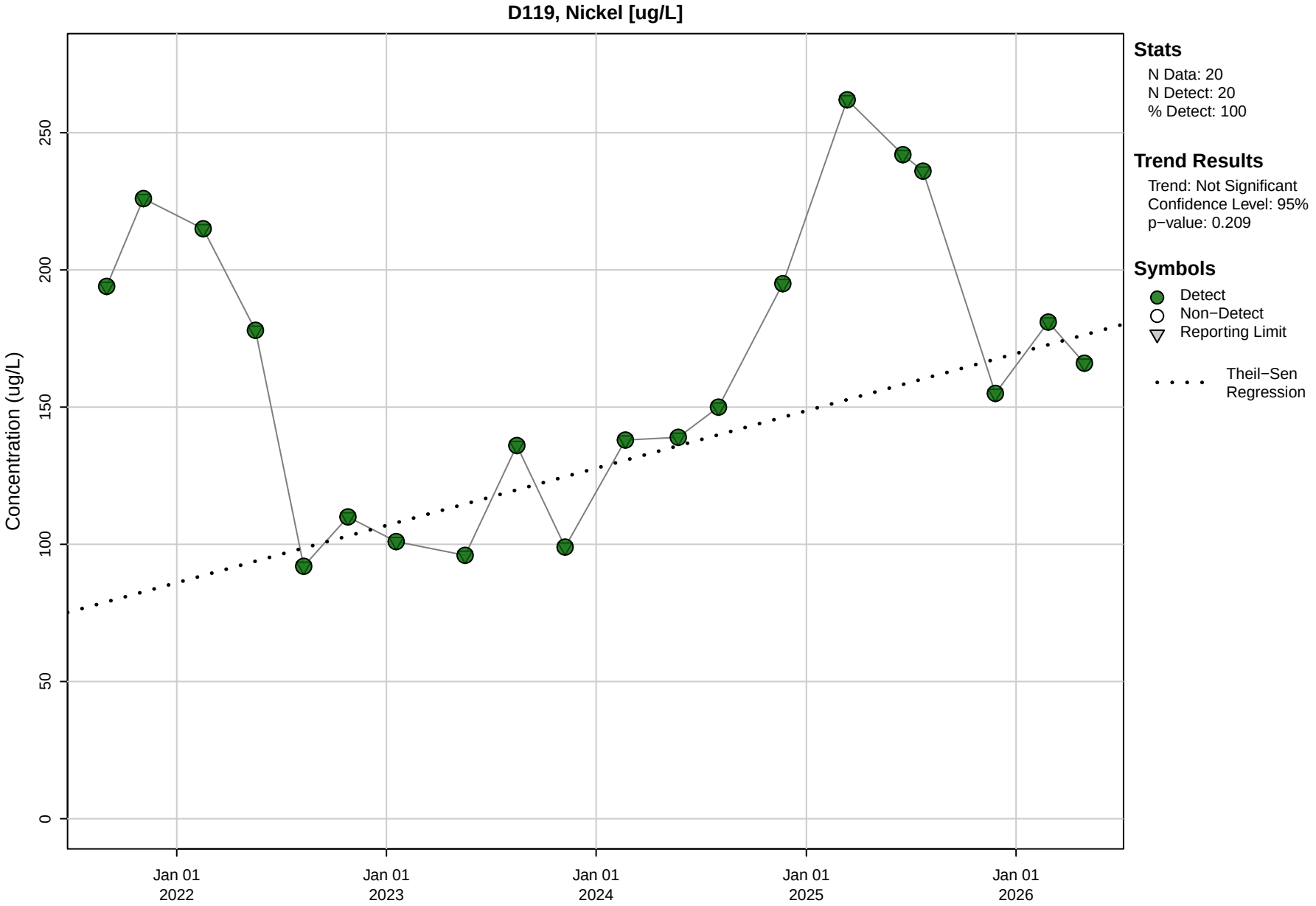

D119, Chloride [mg/L]
Concentration (mg/L)
0
50
100
150
200
250
300
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 26
N Detect: 26
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00811
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

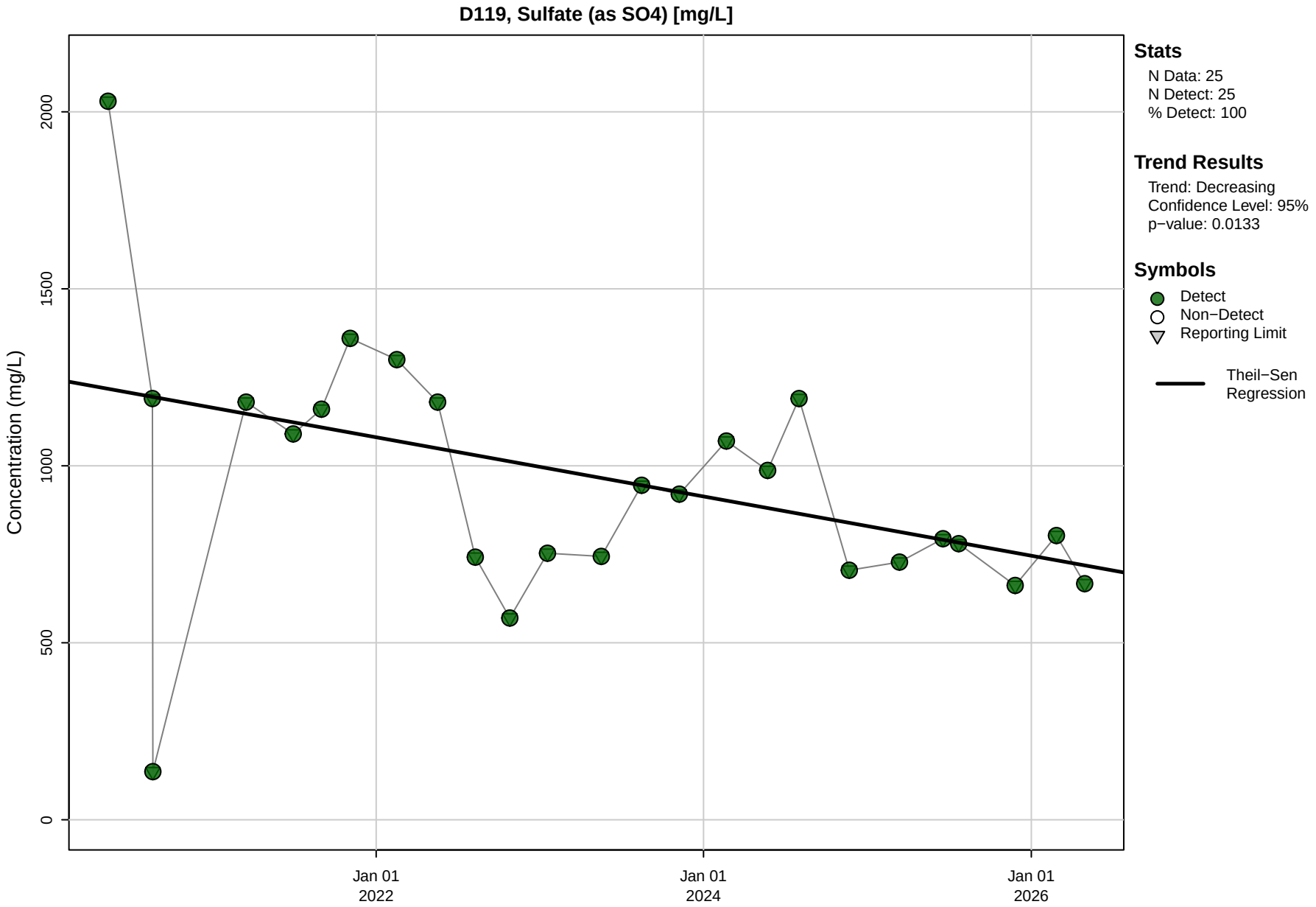

D119, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
4000
5000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0271
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

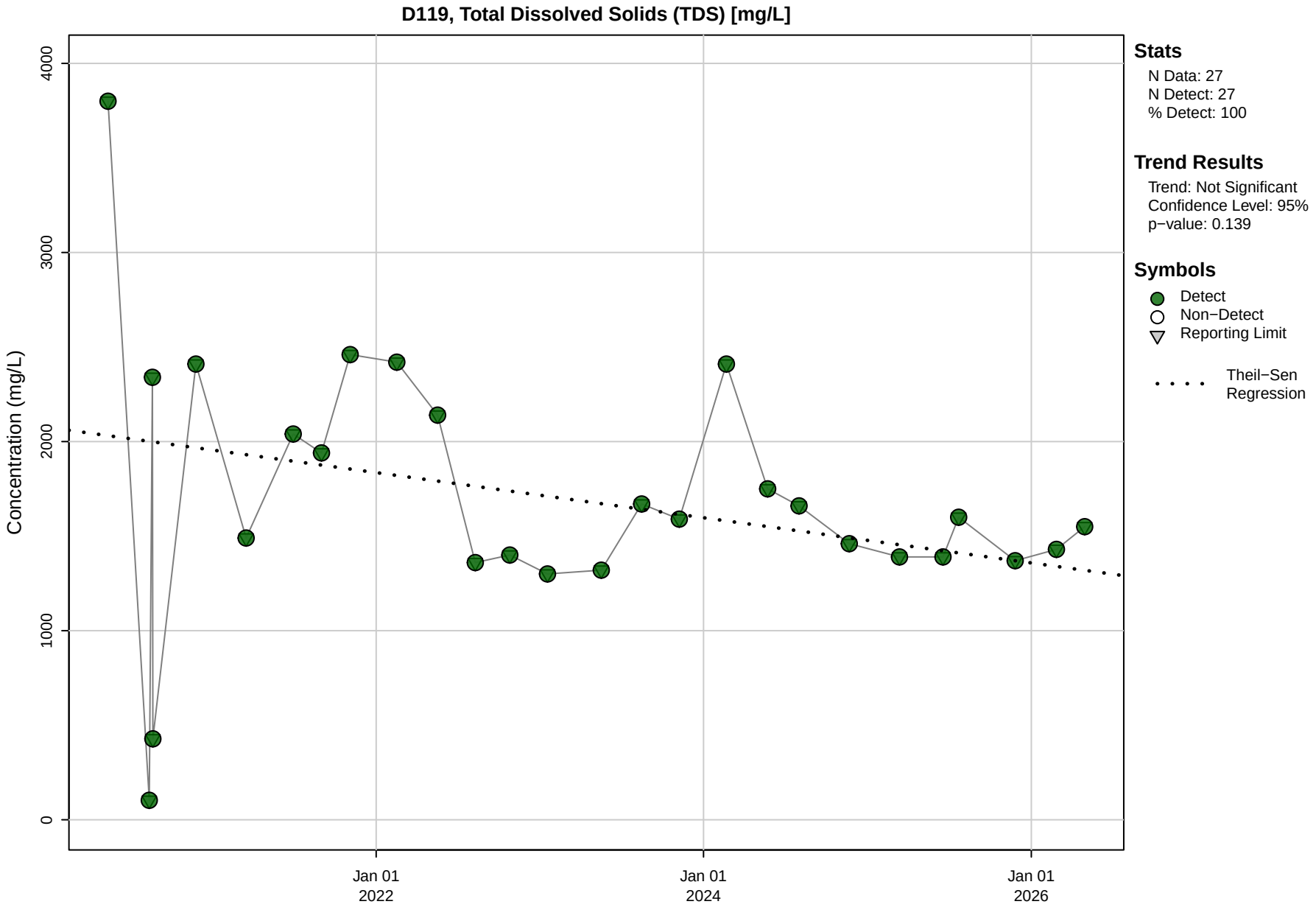

D119, Iron (Total) [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
30000
35000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 25
N Detect: 25
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.272
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

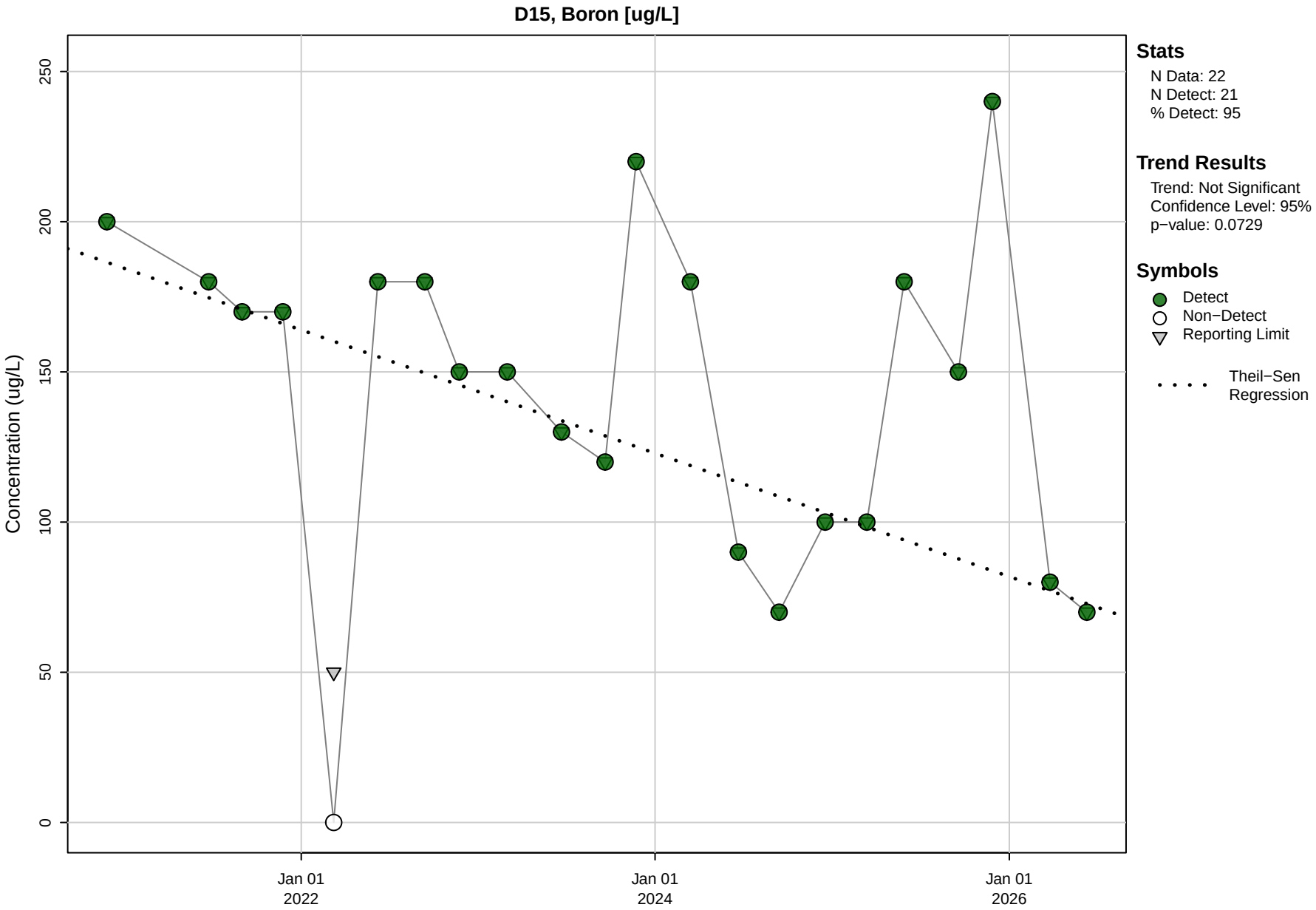

D119, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 21
N Detect: 21
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.976
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

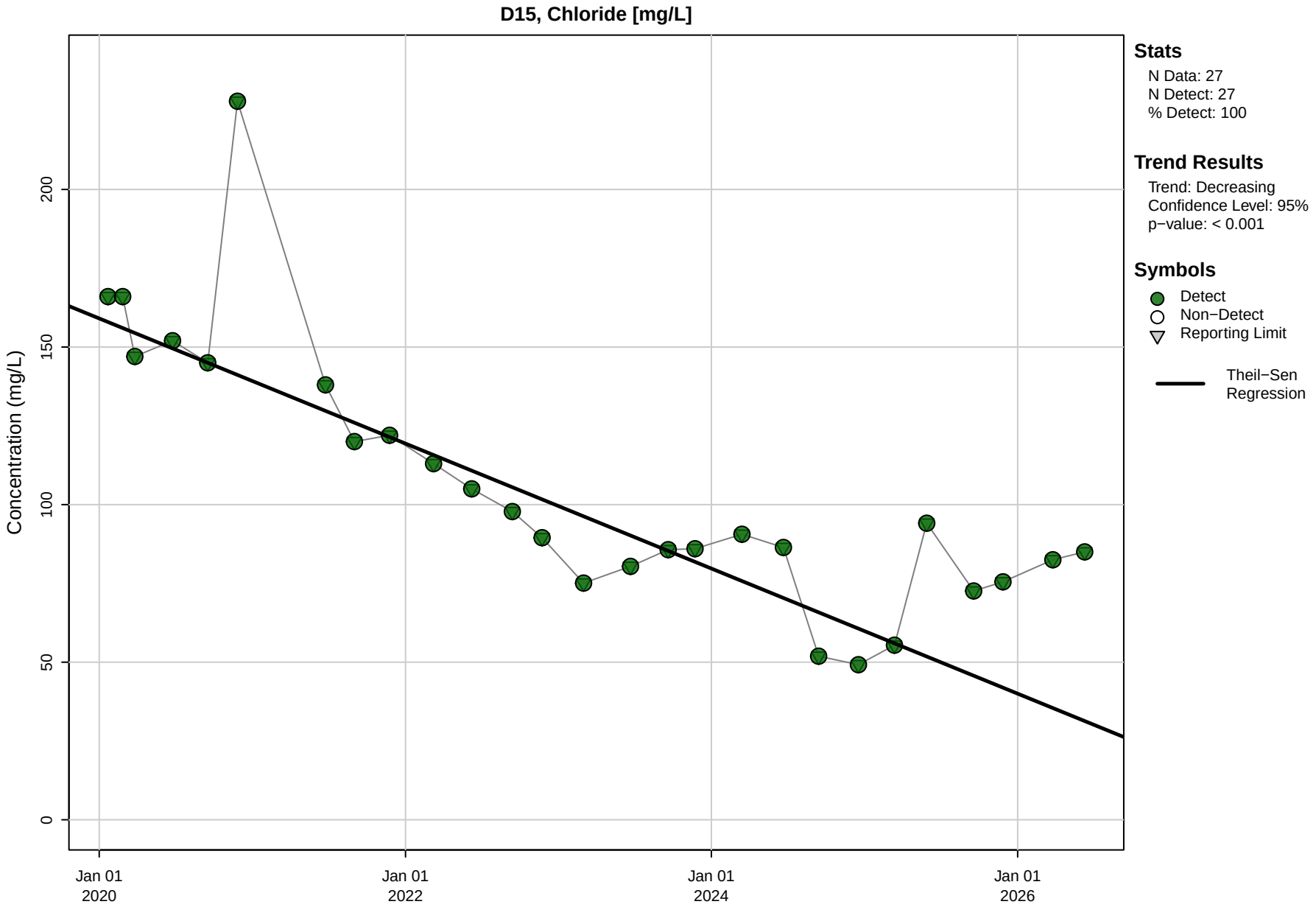

D119, Manganese [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 21
N Detect: 21
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.194
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

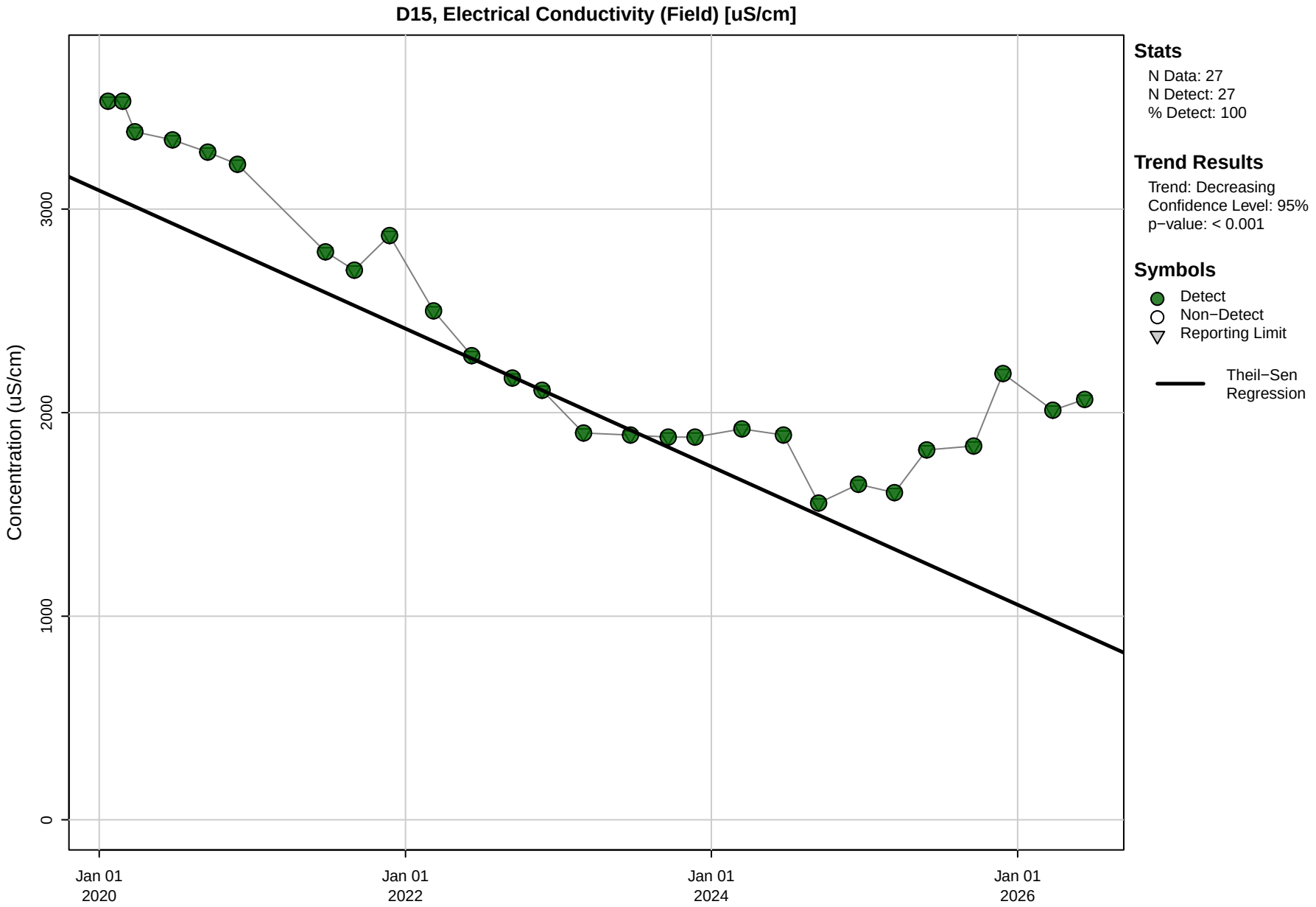

D119, Nickel [ug/L]
Concentration (ug/L)
0
50
100
150
200
250
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 20
N Detect: 20
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.209
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

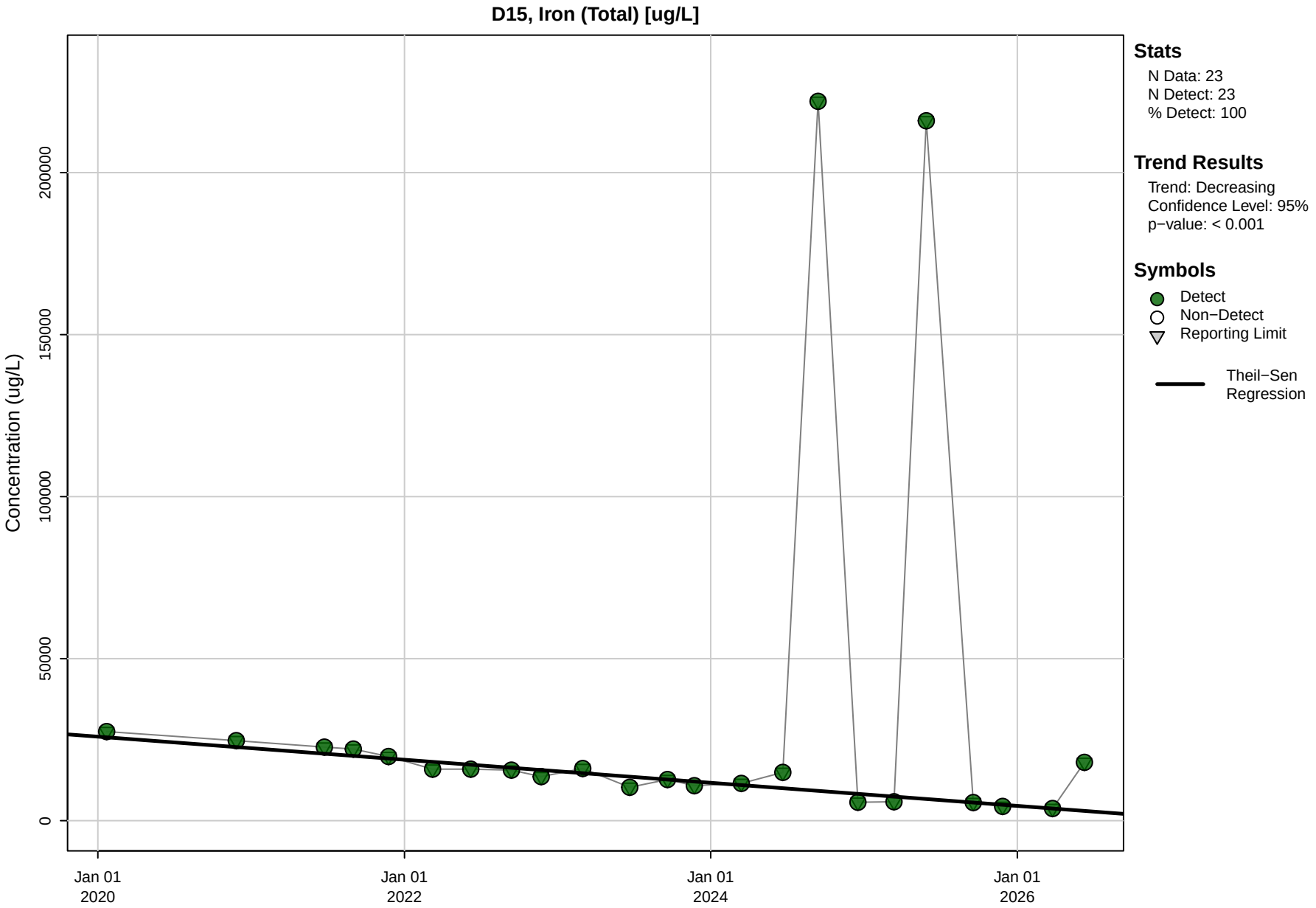

D119, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 25
N Detect: 25
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0133
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

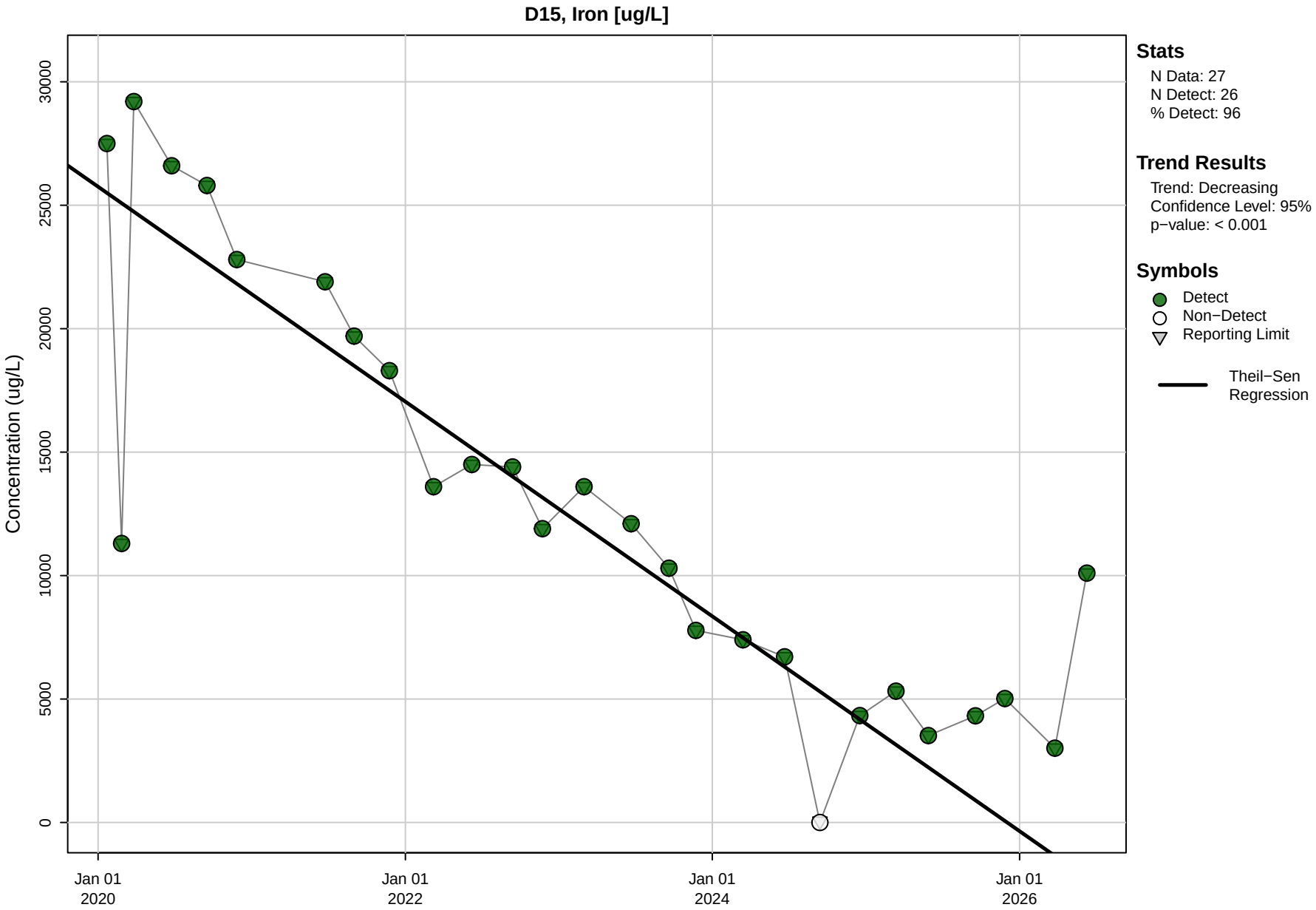

D119, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.139
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

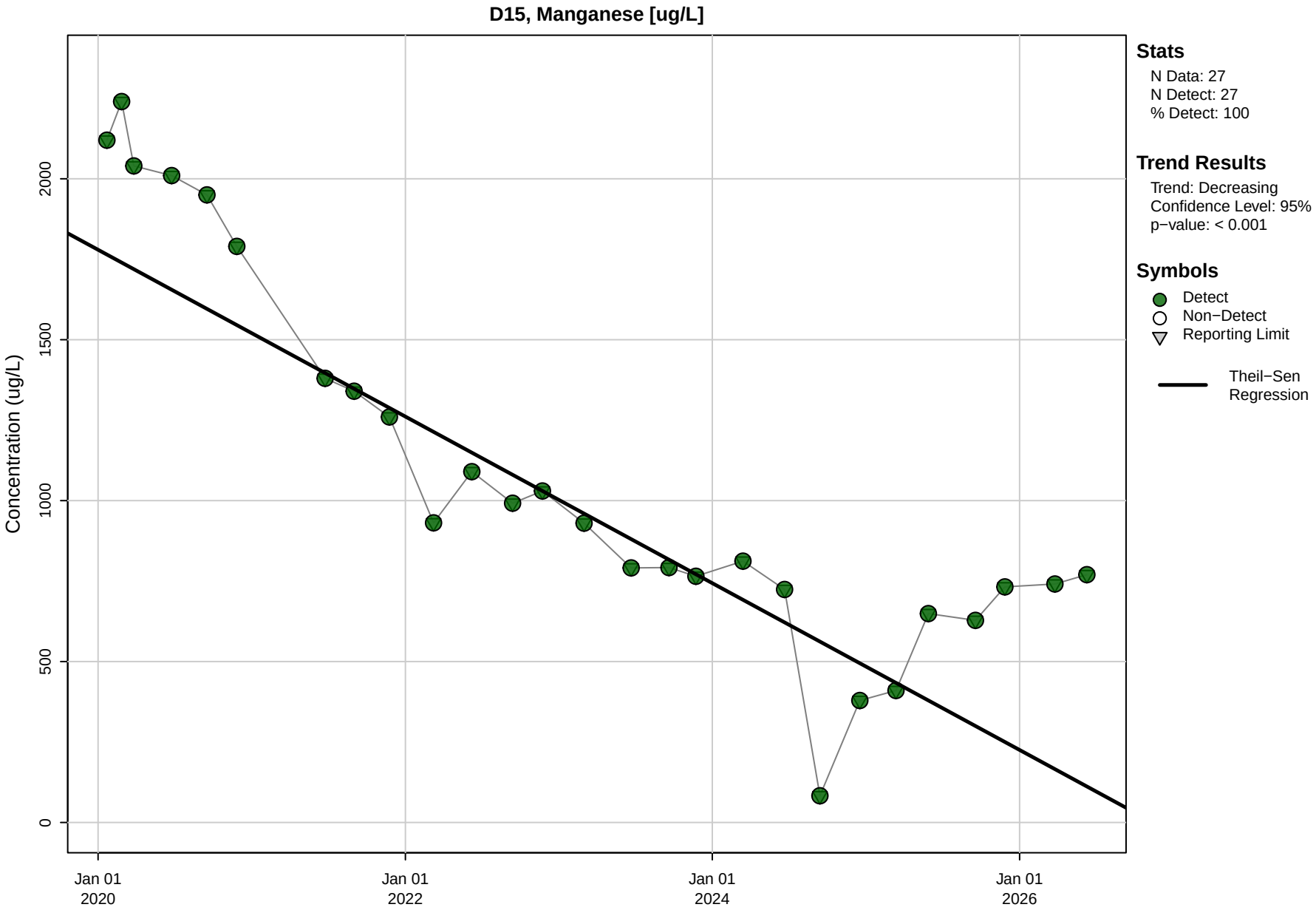

D15, Boron [ug/L]
Concentration (ug/L)
0
50
100
150
200
250
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 22
N Detect: 21
% Detect: 95
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0729
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

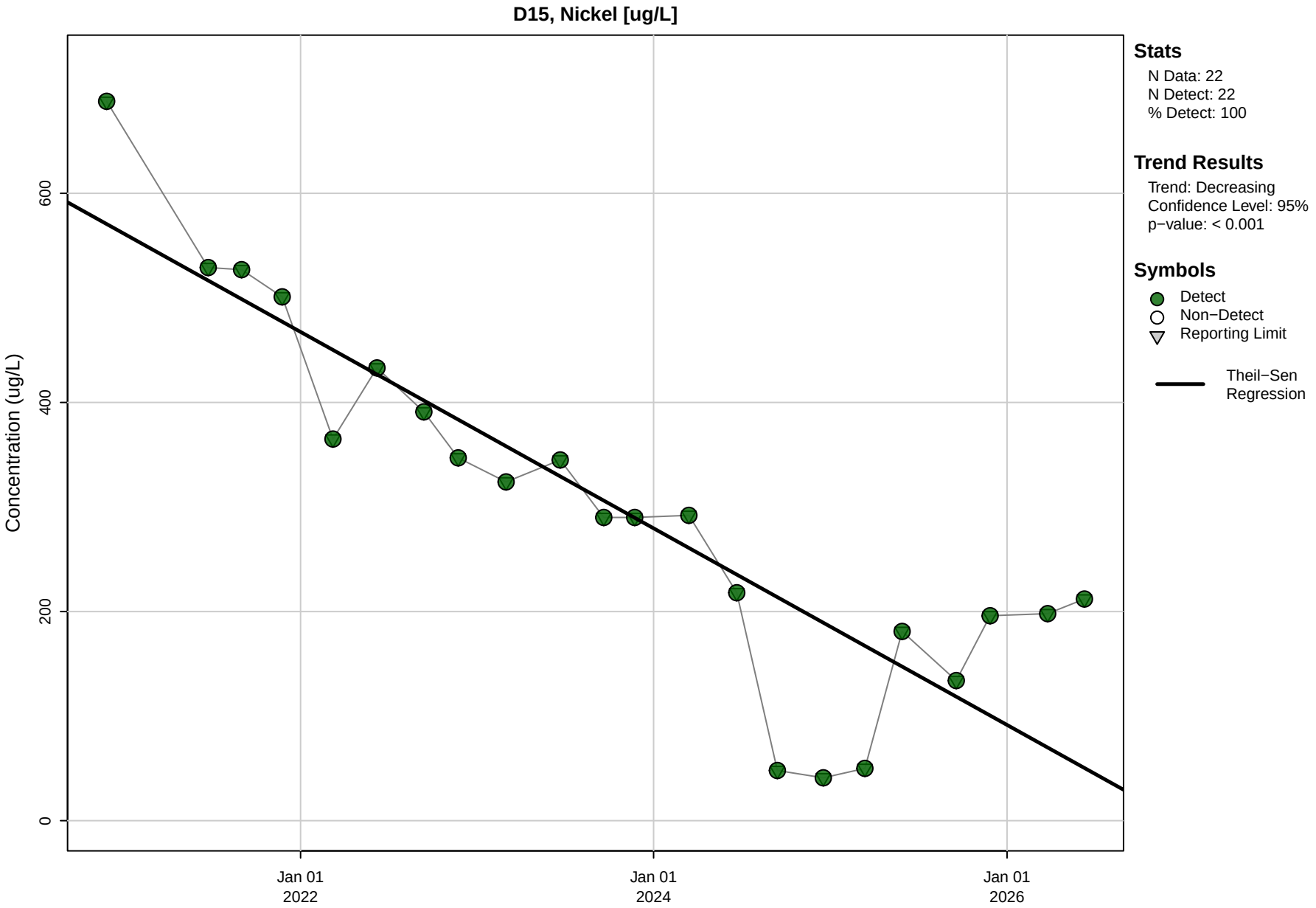

D15, Chloride [mg/L]
Concentration (mg/L)
0
50
100
150
200
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

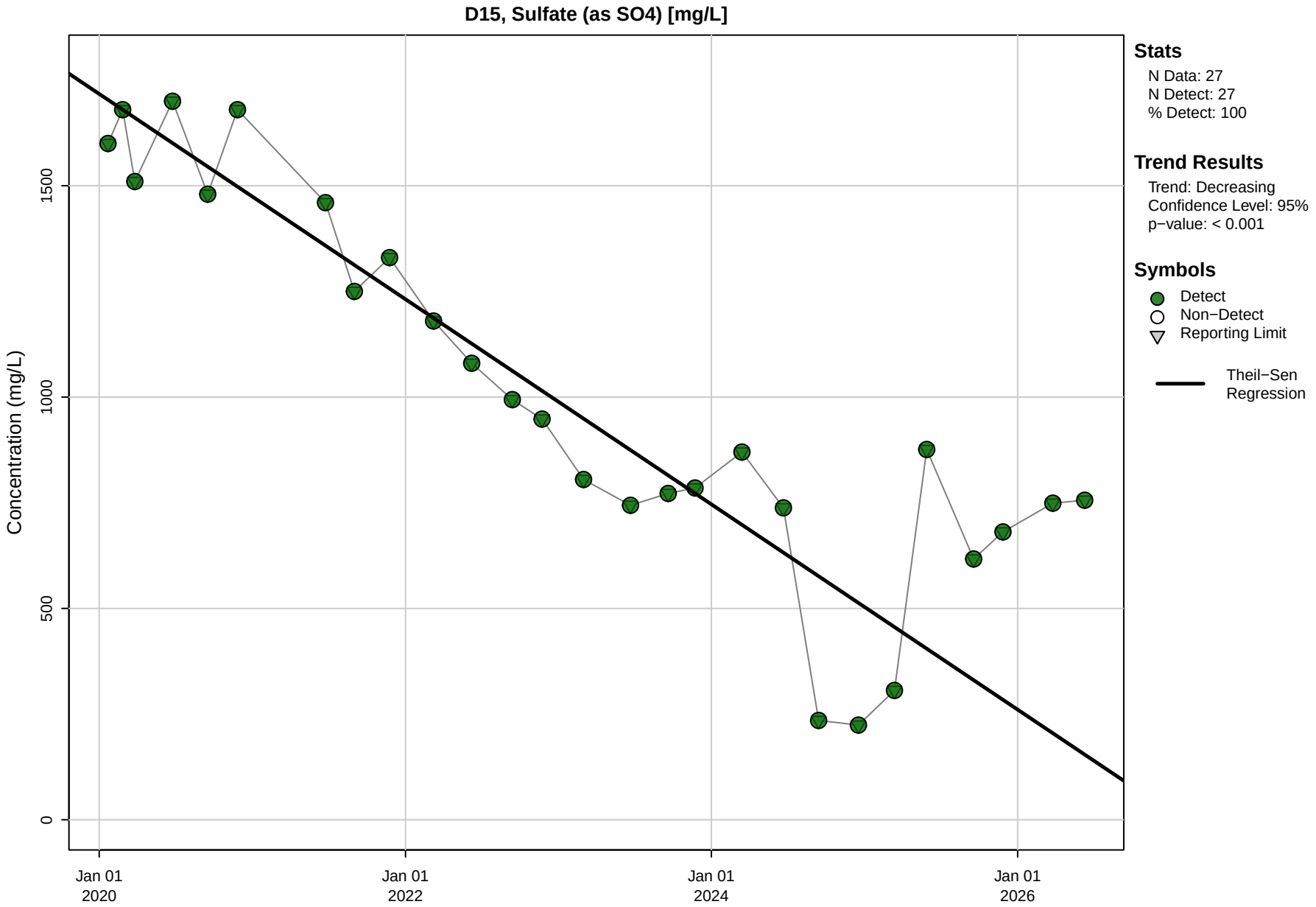

D15, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

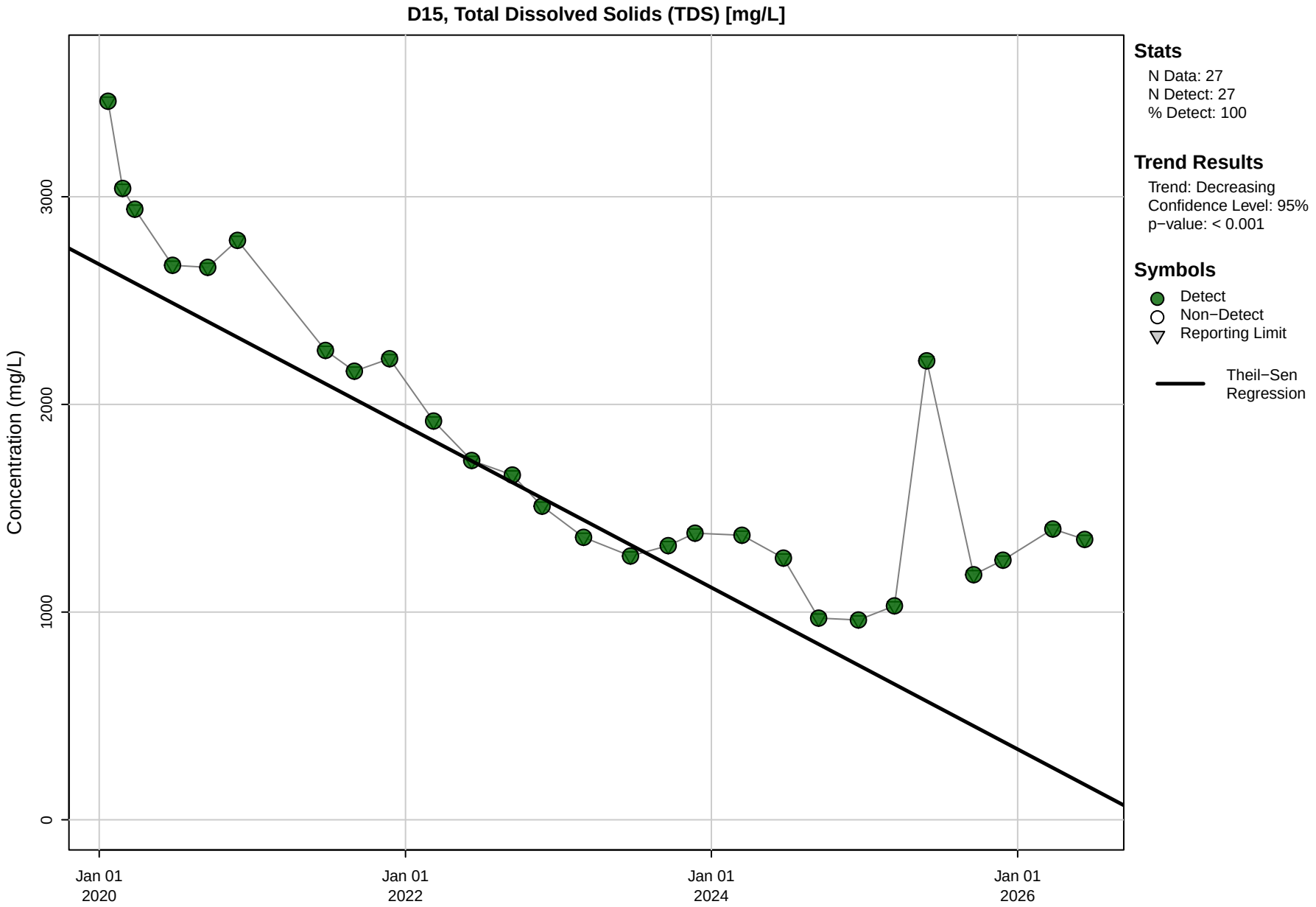

D15, Iron (Total) [ug/L]
Concentration (ug/L)
0
50000
100000
150000
200000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

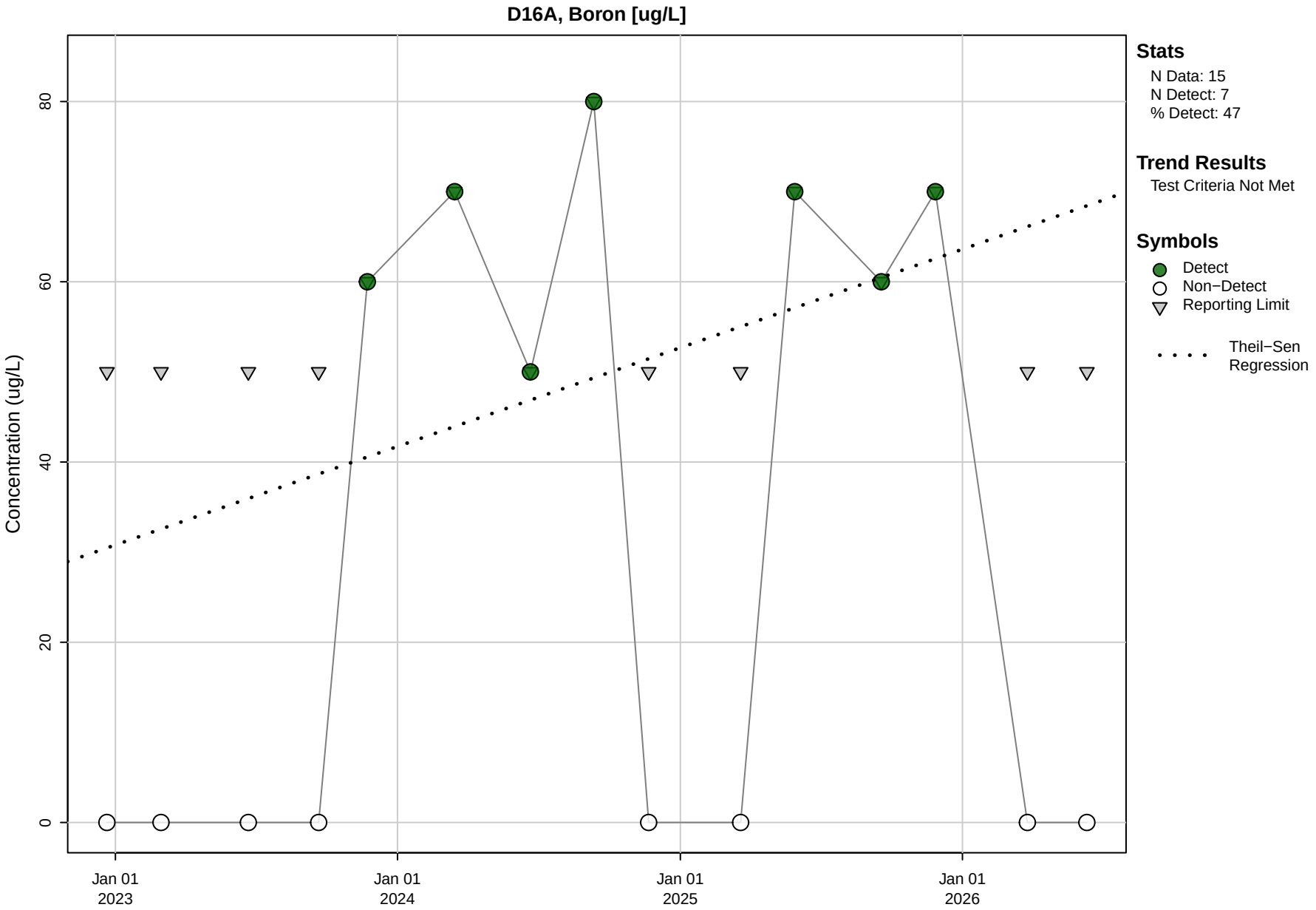

D15, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
30000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 26
% Detect: 96
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

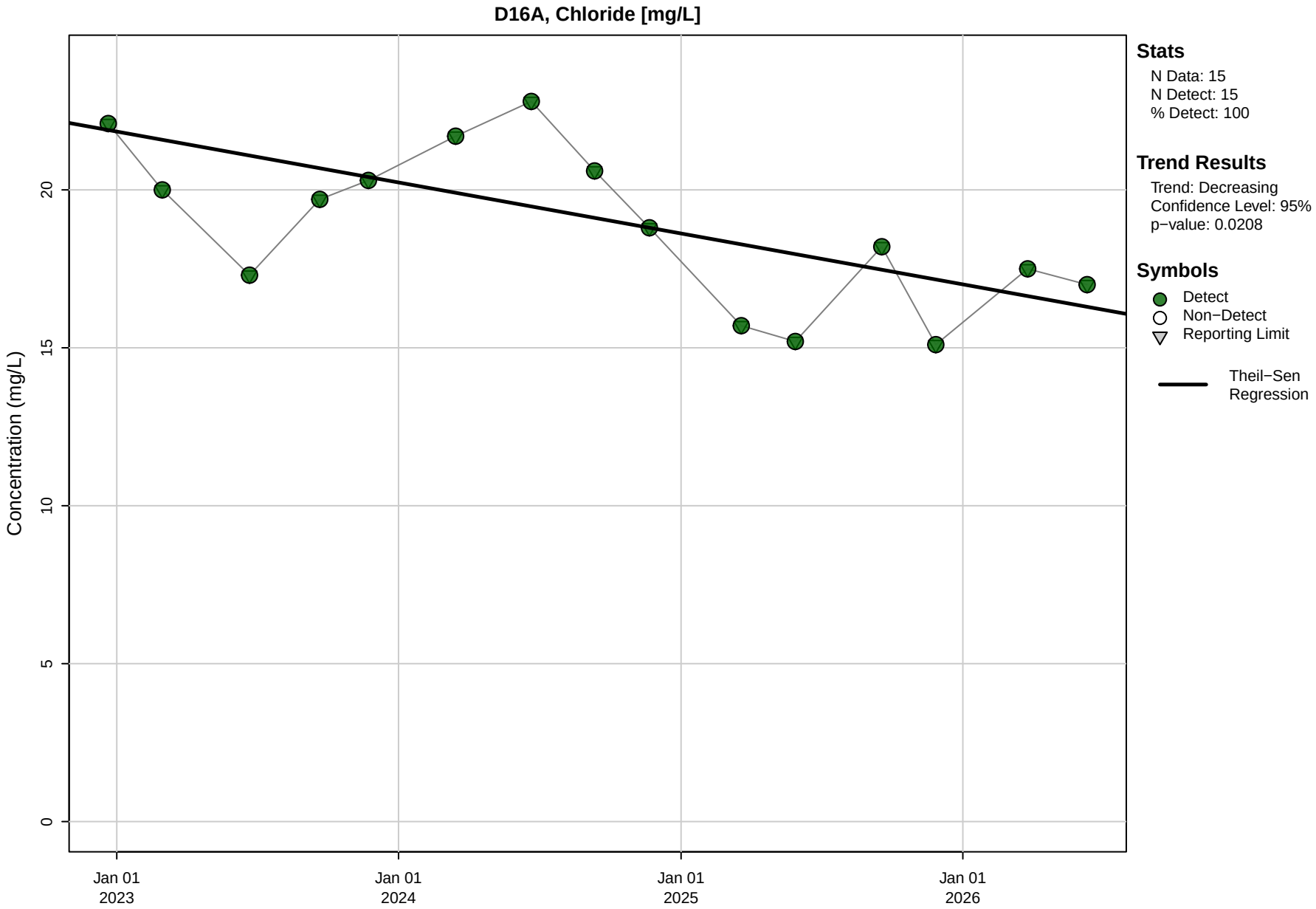

D15, Manganese [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

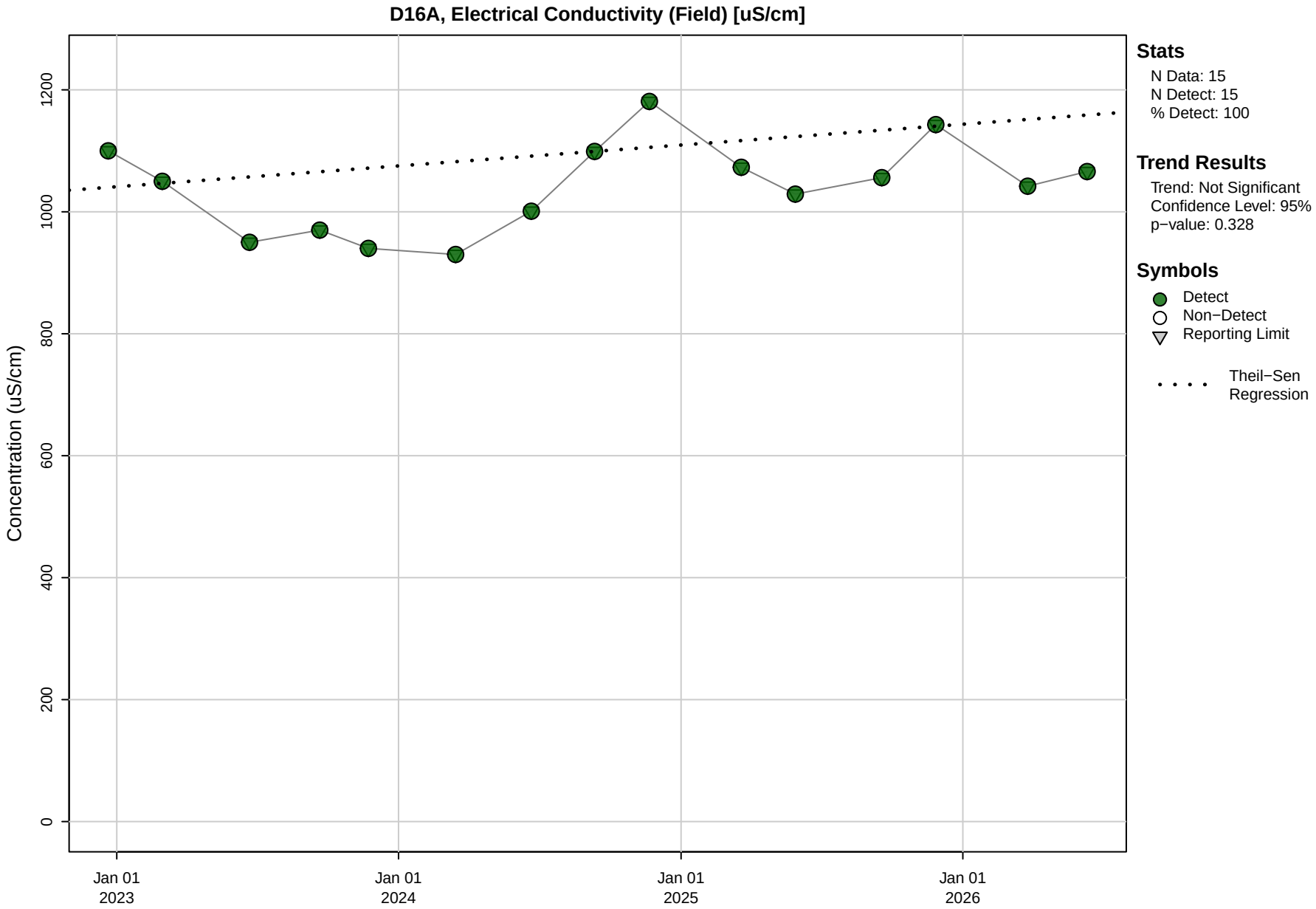

D15, Nickel [ug/L]
Concentration (ug/L)
0
200
400
600
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

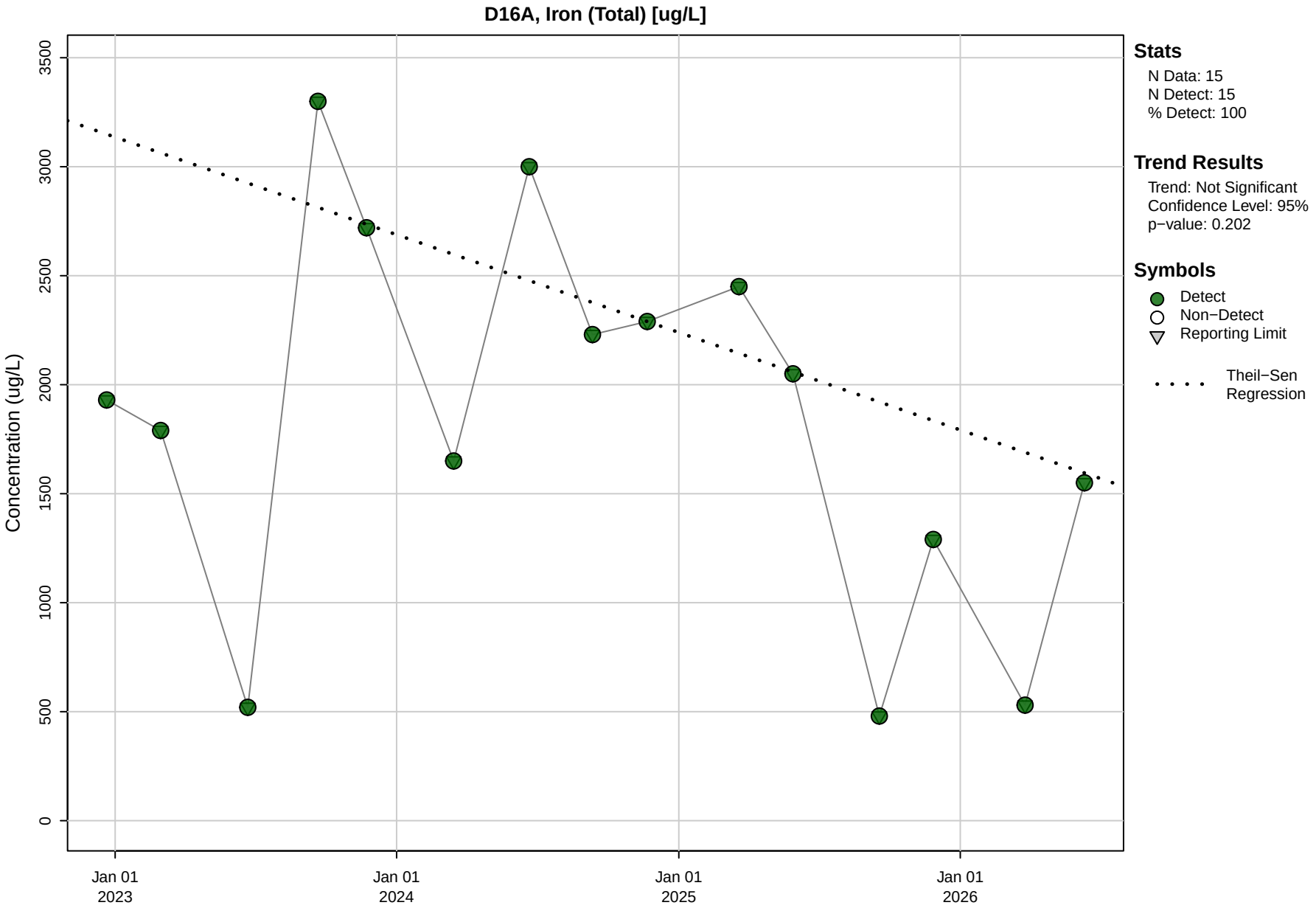

D15, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

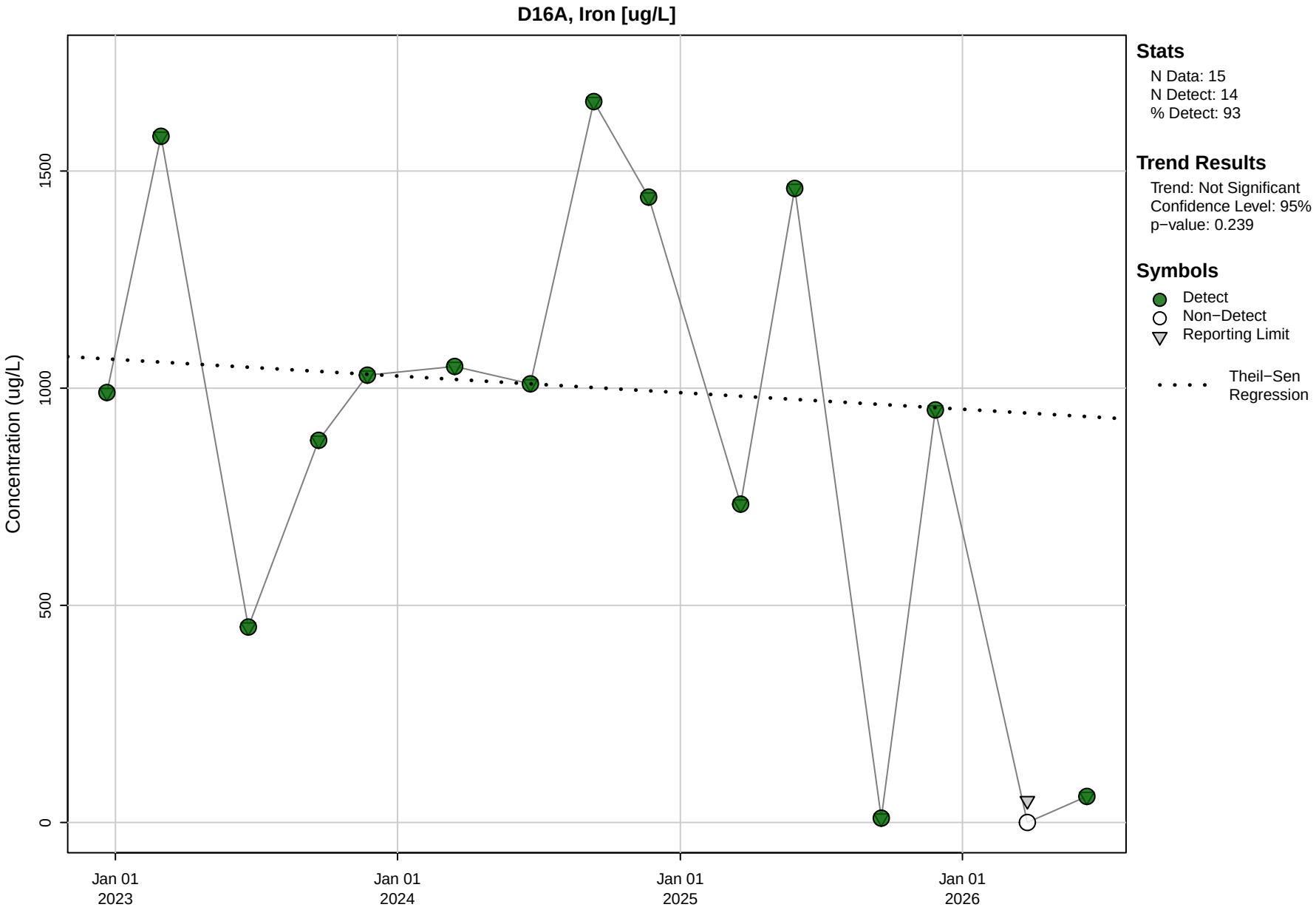

D15, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

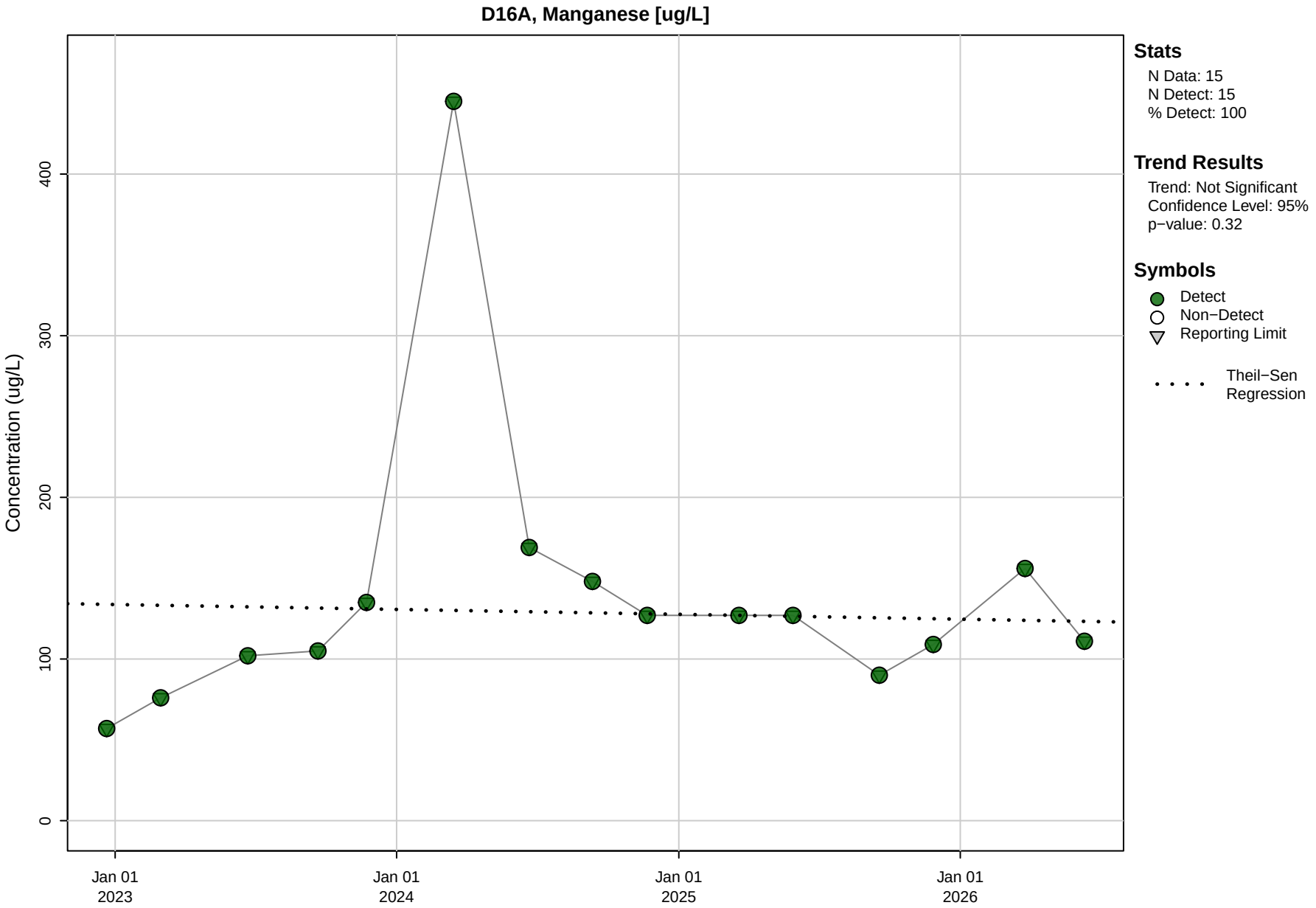

D16A, Boron [ug/L]
Concentration (ug/L)
0
20
40
60
80
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 7
% Detect: 47
Trend Results
Test Criteria Not Met
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

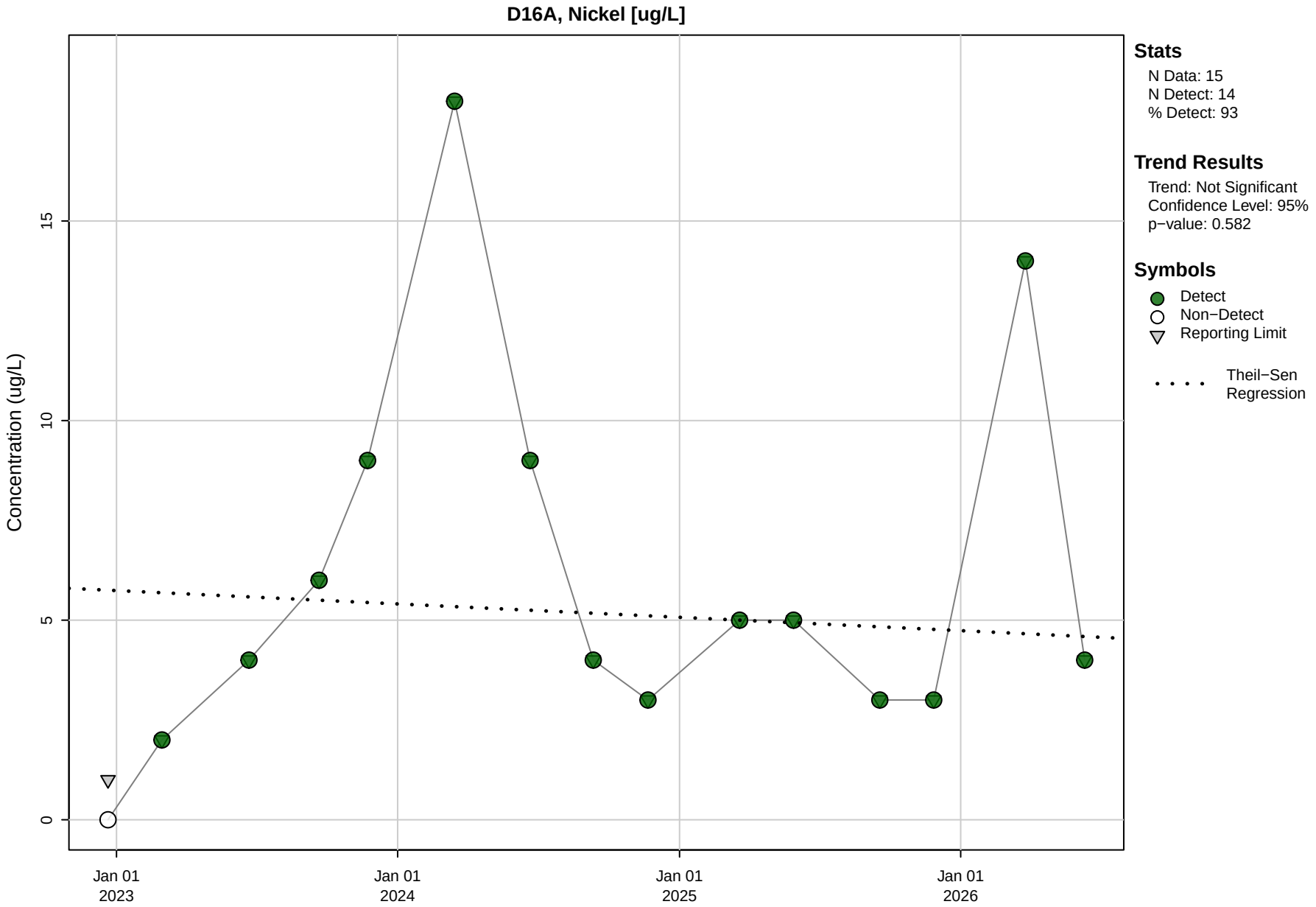

D16A, Chloride [mg/L]
Concentration (mg/L)
0
5
10
15
20
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 15
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0208
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

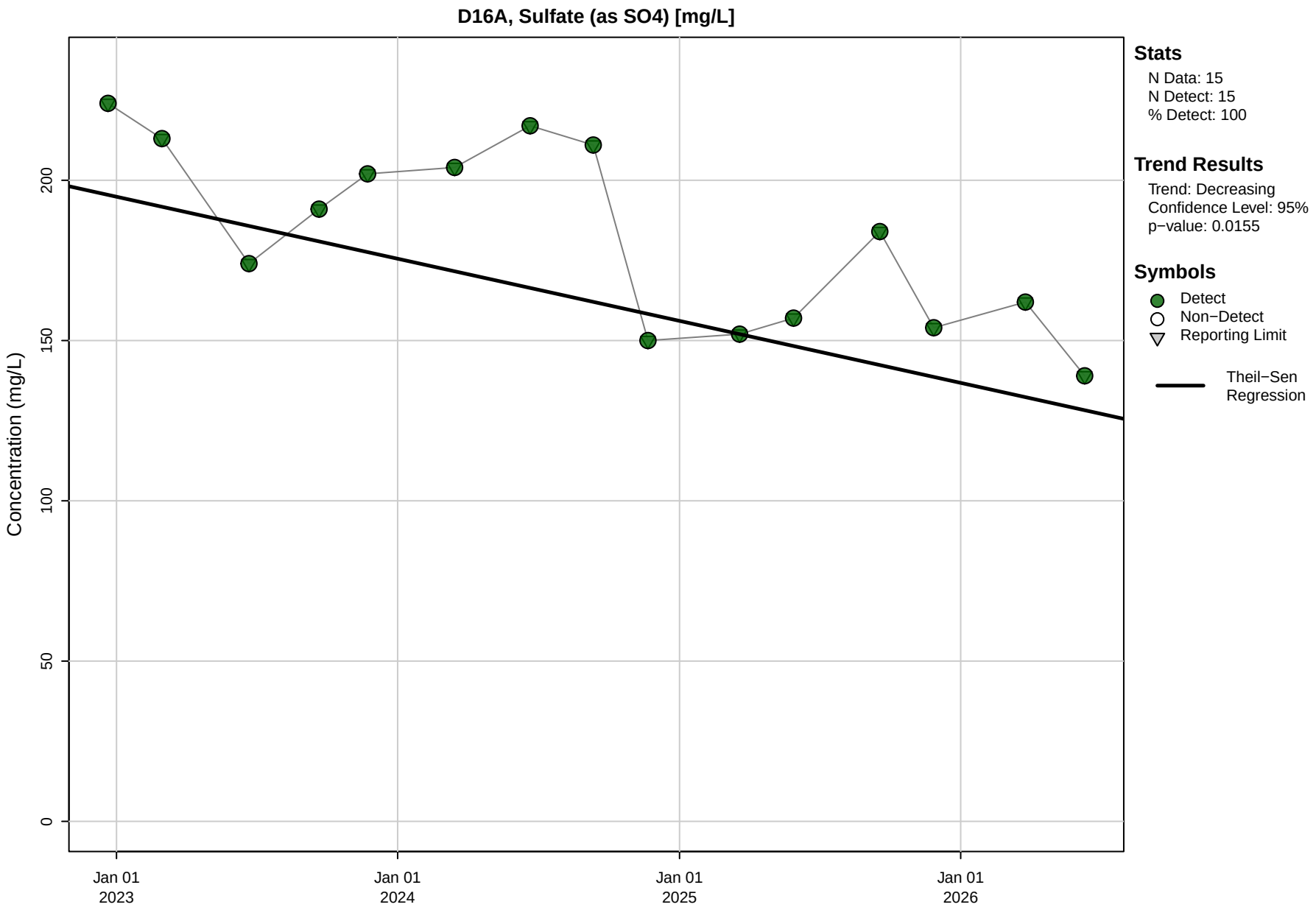

D16A, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
200
400
600
800
1000
1200
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 15
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.328
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

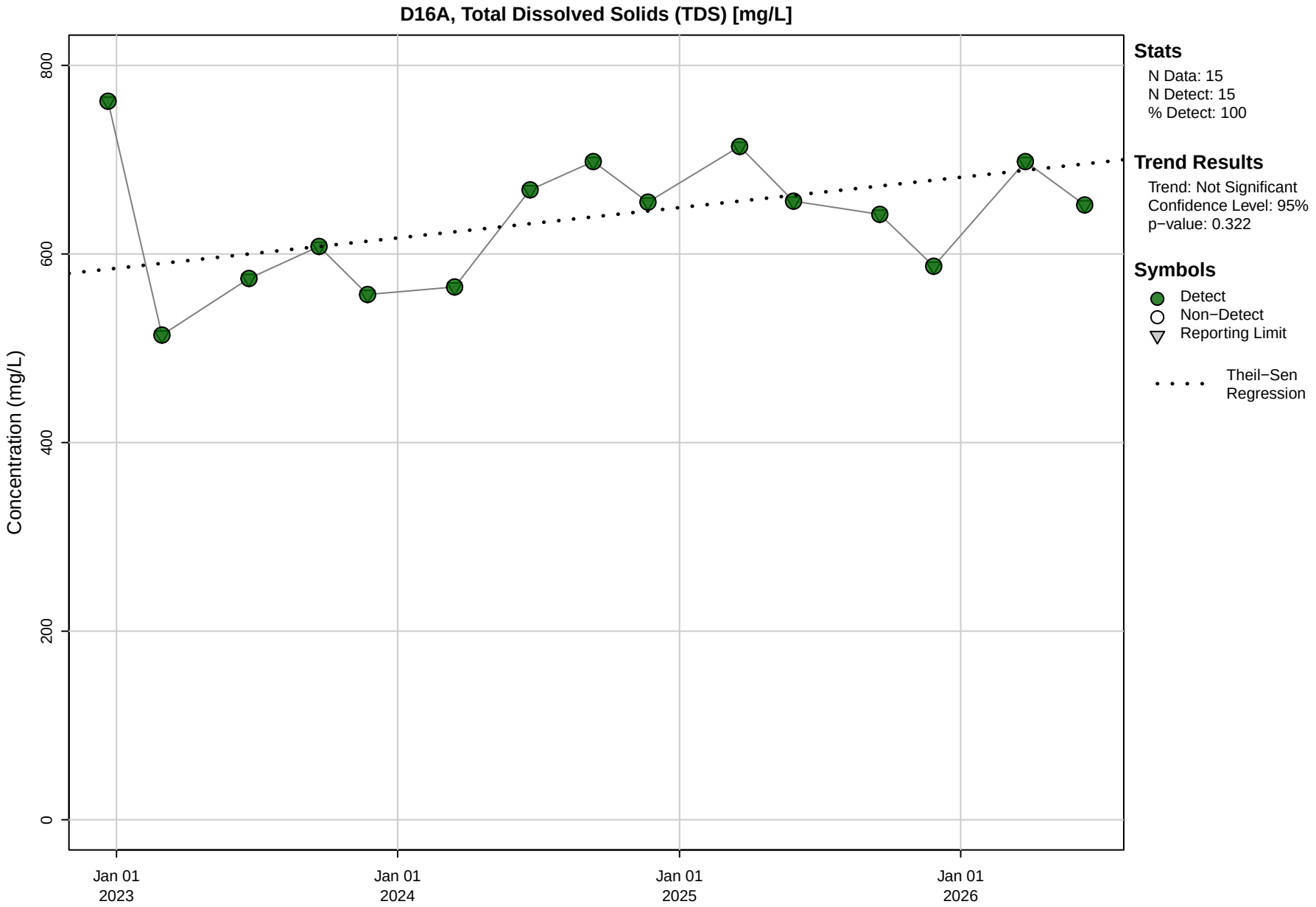

D16A, Iron (Total) [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
3000
3500
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 15
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.202
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

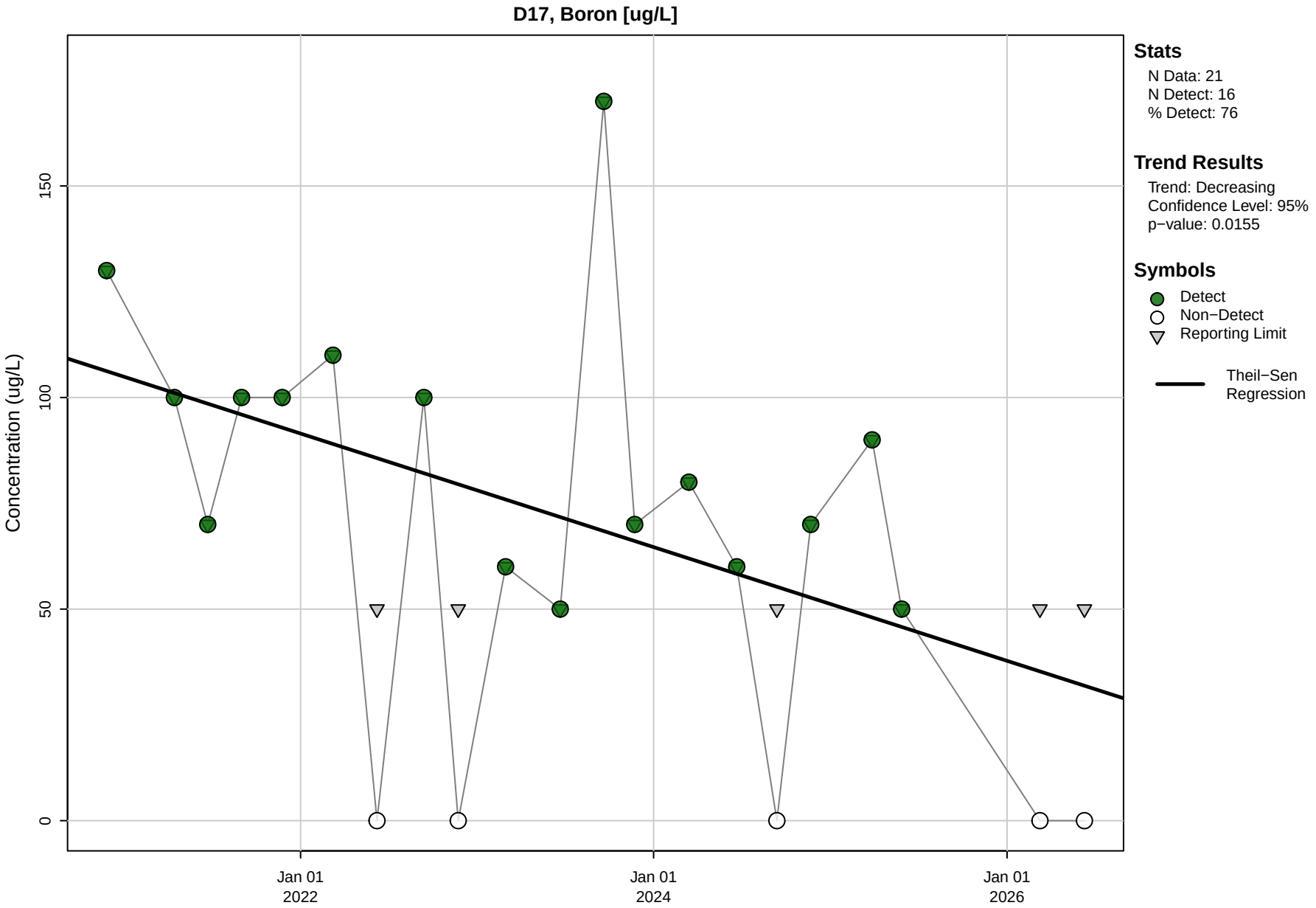

D16A, Iron [ug/L]
Concentration (ug/L)
0
500
1000
1500
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 14
% Detect: 93
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.239
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

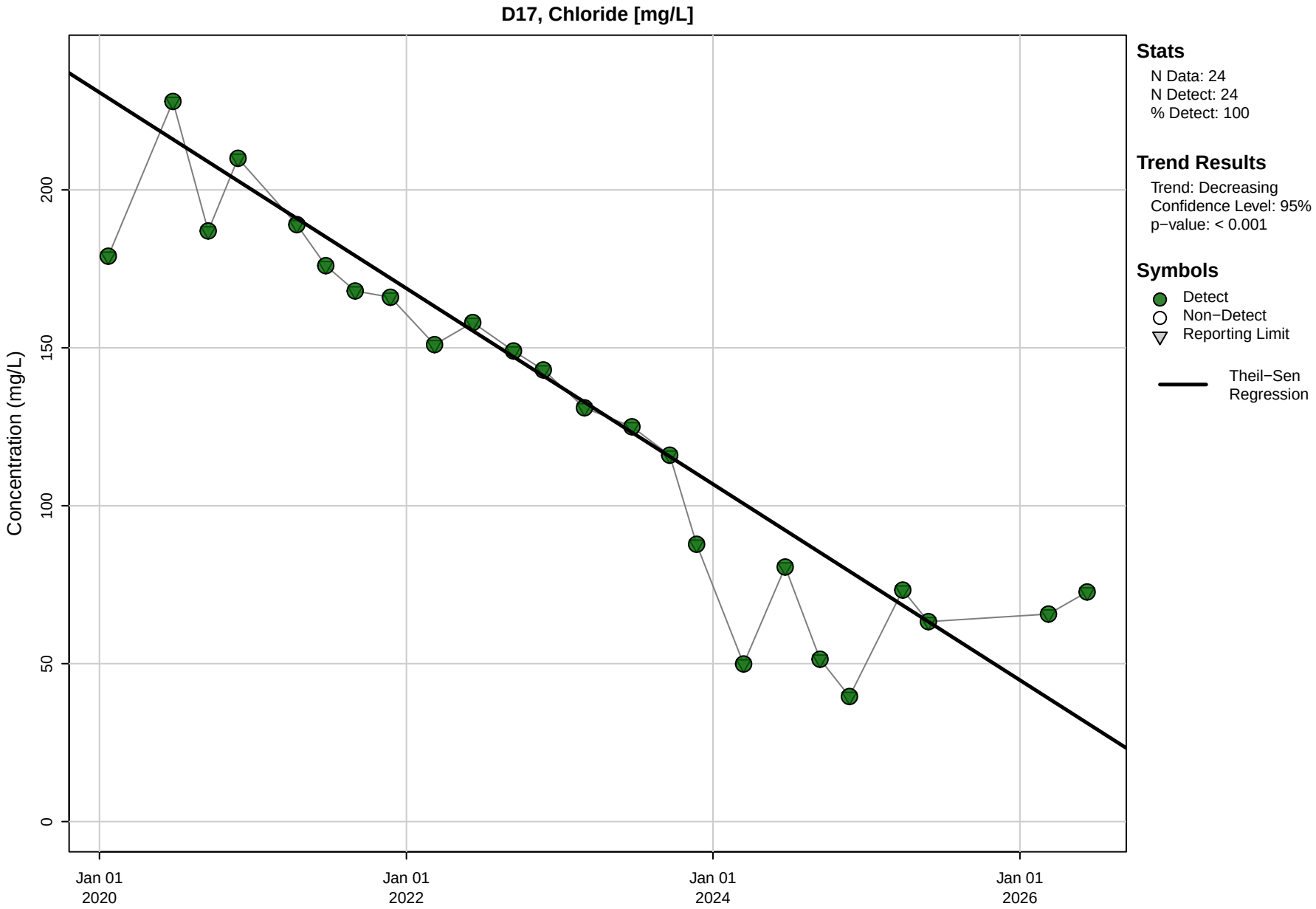

D16A, Manganese [ug/L]
Concentration (ug/L)
0
100
200
300
400
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 15
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.32
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

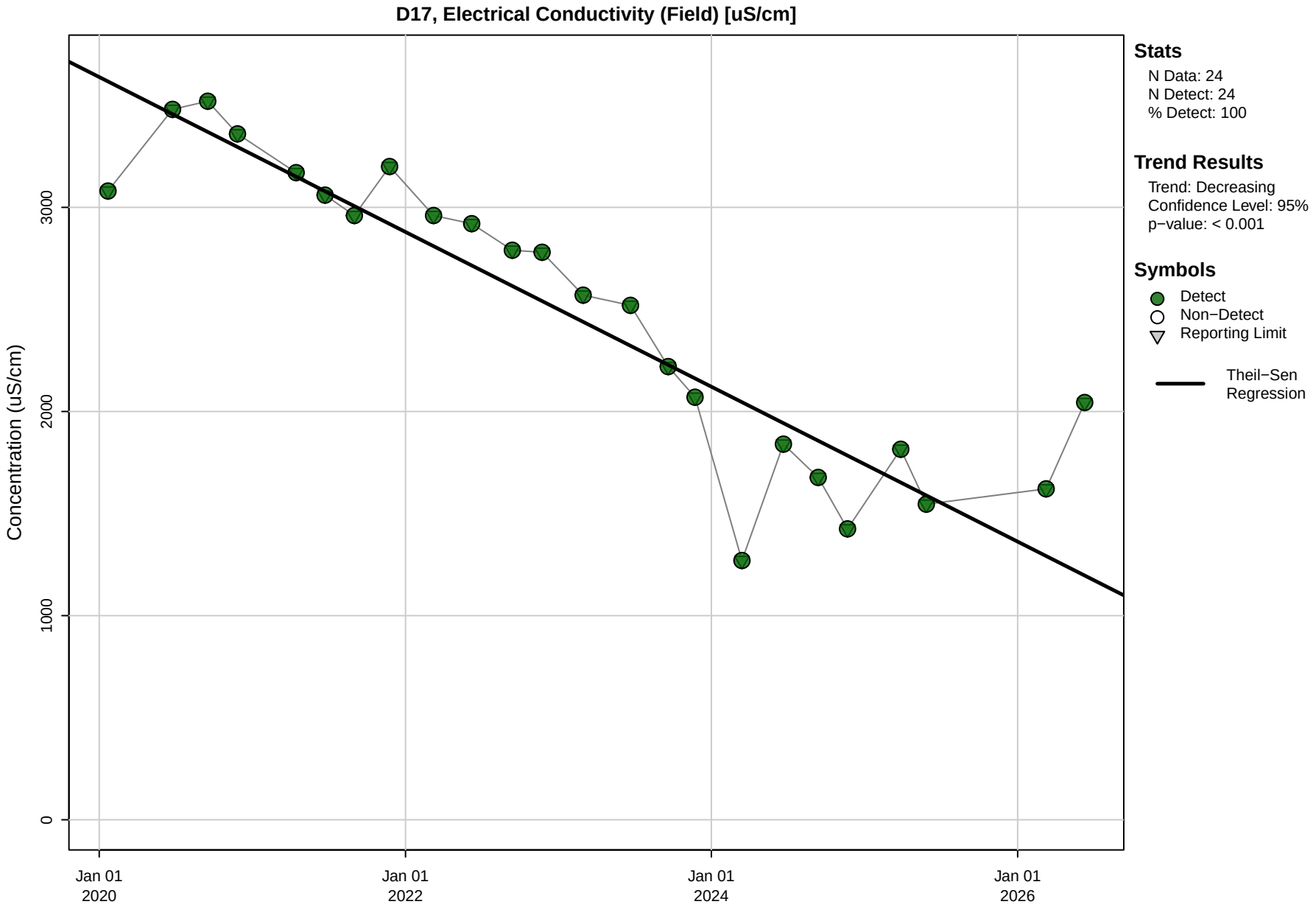

D16A, Nickel [ug/L]
Concentration (ug/L)
0
5
10
15
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 14
% Detect: 93
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.582
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

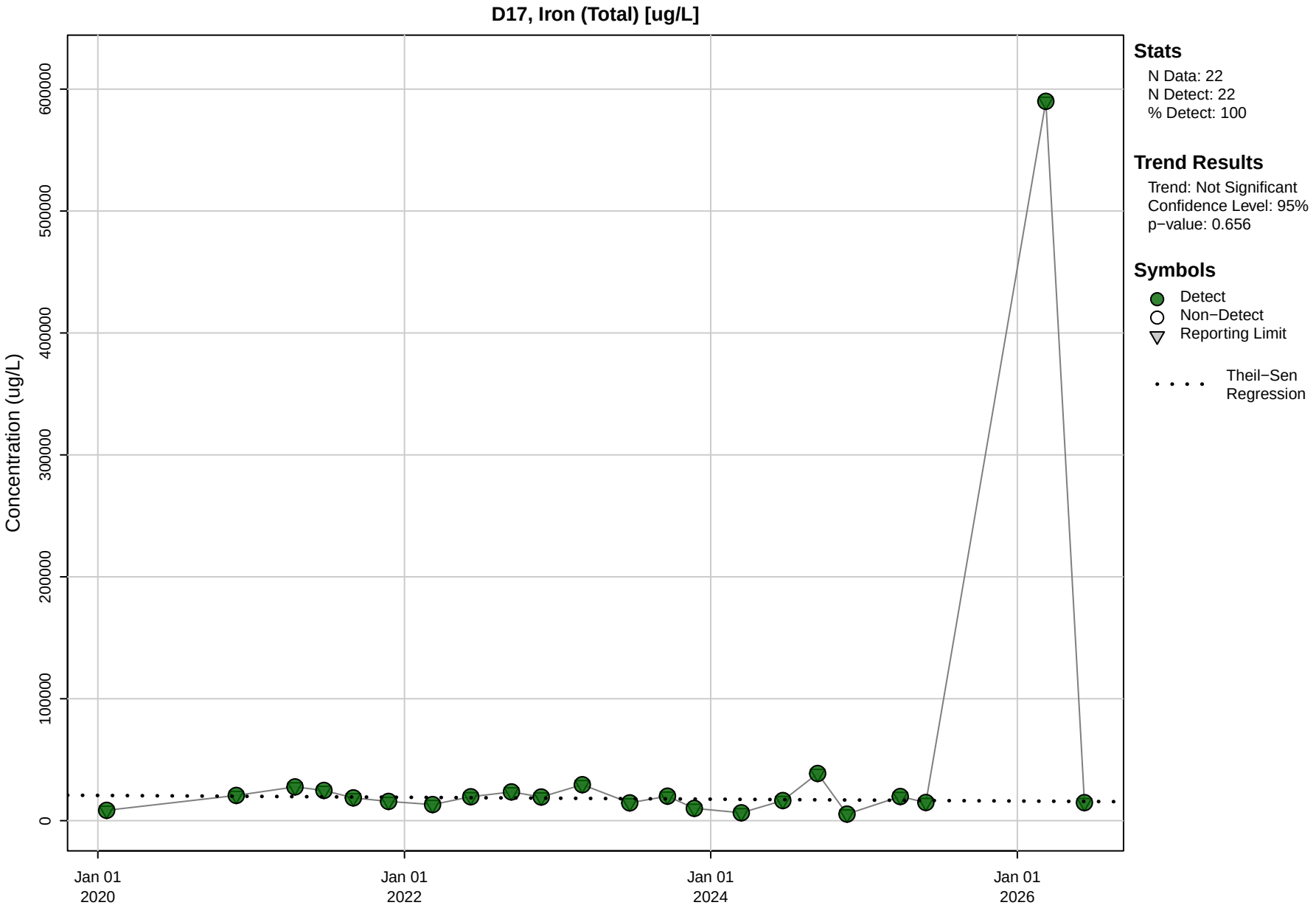

D16A, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
50
100
150
200
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 15
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0155
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

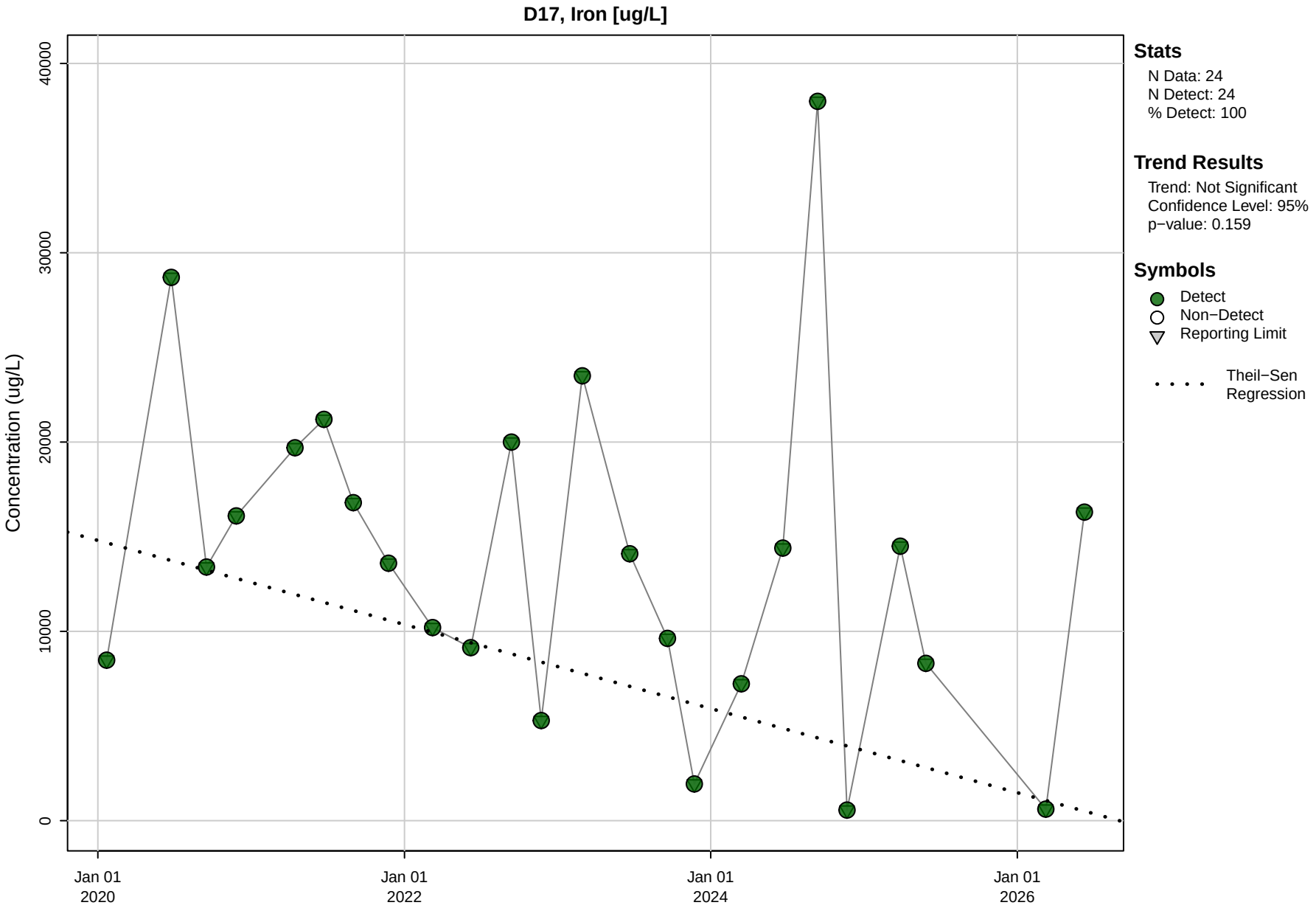

D16A, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
200
400
600
800
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 15
N Detect: 15
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.322
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

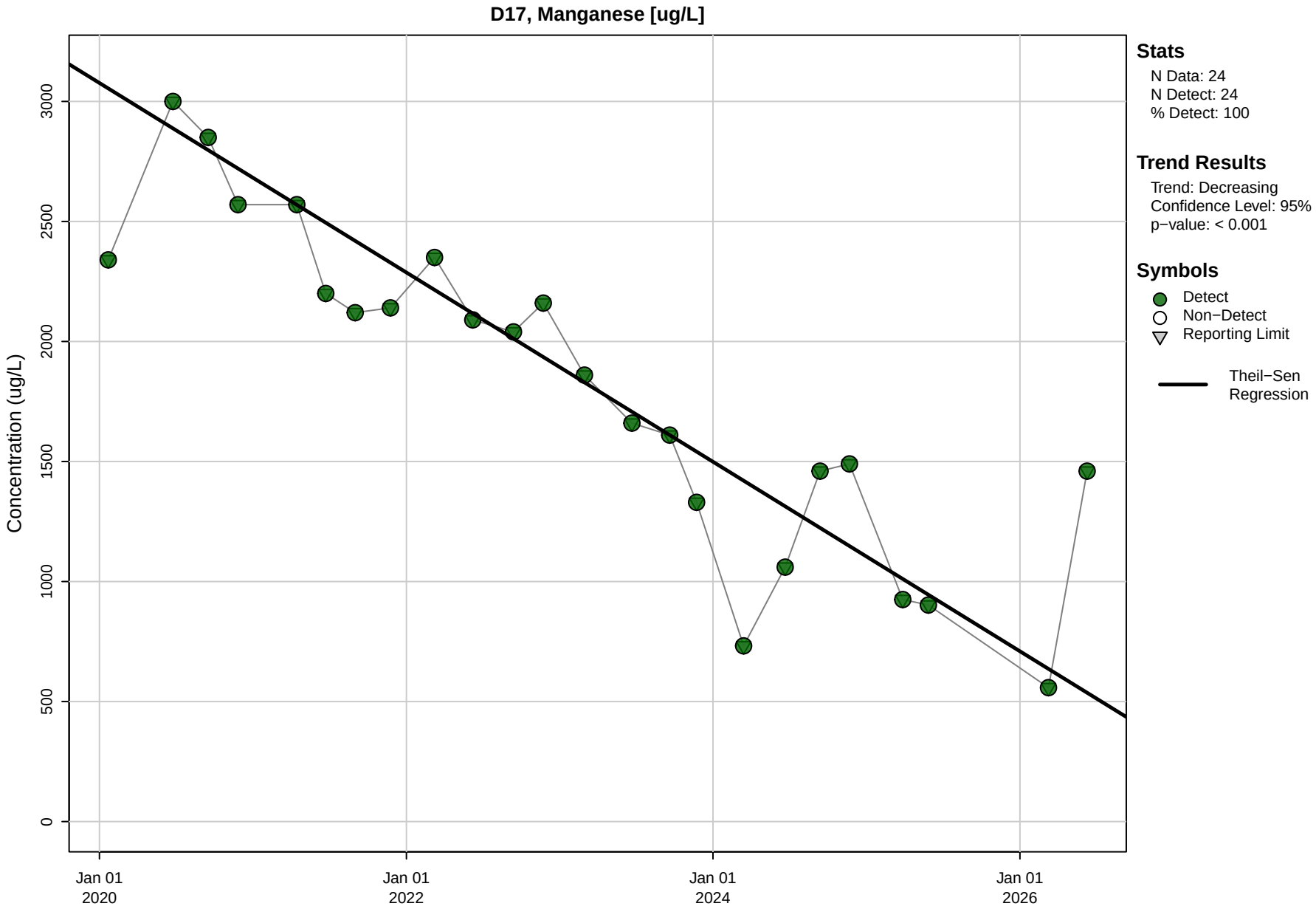

D17, Boron [ug/L]
Concentration (ug/L)
0
50
100
150
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 21
N Detect: 16
% Detect: 76
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0155
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

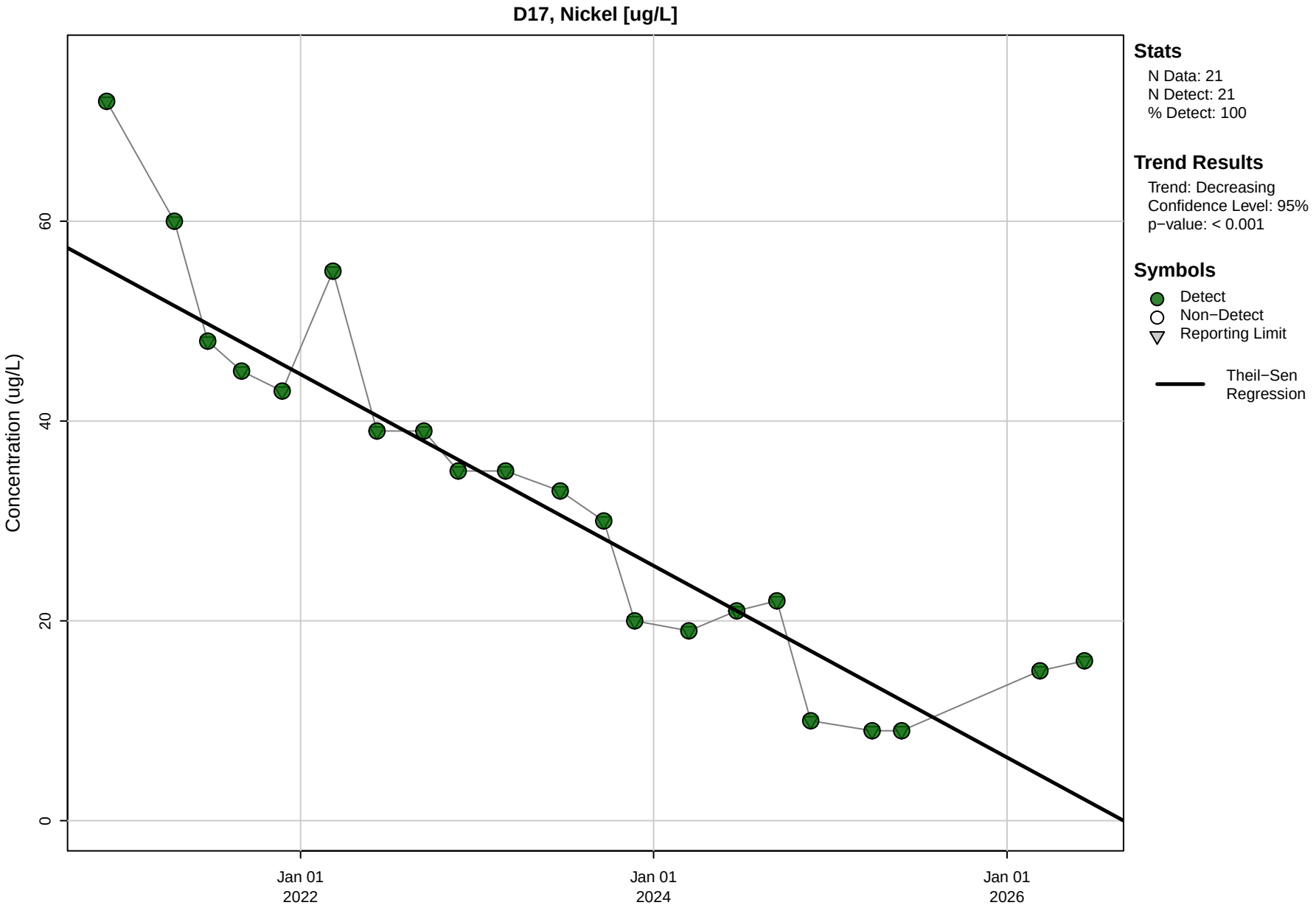

D17, Chloride [mg/L]
Concentration (mg/L)
0
50
100
150
200
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

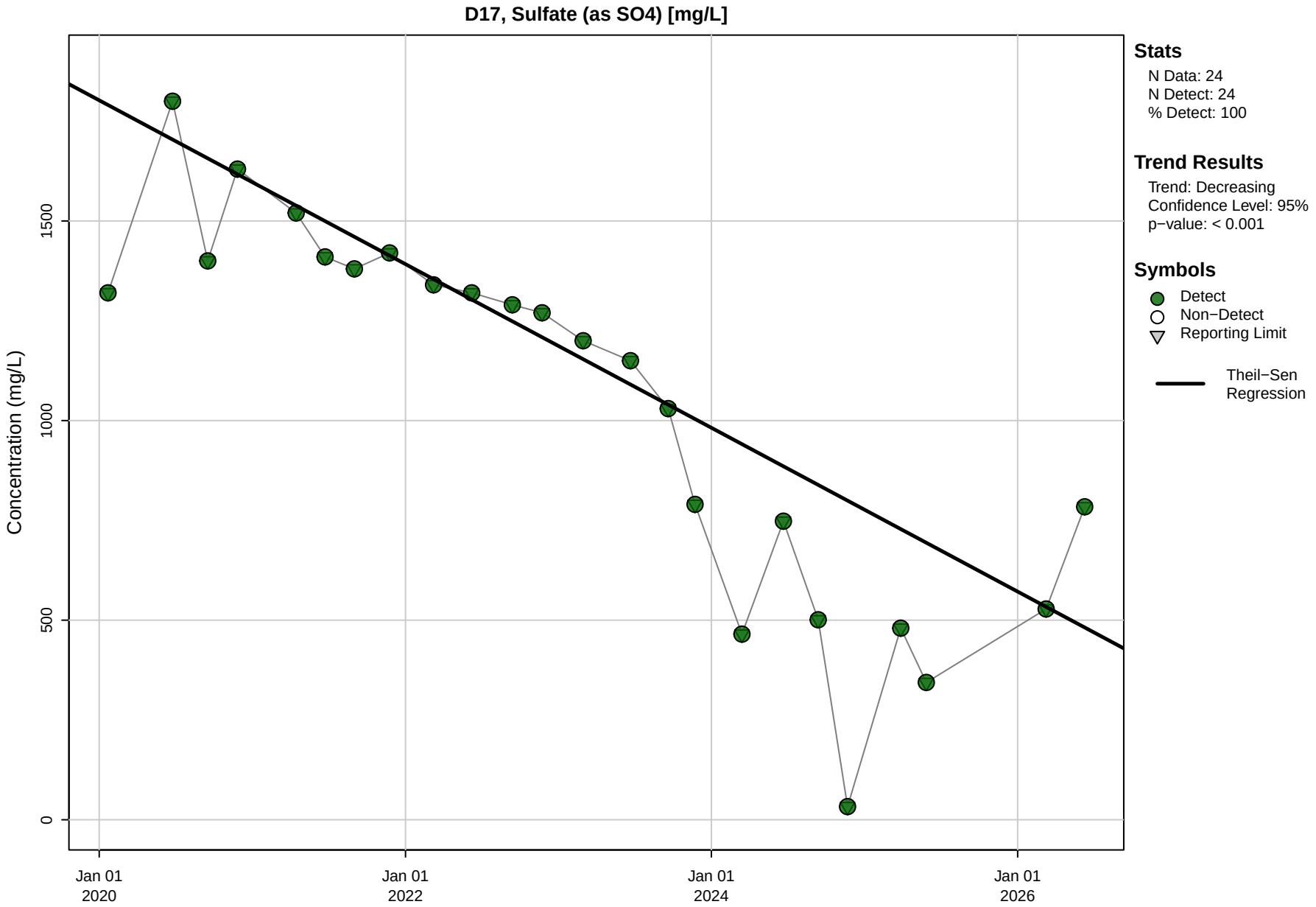

D17, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

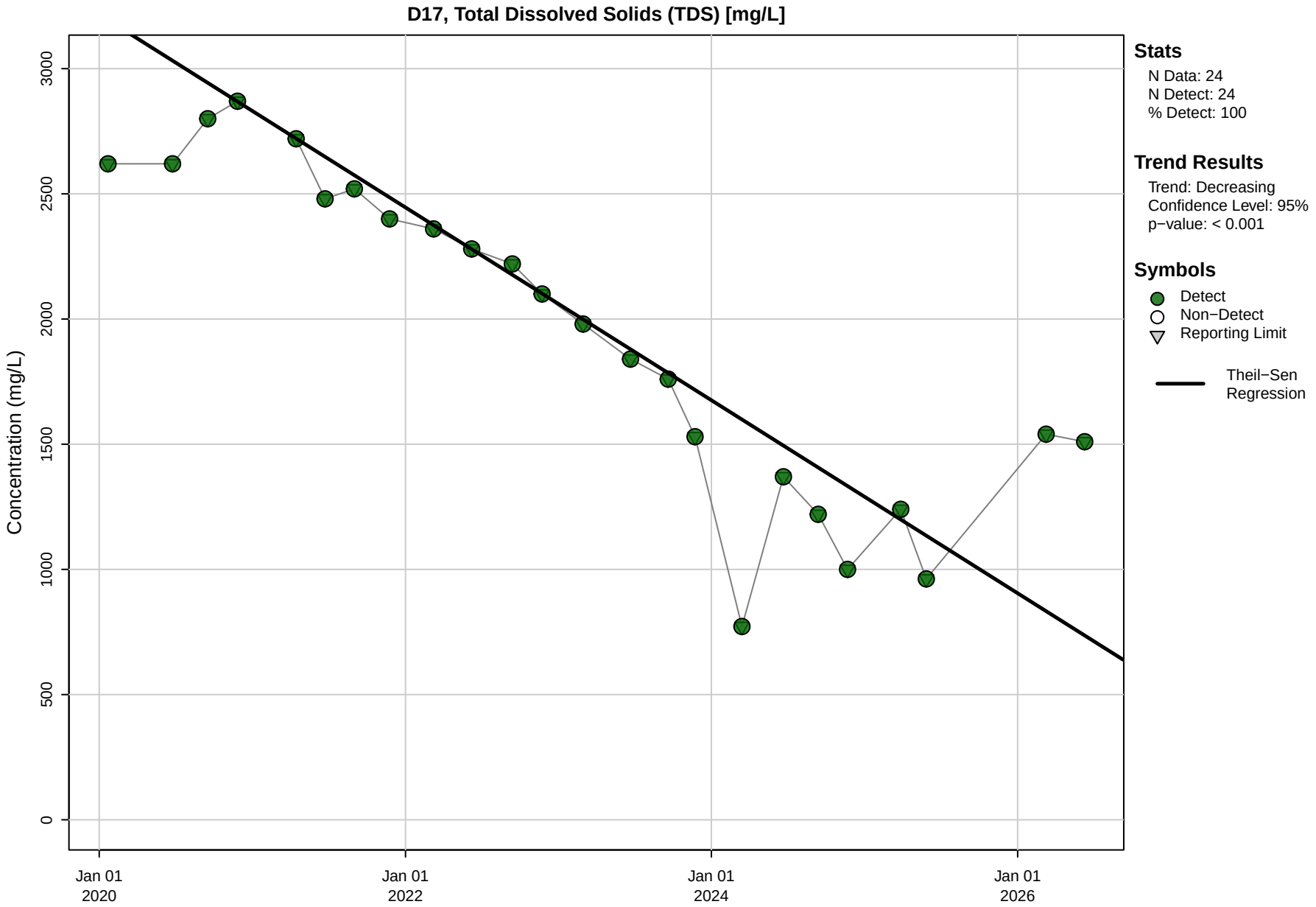

D17, Iron (Total) [ug/L]
Concentration (ug/L)
0
100000
200000
300000
400000
500000
600000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.656
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

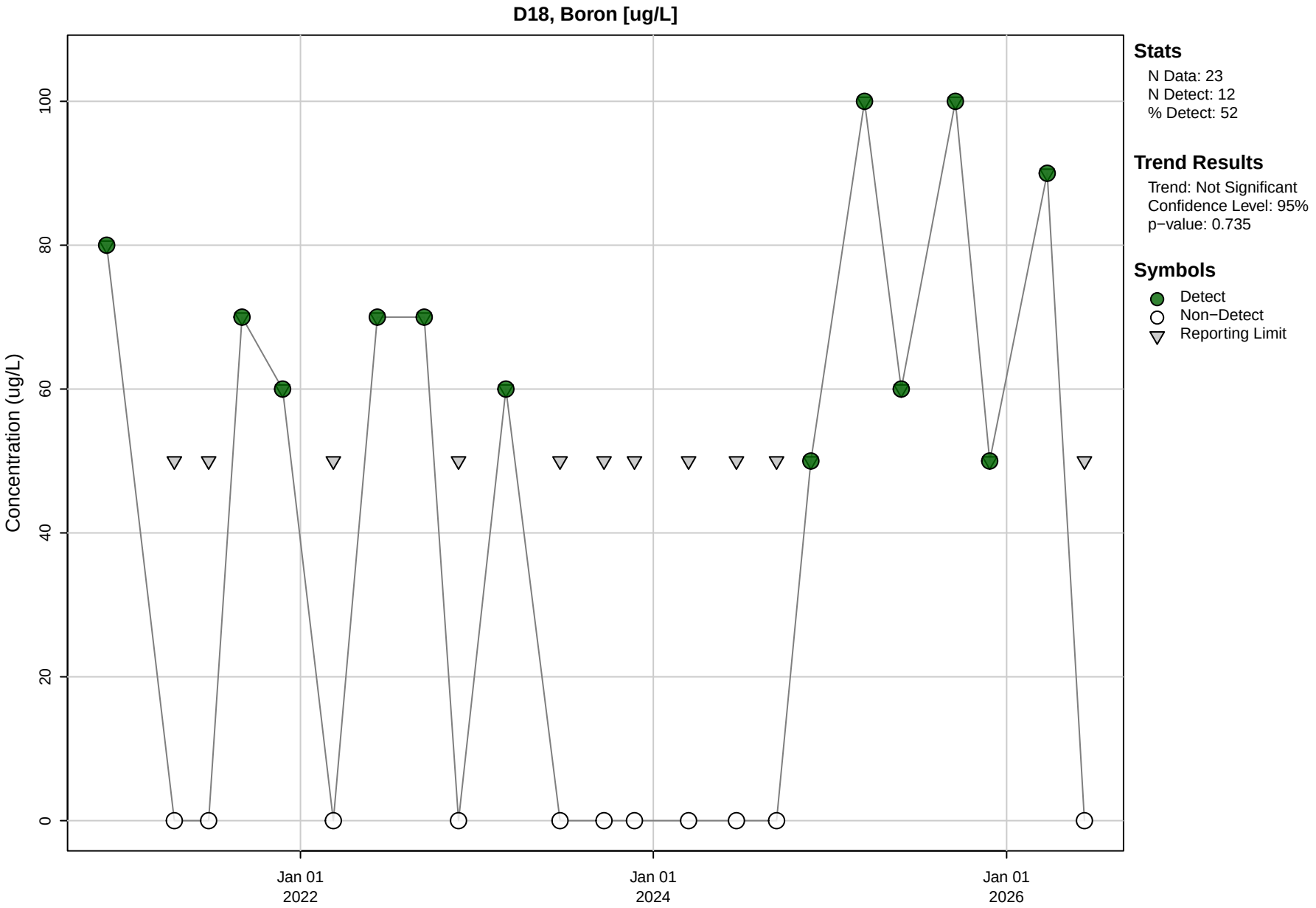

D17, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.159
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

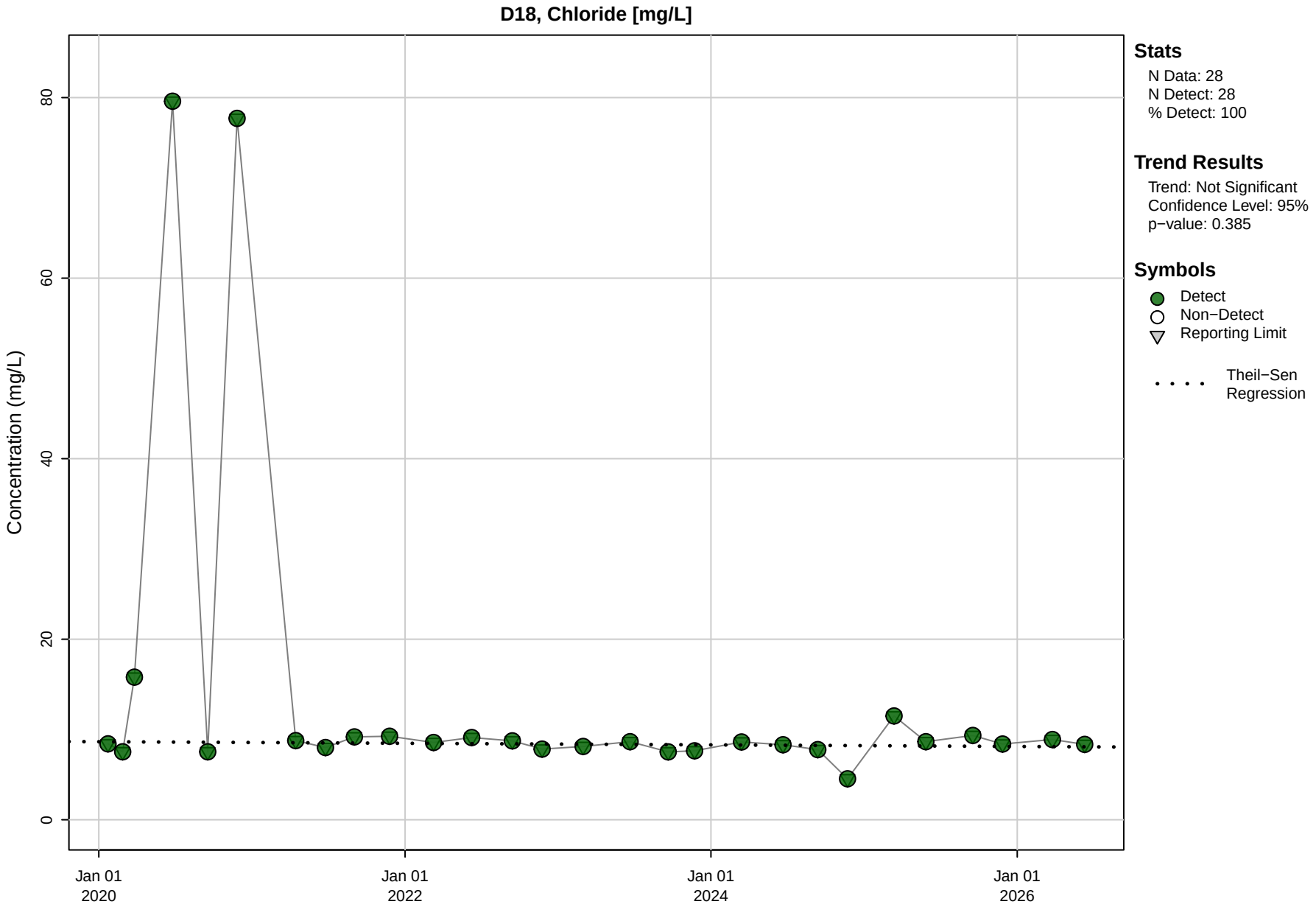

D17, Manganese [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

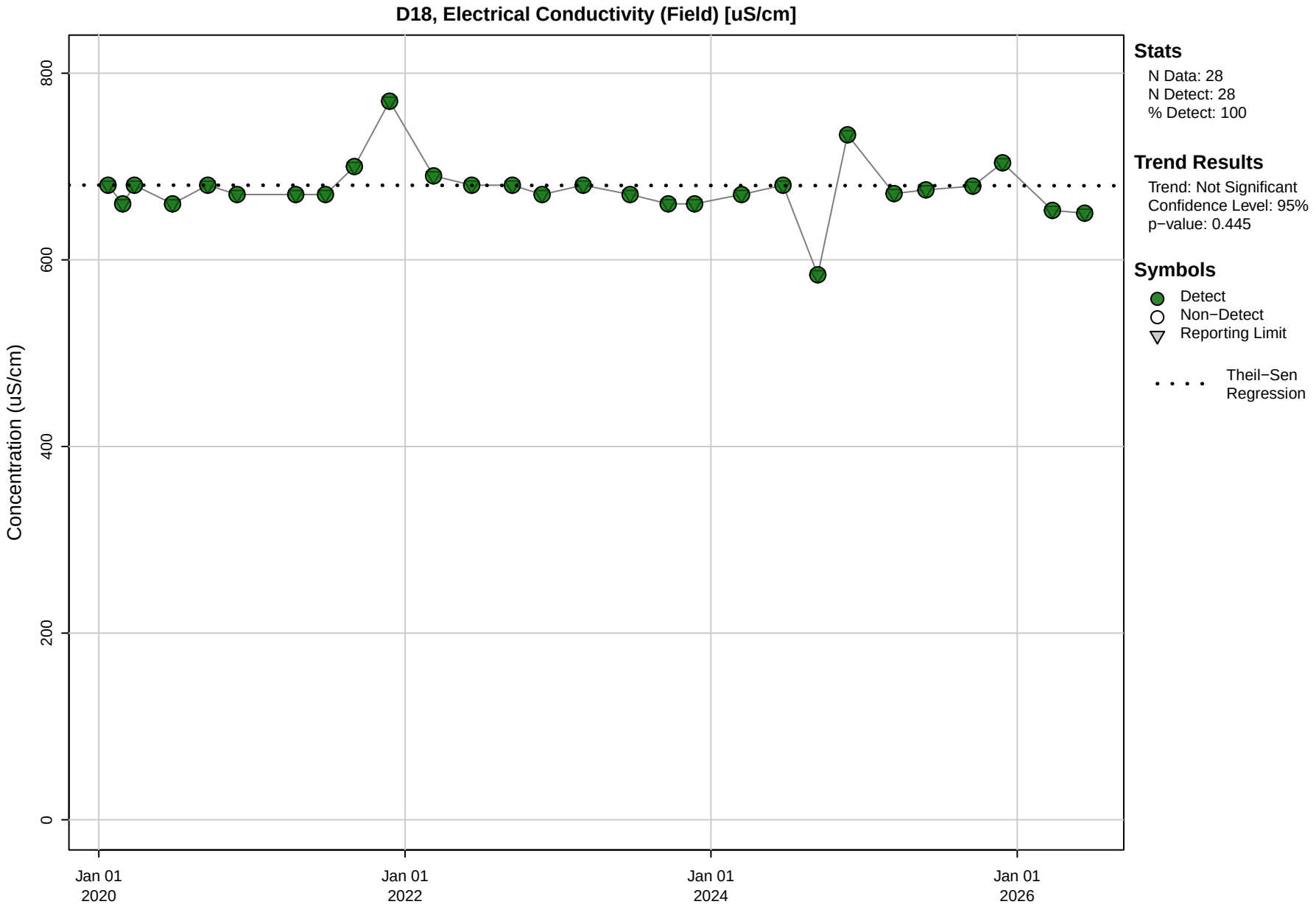

D17, Nickel [ug/L]
Concentration (ug/L)
0
20
40
60
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 21
N Detect: 21
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

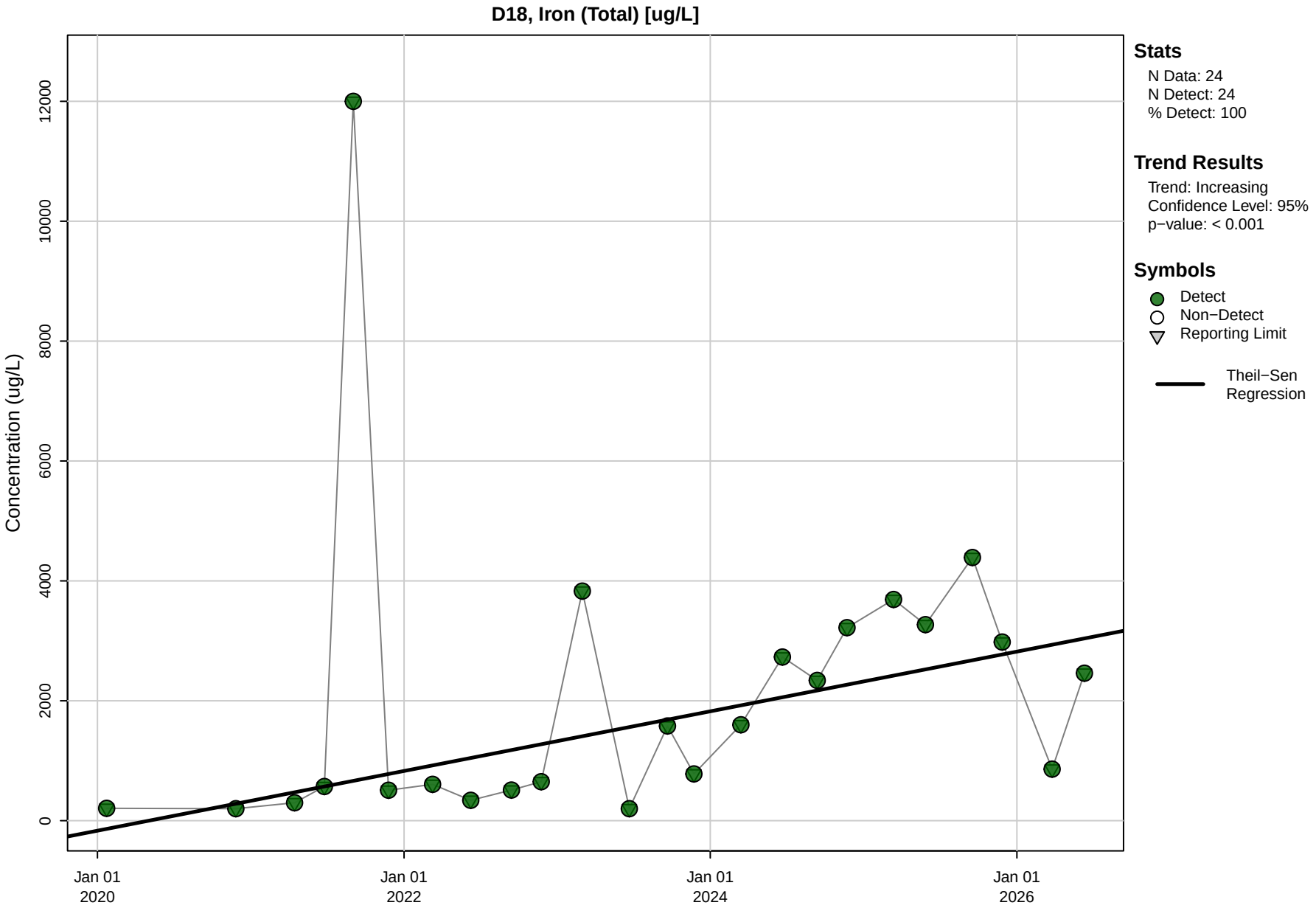

D17, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

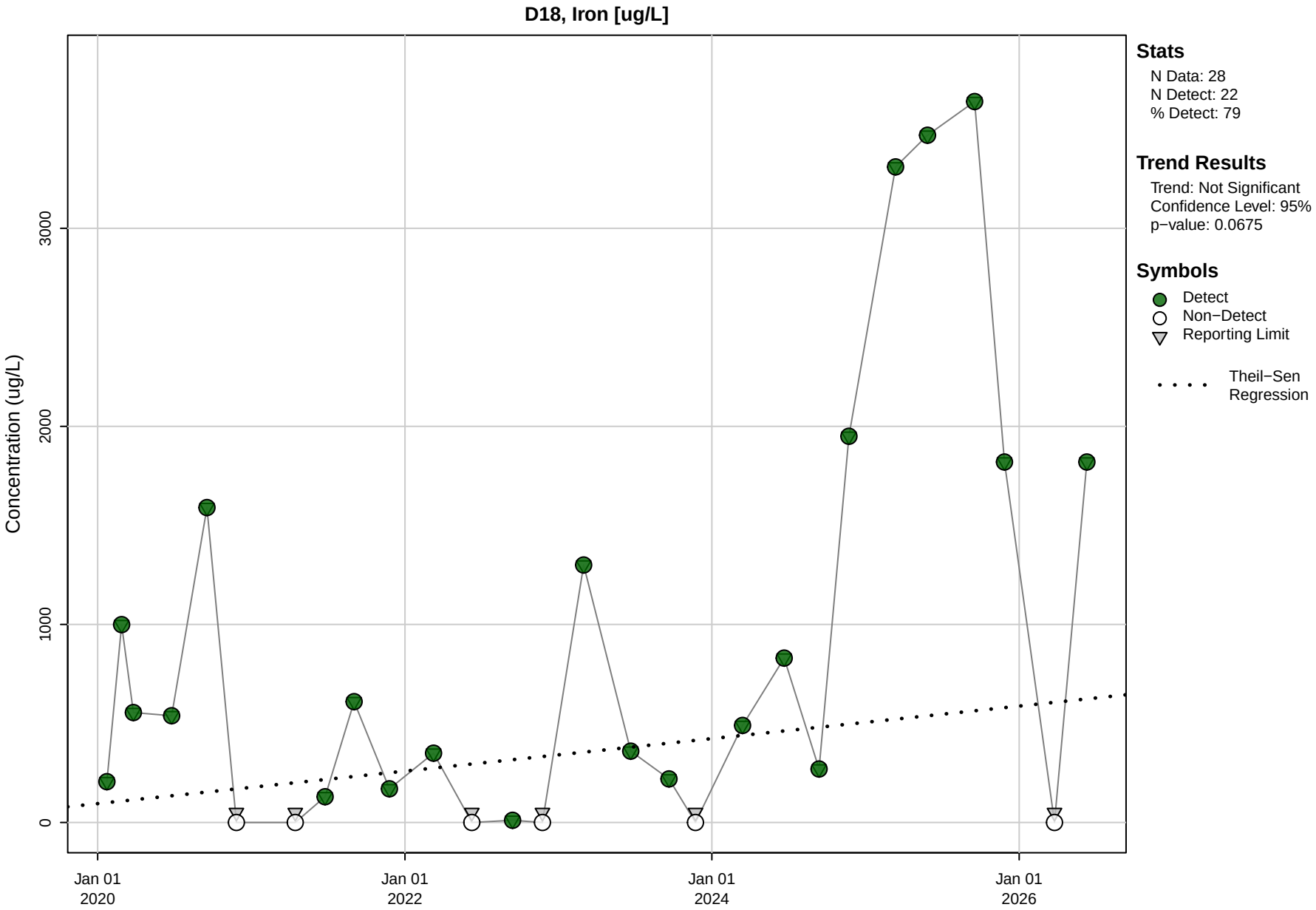

D17, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

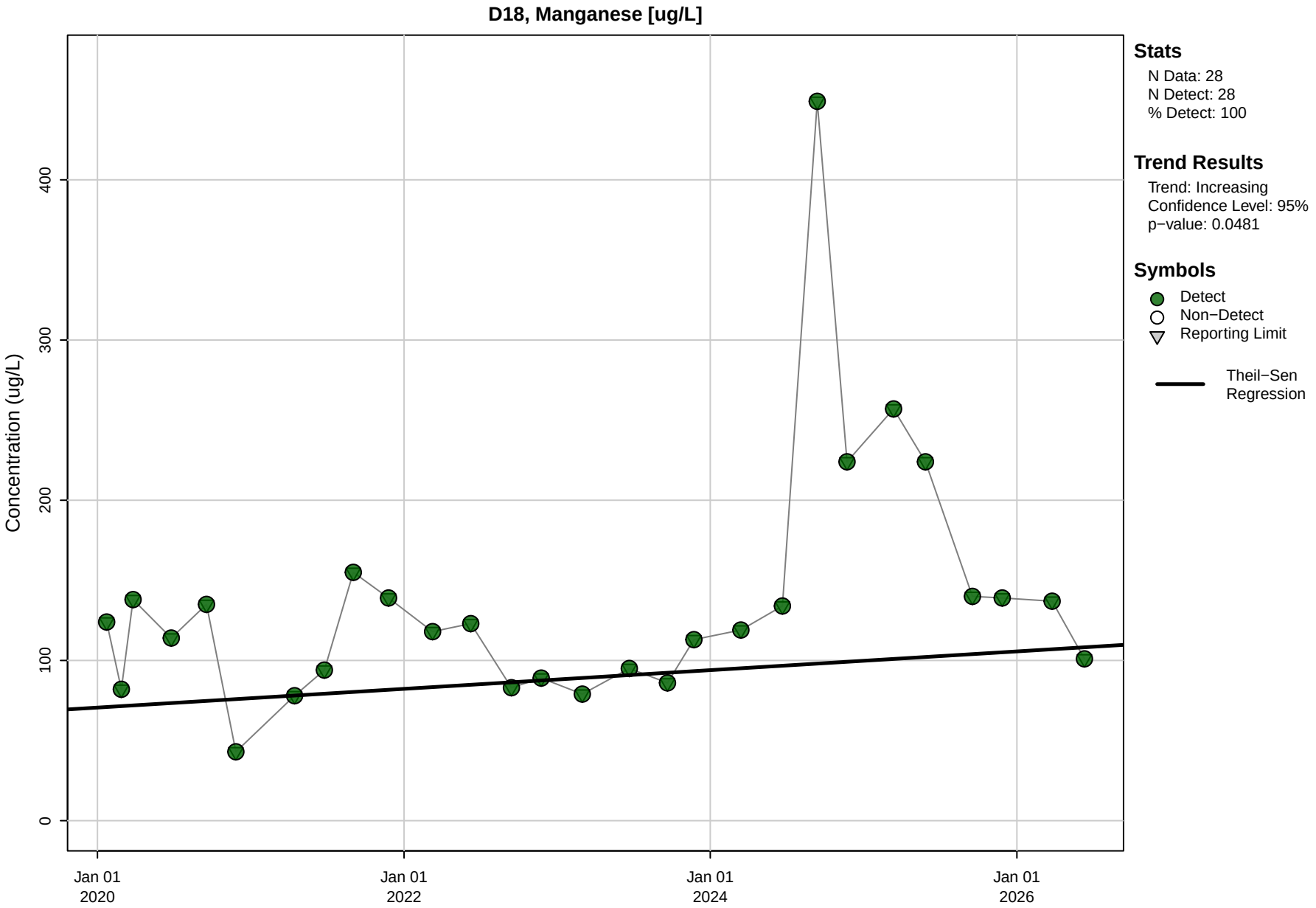

D18, Boron [ug/L]
Concentration (ug/L)
0
20
40
60
80
100
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 12
% Detect: 52
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.735
Symbols
Detect
Non−Detect
Reporting Limit

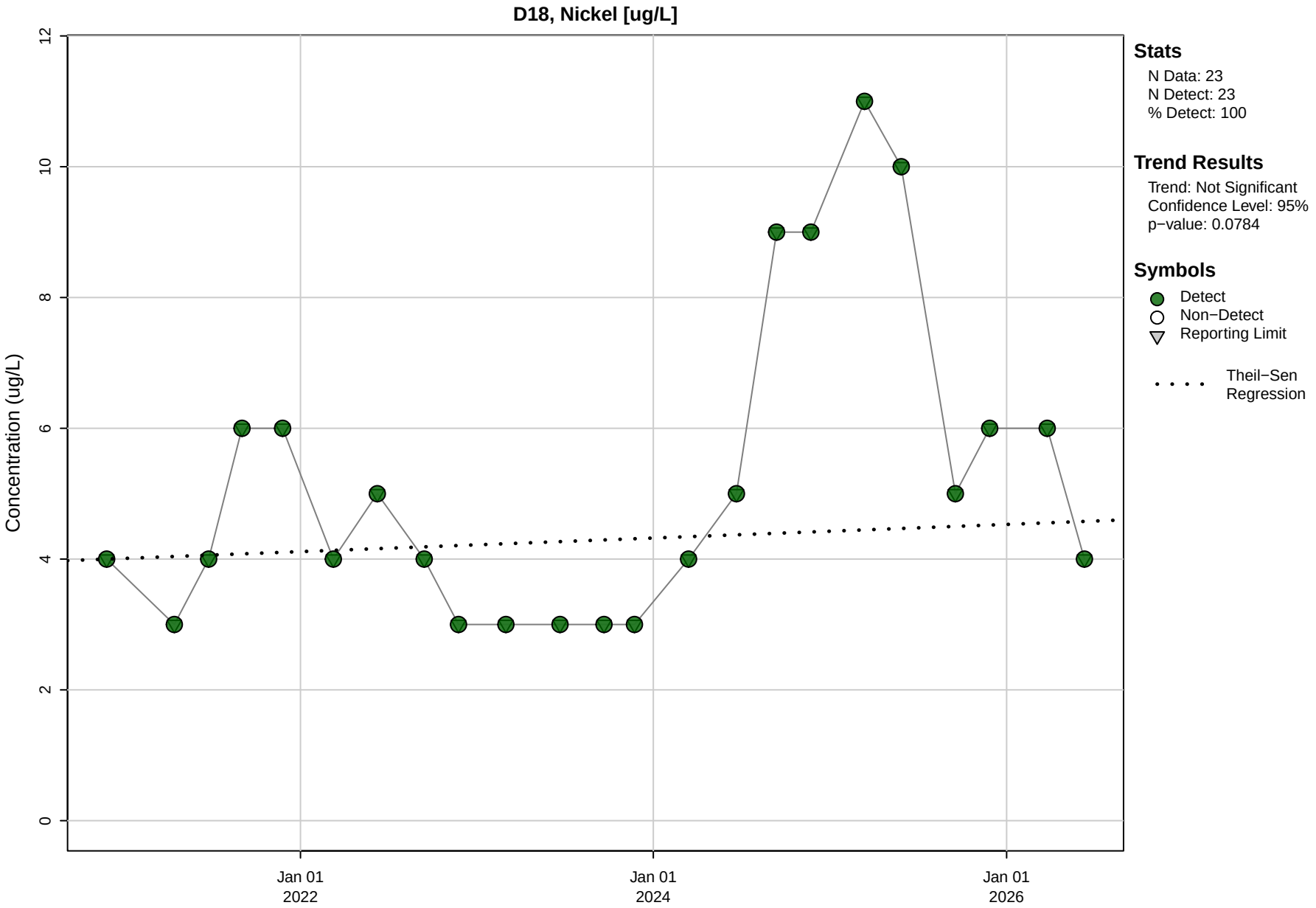

D18, Chloride [mg/L]
Concentration (mg/L)
0
20
40
60
80
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.385
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

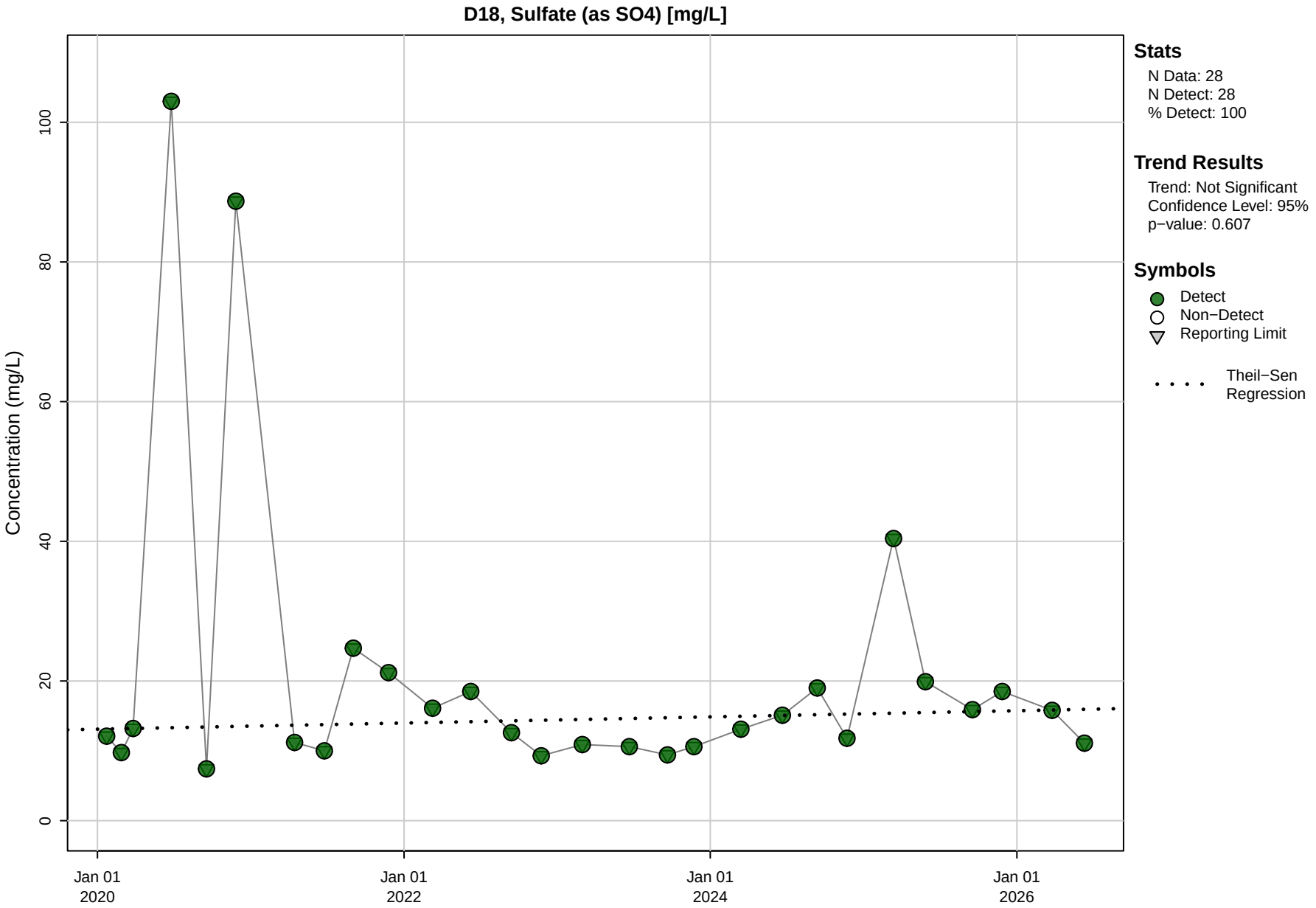

D18, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.445
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

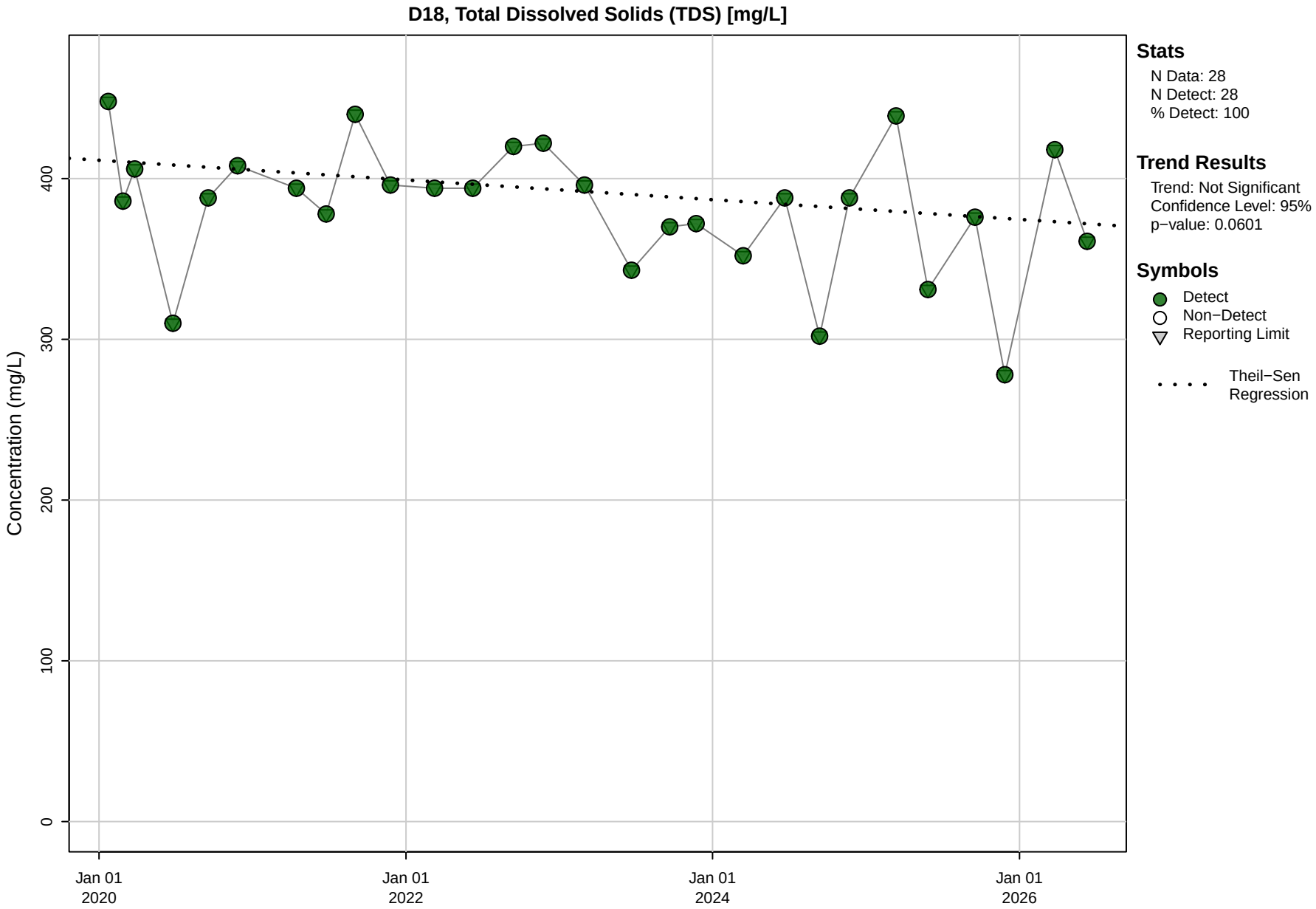

D18, Iron (Total) [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

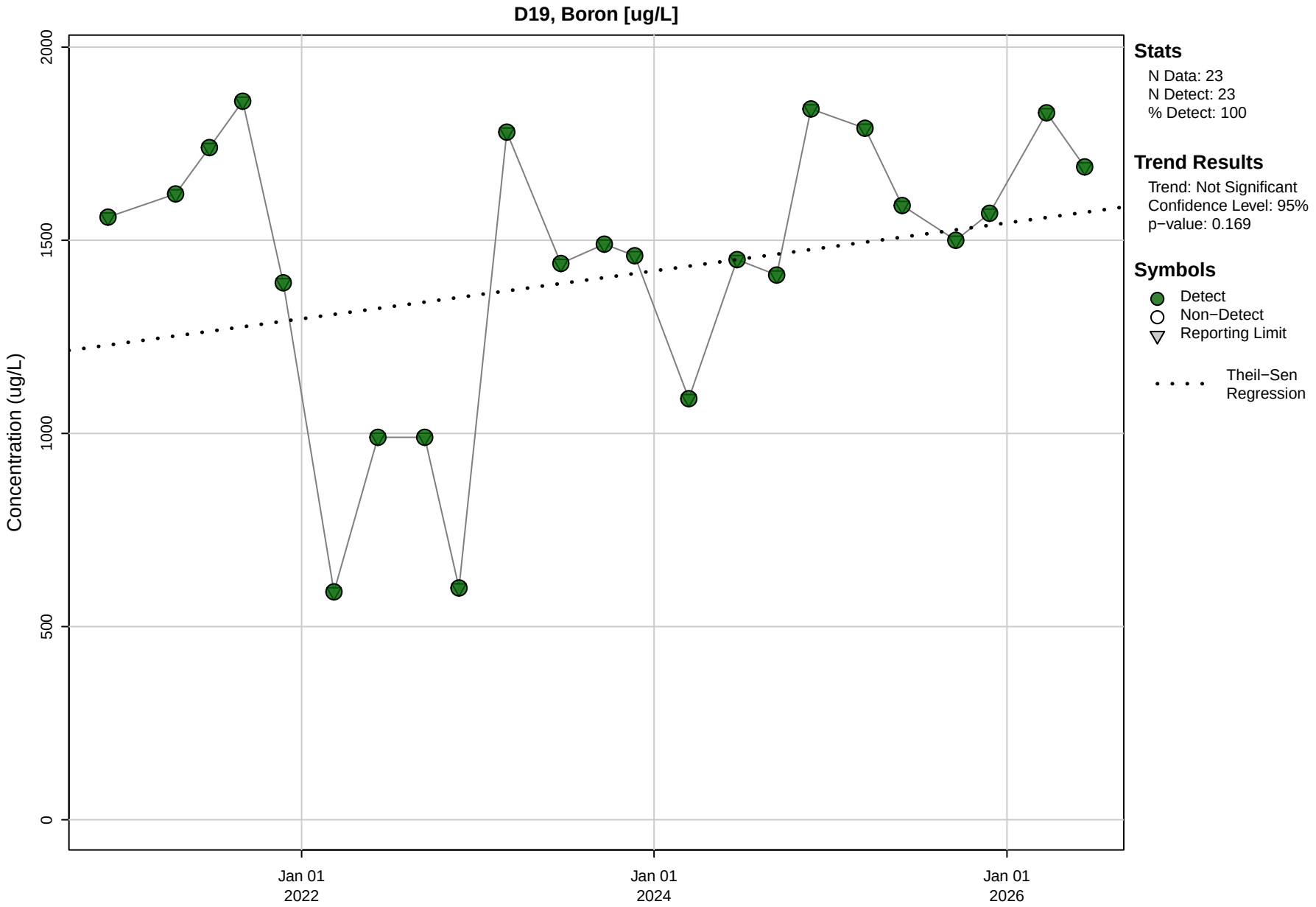

D18, Iron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 22
% Detect: 79
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0675
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

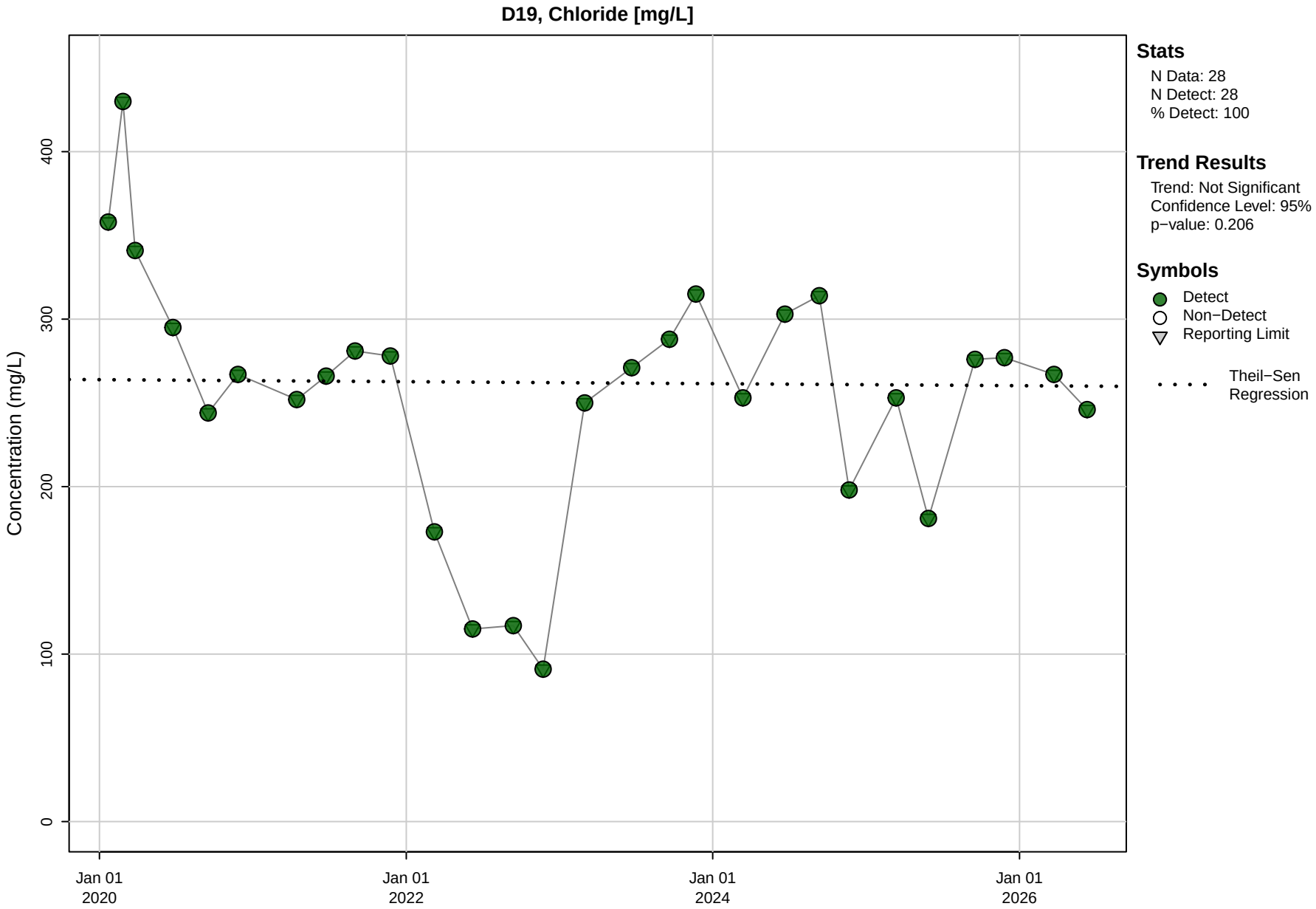

D18, Manganese [ug/L]
Concentration (ug/L)
0
100
200
300
400
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0481
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

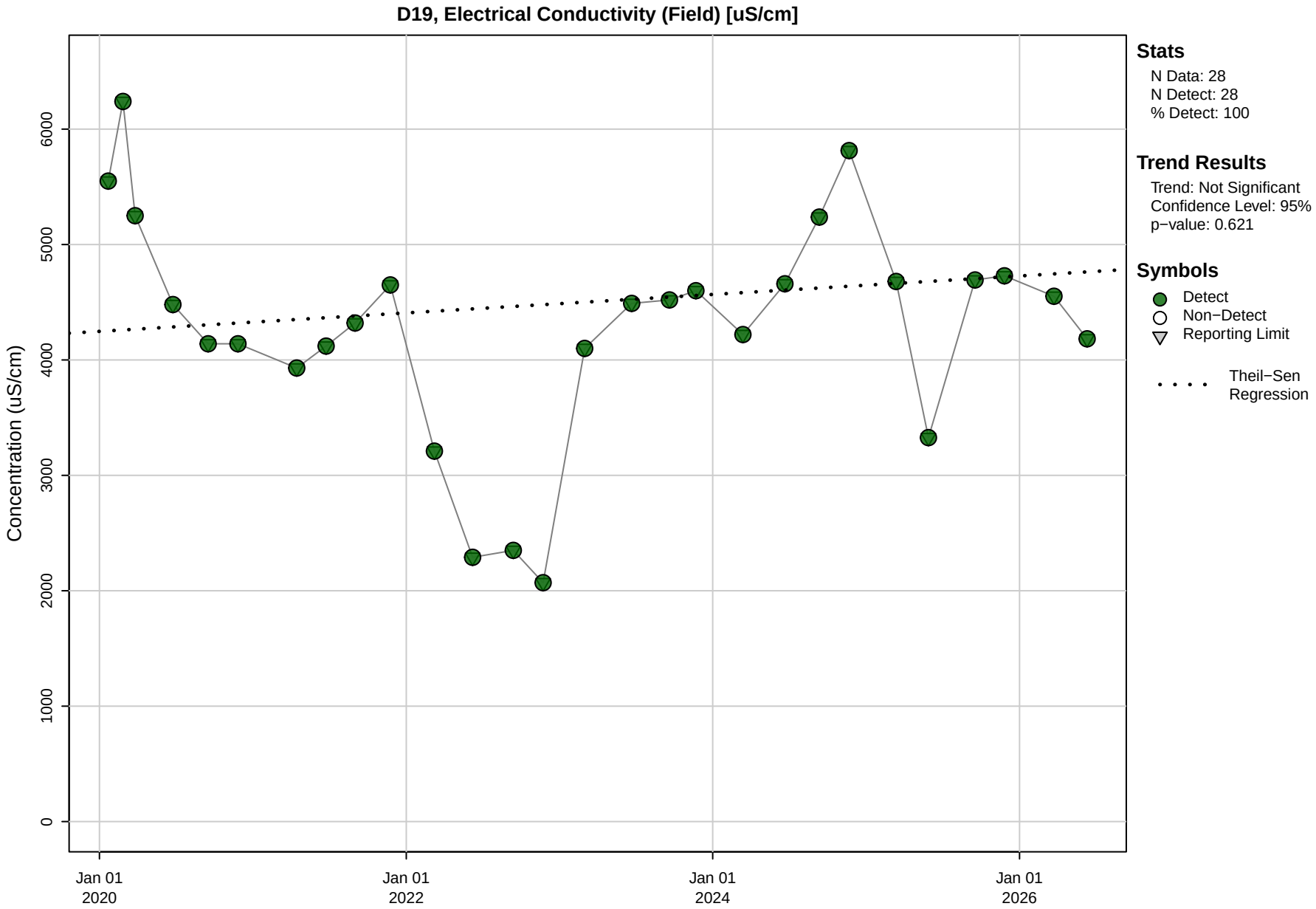

D18, Nickel [ug/L]
Concentration (ug/L)
0
2
4
6
8
10
12
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0784
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

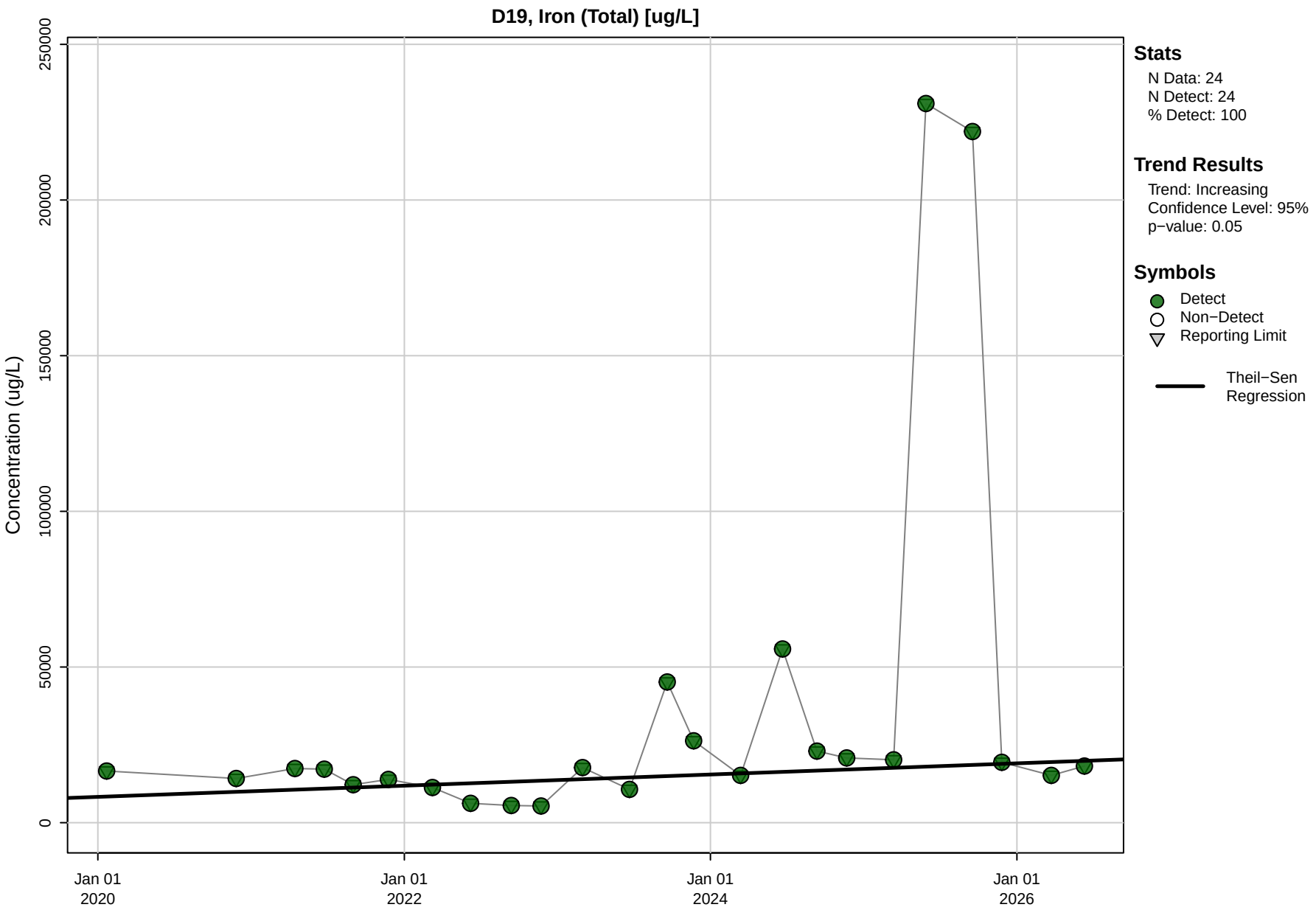

D18, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
20
40
60
80
100
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.607
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

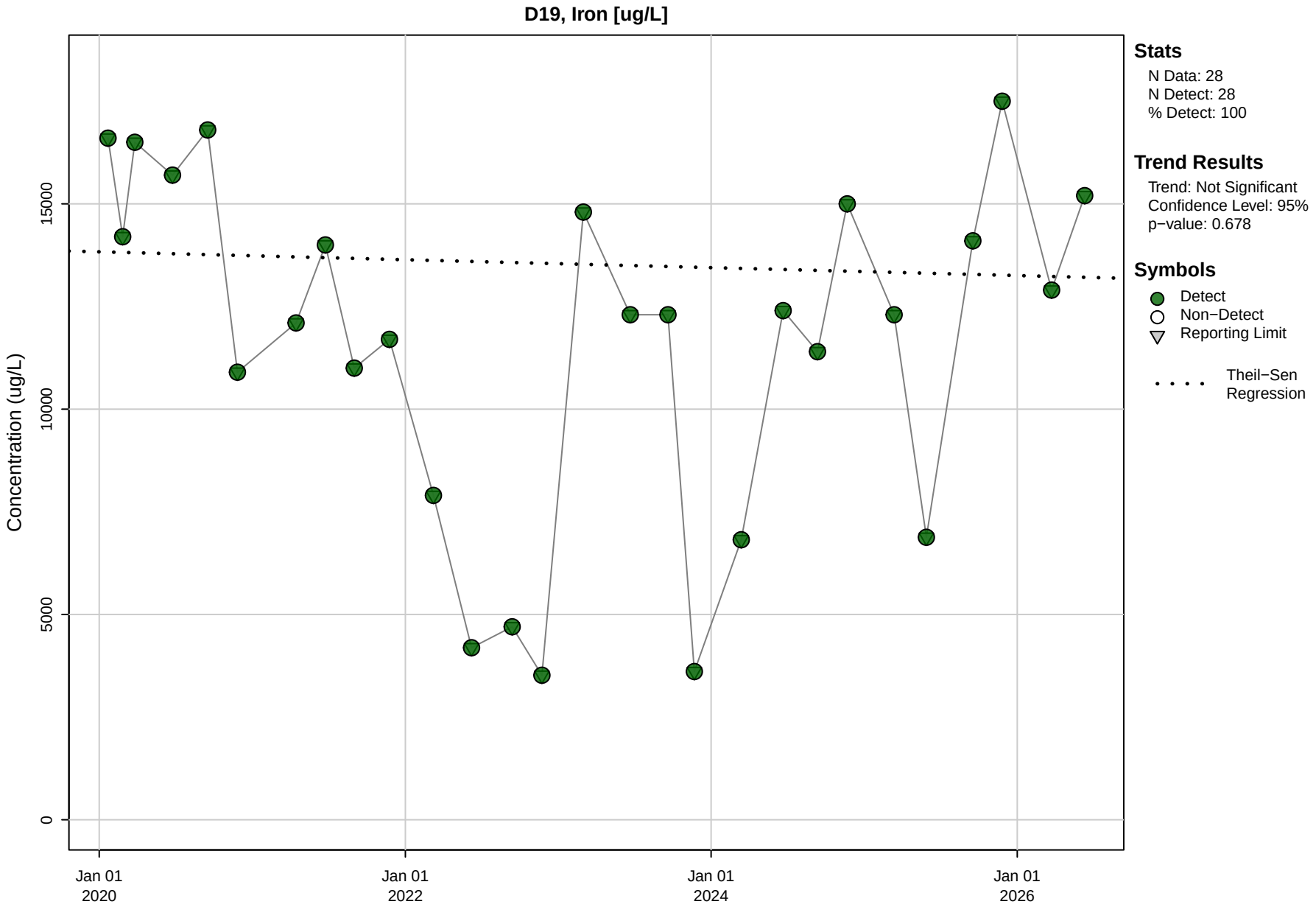

D18, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
100
200
300
400
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0601
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

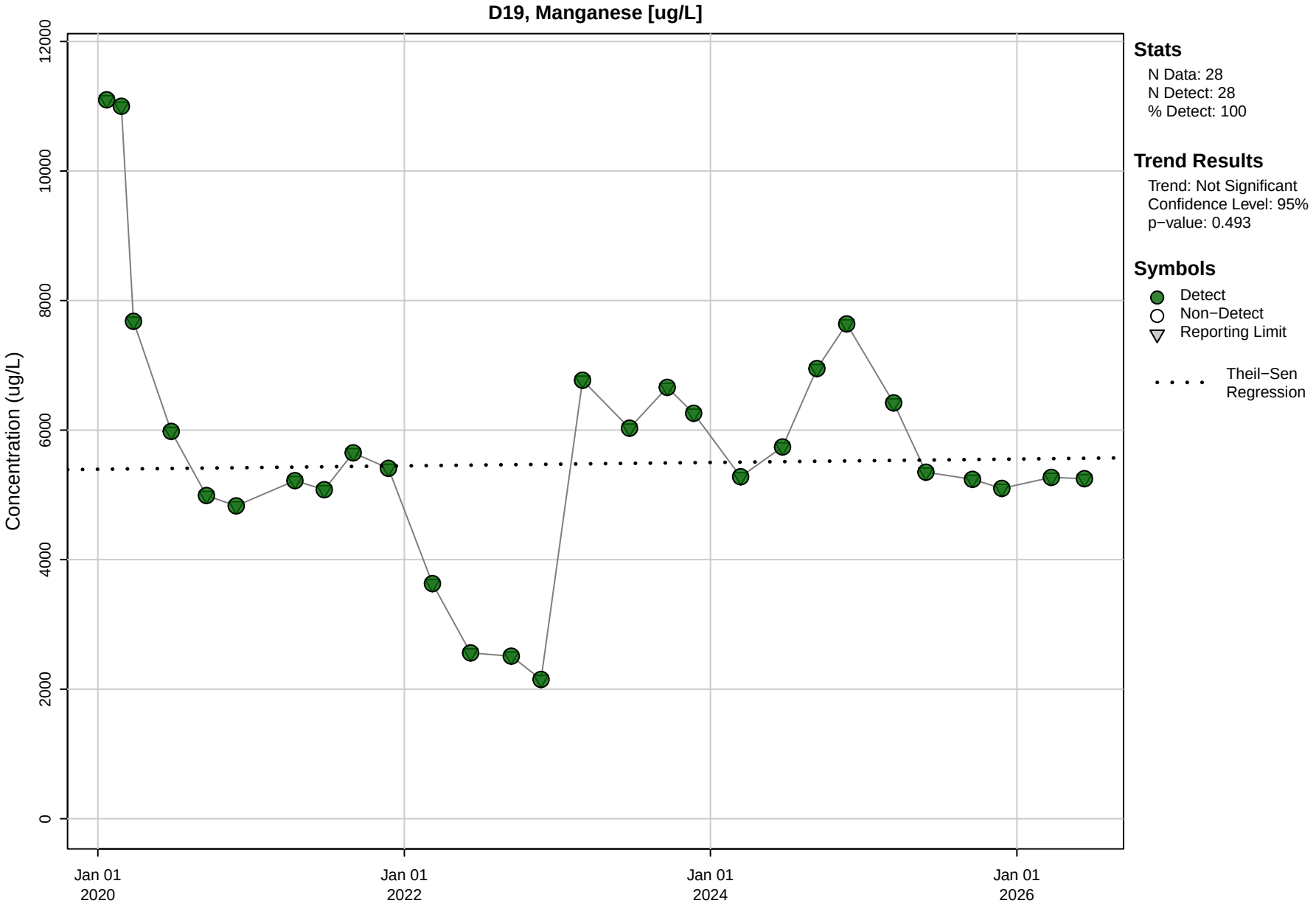

D19, Boron [ug/L]
Concentration (ug/L)
2000
1500
1000
500
0
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.169
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

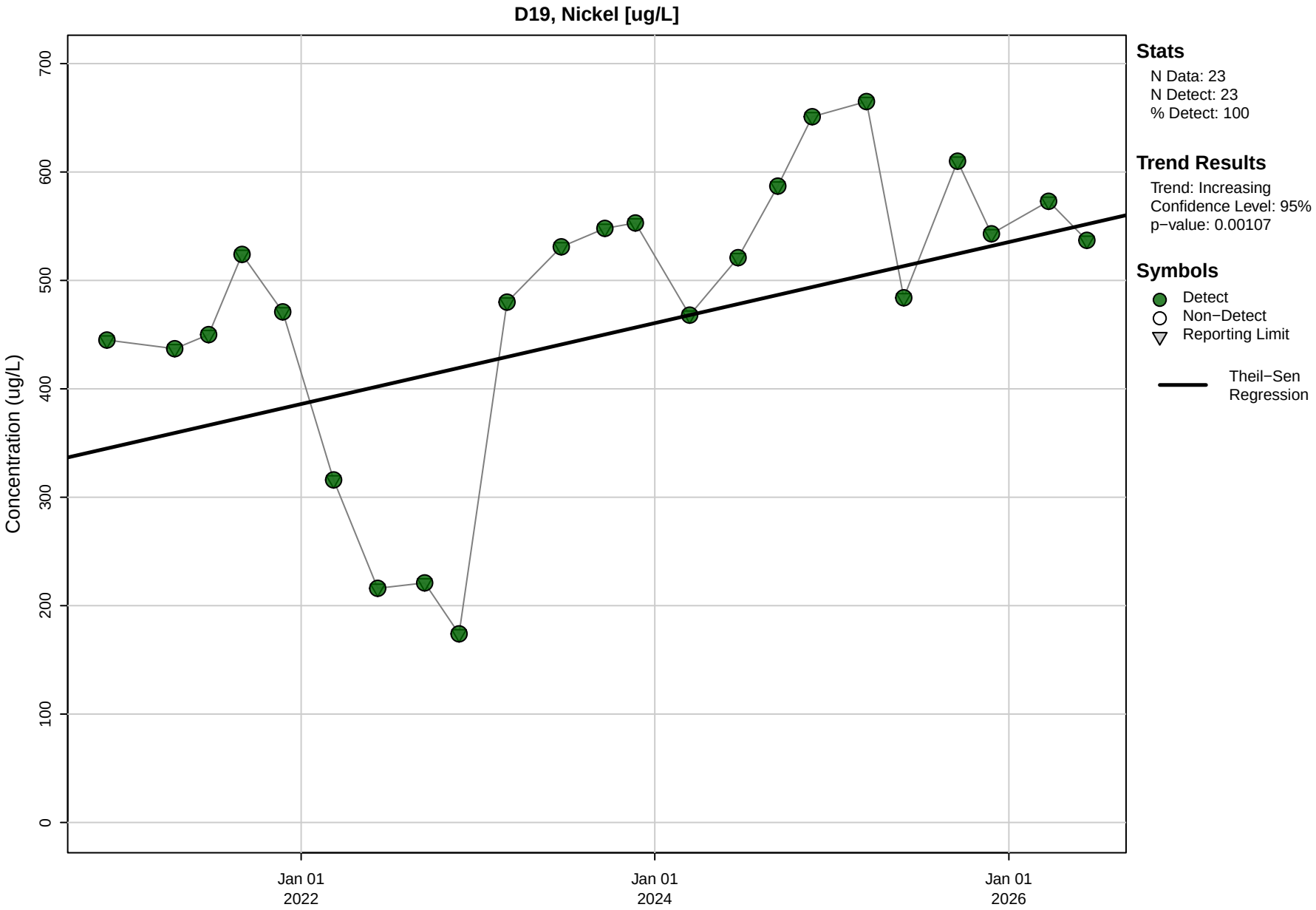

D19, Chloride [mg/L]
Concentration (mg/L)
0
100
200
300
400
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.206
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

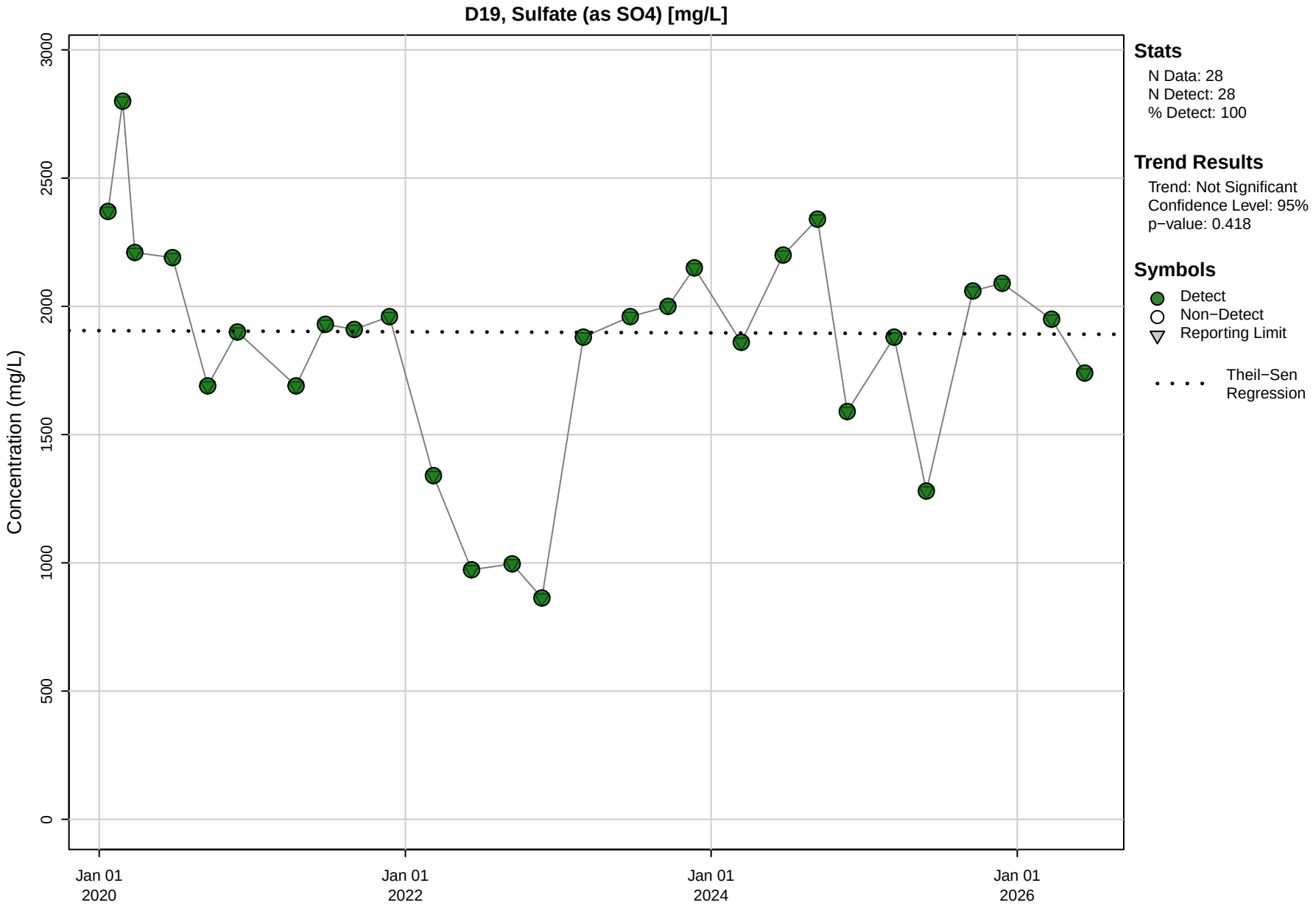

D19, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
4000
5000
6000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.621
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

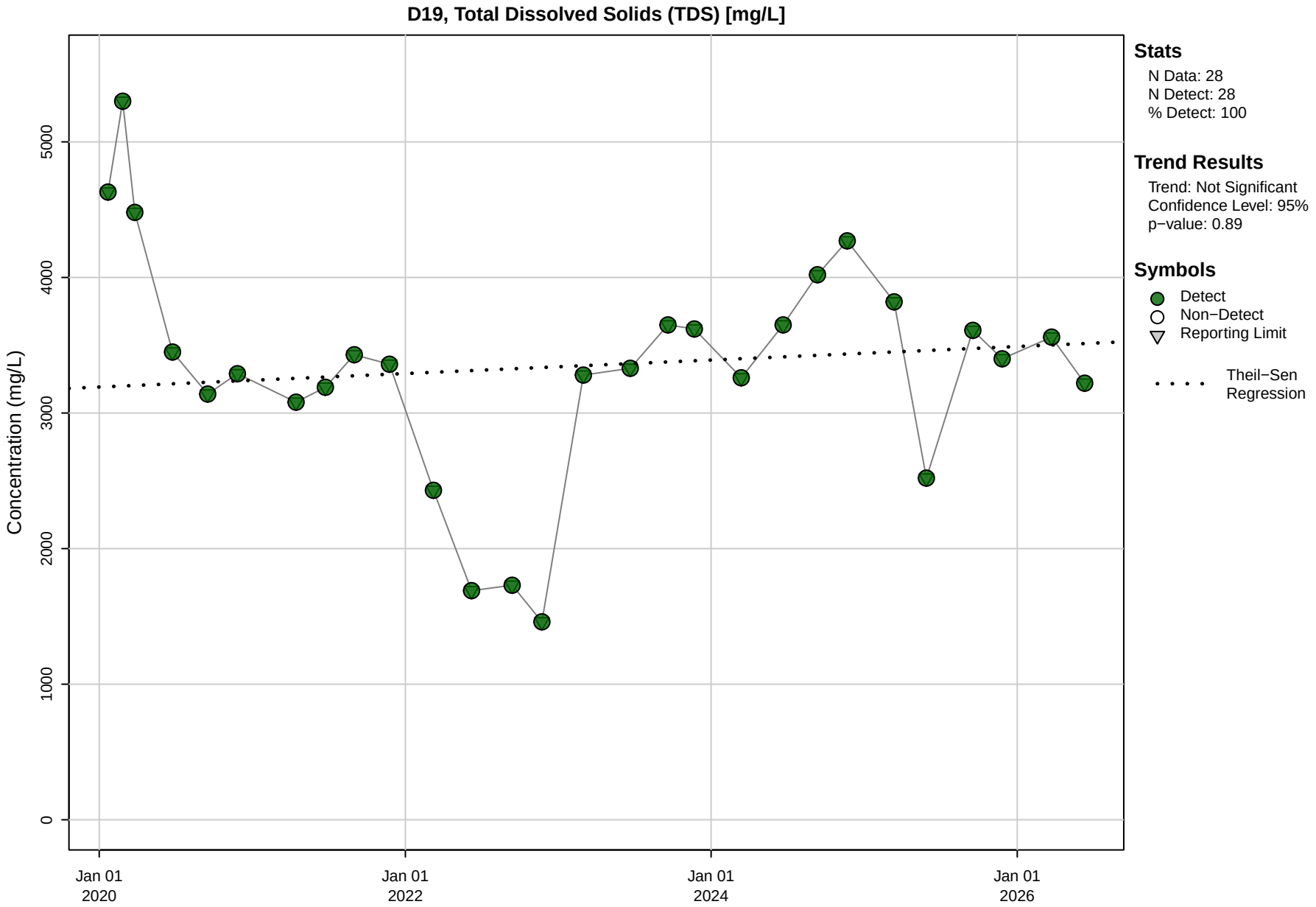

D19, Iron (Total) [ug/L]
Concentration (ug/L)
250000
200000
150000
100000
50000
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.05
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

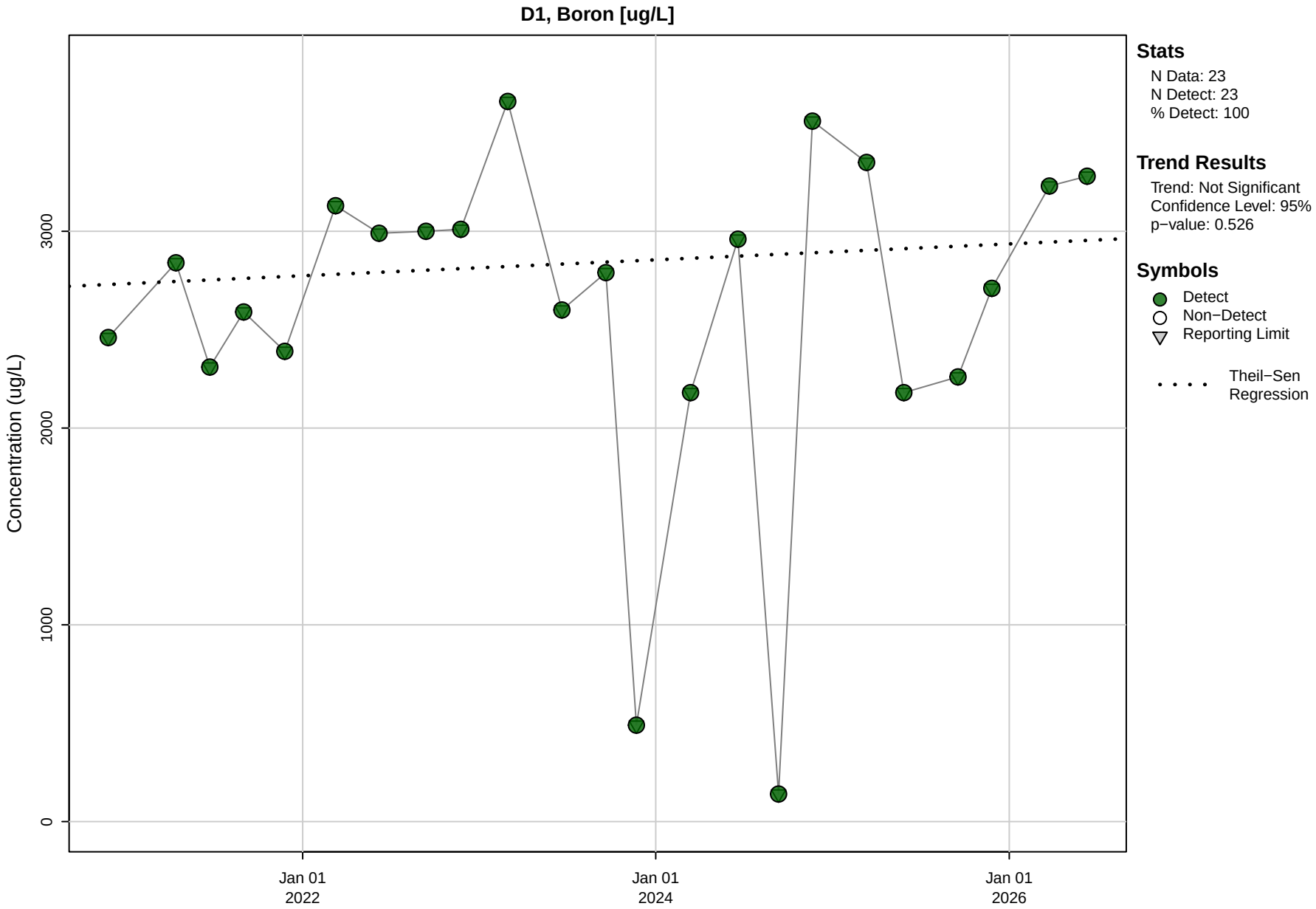

D19, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.678
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

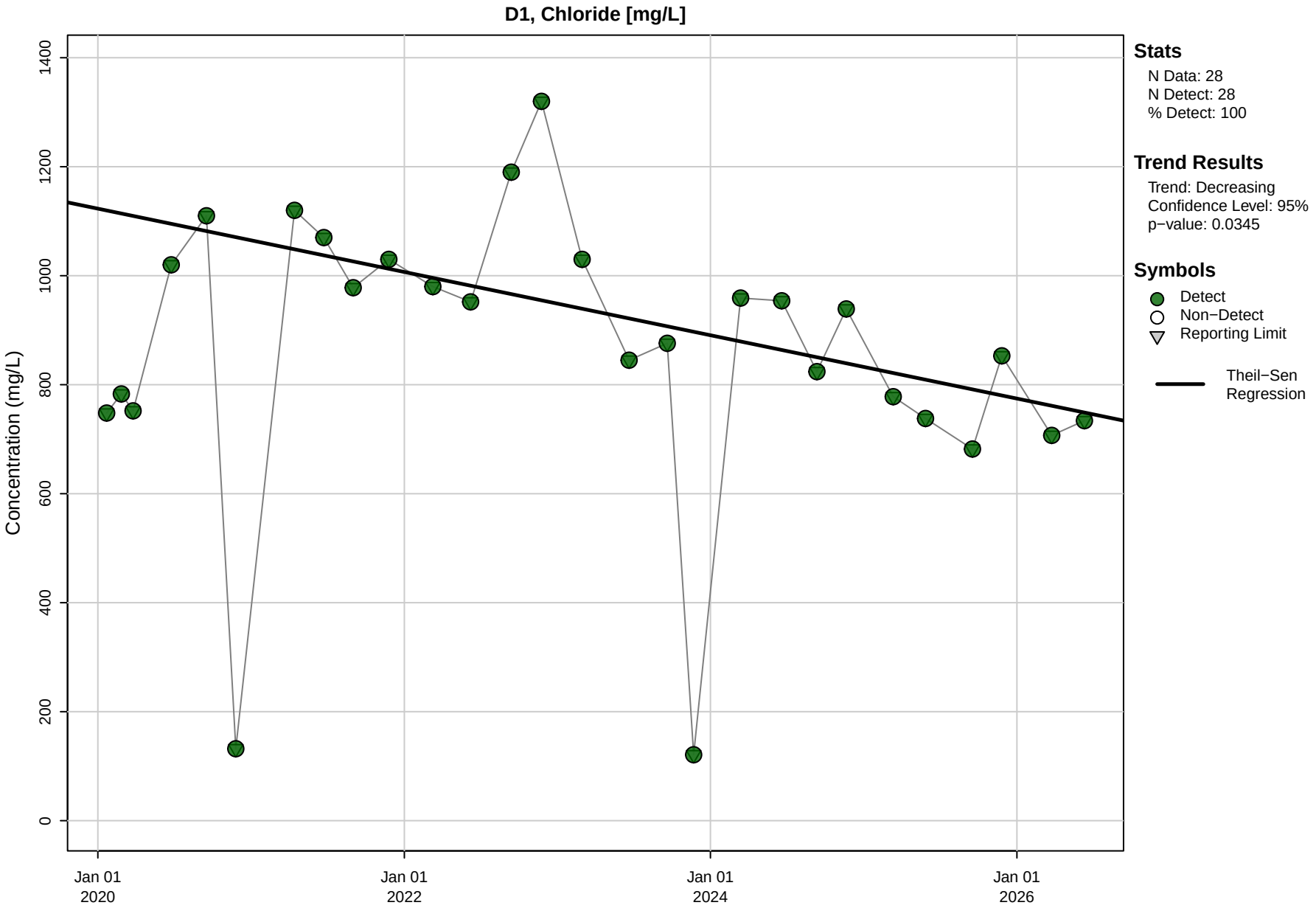

D19, Manganese [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.493
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

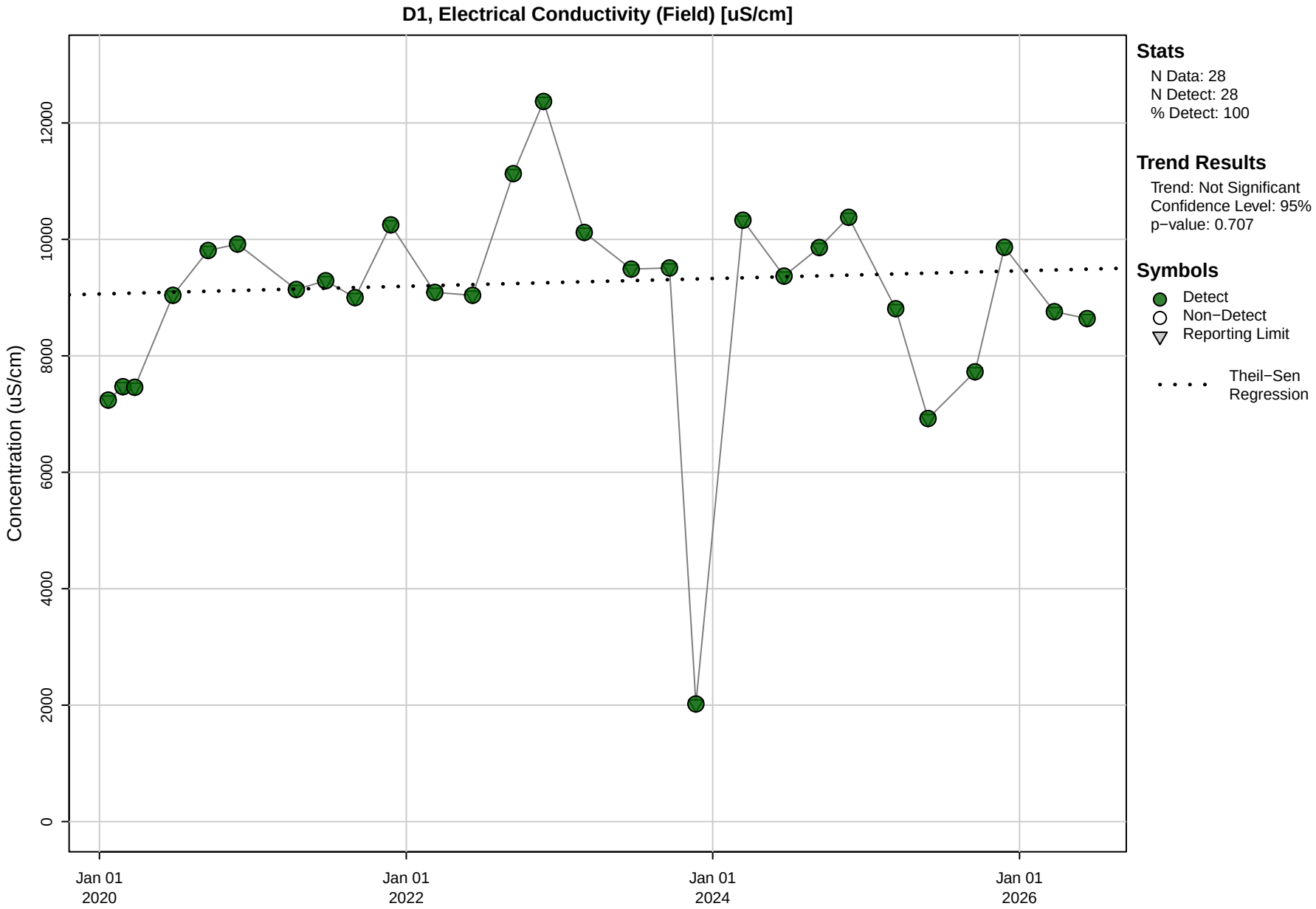

D19, Nickel [ug/L]
Concentration (ug/L)
0
100
200
300
400
500
600
700
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00107
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

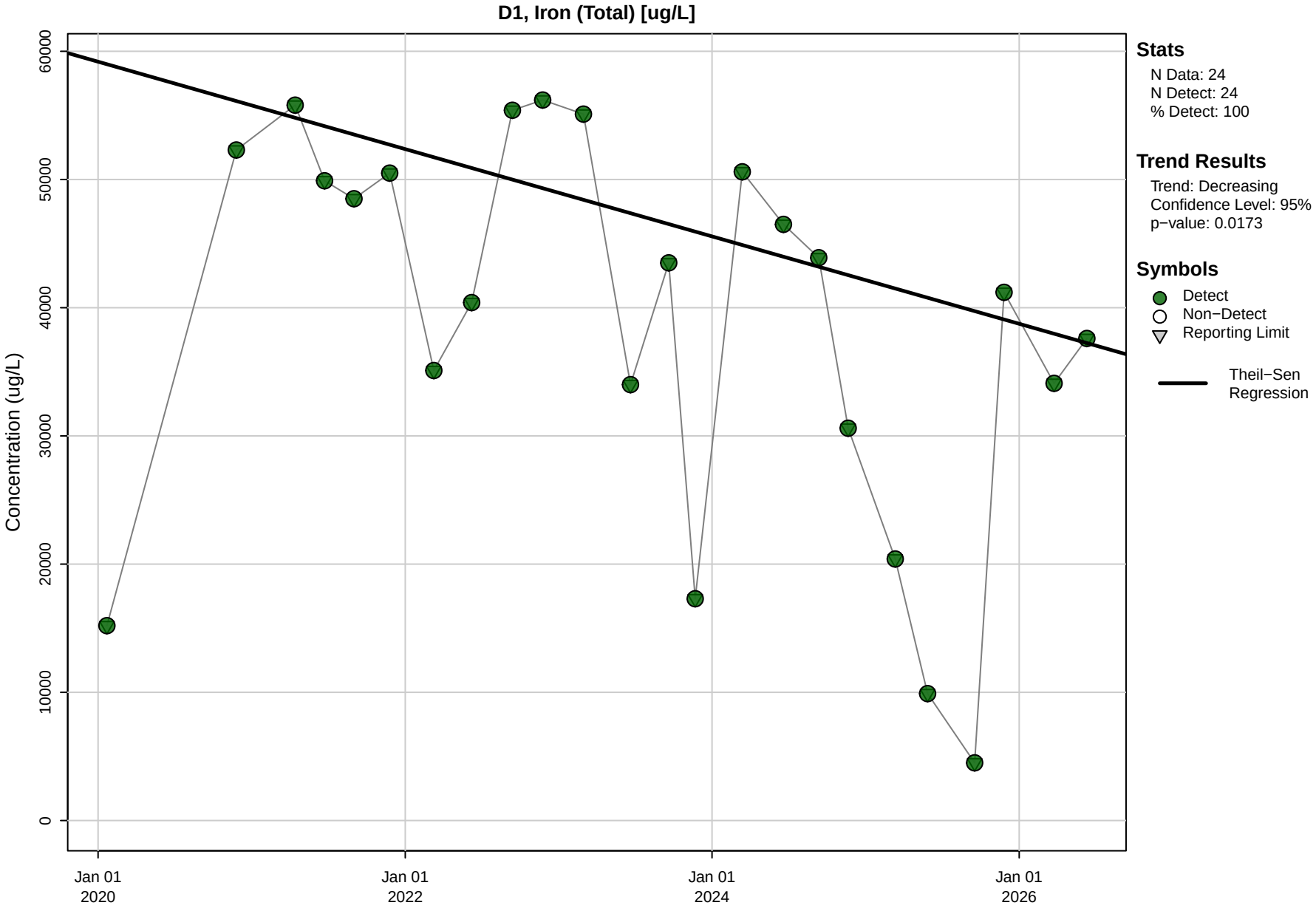

D19, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.418
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

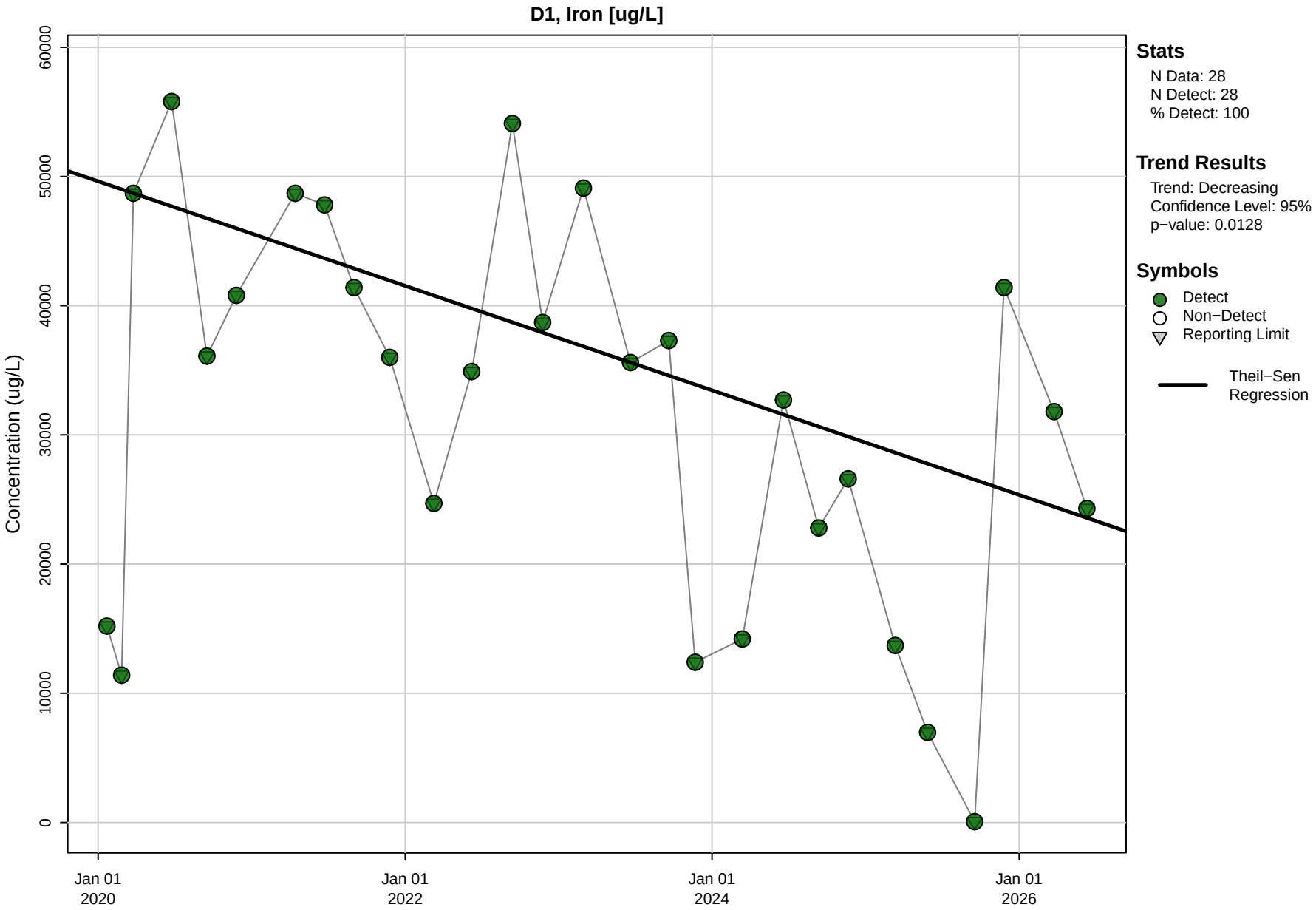

D19, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.89
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

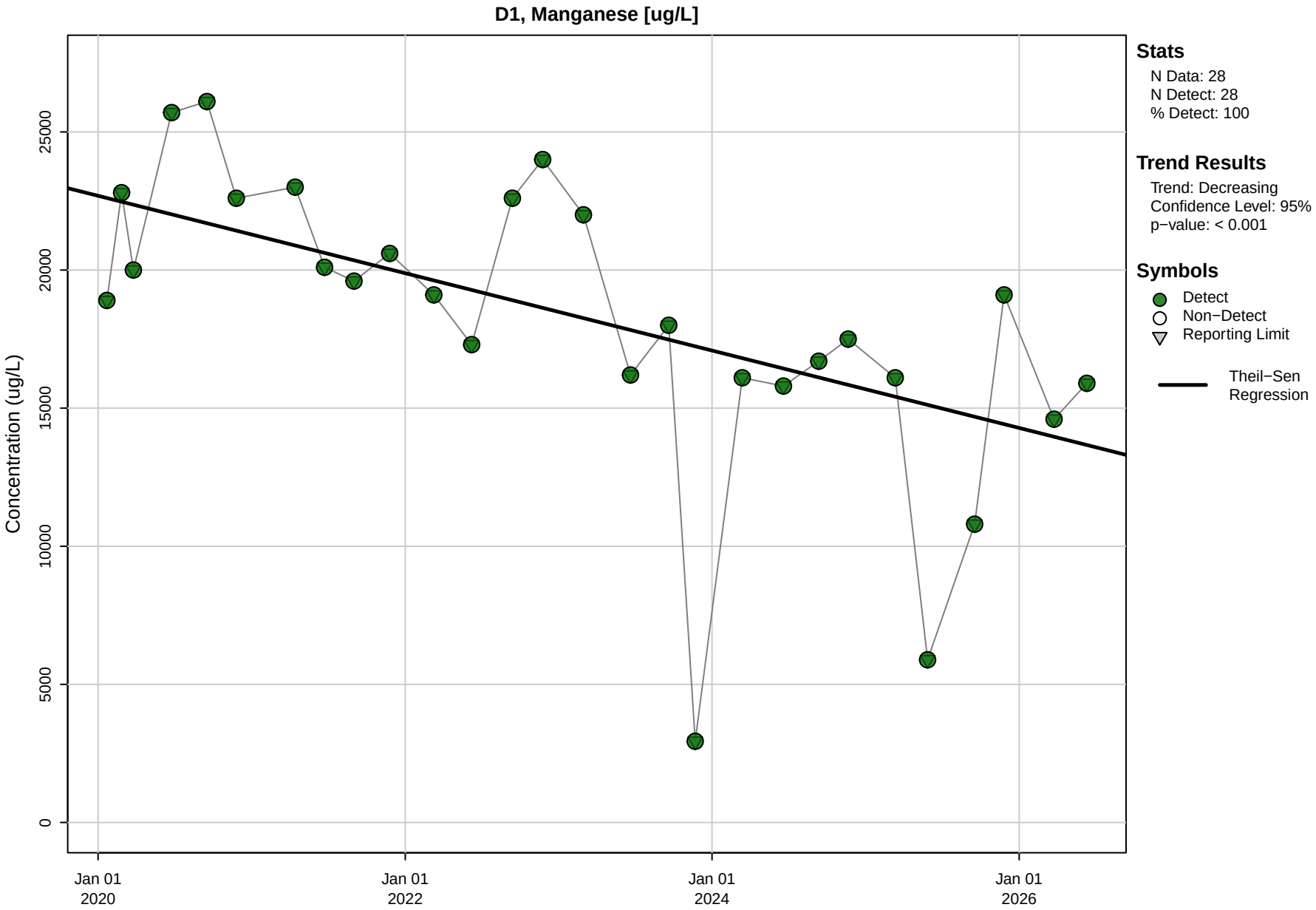

D1, Boron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.526
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

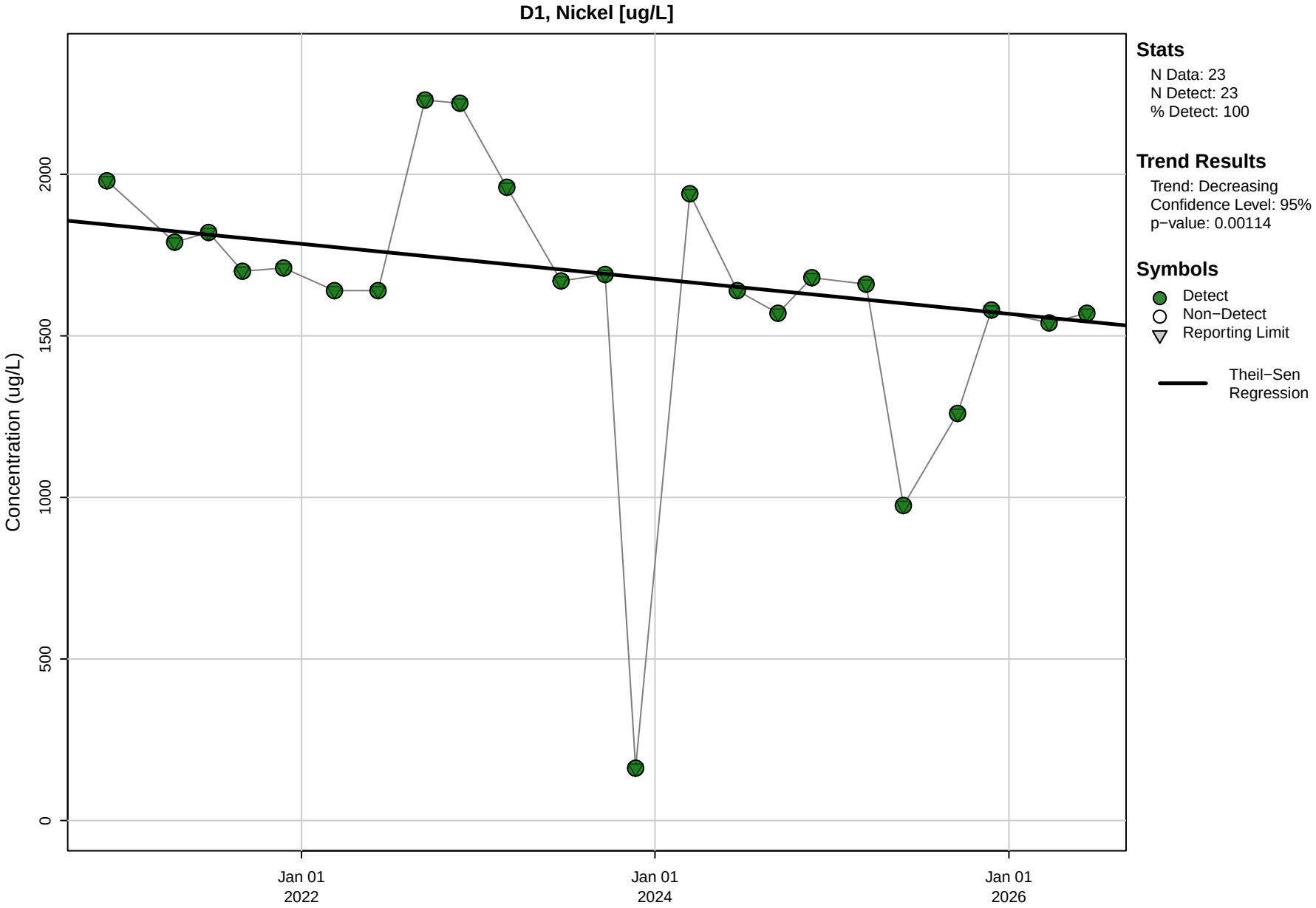

D1, Chloride [mg/L]
Concentration (mg/L)
0
200
400
600
800
1000
1200
1400
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0345
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

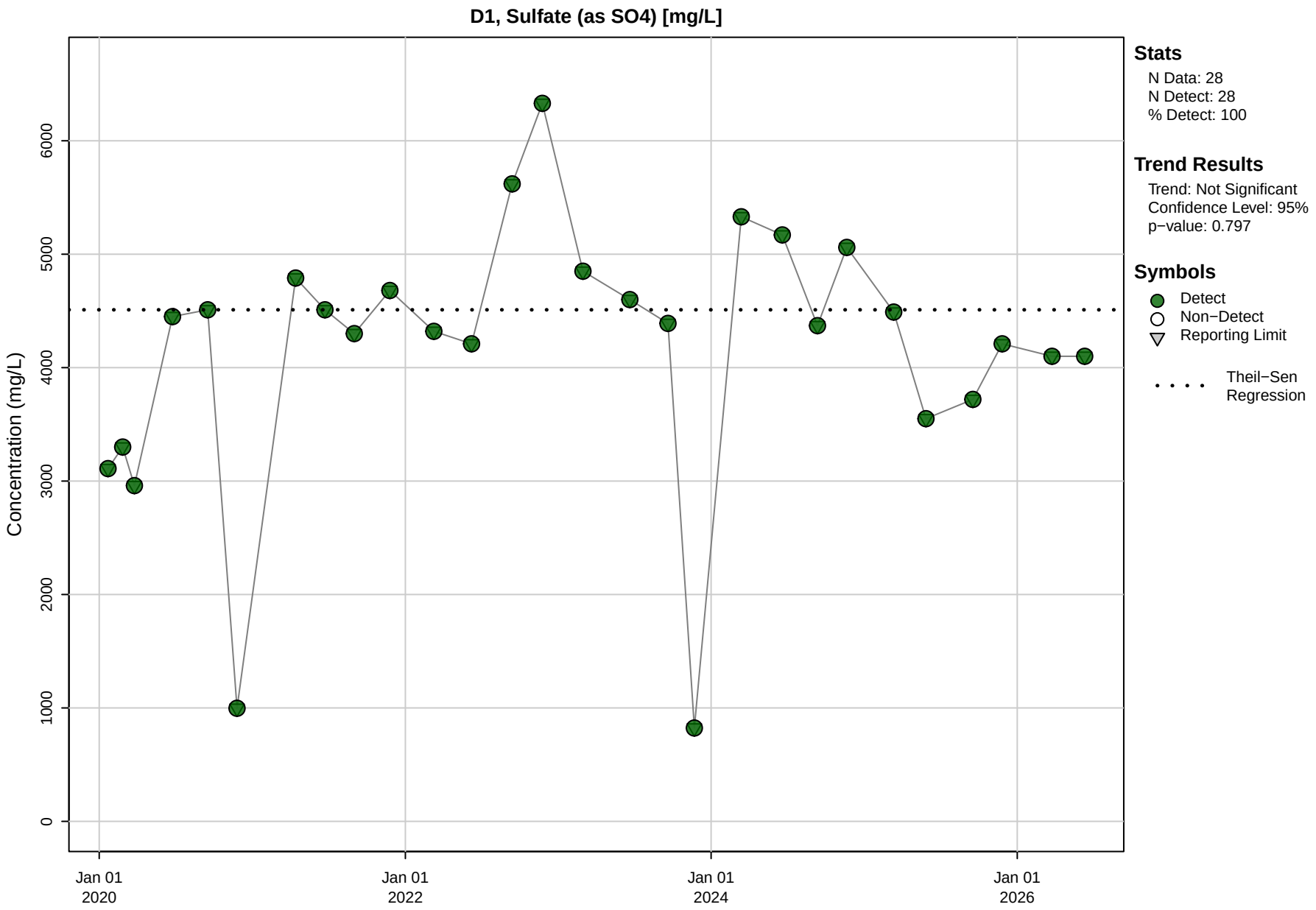

D1, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.707
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

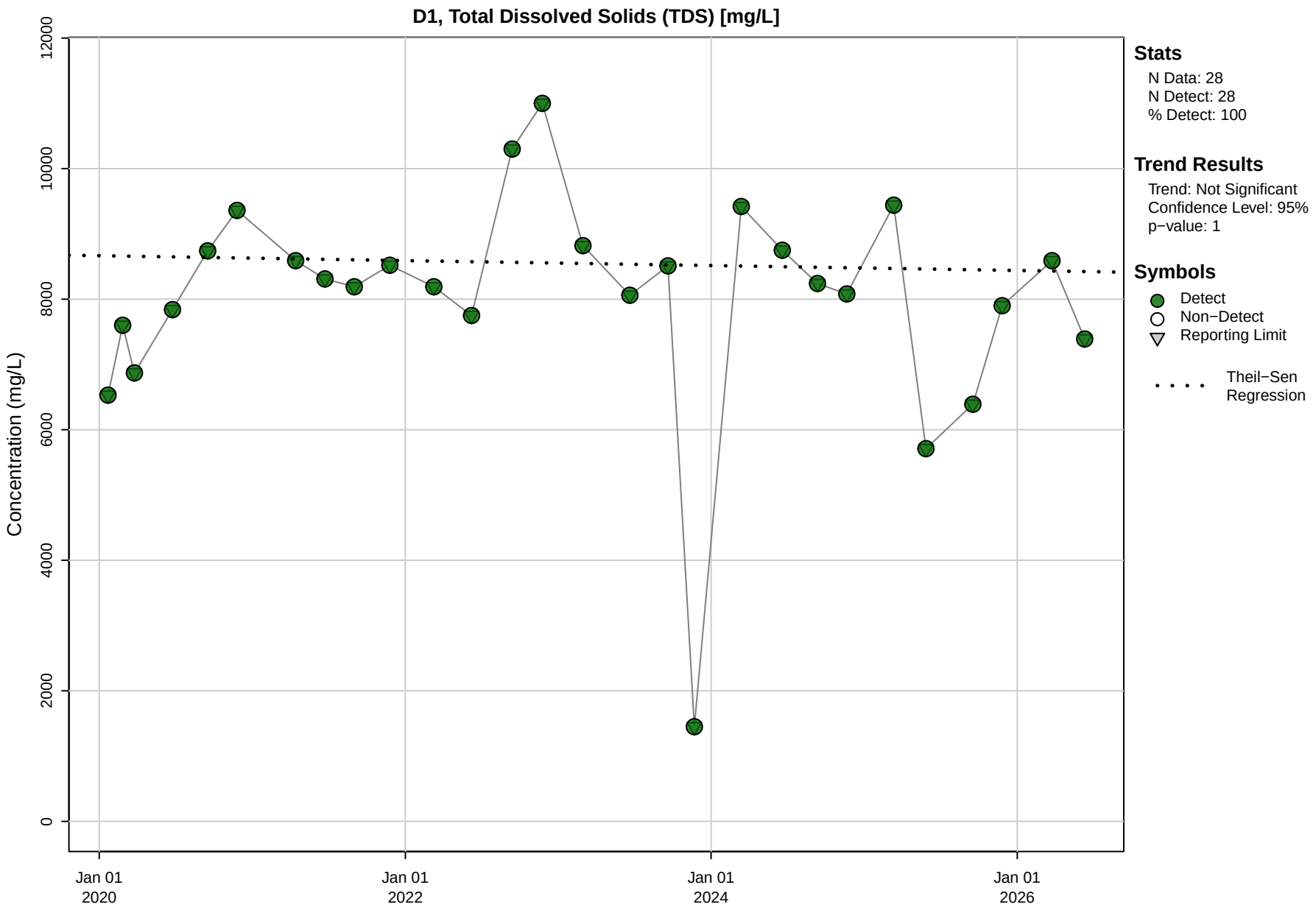

D1, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0173
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

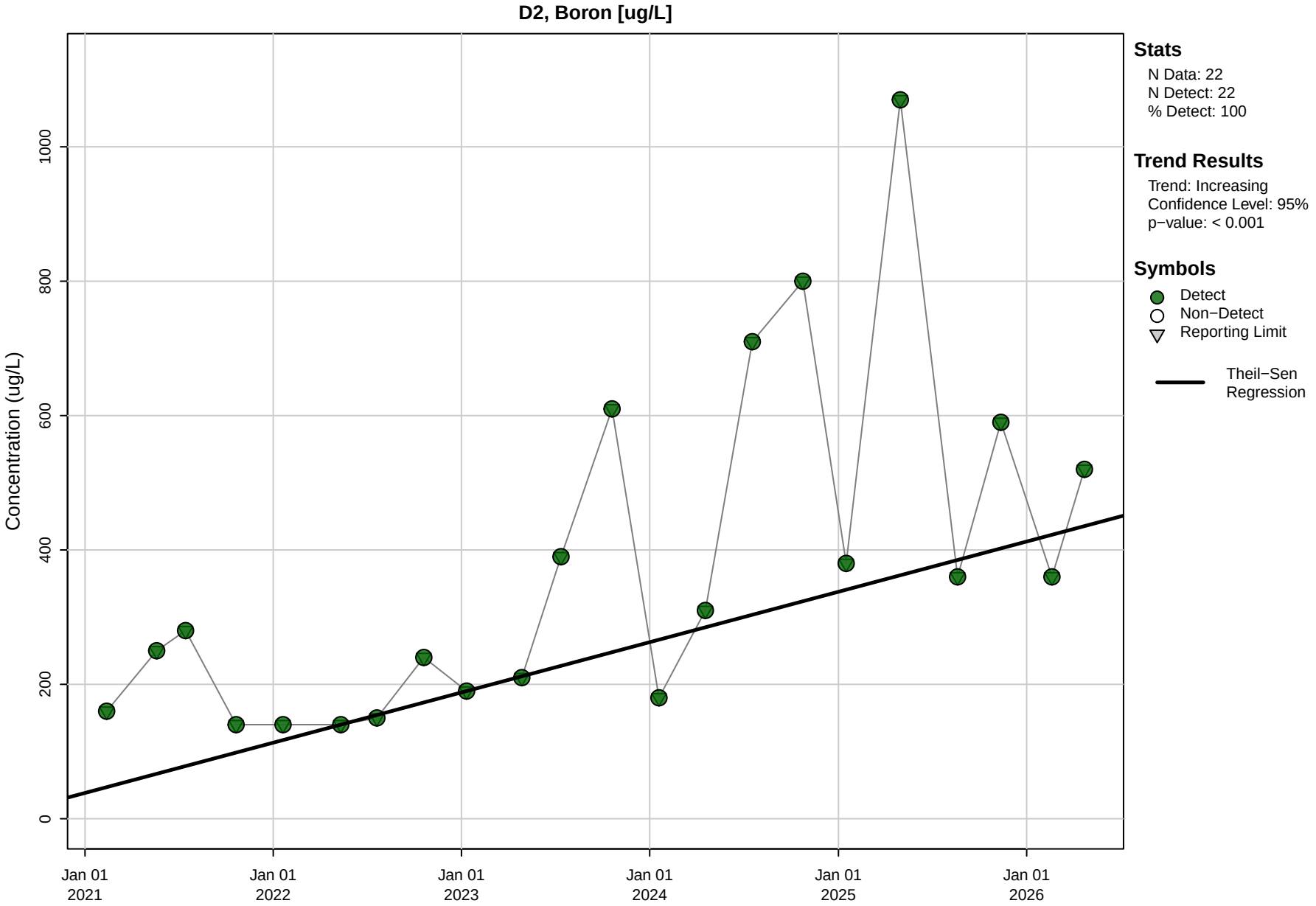

D1, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0128
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

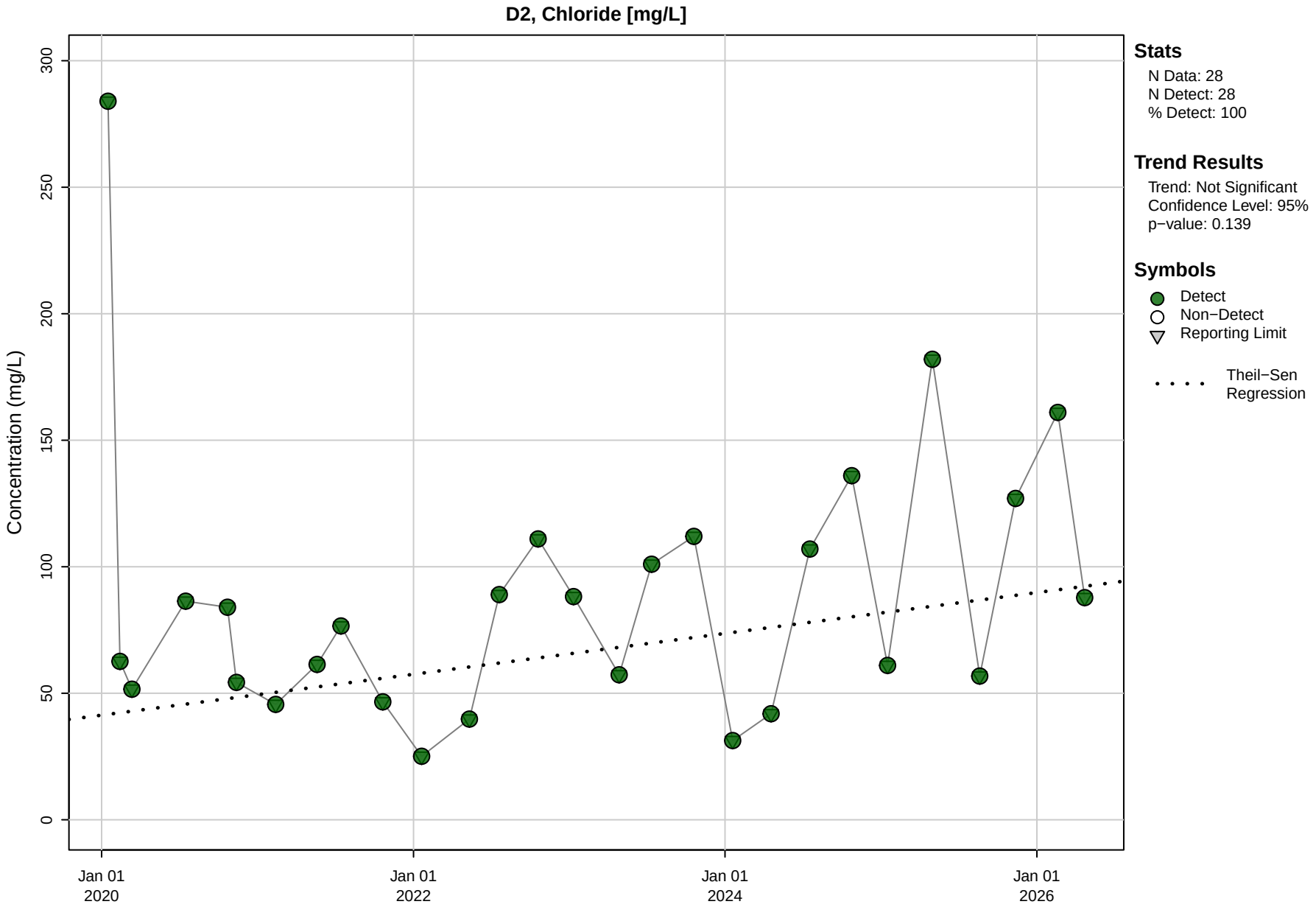

D1, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

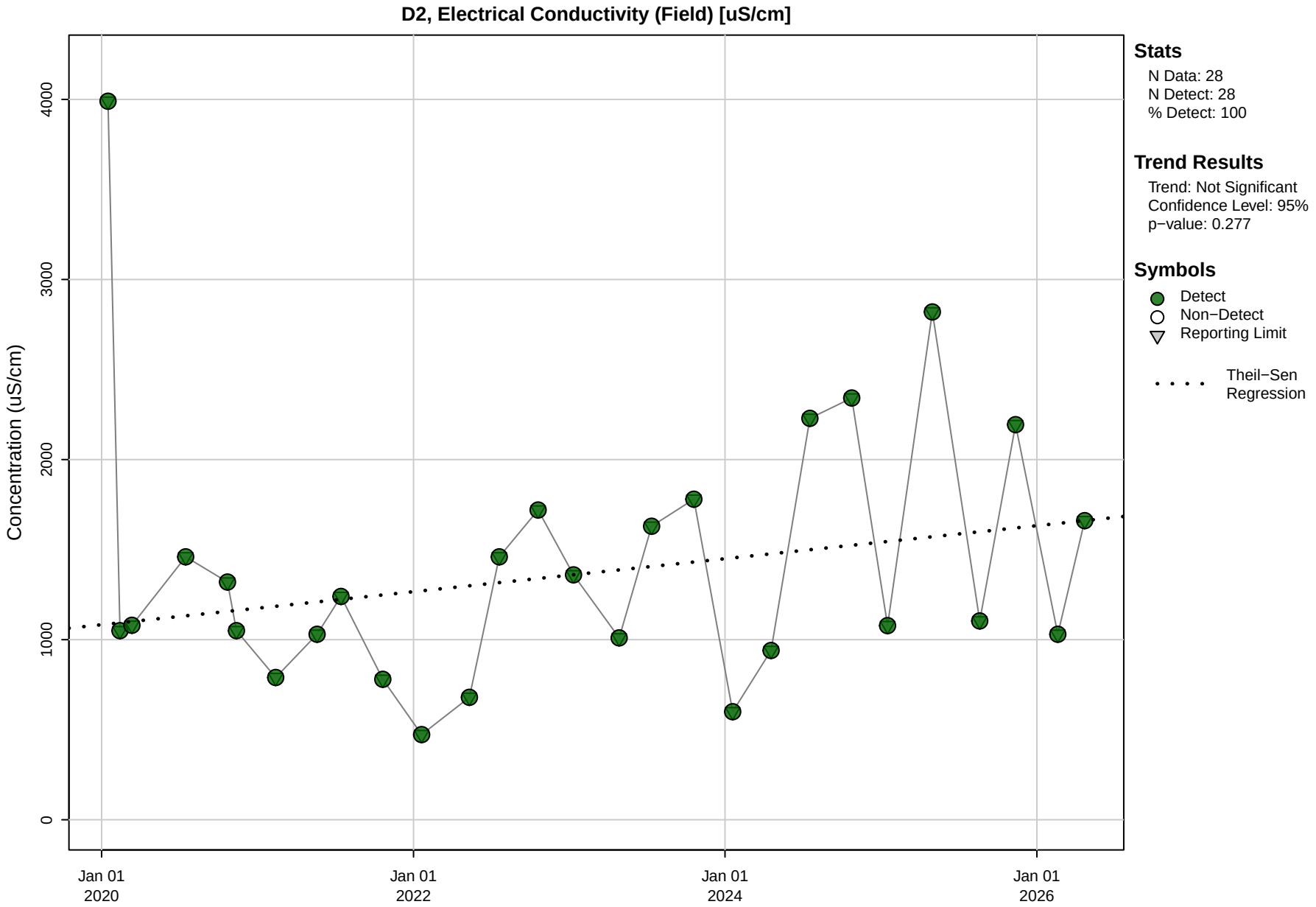

D1, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00114
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

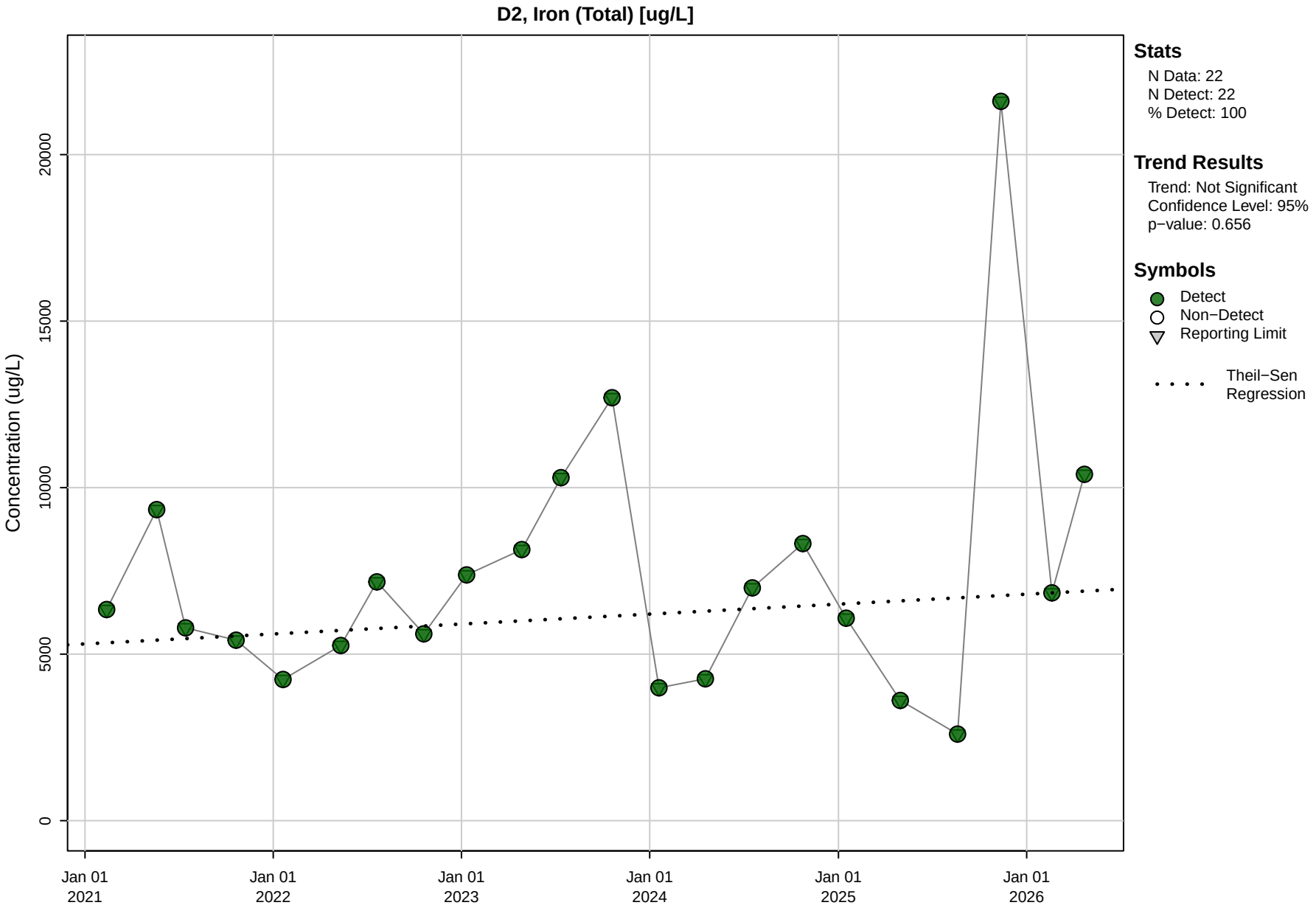

D1, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
6000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.797
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

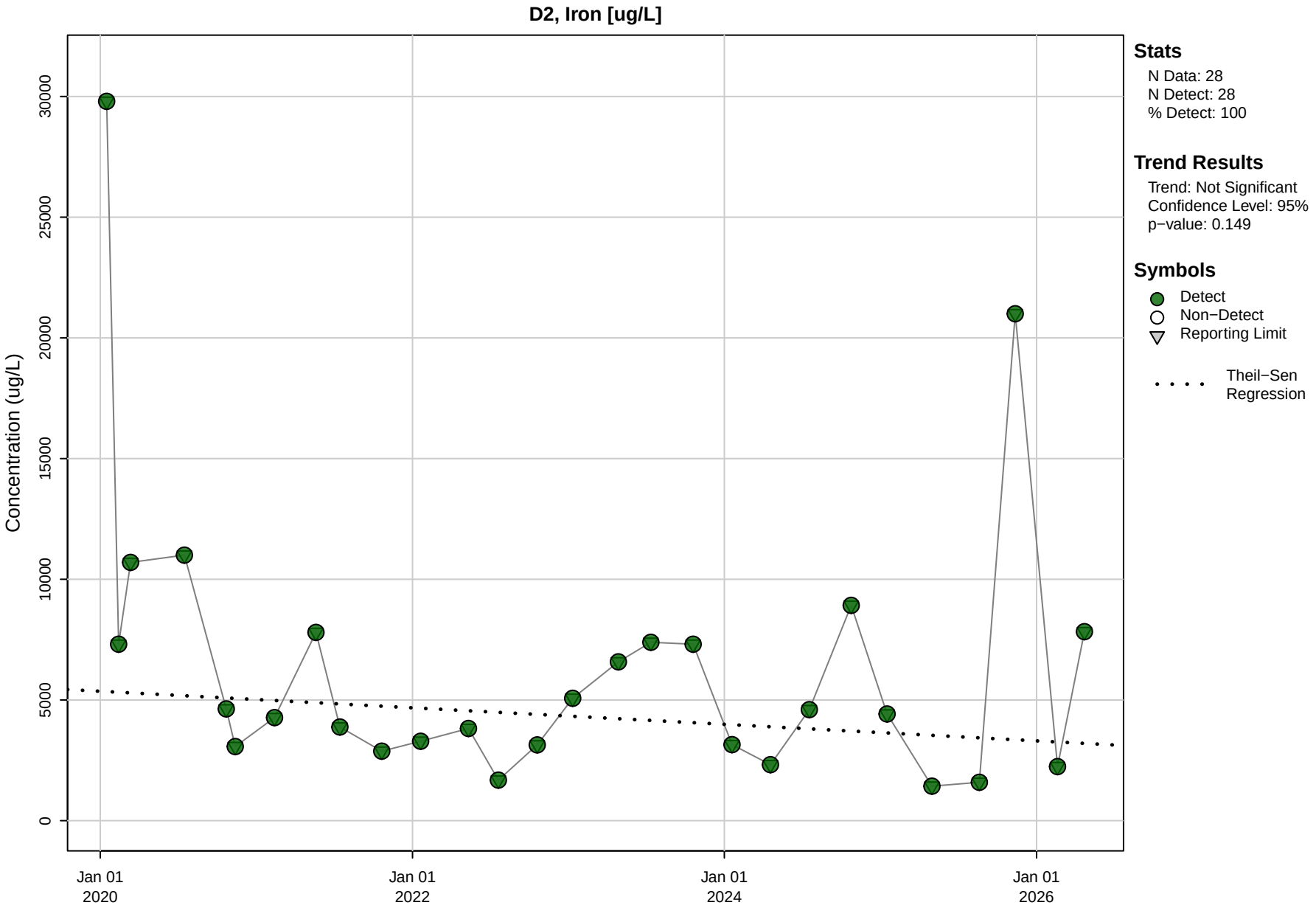

D1, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 1
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

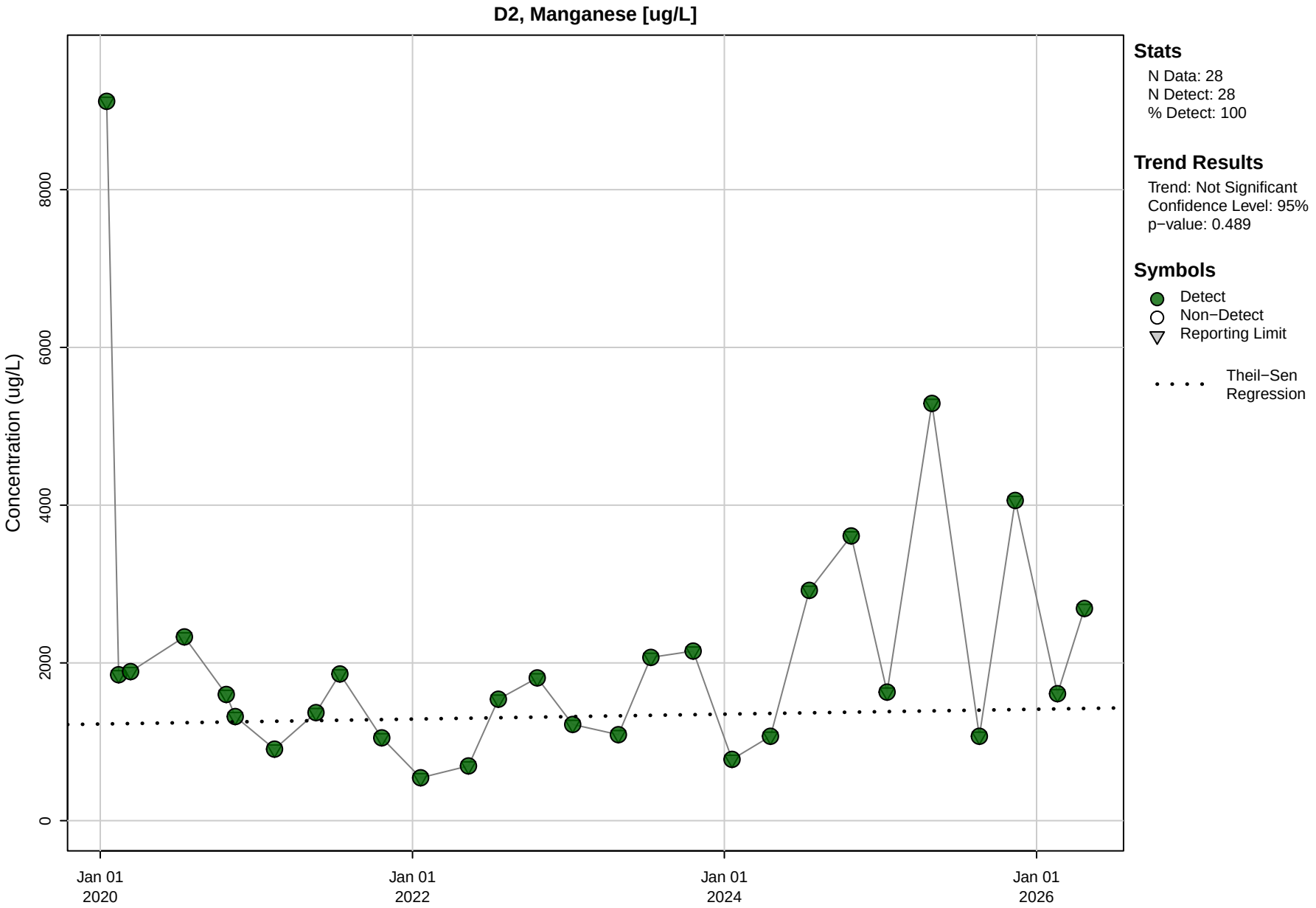

D2, Boron [ug/L]
Concentration (ug/L)
0
200
400
600
800
1000
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

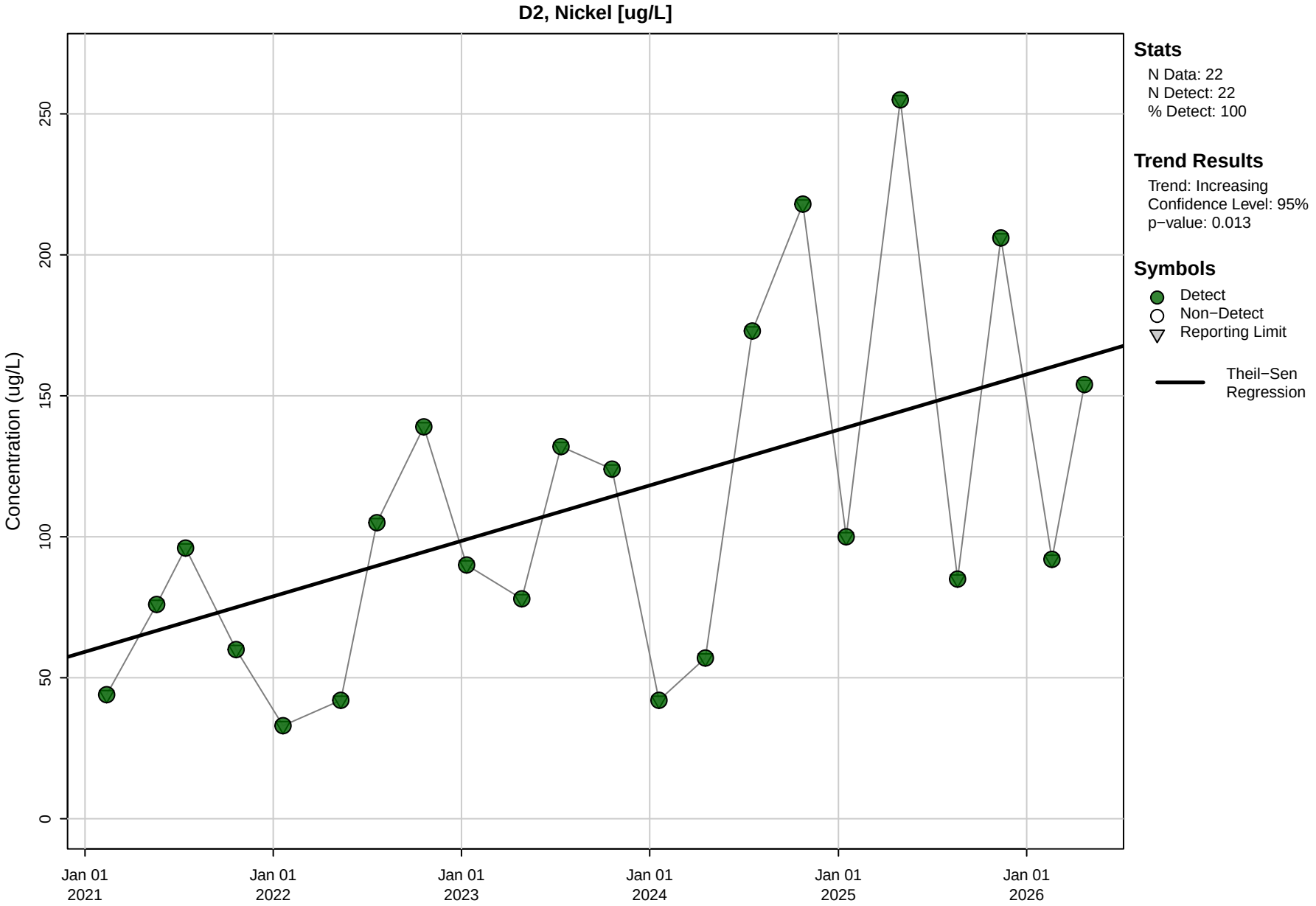

D2, Chloride [mg/L]
Concentration (mg/L)
0
50
100
150
200
250
300
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.139
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

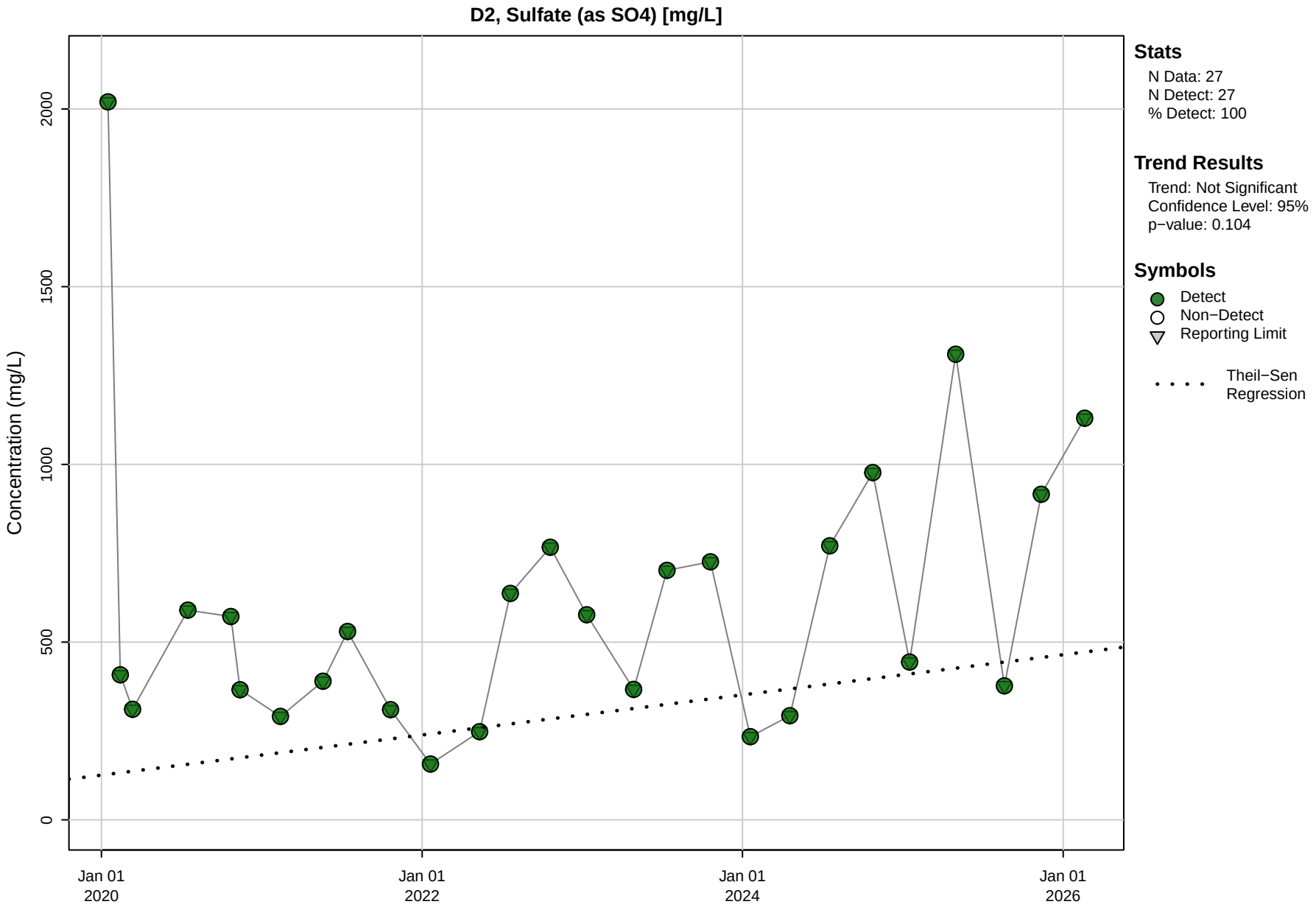

D2, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
1000
2000
3000
4000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.277
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

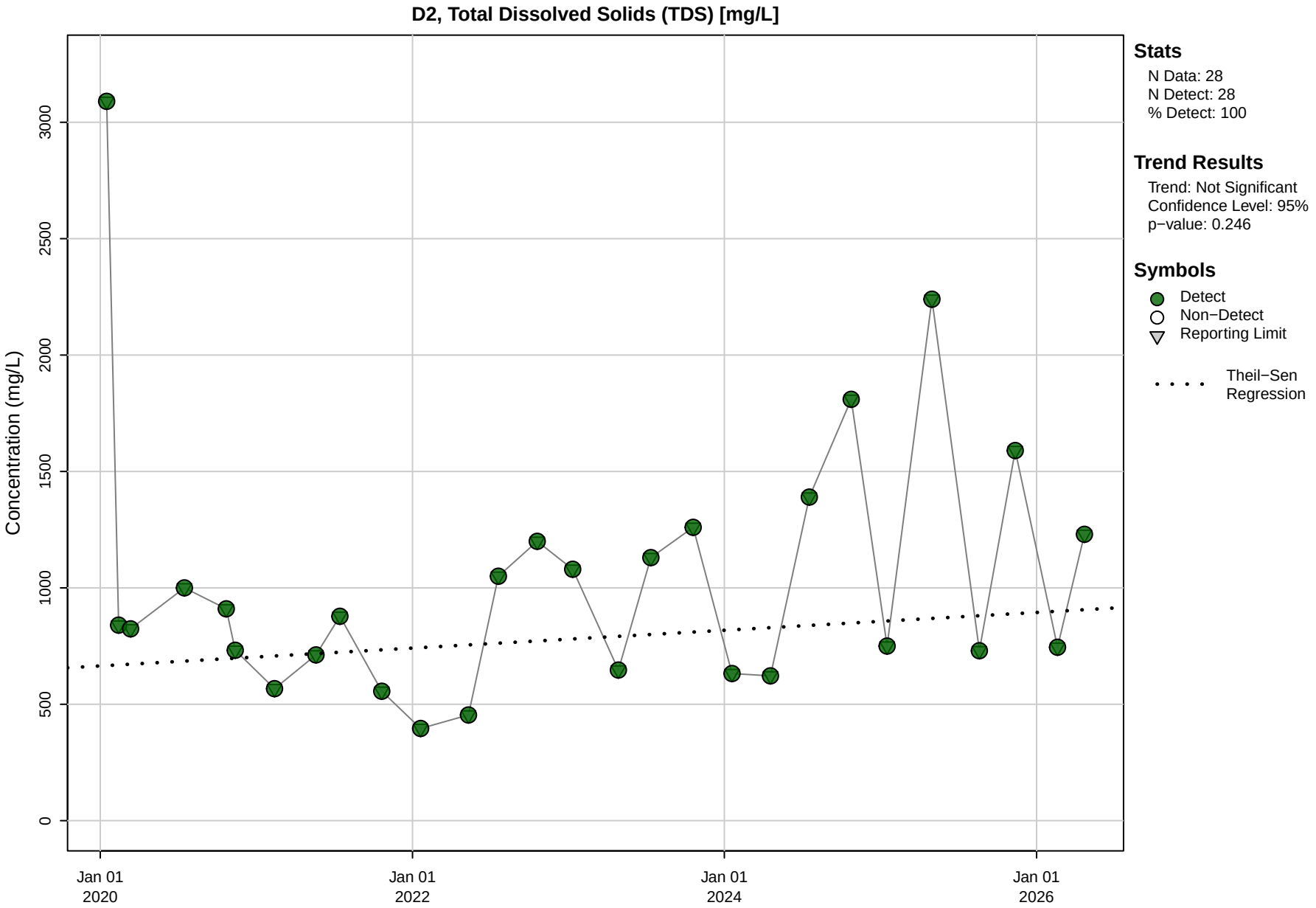

D2, Iron (Total) [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.656
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

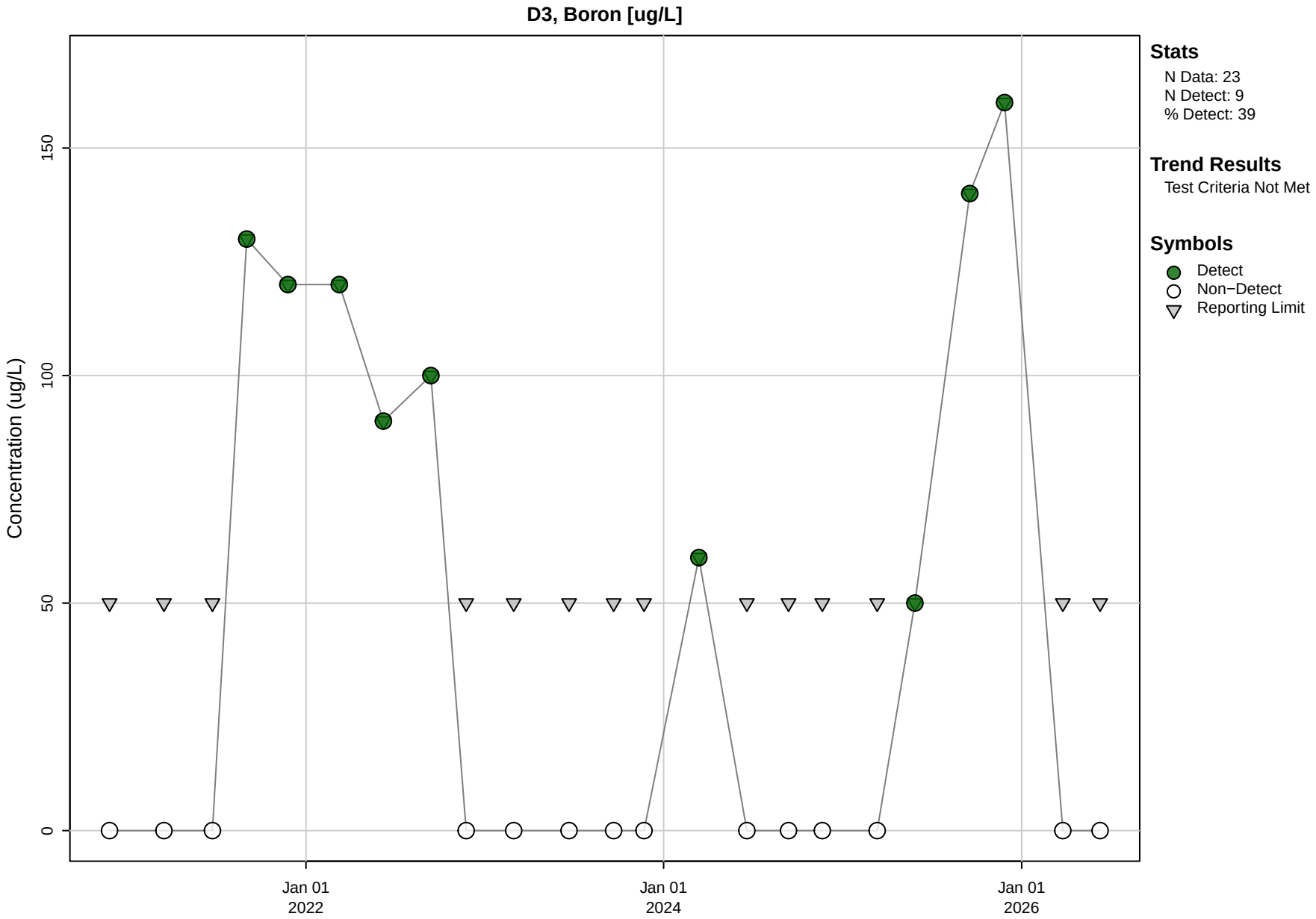

D2, Iron [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
25000
30000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.149
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

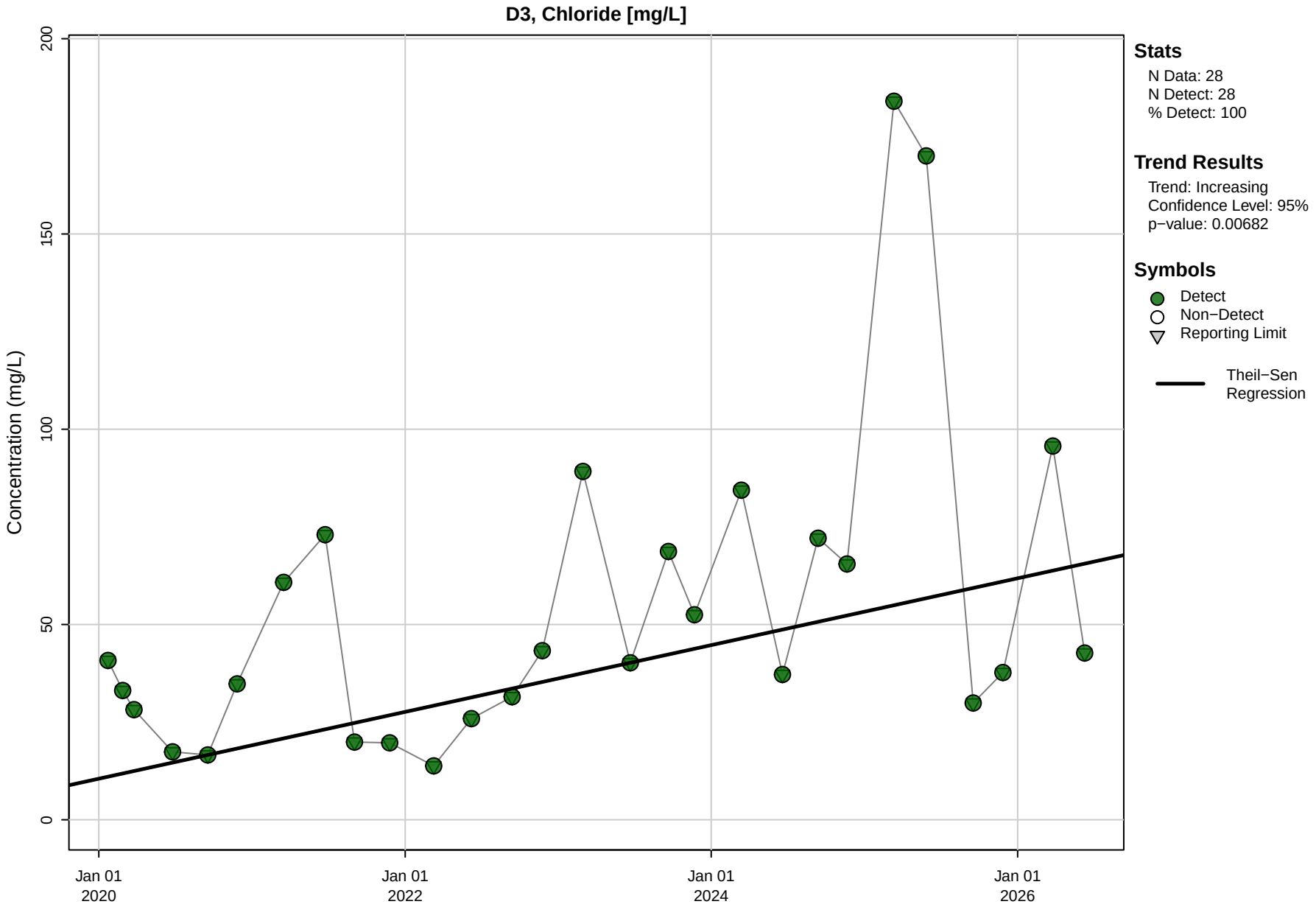

D2, Manganese [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.489
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

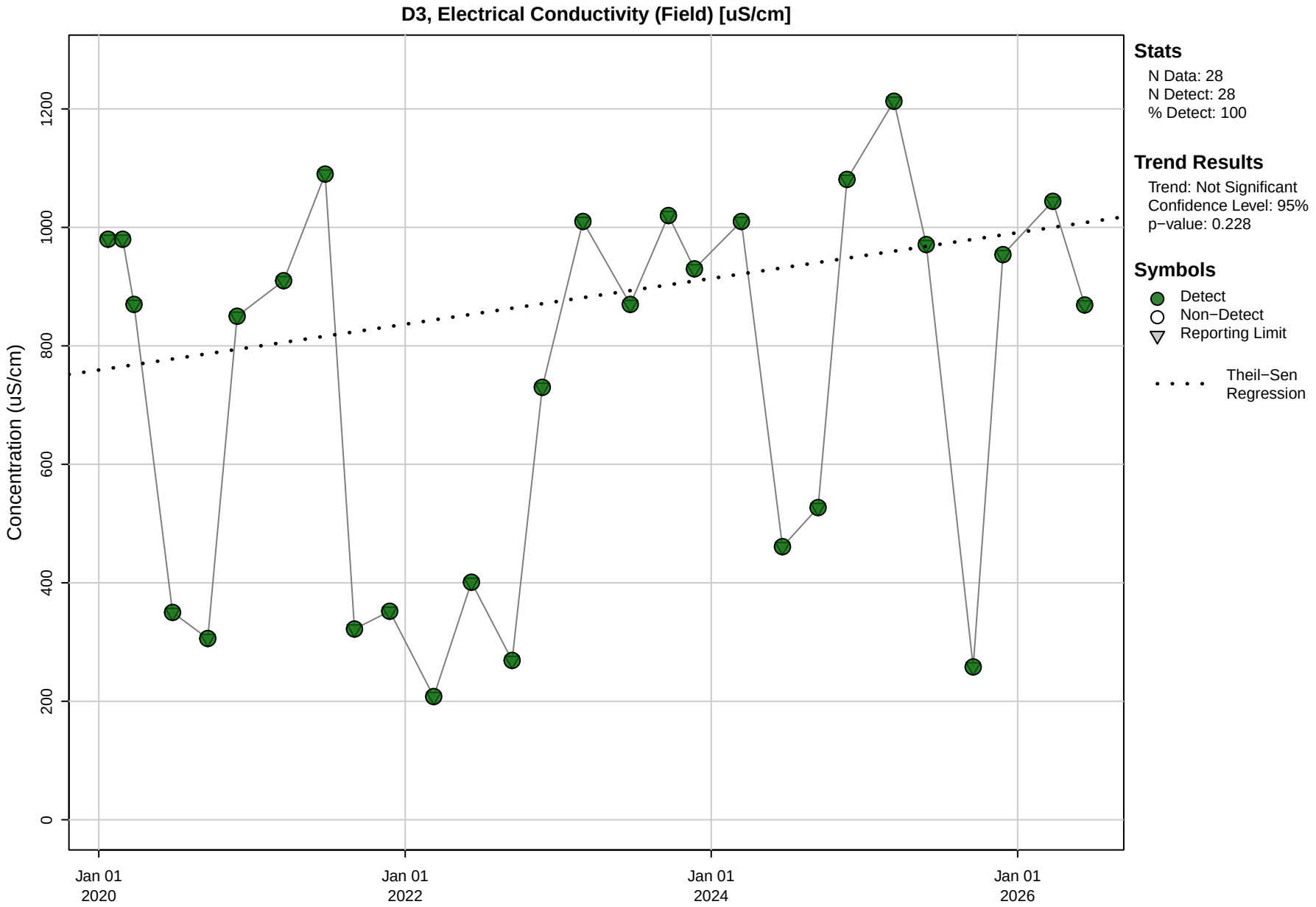

D2, Nickel [ug/L]
Concentration (ug/L)
0
50
100
150
200
250
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.013
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

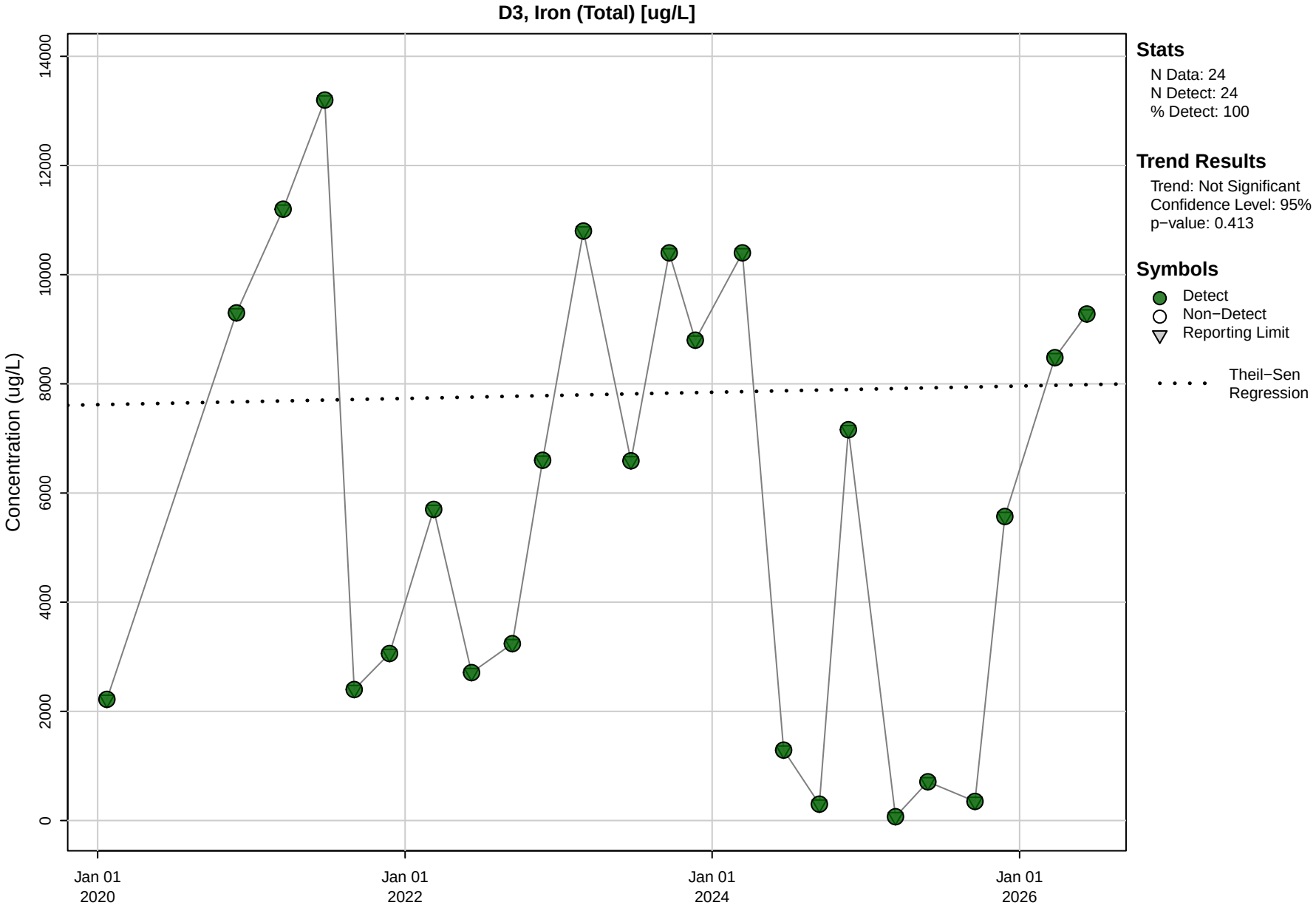

D2, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.104
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

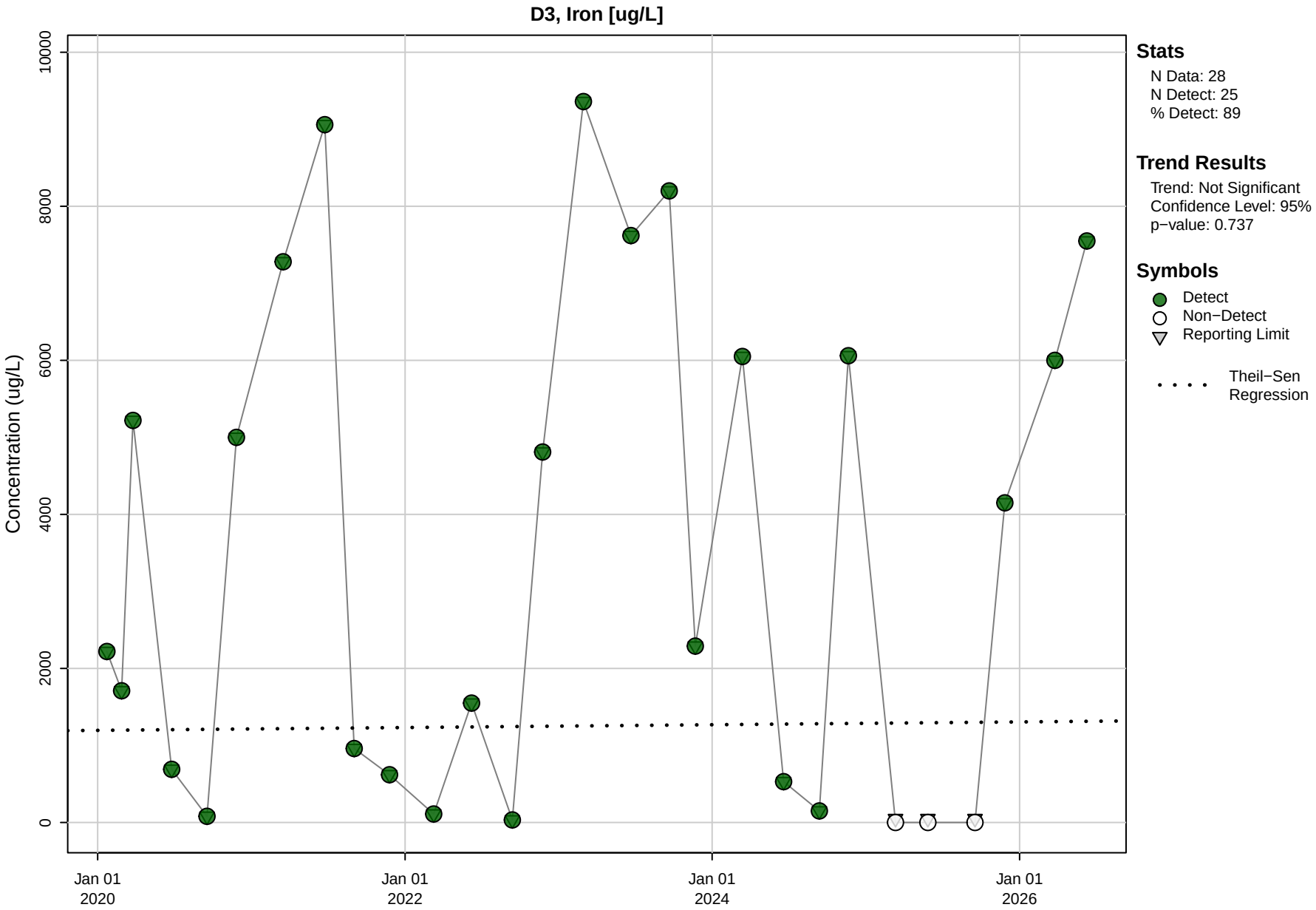

D2, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
500
1000
1500
2000
2500
3000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.246
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

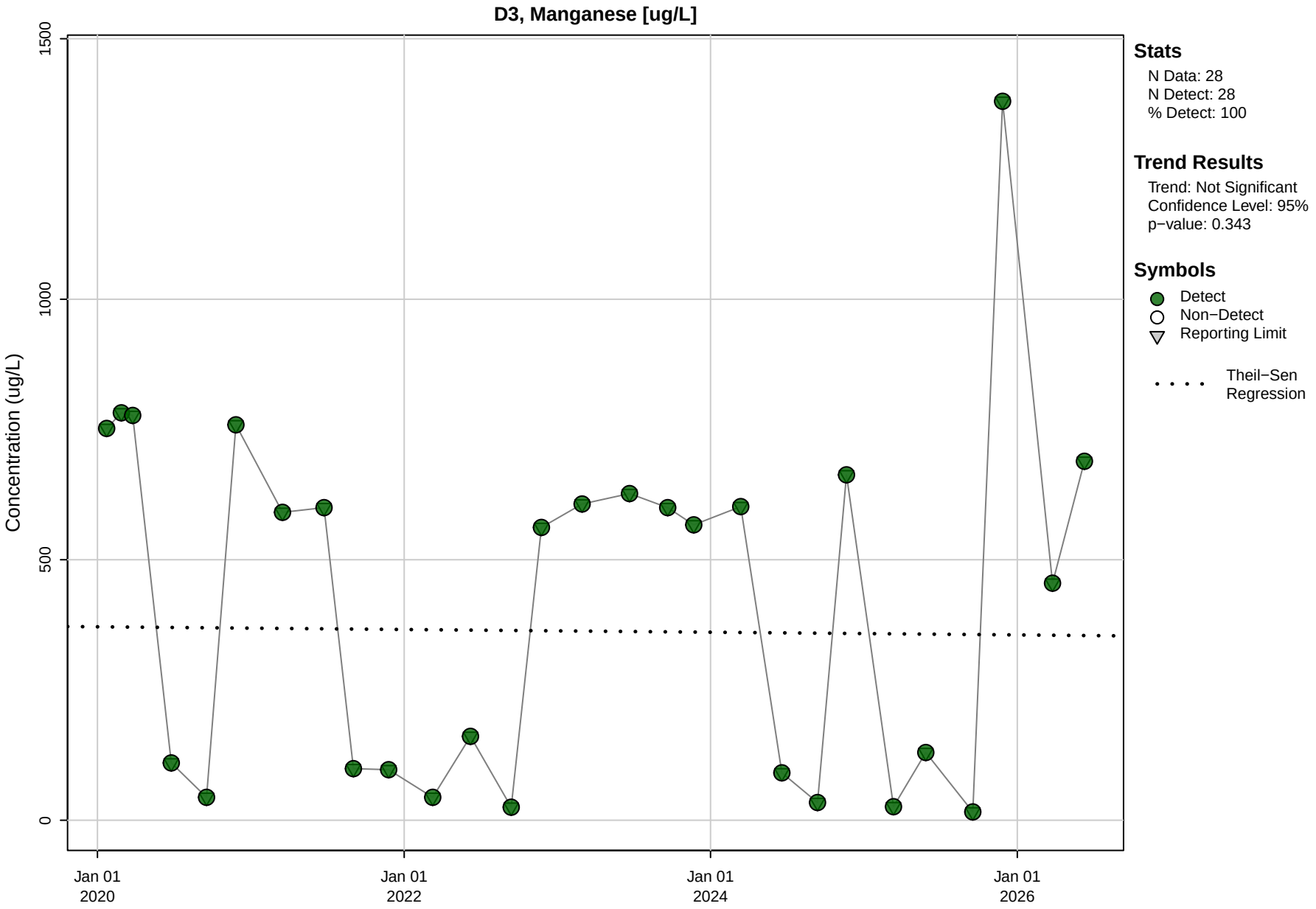

D3, Boron [ug/L]
Concentration (ug/L)
0
50
100
150
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 9
% Detect: 39
Trend Results
Test Criteria Not Met
Symbols
Detect
Non−Detect
Reporting Limit

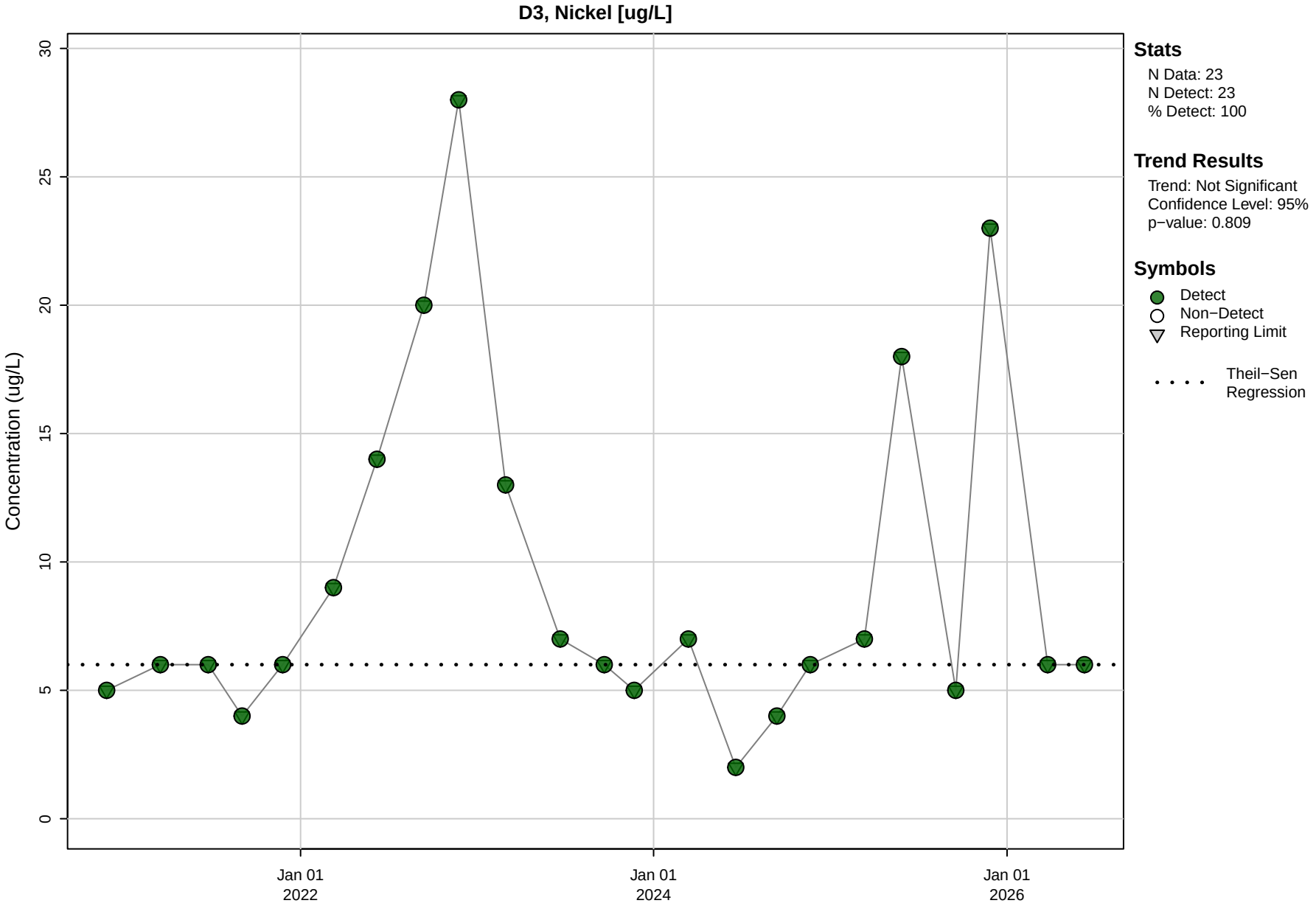

D3, Chloride [mg/L]
Concentration (mg/L)
0
50
100
150
200
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00682
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

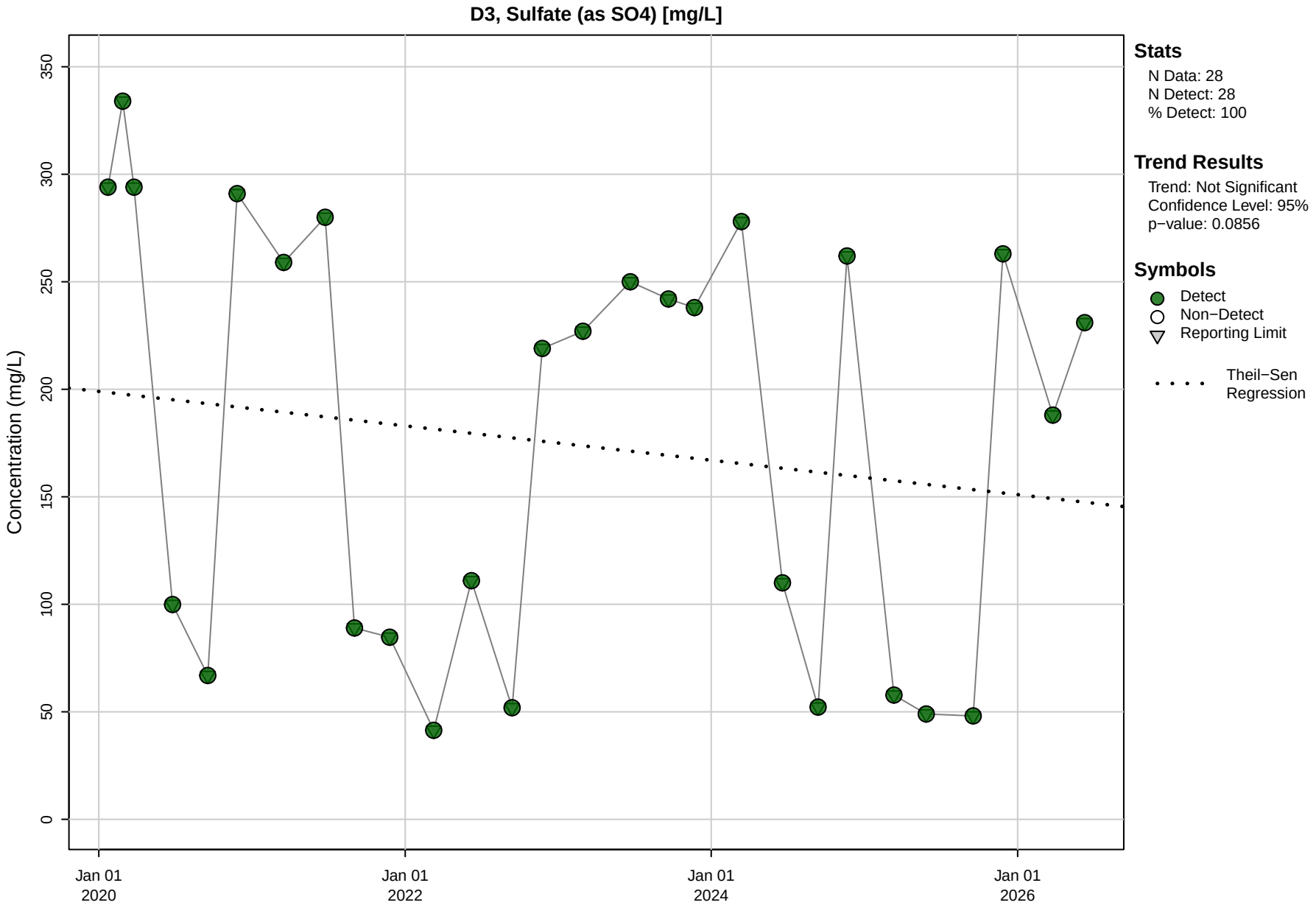

D3, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
200
400
600
800
1000
1200
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.228
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

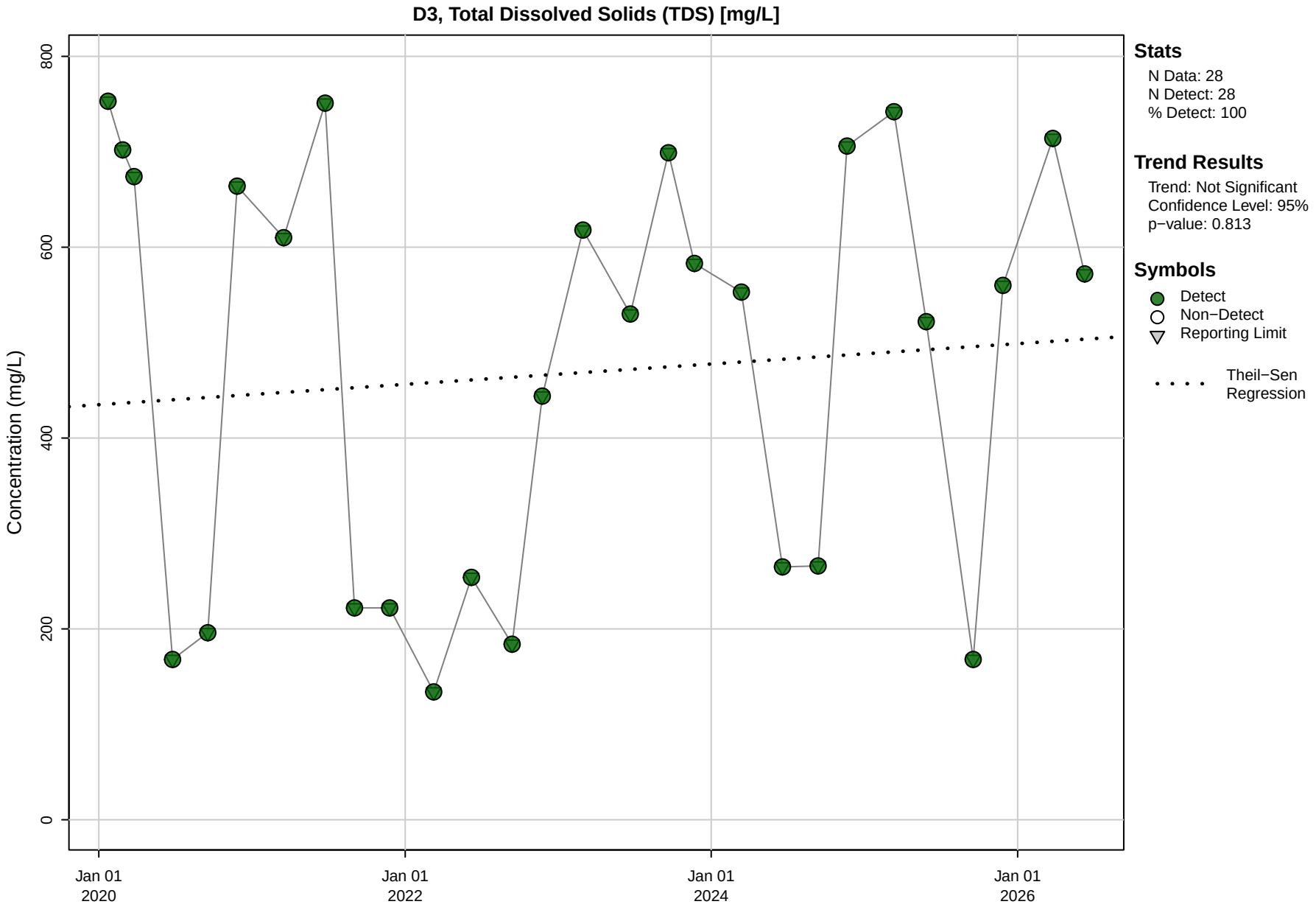

D3, Iron (Total) [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
10000
12000
14000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.413
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

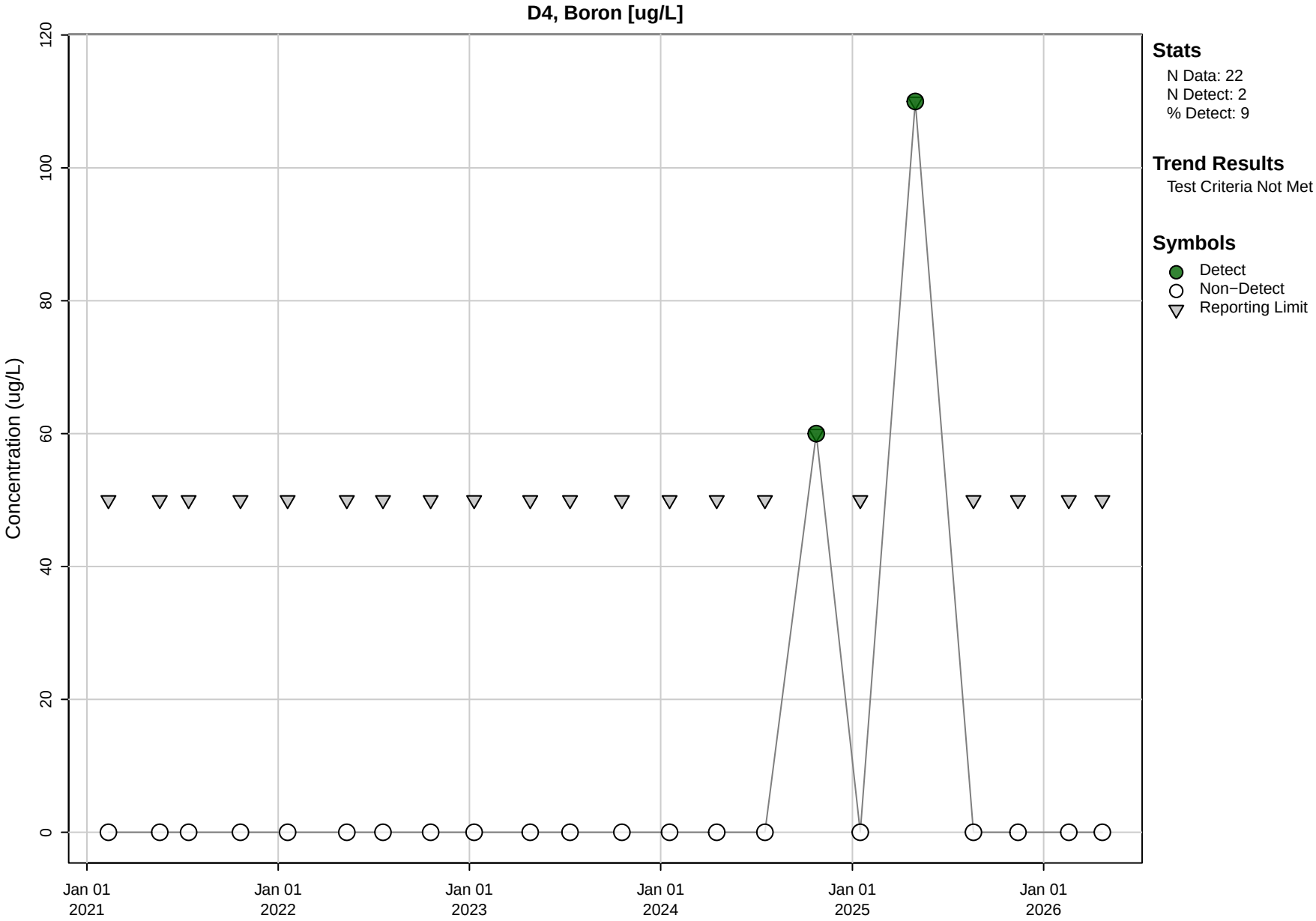

D3, Iron [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 25
% Detect: 89
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.737
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

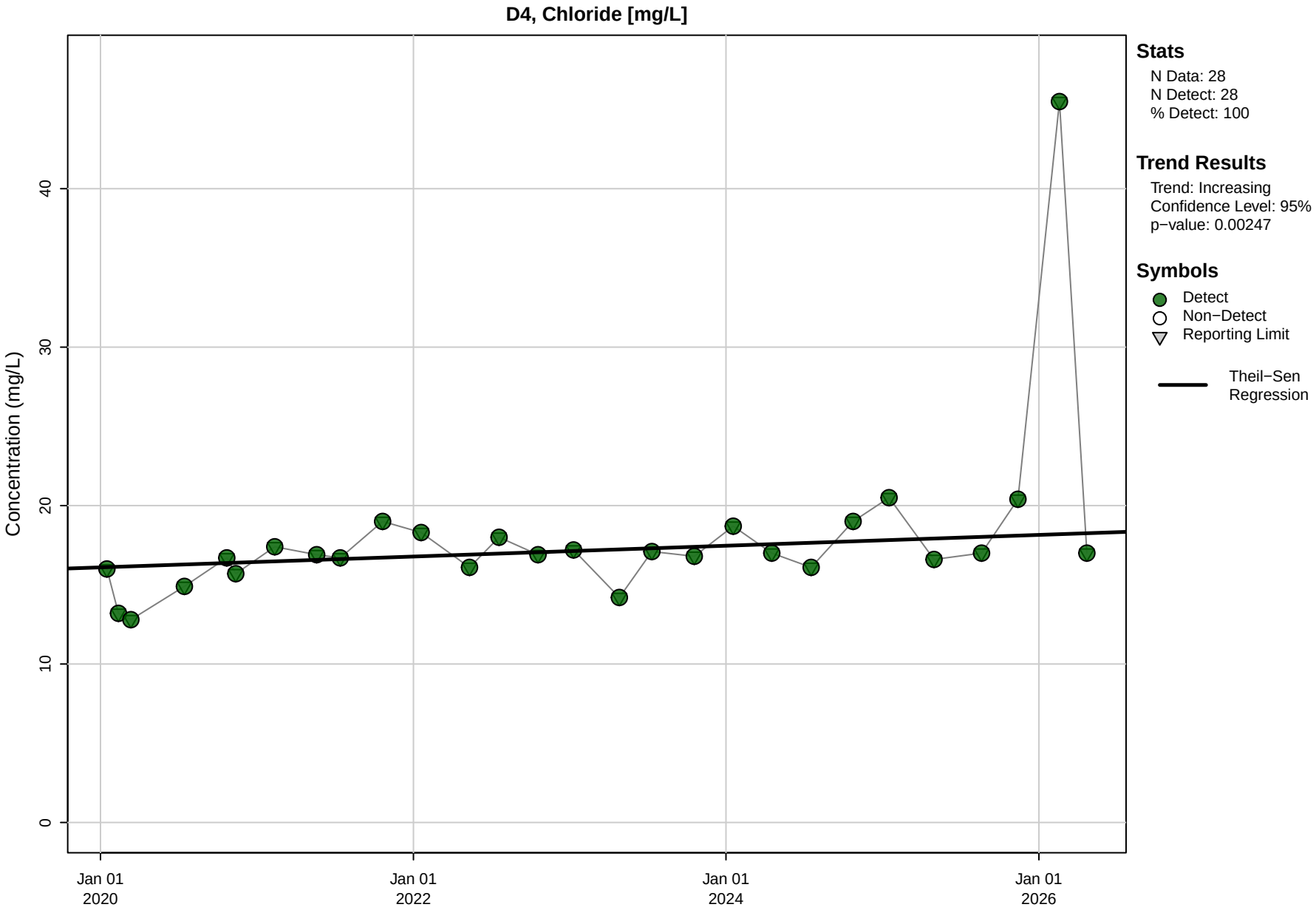

D3, Manganese [ug/L]
Concentration (ug/L)
1500
1000
500
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.343
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

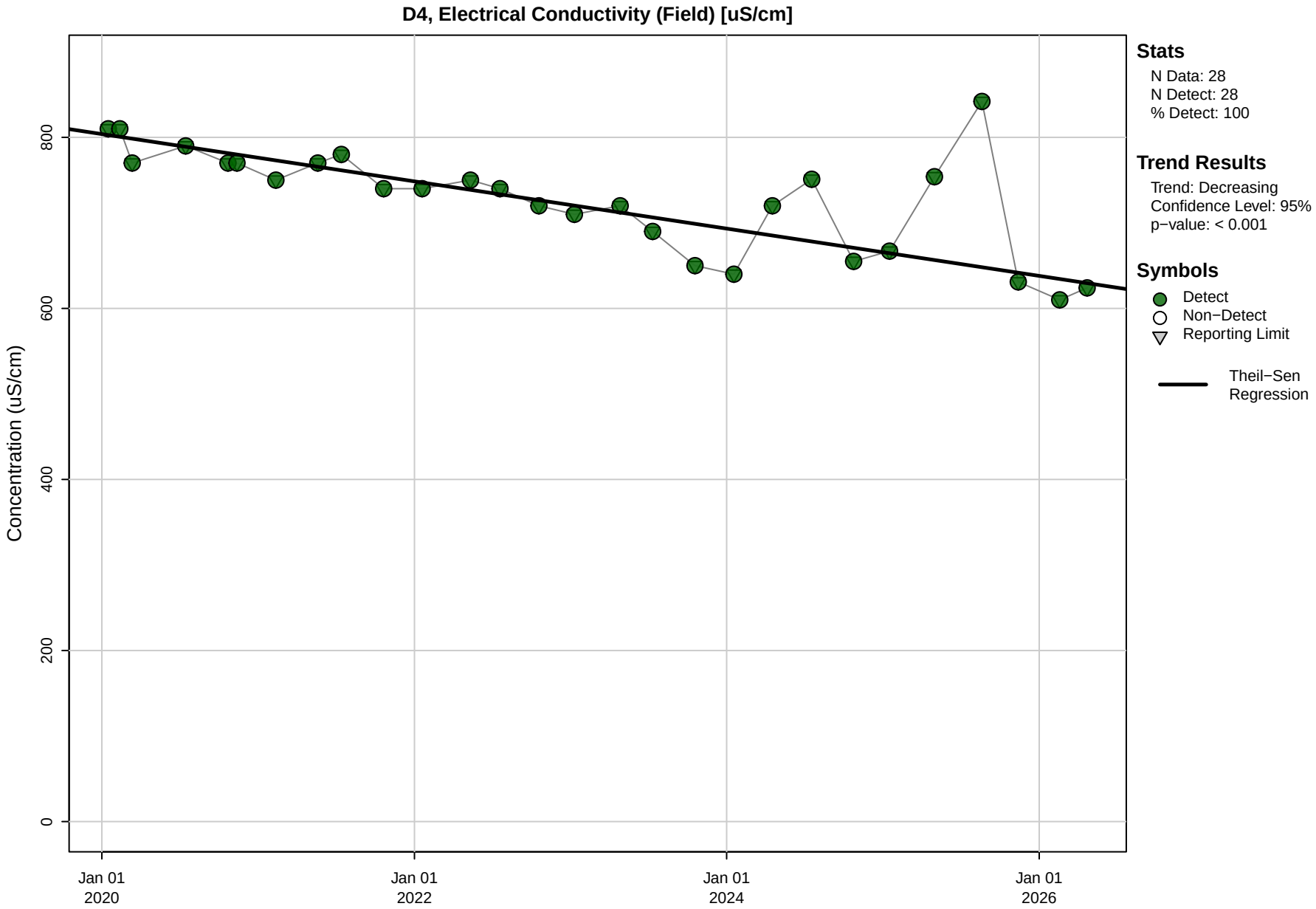

D3, Nickel [ug/L]
Concentration (ug/L)
0
5
10
15
20
25
30
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.809
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

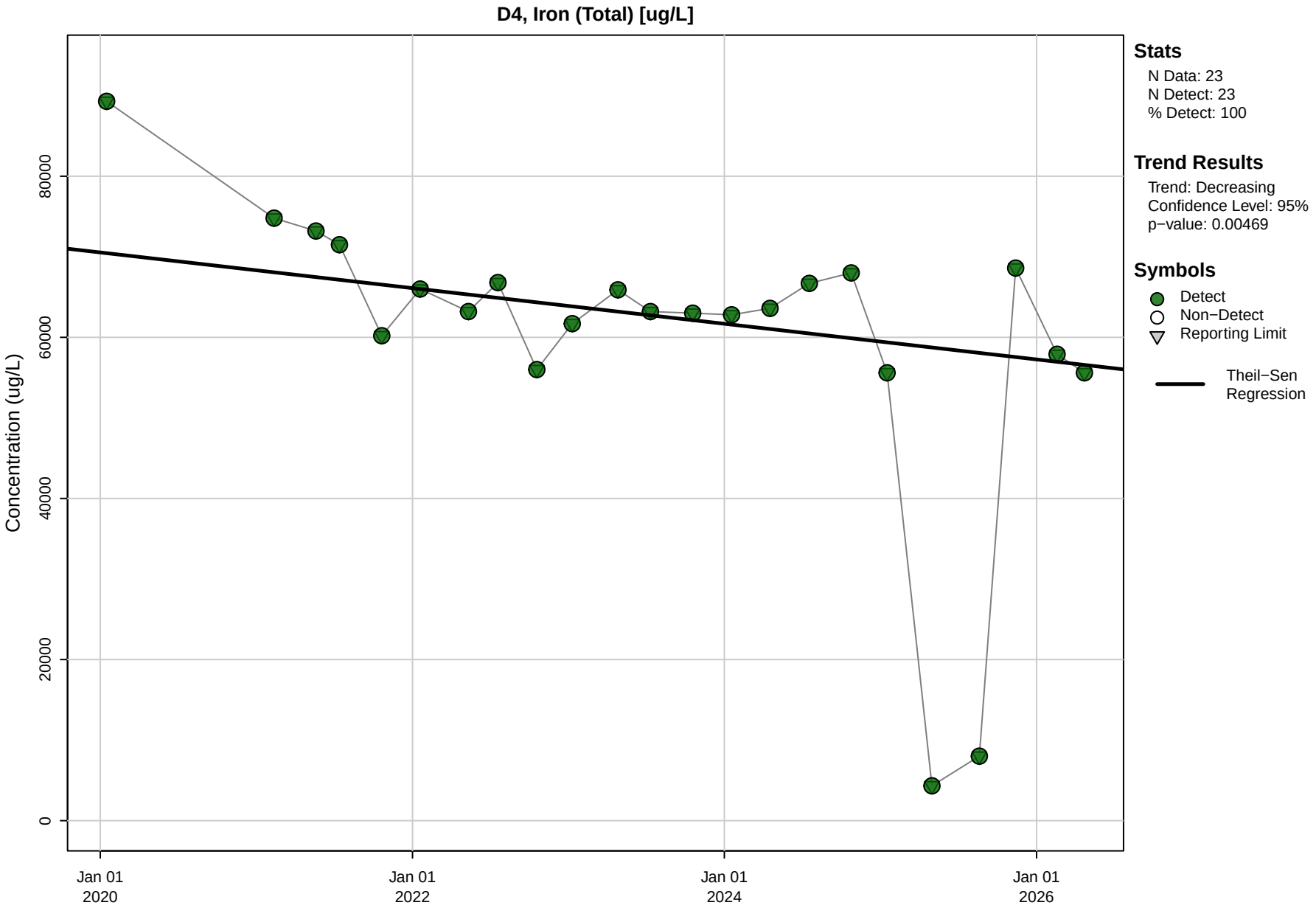

D3, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
50
100
150
200
250
300
350
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0856
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

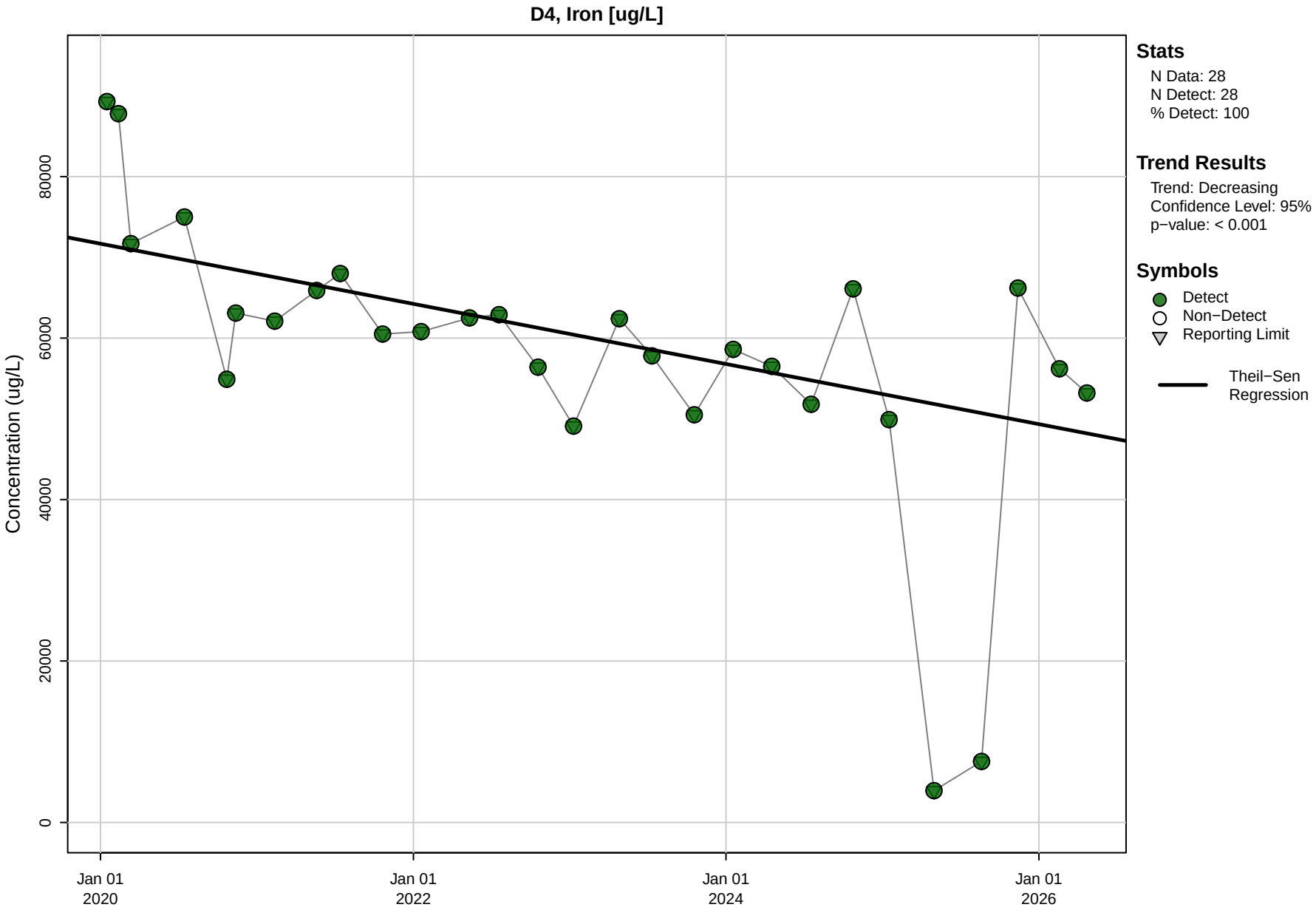

D3, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.813
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

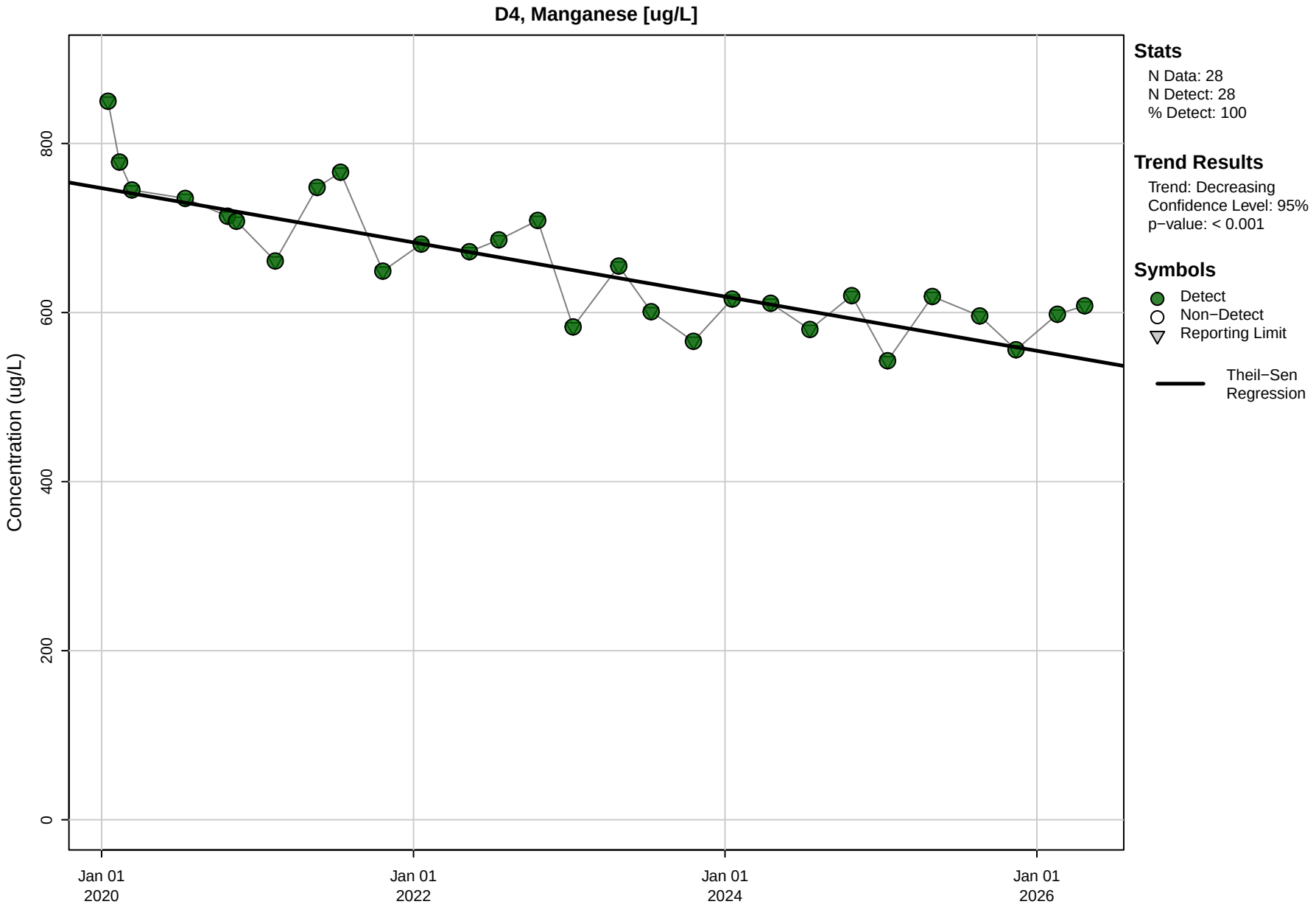

D4, Boron [ug/L]
Concentration (ug/L)
0
20
40
60
80
100
120
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 2
% Detect: 9
Trend Results
Test Criteria Not Met
Symbols
Detect
Non−Detect
Reporting Limit

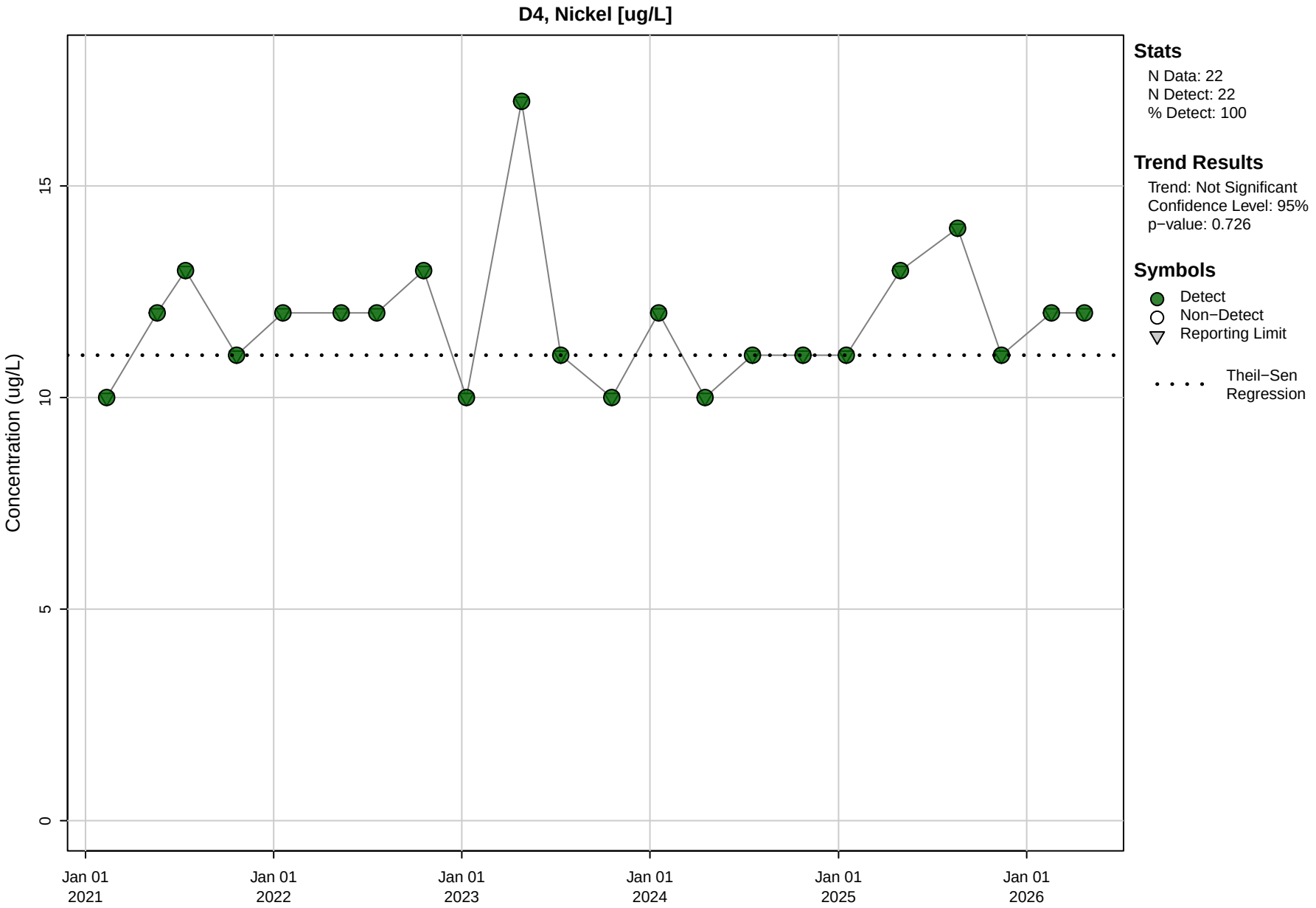

D4, Chloride [mg/L]
Concentration (mg/L)
0
10
20
30
40
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00247
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

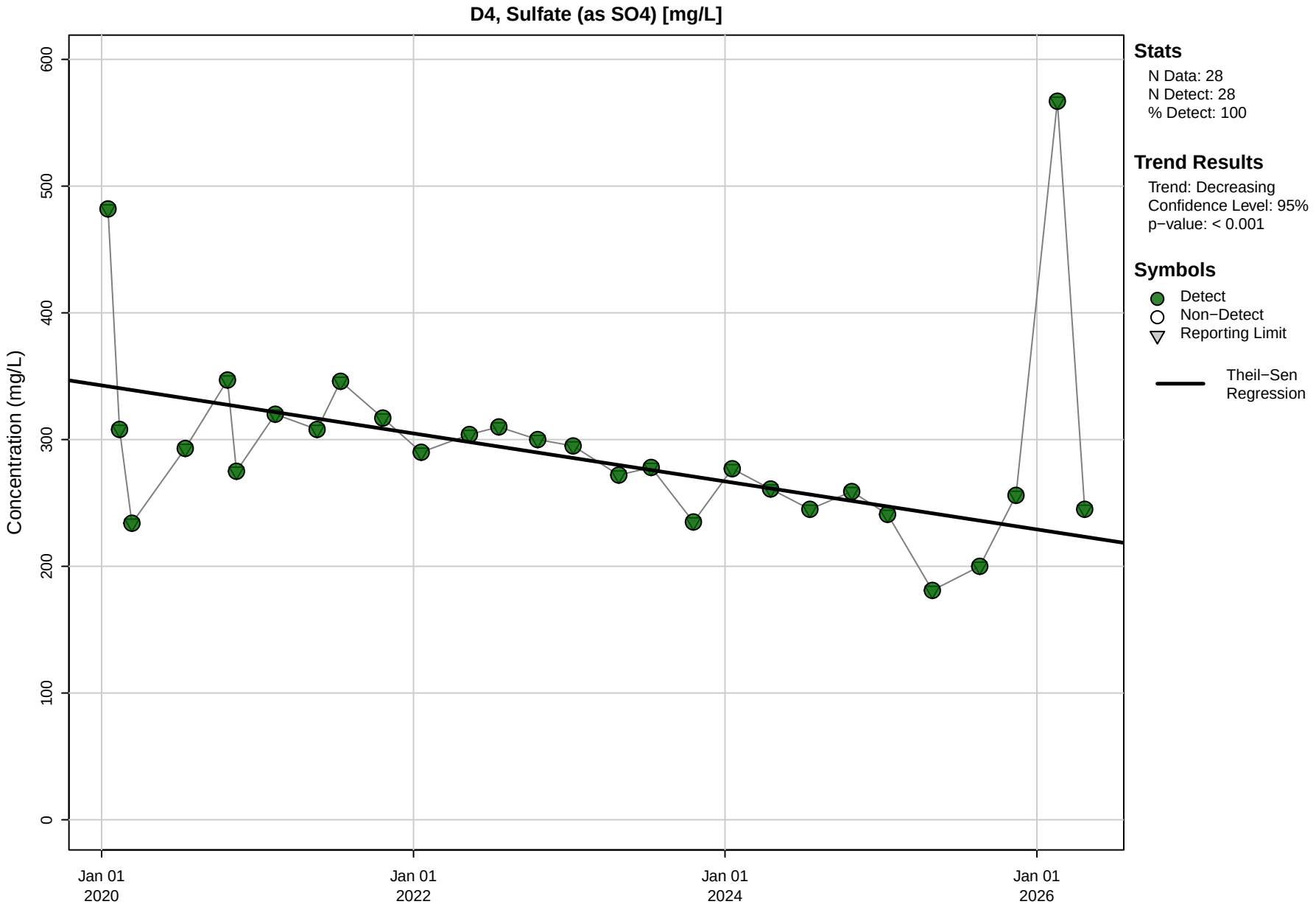

D4, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

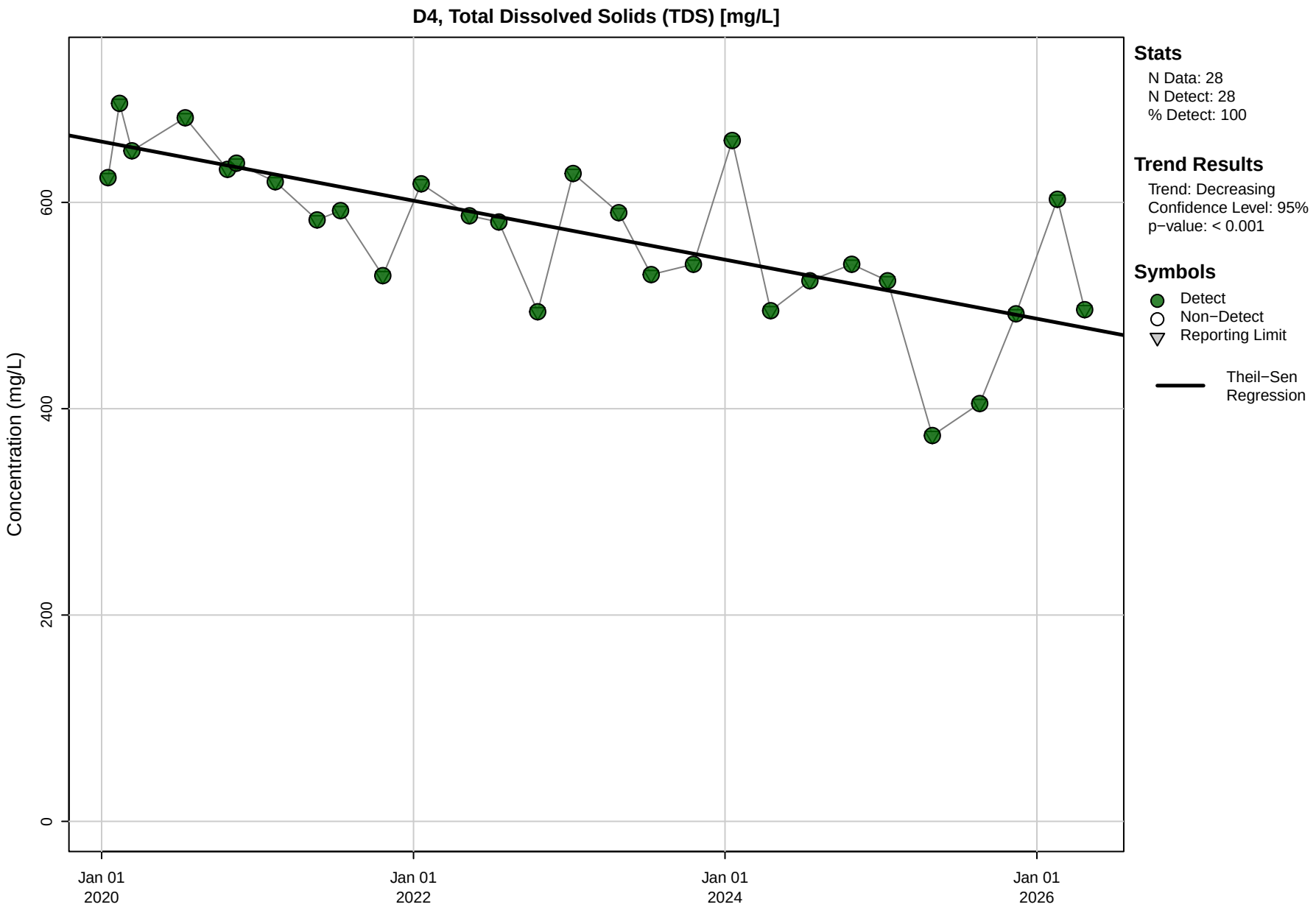

D4, Iron (Total) [ug/L]
Concentration (ug/L)
0
20000
40000
60000
80000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00469
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

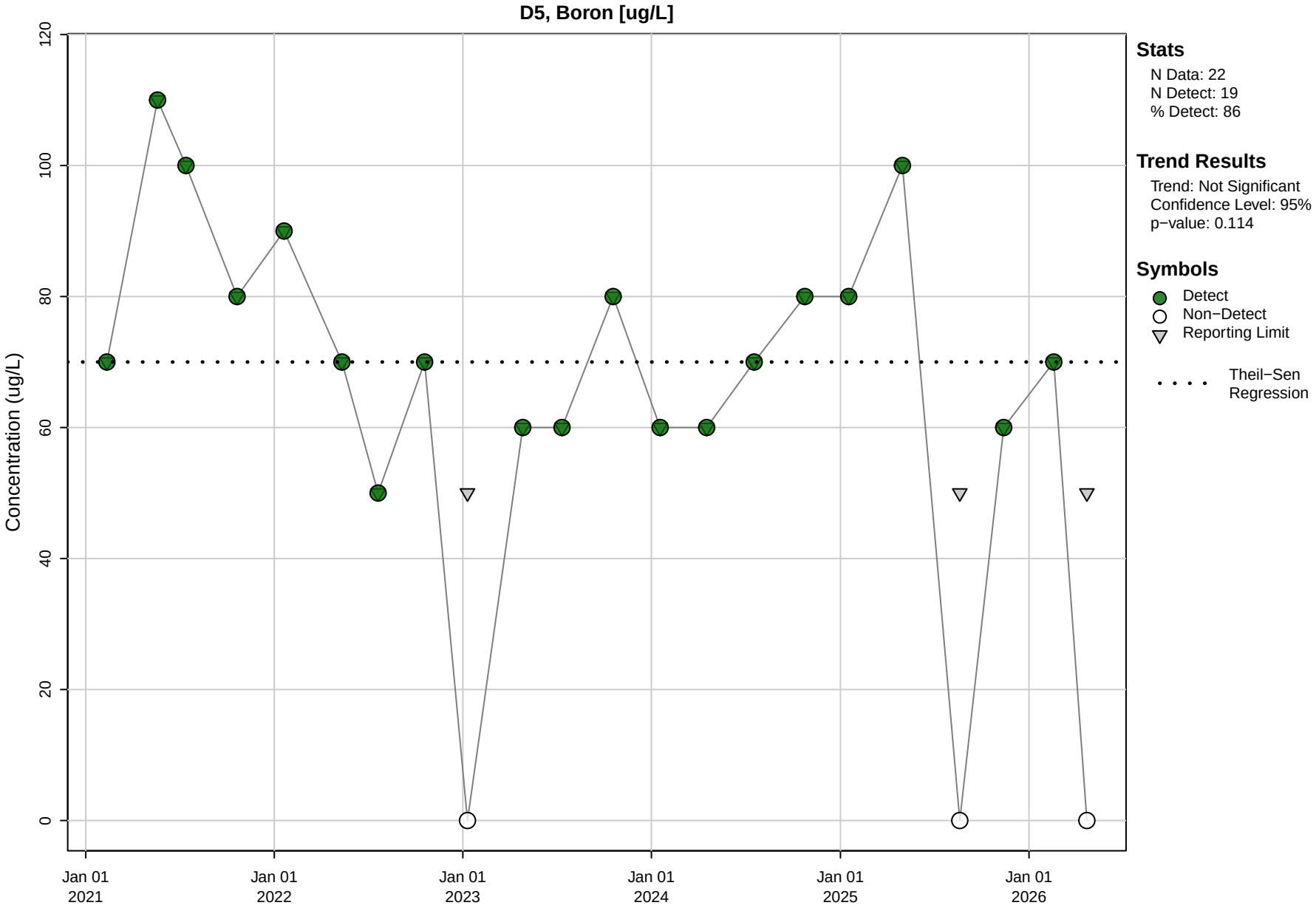

D4, Iron [ug/L]
Concentration (ug/L)
0
20000
40000
60000
80000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

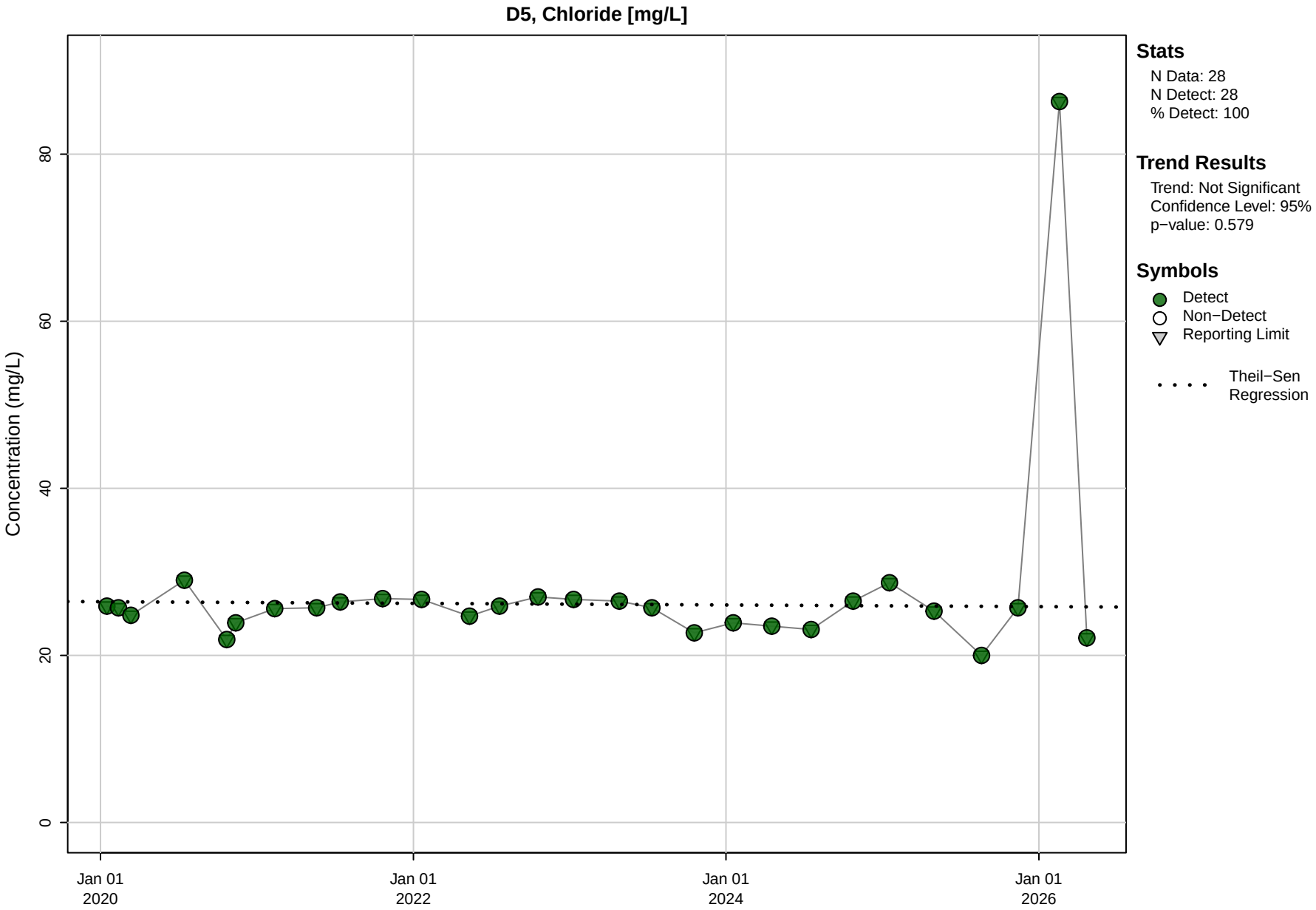

D4, Manganese [ug/L]
Concentration (ug/L)
0
200
400
600
800
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

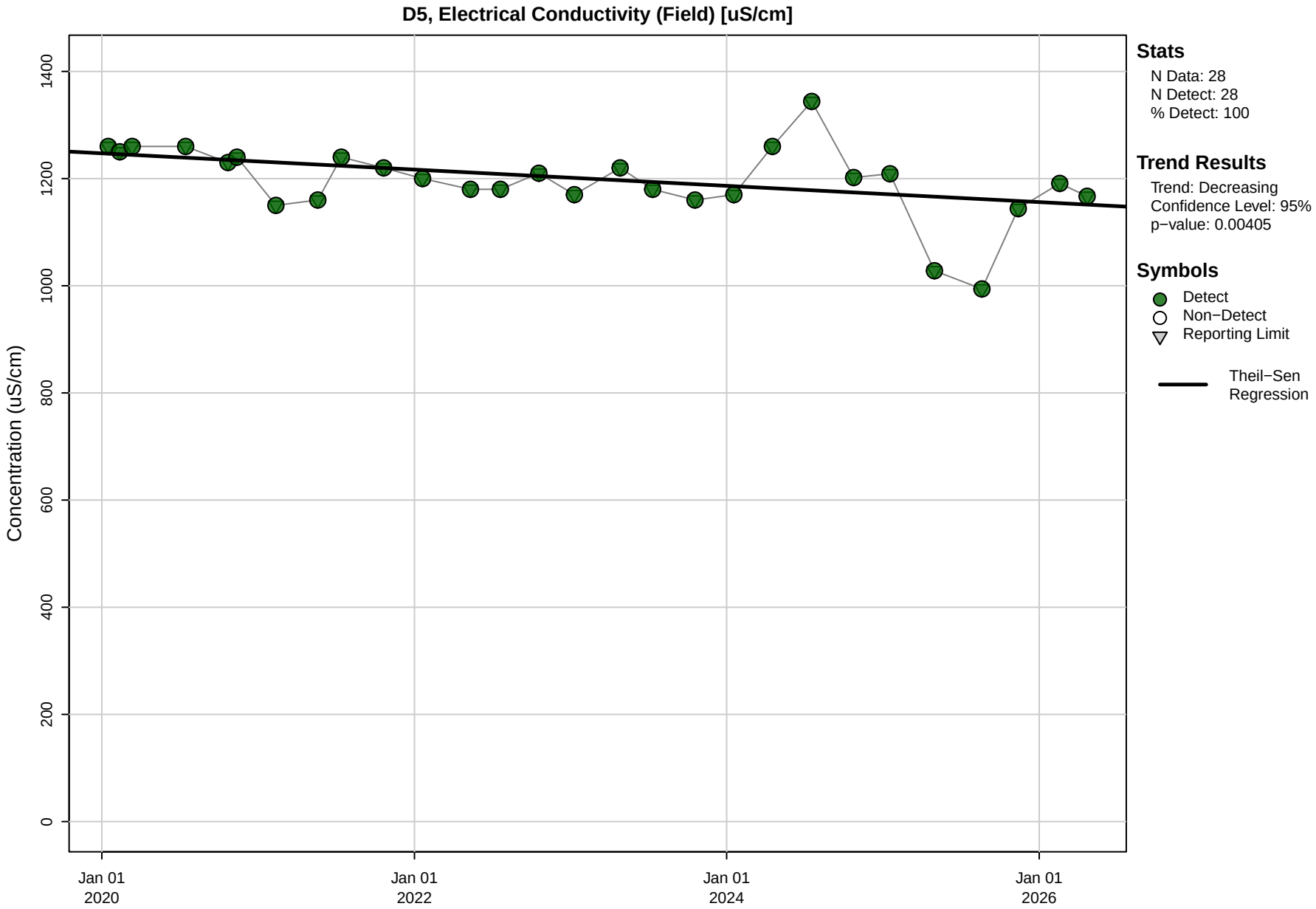

D4, Nickel [ug/L]
Concentration (ug/L)
0
5
10
15
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.726
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

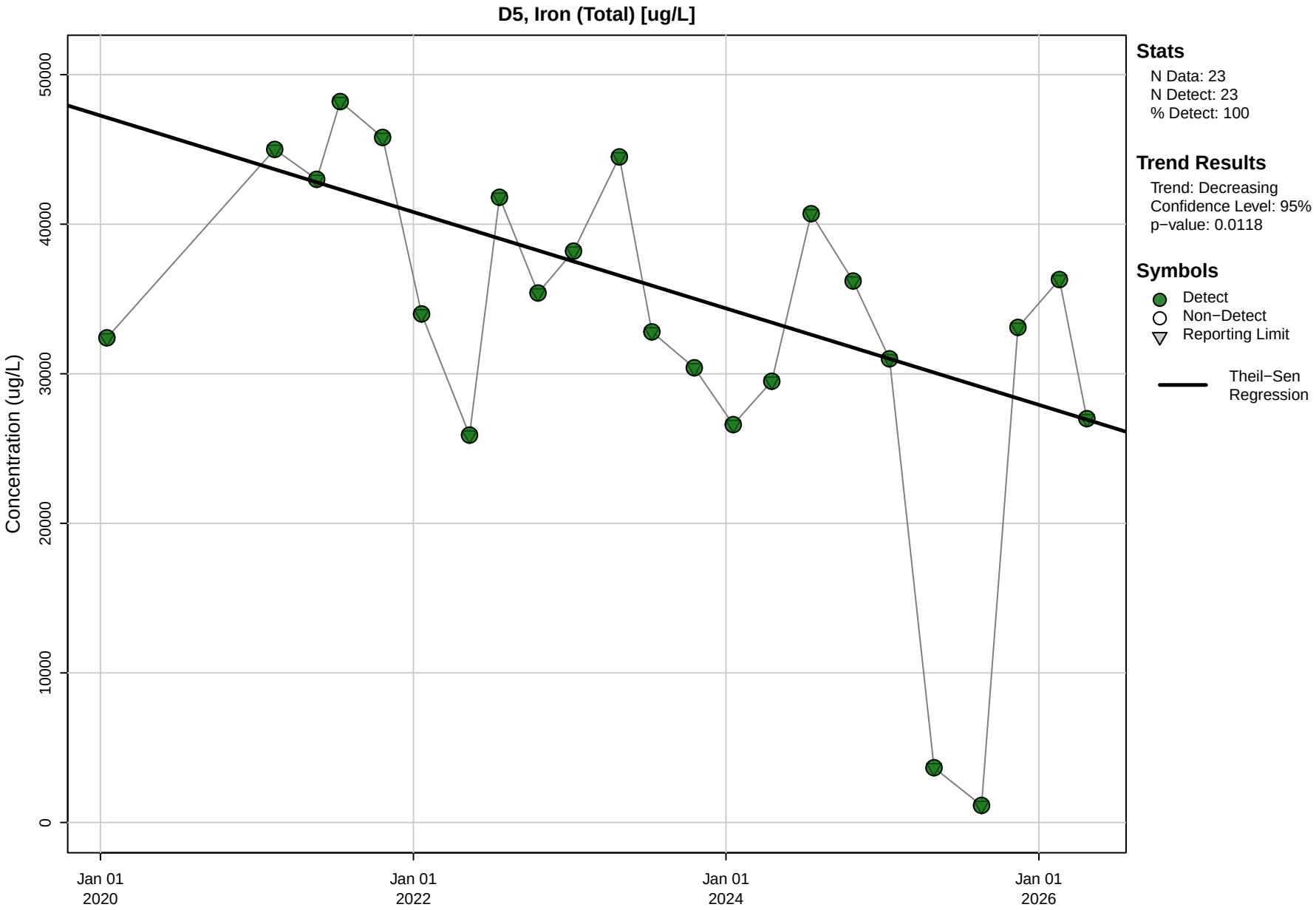

D4, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
100
200
300
400
500
600
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

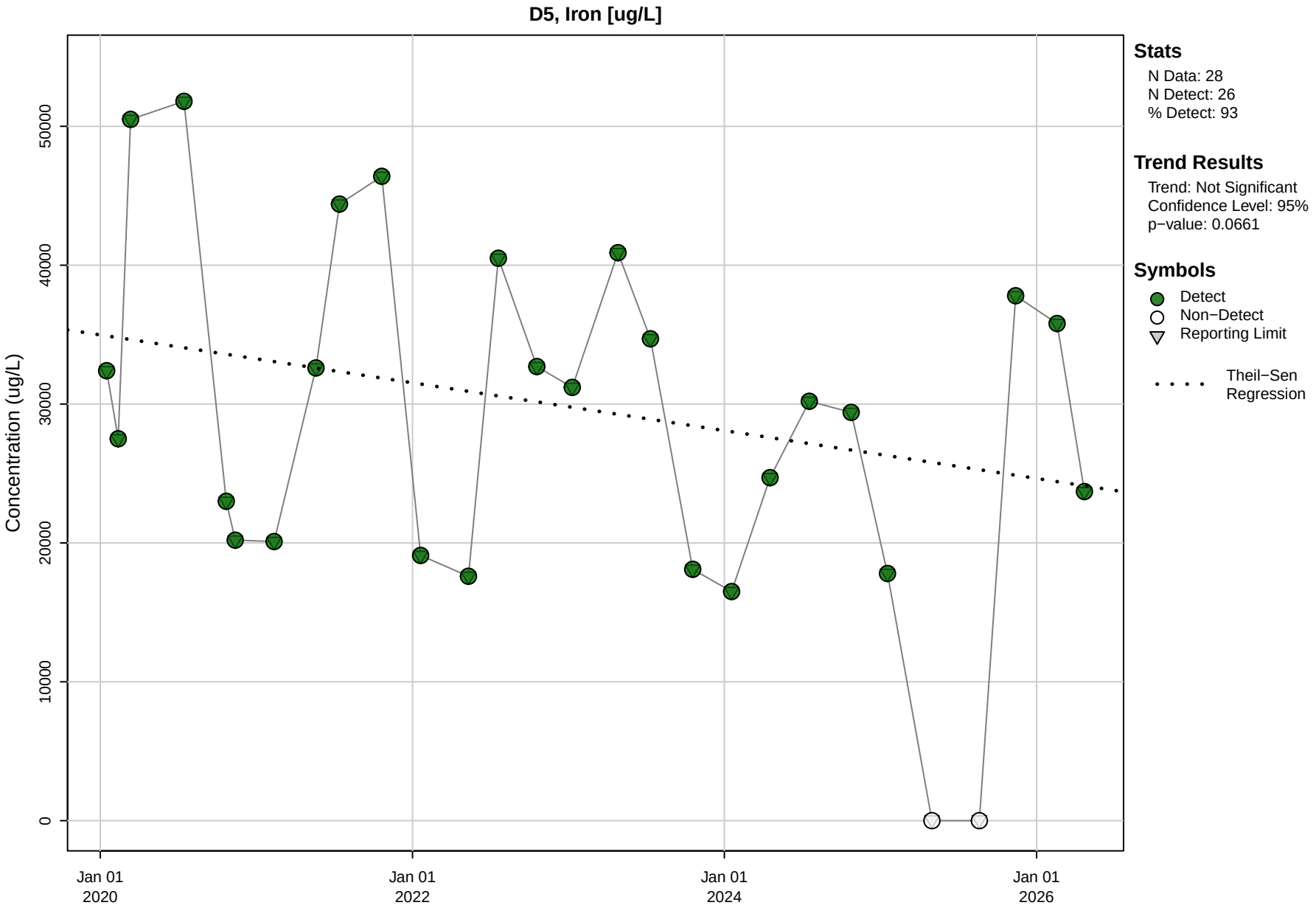

D4, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
200
400
600
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression


D5, Boron [ug/L]
Concentration (ug/L)
0
20
40
60
80
100
120
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 19
% Detect: 86
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.114
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

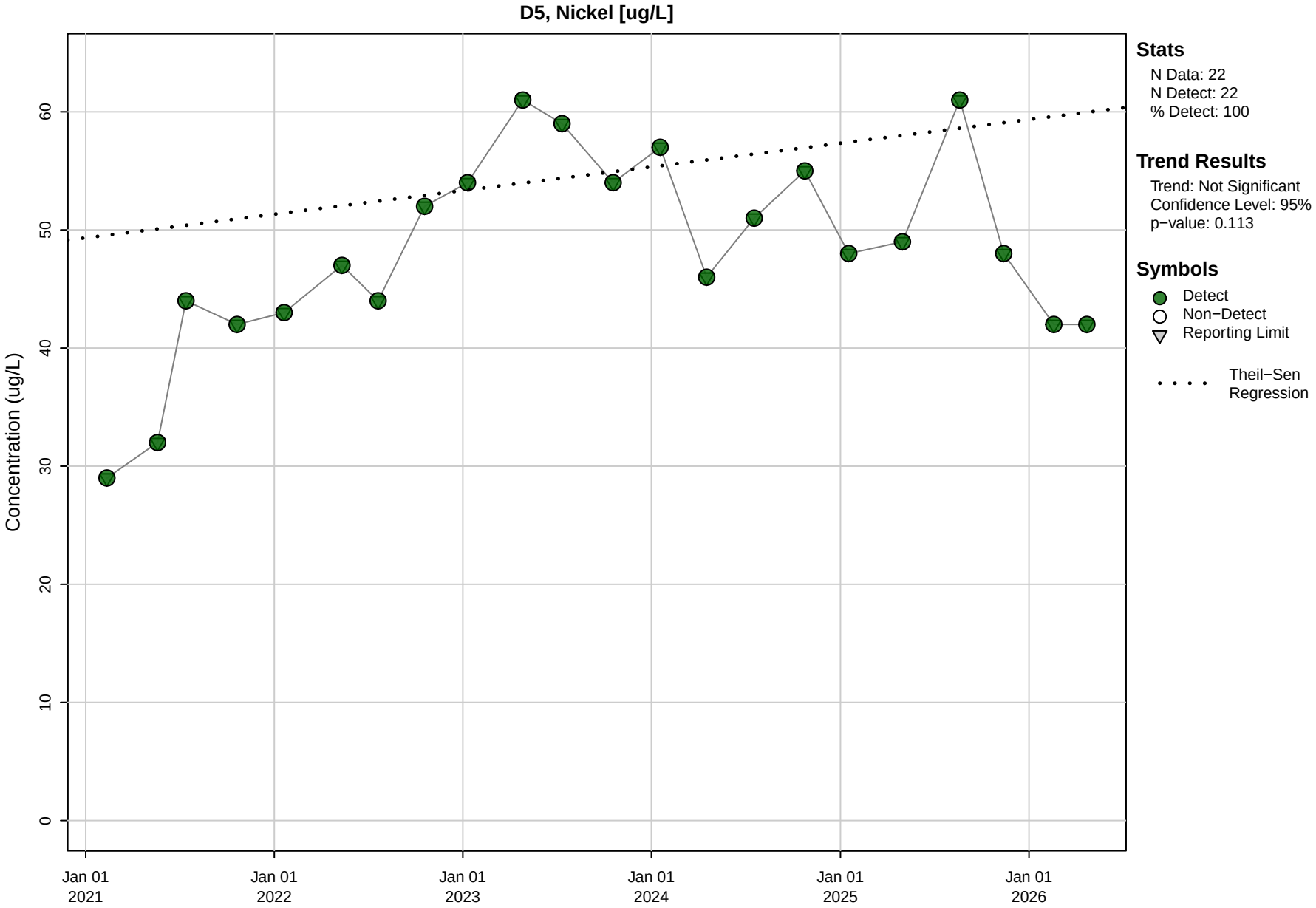

D5, Chloride [mg/L]
Concentration (mg/L)
0
20
40
60
80
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.579
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

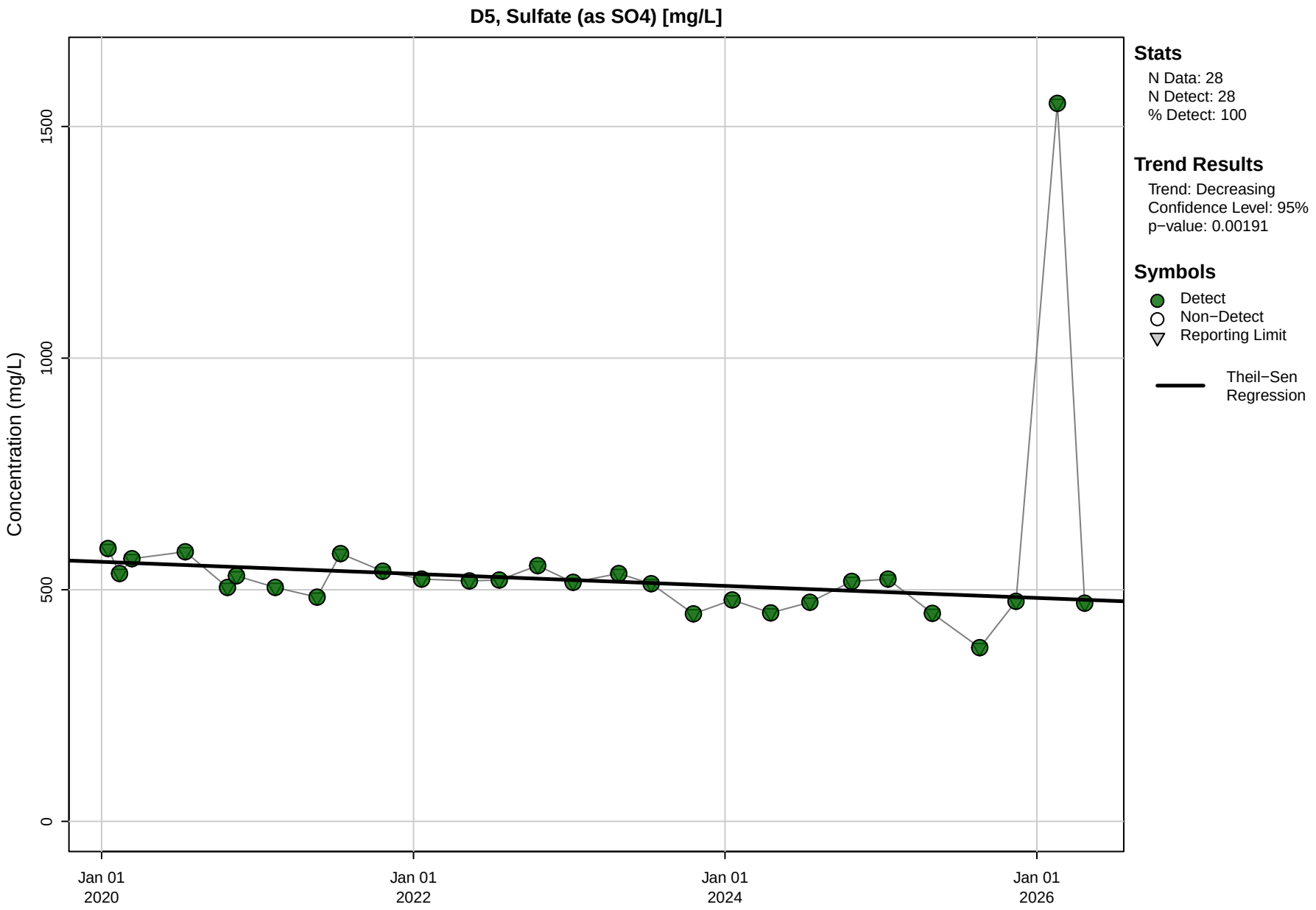

D5, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
200
400
600
800
1000
1200
1400
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00405
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

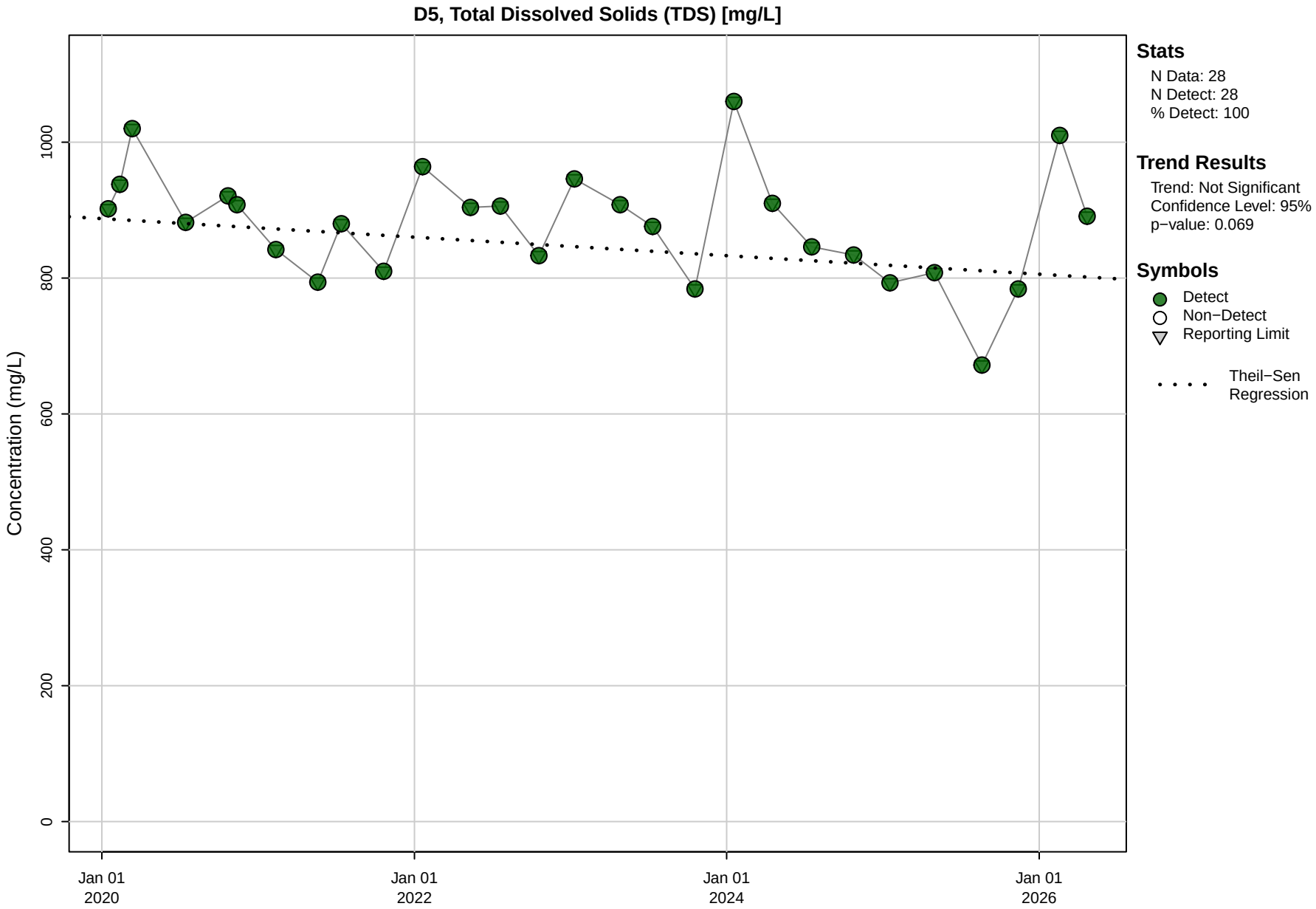

D5, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0118
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

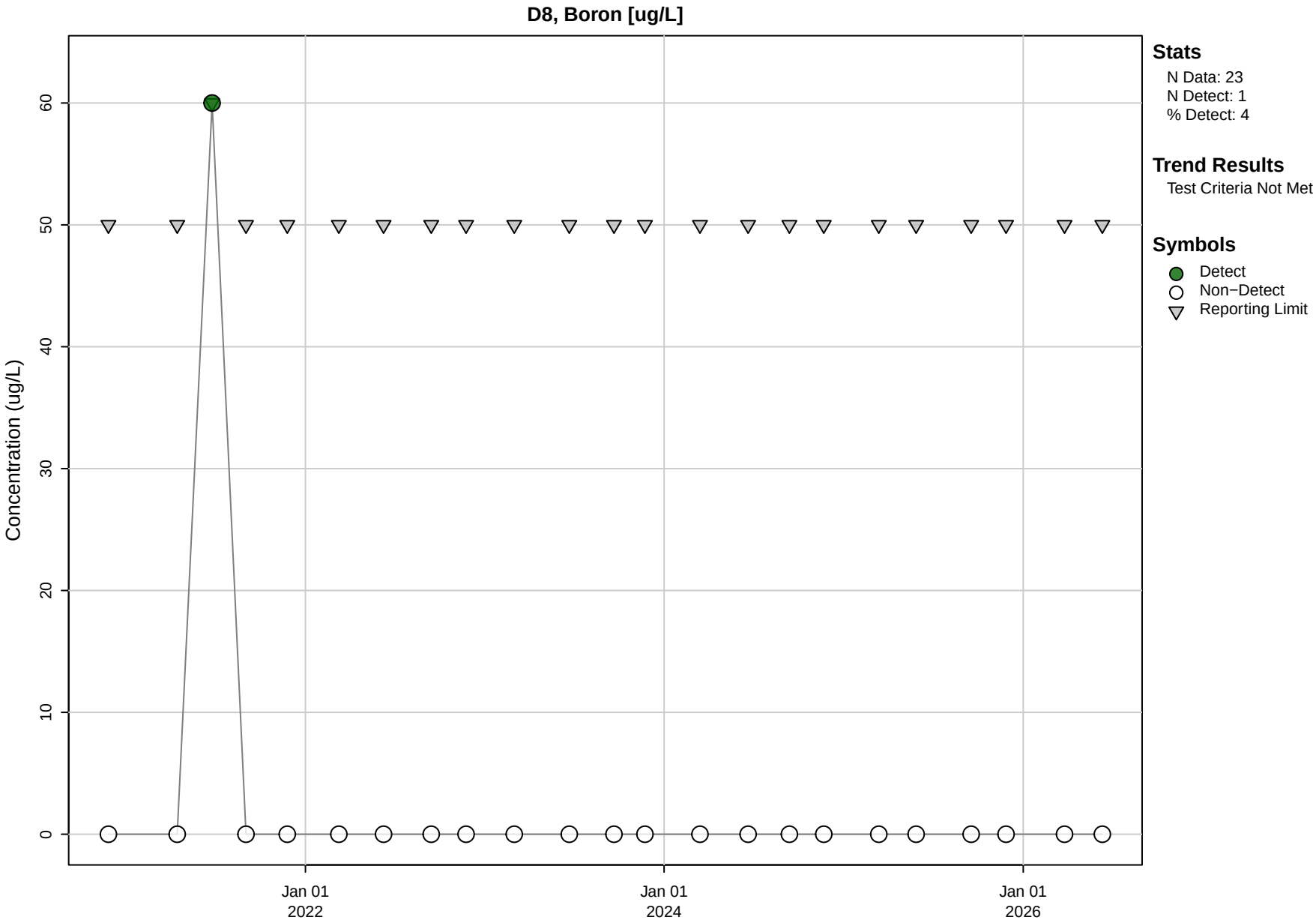

D5, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 26
% Detect: 93
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0661
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

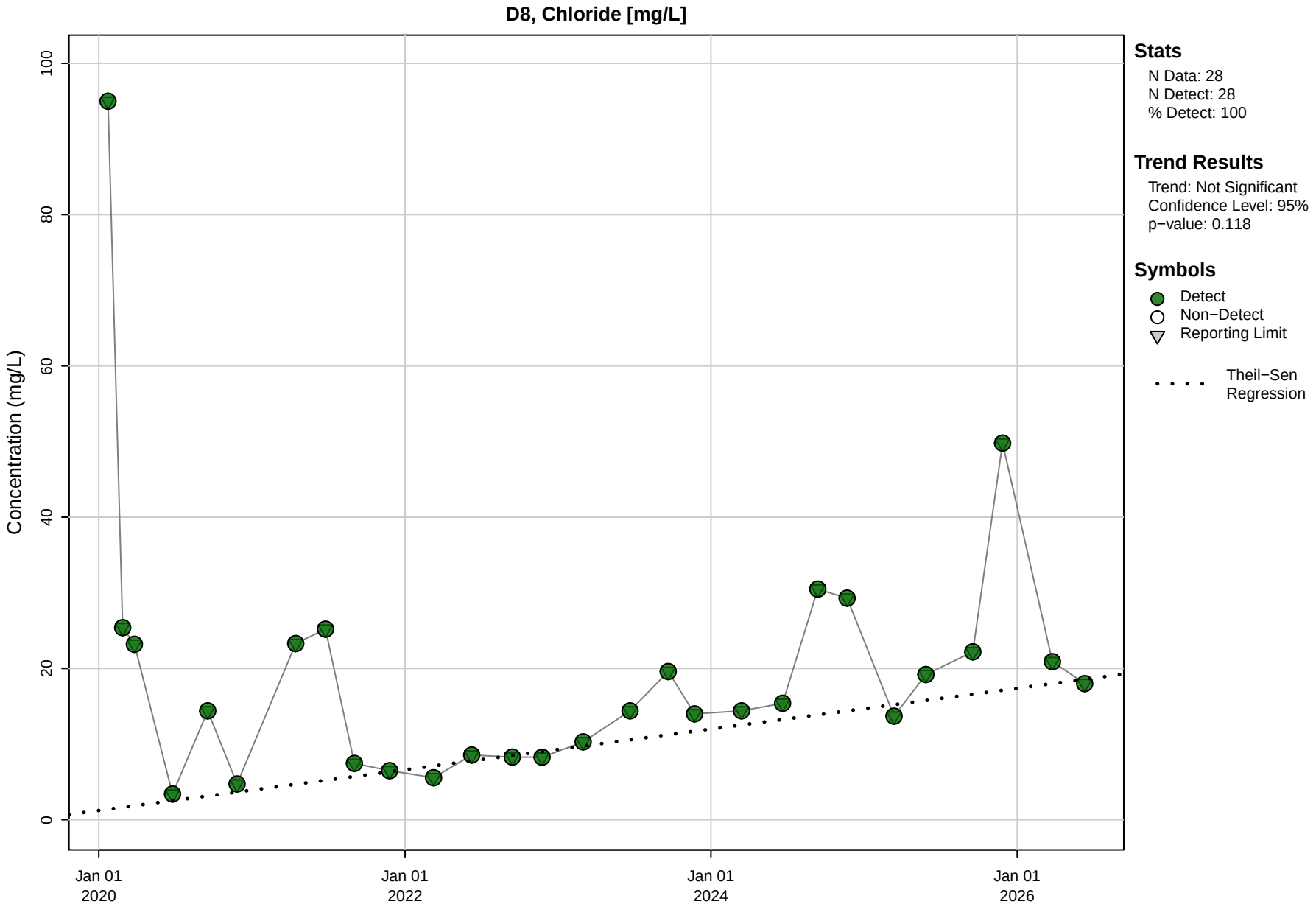

D5, Manganese [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.298
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

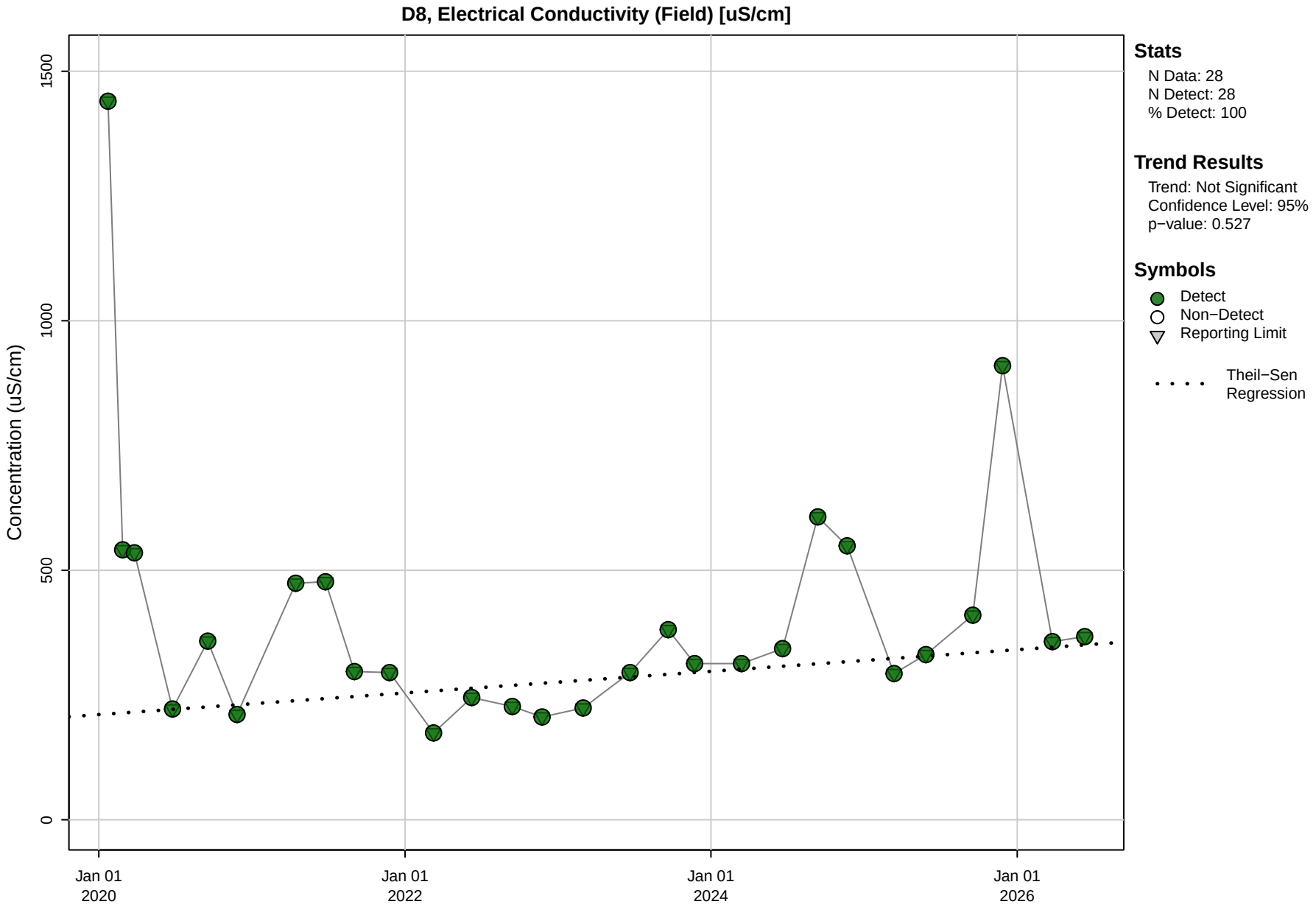

D5, Nickel [ug/L]
Concentration (ug/L)
0
10
20
30
40
50
60
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.113
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

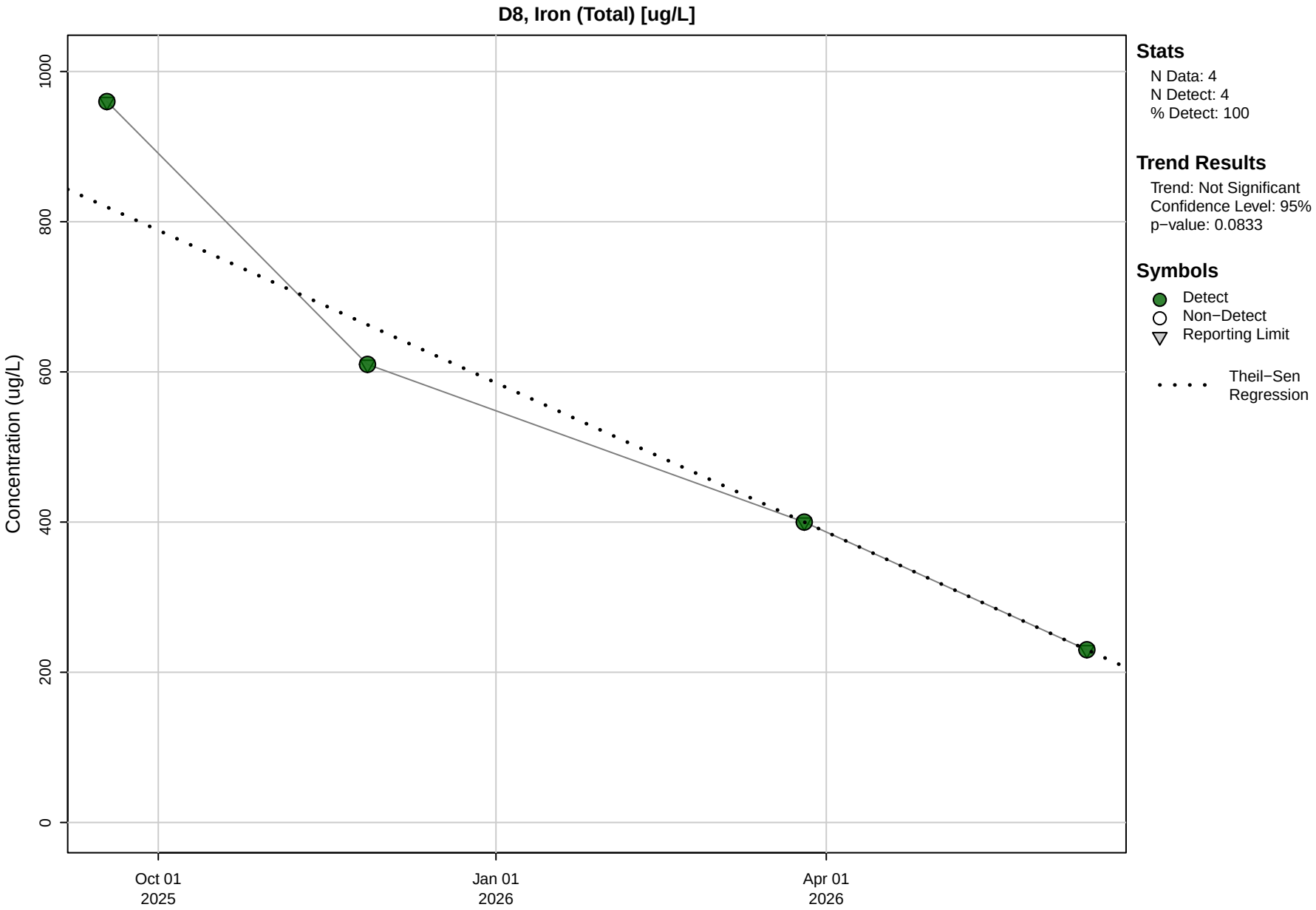

D5, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00191
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

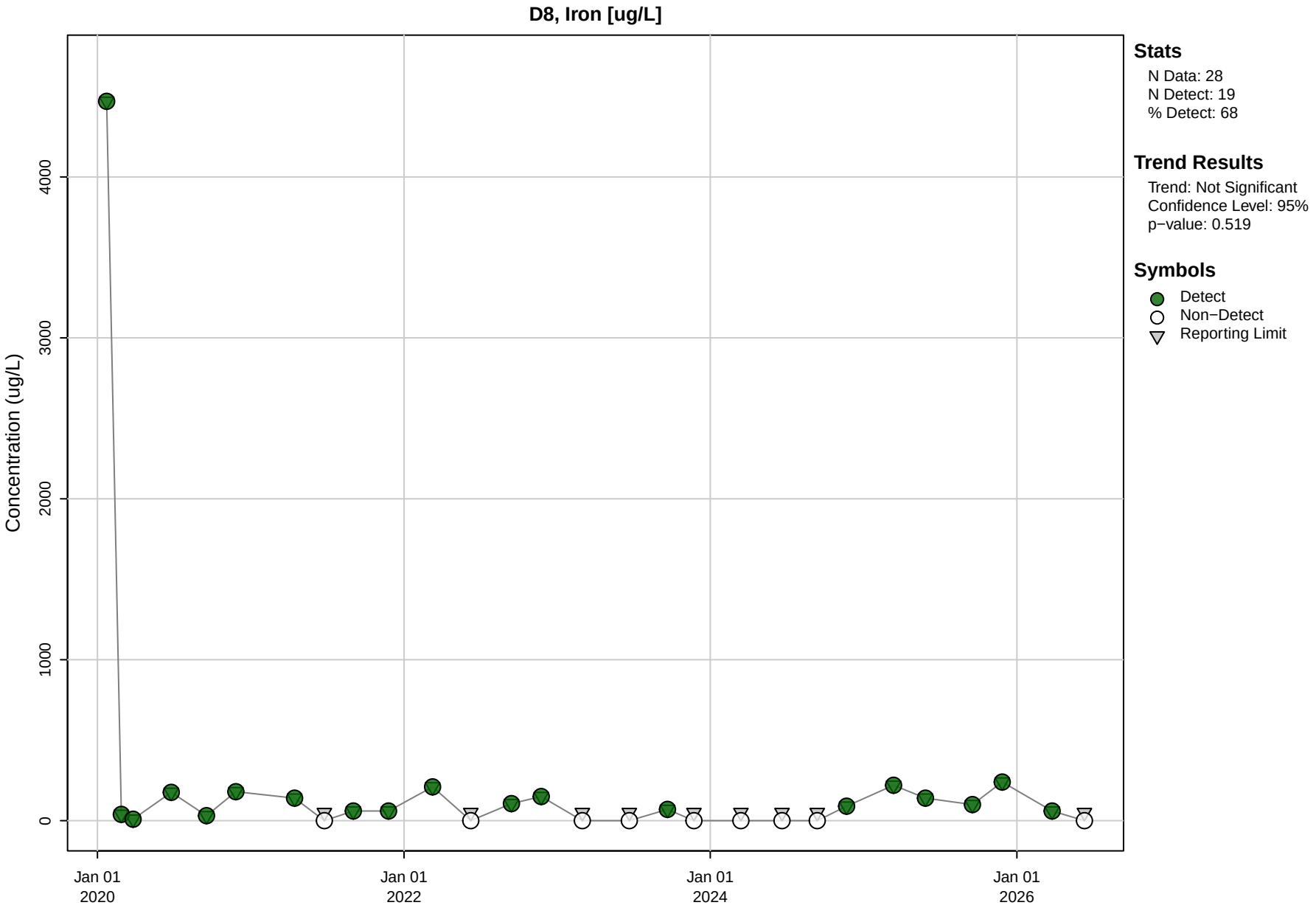

D5, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
200
400
600
800
1000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.069
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

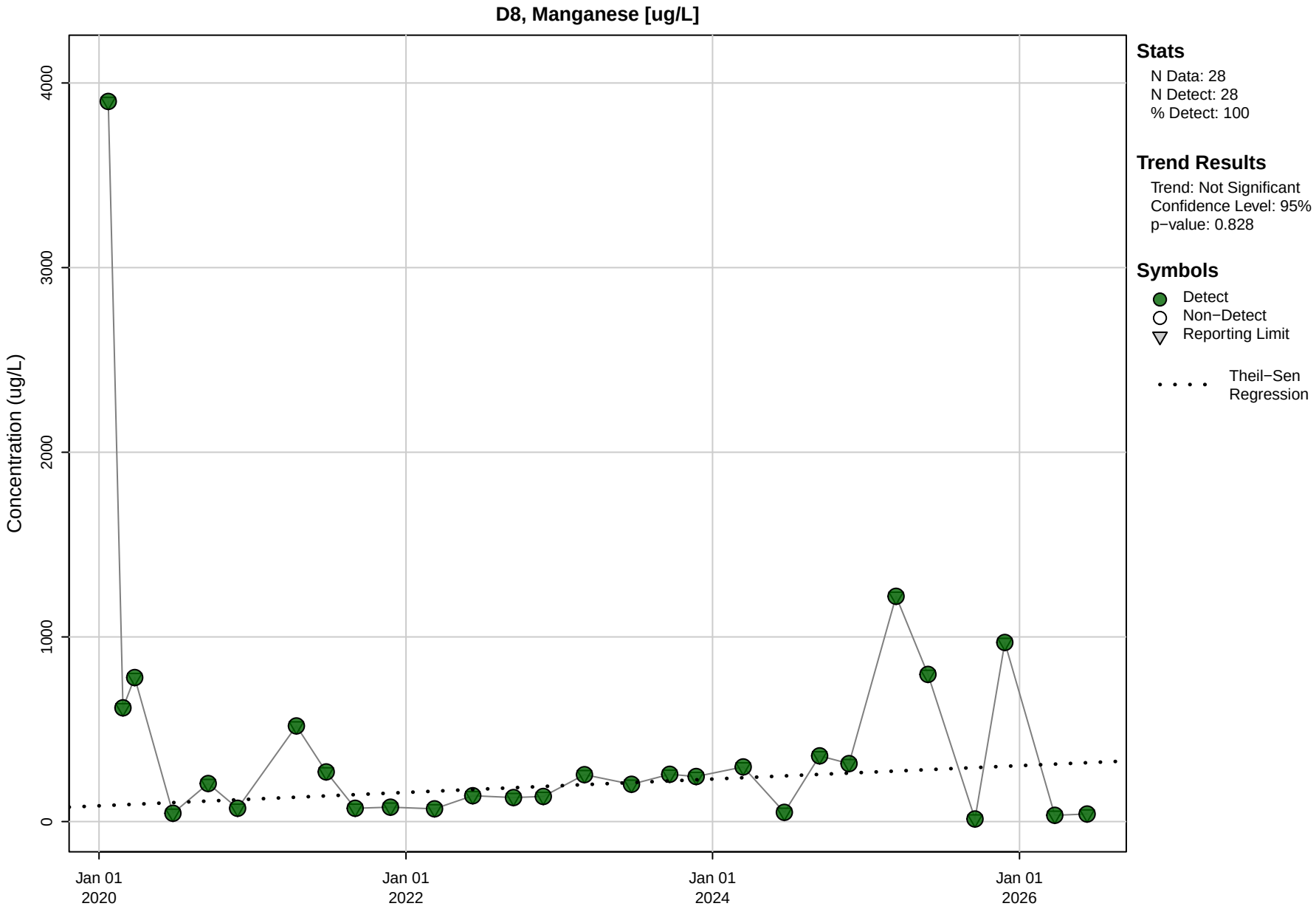

D8, Boron [ug/L]
Concentration (ug/L)
0
10
20
30
40
50
60
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 1
% Detect: 4
Trend Results
Test Criteria Not Met
Symbols
Detect
Non−Detect
Reporting Limit

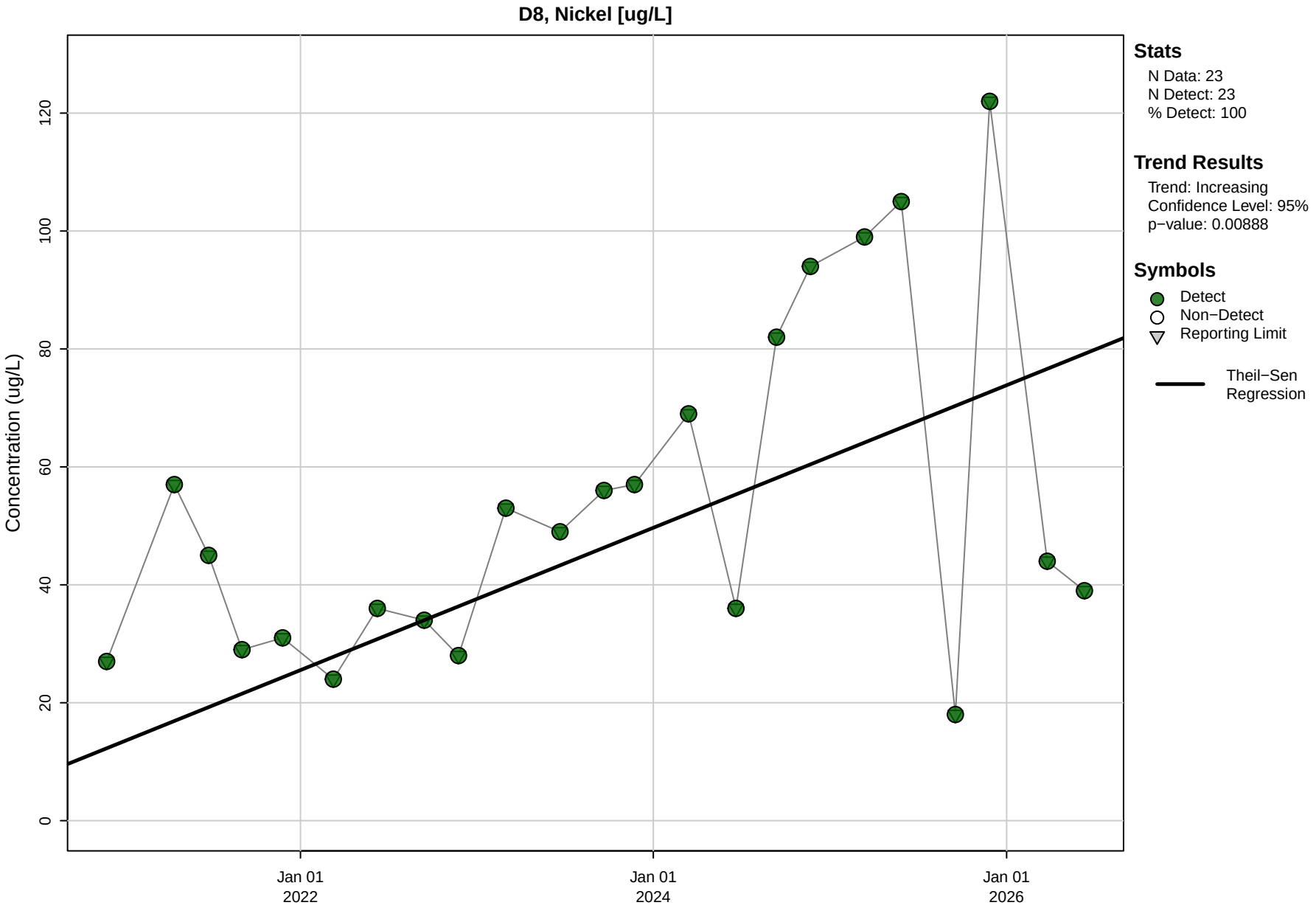

D8, Chloride [mg/L]
Concentration (mg/L)
0
20
40
60
80
100
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.118
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

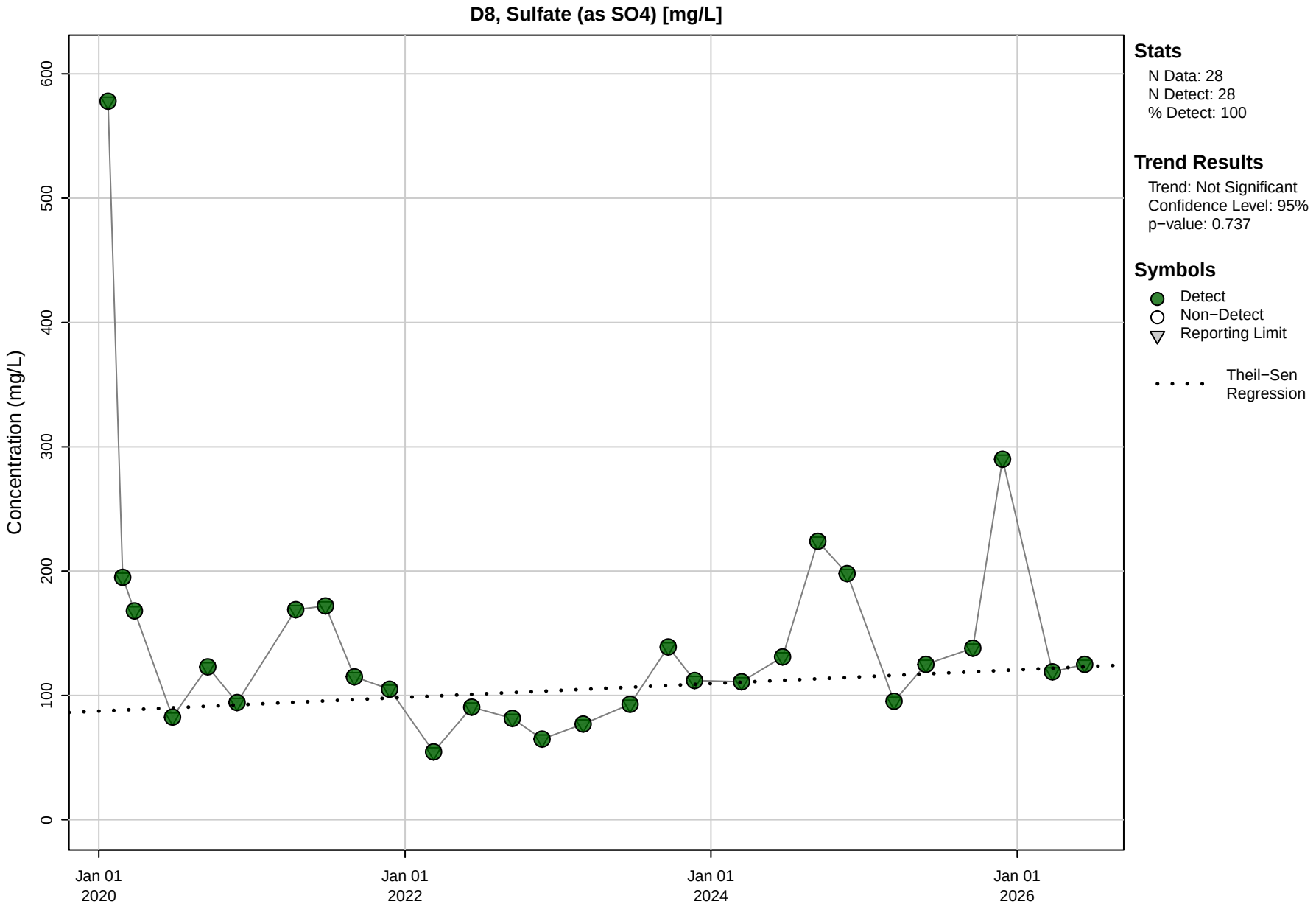

D8, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
500
1000
1500
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.527
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

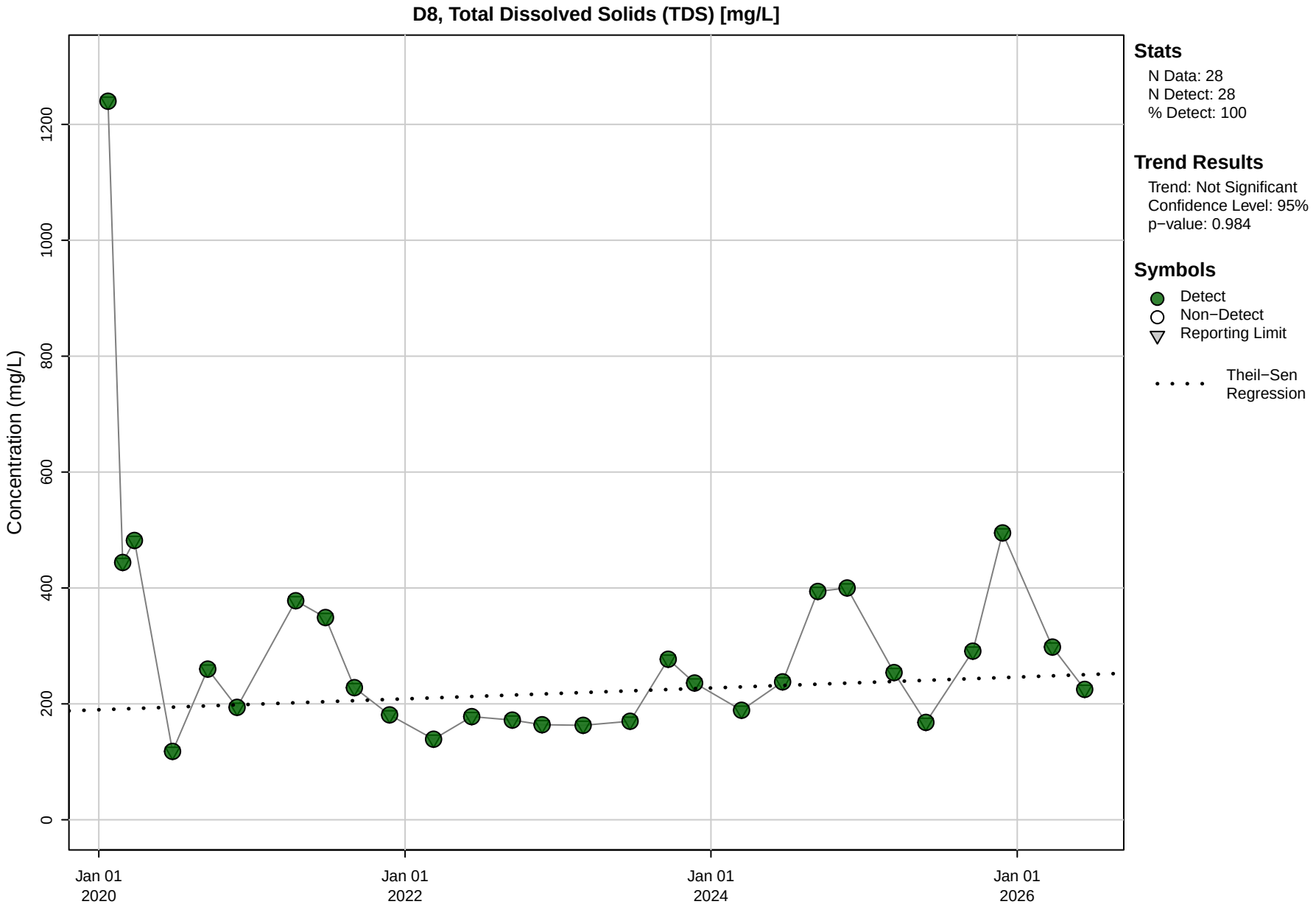

D8, Iron (Total) [ug/L]
Concentration (ug/L)
0
200
400
600
800
1000
Oct 01
2025
Jan 01
2026
Apr 01
2026
Stats
N Data: 4
N Detect: 4
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.0833
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

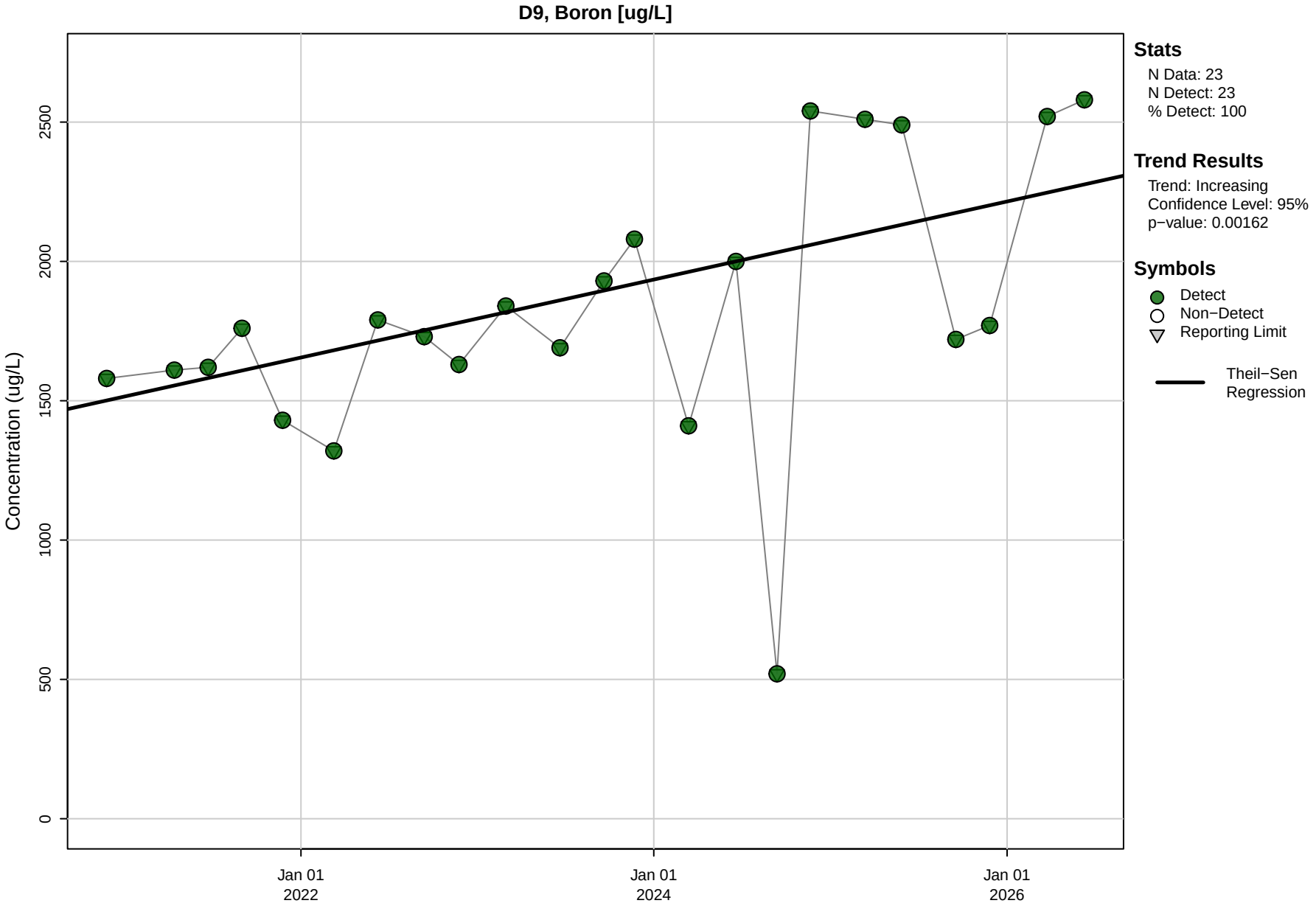

D8, Iron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 19
% Detect: 68
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.519
Symbols
Detect
Non−Detect
Reporting Limit

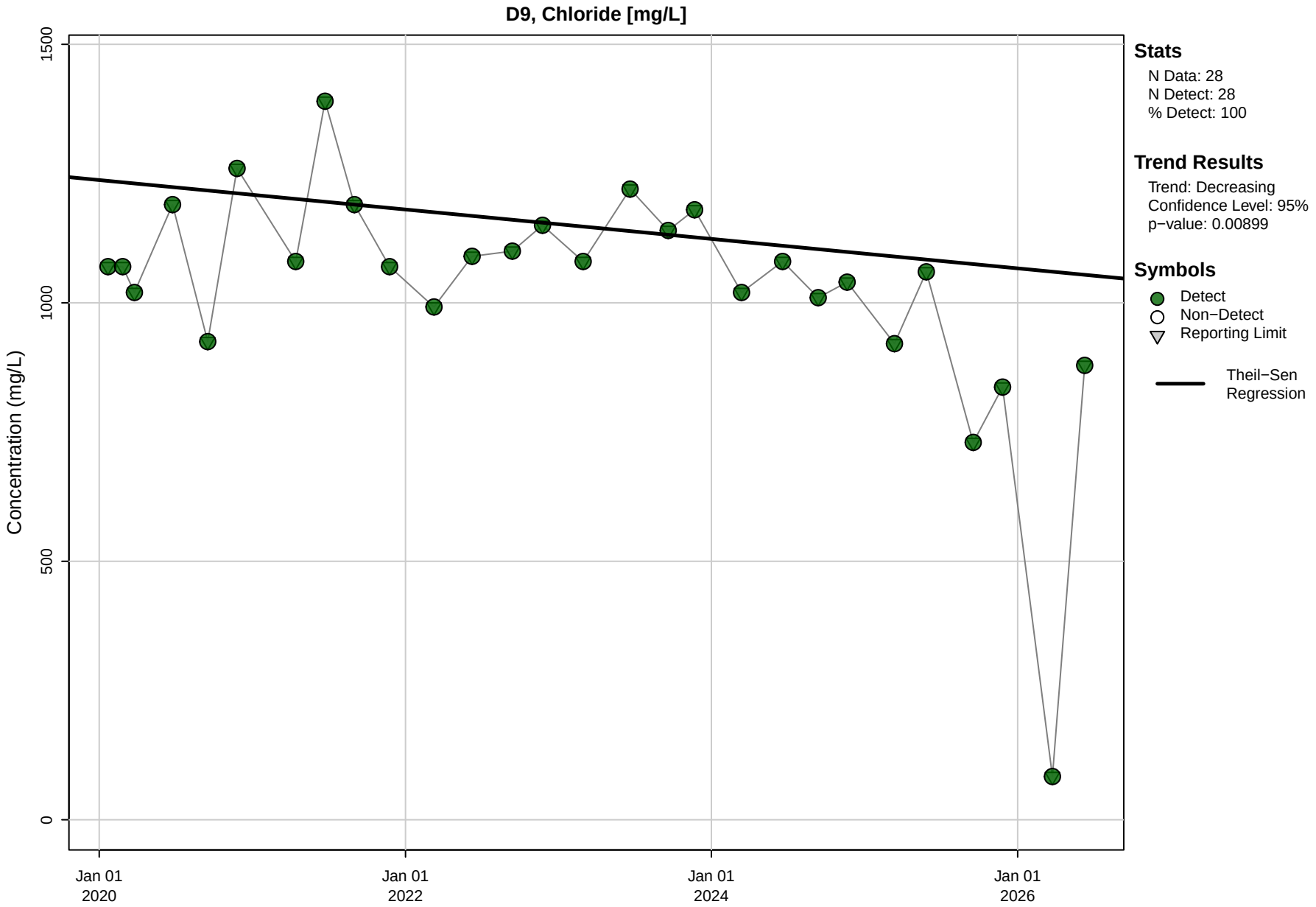

D8, Manganese [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.828
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

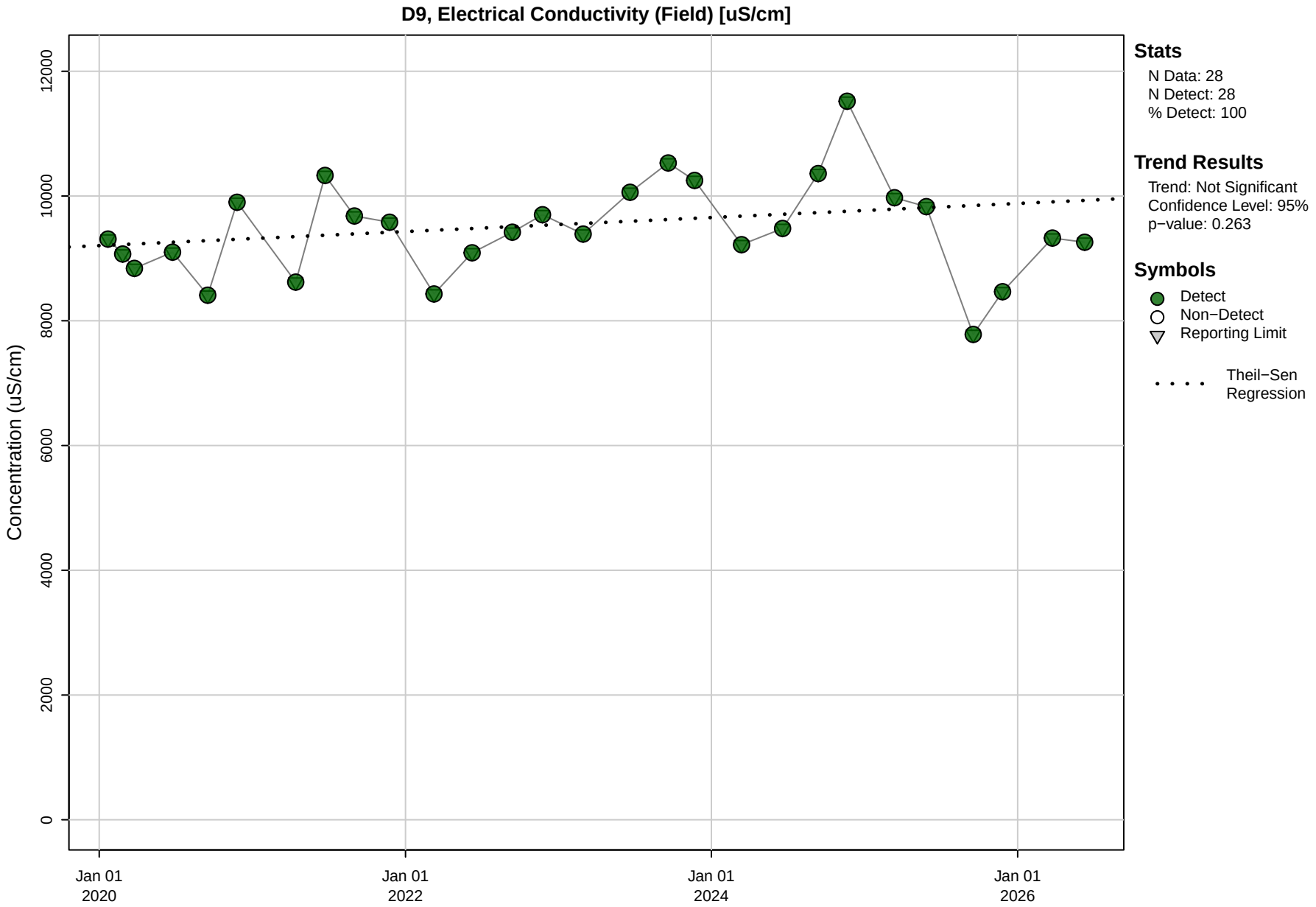

D8, Nickel [ug/L]
Concentration (ug/L)
0
20
40
60
80
100
120
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00888
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

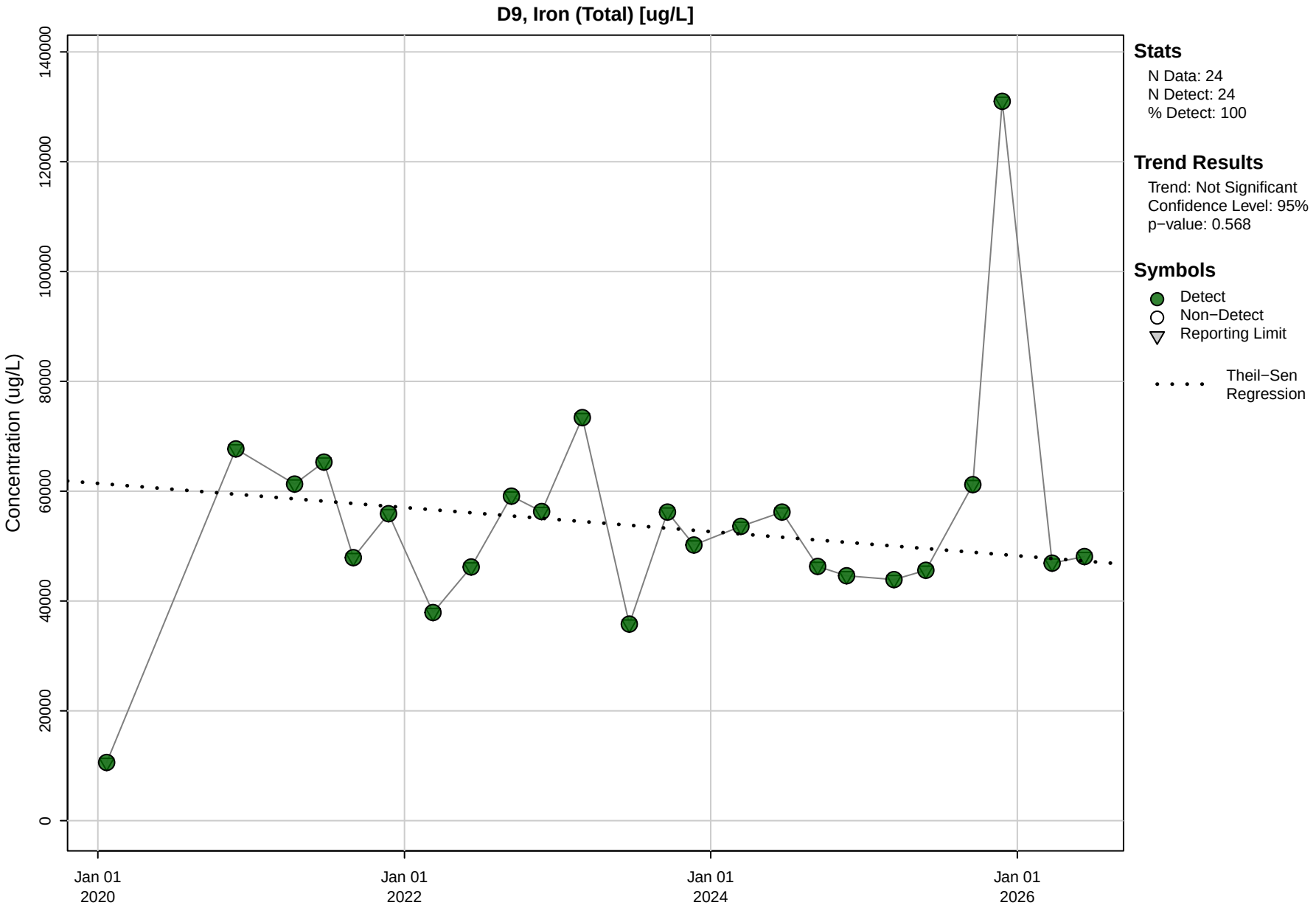

D8, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
100
200
300
400
500
600
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.737
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

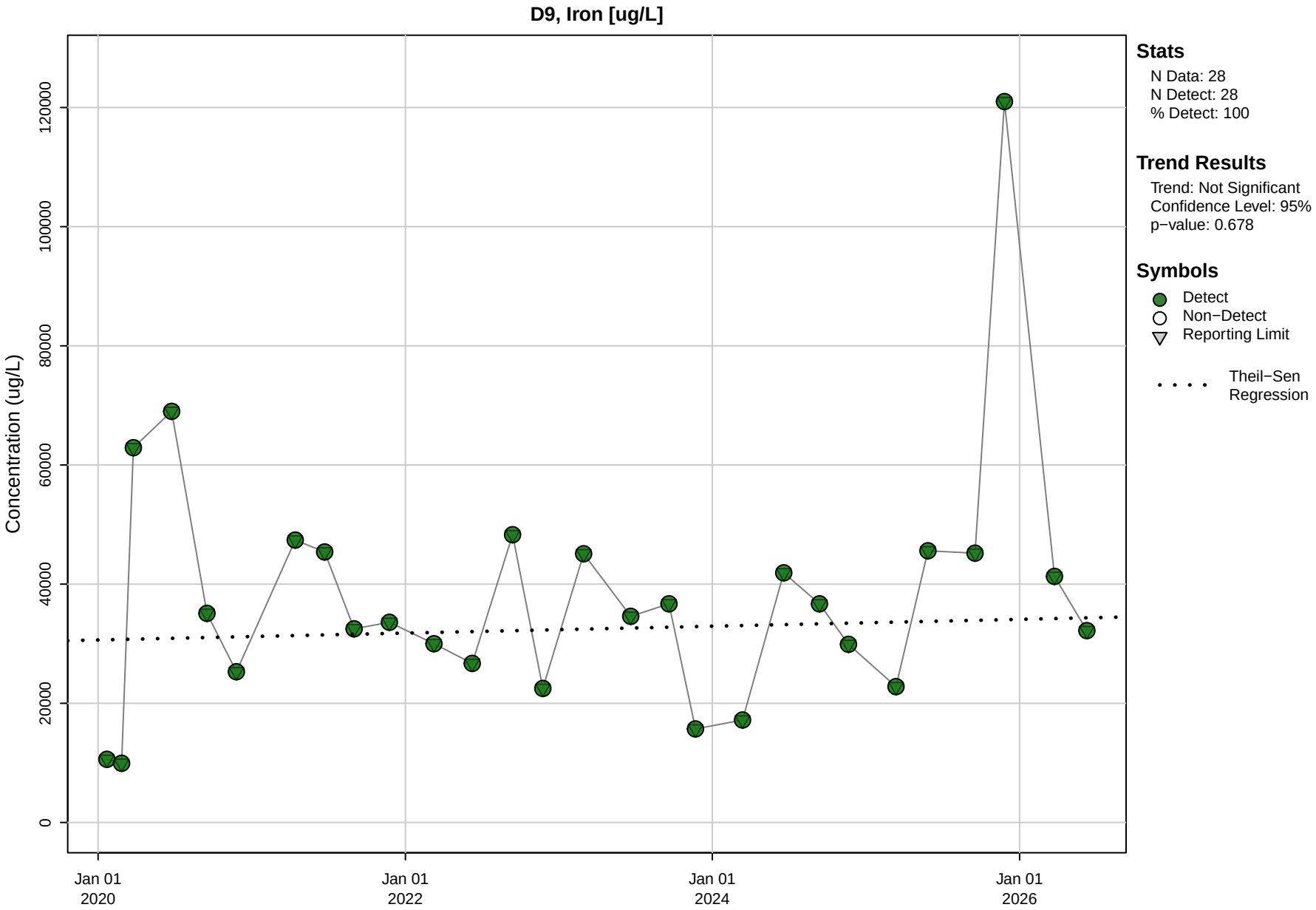

D8, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
200
400
600
800
1000
1200
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.984
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

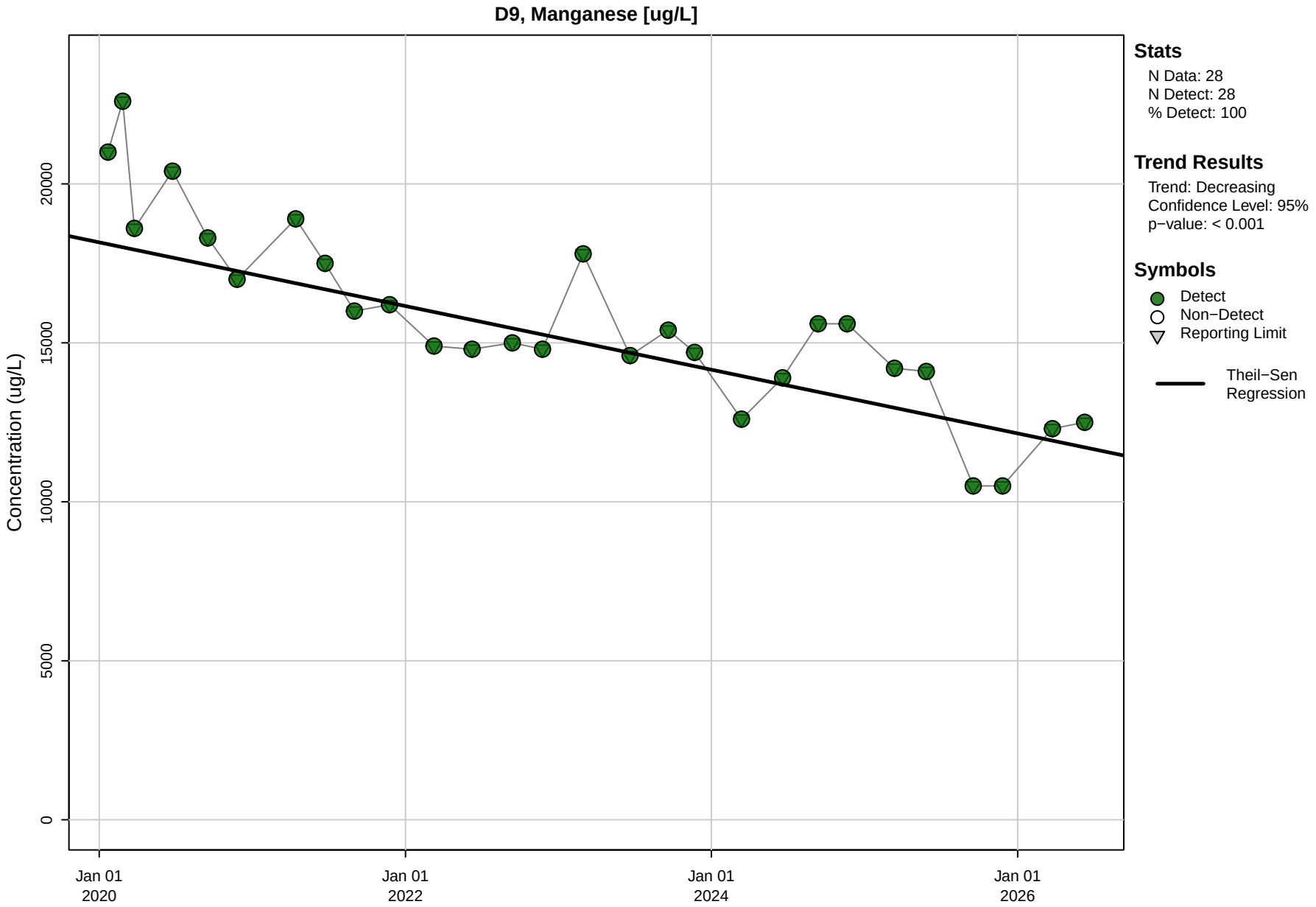

D9, Boron [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00162
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

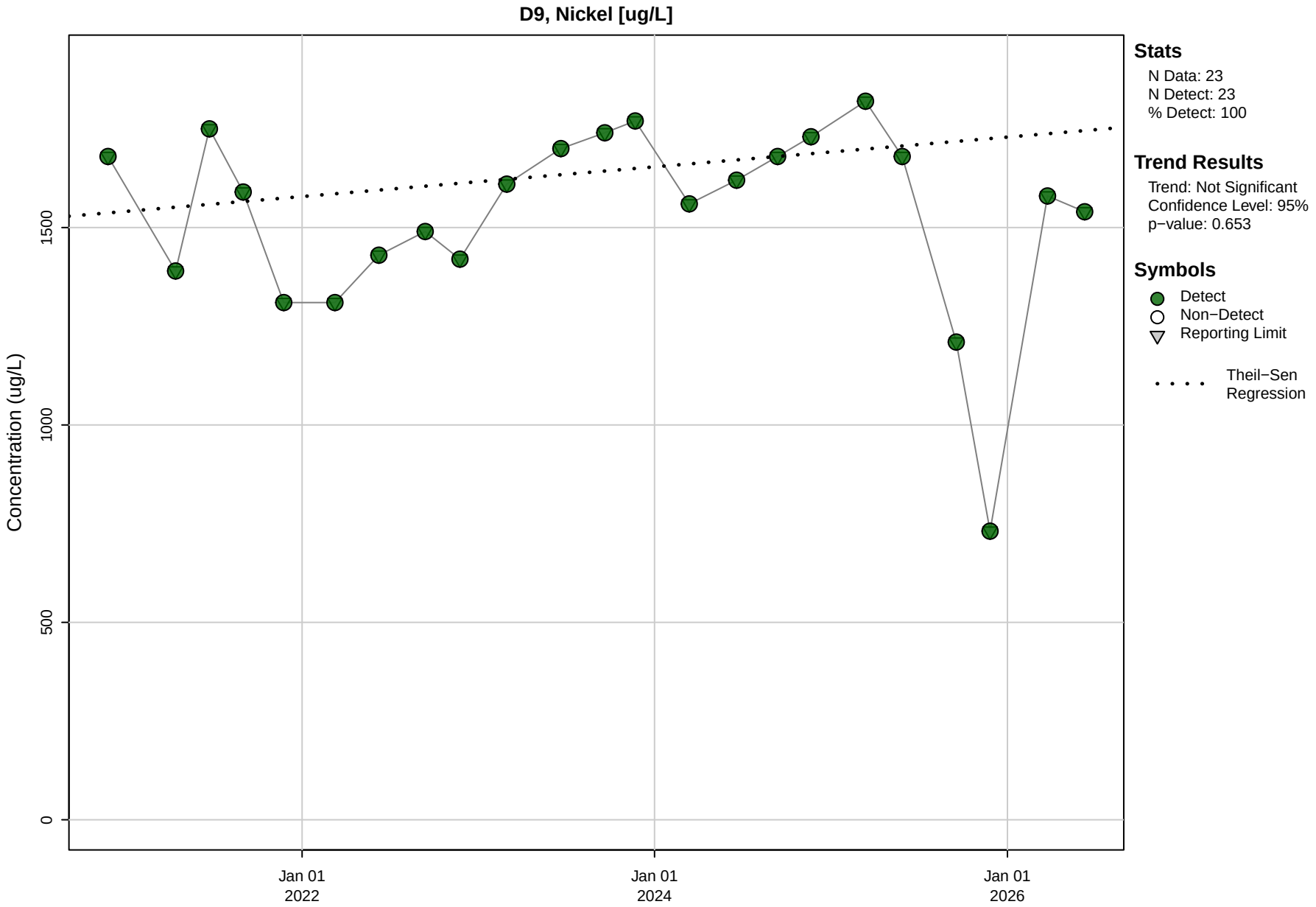

D9, Chloride [mg/L]
Concentration (mg/L)
1500
1000
500
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.00899
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

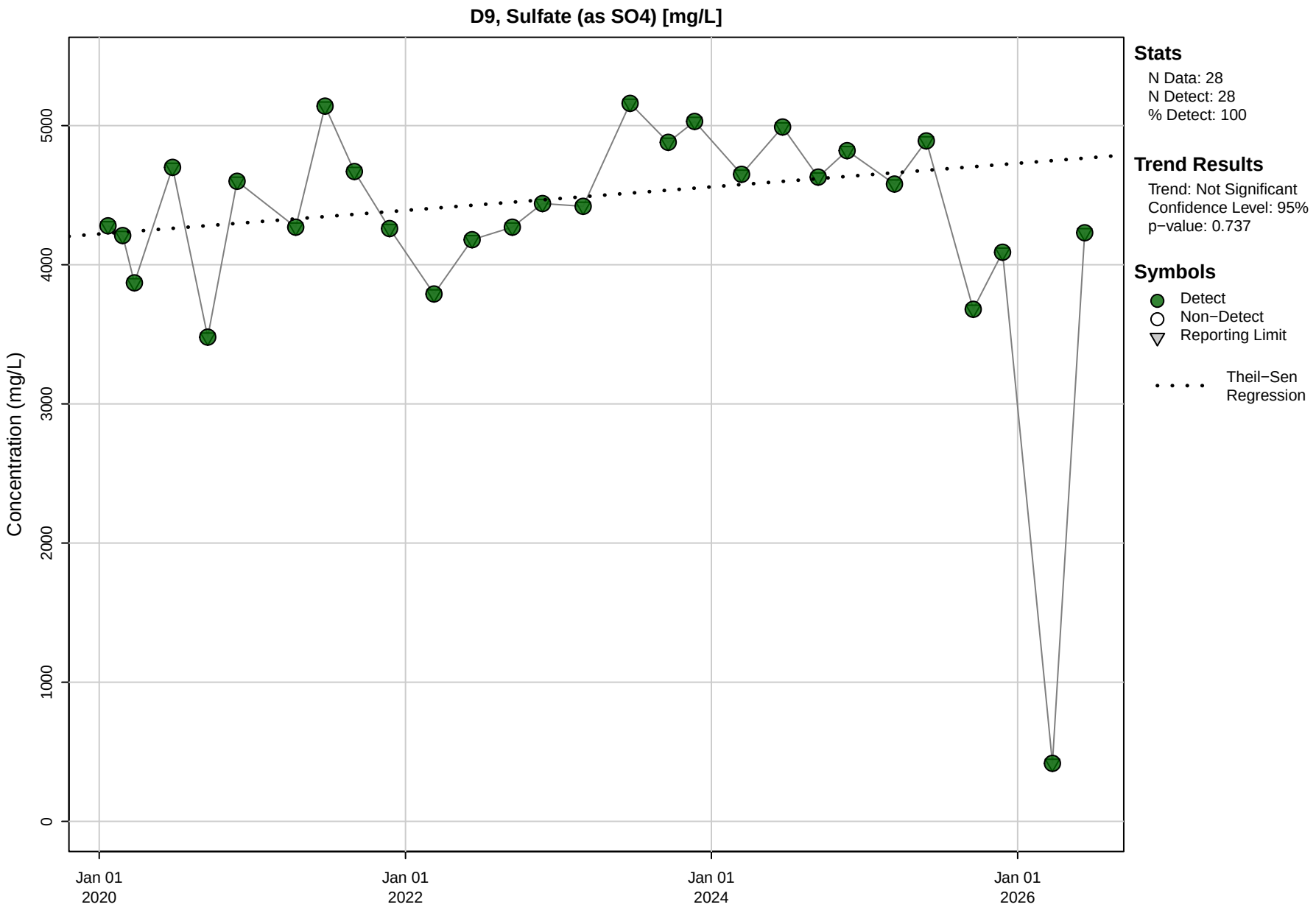

D9, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
2000
4000
6000
8000
10000
12000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.263
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

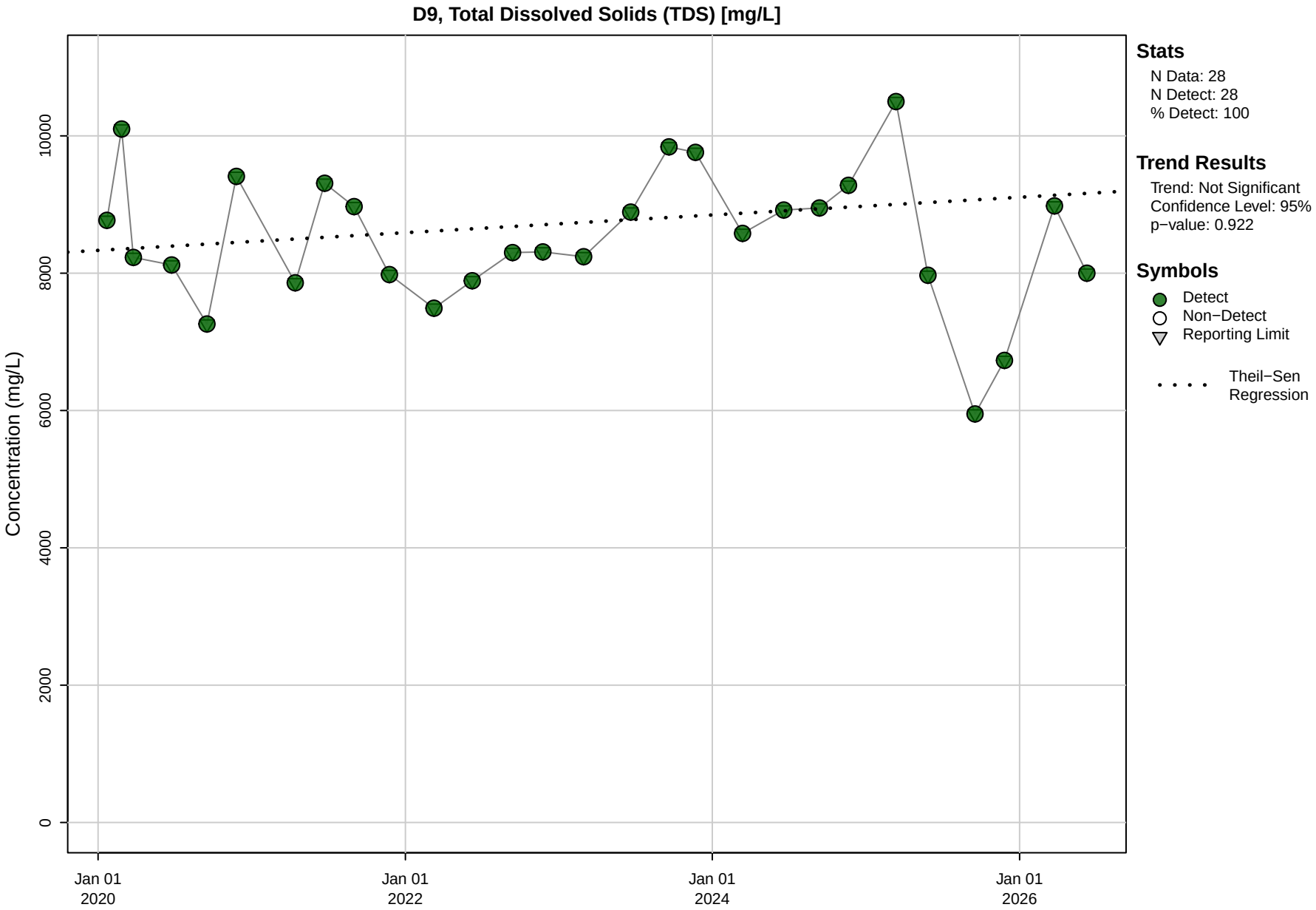

D9, Iron (Total) [ug/L]
Concentration (ug/L)
0
20000
40000
60000
80000
100000
120000
140000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 24
N Detect: 24
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.568
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

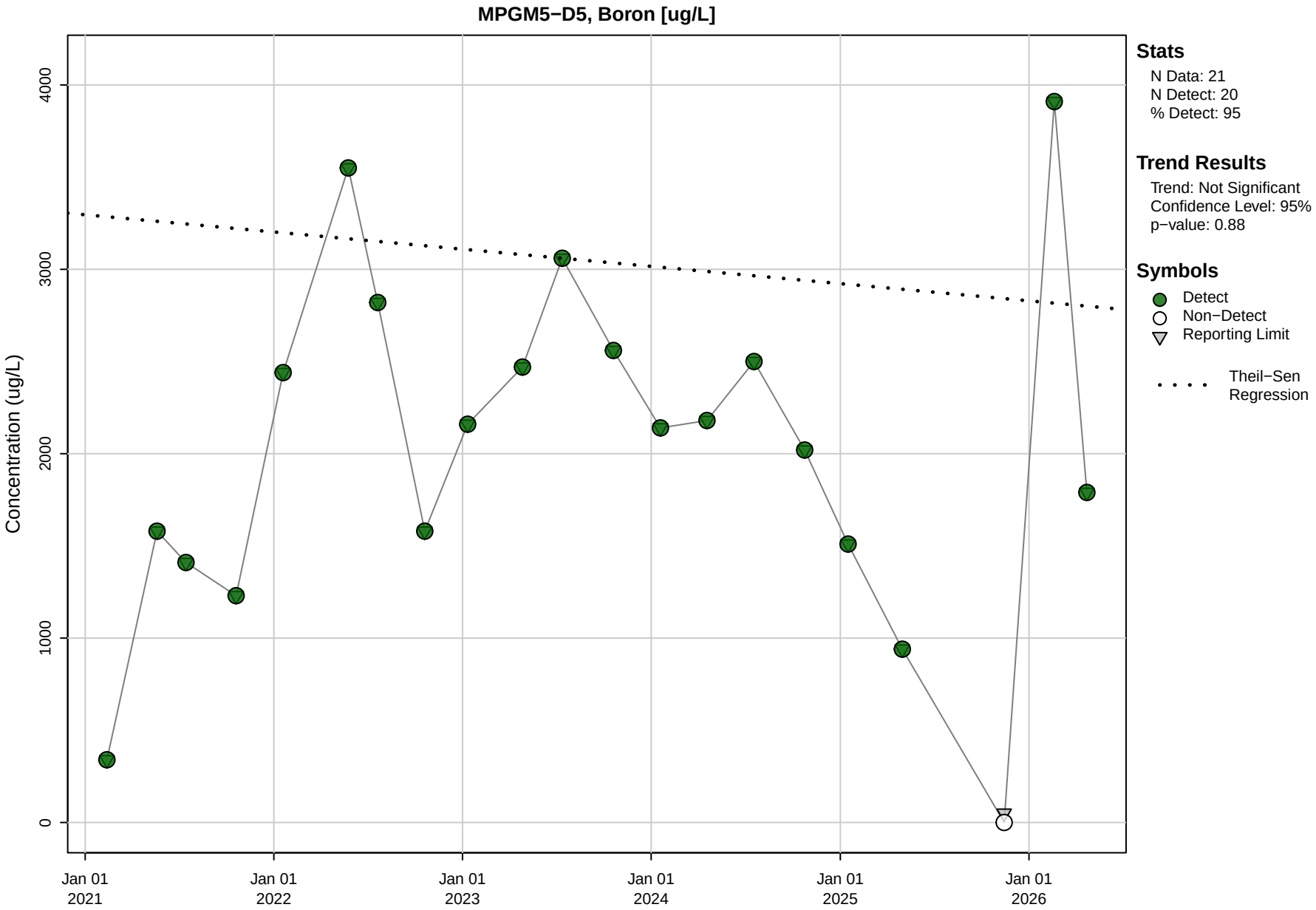

D9, Iron [ug/L]
Concentration (ug/L)
0
20000
40000
60000
80000
100000
120000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.678
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

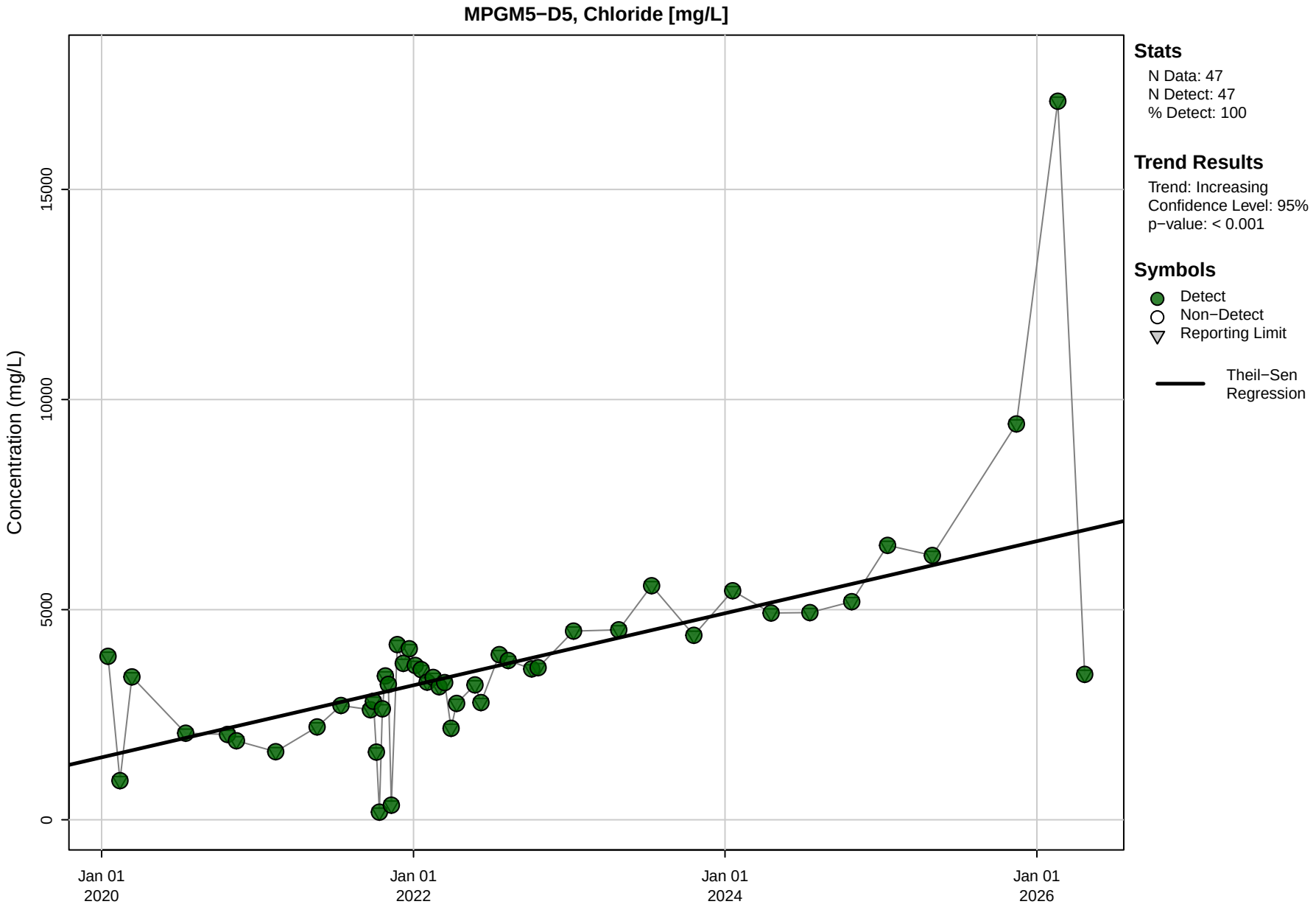

D9, Manganese [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

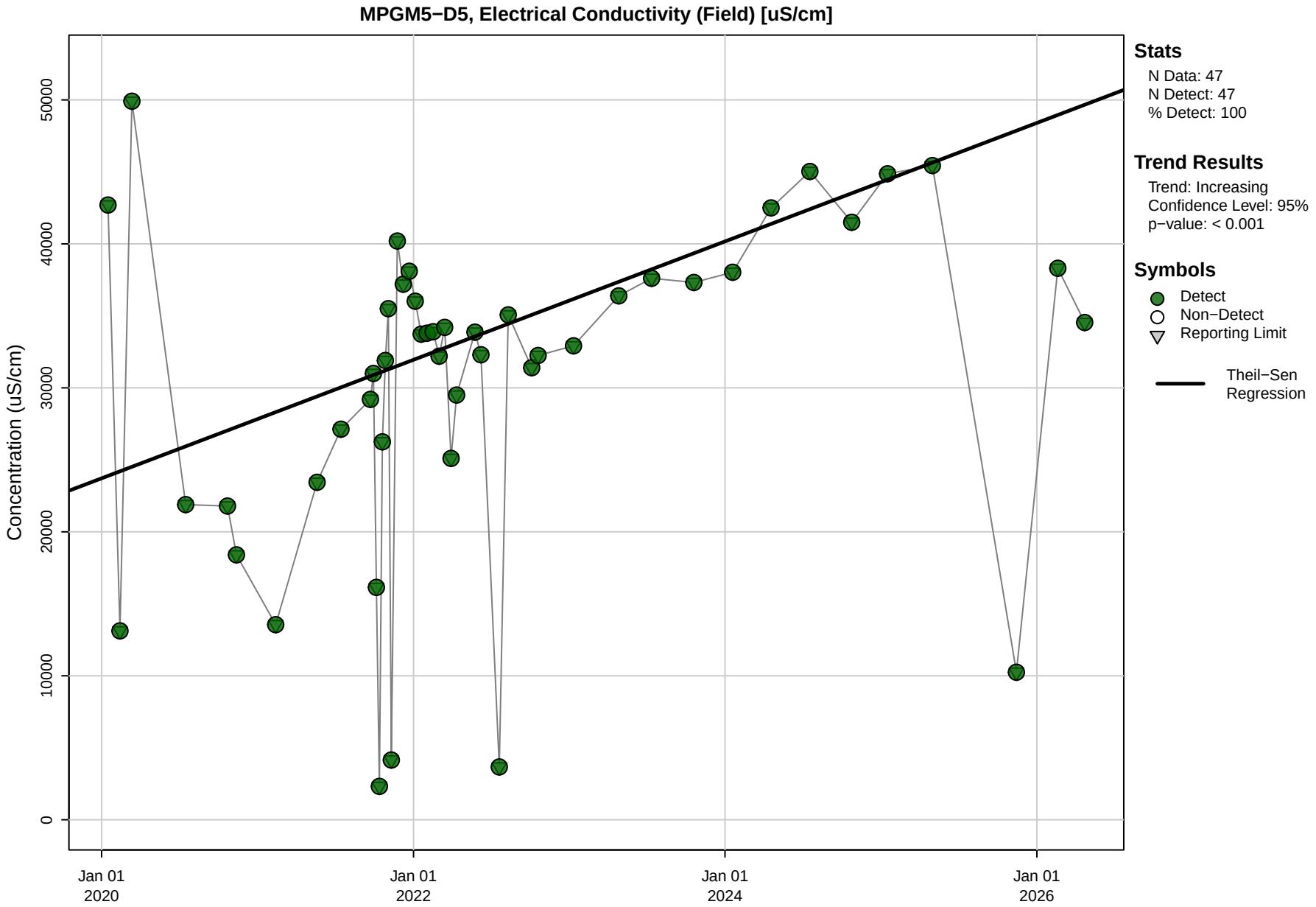

D9, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.653
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

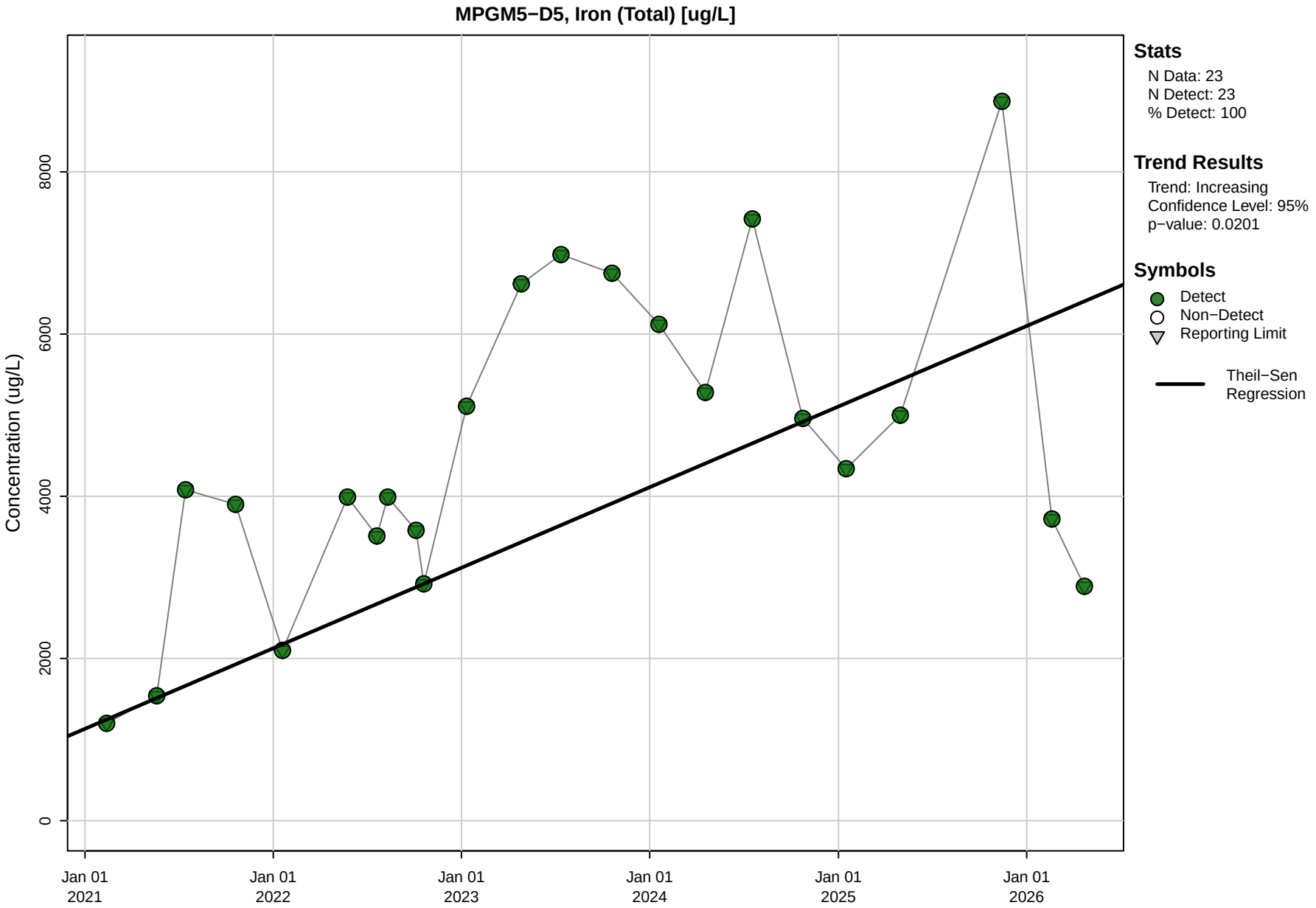

D9, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
1000
2000
3000
4000
5000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.737
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

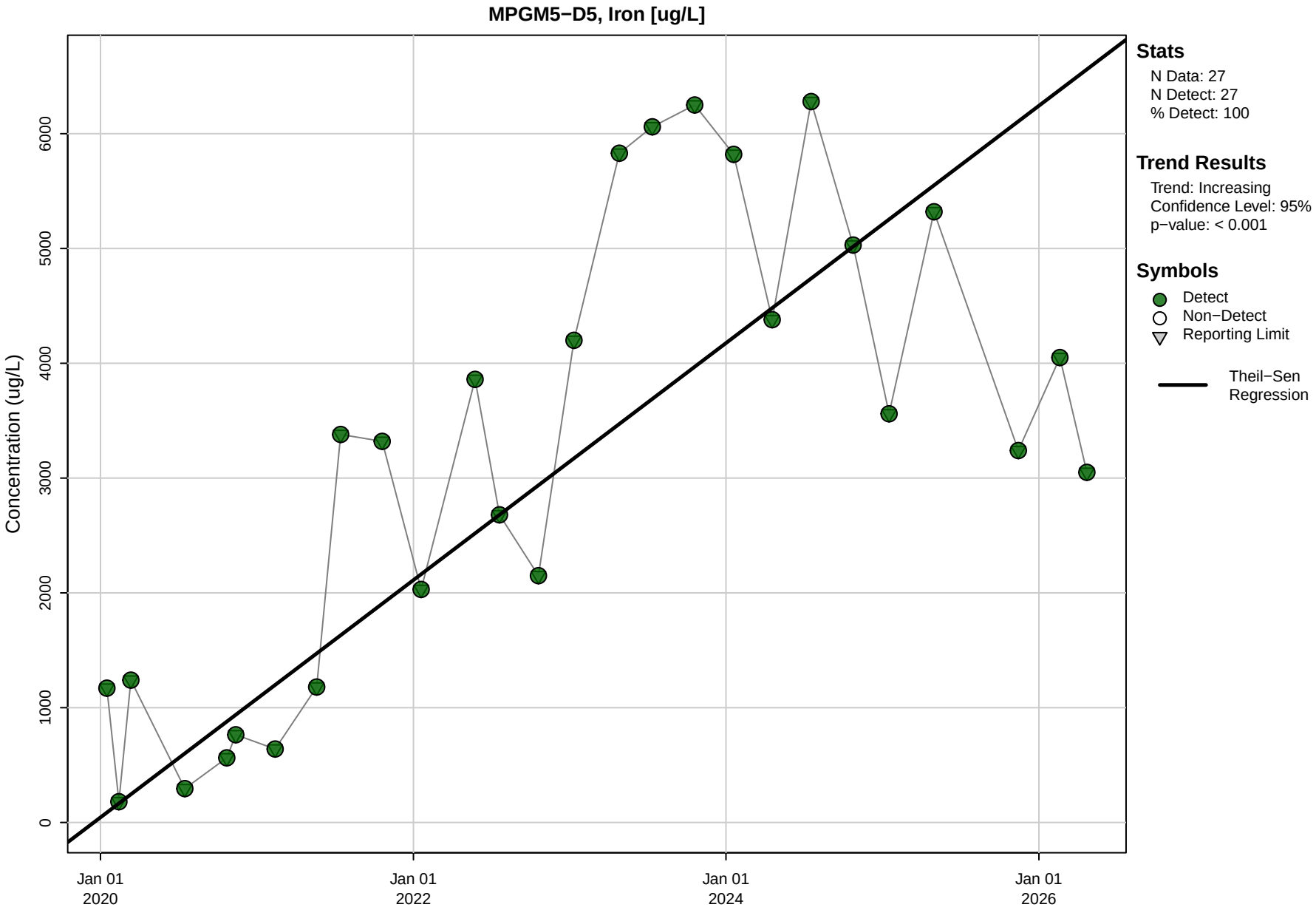

D9, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
10000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 28
N Detect: 28
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.922
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

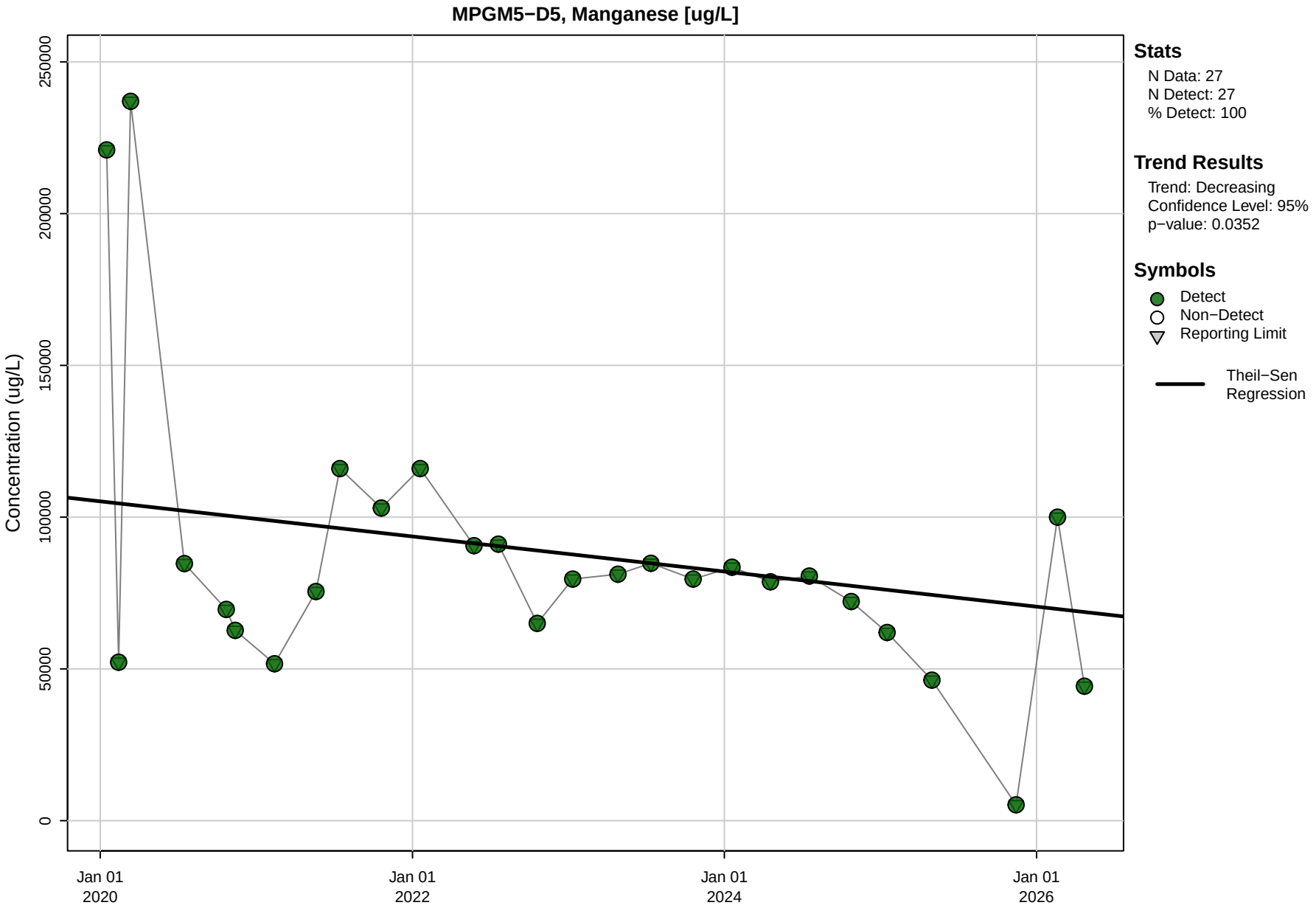

MPGM5−D5, Boron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 21
N Detect: 20
% Detect: 95
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.88
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

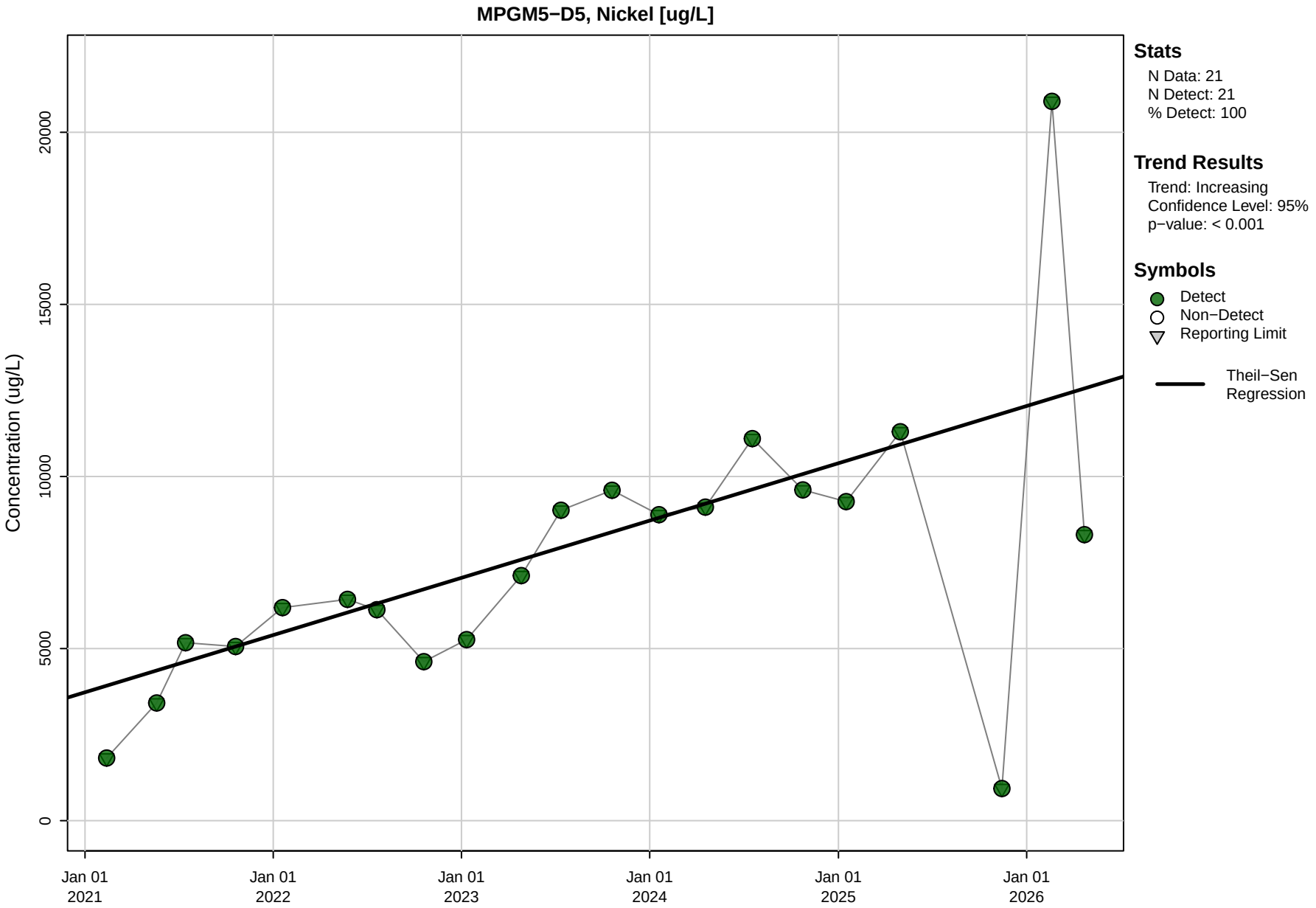

MPGM5−D5, Chloride [mg/L]
Concentration (mg/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 47
N Detect: 47
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

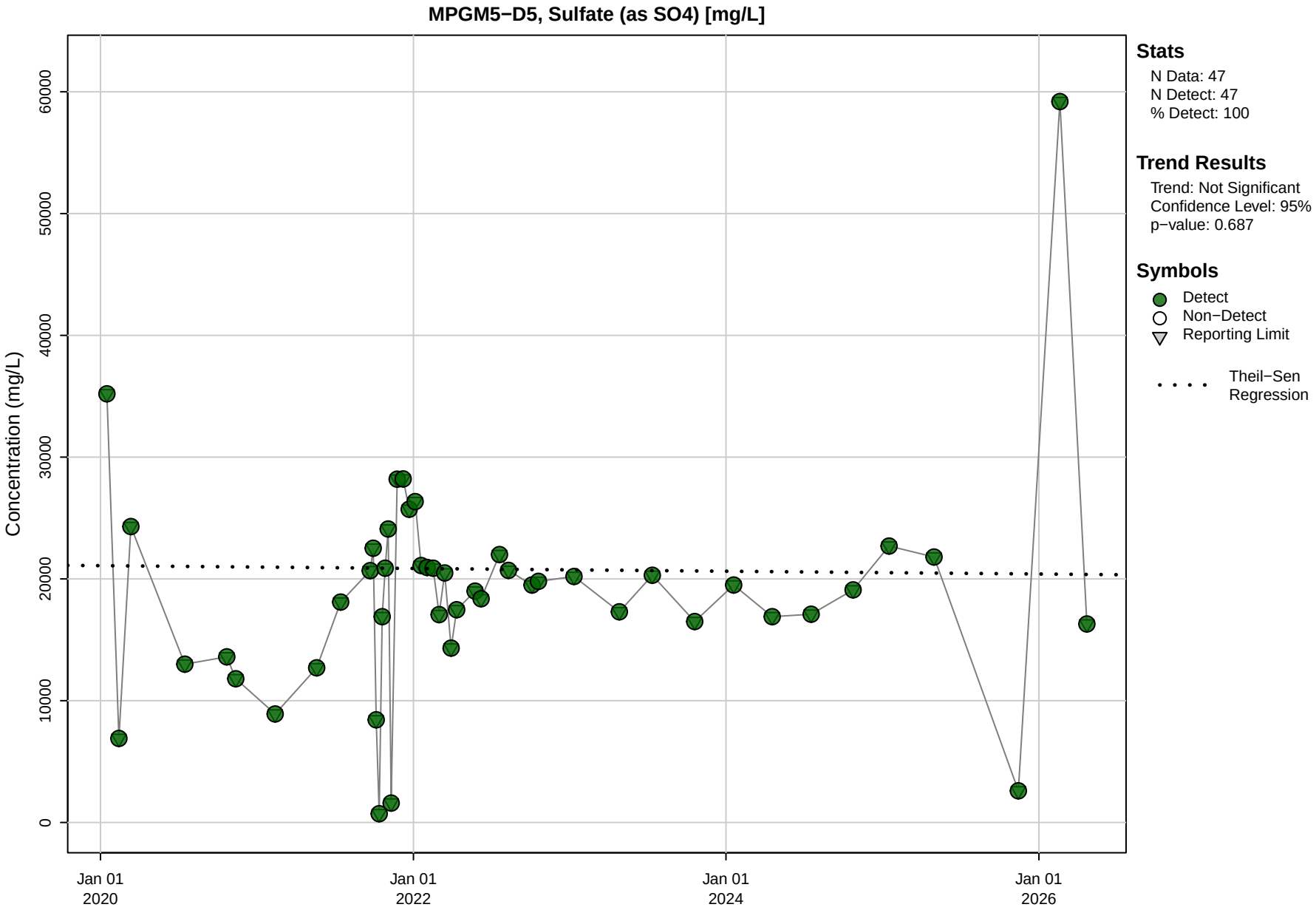

MPGM5−D5, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
10000
20000
30000
40000
50000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 47
N Detect: 47
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

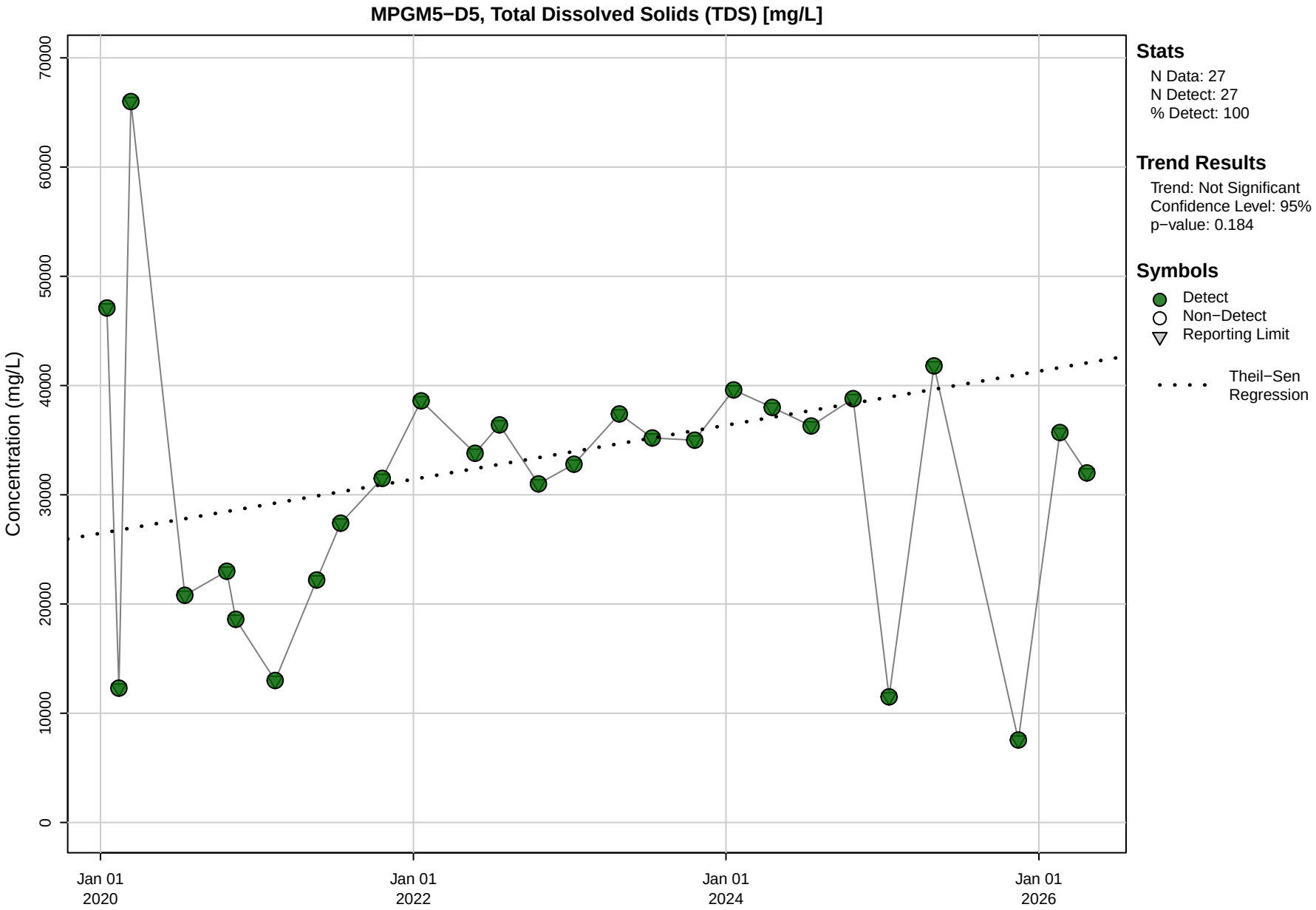

MPGM5−D5, Iron (Total) [ug/L]
Concentration (ug/L)
0
2000
4000
6000
8000
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 23
N Detect: 23
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.0201
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

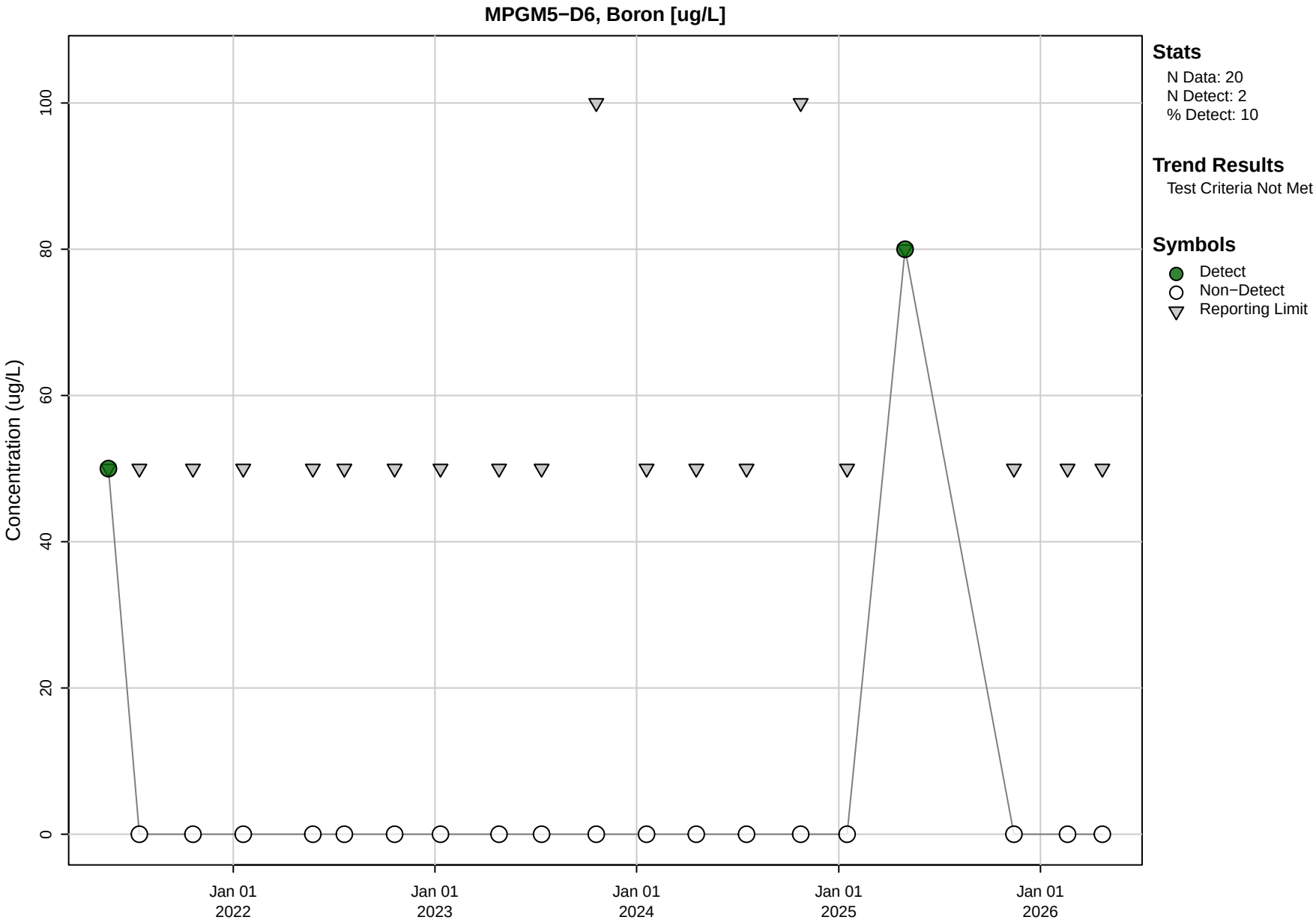

MPGM5−D5, Iron [ug/L]
Concentration (ug/L)
0
1000
2000
3000
4000
5000
6000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

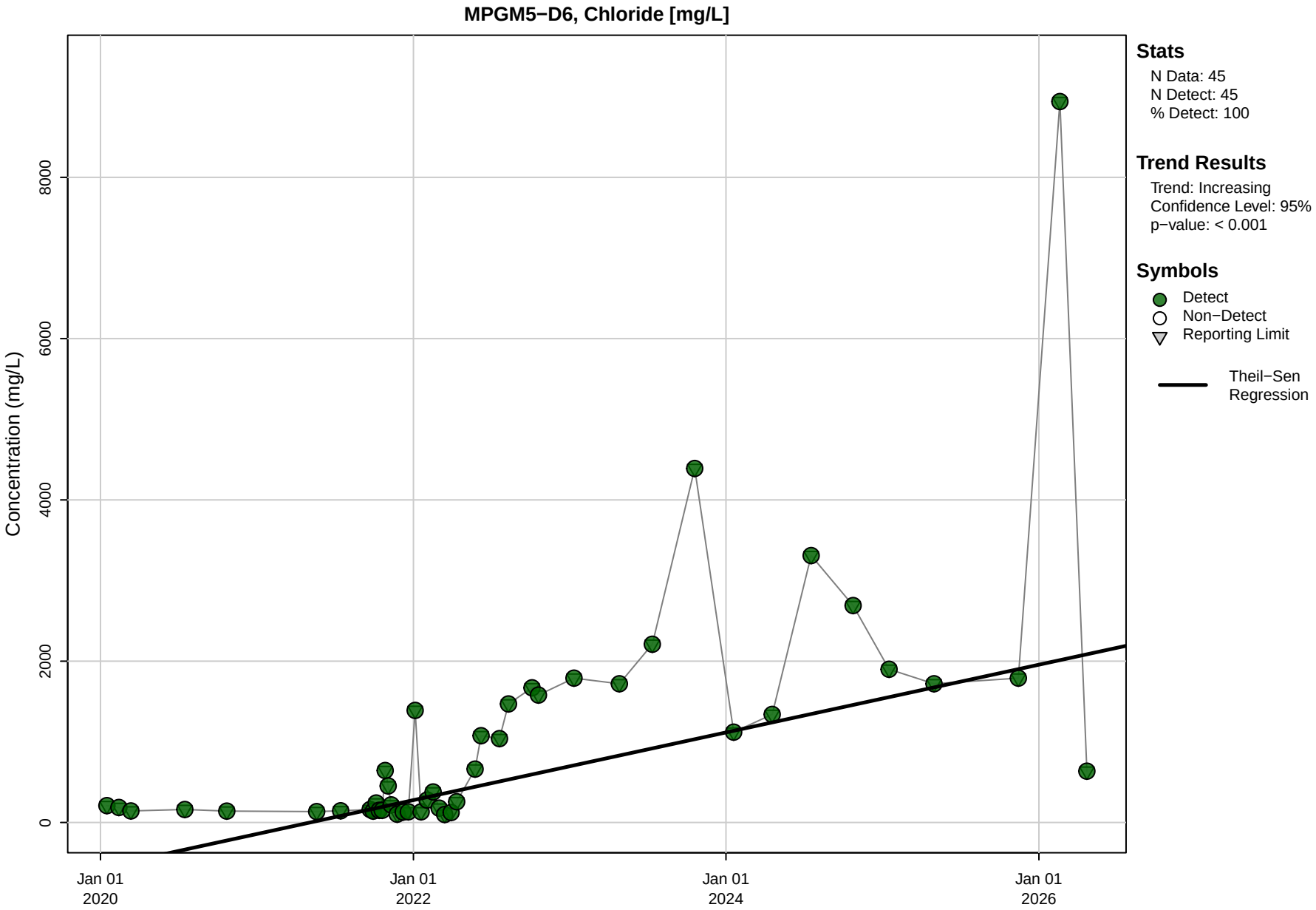

MPGM5−D5, Manganese [ug/L]
Concentration (ug/L)
250000
200000
150000
100000
50000
0
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: 0.0352
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

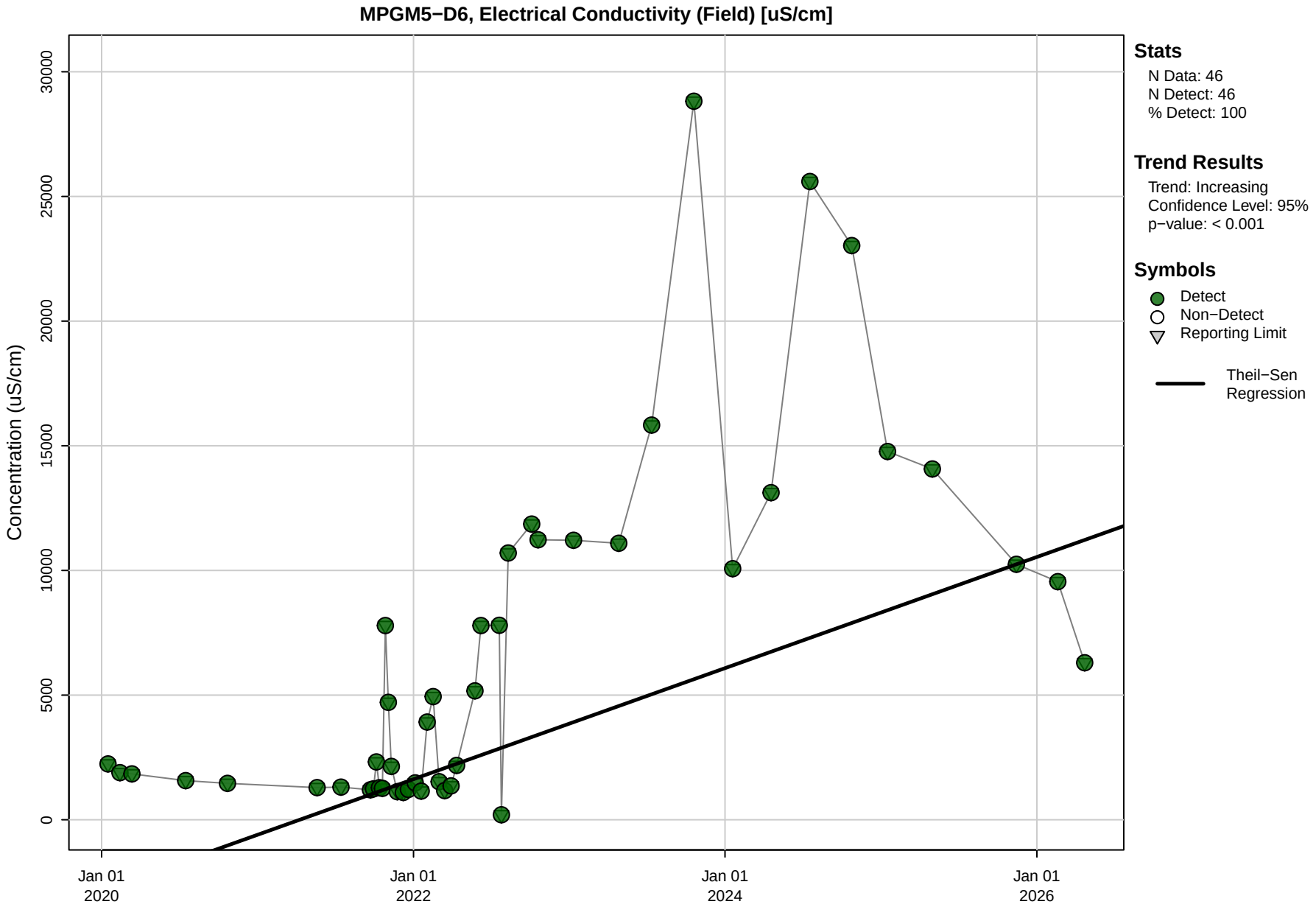

MPGM5−D5, Nickel [ug/L]
Concentration (ug/L)
0
5000
10000
15000
20000
Jan 01
2021
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 21
N Detect: 21
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

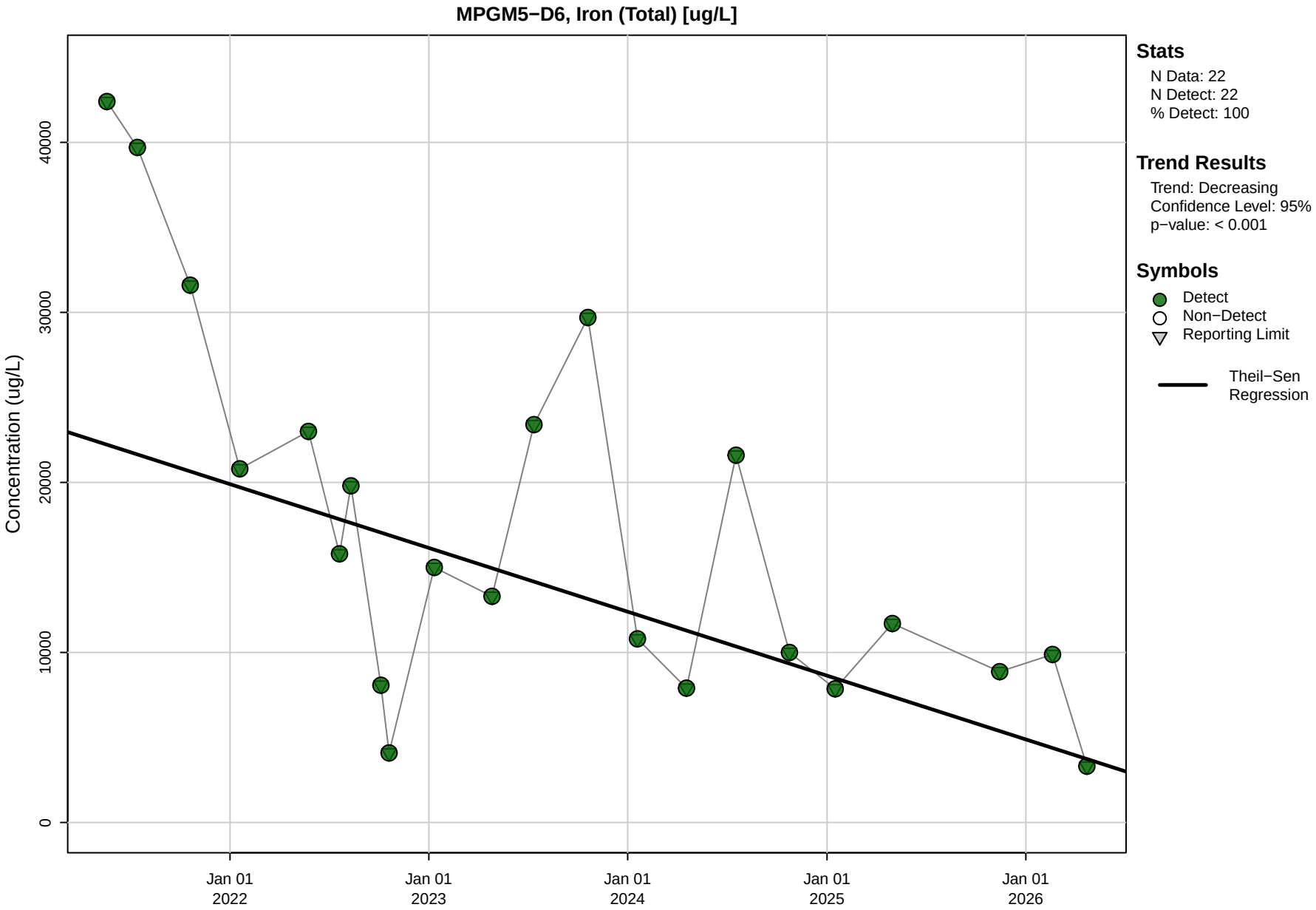

MPGM5−D5, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
10000
20000
30000
40000
50000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 47
N Detect: 47
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.687
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

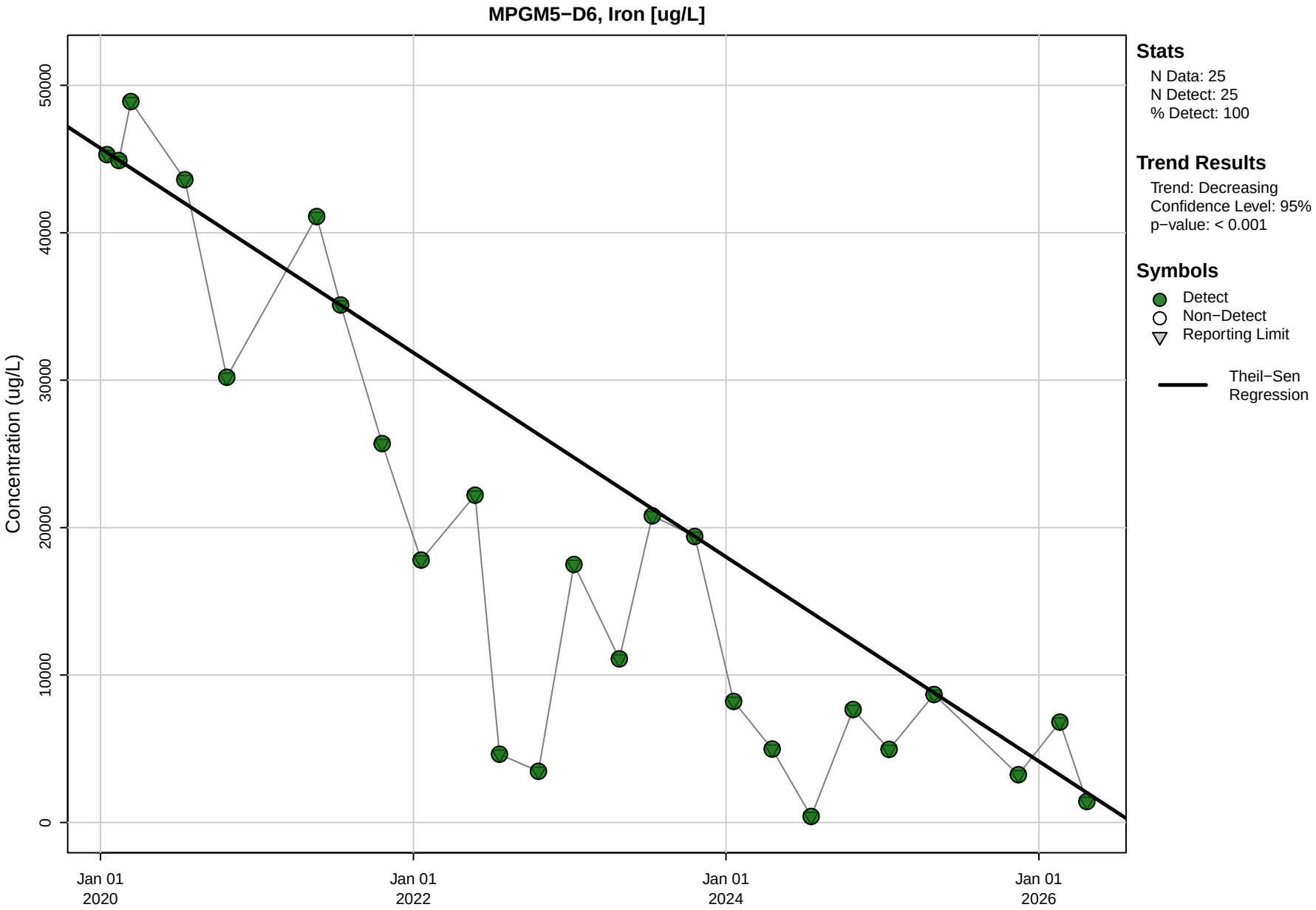

MPGM5−D5, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
10000
20000
30000
40000
50000
60000
70000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 27
N Detect: 27
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.184
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

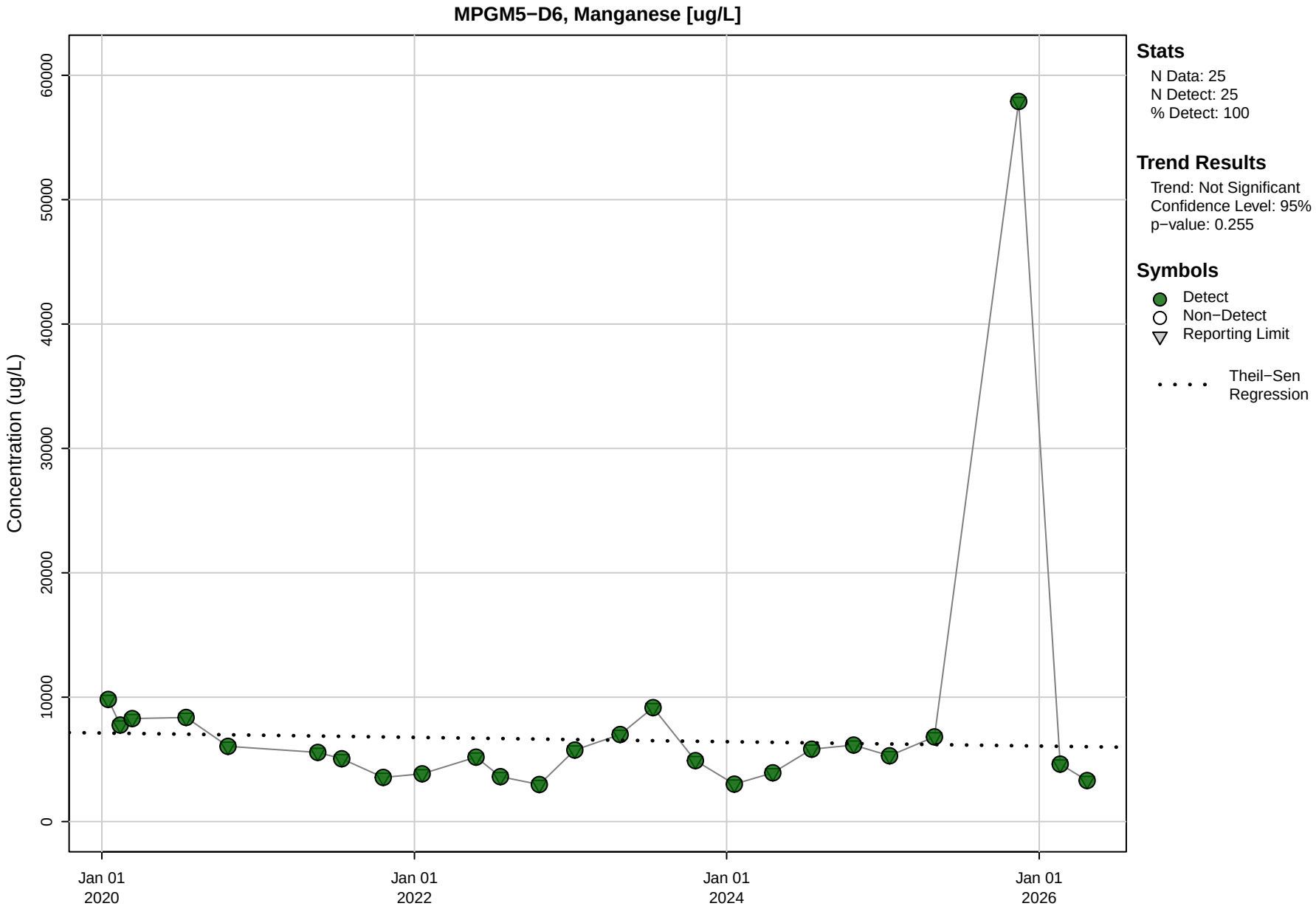

MPGM5−D6, Boron [ug/L]
Concentration (ug/L)
0
20
40
60
80
100
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 20
N Detect: 2
% Detect: 10
Trend Results
Test Criteria Not Met
Symbols
Detect
Non−Detect
Reporting Limit

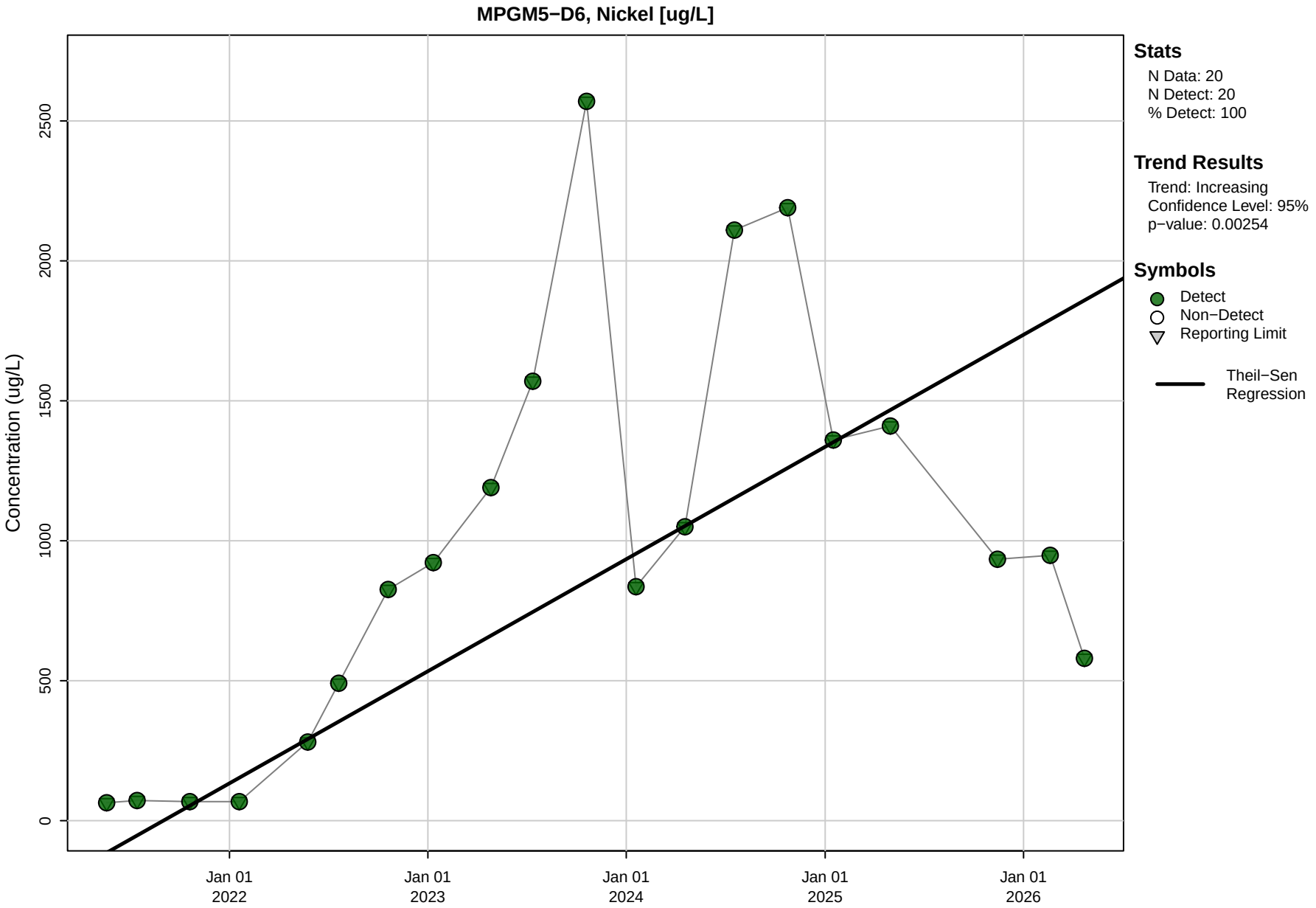

MPGM5−D6, Chloride [mg/L]
Concentration (mg/L)
0
2000
4000
6000
8000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 45
N Detect: 45
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

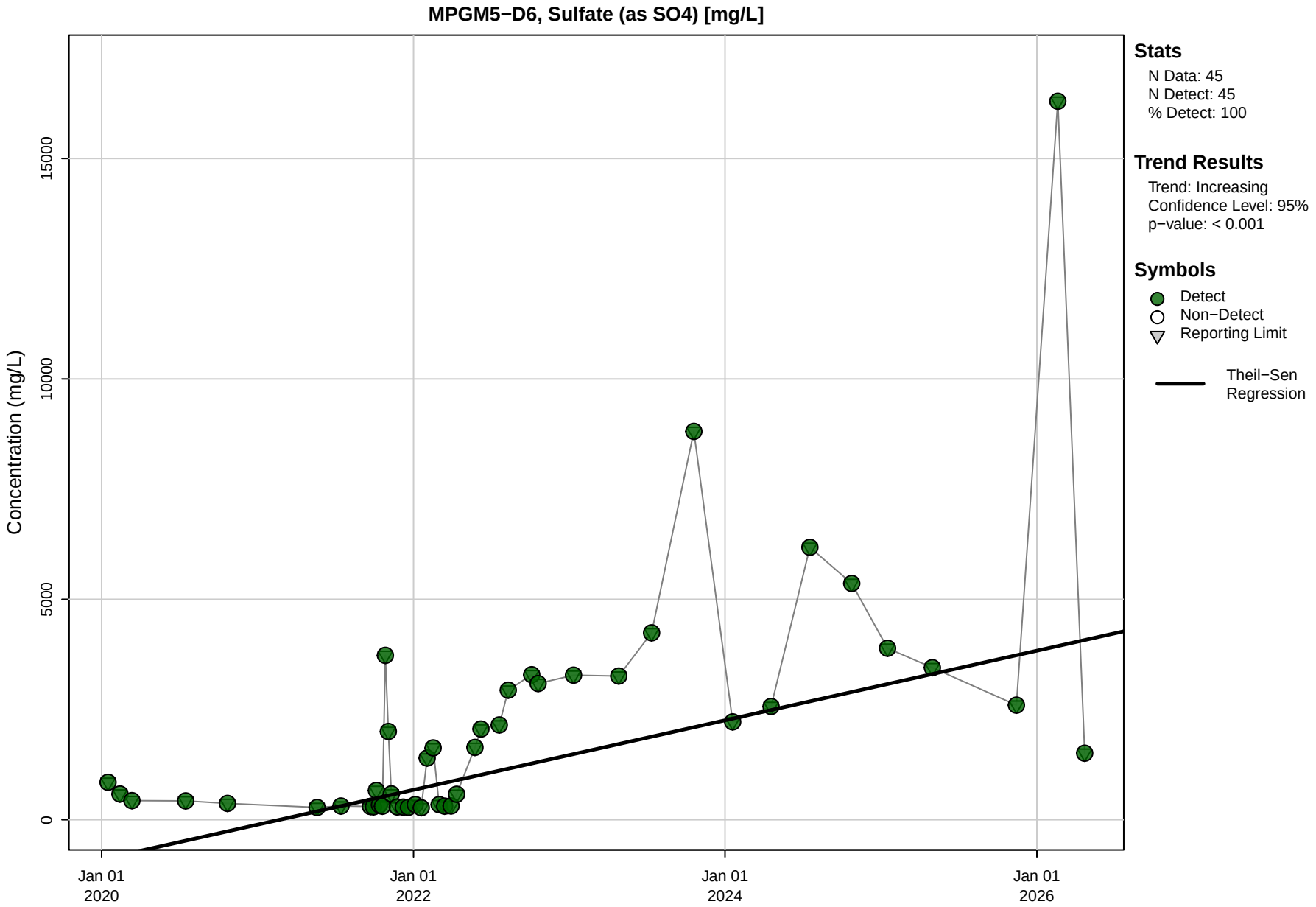

MPGM5−D6, Electrical Conductivity (Field) [uS/cm]
Concentration (uS/cm)
0
5000
10000
15000
20000
25000
30000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 46
N Detect: 46
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

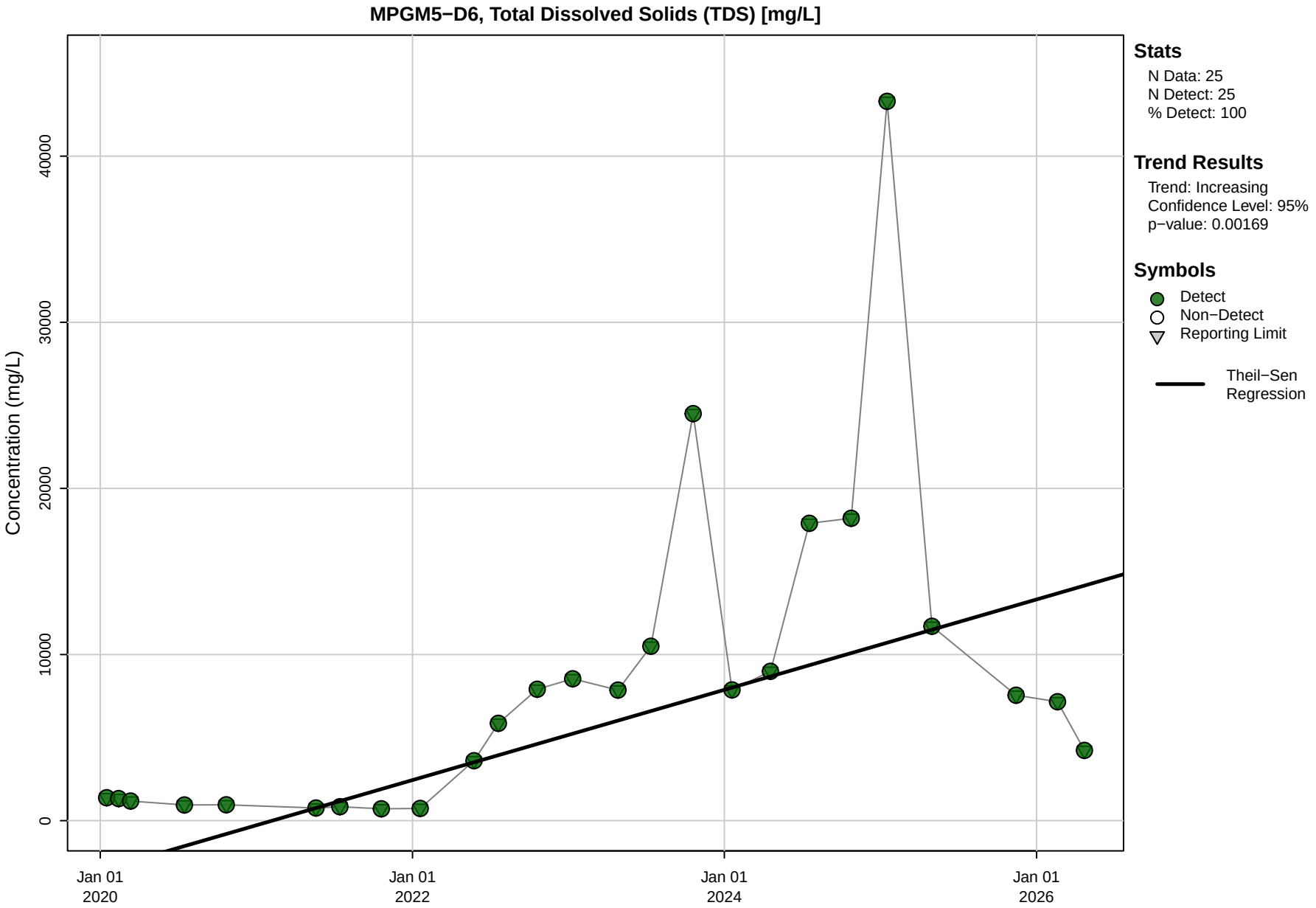

MPGM5−D6, Iron (Total) [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 22
N Detect: 22
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression


MPGM5−D6, Iron [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 25
N Detect: 25
% Detect: 100
Trend Results
Trend: Decreasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression


MPGM5−D6, Manganese [ug/L]
Concentration (ug/L)
0
10000
20000
30000
40000
50000
60000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 25
N Detect: 25
% Detect: 100
Trend Results
Trend: Not Significant
Confidence Level: 95%
p−value: 0.255
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

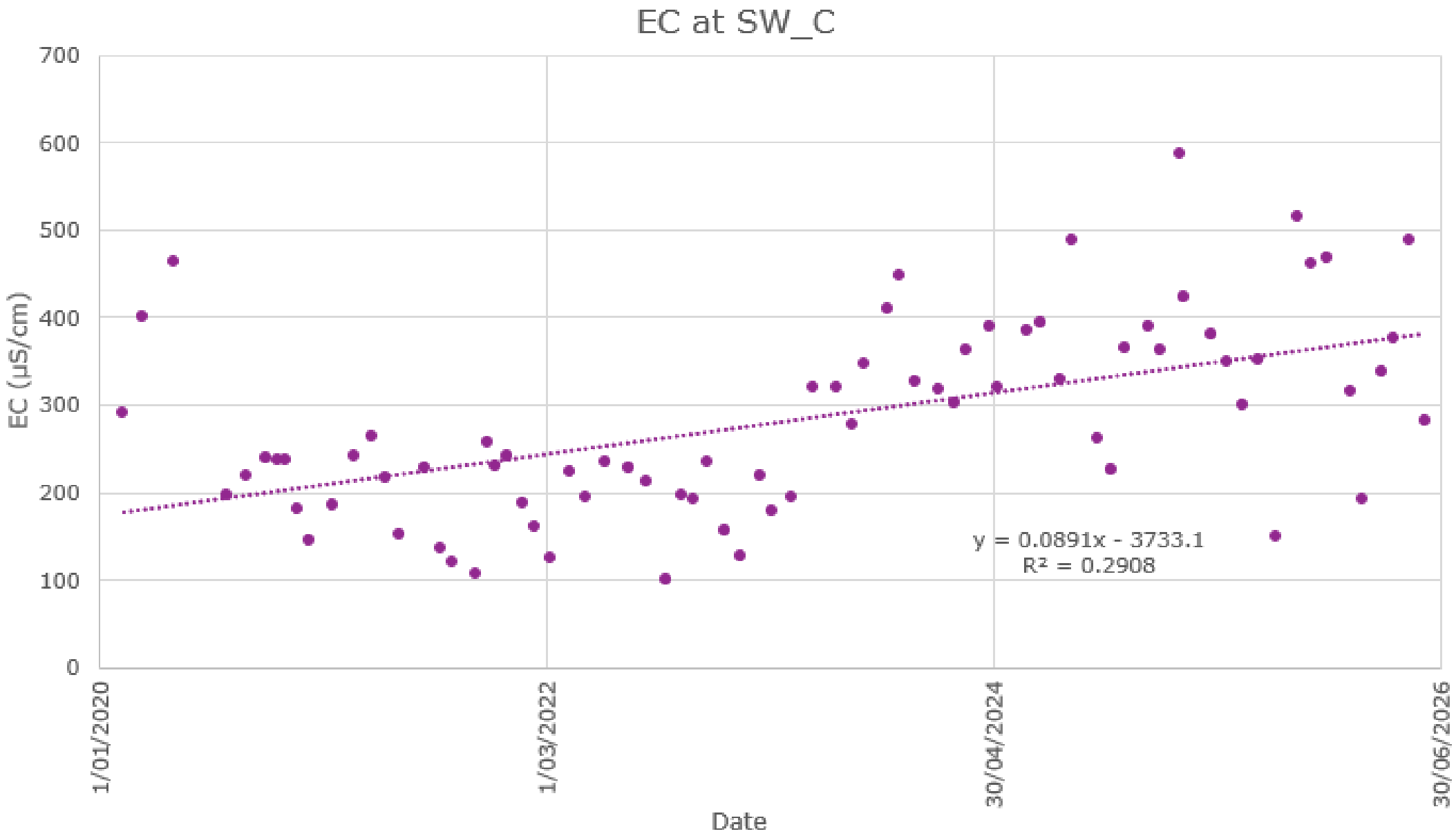

MPGM5−D6, Nickel [ug/L]
Concentration (ug/L)
0
500
1000
1500
2000
2500
Jan 01
2022
Jan 01
2023
Jan 01
2024
Jan 01
2025
Jan 01
2026
Stats
N Data: 20
N Detect: 20
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00254
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

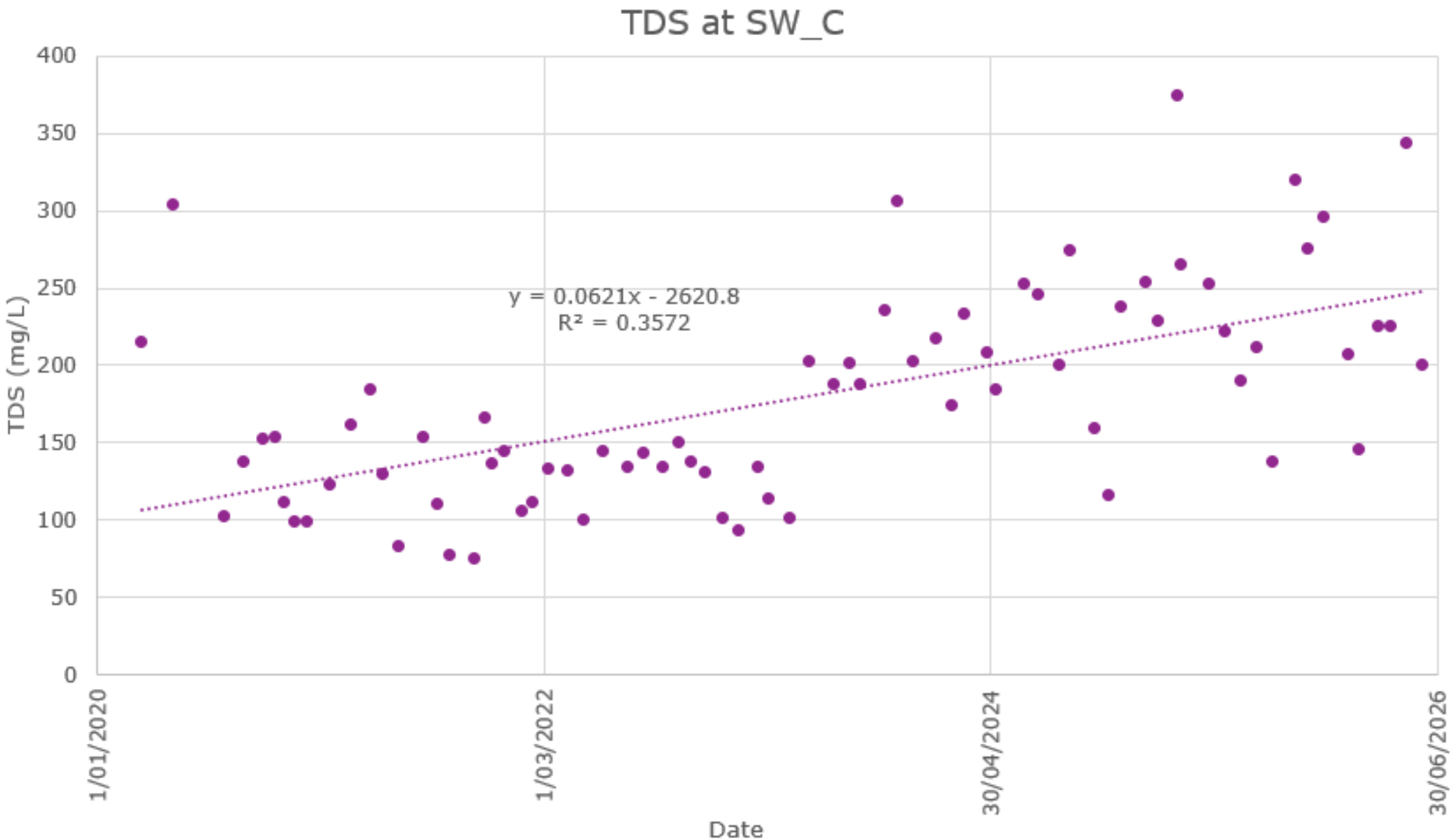

MPGM5−D6, Sulfate (as SO4) [mg/L]
Concentration (mg/L)
0
5000
10000
15000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 45
N Detect: 45
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: < 0.001
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression


MPGM5−D6, Total Dissolved Solids (TDS) [mg/L]
Concentration (mg/L)
0
10000
20000
30000
40000
Jan 01
2020
Jan 01
2022
Jan 01
2024
Jan 01
2026
Stats
N Data: 25
N Detect: 25
% Detect: 100
Trend Results
Trend: Increasing
Confidence Level: 95%
p−value: 0.00169
Symbols
Detect
Non−Detect
Reporting Limit
Theil−Sen
Regression

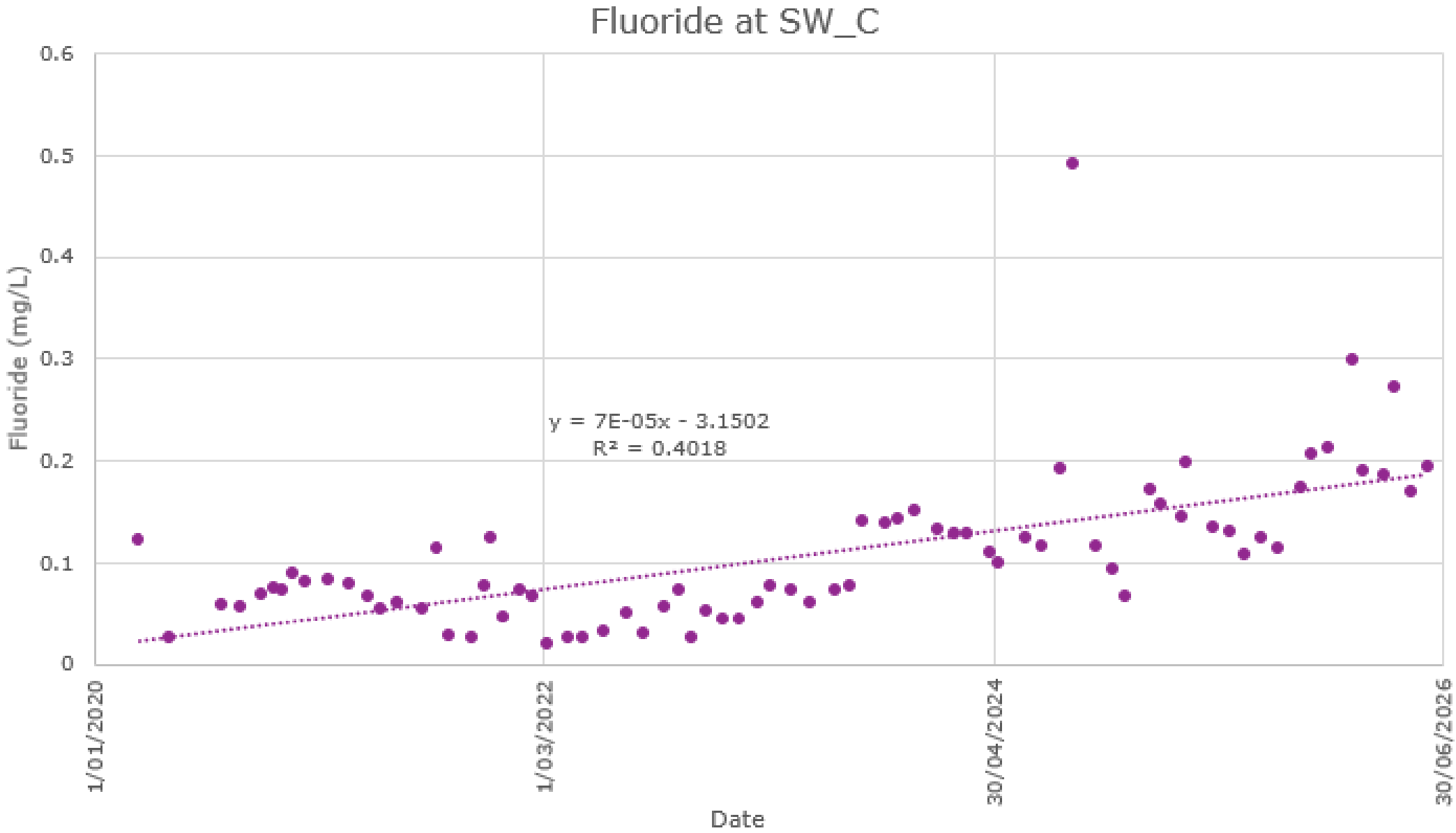
Purpose	Monitoring Location	Stats	EC (Field)	Chloride	Fluoride	Sulfate (as SO4)	TDS	Arsenic - Dissolved	Boron - Dissolved	Copper - Dissolved	Iron	Iron - Dissolved	Manganese - Dissolved	Nickel - Dissolved	Zinc - Dissolved
Upstream	LMP01	R	-0.09	-0.23	0.19	-0.40	0.15	0.14	0.13	-0.32	-0.03	-0.26	0.16	-0.13	-0.20
		R2	0.01	0.05	0.04	0.16	0.02	0.02	0.02	0.10	0.00	0.07	0.03	0.02	0.04
Midstream	NC01	R	0.43	-0.02	0.53	0.30	0.44	0.00	0.18	0.08	-0.12	-0.22	0.36	0.29	0.05
		R2	0.19	0.00	0.28	0.09	0.19	0.00	0.03	0.01	0.01	0.05	0.13	0.08	0.00
	SW_C	R	0.54	0.18	0.63	0.45	0.60	0.00	-0.37	0.18	-0.11	-0.22	0.37	0.25	-0.25
		R2	0.29	0.03	0.40	0.20	0.36	0.00	0.14	0.03	0.01	0.05	0.14	0.06	0.06
	SW_E	R	0.20	0.03	0.07	0.14	0.10	0.14	0.33	0.16	0.36	0.28	0.06	0.15	0.33
		R2	0.04	0.00	0.00	0.02	0.01	0.02	0.11	0.02	0.13	0.08	0.00	0.02	0.11
Downstream	WX22	R	0.37	0.34	0.16	0.31	0.31	0.00	0.48	0.20	-0.17	-0.37	-0.19	0.42	-0.25
		R2	0.14	0.12	0.03	0.09	0.10	0.00	0.23	0.04	0.03	0.14	0.04	0.18	0.06
	SW_G	R	0.49	0.40	0.12	0.45	0.47	0.09	0.56	-0.03	-0.04	-0.39	0.12	0.43	-0.23
		R2	0.24	0.16	0.02	0.20	0.22	0.01	0.31	0.00	0.00	0.15	0.02	0.19	0.05

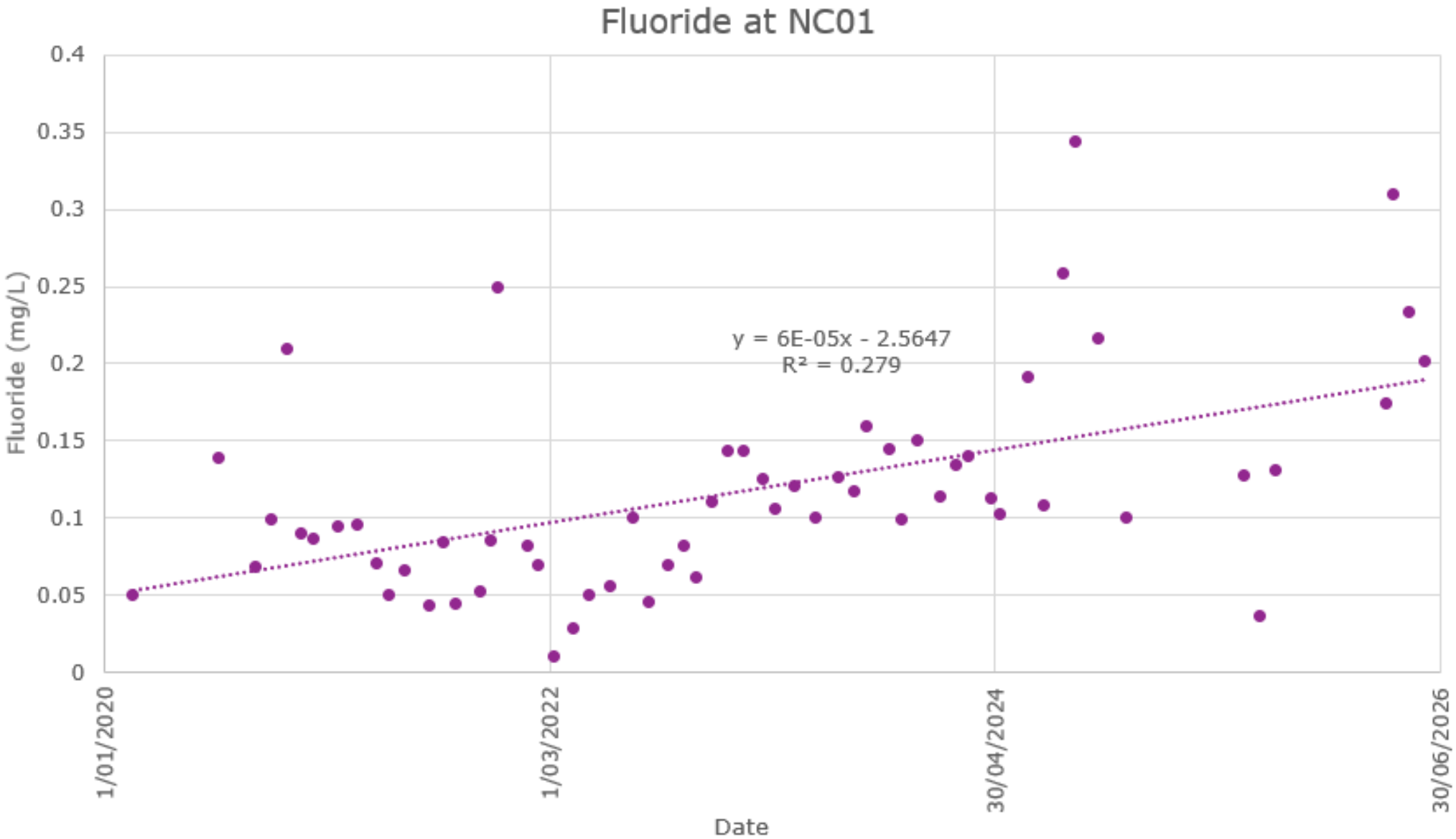
Increasing Trend

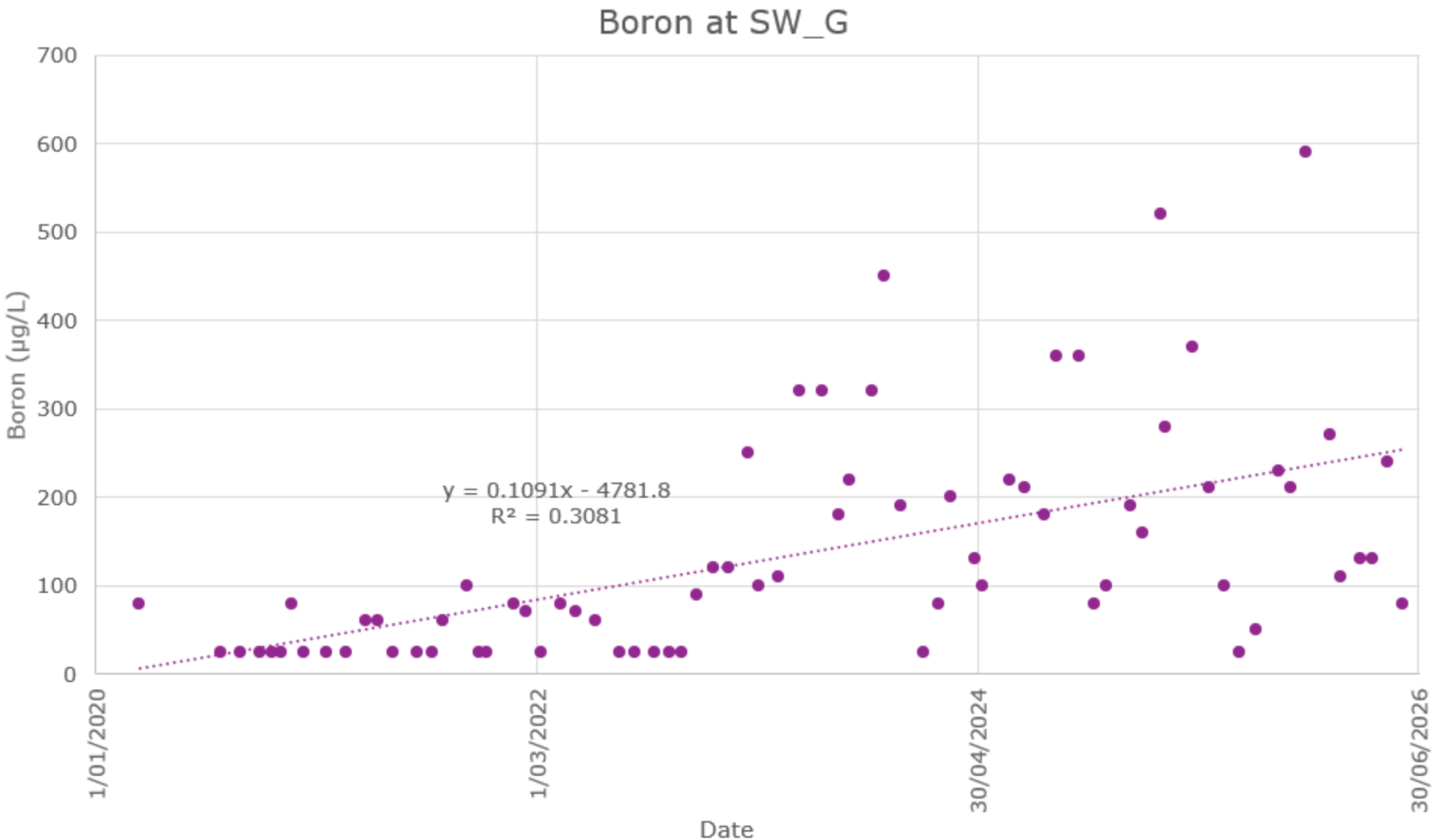

EC at SW_C
700
600
500
400
300
200
100
0
EC (µS/cm)
1/01/2020
1/03/2022
30/04/2024
30/06/2026
Date
y = 0.0891x - 3733.1
R² = 0.2908


TDS at SW_C
TDS (mg/L)
400
350
300
250
200
150
100
50
0
y = 0.0621x - 2620.8
R² = 0.3572
1/01/2020
1/03/2022
30/04/2024
30/06/2026
Date

ERM


Fluoride at SW_C
Fluoride (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
y = 7E-05x - 3.1502
R² = 0.4018
1/01/2020
1/03/2022
30/04/2024
30/06/2026
Date


Fluoride at NC01
Fluoride (mg/L)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
y = 6E-05x - 2.5647
R² = 0.279
1/01/2020
1/03/2022
30/04/2024
30/06/2026
Date


Boron at SW_G
Boron (µg/L)
700
600
500
400
300
200
100
0
y = 0.1091x - 4781.8
R² = 0.3081
1/01/2020
1/03/2022
30/04/2024
30/06/2026
Date

ERM

APPENDIX N LNAR PONDS MONITORING

Work Order

ServiceStream

Work Order No
157302

Asset Information

Asset No: MPSAHPPG00 Ponds - Ash Placement Area

Asset No	Asset Description
MPS	CEM Mt Piper Site
MPSADP	Common Ash & Dust Plant
MPSADPWRS	Ash & Dust Water Reticulati on System
MPSAHPPG00	Ponds - Ash Placement Area

Comments:

Last Reading: **Date:**

Work Details

Job Description: ITP-MP0-SV16 - Monthly Inspection of Service Stream APA Ponds and Infrastructure.
Instructions:
Safety Notes:
Priority: 3 Within 1-2 Weeks **Job Type:** PM04
Status: 5 - Closed
Account Code: 8R1326-B10011-L **Policy No:** 4638 **Frequency:** 1 Months
Department: MP-SUPPORT

Raised: 30/03/2026 **Due Start:** 6/05/2026 **Start:** 09/05/2026 **Due Finish** 6/05/2026 **Finish :** 09/05/2026

Contractor Information

Contractor: **Contact:**
Ph No: **Warranty Start:** **Warranty Finish:**

Completion Details

Trades Name	Date Started	Date Finished	Hours Worked	Signature
N Walsh	9.5.26	9.5.26	2	

Work History Comments

ServiceStream

Document Type: **Inspection Test Plan**

Number: **ITP-MP0-SV16**

Title: **Monthly Inspection of LNAR Ponds Infrastructure**

1 Maintenance Period

Monthly

2 Purpose and Scope

Leachate Monitoring Plan LNAR

3 Personnel Safety & Equipment Precautions

Job Safety Assessment		
Environment	**Hazard**	**Action**
Plant Environment	Minimum personal protection	Wear Helmet, glasses and use ear plugs in noisy environments
Pond Structures	Slip / Trip	Ensure Controls are Applied as per SWMS
	Working Near Water	Ensure Controls are Applied as per SWMS

Note: Review SWMS before carrying out work. Enter any other hazards that are observed.

4 Tools, Supplies & Equipment

5 Initial Conditions

Operational Infrastructure

6 Maintenance Procedure

Carry out the following inspection per Pond.

Estimated Man Hours: 2.5

Whilst performing this routine maintenance, please keep an eye out for anything unusual and record in the defect report. This procedure and the defect report is to be returned to the planner immediately after the tasks are completed for further actioning.

Equipment Number	Equipment Description	Component	Inspection	Criteria	Completed Y / N
LNAR2	LNAR 2 13.8ML Storage Pond	Liner	Report any Damage	Liner is free from damage	Y
			Subgrade Integrity	Subgrade is free from damage / subsidence / water pooling	Y
		Pond General	Tyres	In Place in Pond Corners	Y
			Life Rings	One per Pond	Y
			Foreign Objects	Report Anything Foreign within pond	Nothing in pond

Monthly Inspection of Service Stream APA Ponds and Infrastructure

Equipment Number	Equipment Description	Component	Inspection	Criteria	Completed Y / N
LNAR3	LNAR 3 20ML Storage Pond	Liner	Report any Damage	Liner is free from damage	Y
			Subgrade Integrity	Subgrade is free from damage / subsidence / water pooling	Y
			Liner Leak Detection	Measure Leak Detection Bore With Dip Meter and Record Status Dry / Liquid Detected	Nothing Detected
				If Liquid is detected, record level of liquid from the detection riser	Nil
				Report liquid immediately to Supervisor	N/A
		Pond General	Tyres	In Place in Pond Corners	Y
			Life Rings	One per Pond	Y
			Foreign Objects	Report Anything Foreign within pond	Nothing in Pond.

Monthly Inspection of Service Stream APA Ponds and Infrastructure

Equipment Number	Equipment Description	Component	Inspection	Criteria	Completed Y / N
LNAR4	LNAR 4 20ML Storage Pond	Liner	Report any Damage	Liner is free from damage	Y
			Subgrade Integrity	Subgrade is free from damage / subsidence / water pooling	Maintenance Work Undertaken
			Liner Leak Detection	Measure Leak Detection Bore With Dip Meter and Record Status Dry / Liquid Detected	Nothing Detected
				If Liquid is detected, record level of liquid from the detection riser	Nil
				Report liquid immediately to Supervisor	N/A
		Pond General	Tyres	In Place in Pond Corners	Y
			Life Rings	One per Pond	Y
			Foreign Objects	Report Anything Foreign within pond	Y

Monthly Inspection of Service Stream APA Ponds and Infrastructure

Equipment Number	Equipment Description	Component	Inspection	Criteria	Completed Y / N
LNAR5	LNAR 5 20ML Storage Pond	Liner	Report any Damage	Liner is free from damage	Y
			Subgrade Integrity	Subgrade is free from damage / subsidence / water pooling	Y
			Liner Leak Detection	Measure Leak Detection Bore With Dip Meter and Record Status Dry / Liquid Detected	Nothing Detected
				If Liquid is detected, record level of liquid from the detection riser	Nil
				Report liquid immediately to Supervisor	N/A
		Pond General	Tyres	In Place in Pond Corners	Y
			Life Rings	One per Pond	Y
			Foreign Objects	Report Anything Foreign within pond	Nothing Found

Name of Inspector: Nigel Wakel **Date:** 9.5.26

Monthly Inspection of Service Stream APA Ponds and Infrastructure

MAINTENANCE DEFECT REPORT

Carry out repairs to defects that are judged to be less that 1 hour in duration. Time and materials can be booked to this routine maintenance work order.

Name: Nigel Walsh **Date:** 9.5.26

Number & Equipment Description	Defect	Repair Action Required	Spares Required	Urgency 1-5 (1 = High Priority)
LNAR 4	North Wall	Monitoring N/W wall	N	1

7 Data Review & Operational Verification

Equipment is Operating.

8 References

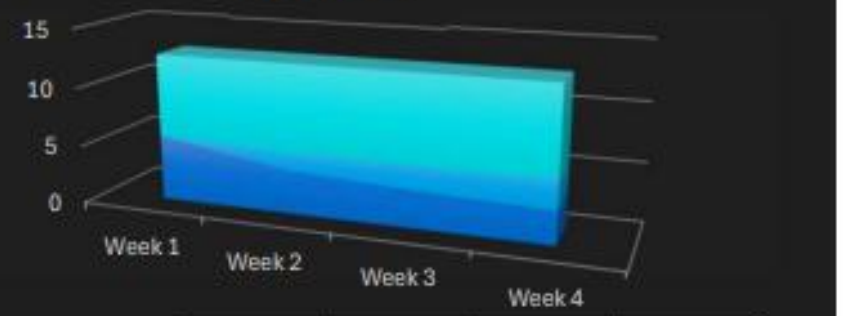
9 Attachments

10 Version History

V2 04/11/2025 – Review Only

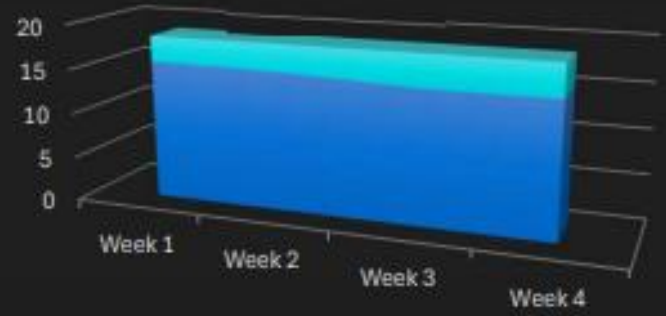
LNAR Lined Ponds – Storage Summary Example (January 2026)

LNAR 2



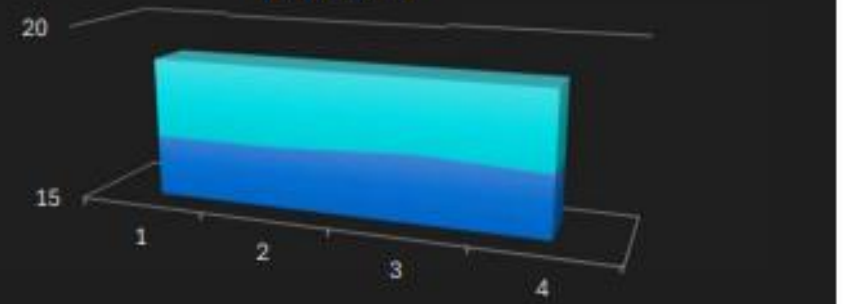
	Week 1	Week 2	Week 3	Week 4
Stormwater Buffer	7.04	7.5	7.5	7.5
Operating Freeboard	0	1.38	1.98	2.38
Pond Level	5.61	3.77	3.17	2.77

LNAR 3



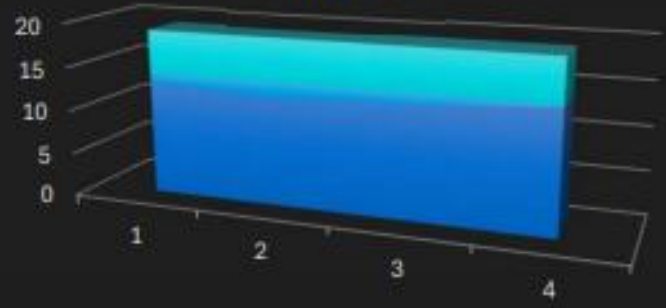
	Week 1	Week 2	Week 3	Week 4
Stormwater Buffer	2.86	3.03	3.65	3.64
Operating Freeboard	0	0	0	0
Pond Level	15.64	15.47	14.85	14.86

LNAR 4



	1	2	3	4
Stormwater Buffer	2.26	2.26	2.07	2.23
Operating Freeboard	0	0	0	0
Pond Level	16.74	16.74	16.93	16.77

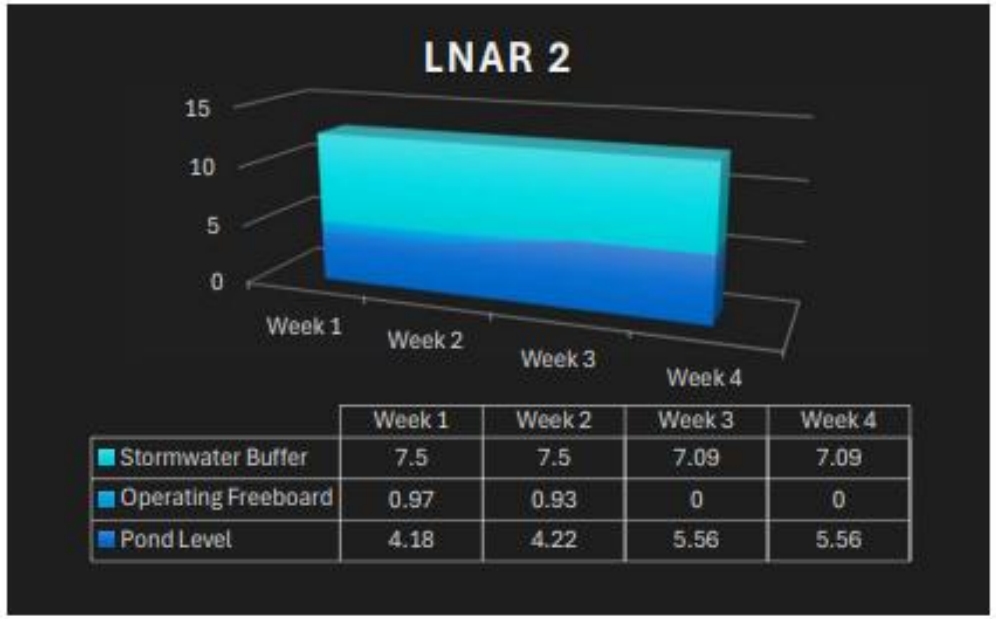
LNAR 5



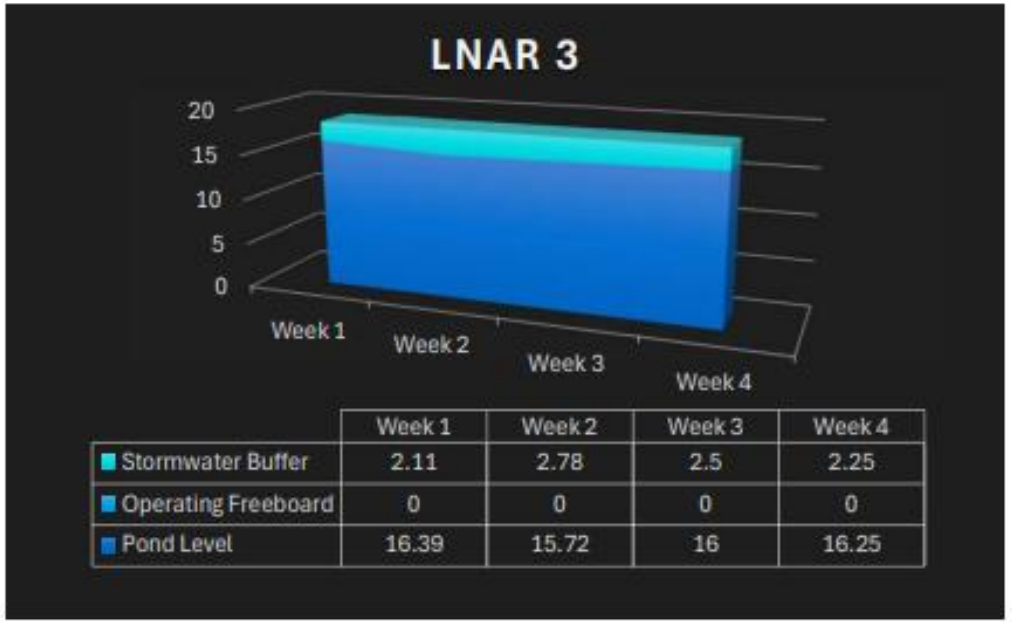
	1	2	3	4
Stormwater Buffer	5	5	5	5
Operating Freeboard	1.08	1.7	1.1	0.17
Pond Level	12.92	12.3	12.9	13.83

ERM

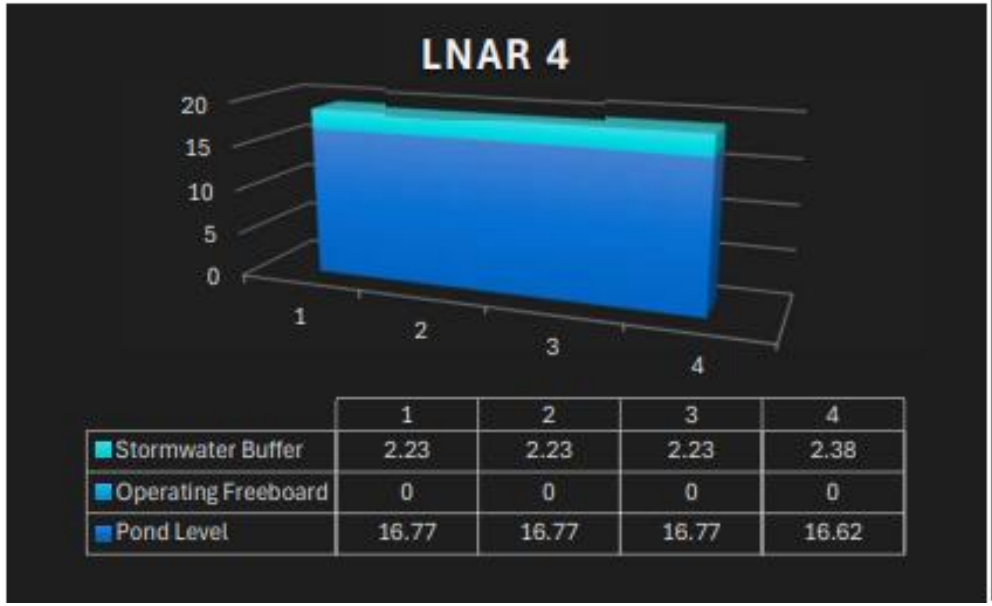
LNAR Lined Ponds – Storage Summary Example (June 2026)



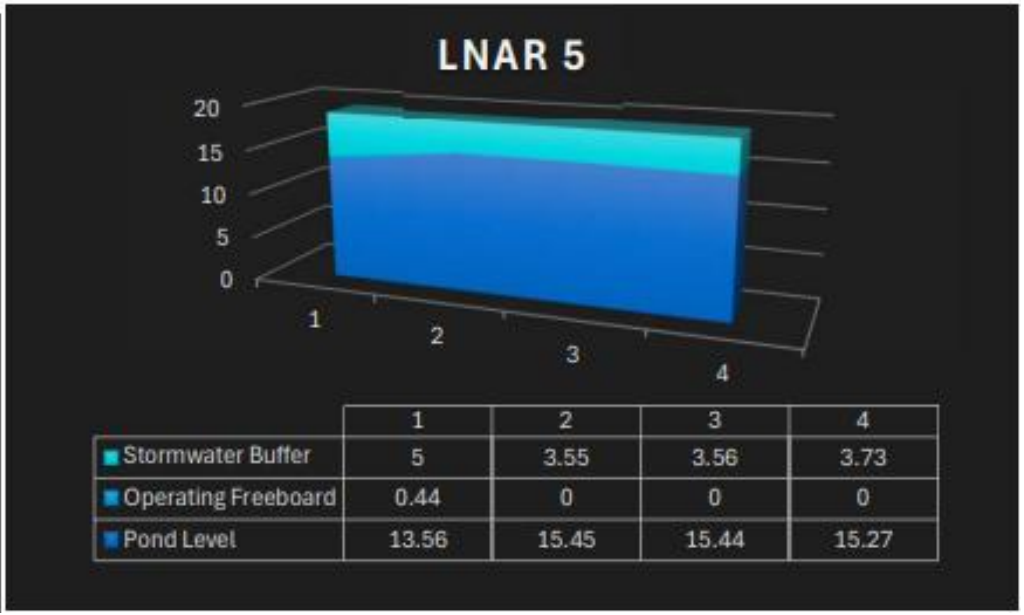
	Week 1	Week 2	Week 3	Week 4
Stormwater Buffer	7.5	7.5	7.09	7.09
Operating Freeboard	0.97	0.93	0	0
Pond Level	4.18	4.22	5.56	5.56



	Week 1	Week 2	Week 3	Week 4
Stormwater Buffer	2.11	2.78	2.5	2.25
Operating Freeboard	0	0	0	0
Pond Level	16.39	15.72	16	16.25



	1	2	3	4
Stormwater Buffer	2.23	2.23	2.23	2.38
Operating Freeboard	0	0	0	0
Pond Level	16.77	16.77	16.77	16.62



	1	2	3	4
Stormwater Buffer	5	3.55	3.56	3.73
Operating Freeboard	0.44	0	0	0
Pond Level	13.56	15.45	15.44	15.27

ERM

LNAR2 Operating Level - 12.6 ML

Purpose: catchment for runoff from unlined areas

Colour Legend Instructions | Copy Formula | Enter Data | Enter Data

Date	FREEBOARD	INFLOWS			OUTFLOWS					Comments
	Calculated (ML)	Transfers from SW1 (ML)	Other (ML)	Adjustment (MONTHLY)	Dust Suppression (ML)	Volume to Evaps / Atomisers (ML)	Transfers to LNAR5 (ML)	Transfers to LNAR4 (ML)	Other Transfers (e.g. to SW2)	
1/01/2026	8.62								0.2	
2/01/2026	7.15		1.67						0.2	
3/01/2026	7.35								0.2	
4/01/2026	7.45								0.1	
5/01/2026	7.44			0.11					0.1	
6/01/2026	7.54								0.1	
7/01/2026	7.04		0.50							
8/01/2026	7.44								0.4	
9/01/2026	7.84								0.4	
10/01/2026	8.24								0.4	
11/01/2026	8.64								0.4	
12/01/2026	8.68		0.36						0.4	Stage 1 RSW
13/01/2026	8.78								0.1	
14/01/2026	8.88								0.1	
15/01/2026	8.88									
16/01/2026	9.13								0.25	
17/01/2026	9.33								0.2	
18/01/2026	9.08		0.45						0.2	0.45 Received SPC
19/01/2026	9.28								0.2	
20/01/2026	9.48								0.2	
21/01/2026	9.48									
22/01/2026	9.48									
23/01/2026	9.48									
24/01/2026	9.48									
25/01/2026	9.68								0.2	
26/01/2026	9.88								0.2	
27/01/2026	9.88									
28/01/2026	9.88									
29/01/2026	9.70		0.38						0.2	
30/01/2026	9.90								0.2	
31/01/2026	10.05								0.15	
1/02/2026	9.17		1.28						0.4	
2/02/2026	8.26		1.31						0.4	
3/02/2026	8.26									
4/02/2026	8.26									
5/02/2026	8.57								0.31	
6/02/2026	8.77								0.2	
7/02/2026	8.77									
8/02/2026	8.77									
9/02/2026	8.27			0.50						
10/02/2026	7.65		0.62							Received Inflows LNAR Stage 1
11/02/2026	7.65									Received Inflows LNAR Stage 1
12/02/2026	5.53		2.12							Received Inflows LNAR Stage 1 (scheduled to receive SW1)
13/02/2026	5.13	0.400								
14/02/2026	5.13									
15/02/2026	4.63	0.500								Receiving SW1
16/02/2026	4.11	0.520								Receiving SW1
17/02/2026	3.49	0.620								Receiving SW1
18/02/2026	3.04	0.450								Receiving SW1
19/02/2026	2.54	0.500								Receiving SW1- High Level Ventia required to re-use or internal transfer to be scheduled
20/02/2026	2.25			0.29						Receiving Flows From Unknown Source (running off roads)
21/02/2026	2.45								0.2	
22/02/2026	2.65								0.2	
23/02/2026	2.85								0.2	
24/02/2026	3.85						0.800		0.2	
25/02/2026	6.06				0.230		1.780		0.2	
26/02/2026	8.26				0.300				1.9	
27/02/2026	8.31	1.500					1.550			
28/02/2026	8.31									

Date	FREEBOARD	INFLOWS			OUTFLOWS					Comments
	Calculated (ML)	Transfers from SW1 (ML)	Other (ML)	Adjustment (MONTHLY)	Dust Suppression (ML)	Volume to Evaps / Atomisers (ML)	Transfers to LNAR5 (ML)	Transfers to LNAR4 (ML)	Other Transfers (e.g. to SW2)	
1/03/2026	8.31									
2/03/2026	8.08	0.230								
3/03/2026	7.24	0.840								
4/03/2026	2.22		6.00						0.98	Receiving Heavy Umetered Flows - Expected to Continue - Return Transfers to SPC
5/03/2026	4.37		0.35						2.5	
6/03/2026	4.97	1.000			0.400				1.2	0.7 SW2- 0.5 SPC
7/03/2026	7.49					0.12		2.200	0.2	W/C
8/03/2026	7.81					0.12			0.2	W/C
9/03/2026	8.08					0.12			0.15	W/C
10/03/2026	7.08	1.000								
11/03/2026	6.39	0.690								
12/03/2026	5.56	0.830								
13/03/2026	4.50	0.800		0.46					0.2	
14/03/2026	5.98				0.180			1.100	0.2	
15/03/2026	6.80	0.660			0.180			1.100	0.2	
16/03/2026	6.48	0.750			0.230				0.2	
17/03/2026	6.27	0.660							0.45	0.25 to SW2
18/03/2026	6.92								0.65	0.45 to SW2
19/03/2026	6.92									Expected to receive Unetered Flows
20/03/2026	6.92									
21/03/2026	6.92									
22/03/2026	6.92									
23/03/2026	4.69			2.23						2.23 unmetered flow received SW1 still to report to pond post rain event
24/03/2026	5.76								1.07	1.07 Return Transfer SPC
25/03/2026	6.44								0.68	0.68 Return Transfer SPC
26/03/2026	8.00	0.770			0.320	0.26			1.75	1.5 Return Transfer SPC
27/03/2026	9.21					0.20			1.01	1.01 Return Transfer SPC
28/03/2026	9.21									
29/03/2026	9.41								0.2	
30/03/2026	9.21	0.350							0.15	
31/03/2026	9.02	0.390							0.2	
1/04/2026	9.52								0.5	
2/04/2026	9.78								0.26	
3/04/2026	9.98								0.2	
4/04/2026	10.18								0.2	
5/04/2026	10.38								0.2	
6/04/2026	10.58								0.2	
7/04/2026	10.58									
8/04/2026	10.78								0.2	
9/04/2026	10.96								0.18	
10/04/2026	11.11								0.15	
11/04/2026	11.30								0.19	
12/04/2026	11.40								0.1	
13/04/2026	11.55								0.15	
14/04/2026	11.75								0.2	
15/04/2026	11.85								0.1	
16/04/2026	11.61		0.34						0.1	
17/04/2026	11.71								0.1	
18/04/2026	11.81								0.1	
19/04/2026	11.81									
20/04/2026	11.81									
21/04/2026	11.91								0.1	
22/04/2026	12.01								0.1	
23/04/2026	12.11								0.1	
24/04/2026	11.65		0.56						0.1	0.16 SPC - 0.40 SW2
25/04/2026	11.85								0.2	
26/04/2026	12.05								0.2	
27/04/2026	12.25								0.2	
28/04/2026	11.60		0.85						0.2	
29/04/2026	11.80								0.2	
30/04/2026	11.47		0.51						0.18	

Date	FREEBOARD	INFLOWS			OUTFLOWS					Comments
	Calculated (ML)	Transfers from SW1 (ML)	Other (ML)	Adjustment (MONTHLY)	Dust Suppression (ML)	Volume to Evaps / Atomisers (ML)	Transfers to LNAR5 (ML)	Transfers to LNAR4 (ML)	Other Transfers (e.g. to SW2)	
1/05/2026	11.67								0.2	
2/05/2026	11.77								0.1	
3/05/2026	11.87								0.1	
4/05/2026	12.07								0.2	
5/05/2026	10.75		1.42						0.1	
6/05/2026	10.75									
7/05/2026	10.25		0.50							0.5 Unmetered Inflow
8/05/2026	10.45								0.2	
9/05/2026	10.65								0.2	
10/05/2026	10.85								0.2	
11/05/2026	11.05								0.2	
12/05/2026	11.05									
13/05/2026	11.05									Scheduled to Receive 1ML SPC Today
14/05/2026	10.03		1.02							
15/05/2026	10.03									
16/05/2026	10.03									
17/05/2026	10.03									
18/05/2026	10.03									
19/05/2026	10.03									
20/05/2026	10.03									
21/05/2026	10.03									
22/05/2026	10.03									
23/05/2026	10.03									
24/05/2026	10.03									
25/05/2026	10.03									
26/05/2026	9.76	0.270								
27/05/2026	9.76									
28/05/2026	9.26	0.500								
29/05/2026	9.26									
30/05/2026	9.26									
31/05/2026	9.26									
1/06/2026	9.26									
2/06/2026	9.26									
3/06/2026	8.72			0.54						
4/06/2026	8.47	0.250								
5/06/2026	8.47									
6/06/2026	8.47									
7/06/2026	8.47									
8/06/2026	8.47									
9/06/2026	8.44			0.03						
10/06/2026	8.44									
11/06/2026	8.33	0.110								
12/06/2026	8.33									
13/06/2026	8.33									
14/06/2026	8.43								0.1	
15/06/2026	8.43									
16/06/2026	8.23	0.200								
17/06/2026	7.86	0.370								
18/06/2026	7.49	0.372								
19/06/2026	7.49									
20/06/2026	7.09	0.400								
21/06/2026	7.09									
22/06/2026	7.09									
23/06/2026	7.09									
24/06/2026	7.09									
25/06/2026	7.09									
26/06/2026	7.09									
27/06/2026	7.09									
28/06/2026	7.09									
29/06/2026	7.09									
30/06/2026	7.09									
1/07/2026	7.09									
2/07/2026	7.09									Expected to Receive Unmetered Flows
3/07/2026	6.03	0.600		0.46						0.46 Unmetered Flow
4/07/2026	6.03									
5/07/2026	5.80	0.230								
6/07/2026	5.57			0.23						0.23 Unmetered Flows
7/07/2026	5.57									
8/07/2026	5.57									
9/07/2026	5.57									
10/07/2026	5.57									
11/07/2026	5.57									
12/07/2026	5.57									
13/07/2026	5.57									
14/07/2026	5.57									
15/07/2026	5.57									
16/07/2026	5.57									
17/07/2026	5.57									
18/07/2026	5.57									
19/07/2026	5.57									

Date	FREEBOARD	INFLOWS			OUTFLOWS					Comments
	Calculated (ML)	Transfers from SW1 (ML)	Other (ML)	Adjustment (MONTHLY)	Dust Suppression (ML)	Volume to Evaps / Atomisers (ML)	Transfers to LNAR5 (ML)	Transfers to LNAR4 (ML)	Other Transfers (e.g. to SW2)	
20/07/2026	5.57									
21/07/2026	6.04								0.47	
22/07/2026	6.04									
23/07/2026	6.04									

LNAR3 **Operating Level - 19 ML**

Purpose: Staging pond for irrigation of lined repository areas and leachate collection

Colour Legend Instructions Copy Formula | Enter Data | Enter Data

Date	FREEBOARD	INFLOWS																Adjustment	OUTFLOWS					Comments
	Calculated (ML)	Surface Water Runoff LNAR 1A/1B (ML)	LNAR 1A/1B Leachate (Total, ML)	Sump 1	Sump 2	Sump 3	Sump 4	Sump 5	Surface Water Runoff LNAR 2A (ML)	LNAR 2A Leachate (Total, ML)	Sump 1	Sump 2	Surface Water Runoff LNAR 2B (ML)	LNAR 2B Leachate (Total, ML)	Sump 1	Sump 2	Transfers from Waste Ponds (ML)	(MONTHLY)	LNAR Irrigation (ML)	LNAR Tanker (ML)	Transfers to LNAR5 (ML)	Transfers to Pond D (ML)	Transfers to Waste Pond A (ML)	
1/01/2026	3.47		0.043			0.023	0.020			0.022	0.012	0.010		0.016	0.016										
2/01/2026	3.38		0.043			0.023	0.020			0.022	0.012	0.010		0.031	0.016	0.015									
3/01/2026	3.28		0.042			0.022	0.020			0.022	0.012	0.010		0.031	0.016	0.015									
4/01/2026	3.20		0.043			0.022	0.021			0.022	0.012	0.010		0.016	0.016										
5/01/2026	2.94		0.042			0.022	0.020		0.290	0.022	0.012	0.010	0.310	0.000					0.097						
6/01/2026	2.90		0.047			0.025	0.022			0.022	0.010	0.012	0.120	0.027	0.014	0.013			0.058						
7/01/2026	2.86		0.036			0.019	0.017			0.022	0.010	0.012		0.028	0.015	0.013			0.039						
8/01/2026	2.88		0.039			0.020	0.019			0.023	0.011	0.012		0.029	0.015	0.014			0.113						
9/01/2026	2.92		0.039			0.020	0.019			0.023	0.011	0.012		0.014		0.014			0.121						
10/01/2026	2.96		0.041			0.021	0.020			0.023	0.011	0.012		0.029	0.015	0.014			0.130						
11/01/2026	3.06		0.039			0.020	0.019			0.021	0.010	0.011		0.000					0.163						
12/01/2026	3.02		0.038			0.020	0.018			0.023	0.011	0.012		0.029	0.015	0.014			0.049						
13/01/2026	2.99		0.034			0.018	0.016			0.021	0.010	0.011		0.000					0.025						
14/01/2026	3.03		0.031			0.015	0.016			0.021	0.010	0.011		0.024	0.015	0.009			0.110						
15/01/2026	3.05		0.028			0.013	0.015			0.023	0.010	0.013		0.029	0.015	0.014			0.102						
16/01/2026	3.02		0.030			0.015	0.015			0.022	0.011	0.011		0.026	0.012	0.014			0.049						
17/01/2026	2.94		0.030			0.015	0.015			0.022	0.011	0.011		0.026	0.012	0.014									
18/01/2026	2.92		0.031			0.016	0.015			0.021	0.010	0.011		0.029	0.015	0.014			0.060						
19/01/2026	2.84		0.030			0.015	0.015			0.022	0.011	0.011		0.026	0.012	0.014									Nil Evaporation for Evap Ring
20/01/2026	2.80		0.029			0.014	0.015			0.011		0.011		0.000											Nil Evaporation for Evap Rine
21/01/2026	3.65		0.031			0.016	0.015			0.000				0.018	0.018				0.098					0.8	
22/01/2026	3.63		0.032			0.016	0.016			0.022	0.010	0.012		0.016		0.016			0.051						
23/01/2026	3.63		0.000							0.000				0.000											
24/01/2026	3.63		0.000							0.000				0.000											
25/01/2026	3.63		0.000							0.000				0.000											
26/01/2026	3.63		0.000							0.000				0.000											
27/01/2026	3.64		0.035			0.018	0.017			0.017		0.017		0.000					0.054						
28/01/2026	3.64		0.033			0.016	0.017			0.016		0.016		0.000					0.051						
29/01/2026	3.59		0.033			0.016	0.017			0.015		0.015		0.000											
30/01/2026	3.59		0.000							0.000				0.000											
31/01/2026	3.66		0.018				0.018			0.000				0.000					0.089						
1/02/2026	3.74		0.017				0.017			0.000				0.000					0.097						
2/02/2026	3.85		0.018				0.018			0.013		0.013		0.000					0.140						
3/02/2026	3.85		0.018				0.018			0.000				0.000					0.023						
4/02/2026	3.85		0.010				0.010			0.014	0.014			0.000					0.021						
5/02/2026	3.67		0.016				0.016		0.200	0.015	0.015			0.000					0.045						
6/02/2026	3.65		0.000							0.017		0.017		0.015	0.015				0.019						
7/02/2026	3.68		0.018				0.018			0.000				0.016		0.016			0.058						
8/02/2026	3.63		0.018				0.018			0.015	0.015			0.015	0.015										
9/02/2026	3.45		0.019				0.019		0.140	0.017		0.017		0.000											
10/02/2026	3.40		0.020				0.020			0.018		0.018		0.016	0.016										
11/02/2026	3.35		0.019				0.019			0.018		0.018		0.015		0.015									
12/02/2026	2.88		0.037				0.037			0.015	0.015			0.016	0.016			0.40							
13/02/2026	2.82		0.025				0.025			0.015	0.015			0.016		0.016									
14/02/2026	2.77		0.020				0.020			0.015	0.015			0.016		0.016									
15/02/2026	2.72		0.019				0.019			0.015	0.015			0.016		0.016									
16/02/2026	2.68		0.025				0.025			0.016		0.016		0.017		0.017			0.020						
17/02/2026	2.66		0.025				0.025			0.018		0.018		0.016		0.016			0.039						
18/02/2026	2.81		0.000							0.017	0.017			0.000					0.160						
19/02/2026	2.98		0.020				0.020			0.000				0.015	0.015				0.210						
20/02/2026	3.11		0.020				0.020			0.017		0.017		0.015	0.015				0.180						
21/02/2026	3.14		0.020				0.020			0.017		0.017		0.015	0.015				0.087						
22/02/2026	3.20		0.021				0.021			0.016		0.016		0.013	0.013				0.110						
23/02/2026	3.25		0.020				0.020			0.017		0.017		0.015	0.015				0.098						
24/02/2026	3.27		0.020				0.020			0.015		0.015		0.000					0.055						
25/02/2026	3.23		0.021				0.021			0.029	0.014	0.015		0.044	0.014	0.030			0.049						
26/02/2026	3.15		0.020				0.020			0.029	0.014	0.015		0.044	0.014	0.030			0.020						
27/02/2026	3.08		0.022				0.022			0.024	0.011	0.013		0.026	0.014	0.012									
28/02/2026	3.01		0.023				0.023			0.024	0.011	0.013		0.027	0.015	0.012									

Date	FREEBOARD	INFLOWS																OUTFLOWS					
	Calculated (ML)	Surface Water Runoff LNAR 1A/1B (ML)	LNAR 1A/1B Leachate (Total, ML)	Sump 1	Sump 2	Sump 3	Sump 4	Sump 5	Surface Water Runoff LNAR 2A (ML)	LNAR 2A Leachate (Total, ML)	Sump 1	Sump 2	Surface Water Runoff LNAR 2B (ML)	LNAR 2B Leachate (Total, ML)	Sump 1	Sump 2	Transfers from Waste Ponds (ML)	Adjustment (MONTHLY)	LNAR Irrigation (ML)	LNAR Tanker (ML)	Transfers to LNAR5 (ML)	Transfers to Pond D (ML)	Transfers to Waste Pond A (ML)	Comments
1/03/2026	2.93		0.019				0.019			0.025	0.012	0.013		0.029	0.015	0.014								
2/03/2026	2.86		0.023				0.023			0.024	0.011	0.013		0.026	0.014	0.012								
3/03/2026	2.76		0.021				0.021			0.025	0.011	0.014		0.059	0.029	0.030								
4/03/2026	3.08		0.050				0.050			0.034	0.020	0.014	0.350	0.061	0.031	0.030		0.85					1.67	
5/03/2026	2.94		0.048				0.048			0.035	0.020	0.015		0.062	0.031	0.031								
6/03/2026	2.80		0.036				0.036			0.036	0.021	0.015		0.061	0.029	0.032								
7/03/2026	2.67		0.041				0.041			0.035	0.021	0.014		0.061	0.029	0.032								
8/03/2026	2.53		0.033				0.033			0.037	0.022	0.015		0.065	0.033	0.032								
9/03/2026	2.40		0.035				0.035			0.036	0.021	0.015		0.061	0.029	0.032								Return Transfer To Be scheduled
10/03/2026	2.27		0.036				0.036			0.036	0.020	0.016		0.060	0.030	0.030								Return Transfer To Be scheduled
11/03/2026	2.13		0.039				0.039			0.037	0.022	0.015		0.059	0.029	0.030								Return Transfer To Be scheduled
12/03/2026	2.00		0.037				0.037			0.039	0.023	0.016		0.059	0.029	0.030								Return Transfer To Be scheduled
13/03/2026	1.86		0.040				0.040			0.038	0.023	0.015		0.058	0.030	0.028								Return Transfer To Be scheduled
14/03/2026	1.76		0.034				0.034			0.036	0.020	0.016		0.035	0.019	0.016								
15/03/2026	2.95		0.030				0.030			0.038	0.022	0.016		0.058	0.030	0.028			0.019				1.3	
16/03/2026	2.85		0.030				0.030			0.038	0.023	0.015		0.058	0.030	0.028			0.023					
17/03/2026	2.79		0.025				0.025			0.035	0.020	0.015		0.041	0.026	0.015			0.041					
18/03/2026	2.72		0.022				0.022			0.035	0.019	0.016		0.037	0.018	0.019			0.025					
19/03/2026	2.69		0.015				0.015			0.024	0.013	0.011		0.023	0.011	0.012			0.031					
20/03/2026	2.62		0.016				0.016			0.026	0.014	0.012		0.023	0.011	0.012								
21/03/2026	2.56		0.016				0.016			0.024	0.012	0.012		0.022	0.010	0.012								
22/03/2026	2.49		0.022				0.022			0.027	0.015	0.012		0.024	0.012	0.012								
23/03/2026	2.41		0.023				0.023			0.026	0.015	0.011		0.023	0.011	0.012								
24/03/2026	2.33		0.028				0.028			0.022	0.011	0.011		0.036	0.018	0.018								Return Transfer To Be scheduled
25/03/2026	2.22		0.021				0.021			0.026	0.014	0.012	0.550	0.036	0.018	0.018							0.53	Return Transfer To BWPA Overnight
26/03/2026	2.10		0.044				0.044			0.026	0.014	0.012		0.055	0.040	0.015								
27/03/2026	1.59		0.053				0.053			0.026	0.014	0.012	0.350	0.080	0.065	0.015								
28/03/2026	1.55		0.041				0.041			0.014	0.014	0.000		0.075	0.060	0.015			0.087					
29/03/2026	2.48		0.039				0.039			0.016	0.016	0.000		0.070	0.055	0.015			0.035				1.02	
30/03/2026	2.41		0.032				0.032			0.015	0.015	0.000		0.070	0.055	0.015			0.045					
31/03/2026	2.10		0.044				0.044			0.014	0.014	0.000	0.210	0.075	0.060	0.015			0.035					
1/04/2026	1.91		0.039				0.039			0.016	0.016	0.000	0.110	0.066	0.055	0.011			0.041					Return Transfer To Be scheduled
2/04/2026	1.58		0.039				0.039			0.012	0.000	0.012	0.230	0.079	0.068	0.011			0.035					Out of Hrs Transfer Scheduled Tonight
3/04/2026	1.47		0.037				0.037			0.014	0.014	0.000		0.066	0.055	0.011								
4/04/2026	3.13		0.039				0.039			0.016	0.016	0.000		0.049	0.049								1.77	
5/04/2026	3.05		0.041				0.041			0.016	0.016	0.000		0.065	0.065				0.040					
6/04/2026	2.96		0.037				0.037			0.013	0.000	0.013		0.074	0.064	0.010			0.035					
7/04/2026	2.85		0.040				0.040			0.012	0.000	0.012		0.079	0.068	0.011			0.024					
8/04/2026	2.74		0.038				0.038			0.011	0.011	0.000		0.098	0.088	0.010			0.038					
9/04/2026	2.64		0.041				0.041			0.013	0.000	0.013		0.086	0.075	0.011			0.032					
10/04/2026	2.54		0.039				0.039			0.014	0.000	0.014		0.077	0.066	0.011			0.032					
11/04/2026	2.34		0.040				0.040			0.015	0.015	0.000	0.110	0.068	0.058	0.010			0.036					
12/04/2026	2.02		0.038				0.038			0.013	0.013	0.000	0.230	0.073	0.062	0.011			0.031					
13/04/2026	1.93		0.033				0.033			0.012	0.000	0.012		0.073	0.062	0.011			0.028					
14/04/2026	1.83		0.039				0.039			0.010	0.010	0.000		0.069	0.059	0.010			0.015					
15/04/2026	1.74		0.040				0.040			0.010	0.010	0.000		0.046	0.037	0.009			0.013					Return Transfer Scheduled overnight 15/4
16/04/2026	3.12		0.038				0.038			0.012	0.000	0.012		0.064	0.053	0.011			0.035				1.46	
17/04/2026	3.03		0.038				0.038			0.010	0.010	0.000		0.078	0.067	0.011			0.028					
18/04/2026	2.95		0.038				0.038			0.010	0.010	0.000		0.054	0.043	0.011			0.030					
19/04/2026	2.88		0.040				0.040			0.010	0.000	0.010		0.047	0.038	0.009			0.028					
20/04/2026	2.79		0.041				0.041			0.010	0.010	0.000		0.080	0.070	0.010			0.035					
21/04/2026	2.73		0.040				0.040			0.011	0.011	0.000		0.054	0.054	0.000			0.042					
22/04/2026	2.66		0.038				0.038			0.009	0.000	0.009		0.063	0.063	0.000			0.046					
23/04/2026	2.59		0.037				0.037			0.010	0.010	0.000		0.071	0.071	0.000			0.049					
24/04/2026	2.51		0.043				0.043			0.011	0.000	0.011		0.065	0.065	0.000			0.038					
25/04/2026	2.44		0.039				0.039			0.012	0.012	0.000		0.059	0.059	0.000			0.040					
26/04/2026	2.37		0.040				0.040			0.011	0.011	0.000		0.060	0.060	0.000			0.041					
27/04/2026	2.32		0.041				0.041			0.011	0.000	0.011		0.039	0.039	0.000			0.035					
28/04/2026	2.25		0.039				0.039			0.011	0.000	0.011		0.054	0.054	0.000			0.042					
29/04/2026	2.17		0.038				0.038			0.012	0.012	0.000		0.060	0.060	0.000			0.025					
30/04/2026	2.09		0.039				0.039			0.012	0.012	0.000		0.054	0.054	0.000			0.031					

Date	FREEBOARD	INFLOWS																	OUTFLOWS					
	Calculated (ML)	Surface Water Runoff LNAR 1A/1B (ML)	LNAR 1A/1B Leachate (Total, ML)	Sump 1	Sump 2	Sump 3	Sump 4	Sump 5	Surface Water Runoff LNAR 2A (ML)	LNAR 2A Leachate (Total, ML)	Sump 1	Sump 2	Surface Water Runoff LNAR 2B (ML)	LNAR 2B Leachate (Total, ML)	Sump 1	Sump 2	Transfers from Waste Ponds (ML)	Adjustment (MONTHLY)	LNAR Irrigation (ML)	LNAR Tanker (ML)	Transfers to LNAR5 (ML)	Transfers to Pond D (ML)	Transfers to Waste Pond A (ML)	Comments
1/05/2026	2.03		0.038				0.038			0.000	0.000	0.000		0.050	0.050	0.000			0.027					
2/05/2026	1.95		0.040				0.040			0.011	0.011	0.000		0.054	0.054	0.000			0.026					
3/05/2026	1.88		0.037				0.037			0.010	0.010	0.000		0.058	0.058	0.000			0.030					
4/05/2026	1.81		0.039				0.039			0.011	0.000	0.011		0.050	0.050	0.000			0.027					
5/05/2026	1.75		0.025				0.025			0.010	0.010	0.000		0.043	0.000	0.043			0.018					
6/05/2026	1.66		0.035				0.035			0.010	0.010	0.000		0.043	0.000	0.043			0.000					
7/05/2026	3.02		0.037				0.037			0.011	0.000	0.011		0.060	0.000	0.060			0.021				1.45	1.45ML Return Transfer BWPA
8/05/2026	2.95		0.041				0.041			0.010	0.010	0.000		0.049	0.000	0.049			0.025					Suspended Due to Wind Drift
9/05/2026	2.87		0.039				0.039			0.010	0.010	0.000		0.050	0.000	0.050			0.025					
10/05/2026	2.83		0.032				0.032			0.010	0.000	0.010		0.037	0.000	0.037			0.033					
11/05/2026	2.78		0.012				0.012			0.012	0.000	0.012		0.041	0.000	0.041			0.018					
12/05/2026	2.70		0.018			0.018	0.000			0.010	0.010	0.000		0.048	0.000	0.048			0.000					
13/05/2026	2.63		0.015			0.015	0.000			0.011	0.011	0.000		0.049	0.000	0.049			0.000					
14/05/2026	2.55		0.030			0.030	0.000			0.012	0.012	0.000		0.039	0.000	0.039			0.000					
15/05/2026	2.47		0.030			0.030	0.000			0.011	0.011	0.000		0.040	0.000	0.040			0.000					
16/05/2026	2.39		0.025			0.025	0.000			0.015	0.015	0.000		0.035	0.000	0.035			0.000					
17/05/2026	2.34		0.029			0.029	0.000			0.014	0.014	0.000		0.028	0.000	0.028			0.018					
18/05/2026	2.26		0.031			0.031	0.000			0.012	0.012	0.000		0.039	0.000	0.039			0.000					
19/05/2026	1.93		0.029			0.029	0.000			0.015	0.015	0.000	0.250	0.031	0.000	0.031			0.000					Return Transfer to be Scheduled
20/05/2026	1.86		0.032			0.032	0.000			0.016	0.016	0.000		0.025	0.000	0.025			0.000					Return Transfer to be Scheduled
21/05/2026	1.79		0.028			0.028	0.000			0.014	0.014	0.000		0.022	0.000	0.022			0.000					Return Transfer Scheduled 21/5
22/05/2026	2.83		0.028			0.028	0.000			0.014	0.014	0.000		0.022	0.000	0.022			0.000				1.1	
23/05/2026	2.27		0.030			0.030	0.000			0.016	0.016	0.000		0.018	0.000	0.018			0.000					
24/05/2026	2.70		0.025			0.025	0.000			0.016	0.016	0.000		0.025	0.000	0.025			0.000					
25/05/2026	2.64		0.028			0.028	0.000			0.014	0.014	0.000		0.022	0.000	0.022			0.000					
26/05/2026	2.60		0.013			0.013	0.000			0.012	0.012	0.000		0.011	0.000	0.011			0.000					
27/05/2026	2.56		0.015			0.015	0.000			0.011	0.011	0.000		0.014	0.000	0.014			0.000					
28/05/2026	2.52		0.014			0.014	0.000			0.013	0.013	0.000		0.014	0.000	0.014			0.000					
29/05/2026	2.48		0.014			0.014	0.000			0.013	0.013	0.000		0.014	0.000	0.014			0.000					
30/05/2026	2.43		0.016			0.016	0.000			0.016	0.016	0.000		0.016	0.000	0.016			0.000					
31/05/2026	2.39		0.011			0.011	0.000			0.015	0.015	0.000		0.015	0.000	0.015			0.000					
1/06/2026	2.35		0.014			0.014	0.000			0.013	0.013	0.000		0.014	0.000	0.014			0.000					
2/06/2026	2.32		0.014			0.014	0.000			0.014	0.014	0.000		0.017	0.000	0.017			0.019					
3/06/2026	2.27		0.016			0.016	0.000			0.015	0.015	0.000		0.020	0.000	0.020			0.000					
4/06/2026	2.22		0.014			0.014	0.000			0.017	0.017	0.000		0.019	0.000	0.019			0.000					
5/06/2026	2.18		0.012			0.012	0.000			0.015	0.015	0.000		0.015	0.000	0.015			0.000					
6/06/2026	2.15		0.015			0.015	0.000			0.012	0.012	0.000		0.015	0.000	0.015			0.016					
7/06/2026	2.11		0.016			0.016	0.000			0.012	0.012	0.000		0.011	0.000	0.011			0.000					
8/06/2026	2.11		0.011			0.011	0.000			0.016	0.016	0.000		0.020	0.000	0.020			0.038					
9/06/2026	2.08		0.011			0.011	0.000			0.016	0.016	0.000		0.019	0.000	0.019			0.025					
10/06/2026	2.04		0.010			0.010	0.000			0.014	0.014	0.000		0.016	0.000	0.016			0.000					
11/06/2026	2.00		0.012			0.012	0.000			0.015	0.015	0.000		0.016	0.000	0.016			0.000					
12/06/2026	2.87		0.014			0.014	0.000			0.016	0.016	0.000		0.015	0.000	0.015			0.000				0.91	
13/06/2026	2.82		0.017			0.017	0.000			0.016	0.016	0.000		0.013	0.000	0.013			0.000					
14/06/2026	2.78		0.013			0.013	0.000			0.015	0.015	0.000		0.013	0.000	0.013			0.000					
15/06/2026	2.73		0.015			0.015	0.000			0.015	0.015	0.000		0.015	0.000	0.015			0.000					
16/06/2026	2.69		0.016			0.016	0.000			0.017	0.017	0.000		0.012	0.000	0.012			0.000					
17/06/2026	2.66		0.014			0.014	0.000			0.016	0.016	0.000		0.012	0.000	0.012			0.016					
18/06/2026	2.64		0.015			0.015	0.000			0.014	0.014	0.000		0.015	0.000	0.015			0.019					
19/06/2026	2.59		0.016			0.016	0.000			0.016	0.016	0.000		0.015	0.000	0.015			0.000					
20/06/2026	2.55		0.012			0.012	0.000			0.015	0.015	0.000		0.015	0.000	0.015			0.000					
21/06/2026	2.50		0.015			0.015	0.000			0.015	0.015	0.000		0.015	0.000	0.015			0.000					
22/06/2026	2.46		0.016			0.016	0.000			0.015	0.015	0.000		0.015	0.000	0.015			0.000					
23/06/2026	2.42		0.014			0.014	0.000			0.016	0.016	0.000		0.013	0.000	0.013			0.000					
24/06/2026	2.38		0.011			0.011	0.000			0.012	0.012	0.000		0.014	0.000	0.014			0.000					
25/06/2026	2.34		0.013			0.013	0.000			0.015	0.015	0.000		0.012	0.000	0.012			0.000					
26/06/2026	2.30		0.014			0.014	0.000			0.014	0.014	0.000		0.011	0.000	0.011			0.000					
27/06/2026	2.26		0.011			0.011	0.000			0.014	0.014	0.000		0.011	0.000	0.011			0.000					
28/06/2026	2.25		0.011			0.011	0.000			0.011	0.011	0.000		0.011	0.000	0.011			0.022					
29/06/2026	2.21		0.013			0.013	0.000			0.015	0.015	0.000		0.013	0.000	0.013			0.000					
30/06/2026	2.19		0.012			0.012	0.000			0.015	0.015	0.000		0.014	0.000	0.014			0.015					
1/07/2026	2.14		0.014			0.014	0.000			0.015	0.015	0.000		0.012	0.000	0.012			0.000					
2/07/2026	2.61		0.011			0.011	0.000			0.013	0.013	0.000		0.010	0.000	0.010			0.000				0.5	
3/07/2026	2.59		0.012			0.012	0.000			0.014	0.014	0.000		0.015	0.000	0.015			0.020					
4/07/2026	2.55		0.014			0.014	0.000			0.014	0.014	0.000		0.014	0.000	0.014			0.000					
5/07/2026	2.51		0.011			0.011	0.000			0.014	0.014	0.000		0.015	0.000	0.015			0.000					
6/07/2026	2.47		0.012			0.012	0.000			0.016	0.016	0.000		0.013	0.000	0.013			0.000					
7/07/2026	2.42		0.010			0.010	0.000			0.016	0.016	0.000		0.017	0.000	0.017			0.000					
8/07/2026	2.41		0.011			0.011	0.000			0.014	0.014	0.000		0.018	0.000	0.018			0.030					
9/07/2026	2.37		0.010			0.010	0.000			0.012	0.012	0.000		0.015	0.000	0.015			0.000					
10/07/2026	2.34		0.012			0.012	0.000			0.014	0.014	0.000		0.012	0.000	0.012			0.000					
11/07/2026	2.30		0.012			0.012	0.000			0.011	0.011	0.000		0.011	0.000	0.011			0.000					
12/07/2026	2.27		0.011			0.011	0.000			0.012	0.012	0.000		0.010	0.000	0.010			0.000					
13/07/2026	2.23		0.010			0.010	0.000			0.014	0.014	0.000		0.010	0.000	0.010			0.000					
14/07/2026	2.21		0.000			0.000	0.000			0.014	0.014	0.000		0.012	0.000	0.012			0.000					
15/07/2026	2.19		0.010			0.010	0.000			0.011	0.011	0.000		0.012	0.000	0.012			0.015					
16/07/2026	2.17		0.011			0.011	0.000			0.013	0.013	0.000		0.010	0.000	0.010			0.014					
17/07/2026	2.13		0.011			0.011	0.000			0.011	0.011	0.000		0.015	0.000	0.015			0.000					
18/07/2026	2.12		0.010			0.010	0.000			0.012	0.012	0.000		0.013	0.000	0.013			0.018					
19/07/2026	2.09		0.000			0.000	0.000			0.014	0.014	0.000		0.014	0.000	0.014			0.000					
20/07/2026	2.07		0.011			0.011	0.000			0.012	0.012	0.000		0.014	0.000	0.014			0.018					
21/07/2026	2.05		0.010			0.010	0.000			0.012	0.012	0.000		0.015	0.000	0.015			0.016					
22/07/2026	2.01		0.013			0.013	0.000			0.012	0.012	0.000		0.011	0.000	0.011			0.000					Heavy Frost
23/07/2026	1.98		0.011			0.011	0.000			0.010	0.010	0.000		0.010	0.000	0.010			0.000					

LNAR4 Operating Level - 18.5 ML

Purpose: Staging pond for WCA, irrigation and storage for runoff from unlined areas

Colour Legend Instructions	Copy Formula	Enter Data	Enter Data

Date	FREEBOARD	INFLOWS						OUTFLOWS						Comments
	Calculated (ML)	Transfers from LNAR5 (ML)	Transfers from LNAR2 (ML)	Transfers from Settling Ponds (ML)	Transfers from SW2 (ML)	Transfers from SHG1 (ML)	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Volume for WCA Ash Conditioning (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR5 (ML)	Transfers to SW2 (ML)	
1/01/2026	3.47										0.00			
2/01/2026	3.61						0.09		0.23		0.23			Received APA Bin Sump
3/01/2026	3.61										0.00			
4/01/2026	3.61										0.00			
5/01/2026	3.72								0.11		0.11			
6/01/2026	3.63						0.09				0.00			Received APA Bin Sump
7/01/2026	2.26				1.44		0.09		0.16		0.16			Received APA Bin Sump
8/01/2026	2.05				0.45				0.24		0.24			
9/01/2026	2.05										0.00			
10/01/2026	2.05										0.00			
11/01/2026	2.26										0.21			
12/01/2026	2.26										0.00			
13/01/2026	2.26										0.00			
14/01/2026	2.26										0.00			
15/01/2026	2.19						0.08				0.00			Receiving APA Sump
16/01/2026	2.09						0.10				0.00			Receiving APA Sump
17/01/2026	2.09										0.00			
18/01/2026	1.96						0.13				0.00			Receiving APA Sump
19/01/2026	1.96										0.00			
20/01/2026	1.96										0.00			
21/01/2026	2.07								0.11		0.11			
22/01/2026	2.23								0.16		0.16			
23/01/2026	2.23										0.00			
24/01/2026	2.23										0.00			
25/01/2026	2.23										0.00			
26/01/2026	2.23										0.00			
27/01/2026	2.23										0.00			
28/01/2026	2.23										0.00			
29/01/2026	2.23										0.00			
30/01/2026	2.23										0.00			
31/01/2026	2.23										0.00			
1/02/2026	2.23										0.00			
2/02/2026	2.23										0.00			
3/02/2026	2.23										0.00			
4/02/2026	2.23										0.00			
5/02/2026	2.23										0.00			
6/02/2026	2.33								0.10		0.10			
7/02/2026	2.33										0.00			
8/02/2026	2.23						0.10				0.00			
9/02/2026	2.23										0.00			
10/02/2026	2.03						0.20				0.00			0.2ML Received APA Sump
11/02/2026	0.76				1.27						0.00			
12/02/2026	0.80						0.14		0.18		0.18			0.14ML Received APA Sump
13/02/2026	1.50						0.11		0.31		0.31		0.50	0.11ML Received APA Sump
14/02/2026	1.50										0.00			
15/02/2026	1.93								0.43		0.43			
16/02/2026	1.93				0.40				0.40		0.40			
17/02/2026	2.27				0.37				0.71		0.71			
18/02/2026	2.28				0.20				0.21		0.21			
19/02/2026	2.27				0.20				0.19		0.19			
20/02/2026	2.27										0.00			
21/02/2026	2.27										0.00			
22/02/2026	2.25						0.02				0.00			APA Bin Sump
23/02/2026	2.25										0.00			
24/02/2026	2.25										0.00			
25/02/2026	2.25										0.00			
26/02/2026	2.25										0.00			
27/02/2026	2.25										0.00			
28/02/2026	2.25										0.00			

Date	FREEBOARD	INFLOWS						OUTFLOWS						Comments
	Calculated (ML)	Transfers from LNAR5 (ML)	Transfers from LNAR2 (ML)	Transfers from Settling Ponds (ML)	Transfers from SW2 (ML)	Transfers from SHG1 (ML)	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Volume for WCA Ash Conditioning (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR5 (ML)	Transfers to SW2 (ML)	
1/03/2026	2.23						0.02				0.00			
2/03/2026	2.23										0.00			
3/03/2026	2.23										0.00			
4/03/2026	1.50				0.52		0.21				0.00			Received Inflows APA Sump/SW2
5/03/2026	1.48						0.02				0.00			
6/03/2026	4.08				0.30				0.40		0.40	2.50		2.5 ML Transferred to SPC
7/03/2026	0.98	1.00	2.20		0.20				0.30		0.30			
8/03/2026	1.23								0.25		0.25			
9/03/2026	1.48								0.25		0.25			
10/03/2026	1.48										0.00			
11/03/2026	1.48										0.00			
12/03/2026	1.48										0.00			
13/03/2026	1.48										0.00			
14/03/2026	0.38		1.10								0.00			
15/03/2026	0.38		1.10								0.00		1.10	SPC
16/03/2026	1.53										0.00		1.15	SPC
17/03/2026	1.53										0.00			
18/03/2026	1.53										0.00			
19/03/2026	1.53										0.00			
20/03/2026	1.53										0.00			
21/03/2026	1.53										0.00			
22/03/2026	1.53										0.00			
23/03/2026	1.48						0.05				0.00			
24/03/2026	1.48										0.00			
25/03/2026	1.48										0.00			
26/03/2026	1.48										0.00			
27/03/2026	1.48										0.00			
28/03/2026	1.48										0.00			
29/03/2026	1.48										0.00			
30/03/2026	1.48										0.00			
31/03/2026	1.48										0.00			
1/04/2026	1.48										0.00			
2/04/2026	2.23				0.45				0.43		0.43		0.77	0.75 Transfer to SPC
3/04/2026	2.23										0.00			
4/04/2026	2.23										0.00			
5/04/2026	2.75								0.15		0.15		0.37	SPC
6/04/2026	2.75										0.00			
7/04/2026	2.89								0.14		0.14			
8/04/2026	2.89										0.00			
9/04/2026	2.99								0.10		0.10			
10/04/2026	2.99										0.00			
11/04/2026	2.99										0.00			
12/04/2026	2.99										0.00			
13/04/2026	2.99										0.00			
14/04/2026	3.34								0.35		0.35			
15/04/2026	3.50								0.16		0.16			
16/04/2026	3.73								0.23		0.23			
17/04/2026	3.83								0.10		0.10			
18/04/2026	3.93								0.10		0.10			
19/04/2026	4.05								0.12		0.12			
20/04/2026	4.20								0.15		0.15			
21/04/2026	3.60			0.60							0.00			
22/04/2026	3.60										0.00			
23/04/2026	3.60										0.00			
24/04/2026	3.60										0.00			
25/04/2026	3.60										0.00			
26/04/2026	3.60										0.00			
27/04/2026	4.08										0.00		0.48	
28/04/2026	4.08										0.00			
29/04/2026	4.08										0.00			
30/04/2026	2.90			1.98							0.00		0.80	

Date	FREEBOARD	INFLOWS						OUTFLOWS						Comments
	Calculated (ML)	Transfers from LNAR5 (ML)	Transfers from LNAR2 (ML)	Transfers from Settling Ponds (ML)	Transfers from SW2 (ML)	Transfers from SHG1 (ML)	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Volume for WCA Ash Conditioning (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR5 (ML)	Transfers to SW2 (ML)	
1/05/2026	2.90										0.00			
2/05/2026	3.11								0.21		0.21			
3/05/2026	2.02			1.80					0.25		0.25		0.46	
4/05/2026	2.37								0.35		0.35			
5/05/2026	2.37										0.00			
6/05/2026	2.37										0.00			
7/05/2026	2.37										0.00			
8/05/2026	2.37										0.00			
9/05/2026	2.37										0.00			
10/05/2026	2.37										0.00			
11/05/2026	2.37										0.00			
12/05/2026	2.37										0.00			
13/05/2026	2.27						0.10				0.00			Inflows APA Bin Sump
14/05/2026	1.59			0.68							0.00			
15/05/2026	1.71								0.12		0.12			
16/05/2026	1.98										0.00		0.27	
17/05/2026	2.09								0.11		0.11			
18/05/2026	2.23						0.09		0.23		0.23			Inflows APA Bin Sump
19/05/2026	2.23										0.00			
20/05/2026	2.23										0.00			
21/05/2026	2.23										0.00			
22/05/2026	2.23										0.00			
23/05/2026	2.23										0.00			
24/05/2026	2.23										0.00			
25/05/2026	2.23										0.00			
26/05/2026	2.23										0.00			
27/05/2026	2.23										0.00			
28/05/2026	2.23										0.00			
29/05/2026	2.23										0.00			
30/05/2026	2.23										0.00			
31/05/2026	2.23										0.00			
1/06/2026	2.23										0.00			
2/06/2026	2.23										0.00			
3/06/2026	2.23										0.00			
4/06/2026	2.23										0.00			
5/06/2026	2.23										0.00			
6/06/2026	2.23										0.00			
7/06/2026	2.23										0.00			
8/06/2026	2.23										0.00			
9/06/2026	2.23										0.00			
10/06/2026	2.23										0.00			
11/06/2026	2.23										0.00			
12/06/2026	2.23										0.00			
13/06/2026	2.23										0.00			
14/06/2026	2.23										0.00			
15/06/2026	2.23										0.00			
16/06/2026	2.23										0.00			
17/06/2026	2.23										0.00			
18/06/2026	2.23										0.00			
19/06/2026	2.23										0.00			
20/06/2026	2.23										0.00			
21/06/2026	2.23										0.00			
22/06/2026	2.23										0.00			
23/06/2026	2.23										0.00			
24/06/2026	2.23										0.00			
25/06/2026	2.23										0.00			
26/06/2026	2.23										0.00			
27/06/2026	2.23										0.00			
28/06/2026	2.38							0.15			0.15			
29/06/2026	2.53							0.15			0.15			
30/06/2026	2.73								0.20		0.20			
1/07/2026	2.73										0.00			
2/07/2026	2.63						0.10				0.00			0.1 Received APA Bin Sump
3/07/2026	2.22				0.41						0.00			
4/07/2026	2.22										0.00			
5/07/2026	2.22										0.00			
6/07/2026	2.22										0.00			
7/07/2026	2.22										0.00			
8/07/2026	2.22										0.00			
9/07/2026	2.22										0.00			
10/07/2026	2.22										0.00			
11/07/2026	2.22										0.00			
12/07/2026	2.22										0.00			
13/07/2026	2.22										0.00			
14/07/2026	2.22										0.00			
15/07/2026	2.22										0.00			
16/07/2026	2.22										0.00			
17/07/2026	2.22										0.00			
18/07/2026	2.22										0.00			

Date	FREEBOARD	INFLOWS						OUTFLOWS						Comments
	Calculated (ML)	Transfers from LNAR5 (ML)	Transfers from LNAR2 (ML)	Transfers from Settling Ponds (ML)	Transfers from SW2 (ML)	Transfers from SHG1 (ML)	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Volume for WCA Ash Conditioning (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR5 (ML)	Transfers to SW2 (ML)	
19/07/2026	2.22										0.00			
20/07/2026	2.22										0.00			
21/07/2026	2.22										0.00			
22/07/2026	2.83										0.00		0.61	
23/07/2026	3.04								0.21		0.21			

LNAR5 Operating Level - 19ML

Purpose: Holds runoff from lined LNAR areas (salty runoff)

Colour Legend Instructions: Copy Formula | Enter Data | | Enter Data

	FREEBOARD	INFLOWS									OUTFLOWS								
Date	Calculated (ML)	Transfers from LNAR2 (ML)	Transfers from LNAR3 (ML)	Transfers from LNAR4 (ML)	Transfers from SW2 (ML)	Transfers from CT Basin (ML)	Transfers from Settling Ponds (ML)	Runoff/RSW from LNAR 1A/1B	Runoff from LNAR Stage 2A	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Evaporation Ring (ML)	LNAR Irrigation (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR4 (ML)	Transfers to SW2 (ML)	Transfers to Settling Ponds (ML)	Comments
1/01/2026	5.01											0.73			0.73				
2/01/2026	4.41						1.27					0.67			0.67				
3/01/2026	5.00				0.18							0.77			0.77				
4/01/2026	5.93											0.93			0.93				
5/01/2026	5.40				0.20		1.43					1.10			1.10				
6/01/2026	5.39				0.38							0.37			0.37				
7/01/2026	6.08											0.69			0.69				
8/01/2026	6.14								0.10			0.16			0.16				
9/01/2026	6.14						0.83					0.83			0.83				
10/01/2026	7.00											0.86			0.86				
11/01/2026	6.16				0.28		1.23					0.67			0.67				
12/01/2026	6.12				0.18							0.14			0.14				
13/01/2026	6.13				0.10							0.11			0.11				
14/01/2026	6.70											0.57			0.57				
15/01/2026	6.70														0.00				
16/01/2026	6.80				0.11							0.21			0.21				
17/01/2026	6.80														0.00				
18/01/2026	7.25											0.45			0.45				
19/01/2026	7.25														0.00				
20/01/2026	5.77						1.48								0.00				
21/01/2026	6.10						1.28					0.36			0.36		1.25		
22/01/2026	6.24				0.25							0.39			0.39				
23/01/2026	6.24														0.00				
24/01/2026	6.49											0.25			0.25				
25/01/2026	5.54						1.23					0.28			0.28				
26/01/2026	5.87											0.33			0.33				
27/01/2026	6.20											0.33			0.33				
28/01/2026	5.17						1.36					0.33			0.33				
29/01/2026	5.55														0.00	0.38			
30/01/2026	5.55														0.00				
31/01/2026	4.87						0.97					0.29			0.29				
1/02/2026	5.36						1.18					0.39			0.39	1.28			LNAR2
2/02/2026	5.57				0.18		1.33					0.41			0.41	1.31			LNAR2
3/02/2026	5.78											0.21			0.21				
4/02/2026	5.91											0.13			0.13				
5/02/2026	6.12						0.85			0.10		0.41			0.41		0.75		Received 0.1 APA Sump
6/02/2026	6.60											0.48			0.48				
7/02/2026	6.15						0.78					0.33			0.33				
8/02/2026	5.52						0.75					0.12			0.12				
9/02/2026	5.52														0.00				
10/02/2026	5.52														0.00				
11/02/2026	5.66											0.14			0.14				
12/02/2026	4.83								0.83						0.00				Receivine Inflows 2A lined
13/02/2026	4.95											0.12			0.12				
14/02/2026	4.95														0.00				
15/02/2026	4.72								0.23						0.00				
16/02/2026	4.72														0.00				
17/02/2026	3.59				0.75				0.38						0.00				
18/02/2026	4.24											0.65			0.65				
19/02/2026	4.86											0.62			0.62				
20/02/2026	5.53						0.10					0.50			0.50		0.27		
21/02/2026	5.74											0.21			0.21				
22/02/2026	6.37											0.63			0.63				
23/02/2026	5.49						1.46					0.58			0.58				
24/02/2026	5.47	0.80										0.38			0.38		0.40		
25/02/2026	4.69	1.78										0.12			0.12		0.88		
26/02/2026	4.69														0.00				
27/02/2026	2.89	1.55							0.25						0.00				
28/02/2026	2.89														0.00				

	FREEBOARD	INFLOWS									OUTFLOWS								
Date	Calculated (ML)	Transfers from LNAR2 (ML)	Transfers from LNAR3 (ML)	Transfers from LNAR4 (ML)	Transfers from SW2 (ML)	Transfers from CT Basin (ML)	Transfers from Settling Ponds (ML)	Runoff/RSW from LNAR 1A/1B	Runoff from LNAR Stage 2A	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Evaporation Ring (ML)	LNAR Irrigation (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR4 (ML)	Transfers to SW2 (ML)	Transfers to Settling Ponds (ML)	Comments
1/03/2026	2.89														0.00				
2/03/2026	2.89														0.00				
3/03/2026	3.10											0.21			0.21				
4/03/2026	2.19	0.10						0.81							0.00				
5/03/2026	0.54				0.09			0.65		1.00		0.09			0.09				Received 1ML APA Sumo
6/03/2026	0.54														0.00				
7/03/2026	1.54														0.00	1.00			
8/03/2026	1.54														0.00				
9/03/2026	1.44				0.10										0.00				
10/03/2026	2.16										0.22	0.50			0.72				
11/03/2026	2.79				0.25						0.25	0.63			0.88				
12/03/2026	3.45				0.32						0.35	0.63			0.98				
13/03/2026	3.95										0.20	0.30			0.50				
14/03/2026	3.95														0.00				
15/03/2026	4.05										0.10				0.10				
16/03/2026	4.18										0.13				0.13				
17/03/2026	4.32										0.14				0.14				
18/03/2026	4.18								0.14						0.00				
19/03/2026	4.83										0.15	0.50			0.65				
20/03/2026	4.83														0.00				
21/03/2026	4.83														0.00				
22/03/2026	4.83														0.00				
23/03/2026	4.83														0.00				
24/03/2026	3.54				0.31			0.98							0.00				
25/03/2026	3.54														0.00				
26/03/2026	3.54														0.00				
27/03/2026	3.85											0.31			0.31				
28/03/2026	4.23											0.38			0.38				
29/03/2026	4.66											0.43			0.43				
30/03/2026	5.07											0.41			0.41				
31/03/2026	5.39											0.32			0.32				
1/04/2026	5.47				0.35							0.43			0.43				
2/04/2026	5.47														0.00				
3/04/2026	5.68														0.21				
4/04/2026	5.87														0.19				
5/04/2026	5.87														0.00				
6/04/2026	6.81														0.00			0.94	SPC
7/04/2026	6.81														0.00				
8/04/2026	6.97											0.16			0.16				
9/04/2026	7.09											0.12			0.12				
10/04/2026	7.26											0.17			0.17				
11/04/2026	7.44											0.18			0.18				
12/04/2026	7.62											0.18			0.18				
13/04/2026	7.78											0.16			0.16				
14/04/2026	7.92				0.15						0.11	0.18			0.29				
15/04/2026	7.90				0.14						0.12				0.12				
16/04/2026	8.68										0.15	0.28			0.43		0.35		
17/04/2026	8.52						0.78				0.15	0.25			0.40		0.22		
18/04/2026	8.62										0.10				0.10				
19/04/2026	8.87										0.10	0.15			0.25				
20/04/2026	8.97										0.10				0.10				
21/04/2026	7.79						1.55				0.10	0.27			0.37				
22/04/2026	6.94						1.90				0.15	0.39			0.54		0.51		
23/04/2026	5.50						2.20				0.15	0.41			0.56		0.20		
24/04/2026	4.20						1.86				0.14	0.32			0.46		0.10		
25/04/2026	4.72										0.14	0.38			0.52				
26/04/2026	4.64						0.58				0.15	0.35			0.50				
27/04/2026	4.49						0.50				0.16	0.39			0.55				
28/04/2026	5.25										0.16	0.40			0.56				
29/04/2026	5.27				0.30						0.11	0.21			0.32				
30/04/2026	5.56										0.12	0.17			0.29				

	FREEBOARD	INFLOWS									OUTFLOWS								
Date	Calculated (ML)	Transfers from LNAR2 (ML)	Transfers from LNAR3 (ML)	Transfers from LNAR4 (ML)	Transfers from SW2 (ML)	Transfers from CT Basin (ML)	Transfers from Settling Ponds (ML)	Runoff/RSW from LNAR 1A/1B	Runoff from LNAR Stage 2A	Adjustment (MONTHLY)	Volume to Evaps / Atomisers (ML)	Volume for Dust Suppression (incl Tanker) (ML)	Evaporation Ring (ML)	LNAR Irrigation (ML)	Daily Total Volume Used at the Repository (ML)	Transfers to LNAR4 (ML)	Transfers to SW2 (ML)	Transfers to Settling Ponds (ML)	Comments
1/05/2026	5.87										0.10	0.21			0.31				
2/05/2026	5.87														0.00				
3/05/2026	5.07						0.80								0.00				
4/05/2026	5.07														0.00				
5/05/2026	5.29				0.25						0.10	0.37			0.47				
6/05/2026	5.44											0.15			0.15				
7/05/2026	5.44				0.27						0.10	0.17			0.27				
8/05/2026	5.26						1.38				0.10	0.26			0.36		0.84		
9/05/2026	5.63										0.11	0.26			0.37				
10/05/2026	5.93										0.09	0.21			0.30				
11/05/2026	6.15											0.22			0.22				
12/05/2026	5.05				1.10										0.00				
13/05/2026	5.51										0.10	0.36			0.46				
14/05/2026	5.77										0.10	0.16			0.26				
15/05/2026	5.77														0.00				
16/05/2026	5.90											0.13			0.13				
17/05/2026	5.90														0.00				
18/05/2026	5.47						0.76				0.10	0.12			0.22		0.11		
19/05/2026	5.47														0.00				
20/05/2026	5.47														0.00				
21/05/2026	5.47				0.11							0.11			0.11				
22/05/2026	5.47														0.00				
23/05/2026	5.59											0.12			0.12				
24/05/2026	5.67										0.08				0.08				
25/05/2026	6.27											0.10			0.10		0.50		
26/05/2026	6.12				0.15										0.00				
27/05/2026	6.12														0.00				
28/05/2026	6.02									0.10					0.00				Inflows APA Bin Sump
29/05/2026	6.02														0.00				
30/05/2026	6.02														0.00				
31/05/2026	5.89									0.13					0.00				Inflows APA Bin Sump
1/06/2026	5.49				0.40										0.00				
2/06/2026	5.59										0.10				0.10				
3/06/2026	5.49				0.10										0.00				
4/06/2026	5.49														0.00				
5/06/2026	5.49														0.00				
6/06/2026	5.34				0.15										0.00				
7/06/2026	5.44										0.10				0.10				
8/06/2026	5.21				0.45						0.10	0.12			0.22				
9/06/2026	4.76				0.56							0.11			0.11				
10/06/2026	4.76														0.00				
11/06/2026	4.76														0.00				
12/06/2026	4.16									0.70		0.10			0.10				0.7ML Received SHG1
13/06/2026	3.55									0.61					0.00				0.61ML Received SHG1
14/06/2026	3.55														0.00				
15/06/2026	3.55														0.00				
16/06/2026	3.95										0.10				0.10		0.30		
17/06/2026	4.05										0.10				0.10				
18/06/2026	4.16										0.11				0.11				
19/06/2026	4.16														0.00				
20/06/2026	4.16														0.00				
21/06/2026	3.56				0.60										0.00				
22/06/2026	3.56														0.00				
23/06/2026	3.68										0.12				0.12				
24/06/2026	3.93										0.10	0.15			0.25				
25/06/2026	3.52				0.61						0.10	0.10			0.20				
26/06/2026	3.52														0.00				
27/06/2026	3.62										0.10				0.10				
28/06/2026	3.73											0.11			0.11				
29/06/2026	3.86										0.13				0.13				
30/06/2026	3.56				0.40							0.10			0.10				
1/07/2026	3.56														0.00				
2/07/2026	3.56														0.00				
3/07/2026	2.86						0.70								0.00				
4/07/2026	2.86														0.00				
5/07/2026	2.86														0.00				
6/07/2026	2.86														0.00				
7/07/2026	2.86														0.00				
8/07/2026	2.86														0.00				
9/07/2026	3.06										0.10	0.10			0.20				
10/07/2026	2.92				0.38						0.10	0.14			0.24				
11/07/2026	3.03										0.11				0.11				
12/07/2026	3.03														0.00				
13/07/2026	3.29										0.11	0.15			0.26				
14/07/2026	3.45											0.16			0.16				
15/07/2026	3.58											0.13			0.13				
16/07/2026	3.43				0.41						0.10	0.16			0.26				
17/07/2026	3.69										0.10	0.16			0.26				
18/07/2026	3.69														0.00				
19/07/2026	3.83											0.14			0.14				
20/07/2026	4.08										0.10	0.15			0.25				
21/07/2026	4.18										0.10				0.10				
22/07/2026	4.41										0.11	0.12			0.23				
23/07/2026	4.67										0.12	0.14			0.26				

ASH CONDITIONING SUMMARY

Colour Legend Instructions	Copy Formula	Enter Data	Enter Data

	WCA				BCA			
Date	From LNARS (ML)	From Settling Ponds (ML)	CT Basin (ML)	WCA Total (kL)	From LNAR3 (ML)	From Waste Pond A (ML)	From Waste Pond B (ML)	BCA TOTAL (kL)
1/01/2026				0			0.216	216
2/01/2026				0			0.186	186
3/01/2026				0			0.223	223
4/01/2026				0			0.197	197
5/01/2026				0			0.234	234
6/01/2026				0			0.197	197
7/01/2026				0			0.177	177
8/01/2026				0			0.276	276
9/01/2026				0			0.404	404
10/01/2026				0			0.424	424
11/01/2026				0			0.400	400
12/01/2026				0			0.404	404
13/01/2026				0			0.151	151
14/01/2026				0			0.202	202
15/01/2026				0			0.290	290
16/01/2026				0			0.259	259
17/01/2026				0			0.176	176
18/01/2026				0			0.198	198
19/01/2026				0			0.205	205
20/01/2026				0			0.179	179
21/01/2026				0			0.139	139
22/01/2026				0		0.040		40
23/01/2026				0		0.061		61
24/01/2026				0		0.010		10
25/01/2026				0		0.209		209
26/01/2026				0		0.348		348
27/01/2026				0		0.390		390
28/01/2026				0			0.263	263
29/01/2026				0			0.246	246
30/01/2026				0			0.209	209
31/01/2026				0			0.275	275
1/02/2026				0			0.402	402
2/02/2026				0			0.380	380
3/02/2026				0			0.128	128
4/02/2026				0			0.109	109
5/02/2026				0			0.377	377
6/02/2026				0			0.459	459
7/02/2026				0			0.287	287
8/02/2026				0			0.413	413
9/02/2026				0			0.343	343
10/02/2026				0			0.389	389
11/02/2026				0			0.300	300
12/02/2026				0			0.310	310
13/02/2026				0			0.403	403
14/02/2026				0			0.231	231
15/02/2026				0			0.230	230
16/02/2026				0			0.170	170
17/02/2026				0			0.221	221
18/02/2026				0		0.120		120
19/02/2026				0		0.264		264
20/02/2026				0		0.150		150
21/02/2026				0		0.347		347
22/02/2026				0		0.263		263
23/02/2026				0		0.308		308
24/02/2026				0		0.186		186
25/02/2026				0		0.360		360
26/02/2026				0		0.252		252
27/02/2026				0		0.216		216
28/02/2026				0		0.284		284
1/03/2026				0		0.231		231
2/03/2026				0		0.334		334
3/03/2026				0		0.231		231
4/03/2026			0.190	190				0
5/03/2026				0		0.191		191
6/03/2026				0		0.214		214
7/03/2026				0		0.423		423
8/03/2026				0		0.465		465
9/03/2026				0		0.291		291
10/03/2026				0		0.271		271
11/03/2026				0		0.203		203
12/03/2026				0		0.189		189
13/03/2026				0		0.251		251
14/03/2026				0		0.326		326
15/03/2026				0		0.221		221
16/03/2026		0.110		110		0.256		256
17/03/2026		0.050		50				0
18/03/2026				0		0.207		207
19/03/2026				0		0.329		329
20/03/2026				0		0.347		347
21/03/2026				0		0.168		168
22/03/2026				0		0.250		250
23/03/2026				0		0.253		253
24/03/2026				0		0.218		218
25/03/2026				0		0.162		162
26/03/2026				0		0.179		179
27/03/2026				0		0.169		169
28/03/2026				0		0.133		133
29/03/2026				0		0.212		212
30/03/2026				0		0.239		239
31/03/2026				0		0.162		162

	WCA				BCA			
Date	From LNAR5 (ML)	From Settling Ponds (ML)	CT Basin (ML)	WCA Total (kL)	From LNAR3 (ML)	From Waste Pond A (ML)	From Waste Pond B (ML)	BCA TOTAL (kL)
1/04/2026				0		0.149		149
2/04/2026				0		0.165		165
3/04/2026				0		0.301		301
4/04/2026				0		0.258		258
5/04/2026				0		0.123		123
6/04/2026				0		0.146		146
7/04/2026				0		0.192		192
8/04/2026				0		0.150		150
9/04/2026				0		0.000		0
10/04/2026				0		0.000		0
11/04/2026				0		0.299		299
12/04/2026				0		0.155		155
13/04/2026				0		0.186		186
14/04/2026				0		0.148		148
15/04/2026				0		0.277		277
16/04/2026				0		0.240		240
17/04/2026				0		0.289		289
18/04/2026				0		0.179		179
19/04/2026				0		0.260		260
20/04/2026				0		0.284		284
21/04/2026				0		0.270		270
22/04/2026				0		0.195		195
23/04/2026				0		0.187		187
24/04/2026				0		0.200		200
25/04/2026				0		0.105		105
26/04/2026				0		0.219		219
27/04/2026				0		0.256		256
28/04/2026				0		0.322		322
29/04/2026				0		0.271		271
30/04/2026				0		0.274		274
1/05/2026				0		0.000		0
2/05/2026				0		0.315		315
3/05/2026				0		0.050		50
4/05/2026				0		0.218		218
5/05/2026				0		0.361		361
6/05/2026				0		0.342		342
7/05/2026				0		0.307		307
8/05/2026				0		0.217		217
9/05/2026				0		0.245		245
10/05/2026				0		0.281		281
11/05/2026				0		0.313		313
12/05/2026				0		0.287		287
13/05/2026				0		0.244		244
14/05/2026				0		0.219		219
15/05/2026				0		0.166		166
16/05/2026				0		0.305		305
17/05/2026				0		0.234		234
18/05/2026				0		0.347		347
19/05/2026				0		0.345		345
20/05/2026				0		0.166		166
21/05/2026				0		0.401		401
22/05/2026				0		0.246		246
23/05/2026				0		0.241		241
24/05/2026				0		0.346		346
25/05/2026				0		0.375		375
26/05/2026				0		0.214		214
27/05/2026				0		0.339		339
28/05/2026				0		0.316		316
29/05/2026				0		0.268		268
30/05/2026				0		0.315		315
31/05/2026				0		0.146		146
1/06/2026				0		0.212		212
2/06/2026				0		0.216		216
3/06/2026				0		0.028		28
4/06/2026				0		0.169		169
5/06/2026				0		0.112		112
6/06/2026				0		0.302		302
7/06/2026				0		0.185		185
8/06/2026				0		0.211		211
9/06/2026				0		0.226		226
10/06/2026				0		0.213		213
11/06/2026				0		0.254		254
12/06/2026				0		0.183		183
13/06/2026				0		0.315		315
14/06/2026				0		0.144		144
15/06/2026				0		0.314		314
16/06/2026				0		0.319		319
17/06/2026				0		0.378		378
18/06/2026				0		0.353		353
19/06/2026				0		0.313		313
20/06/2026				0		0.354		354
21/06/2026				0		0.349		349
22/06/2026				0		0.395		395
23/06/2026				0		0.366		366
24/06/2026				0		0.330		330
25/06/2026				0		0.353		353
26/06/2026				0		0.331		331
27/06/2026				0		0.385		385
28/06/2026				0		0.367		367
29/06/2026				0		0.384		384
30/06/2026				0		0.248		248
1/07/2026				0		0.505		505
2/07/2026				0		0.363		363
3/07/2026				0		0.202		202
4/07/2026				0		0.314		314
5/07/2026				0		0.257		257
6/07/2026				0		0.297		297
7/07/2026				0		0.328		328
8/07/2026				0		0.301		301
9/07/2026				0		0.180		180
10/07/2026				0		0.390		390
11/07/2026				0		0.486		486
12/07/2026				0		0.495		495
13/07/2026				0		0.349		349
14/07/2026				0		0.324		324
15/07/2026				0		0.280		280
16/07/2026				0		0.275		275
17/07/2026				0		0.345		345
18/07/2026				0		0.347		347
19/07/2026				0		0.350		350
20/07/2026				0		0.291		291
21/07/2026				0			0.213	213
22/07/2026				0			0.273	273
23/07/2026				0			0.314	314

Rainfall

Date	Daily Rainfall (MM)
1/01/2026	
2/01/2026	
3/01/2026	
4/01/2026	0.2
5/01/2026	17.8
6/01/2026	18.8
7/01/2026	
8/01/2026	
9/01/2026	
10/01/2026	
11/01/2026	
12/01/2026	2.0
13/01/2026	0.2
14/01/2026	
15/01/2026	12.8
16/01/2026	
17/01/2026	8.8
18/01/2026	1.2
19/01/2026	10.8
20/01/2026	0.6
21/01/2026	0.2
22/01/2026	
23/01/2026	
24/01/2026	
25/01/2026	
26/01/2026	
27/01/2026	
28/01/2026	
29/01/2026	
30/01/2026	
31/01/2026	
1/02/2026	4.2
2/02/2026	8.0
3/02/2026	0.2
4/02/2026	
5/02/2026	
6/02/2026	1.0
7/02/2026	
8/02/2026	12.4
9/02/2026	13.8
10/02/2026	23.0
11/02/2026	27.2
12/02/2026	
13/02/2026	
14/02/2026	
15/02/2026	
16/02/2026	0.2
17/02/2026	
18/02/2026	
19/02/2026	
20/02/2026	
21/02/2026	12.6
22/02/2026	1.0
23/02/2026	
24/02/2026	
25/02/2026	
26/02/2026	7.4
27/02/2026	2.0
28/02/2026	0.2

Date	Daily Rainfall (MM)
1/03/2026	0.2
2/03/2026	1.6
3/03/2026	40.0
4/03/2026	41.0
5/03/2026	0.2
6/03/2026	
7/03/2026	5.0
8/03/2026	0.2
9/03/2026	
10/03/2026	0.4
11/03/2026	
12/03/2026	
13/03/2026	
14/03/2026	
15/03/2026	
16/03/2026	
17/03/2026	
18/03/2026	0.8
19/03/2026	6.5
20/03/2026	
21/03/2026	0.2
22/03/2026	20.6
23/03/2026	0.6
24/03/2026	0.5
25/03/2026	
26/03/2026	
27/03/2026	9.0
28/03/2026	
29/03/2026	0.2
30/03/2026	
31/03/2026	
1/04/2026	
2/04/2026	
3/04/2026	
4/04/2026	0.2
5/04/2026	
6/04/2026	
7/04/2026	0.3
8/04/2026	
9/04/2026	
10/04/2026	
11/04/2026	
12/04/2026	
13/04/2026	
14/04/2026	
15/04/2026	
16/04/2026	
17/04/2026	
18/04/2026	
19/04/2026	
20/04/2026	
21/04/2026	
22/04/2026	0.2
23/04/2026	
24/04/2026	
25/04/2026	
26/04/2026	
27/04/2026	
28/04/2026	
29/04/2026	
30/04/2026	

Date	Daily Rainfall (MM)
1/05/2026	
2/05/2026	
3/05/2026	
4/05/2026	
5/05/2026	15.8
6/05/2026	0.4
7/05/2026	
8/05/2026	
9/05/2026	
10/05/2026	
11/05/2026	
12/05/2026	0.4
13/05/2026	
14/05/2026	4.0
15/05/2026	
16/05/2026	0.4
17/05/2026	
18/05/2026	0.3
19/05/2026	8.0
20/05/2026	10.2
21/05/2026	
22/05/2026	
23/05/2026	
24/05/2026	0.2
25/05/2026	
26/05/2026	0.4
27/05/2026	9.8
28/05/2026	
29/05/2026	
30/05/2026	8.0
31/05/2026	
1/06/2026	2.5
2/06/2026	1.5
3/06/2026	18.5
4/06/2026	4.6
5/06/2026	
6/06/2026	0.4
7/06/2026	0.2
8/06/2026	
9/06/2026	
10/06/2026	
11/06/2026	3.0
12/06/2026	
13/06/2026	0.7
14/06/2026	1.0
15/06/2026	4.5
16/06/2026	
17/06/2026	
18/06/2026	
19/06/2026	
20/06/2026	6.6
21/06/2026	
22/06/2026	
23/06/2026	
24/06/2026	
25/06/2026	
26/06/2026	
27/06/2026	0.2
28/06/2026	
29/06/2026	0.1
30/06/2026	
1/07/2026	7.4
2/07/2026	25.0
3/07/2026	1.0
4/07/2026	
5/07/2026	0.2
6/07/2026	0.5
7/07/2026	0.6
8/07/2026	
9/07/2026	
10/07/2026	0.2
11/07/2026	
12/07/2026	5.2
13/07/2026	0.2
14/07/2026	
15/07/2026	
16/07/2026	
17/07/2026	0.2
18/07/2026	
19/07/2026	
20/07/2026	
21/07/2026	

Date	Daily Rainfall (MM)
22/07/2026	
23/07/2026	

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
1/01/2026	8:00	8	
1/01/2026	8:30	8	
1/01/2026	9:00	8	
1/01/2026	13:00		6
1/01/2026	13:30		6
1/01/2026	13:40	8	
1/01/2026	13:50	8	
1/01/2026	15:10	8	
1/01/2026	15:30	8	
2/01/2026	7:25		6
2/01/2026	7:40	8	
2/01/2026	8:00	8	
2/01/2026	11:00	8	
2/01/2026	11:20	8	
3/01/2026	7:15		6
3/01/2026	7:30		4
3/01/2026	7:40	8	
3/01/2026	7:55	8	
3/01/2026	8:10	8	
3/01/2026	8:25	8	
3/01/2026	10:40	8	
3/01/2026	11:00	8	
4/01/2026	7:20		4
4/01/2026	7:30		6
4/01/2026	7:40	8	
4/01/2026	7:55	8	
4/01/2026	8:10	8	
4/01/2026	11:15	8	
4/01/2026	11:30	8	
5/01/2026	10:10	8	
5/01/2026	10:30	8	
5/01/2026	10:50		7
5/01/2026	11:10		7
5/01/2026	11:20	8	
5/01/2026	13:45	8	
5/01/2026	14:15	8	
6/01/2026	8:00	8	
6/01/2026	8:20		2
6/01/2026	8:30		7
6/01/2026	8:50	8	
7/01/2026	7:30		7
7/01/2026	8:30	8	
7/01/2026	8:45	8	
7/01/2026	9:00	8	
7/01/2026	9:30	8	
7/01/2026	10:00	8	
7/01/2026	10:30	8	
7/01/2026	11:05	8	
7/01/2026	11:30	8	
7/01/2026	13:20	8	
8/01/2026	7:30		4
8/01/2026	8:30	8	
8/01/2026	9:00	8	
8/01/2026	9:15		6
8/01/2026	11:40	8	
8/01/2026	12:00	8	
9/01/2026	7:25		6
9/01/2026	7:40		6
9/01/2026	7:50	8	
9/01/2026	8:10	8	
9/01/2026	8:30	8	
9/01/2026	10:55	8	
9/01/2026	11:05	8	
10/01/2026	7:40		6
10/01/2026	7:50		6
10/01/2026	8:01	8	
10/01/2026	8:10	8	
10/01/2026	8:46	8	
10/01/2026	10:40	8	
10/01/2026	11:40	8	
11/01/2026	7:20		6
11/01/2026	7:40		4
11/01/2026	7:50	8	
11/01/2026	8:10	8	
11/01/2026	8:20	8	
11/01/2026	10:20	8	
11/01/2026	10:35	8	
11/01/2026	12:15	8	
12/01/2026	8:00	8	
12/01/2026	8:30	8	
13/01/2026	7:35	8	
13/01/2026	7:50		7
13/01/2026	8:10	8	
13/01/2026	8:20	8	
13/01/2026	8:50		7
13/01/2026	9:10	8	
14/01/2026	7:25		6
14/01/2026	7:40	8	
14/01/2026	7:55	8	
14/01/2026	8:15	8	
14/01/2026	8:30	8	
14/01/2026	9:00	8	
14/01/2026	9:35	8	
14/01/2026	10:40	8	
14/01/2026	11:50	8	
14/01/2026	13:20	8	
14/01/2026	13:40		4
15/01/2026	7:20		6
15/01/2026	7:55	8	
15/01/2026	8:05	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)
1/01/2026	56	12
2/01/2026	32	6
3/01/2026	48	10
4/01/2026	40	10
5/01/2026	40	14
6/01/2026	16	9
7/01/2026	72	7
8/01/2026	32	10
9/01/2026	40	12
10/01/2026	40	12
11/01/2026	48	10
12/01/2026	16	
13/01/2026	32	14
14/01/2026	72	10
15/01/2026	32	6
16/01/2026	16	12
17/01/2026	40	6
18/01/2026	56	10
19/01/2026	24	
20/01/2026	40	0.5
21/01/2026	16	
22/01/2026	16	
23/01/2026		
24/01/2026	72	10
25/01/2026	70	12
26/01/2026	24	10
27/01/2026	24	7
28/01/2026	48	10
29/01/2026	32	10
30/01/2026	24	6
31/01/2026	48	10
1/02/2026	32	10
2/02/2026	24	9
3/02/2026	24	8
4/02/2026	72	6
5/02/2026	40	12
6/02/2026	40	8
7/02/2026	48	8
8/02/2026	40	8
9/02/2026	40	7
10/02/2026	48	14
11/02/2026	16	
12/02/2026	72	10
13/02/2026	32	10
14/02/2026	56	10
15/02/2026	24	6
16/02/2026	40	14
17/02/2026	16	7
18/02/2026	80	7
19/02/2026	40	13
20/02/2026	72	8
21/02/2026	32	4
22/02/2026	48	3
23/02/2026	16	
24/02/2026	40	18
25/02/2026	32	
26/02/2026	48	7
27/02/2026	48	7
28/02/2026	32	3
1/03/2026	48	5
2/03/2026	24	7
3/03/2026		
4/03/2026	72	
5/03/2026	8	7
6/03/2026	8	7
7/03/2026	88	19
8/03/2026	32	
9/03/2026	72	10
10/03/2026	24	5
11/03/2026		
12/03/2026		
13/03/2026	56	15
14/03/2026	72	
15/03/2026	88	10
16/03/2026		
17/03/2026	48	12
18/03/2026	24	
19/03/2026	32	4
20/03/2026	24	
21/03/2026	72	8
22/03/2026	44	
23/03/2026	64	12
24/03/2026	32	5
25/03/2026	40	
26/03/2026	32	12
27/03/2026	12	
28/03/2026	64	5
29/03/2026	32	
30/03/2026	56	5
31/03/2026	32	5
1/04/2026	32	10
2/04/2026	32	5
3/04/2026	40	6
4/04/2026	16	6
5/04/2026	16	6
6/04/2026	40	12
7/04/2026	32	
8/04/2026		
9/04/2026		
10/04/2026	88	12

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)
1/01/2026	100		56.50470219
2/01/2026	100		
3/01/2026	100		
4/01/2026	100		
5/01/2026	100		
6/01/2026	100		
7/01/2026	100		
8/01/2026	100		
9/01/2026	100		
10/01/2026	100		
11/01/2026	100		
12/01/2026	100		
13/01/2026	100		
14/01/2026	100		
15/01/2026	100		
16/01/2026	100		
17/01/2026	100		
18/01/2026	100		
19/01/2026	100		
20/01/2026	100		
21/01/2026	100	SRTF 100% Available no Ash due to Unit 2 tube leak & FAA take- Loads Received Repository as Directed	
22/01/2026	100		
23/01/2026	100		
24/01/2026	100		
25/01/2026	100		
26/01/2026	100		
27/01/2026	100		
28/01/2026	100		
29/01/2026	100		
30/01/2026	100		
31/01/2026	100		
1/02/2026	100		
2/02/2026	100		
3/02/2026	100	Low Ash	
4/02/2026	100		
5/02/2026	100		
6/02/2026	100		
7/02/2026	100		
8/02/2026	100		
9/02/2026	100		
10/02/2026	100		
11/02/2026	20	Ashing Stopped For APA Power Pack Maintenance	
12/02/2026	100		
13/02/2026	100		
14/02/2026	100		
15/02/2026	100		
16/02/2026	100		
17/02/2026	100		
18/02/2026	100		
19/02/2026	100		
20/02/2026	100		
21/02/2026	100		
22/02/2026	100		
23/02/2026	100		
24/02/2026	100		
25/02/2026	50	Conveyor works	
26/02/2026	100		
27/02/2026	100		
28/02/2026	100		
1/03/2026	100		
2/03/2026	100		
3/03/2026	0	WCA Due To Inclement weather	
4/03/2026	75	Late Start Due To Repository Repairs Post Rain Event - Loads Rejected Due To Excessive Moisture	
5/03/2026	25	2 Loads accepted during clean up post salt spill	
6/03/2026	100		
7/03/2026	100		
8/03/2026	100		
9/03/2026	100		
10/03/2026	100	Deliveries Suspended Until After 9 AM	
11/03/2026	100	NIL Deliveries Received	
12/03/2026	100	NIL Deliveries Received	
13/03/2026	100		
14/03/2026	100		
15/03/2026	100		
16/03/2026	100	SRTF Available but no ash in silo due to FAA valve chanae	
17/03/2026	100		
18/03/2026	100		
19/03/2026	100		
20/03/2026	100		
21/03/2026	100		
22/03/2026	100		
23/03/2026	100		
24/03/2026	100		
25/03/2026	100		
26/03/2026	100		
27/03/2026	100		
28/03/2026	100		
29/03/2026	100		
30/03/2026	100		
31/03/2026	100		
1/04/2026	100		
2/04/2026	100		
3/04/2026	100		
4/04/2026	100		
5/04/2026	100		
6/04/2026	100		
7/04/2026	100		
8/04/2026	0	No Deliveries Due to No Ash	
9/04/2026	0	No Deliveries Due to No Ash	
10/04/2026	100		

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
15/01/2026	10:30	8	
15/01/2026	14:40	8	
16/01/2026	10:00		6
16/01/2026	10:10		6
16/01/2026	10:20	8	
16/01/2026	11:40	8	
17/01/2026	7:40		6
17/01/2026	7:55	8	
17/01/2026	8:10	8	
17/01/2026	8:20	8	
17/01/2026	9:15	8	
17/01/2026	9:30	8	
18/01/2026	7:20	8	
18/01/2026	7:35	8	
18/01/2026	7:45		6
18/01/2026	7:50		4
18/01/2026	8:10	8	
18/01/2026	8:20	8	
18/01/2026	8:40	8	
18/01/2026	11:20	8	
18/01/2026	11:35	8	
19/01/2026	8:45	8	
19/01/2026	9:05	8	
19/01/2026	9:30	8	
20/01/2026	8:30	8	
20/01/2026	8:45	8	
20/01/2026	9:00	8	
20/01/2026	10:15	8	
20/01/2026	10:50		0.5
20/01/2026	11:30	8	
21/01/2026	11:00	8	
21/01/2026	11:20	8	
22/01/2026	7:45	8	
22/01/2026	8:20	8	
23/01/2026			
24/01/2026	7:20		4
24/01/2026	7:30		6
24/01/2026	7:45	8	
24/01/2026	8:01	8	
24/01/2026	8:18	8	
24/01/2026	8:30	8	
24/01/2026	9:05	4	
24/01/2026	9:20	4	
24/01/2026	9:40	8	
24/01/2026	11:20	8	
24/01/2026	11:45	8	
24/01/2026	11:55	8	
25/01/2026	7:20		6
25/01/2026	7:32		6
25/01/2026	7:45	8	
25/01/2026	8:00	8	
25/01/2026	8:25	8	
25/01/2026	8:35	8	
25/01/2026	8:50	6	
25/01/2026	10:25	8	
25/01/2026	10:40	8	
25/01/2026	13:30	8	
25/01/2026	14:00	8	
26/01/2026	7:40		4
26/01/2026	8:00		6
26/01/2026	8:30	8	
26/01/2026	9:00	8	
26/01/2026	9:30	8	
27/01/2026	7:30	8	
27/01/2026	8:00		7
27/01/2026	8:40	8	
27/01/2026	10:15	8	
28/01/2026	7:30		6
28/01/2026	8:05		4
28/01/2026	8:15	8	
28/01/2026	8:35	8	
28/01/2026	8:50	8	
28/01/2026	9:10	8	
28/01/2026	11:40	8	
28/01/2026	12:10	8	
29/01/2026	7:30		6
29/01/2026	8:00	8	
29/01/2026	8:15	8	
29/01/2026	10:40	8	
29/01/2026	10:50	8	
29/01/2026	11:00		4
30/01/2026	7:15		6
30/01/2026	7:40	8	
30/01/2026	8:00	8	
30/01/2026	8:10	8	
31/01/2026	7:00		4
31/01/2026	7:15		6
31/01/2026	7:35	8	
31/01/2026	8:00	8	
31/01/2026	8:30	8	
31/01/2026	9:00	8	
31/01/2026	13:30	8	
31/01/2026	14:00	8	
1/02/2026	7:20		4
1/02/2026	7:40		6
1/02/2026	8:00	8	
1/02/2026	8:15	8	
1/02/2026	13:30	8	
1/02/2026	13:45	8	
2/02/2026	7:45	8	
2/02/2026	8:00	8	
2/02/2026	8:15		2
2/02/2026	8:30		7
2/02/2026	11:30	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)
11/04/2026	32	6
12/04/2026	16	10
13/04/2026		
14/04/2026	64	5
15/04/2026	48	5
16/04/2026	48	6
17/04/2026	32	10
18/04/2026	48	10
19/04/2026	56	6
20/04/2026	24	
21/04/2026	24	17
22/04/2026	32	
23/04/2026	32	12
24/04/2026	24	6
25/04/2026	48	12
26/04/2026	56	6
27/04/2026	52	10
28/04/2026	56	7
29/04/2026	64	6
30/04/2026		
1/05/2026	64	12
2/05/2026		
3/05/2026		12
4/05/2026	104	12
5/05/2026	40	
6/05/2026	48	12
7/05/2026	16	6
8/05/2026	40	6
9/05/2026	16	
10/05/2026	56	
11/05/2026	16	8
12/05/2026	24	
13/05/2026	56	12
14/05/2026	48	6
15/05/2026	56	6
16/05/2026	40	8
17/05/2026	40	6
18/05/2026	32	8
19/05/2026		
20/05/2026	80	12
21/05/2026	32	6
22/05/2026	48	16
23/05/2026	48	6
24/05/2026	48	7
25/05/2026	32	7
26/05/2026	32	
27/05/2026	40	14
28/05/2026	48	6
29/05/2026	24	10
30/05/2026	40	
31/05/2026	56	10
1/06/2026	32	6
2/06/2026		
3/06/2026	64	15
4/06/2026	24	6
5/06/2026	40	6
6/06/2026	24	6
7/06/2026	40	10
8/06/2026	48	6
9/06/2026	16	
10/06/2026	64	12
11/06/2026		
12/06/2026	48	12
13/06/2026	40	6
14/06/2026	40	8
15/06/2026	40	6
16/06/2026	40	6
17/06/2026	48	6
18/06/2026	24	6
19/06/2026	32	6
20/06/2026	40	6
21/06/2026	32	6
22/06/2026	32	6
23/06/2026	32	6
24/06/2026	40	6
25/06/2026	40	6
26/06/2026	40	6
27/06/2026	32	6
28/06/2026	40	6
29/06/2026	48	6
30/06/2026	32	6
1/07/2026	32	6
2/07/2026	32	
3/07/2026	48	
4/07/2026	32	6
5/07/2026	40	6
6/07/2026	48	6
7/07/2026	40	6
8/07/2026	24	6
9/07/2026	48	6
10/07/2026	40	7
11/07/2026	39	6
12/07/2026	32	12
13/07/2026	32	6
14/07/2026	40	
15/07/2026	32	2
16/07/2026	32	
17/07/2026	32	8
18/07/2026	32	4
19/07/2026	32	8
20/07/2026	24	8
21/07/2026	48	8
22/07/2026	32	7
Grand Total	**7657**	**1321.5**

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)
11/04/2026	100		
12/04/2026	100		
13/04/2026	100	No Deliveries Truck Down	
14/04/2026	100		
15/04/2026	100		
16/04/2026	100		
17/04/2026	100		
18/04/2026	100		
19/04/2026	100		
20/04/2026	100		
21/04/2026	100		
22/04/2026	100		
23/04/2026	100		
24/04/2026	100		
25/04/2026	100		
26/04/2026	100		
27/04/2026	100		
28/04/2026	100		
29/04/2026	100		
30/04/2026	100	No deliveries due to Conveyor Replacement	
1/05/2026	100		
2/05/2026	100	Limited Deliveries Due to Belt Commissioning	
3/05/2026	100	Limited Deliveries Due to Belt Commissioning	
4/05/2026	100	Limited Deliveries Due to Belt Commissioning	
5/05/2026	100	Limited Deliveries Due to Belt Commissionine	
6/05/2026	100		
7/05/2026	100		
8/05/2026	100		
9/05/2026	100		
10/05/2026	100		
11/05/2026	100		
12/05/2026	100		
13/05/2026	100		
14/05/2026	100		
15/05/2026	100		
16/05/2026	100		
17/05/2026	100		
18/05/2026	100		
19/05/2026	100	SRTF 100% Available Loads Held Due to No Ashing	
20/05/2026	100		
21/05/2026	100		
22/05/2026	100		
23/05/2026	100		
24/05/2026	100		
25/05/2026	100		
26/05/2026	100		
27/05/2026	100		
28/05/2026	100		
29/05/2026	100		
30/05/2026	100		
31/05/2026	100		
1/06/2026	100		
2/06/2026	100	NIL deliveries Received Due to no Ashing	
3/06/2026	100		
4/06/2026	100		
5/06/2026	100		
6/06/2026	100		
7/06/2026	100		
8/06/2026	100		
9/06/2026	100		
10/06/2026	100		
11/06/2026	100	No Deliveries Received Due to Ash Placement	
12/06/2026	100		
13/06/2026	100		
14/06/2026	100		
15/06/2026	100		
16/06/2026	100		
17/06/2026	100		
18/06/2026	100		
19/06/2026	100		
20/06/2026	100		
21/06/2026	100		
22/06/2026	100		
23/06/2026	100		
24/06/2026	100		
25/06/2026	100		
26/06/2026	100		
27/06/2026	100		
28/06/2026	100		
29/06/2026	100		
30/06/2026	100		
1/07/2026	100		
2/07/2026	100		
3/07/2026	100		
4/07/2026	100		
5/07/2026	100		
6/07/2026	100		
7/07/2026	100		
8/07/2026	100		
9/07/2026	100		
10/07/2026	100		
11/07/2026	100		
12/07/2026	100		
13/07/2026	100		
14/07/2026	100		
15/07/2026	100		
16/07/2026	100		
17/07/2026	100		
18/07/2026	100		
19/07/2026	100		
20/07/2026	100		
21/07/2026	100		
22/07/2026	100		

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
3/02/2026	8:10	8	
3/02/2026	8:25	8	
3/02/2026	8:50	8	
3/02/2026	9:10		8
4/02/2026	7:20		6
4/02/2026	7:35	8	
4/02/2026	7:55	8	
4/02/2026	8:35	8	
4/02/2026	9:00	8	
4/02/2026	10:15	8	
4/02/2026	10:50	8	
4/02/2026	11:15	8	
4/02/2026	11:40	8	
4/02/2026	12:00	8	
5/02/2026	7:30		6
5/02/2026	7:45		6
5/02/2026	8:00	8	
5/02/2026	8:30	8	
5/02/2026	10:30	8	
5/02/2026	11:15	8	
5/02/2026	13:50	8	
6/02/2026	7:20		2
6/02/2026	7:40		6
6/02/2026	8:00	8	
6/02/2026	8:20	8	
6/02/2026	11:15	8	
6/02/2026	11:50	8	
6/02/2026	14:00	8	
7/02/2026	7:20		2
7/02/2026	7:30		6
7/02/2026	7:45	8	
7/02/2026	8:00	8	
7/02/2026	8:20	8	
7/02/2026	10:50	8	
7/02/2026	11:20	8	
7/02/2026	13:30	8	
8/02/2026	7:20	8	
8/02/2026	7:40	8	
8/02/2026	7:50		2
8/02/2026	8:00		6
8/02/2026	10:10	8	
8/02/2026	10:35	8	
8/02/2026	12:20	8	
9/02/2026	8:00	8	
9/02/2026	8:20	8	
9/02/2026	8:35	8	
9/02/2026	9:00		7
9/02/2026	10:45	8	
9/02/2026	11:10	8	
10/02/2026	7:30	8	
10/02/2026	7:50	8	
10/02/2026	8:10	8	
10/02/2026	8:30		7
10/02/2026	10:30	8	
10/02/2026	11:50	8	
10/02/2026	13:40		7
10/02/2026	14:00	8	
11/02/2026	7:41	8	
11/02/2026	7:50	8	
12/02/2026	7:20		4
12/02/2026	7:40		6
12/02/2026	8:00	8	
12/02/2026	8:20	8	
12/02/2026	8:40	8	
12/02/2026	9:00	8	
12/02/2026	10:00	8	
12/02/2026	10:30	8	
12/02/2026	11:00	8	
12/02/2026	11:20	8	
12/02/2026	15:10	8	
13/02/2026	7:20		4
13/02/2026	7:40		6
13/02/2026	8:15	8	
13/02/2026	8:40	8	
13/02/2026	9:50	8	
13/02/2026	11:50	8	
14/02/2026	7:20		4
14/02/2026	7:40		6
14/02/2026	7:50	8	
14/02/2026	8:10	8	
14/02/2026	8:25	8	
14/02/2026	8:50	8	
14/02/2026	9:10	8	
14/02/2026	11:30	8	
14/02/2026	11:45	8	
15/02/2026	7:50	8	
15/02/2026	8:05	8	
15/02/2026	8:20		6
15/02/2026	8:30	8	
16/02/2026	7:40	8	
16/02/2026	8:00	8	
16/02/2026	8:30	8	
16/02/2026	8:40	8	
16/02/2026	13:20		7
16/02/2026	13:50	8	
16/02/2026	14:20		7

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
17/02/2026	11:00		7
17/02/2026	11:20	8	
17/02/2026	11:50	8	
18/02/2026	7:30	8	
18/02/2026	7:40	8	
18/02/2026	8:00	8	
18/02/2026	8:20	8	
18/02/2026	8:45		7
18/02/2026	9:00	8	
18/02/2026	9:20	8	
18/02/2026	10:40	8	
18/02/2026	11:15	8	
18/02/2026	13:10	8	
18/02/2026	13:40	8	
19/02/2026	7:40	8	
19/02/2026	8:00	8	
19/02/2026	8:20	8	
19/02/2026	8:40		6
19/02/2026	9:10		7
19/02/2026	10:40	8	
19/02/2026	11:10	8	
20/02/2026	8:00	8	
20/02/2026	8:40	8	
20/02/2026	9:25	8	
20/02/2026	9:30		6
20/02/2026	10:00	8	
20/02/2026	11:15	8	
20/02/2026	11:25	8	
20/02/2026	12:15	8	
20/02/2026	13:50	8	
20/02/2026	14:20	8	
20/02/2026	14:40		2
21/02/2026	7:30	8	
21/02/2026	8:00	8	
21/02/2026	8:40		3
21/02/2026	10:30	8	
21/02/2026	10:50	8	
21/02/2026	13:50		1
22/02/2026	7:35	8	
22/02/2026	8:14	8	
22/02/2026	8:30	8	
22/02/2026	8:50		3
22/02/2026	9:35	8	
22/02/2026	10:50	8	
22/02/2026	13:45	8	
23/02/2026	7:40	8	
23/02/2026	11:00	8	
24/02/2026	8:00	8	
24/02/2026	9:00		8
24/02/2026	9:30		2
24/02/2026	10:00	8	
24/02/2026	12:00	8	
24/02/2026	12:30	8	
24/02/2026	14:00		8
24/02/2026	14:30	8	
25/02/2026	7:40	8	
25/02/2026	8:00	8	
25/02/2026	8:20	8	
25/02/2026	8:50	8	
26/02/2026	7:30	8	
26/02/2026	7:50	8	
26/02/2026	8:05		7
26/02/2026	8:30	8	
26/02/2026	8:50	8	
26/02/2026	10:30	8	
26/02/2026	11:20	8	
27/02/2026	7:30	8	
27/02/2026	7:55	8	
27/02/2026	8:15		7
27/02/2026	9:00	8	
27/02/2026	10:40	8	
27/02/2026	11:00	8	
27/02/2026	13:50	8	
28/02/2026	7:30	8	
28/02/2026	8:00	8	
28/02/2026	8:50		3
28/02/2026	11:20	8	
28/02/2026	12:00	8	
1/03/2026	7:40		4
1/03/2026	8:00	8	
1/03/2026	8:15	8	
1/03/2026	11:10	8	
1/03/2026	11:35	8	
1/03/2026	13:30	8	
1/03/2026	14:00	8	
1/03/2026	14:20		1
2/03/2026	7:40	8	
2/03/2026	8:15	8	
2/03/2026	8:40	8	
2/03/2026	10:30		7
3/03/2026			
4/03/2026	9:30	8	
4/03/2026	11:30	8	
4/03/2026	11:50	8	
4/03/2026	12:15	8	
4/03/2026	13:00	8	
4/03/2026	13:15	8	
4/03/2026	13:35	8	
4/03/2026	14:00	8	
4/03/2026	14:30	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
5/03/2026	14:30	8	
5/03/2026	14:45		7
6/03/2026	13:20	8	
6/03/2026	13:40		7
7/03/2026	7:40	8	
7/03/2026	7:50	8	
7/03/2026	8:05		7
7/03/2026	8:30	8	
7/03/2026	8:50	8	
7/03/2026	9:50	8	
7/03/2026	10:20	8	
7/03/2026	11:10	8	
7/03/2026	11:35	8	
7/03/2026	12:00	8	
7/03/2026	12:20		7
7/03/2026	13:20	8	
7/03/2026	14:40	8	
7/03/2026	15:05		5
8/03/2026	9:20	8	
8/03/2026	9:40	8	
8/03/2026	11:05	8	
8/03/2026	11:40	8	
9/03/2026	7:40	8	
9/03/2026	8:05	8	
9/03/2026	8:40	8	
9/03/2026	9:05	8	
9/03/2026	9:20		6
9/03/2026	9:30		4
9/03/2026	10:50	8	
9/03/2026	11:25	8	
9/03/2026	11:40	8	
9/03/2026	12:00	8	
9/03/2026	12:20	8	
10/03/2026	9:15	8	
10/03/2026	9:45	8	
10/03/2026	10:55	8	
10/03/2026	11:25		5
11/03/2026			
12/03/2026			
13/03/2026	8:45	8	
13/03/2026	8:55	8	
13/03/2026	9:10	8	
13/03/2026	10:00	8	
13/03/2026	10:15		7
13/03/2026	11:10		8
13/03/2026	11:30	8	
13/03/2026	11:40	8	
13/03/2026	12:05	8	
14/03/2026	8:30	8	
14/03/2026	8:45	8	
14/03/2026	9:10	8	
14/03/2026	10:10	8	
14/03/2026	10:30	8	
14/03/2026	11:20	8	
14/03/2026	12:10	8	
14/03/2026	14:00	8	
14/03/2026	14:20	8	
15/03/2026	7:50	8	
15/03/2026	8:10	8	
15/03/2026	8:20		5
15/03/2026	8:35	8	
15/03/2026	9:00		5
15/03/2026	9:15	8	
15/03/2026	9:25	8	
15/03/2026	9:40	8	
15/03/2026	9:50	8	
15/03/2026	10:10	8	
15/03/2026	12:30	8	
15/03/2026	12:45	8	
15/03/2026	13:40	8	
16/03/2026			
17/03/2026	7:40	8	
17/03/2026	8:00	8	
17/03/2026	8:35	8	
17/03/2026	9:00		6
17/03/2026	9:15		6
17/03/2026	9:30	8	
17/03/2026	9:50	8	
17/03/2026	10:05	8	
18/03/2026	7:35	8	
18/03/2026	11:32	8	
18/03/2026	11:05	8	
19/03/2026	7:35	8	
19/03/2026	7:52	8	
19/03/2026	8:30	8	
19/03/2026	11:00	8	
19/03/2026	11:15		2
19/03/2026	11:45		2
20/03/2026	11:45	8	
20/03/2026	12:00	8	
20/03/2026	12:25	8	
21/03/2026	7:33	8	
21/03/2026	7:47	8	
21/03/2026	8:02	8	
21/03/2026	8:55		5
21/03/2026	9:40		3
21/03/2026	9:53	8	
21/03/2026	10:09	8	
21/03/2026	12:00	8	
21/03/2026	12:15	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
21/03/2026	12:40	8	
21/03/2026	13:35	8	
22/03/2026	9:00	8	
22/03/2026	9:20	8	
22/03/2026	9:45	8	
22/03/2026	10:50	4	
22/03/2026	11:45	8	
22/03/2026	12:30	8	
23/03/2026	8:00	8	
23/03/2026	8:20	8	
23/03/2026	8:40		6
23/03/2026	9:00		6
23/03/2026	11:00	8	
23/03/2026	11:25	8	
23/03/2026	11:40	8	
23/03/2026	12:10	8	
23/03/2026	12:20	8	
23/03/2026	12:35	8	
24/03/2026	7:40	8	
24/03/2026	8:00		5
24/03/2026	8:15	8	
24/03/2026	9:05	8	
24/03/2026	12:00	8	
25/03/2026	7:20	8	
25/03/2026	8:10	8	
25/03/2026	8:30	8	
25/03/2026	13:10	8	
25/03/2026	13:30	8	
26/03/2026	8:00	8	
26/03/2026	8:35		7
26/03/2026	9:00	8	
26/03/2026	11:00	8	
26/03/2026	11:20	8	
26/03/2026	13:00		5
27/03/2026	7:50	8	
27/03/2026	8:10	4	
28/03/2026	7:50	8	
28/03/2026	8:00		5
28/03/2026	8:20	8	
28/03/2026	8:40	8	
28/03/2026	9:00	8	
28/03/2026	9:10	8	
28/03/2026	10:00	8	
28/03/2026	11:00	8	
28/03/2026	11:40	8	
29/03/2026	7:30	8	
29/03/2026	10:50	8	
29/03/2026	11:00	8	
29/03/2026	11:20	8	
30/03/2026	7:40	8	
30/03/2026	8:00	8	
30/03/2026	8:20	8	
30/03/2026	8:35		5
30/03/2026	9:00	8	
30/03/2026	10:40	8	
30/03/2026	11:15	8	
30/03/2026	16:30	8	
31/03/2026	8:10	8	
31/03/2026	8:30	8	
31/03/2026	9:00		5
31/03/2026	11:20	8	
31/03/2026	12:45	8	
1/04/2026	8:45		6
1/04/2026	9:00		4
1/04/2026	9:30	8	
1/04/2026	9:45	8	
1/04/2026	10:00	8	
1/04/2026	11:30	8	
2/04/2026	8:00	8	
2/04/2026	8:30	8	
2/04/2026	9:00	8	
2/04/2026	9:30		5
2/04/2026	13:30	8	
3/04/2026	8:00		6
3/04/2026	8:30	8	
3/04/2026	8:45	8	
3/04/2026	9:00	8	
3/04/2026	11:30	8	
3/04/2026	11:50	8	
4/04/2026	8:00		6
4/04/2026	8:30	8	
4/04/2026	9:00	8	
5/04/2026	9:45		6
5/04/2026	10:00	8	
5/04/2026	10:30	8	
6/04/2026	7:45		6
6/04/2026	8:00		6
6/04/2026	8:15	8	
6/04/2026	8:30	8	
6/04/2026	8:45	8	
6/04/2026	9:00	8	
6/04/2026	9:20	8	
7/04/2026	7:30	8	
7/04/2026	7:45	8	
7/04/2026	8:00	8	
7/04/2026	9:20	8	
8/04/2026			
9/04/2026			
10/04/2026	7:30		6
10/04/2026	7:45		6

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
10/04/2026	8:00	8	
10/04/2026	8:30	8	
10/04/2026	8:45	8	
10/04/2026	9:00	8	
10/04/2026	9:30	8	
10/04/2026	9:45	8	
10/04/2026	10:30	8	
10/04/2026	10:40	8	
10/04/2026	1:50	8	
10/04/2026	11:00	8	
10/04/2026	14:00	8	
11/04/2026	7:30		6
11/04/2026	7:45	8	
11/04/2026	8:00	8	
11/04/2026	8:30	8	
11/04/2026	9:00	8	
12/04/2026	7:30		6
12/04/2026	7:45		4
12/04/2026	8:00	8	
12/04/2026	10:00	8	
13/04/2026			
14/04/2026	7:30	8	
14/04/2026	7:45	8	
14/04/2026	8:00	8	
14/04/2026	8:30		5
14/04/2026	8:50	8	
14/04/2026	10:40	8	
14/04/2026	11:00	8	
14/04/2026	11:20	8	
14/04/2026	11:50	8	
15/04/2026	7:30	8	
15/04/2026	7:45	8	
15/04/2026	7:55	8	
15/04/2026	8:10	8	
15/04/2026	8:40		5
15/04/2026	9:00	8	
15/04/2026	11:40	8	
16/04/2026	7:30		6
16/04/2026	8:00	8	
16/04/2026	8:30	8	
16/04/2026	9:00	8	
16/04/2026	9:20	8	
16/04/2026	9:55	8	
16/04/2026	11:20	8	
17/04/2026	7:30		4
17/04/2026	7:45		6
17/04/2026	8:00	8	
17/04/2026	8:30	8	
17/04/2026	9:00	8	
17/04/2026	9:30	8	
18/04/2026	7:00		6
18/04/2026	7:45		4
18/04/2026	8:00	8	
18/04/2026	8:30	8	
18/04/2026	9:00	8	
18/04/2026	9:30	8	
18/04/2026	9:45	8	
18/04/2026	10:30	8	
19/04/2026	7:30		6
19/04/2026	7:45	8	
19/04/2026	8:00	8	
19/04/2026	8:30	8	
19/04/2026	9:00	8	
19/04/2026	11:50	8	
19/04/2026	12:30	8	
19/04/2026	14:00	8	
20/04/2026	7:30	8	
20/04/2026	8:00	8	
20/04/2026	11:00	8	
21/04/2026	10:00	8	
21/04/2026	10:20		6
21/04/2026	10:40		3
21/04/2026	11:15	8	
21/04/2026	11:30		8
21/04/2026	11:50	8	
22/04/2026	10:05	8	
22/04/2026	10:20	8	
22/04/2026	11:05	8	
22/04/2026	11:35	8	
23/04/2026	12:05		6
23/04/2026	12:25		6
23/04/2026	12:40	8	
23/04/2026	13:00	8	
23/04/2026	13:20	8	
23/04/2026	14:00	8	
24/04/2026	7:30		6
24/04/2026	7:45	8	
24/04/2026	8:15	8	
24/04/2026	11:00	8	
25/04/2026	7:15		6
25/04/2026	7:30	8	
25/04/2026	7:50	8	
25/04/2026	8:05		6
25/04/2026	8:15	8	
25/04/2026	8:30	8	
25/04/2026	10:25	8	
25/04/2026	10:45	8	
26/04/2026	7:20	8	
26/04/2026	7:40	8	
26/04/2026	7:55		6

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
26/04/2026	8:10	8	
26/04/2026	8:25	8	
26/04/2026	8:45	8	
26/04/2026	10:10	8	
26/04/2026	12:10	8	
27/04/2026	7:40	8	
27/04/2026	8:00	8	
27/04/2026	8:15	8	
27/04/2026	8:30		4
27/04/2026	8:50		6
27/04/2026	9:10	4	
27/04/2026	9:20	8	
27/04/2026	10:40	8	
27/04/2026	11:50	8	
28/04/2026	7:30	8	
28/04/2026	7:45	8	
28/04/2026	8:00	8	
28/04/2026	8:30	8	
28/04/2026	9:00	8	
28/04/2026	10:50		7
28/04/2026	11:30	8	
28/04/2026	11:40	8	
29/04/2026	9:40		6
29/04/2026	9:50	8	
29/04/2026	10:10	8	
29/04/2026	10:50	8	
29/04/2026	11:10	8	
29/04/2026	11:40	8	
29/04/2026	11:50	8	
29/04/2026	13:50	8	
29/04/2026	14:15	8	
30/04/2026			
1/05/2026	10:15		6
1/05/2026	10:35		6
1/05/2026	10:50	8	
1/05/2026	11:05	8	
1/05/2026	11:30	8	
1/05/2026	11:50	8	
1/05/2026	12:50	8	
1/05/2026	13:10	8	
1/05/2026	15:00	8	
1/05/2026	15:20	8	
2/05/2026			
3/05/2026	12:30		6
3/05/2026	13:00		6
4/05/2026	7:35		6
4/05/2026	10:00	8	
4/05/2026	10:15	8	
4/05/2026	10:35	8	
4/05/2026	11:00	8	
4/05/2026	11:30	8	
4/05/2026	14:35	8	
4/05/2026	14:50	8	
4/05/2026	APA	8	
4/05/2026	APA	8	
4/05/2026	APA	8	
4/05/2026	APA	8	
4/05/2026	APA	8	
4/05/2026	APA	8	
4/05/2026	APA		6
5/05/2026	8:40	8	
5/05/2026	9:10	8	
5/05/2026	11:30	8	
5/05/2026	11:50	8	
5/05/2026	14:05	8	
6/05/2026	7:30		6
6/05/2026	8:00		6
6/05/2026	8:30	8	
6/05/2026	9:00	8	
6/05/2026	11:26	8	
6/05/2026	12:00	8	
6/05/2026	14:00	8	
6/05/2026	14:30	8	
7/05/2026	8:30	8	
7/05/2026	11:00		6
7/05/2026	14:10	8	
8/05/2026	7:50	8	
8/05/2026	8:20	8	
8/05/2026	8:40	8	
8/05/2026	10:50	8	
8/05/2026	11:10	8	
8/05/2026	9:30		6
9/05/2026	10:15	8	
9/05/2026	10:45	8	
10/05/2026	9:50	8	
10/05/2026	10:10	8	
10/05/2026	10:20	8	
10/05/2026	11:50	8	
10/05/2026	12:20	8	
10/05/2026	14:15	8	
10/05/2026	14:40	8	
11/05/2026	8:30		8
11/05/2026	10:15	8	
11/05/2026	10:40	8	
12/05/2026	10:00	8	
12/05/2026	10:20	8	
12/05/2026	10:35	8	
13/05/2026	7:50	8	
13/05/2026	8:10	8	
13/05/2026	8:30		6

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
13/05/2026	8:45		6
13/05/2026	9:00	8	
13/05/2026	9:25	8	
13/05/2026	9:50	8	
13/05/2026	11:20	8	
13/05/2026	11:40	8	
14/05/2026	7:00	8	
14/05/2026	13:00	8	
14/05/2026	13:30		6
14/05/2026	13:45	8	
14/05/2026	14:05	8	
14/05/2026	15:30	8	
14/05/2026	15:45	8	
15/05/2026	10:00	8	
15/05/2026	10:20	8	
15/05/2026	11:30	8	
15/05/2026	11:38	8	
15/05/2026	11:00		6
15/05/2026	11:20	8	
15/05/2026	12:05	8	
15/05/2026	13:55	8	
16/05/2026	9:10		4
16/05/2026	9:35		4
16/05/2026	9:55	8	
16/05/2026	10:10	8	
16/05/2026	10:20	8	
16/05/2026	10:55	8	
16/05/2026	12:30	8	
17/05/2026	8:10		6
17/05/2026	8:40	8	
17/05/2026	9:05	8	
17/05/2026	10:05	8	
17/05/2026	10:30	8	
17/05/2026	12:45	8	
18/05/2026	12:20	8	
18/05/2026	12:40	8	
18/05/2026	13:00	8	
18/05/2026	13:30		8
18/05/2026	14:00	8	
19/05/2026			
20/05/2026	8:00		6
20/05/2026	8:50		6
20/05/2026	9:30	8	
20/05/2026	9:50	8	
20/05/2026	10:30	8	
20/05/2026	10:50	8	
20/05/2026	11:30	8	
20/05/2026	12:00	8	
20/05/2026	12:40	8	
20/05/2026	13:20	8	
20/05/2026	13:45	8	
20/05/2026	14:40	8	
21/05/2026	8:00		6
21/05/2026	8:15	8	
21/05/2026	8:30	8	
21/05/2026	11:30	8	
21/05/2026	11:50	8	
22/05/2026	8:00		6
22/05/2026	10:30		6
22/05/2026	10:40	8	
22/05/2026	11:00	8	
22/05/2026	11:20	8	
22/05/2026	11:45	8	
22/05/2026	13:00	8	
22/05/2026	15:00	8	
22/05/2026	15:30		4
23/05/2026	7:50	8	
23/05/2026	8:10	8	
23/05/2026	8:30		6
23/05/2026	8:35	8	
23/05/2026	11:00	8	
23/05/2026	11:15	8	
23/05/2026	13:20	8	
24/05/2026	7:30	8	
24/05/2026	7:45	8	
24/05/2026	8:10		7
24/05/2026	10:50	8	
24/05/2026	11:10	8	
24/05/2026	13:20	8	
24/05/2026	14:00	8	
25/05/2026	7:30	8	
25/05/2026	8:00	8	
25/05/2026	10:40	8	
25/05/2026	11:00		7
25/05/2026	11:25	8	
26/05/2026	7:50	8	
26/05/2026	8:10	8	
26/05/2026	8:40	8	
26/05/2026	13:30	8	
27/05/2026	8:15		6
27/05/2026	8:30		8
27/05/2026	9:10	8	
27/05/2026	9:35	8	
27/05/2026	11:25	8	
27/05/2026	11:45	8	
27/05/2026	14:40	8	
28/05/2026	8:30		6
28/05/2026	9:00	8	
28/05/2026	9:30	8	
28/05/2026	10:00	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
28/05/2026	12:40	8	
28/05/2026	14:40	8	
28/05/2026	15:10	8	
29/05/2026	7:30		6
29/05/2026	7:45		4
29/05/2026	8:00	8	
29/05/2026	10:45	8	
29/05/2026	11:10	8	
30/05/2026	8:10	8	
30/05/2026	8:30	8	
30/05/2026	8:40	8	
30/05/2026	9:15	8	
30/05/2026	9:30	8	
31/05/2026	7:40		6
31/05/2026	8:00	8	
31/05/2026	8:15		4
31/05/2026	8:30	8	
31/05/2026	8:40	8	
31/05/2026	8:55	8	
31/05/2026	9:10	8	
31/05/2026	11:00	8	
31/05/2026	12:00	8	
1/06/2026	8:00	8	
1/06/2026	8:30	8	
1/06/2026	10:50		6
1/06/2026	11:15	8	
1/06/2026	11:45	8	
2/06/2026			
3/06/2026	9:10	8	
3/06/2026	9:30	8	
3/06/2026	10:30	8	
3/06/2026	11:00	8	
3/06/2026	11:50		7
3/06/2026	12:35		8
3/06/2026	12:55	8	
3/06/2026	13:45	8	
3/06/2026	14:10	8	
3/06/2026	14:40	8	
4/06/2026	7:20	8	
4/06/2026	7:55	8	
4/06/2026	8:21	8	
4/06/2026	9:27		6
5/06/2026	9:30	8	
5/06/2026	9:45		6
5/06/2026	10:10	8	
5/06/2026	10:30	8	
5/06/2026	10:50	8	
5/06/2026	13:20	8	
6/06/2026	7:50		6
6/06/2026	8:00	8	
6/06/2026	8:30	8	
6/06/2026	9:00	8	
7/06/2026	7:45		4
7/06/2026	8:05		6
7/06/2026	8:20	8	
7/06/2026	8:44	8	
7/06/2026	10:15	8	
7/06/2026	10:30	8	
7/06/2026	11:35	8	
8/06/2026	7:40	8	
8/06/2026	7:55	8	
8/06/2026	8:10	8	
8/06/2026	8:25		6
8/06/2026	8:50	8	
8/06/2026	11:00	8	
8/06/2026	11:35	8	
9/06/2026	8:00	8	
9/06/2026	10:40	8	
10/06/2026	7:20		6
10/06/2026	7:30		6
10/06/2026	7:45	8	
10/06/2026	8:10	8	
10/06/2026	8:30	8	
10/06/2026	9:00	8	
10/06/2026	10:00	8	
10/06/2026	10:30	8	
10/06/2026	10:45	8	
10/06/2026	12:00	8	
11/06/2026			
12/06/2026	7:17		6
12/06/2026	7:30		6
12/06/2026	8:00	8	
12/06/2026	8:40	8	
12/06/2026	9:00	8	
12/06/2026	9:15	8	
12/06/2026	9:40	8	
12/06/2026	10:30	8	
13/06/2026	8:30		6
13/06/2026	9:00	8	
13/06/2026	9:15	8	
13/06/2026	9:30	8	
13/06/2026	9:45	8	
13/06/2026	10:45	8	
14/06/2026	7:30	8	
14/06/2026	7:45	8	
14/06/2026	8:00	8	
14/06/2026	8:30	8	
14/06/2026	8:45		8
14/06/2026	11:45	8	
15/06/2026	7:30		6

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
15/06/2026	7:45	8	
15/06/2026	8:00	8	
15/06/2026	8:30	8	
15/06/2026	10:50	8	
15/06/2026	11:15	8	
16/06/2026	7:35	8	
16/06/2026	8:00	8	
16/06/2026	8:25		6
16/06/2026	8:50	8	
16/06/2026	10:40	8	
16/06/2026	11:00	8	
17/06/2026	7:30	8	
17/06/2026	8:35		6
17/06/2026	9:20	8	
17/06/2026	10:55	8	
17/06/2026	11:20	8	
17/06/2026	14:10	8	
17/06/2026	14:30	8	
18/06/2026	7:30	8	
18/06/2026	7:50	8	
18/06/2026	8:15		6
18/06/2026	10:50	8	
19/06/2026	7:20		6
19/06/2026	7:45	8	
19/06/2026	8:05	8	
19/06/2026	11:10	8	
19/06/2026	11:30	8	
20/06/2026	7:40		6
20/06/2026	7:55	8	
20/06/2026	8:15	8	
20/06/2026	8:40	8	
20/06/2026	12:05	8	
20/06/2026	12:25	8	
21/06/2026	7:30	8	
21/06/2026	7:50		6
21/06/2026	8:10	8	
21/06/2026	11:40	8	
21/06/2026	12:00	8	
22/06/2026	7:30	8	
22/06/2026	7:45	8	
22/06/2026	8:15		6
22/06/2026	12:40	8	
22/06/2026	13:00	8	
23/06/2026	7:30	8	
23/06/2026	7:45	8	
23/06/2026	8:15		6
23/06/2026	12:30	8	
23/06/2026	13:00	8	
24/06/2026	7:30	8	
24/06/2026	7:45	8	
24/06/2026	8:15		6
24/06/2026	11:30	8	
24/06/2026	12:00	8	
24/06/2026	14:40	8	
25/06/2026	7:30	8	
25/06/2026	7:45	8	
25/06/2026	8:20		6
25/06/2026	10:30	8	
25/06/2026	11:00	8	
25/06/2026	13:20	8	
26/06/2026	7:30		6
26/06/2026	7:50	8	
26/06/2026	8:15	8	
26/06/2026	10:30	8	
26/06/2026	11:00	8	
26/06/2026	14:30	8	
27/06/2026	7:50		6
27/06/2026	8:00	8	
27/06/2026	8:20	8	
27/06/2026	11:10	8	
27/06/2026	11:30	8	
28/06/2026	8:00	8	
28/06/2026	8:15	8	
28/06/2026	8:40	8	
28/06/2026	9:50		6
28/06/2026	11:30	8	
28/06/2026	11:50	8	
29/06/2026	7:20	8	
29/06/2026	7:50	8	
29/06/2026	8:10		6
29/06/2026	10:00	8	
29/06/2026	10:40	8	
29/06/2026	12:55	8	
29/06/2026	13:40	8	
30/06/2026	8:00	8	
30/06/2026	8:30	8	
30/06/2026	8:50		6
30/06/2026	10:30	8	
30/06/2026	13:10	8	
1/07/2026	7:35		6
1/07/2026	7:50	8	
1/07/2026	8:10	8	
1/07/2026	11:00	8	
1/07/2026	11:30	8	
2/07/2026	7:30	8	
2/07/2026	7:45	8	
2/07/2026	11:00	8	
2/07/2026	11:30	8	
3/07/2026	7:45	8	
3/07/2026	8:00	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
3/07/2026	8:20	8	
3/07/2026	9:00	8	
3/07/2026	11:15	8	
3/07/2026	11:40	8	
4/07/2026	7:50	8	
4/07/2026	8:00	8	
4/07/2026	8:20		6
4/07/2026	12:50	8	
4/07/2026	13:00	8	
5/07/2026	9:10		6
5/07/2026	9:20	8	
5/07/2026	9:30	8	
5/07/2026	10:00	8	
5/07/2026	13:00	8	
5/07/2026	13:20	8	
6/07/2026	7:25	8	
6/07/2026	7:45	8	
6/07/2026	8:05	8	
6/07/2026	9:50	8	
6/07/2026	10:10	8	
6/07/2026	10:45		6
6/07/2026	14:40	8	
7/07/2026	7:30	8	
7/07/2026	7:50	8	
7/07/2026	8:20		6
7/07/2026	10:15	8	
7/07/2026	10:35	8	
7/07/2026	14:00	8	
8/07/2026	7:40	8	
8/07/2026	8:00	8	
8/07/2026	14:10		6
8/07/2026	14:50	8	
9/07/2026	7:25	8	
9/07/2026	7:50	8	
9/07/2026	8:15	8	
9/07/2026	9:00		6
9/07/2026	10:20	8	
9/07/2026	10:45	8	
9/07/2026	13:35	8	
10/07/2026	7:50	8	
10/07/2026	8:15	8	
10/07/2026	10:15		7
10/07/2026	10:50	8	
10/07/2026	11:10	8	
10/07/2026	13:30	8	
11/07/2026	7:50		6
11/07/2026	8:20	8	
11/07/2026	9:00	8	
11/07/2026	11:30	8	
11/07/2026	12:00	8	
11/07/2026	14:40	7	
12/07/2026	7:50	8	
12/07/2026	8:10	8	
12/07/2026	8:20		6
12/07/2026	11:45		6
12/07/2026	12:30	8	
12/07/2026	13:00	8	
13/07/2026	7:30	8	
13/07/2026	7:50	8	
13/07/2026	8:10		6
13/07/2026	12:20	8	
13/07/2026	12:45	8	
14/07/2026	7:30	8	
14/07/2026	8:00	8	
14/07/2026	8:30	8	
14/07/2026	11:00	8	
14/07/2026	11:30	8	
15/07/2026	7:30	8	
15/07/2026	8:00	8	
15/07/2026	11:10		2
15/07/2026	13:10	8	
15/07/2026	13:30	8	
16/07/2026	7:30	8	
16/07/2026	7:50	8	
16/07/2026	11:10	8	
16/07/2026	11:40	8	
17/07/2026	7:30		6
17/07/2026	7:50	8	
17/07/2026	8:20	8	
17/07/2026	12:00		2
17/07/2026	12:40	8	
17/07/2026	13:10	8	
18/07/2026	7:50		4
18/07/2026	8:20	8	
18/07/2026	8:45	8	
18/07/2026	12:00	8	
18/07/2026	12:30	8	
19/07/2026	7:40	8	
19/07/2026	8:00	8	
19/07/2026	8:20		6
19/07/2026	11:20	8	
19/07/2026	11:40	8	
19/07/2026	14:10		2
20/07/2026	8:30	8	
20/07/2026	9:00	8	
20/07/2026	9:20		8
20/07/2026	13:20	8	
21/07/2026	11:15	8	
21/07/2026	11:30	8	
21/07/2026	11:50	8	

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

Date	Time	Lime Solids (tonnes)	Mixed Salts (tonnes)
21/07/2026	12:15		8
21/07/2026	12:30	8	
21/07/2026	13:25	8	
21/07/2026	14:40	8	
22/07/2026	7:50	8	
22/07/2026	8:15	8	
22/07/2026	8:45		6
22/07/2026	11:00	8	
22/07/2026	11:20	8	
22/07/2026	13:50		1

Row Labels	Sum of Lime Solids	Sum of Mixed Salts(tonnes)

Date	SRTF Availability (%)	Comments	Average of SRTF Availability (%)

APA Receival Bin Sump

Date	Flow to SPB/SPC (ML)	Flowing into SPB/SPC
1/01/2026		
2/01/2026	0.085	LNAR4
3/01/2026		
4/01/2026		
5/01/2026	0.094	LNAR4
6/01/2026	0.086	LNAR4
7/01/2026		
8/01/2026		
9/01/2026		
10/01/2026		
11/01/2026		
12/01/2026		
13/01/2026		
14/01/2026		
15/01/2026	0.075	LNAR4
16/01/2026	0.100	LNAR4
17/01/2026		
18/01/2026	0.130	LNAR4
19/01/2026		
20/01/2026		
21/01/2026		
22/01/2026		
23/01/2026		
24/01/2026		
25/01/2026		
26/01/2026		
27/01/2026		
28/01/2026		
29/01/2026		
30/01/2026		
31/01/2026		
1/02/2026		
2/02/2026		
3/02/2026		
4/02/2026		
5/02/2026	0.100	LNAR5
6/02/2026		
7/02/2026		
8/02/2026	0.150	LNAR5
9/02/2026		
10/02/2026	0.200	LNAR4
11/02/2026	0.250	LNAR4
12/02/2026	0.180	LNAR4
13/02/2026	0.110	LNAR4
14/02/2026		
15/02/2026		
16/02/2026		
17/02/2026		
18/02/2026		
19/02/2026		
20/02/2026		
21/02/2026		
22/02/2026	0.020	LNAR4
23/02/2026		
24/02/2026		
25/02/2026		
26/02/2026		
27/02/2026		
28/02/2026		

1/03/2026	0.021	LNAR4
2/03/2026		
3/03/2026		
4/03/2026	0.130	LNAR4
5/03/2026	1.000	LNAR5
6/03/2026		
7/03/2026		
8/03/2026		
9/03/2026		
10/03/2026		
11/03/2026		
12/03/2026		
13/03/2026		
14/03/2026		
15/03/2026		
16/03/2026		
17/03/2026		
18/03/2026		
19/03/2026		
20/03/2026		
21/03/2026		
22/03/2026	0.200	LNAR4
23/03/2026		
24/03/2026		
25/03/2026		
26/03/2026		
27/03/2026		
28/03/2026		
29/03/2026		
30/03/2026		
31/03/2026		
1/04/2026		
2/04/2026		
3/04/2026		
4/04/2026		
5/04/2026		
6/04/2026		
7/04/2026		
8/04/2026		
9/04/2026		
10/04/2026		
11/04/2026		
12/04/2026		
13/04/2026		
14/04/2026		
15/04/2026		
16/04/2026		
17/04/2026		
18/04/2026		
19/04/2026		
20/04/2026		
21/04/2026		
22/04/2026		
23/04/2026		
24/04/2026		
25/04/2026		
26/04/2026		
27/04/2026		
28/04/2026		
29/04/2026		
30/04/2026		

1/05/2026		
2/05/2026		
3/05/2026		
4/05/2026		
5/05/2026		
6/05/2026	0.075	LNAR4
7/05/2026		
8/05/2026		
9/05/2026		
10/05/2026		
11/05/2026		
12/05/2026		
13/05/2026	0.096	LNAR4
14/05/2026		
15/05/2026		
16/05/2026		
17/05/2026		
18/05/2026	0.094	LNAR4
19/05/2026		
20/05/2026		
21/05/2026		
22/05/2026		
23/05/2026		
24/05/2026		
25/05/2026		
26/05/2026		
27/05/2026		
28/05/2026		
29/05/2026		
30/05/2026		
31/05/2026		
1/06/2026		
2/06/2026		
3/06/2026		
4/06/2026		
5/06/2026		
6/06/2026		
7/06/2026		
8/06/2026		
9/06/2026		
10/06/2026		
11/06/2026		
12/06/2026		
13/06/2026		
14/06/2026		
15/06/2026		
16/06/2026		
17/06/2026		
18/06/2026		
19/06/2026		
20/06/2026		
21/06/2026		
22/06/2026		
23/06/2026		
24/06/2026		
25/06/2026		
26/06/2026		
27/06/2026		
28/06/2026		
29/06/2026		
30/06/2026		
1/07/2026		
2/07/2026	0.100	LNAR4
3/07/2026		
4/07/2026		
5/07/2026		
6/07/2026		
7/07/2026		
8/07/2026		
9/07/2026		
10/07/2026		
11/07/2026		
12/07/2026		
13/07/2026		
14/07/2026		
15/07/2026		
16/07/2026		
17/07/2026		
18/07/2026		
19/07/2026		
20/07/2026		
21/07/2026		
22/07/2026		
23/07/2026		

Annual Summary - 2025-2026

LNAR Lined Storage Ponds	Inter Liner Leak Detection Sump											
	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26
LNAR 3 (Formerly BWA)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry		
LNAR 4 (Formerly BWB)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry		
LNAR 5 (Formerly BWC)	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry		

12 Monthly Summary - 2025-2026

LNAR Stage 1 A/B

Liner Leachate Collection Sumps	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Totals
LNAR Stage 1 Liner Leachate Pipeline Sump 1	-												-
LNAR Stage 1 Liner Leachate Pipeline Sump 2													-
LNAR Stage 1 Liner Leachate Pipeline Sump 3	608,000	626,000	623,000	667,000	460,000				461,000	407,000			3,852,000
LNAR Stage 1 Liner Leachate Pipeline Sump 4	1,164,000	912,000	694,000	616,000	457,000	531,000	993,000	1,169,000	375,000				6,911,000
LNAR Stage 1 Liner Leachate Pipeline Sump 5													-

LNAR Stage 2 A/B

Liner Leachate Collection Sumps	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Totals
LNAR Stage 2A Liner Leachate Pipeline Sump 1	1,206,000	1,202,000	1,016,000	928,000	500,000	426,000	905,000	359,000	375,000	441,000			7,358,000
LNAR Stage 2B Liner Leachate Pipeline Sump 1				380,000	444,000	388,000	1,562,000	1,970,000	1,062,000	436,000			6,242,000

				ater Qualit	boratory Par	ANZ-General Chemistry			ANZ-Alkalinity				ANZ-Cations and Anions											
				pH - Field	Electrical Conductivity Field (non-compensated)	Hardness as CaCO3	Hardness as Calcium	Oil & Grease	Alkalinity - P	Alkalinity - Total as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Sulphate as SO4 2-	Chloride	Fluoride	Total suspended solids	Calcium - Total	Calcium - Dissolved	Magnesium - Total	Magnesium - Dissolved	Sodium - Total	Sodium - Dissolved	Potassium - Total	Potassium - Dissolved
			LOR	0	1	0.01	0.1	5	1	1	1	1	1	0.01	0.001	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
			Units	pH units	uS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			Action Levels																					
			MOUNT-PIPER-ANZECC/LOCAL SSTL-WS[1]	6.5 - 8	2200	200							1000	350	1.5		1000	1000			180	180		
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																					
LN Pond 2	7/01/2026	LN POND 2_20260107	N	**8.57**	**3667**	**127**	**68.7**	< 5	**4.825**	**153.435**	**143.785**	**9.65**	**1850**	**114**	**2.76**	**123**	**29.7**	**27.5**	**15.2**	**14.1**	**758**	**733**	**43.1**	**41**
	17/02/2026	LN POND 2_20260217	N	**7.62**	**2353**	**121**	**62.7**	< 5	**0**	**99.07**	**99.07**		**737**	**45.7**	**1.3**	**58**	**25.1**	**25.1**	**14.3**	**14.2**	**418**	**437**	**25.3**	**25.3**
	4/03/2026	LN POND 2_20260304	N	**8.43**	**1542**	**113**	**53.9**	< 5	**0**	**82.35**	**82.35**		**530**	**40.4**	**1.36**	**38**	**21.8**	**21.6**	**14.3**	**14.3**	**266**	**275**	**18.3**	**18.2**
	8/04/2026	LN POND 2_20260408	N	**8.6**	**963**	**90.1**	**41.9**	< 5	**0**	**67.87**	**67.87**		**306**	**24.6**	**0.757**	**91.33**	**16.9**	**16.8**	**11.6**	**11.7**	**146**	**149**	**11.6**	**11.9**
	4/05/2026	LN POND 2_20260504	N	**9.1**	**1680**	**74.8**	**38.7**	< 5	**18.335**	**152.9525**	**116.2825**	**36.67**	**590**	**33.8**	**1.08**	**49**	**16**	**15.5**	**8.91**	**8.76**	**308**	**307**	**15.7**	**15.3**
	2/06/2026	LN POND 2_20260602	N	**8.06**	**604**	**77.3**	**40**	< 5	**21.965**	**238.75**	**194.82**	**43.93**	**740**	**85.8**	**2.09**	**10.33**	**15.6**	**16**	**9.04**	**9.06**	**413**	**444**	**21.4**	**22.9**
LNAR 3	7/01/2026	LNAR3_20260107	N	**9.92**	**86723**	**46.8**	**31.2**	**9**	**7623.5**	**19589.5**	**4342.5**	**15247**	**23500**	**7560**	**173**	**271**	**18.6**	**12.5**	**6.94**	**3.79**	**23900**	**22500**	**1530**	**1460**
	17/02/2026	LNAR3_20260217	N	**10.01**	**47147**	**39.5**	**25.7**	< 5	**5461.9**	**12834.5**	**1910.7**	**10923.8**	**8180**	**2500**	**45.7**	**61**	**16.2**	**10.3**	**5.55**	**3.34**	**15200**	**14200**	**1150**	**1060**
	4/03/2026	LNAR3_20260304	N	**10.1**	**43715**	**36.2**	**20.9**	**8**	**4815.35**	**11174.7**	**1544**	**9630.7**	**13300**	**4420**	**96.6**	**78**	**14.2**	**8.38**	**6.85**	**3.72**	**14300**	**13400**	**1020**	**928**
	8/04/2026	LNAR3_20260408	N	**9.97**	**66323**	**41.7**	**25.5**	**5**	**8781.5**	**21905.5**	**4342.5**	**17563**	**24200**	**6780**	**157**	**25.67**	**16.5**	**10.2**	**6.38**	**3.93**	**24700**	**23100**	**1430**	**1350**
	4/05/2026	LNAR3_20260504	N	**10.05**	**71346**	**50.1**	**30**	< 5	**10808**	**24511**	**2895**	**21616**	**27700**	**8020**	**182**	**28**	**17.4**	**12**	**7.29**	**4.9**	**28900**	**26600**	**2050**	**1910**
	2/06/2026	LNAR3_20260602	N	**9.88**	**70374**	**47**	**29**	< 5	**10027.5**	**23206.5**	**3151.5**	**20055**	**25500**	**7840**	**167**	**86.67**	**19.3**	**11.6**	**8.53**	**4.38**	**28100**	**24300**	**1730**	**1500**
LNAR 4	7/01/2026	LNAR4_20260107	N	**8.67**	**3205**	**105**	**61.4**	< 5	**10.29**	**224.2**	**203.615**	**20.59**	**1100**	**105**	**2.31**	**151**	**27**	**24.6**	**11.2**	**10.6**	**666**	**665**	**39.8**	**39.7**
	17/02/2026	LNAR4_20260217	N	**8.3**	**3290**	**94.1**	**54.4**	< 5	**0**	**224.845**	**224.845**		**951**	**91.1**	**1.95**	**106**	**24.1**	**21.8**	**10.5**	**9.64**	**667**	**672**	**41.2**	**40.9**
	4/03/2026	LNAR4_20260304	N	**9.04**	**3023**	**87.4**	**50.9**	< 5	**15.12**	**200.72**	**170.48**	**30.24**	**1010**	**101**	**2.72**	**57**	**21.7**	**20.4**	**9.28**	**8.85**	**621**	**627**	**39.3**	**39.4**
	8/04/2026	LNAR4_20260408	N	**8.88**	**3036**	**82.9**	**47.2**	< 5	**14.15**	**237.71**	**209.405**	**28.31**	**1040**	**118**	**3.07**	**61.33**	**20.5**	**18.9**	**9.34**	**8.68**	**593**	**573**	**35.2**	**34.8**
	4/05/2026	LNAR4_20260504	N	**9.25**	**2788**	**70**	**39.2**	< 5	**36.1875**	**264.8925**	**192.5175**	**72.375**	**944**	**101**	**2.57**	**37.5**	**17.5**	**15.7**	**8.09**	**7.49**	**569**	**558**	**34.2**	**32.9**
	2/06/2026	LNAR4_20260602	N	**9.34**	**3970**	**81.6**	**47.2**	< 5	**29.605**	**271.22**	**212.01**	**59.21**	**969**	**111**	**2.77**	**21.67**	**18.7**	**18.9**	**8.45**	**8.36**	**572**	**605**	**35.9**	**36.6**
LNAR 5	7/01/2026	LNAR5_20260107	N	**7.59**	**3596**	**92.7**	**50.7**	< 5	**0**	**144.11**	**144.11**		**1470**	**72.7**	**2.09**	**74**	**20.7**	**20.3**	**10.3**	**10.2**	**719**	**723**	**37.1**	**37.4**
	17/02/2026	LNAR5_20260217	N	**8.83**	**3564**	**83.6**	**48.9**	< 5	**5.47**	**239**	**228.06**	**10.94**	**1020**	**88.4**	**2.13**	**124.67**	**21.1**	**19.6**	**9.1**	**8.41**	**734**	**722**	**41.4**	**39.9**
	4/03/2026	LNAR5_20260304	N	**9.15**	**3382**	**92.7**	**54.7**	< 5	**33.13**	**269.56**	**203.29**	**66.26**	**1130**	**130**	**3.3**	**456**	**23**	**21.9**	**9.95**	**9.23**	**695**	**707**	**43.9**	**43.1**
	8/04/2026	LNAR5_20260408	N	**9.03**	**963**	**86.1**	**52.4**	< 5	**21.87**	**293.68**	**249.935**	**43.75**	**1130**	**162**	**3.74**	**59**	**21.9**	**21**	**8.56**	**8.18**	**702**	**719**	**41.3**	**42.5**
	4/05/2026	LNAR5_20260504	N	**9.65**	**4274**	**64.9**	**40.5**	< 5	**121.12**	**501.8**	**259.585**	**242.215**	**1350**	**203**	**4.19**	**2145**	**18**	**16.2**	**7.05**	**5.93**	**926**	**917**	**55.2**	**53.3**
	2/06/2026	LNAR5_20260602	N	**8.99**	**2895**	**65.6**	**41.7**	< 5	**69.715**	**447.895**	**308.465**	**139.43**	**1180**	**185**	**3.72**	**90**	**17.3**	**16.7**	**6.11**	**5.8**	**818**	**851**	**50.7**	**50**

				ater Quality	ANZ-Metals																								
				pH - Field	Aluminium - Dissolved	Antimony - Dissolved	Arsenic - Dissolved	Barium - Dissolved	Beryllium - Dissolved	Boron - Dissolved	Cadmium - Dissolved	Chromium - Dissolved	Cobalt - Dissolved	Copper - Dissolved	Iron - Dissolved	Lead - Dissolved	Manganese - Dissolved	Molybdenum - Dissolved	Nickel - Dissolved	Selenium - Dissolved	Silver - Dissolved	Strontium - Dissolved	Vanadium - Dissolved	Zinc - Dissolved	Aluminium - Total	Antimony - Total	Arsenic - Total	Barium - Total	Beryllium - Total
LOR				0	10	1	1	1	1	1	1	1	1	1	50	1	1	1	1	1	1	1	1	1	10	1	1	1	1
Units				pH units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Action Levels																													
MOUNT-PIPER-ANZECC/LOCAL SSTL-WS[1]				6.5 - 8	0.8	9	24	700	100	370	0.85	2	1.4	3.5	300	5	1900	10	17	5	0.05	0	6	116	0.8	9	24	700	100
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																										
LN Pond 2	7/01/2026	LN POND 2_20260107	N	**8.57**	**60**	**11**	**87**	**46**	< 1	**600**	**1.2**	**2**	**2**	**19**	**110**	< 1	**11**	**155**	**14**	**66**	**< 1**	**159**	**50**	**77**	**2630**	**9**	**117**	**76**	< 1
	17/02/2026	LN POND 2_20260217	N	**7.62**	**< 10**	**5**	**36**	**49**	< 1	**400**	**0.6**	< 1	**1**	**10**	< 50	< 1	**41**	**96**	**14**	**30**	**< 1**	**141**	**10**	**41**	**3900**	**4**	**48**	**82**	< 1
	4/03/2026	LN POND 2_20260304	N	**8.43**	**20**	**3**	**12**	**28**	< 1	**230**	**0.3**	< 1	**1**	**4**	< 50	< 1	**21**	**71**	**10**	**17**	**< 1**	**102**	**< 10**	**16**	**2040**	**4**	**16**	**43**	< 1
	8/04/2026	LN POND 2_20260408	N	**8.6**	**10**	**2**	**2**	**29**	< 1	**200**	**0.2**	< 1	**1**	**2**	< 50	< 1	**3**	**46**	**7**	**10**	**< 1**	**91**	**< 10**	**6**	**1080**	**2**	**7**	**41**	< 1
	4/05/2026	LN POND 2_20260504	N	**9.1**	**110**	**7**	**26**	**23**	< 1	**350**	**0.2**	< 1	< 1	**19**	< 50	< 1	**1**	**90**	**8**	**25**	**< 1**	**98**	**20**	**51**	**940**	**7**	**33**	**32**	< 1
	2/06/2026	LN POND 2_20260602	N	**8.06**	**90**	**14**	**82**	**26**	< 1	**370**	**0.6**	**1**	**2**	**21**	< 50	< 1	**11**	**176**	**14**	**81**	**< 1**	**119**	**60**	**45**	**1540**	**15**	**84**	**31**	< 1
LNAR 3	7/01/2026	LNAR3_20260107	N	**9.92**	**110**	**1200**	**14500**	**133**	< 10	**31600**	**54**	**253**	**46**	**1600**	**350**	**62**	**218**	**22100**	**841**	**12100**	**< 10**	**2010**	**9310**	**1150**	**1600**	**1200**	**14400**	**137**	< 10
	17/02/2026	LNAR3_20260217	N	**10.01**	**290**	**696**	**10200**	**95**	< 10	**13800**	**37.7**	**174**	**29**	**1100**	**280**	**49**	**147**	**13300**	**476**	**6300**	**< 10**	**1200**	**5540**	**610**	**1010**	**755**	**8530**	**99**	< 10
	4/03/2026	LNAR3_20260304	N	**10.1**	**140**	**638**	**6880**	**70**	< 10	**12300**	**33.3**	**162**	**20**	**829**	**200**	**30**	**116**	**10700**	**400**	**5820**	**< 10**	**876**	**4380**	**513**	**3730**	**757**	**7590**	**94**	< 10
	8/04/2026	LNAR3_20260408	N	**9.97**	**120**	**1390**	**14800**	**110**	< 10	**21500**	**49.2**	**330**	**42**	**1620**	**180**	**47**	**147**	**23100**	**720**	**12500**	**< 10**	**1140**	**7260**	**822**	**400**	**2630**	**17200**	**146**	< 1
	4/05/2026	LNAR3_20260504	N	**10.05**	**< 100**	**1900**	**17000**	**162**	< 10	**28600**	**55.8**	**324**	**39**	**1800**	**250**	**48**	**165**	**24900**	**773**	**13700**	**< 10**	**1680**	**8910**	**938**	**670**	**1810**	**15900**	**150**	< 10
	2/06/2026	LNAR3_20260602	N	**9.88**	**< 100**	**1970**	**14800**	**26**	< 10	**30600**	**53.7**	**280**	**43**	**1380**	**220**	**47**	**211**	**24200**	**749**	**11700**	**< 10**	**796**	**8800**	**1000**	**280**	**1830**	**14900**	**147**	< 10
LNAR 4	7/01/2026	LNAR4_20260107	N	**8.67**	**110**	**11**	**105**	**41**	< 1	**640**	**2.8**	**2**	**2**	**30**	**60**	< 1	**14**	**204**	**20**	**90**	**< 1**	**112**	**70**	**114**	**7190**	**9**	**114**	**90**	< 1
	17/02/2026	LNAR4_20260217	N	**8.3**	**70**	**12**	**122**	**42**	< 1	**730**	**2.1**	**1**	**2**	**29**	**100**	< 1	**32**	**261**	**15**	**85**	**< 1**	**111**	**80**	**110**	**2990**	**12**	**135**	**76**	< 1
	4/03/2026	LNAR4_20260304	N	**9.04**	**90**	**12**	**118**	**38**	< 1	**510**	**2.4**	**3**	**2**	**24**	**70**	< 1	**3**	**239**	**20**	**93**	**< 1**	**106**	**70**	**90**	**2530**	**18**	**112**	**57**	< 1
	8/04/2026	LNAR4_20260408	N	**8.88**	**70**	**16**	**125**	**38**	< 1	**560**	**1.4**	**2**	**2**	**18**	**80**	< 1	**4**	**287**	**20**	**95**	**< 1**	**120**	**80**	**42**	**2200**	**14**	**120**	**55**	< 1
	4/05/2026	LNAR4_20260504	N	**9.25**	**100**	**17**	**105**	**29**	< 1	**500**	**1.2**	**1**	**2**	**17**	< 50	< 1	< 1	**244**	**17**	**88**	**< 1**	**99**	**70**	**33**	**3090**	**17**	**110**	**47**	< 1
	2/06/2026	LNAR4_20260602	N	**9.34**	**90**	**19**	**112**	**34**	< 1	**490**	**1.2**	**1**	**2**	**16**	**90**	< 1	**2**	**184**	**20**	**82**	**< 1**	**111**	**70**	**37**	**1200**	**17**	**120**	**45**	< 1
LNAR 5	7/01/2026	LNAR5_20260107	N	**7.59**	**120**	**9**	**75**	**60**	< 1	**590**	**6.4**	**2**	**1**	**45**	**80**	< 1	**77**	**129**	**19**	**48**	**< 1**	**89**	**50**	**402**	**1140**	**9**	**97**	**80**	< 1
	17/02/2026	LNAR5_20260217	N	**8.83**	**100**	**13**	**135**	**45**	< 1	**620**	**2.2**	**2**	**2**	**28**	**80**	< 1	**84**	**199**	**19**	**91**	**< 1**	**114**	**80**	**149**	**1870**	**14**	**153**	**72**	< 1
	4/03/2026	LNAR5_20260304	N	**9.15**	**80**	**11**	**130**	**38**	< 1	**580**	**1.7**	**1**	**3**	**21**	< 50	< 1	**64**	**297**	**23**	**76**	**< 1**	**129**	**70**	**126**	**7870**	**14**	**134**	**91**	**1**
	8/04/2026	LNAR5_20260408	N	**9.03**	**70**	**15**	**148**	**36**	< 1	**670**	**1.4**	**2**	**4**	**19**	< 50	< 1	**37**	**362**	**26**	**79**	**< 1**	**156**	**80**	**109**	**5040**	**13**	**144**	**68**	< 1
	4/05/2026	LNAR5_20260504	N	**9.65**	**150**	**23**	**232**	**30**	< 1	**950**	**1.1**	**3**	**5**	**47**	< 50	< 1	**21**	**470**	**31**	**135**	**< 1**	**133**	**110**	**118**	**8540**	**22**	**258**	**69**	< 1
	2/06/2026	LNAR5_20260602	N	**8.99**	**100**	**22**	**204**	**32**	< 1	**630**	**1.1**	**3**	**4**	**31**	< 50	< 1	**19**	**352**	**27**	**121**	**< 1**	**140**	**110**	**64**	**4950**	**21**	**207**	**60**	**1**

				Water Quality																		NZ-Nutrient	ANZ-TPH					
				pH - Field	Boron - Total	Cadmium - Total	Chromium - Total	Chromium (III) - Total	Chromium (VI) - Total	Cobalt - Total	Copper - Total	Iron - Total	Lead - Total	Manganese - Total	Mercury - Total	Molybdenum - Total	Nickel - Total	Selenium - Total	Silver - Total	Strontium - Total	Vanadium - Total	Zinc - Total	Sulfur	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction - Sum
LOR				0	1	1	1	1	1	1	1	50	1	1	0.04	1	1	1	1	1	1	1	1	0.02	0.05	0.1	0.05	0.05
Units				pH units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Action Levels																												
MOUNT-PIPER-ANZECC/LOCAL SSTL-WS[1]				6.5 - 8	370	0.85	2	3.3	1	1.4	3.5	300	5	1900	0.06	10	17	5	0.05	0	6	116						
Sample Location	**Date Sampled**	**Sample ID**	**Sample Type**																									
LN Pond 2	7/01/2026	LN POND 2_20260107	N	**8.57**	**730**	**1.8**	**6**	< 1	**4**	**6**	**43**	**2510**	**6**	**200**	**0.08**	**257**	**31**	**77**	**< 1**	**206**	**80**	**237**	**509**	< 0.02	< 0.05	**0.31**	**0.37**	**0.68**
	17/02/2026	LN POND 2_20260217	N	**7.62**	**400**	**0.9**	**6**	< 1	< 1	**6**	**25**	**3840**	**10**	**198**	< 0.04	**125**	**30**	**32**	**< 1**	**158**	**30**	**119**	**282**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/03/2026	LN POND 2_20260304	N	**8.43**	**200**	**0.5**	**4**	< 1	**1**	**3**	**9**	**2210**	**4**	**76**	< 0.04	**80**	**16**	**17**	**< 1**	**105**	**< 10**	**32**	**188**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	8/04/2026	LN POND 2_20260408	N	**8.6**	**150**	**0.2**	**1**	< 1	< 1	**3**	**6**	**1090**	**3**	**70**	< 0.04	**39**	**13**	**10**	**< 1**	**98**	**< 10**	**26**	**109**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/05/2026	LN POND 2_20260504	N	**9.1**	**440**	**0.2**	**2**	< 1	**4**	**2**	**27**	**750**	**1**	**33**	< 0.04	**113**	**12**	**29**	**< 1**	**108**	**30**	**78**	**217**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	2/06/2026	LN POND 2_20260602	N	**8.06**	**500**	**0.6**	**3**	< 1	**4**	**3**	**25**	**1130**	**2**	**51**	< 0.04	**229**	**18**	**83**	**< 1**	**114**	**70**	**61**	**282**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
LNAR 3	7/01/2026	LNAR3_20260107	N	**9.92**	**29600**	**56.9**	**264**	**63**	**190**	**45**	**1630**	**960**	**66**	**232**	< 0.04	**23900**	**839**	**11900**	**< 10**	**2060**	**9380**	**1160**	**7800**	< 0.02	**0.06**	**3.39**	**0.33**	**3.78**
	17/02/2026	LNAR3_20260217	N	**10.01**	**17100**	**32.7**	**169**	**20**	**154**	**25**	**933**	**270**	**33**	**126**	< 0.04	**12600**	**454**	**7420**	**< 10**	**1180**	**5300**	**596**	**5000**	**0.07**	< 0.05	**0.67**	**0.3**	**0.97**
	4/03/2026	LNAR3_20260304	N	**10.1**	**13300**	**32.4**	**150**	**< 100**	**98**	**23**	**979**	**1290**	**32**	**108**	< 0.04	**11700**	**428**	**6270**	**< 10**	**929**	**4770**	**549**	**4810**	**0.03**	< 0.05	**0.28**	**0.18**	**0.46**
	8/04/2026	LNAR3_20260408	N	**9.97**	**29300**	**44.6**	**297**	**57**	**273**	**39**	**1540**	**270**	**45**	**133**	< 0.04	**28400**	**684**	**13400**	**< 1**	**1470**	**7820**	**787**	**8230**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/05/2026	LNAR3_20260504	N	**10.05**	**29600**	**56.9**	**337**	**70**	**254**	**36**	**1730**	**410**	**45**	**161**	< 0.04	**24900**	**718**	**12600**	**< 10**	**1590**	**8080**	**918**	**9210**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	2/06/2026	LNAR3_20260602	N	**9.88**	**31400**	**48.2**	**277**	**280**	**< 20**	**44**	**1450**	**< 500**	**46**	**203**	< 0.04	**21500**	**757**	**12000**	**< 10**	**1720**	**8260**	**1010**	**9750**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
LNAR 4	7/01/2026	LNAR4_20260107	N	**8.67**	**610**	**3.6**	**10**	< 1	**5**	**6**	**63**	**5300**	**12**	**143**	**0.11**	**273**	**36**	**89**	**< 1**	**135**	**90**	**379**	**398**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	17/02/2026	LNAR4_20260217	N	**8.3**	**650**	**3.2**	**7**	**1**	< 1	**4**	**56**	**2310**	**6**	**133**	< 0.04	**278**	**31**	**106**	**< 1**	**139**	**100**	**332**	**393**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/03/2026	LNAR4_20260304	N	**9.04**	**430**	**2.5**	**6**	< 1	**3**	**4**	**36**	**2310**	**5**	**70**	< 0.04	**260**	**24**	**89**	**< 1**	**108**	**90**	**178**	**369**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	8/04/2026	LNAR4_20260408	N	**8.88**	**560**	**2.2**	**5**	**2**	< 1	**4**	**36**	**1810**	**3**	**69**	**0.05**	**264**	**29**	**89**	**< 1**	**135**	**100**	**168**	**375**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/05/2026	LNAR4_20260504	N	**9.25**	**540**	**1.4**	**5**	< 1	**2**	**3**	**31**	**2110**	**4**	**67**	< 0.04	**271**	**24**	**88**	**< 1**	**109**	**80**	**134**	**313**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	2/06/2026	LNAR4_20260602	N	**9.34**	**620**	**1.5**	**2**	< 1	**1**	**3**	**22**	**930**	**2**	**27**	< 0.04	**292**	**22**	**88**	**< 1**	**121**	**80**	**72**	**359**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
LNAR 5	7/01/2026	LNAR5_20260107	N	**7.59**	**680**	**8.9**	**4**	< 1	**5**	**2**	**93**	**930**	**3**	**144**	**0.13**	**217**	**29**	**64**	**< 1**	**109**	**60**	**776**	**498**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	17/02/2026	LNAR5_20260217	N	**8.83**	**670**	**2.9**	**5**	**2**	< 1	**4**	**57**	**1510**	**5**	**175**	< 0.04	**312**	**29**	**100**	**< 1**	**136**	**100**	**331**	**437**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/03/2026	LNAR5_20260304	N	**9.15**	**500**	**1.9**	**11**	< 1	**3**	**8**	**46**	**5390**	**14**	**231**	< 0.04	**325**	**39**	**76**	**< 1**	**148**	**100**	**252**	**399**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	8/04/2026	LNAR5_20260408	N	**9.03**	**630**	**1.6**	**7**	**2**	< 1	**7**	**34**	**3770**	**7**	**183**	**0.05**	**364**	**40**	**78**	**< 1**	**182**	**100**	**179**	**416**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	4/05/2026	LNAR5_20260504	N	**9.65**	**1070**	**1.4**	**9**	< 1	**6**	**8**	**74**	**2410**	**8**	**206**	**0.09**	**580**	**43**	**150**	**< 1**	**168**	**130**	**270**	**513**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05
	2/06/2026	LNAR5_20260602	N	**8.99**	**820**	**1.3**	**9**	**< 10**	**< 10**	**7**	**52**	**3890**	**6**	**172**	< 0.04	**510**	**38**	**121**	**< 1**	**157**	**120**	**159**	**437**	< 0.02	< 0.05	< 0.1	< 0.05	< 0.05

APPENDIX O TARP EVALUATION

TABLE O-1: CONCENTRATIONS ABOVE THE ADOPTED GUIDELINE VALUES FOR THE FIRST TIME

Analyte	Screening Criteria	Location	Exceedance and Maximum Concentration
Groundwater Monitoring Locations			
Sulphate	1000 mg/L	MPGM4/D5	1/2 monitoring rounds – 1550 mg/L
** Hardness as $CaCO_3$	200 mg/L	MPGM4/D1	2/2 monitoring rounds – 2520 mg/L
		MPGM4/D10	2/2 monitoring rounds – 1460 mg/L
		D102	2/2 monitoring rounds – 3180 mg/L
		D103	2/2 monitoring rounds – 1400 mg/L
		D104	2/2 monitoring rounds – 589 mg/L
		D105	2/2 monitoring rounds – 1050 mg/L
		D106	2/2 monitoring rounds – 2590 mg/L
		D107	2/2 monitoring rounds – 2470 mg/L
		D110	2/2 monitoring rounds – 3180 mg/L
		D113	2/2 monitoring rounds – 1020 mg/L
		D117	2/2 monitoring rounds – 1570 mg/L
		D119	2/2 monitoring rounds – 457 mg/L
		D15	2/2 monitoring rounds – 348 mg/L
		D16A	2/2 monitoring rounds – 459 mg/L
		D17	2/2 monitoring rounds – 832 mg/L
		D18	2/2 monitoring rounds – 321 mg/L
		D19	2/2 monitoring rounds – 992 mg/L
		MPGM4/D2	2/2 monitoring rounds – 400 mg/L
		MPGM4/D3	2/2 monitoring rounds – 398 mg/L
		MPGM4/D5	2/2 monitoring rounds – 533 mg/L
		MPGM4/D9	2/2 monitoring rounds – 3040 mg/L
		MPGM5/D5	2/2 monitoring rounds – 3630 mg/L
		MPGM5/D6	2/2 monitoring rounds – 1110 mg/L
* Copper (filtered)	5 µg/L	D102	1/2 monitoring rounds – 30 µg/L
		D103	1/2 monitoring rounds – 6 µg/L
		D106	1/2 monitoring rounds – 6 µg/L
		D107	1/2 monitoring rounds – 21 µg/L
		D110	1/2 monitoring rounds – 36 µg/L

Analyte	Screening Criteria	Location	Exceedance and Maximum Concentration
** Molybdenum (filtered)	10 µg/L	D17	1/2 monitoring rounds – 32 µg/L
Ammonia	0.9 mg/L	D17	1/2 monitoring rounds – 1.25 mg/L
** Total Nitrogen	0.25 mg/L	MPGM4/D4	2/2 monitoring rounds – 0.8 mg/L
		MPGM4/D5	2/2 monitoring rounds – 0.5 mg/L
		MPGM4/D3	2/2 monitoring rounds – 0.4 mg/L
		MPGM4/D2	1/2 monitoring rounds – 1.4 mg/L
		D106	2/2 monitoring rounds – 2.8 mg/L
		D107	2/2 monitoring rounds – 1.3 mg/L
		D119	2/2 monitoring rounds – 50.8 mg/L
		MPGM4/D1	2/2 monitoring rounds – 1.2 mg/L
		D102	2/2 monitoring rounds – 1.6 mg/L
		D103	2/2 monitoring rounds – 0.6 mg/L
		D104	2/2 monitoring rounds – 0.6 mg/L
		D105	2/2 monitoring rounds – 0.3 mg/L
		MPGM4/D8	2/2 monitoring rounds – 0.4 mg/L
		MPGM4/D9	2/2 monitoring rounds – 1.9 mg/L
		MPGM4/D10	2/2 monitoring rounds – 1.1 mg/L
		D110	2/2 monitoring rounds – 1.5 mg/L
		D113	2/2 monitoring rounds – 1.2 mg/L
		D117	2/2 monitoring rounds – 4.1 mg/L
		MPGM4/D19	2/2 monitoring rounds – 0.8 mg/L
		D15	2/2 monitoring rounds – 12.4 mg/L
		D16A	2/2 monitoring rounds – 1 mg/L
		D17	2/2 monitoring rounds – 32.6 mg/L
		D18	2/2 monitoring rounds – 0.8 mg/L
		MPGM5/D5	2/2 monitoring rounds – 18.4 mg/L
		MPGM5/D6	2/2 monitoring rounds – 4.9 mg/L
Surface Water Monitoring Locations			
** Hardness as $CaCO_3$	200 mg/L	SW_E	2/6 monitoring rounds – 256 mg/L
		SW_G	2/6 monitoring rounds – 326 mg/L
		WX22	2/6 monitoring rounds – 324 mg/L
** Cobalt (filtered)	1.4 µg/L	SW_E	4/6 monitoring rounds - 10 µg/L

Analyte	Screening Criteria	Location	Exceedance and Maximum Concentration

Notes:
** First time application of ANZG (2018) guideline values.*
*** First time analysis of this analyte during the current reporting period. In the case of filtered metals, concentrations of total metals have exceeded the adopted guideline value during previous monitoring rounds.*

TABLE O-2: HISTORICAL MAXIMUM EXCEEDANCES

Bore ID	Analyte	Historical Maximum	The Reporting Period
Cross-gradient MPAR / adjacent MPAR to the north and adjacent Wangcol Creek			
D119	Total Nitrogen	1.9 mg/L– August 2020	50.8 mg/L – February 2026
	Total Kjeldahl Nitrogen as N	0.4 mg/L – August 2020	50.5 mg/L – February 2026
	Total Phosphorus	0.01 mg/L – August 2020	2.45 mg/L – February 2026
Downgradient MPAR, areas adjacent Wangcol Creek			
D102	Copper (filtered)	2 µg/L – May 2024	30 µg/L – May 2026
Downgradient MPAR, including LNAR (north) and historical mining disturbance (east)			
D117	Selenium (filtered)	0.9 µg/L – August 2020	288 µg/L – March 2026
Cross-gradient MPAR to the south, including LNAR (south) and historical mining disturbance			
D17	Iron (total)	38,700 µg/L – September 2024	590,000 µg/L – March 2026

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Mexico
Mozambique
The Netherlands
Peru
Poland
Portugal
Romania
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Thailand
UAE
UK
US
Vietnam

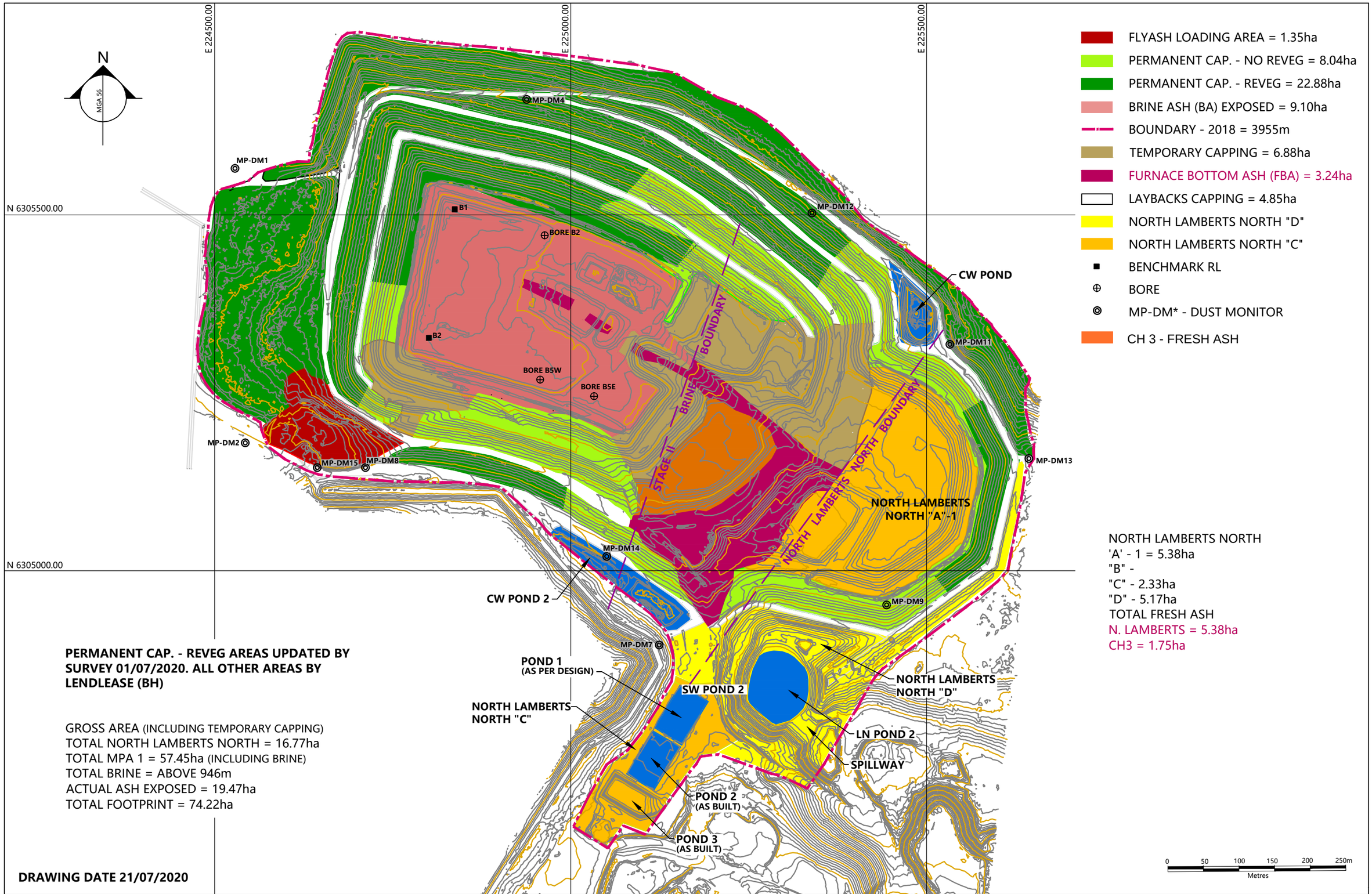
ERM's Sydney office

Level 14
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Sydney, NSW 2000

T +61 (2) 8584 8888

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Appendix G Mt Piper Ash Repository & Lamberts North Rehabilitation Plan



PERMANENT CAP. - REVEG AREAS UPDATED BY SURVEY 01/07/2020. ALL OTHER AREAS BY LENDLEASE (BH)

GROSS AREA (INCLUDING TEMPORARY CAPPING)
TOTAL NORTH LAMBERTS NORTH = 16.77ha
TOTAL MPA 1 = 57.45ha (INCLUDING BRINE)
TOTAL BRINE = ABOVE 946m
ACTUAL ASH EXPOSED = 19.47ha
TOTAL FOOTPRINT = 74.22ha

DRAWING DATE 21/07/2020

NORTH LAMBERTS NORTH
'A' - 1 = 5.38ha
"B" -
"C" - 2.33ha
"D" - 5.17ha
TOTAL FRESH ASH
N. LAMBERTS = 5.38ha
CH3 = 1.75ha

NOTES:
AREAS BY LENDLEASE

Disclaimer:
CEH Survey Pty. Ltd. do not guarantee the accuracy or completeness of this plan and are not liable for any loss or damage which the user may suffer resulting from the use of this plan.

No.	AMENDMENT	DATE	DRAWN	CHECK'D	AUTH'D

CEH SURVEY
CONSULTING LAND, ENGINEERING AND MINING SURVEYORS
"Astrolabe" 1 Rutherford Lane, LITHGOW 2790
ABN: 68 068 644 551 Email: survey@ceh.com.au Office: (02) 6351 2281 Website: www.ceh.com.au

SCALE: 1 : 5000 (A3)

CLIENT: LEND LEASE SERVICES PTY LTD

LOCALITY: MOUNT PIPER

LGA: LITHGOW

PLAN: **LEND LEASE SERVICES PTY LTD**
MOUNT PIPER ASH EMPLACEMENT
SURVEY: FEBRUARY 2020

SURVEYOR:	DRAWN:	DATE:	PLAN No.
T.H./B.N./L.B.	G.M./D.M.	21-07-2020	MPA0220 (As surveyed)

CEH Job No. - 3/841

PLAN No. MPA0220 AS SURVEY



SERVICESTREAM

MOUNT PIPER - ASH PLACEMENT

SURVEY : 28th APRIL 2026

SCALE - 1:5000 (A3 SHEET) DATUM: MGA (ZONE56)

GRID NORTH

CEH SURVEY
CONSULTING AND CIVIL ENGINEERING AND MINING SURVEYORS
"Astrolabe" 1 Hubbard Lane,
L NSW 2290
ABN: 68 058 544 661 Office: (02) 4951 2281
Email: surveyor@ceh.com.au Website: www.ceh.com.au

PROFESSIONAL STANDARDS SCHEME Liability limited by a scheme approved under Professional Standards Legislation.

DATE	28-04-2026
AMENDED	14-05-2026
SURVEYOR	TH/BN
DRAWN	GM/TH
CHECKED	

DRAWING No:

MPA0426
(as surveyed)

CCAD6 JOB & DWG:
MPA0426_gm - MPA0426 as survey

Appendix H EnergyAustralia NSW Community Sponsorships and Donations from 1 September 2025 – 30 June 2026

Date	Name	Project	Type
Sep 25	Lithgow High School	EnergyAustralia Community Award	Sponsorship
Sep 25	Rydal Show Society	Annual Show	Sponsorship
Sep 25	La Salle Academy Lithgow	EnergyAustralia Community Award	Sponsorship
Sep 25	St Josephs School Portland	EnergyAustralia Community Award	Sponsorship
Oct 25	Wallerawang Acclimatisation Society	Gone Fishing Day	Sponsorship
Oct 25	Lithgow Public School	EnergyAustralia Community Award	Sponsorship
Oct 25	Zig Zag Public School	EnergyAustralia Community Award	Sponsorship
Oct 25	Wallerawang Acclimatisation Society	Gone Fishing Day: Marquee	Equipment loan
Nov 25	Mingaan Aboriginal Corporation	NAIDOC week	Sponsorship
Nov 25	Capertee Public School	EnergyAustralia Community Award	Sponsorship
Nov 25	Cooerwull Public School	EnergyAustralia Community Award	Sponsorship
Nov 25	Cullen Bullen Public School	EnergyAustralia Community Award	Sponsorship
Nov 25	Meadow Flat Public School	EnergyAustralia Community Award	Sponsorship
Nov 25	Portland Central School	EnergyAustralia Community Award	Sponsorship
Nov 25	St Patricks School	EnergyAustralia Community Award	Sponsorship
Nov 25	Cullen Bullen Public School	Refurbish outdoor seating area	Grant
Nov 25	Lithgow Community Projects (Lithgow Cares Committee)	Engagement workshops in local high schools	Grant

Nov 25	Rydal Recreational Reserve	Internet upgrade	Grant
Dec 25	Lithgow Community Projects	Staff Donations	4
Dec 25	Capertee Public School	EnergyAustralia Community Award	Sponsorship
Dec 25	Hampton Public School	EnergyAustralia Community Award	Sponsorship
Dec 25	Wallerawang Public School	EnergyAustralia Community Award	Sponsorship
Dec 25	Lithgow Public School	EnergyAustralia Community Award	Sponsorship
Dec 25	Lithgow Athletics	Athletics Carnival: Marquee	Equipment loan
Dec 25	Wallerawang Progress Association	New Years Eve: Marquee	Equipment loan
Jan 26	Lithgow Swim Club	Swimming Carnival: Marquee	Equipment loan
Feb 26	Rydal Show Society	Rydal Show: Marquee	Equipment loan
Mar 26	Portland Art Society	Portland Art Show	Sponsorship
Apr 26	Lithgow Show Society	Lithgow Show	Sponsorship
Apr 26	Portland Easter Festival	Portland Easter Festival: Marquee	Equipment loan
May 26	One Mob Aboriginal Corporation	Cultural artwork workshops	Grant
May 26	PCYC Lithgow	Refurbishment of BBQ trailer	Grant
May 26	Lithgow High School	Sola Car Challenge	Grant

Appendix I Complaints Register

Complaints No.	Date Received	Nature (Enquiry / Notification / Complaint)	Issue(s)	Description	Corrective Actions Required	Actions Completed	
						Y / N	Date
No complaints received during reporting period							

Appendix J Independent Environmental Audit Finding

Lamberts North Ash Repository Internal Audit

2025 – 2026

Document ID: A2520087

Audit Report			
Audit Summary	An internal audit was completed for the Lamberts North Ash Repository (LNAR). The review focused on Service Stream data and records relevant to land management, surface water management, leachate monitoring, ash placement and associated environmental controls. The audit included a review of operational records, monitoring data, environmental controls, reporting requirements and site management practices to assess compliance with applicable licence, approval and management plan requirements.	**Audit Findings** (see Audit Criteria overleaf, for full description)	
		NC-H	Non-compliance – High	**0**
		NC-M	Non-compliance – Medium	**0**
		NC-L	Non-compliance – Low	**1**
		NC-A	Administrative non-compliance	**0**
		C	Compliant	10
		NA	Not Assessed	**0**
		O	Observation	0
Auditor	Chad Hosking		
Audit Date	July 2026		
Audit Type	Internal Audit		
Audit Method	Desktop review, interviews and site inspection		
Audit Scope	Review of LNAR Stage 1 and Stage 2 land and surface water management, including Service Stream monitoring and operational records, leachate detection, pond and ash-conditioning data, waste placement controls, erosion and sediment controls, and supporting environmental reporting. The audit criteria were drawn from EPL 13007, the LNAR Operation Environmental Management Plan, the Water Management Plan and relevant Mt Piper environmental risk register scenarios.		
Audit Limitations	The audit was based on a review of available documentation, monitoring records and supporting evidence. Findings are limited to the audit scope and evidence available at the time of the audit.		

Audit Documents	**Document Title**	**Document Reference**
	Mt Piper EPA Licence 13007	B576884
	Lamberts North Ash Placement Project - Operation Environmental Management Plan	A2381600
	Lamberts North Ash Placement Project - Conditions of Project Approval 09_0186 (Mod 2), 5 November 2024	A2348706

Audit Criteria

Risk Level	Colour Code	Description
High	**NC-H**	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.
Medium	**NC-M**	Non-compliance with: • Potential for serious environmental consequences, but is unlikely to occur; or • Potential for moderate environmental consequences, but is likely to occur.
Low	**NC-L**	Non-compliance with: • Potential for moderate environmental consequences, but is unlikely to occur; or • Potential for low environmental consequences but is likely to occur.
Administrative non-compliance	**NC-A**	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).
Compliant	**C**	The intent and all elements of the requirement of the regulatory approval have been complied with.
Not Assessed	**NA**	Not assessed.
Observation	**O**	Observation, based on identified inconsistency or opportunity for improvement.

Reference	Conditions	Finding	Comments / Evidence
EPL 13007 P1.2 / P1.3	P1.2 identifies utilisation areas used for monitoring and/or setting limits for the application of solids or liquids. P1.3 identifies monitoring and discharge points used for monitoring and/or setting limits for discharges of pollutants to water.	C	The Mt Piper EPL Premises Plan and Monitoring Points Map was updated to include the new points in Figure 3, Groundwater and Surface Water Monitoring Locations, within the Water Management Plan reviewed 7 July 2026. A sample of points was demonstrated.
EPL 13007 P1.4	The licence defines the Water Plan by reference to the Groundwater and Surface Water Sampling Locations plan.	C	The Water Management Plan reviewed 7 July 2026 was sighted and available.
EPL 13007 L1.1	Except as expressly provided elsewhere in the licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	C	The source audit tool identified an opportunity to document internal waste movements to the ash repository, including waste type, volume and licence category. This would support decisions on abnormal materials and whether they are permitted for onsite disposal.
EPL 13007 M2.1 / M2.6	For each specified monitoring or discharge point or utilisation area, monitoring must be undertaken for the nominated pollutants using the specified method, units and frequency.	C	Appendix 1 Schedule of Tests records the required frequency and analytes for each location and is provided to monitoring contractors. MonitorPro email alerts are received for monitoring issues and completed reports. The audit sampled chloride at Point 41 (two samples in 2026) and dissolved arsenic at Point 29 (four monthly samples from March 2026).
EPL 13007 M3.2	Monitoring for pollutant concentrations discharged to waters or applied to a utilisation area must follow the Approved Methods Publication unless another method has been approved by the EPA in writing.	C	A NATA-accredited laboratory arrangement was described: Ecolab onsite for pH and conductivity and ALS for other testing. Ecolab/Nalco accreditation number 1099 and its approved methods list dated 9 October 2025 were sighted.
EPL 13007 R5.10 (formerly R4.12)	The EPA must be notified if the leak detection system surrounding the leachate ponds is triggered, including the potential leak location, dispersion analysis and potential impacts.	C	LNAR ponds 3, 4 and 5 have inter-liner sumps checked using an EC sample probe. Results are recorded in the monthly Service Stream report under LNAR Stage 1 - Ash Repository Leachate Pump Out and Storage Data. The June 2026 report recorded dry results back to September 2025. Service Stream advised that liquid detected by the EC meter would be tested and escalated to EnergyAustralia environment and maintenance teams. Weekly contract meetings also cover ash placement, salt deliveries, water transfers, fabric filter dust, contract deliverables and environmental matters.
LNAR OEMP Section 5.6.4, Table 5-19, Item 2	Implement the land and surface water management controls specified for LNAR operations.	C	The site inspection observed earthen bunding directing water to ponds, liners used to separate rainfall from ash, completed capping works visible at MPAR, ash delivery and compaction, and lined ponds managed by manual pumping. Service Stream demonstrated the LNAR Pond and Ash Conditioning Tracking spreadsheet, including daily freeboard, inflows, outflows and volumes, key metrics, rainfall, salts and APA sump-bin tabs. Propeller software was described as tracking waste shapes and volumes and supporting rainfall-flow modelling.
EPL 13007 L5.3	Only the following waste streams generated at the premises may be disposed of within the ash repository: ash, mill pyrites, demineralisation and polisher plant effluents, chemical clean solutions, cooling tower sediments, ion exchange resins and fabric filter bags.	NC-L	The filter-bag and pond-sediment disposal area contained a blue plastic drum, two tyres and black liner material in addition to the expected waste. The source audit classified this as a minor non-conformance with EPL L5.3. The internal waste-approval process, approval records and inspection arrangements should be reviewed to prevent recurrence.
Risk Register RISK-0526-00017	Water discharge from the site does not meet required water quality from the coal settling pond and ash repositories.	C	Service Stream advised that weather is checked three times each day to plan water management; evidence of those checks was not sighted. Retaining the weather observations or source records with the LNAR daily tracking workbook would strengthen the evidence trail.
Risk Register RISK-0526-00023	Construction or maintenance activities may cause erosion and sediment impacts.	C	The MPAR project was described as using an Erosion Management Plan. An Authority to Dig Form dated 2 July 2026 was sighted with Environmental Manager sign-off and erosion-control appendices. The site inspection observed sediment fencing and hay bales in use to control runoff.

Reference	Conditions	Finding	Comments / Evidence
Risk Register RISK-0526-00009	Unauthorised clearing of native vegetation may disturb or remove vegetation and fauna habitat.	C	The Authority to Dig process was described and a form dated 12 May 2026 included environmental questions and Environmental Manager sign-off. An Environmental Walkdown dated 10 June 2026 included records and photographs. The site inspection observed sediment fencing and hay bales at the project area. Wildlife management records were also sighted.

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