# HOWSE PROPERTY ANNUAL REPORT

## April 2025 – March 2026 Activities



Tata Steel Minerals Canada Limited

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# EXECUTIVE SUMMARY – ENGLISH

Tata Steel Minerals Canada (TSMC) operates the Direct Shipping Ore (DSO) Timmins Facility in Newfoundland and Labrador, approximately 25 km northwest of Schefferville, Quebec. The facility includes several open-pit mining properties, a processing plant, and supporting infrastructure. Iron ore extracted and processed at the site is transported by rail to Sept-Îles, Quebec, and shipped to customers for the production of steel and related products.

The Howse Project, also referred to as the Designated Project, is an open-pit iron ore mining operation located near the DSO Timmins Facility. The Project includes the construction, operation, rehabilitation, and closure of an open-pit mine with an expected production capacity of up to 44 million tonnes of iron ore over an estimated mine life of approximately 20 years. The Project received federal approval through the Impact Assessment Agency of Canada (IAAC) Decision Statement issued on June 29, 2018. This annual report is submitted in accordance with Condition 2.8 of the Decision Statement and summarizes activities undertaken between April 1, 2025, and March 31, 2026, to demonstrate compliance with applicable federal environmental assessment requirements.

Following the commencement of construction in February 2025, the Project progressed into its initial operational phase during the current reporting period. Key activities completed during 2025–2026 included:

- Continued development of the Howse pit;
- Expansion of surface water management infrastructure, including ditches, sumps, and pumping systems to effectively manage runoff and sediment control;
- Ongoing implementation of approved Follow-up Programs covering surface water, groundwater, wetlands, migratory birds, air quality, caribou monitoring, cultural heritage, and community engagement;
- Completion of surface water, groundwater, lake level, wetland, and air quality monitoring programs in accordance with regulatory commitments;
- Completion of a wetland vegetation survey to assess potential effects on habitat functions supporting migratory birds;
- Continued engagement and consultation with Indigenous communities, including establishment of a Howse Project Follow-up Plan Working Group to support collaborative review of monitoring and follow-up programs;
- Maintenance and upgrades of bypass roads and continued coordination with Indigenous communities regarding access to traditional land-use areas;
- Continued implementation and refinement of environmental management, communication, and compliance programs in support of Project operations.

Monitoring results collected during the reporting period indicate that environmental conditions generally remained consistent with baseline and historical conditions. Surface water quality, groundwater quality and levels, lake water levels, wetland monitoring results, and air quality monitoring data did not identify any Project-related effects requiring additional mitigation measures. All measured concentrations of regulated air contaminants remained below applicable provincial criteria. No impacts to fish habitat, migratory birds, wetlands, groundwater resources, or traditional land use activities were identified through the monitoring programs conducted during the reporting period.

One reportable accident occurred during the reporting period involving a fire in an excavator operating within the Howse Pit. The incident was managed in accordance with the Howse Project Accidents and Malfunctions Response Plan, including regulatory notifications and follow-up reporting. In addition, six minor operational

spills were reported and addressed through immediate cleanup and corrective actions. No residual adverse environmental effects were identified following the closure of all incidents.

TSMC remains committed to implementing the Howse Project in a manner that protects the environment, respects Indigenous interests, and complies with all applicable regulatory requirements. Environmental monitoring programs, follow-up activities, adaptive management measures, and community engagement initiatives will continue throughout future phases of Project development and operation to ensure environmental performance and regulatory compliance are maintained.

# RÉSUMÉ EXÉCUTIF – FRANÇAIS

Tata Steel Minerals Canada (TSMC) exploite l'installation Direct Shipping Ore (DSO) Timmins à Terre-Neuve-et-Labrador, à environ 25 km au nord-ouest de Schefferville, au Québec. L'installation comprend plusieurs mines à ciel ouvert, une usine de traitement ainsi que des infrastructures de soutien. Le minerai de fer extrait et traité sur le site est transporté par chemin de fer jusqu'à Sept-Îles, au Québec, puis expédié aux clients pour la fabrication d'acier et de produits connexes.

Le projet Howse, également appelé Projet désigné, est une exploitation minière de minerai de fer à ciel ouvert située à proximité de l'installation DSO Timmins. Le projet comprend la construction, l'exploitation, la réhabilitation et la fermeture d'une mine à ciel ouvert dont la capacité de production prévue est d'au plus 44 millions de tonnes de minerai de fer sur une durée de vie estimée d'environ 20 ans. Le projet a reçu l'approbation fédérale par l'entremise de la Déclaration de décision émise par l'Agence d'évaluation d'impact du Canada (AEIC) le 29 juin 2018. Le présent rapport annuel est soumis conformément à la condition 2.8 de cette Déclaration de décision et résume les activités réalisées entre le 1er avril 2025 et le 31 mars 2026 afin de démontrer la conformité aux exigences fédérales applicables en matière d'évaluation environnementale.

À la suite du début des travaux de construction en février 2025, le projet est passé à sa phase opérationnelle initiale au cours de la période visée par le présent rapport. Les principales activités réalisées en 2025-2026 comprennent :

- La poursuite du développement de la fosse Howse;
- L'agrandissement des infrastructures de gestion des eaux de surface, notamment les fossés, puisards et systèmes de pompage, afin d'assurer une gestion efficace du ruissellement et du contrôle des sédiments;
- La mise en œuvre continue des programmes de suivi approuvés portant sur les eaux de surface, les eaux souterraines, les milieux humides, les oiseaux migrateurs, la qualité de l'air, le suivi du caribou, le patrimoine culturel et la mobilisation des communautés;
- La réalisation des programmes de suivi de la qualité des eaux de surface, des eaux souterraines, des niveaux d'eau des lacs, des milieux humides et de la qualité de l'air conformément aux engagements réglementaires;
- La réalisation d'un inventaire de la végétation des milieux humides afin d'évaluer les effets potentiels sur les fonctions d'habitat soutenant les oiseaux migrateurs;
- La poursuite des activités de mobilisation et de consultation auprès des communautés autochtones, y compris la création d'un groupe de travail sur le plan de suivi du projet Howse afin de favoriser l'examen collaboratif des programmes de suivi et de surveillance;
- L'entretien et l'amélioration des routes de contournement ainsi que la poursuite de la coordination avec les communautés autochtones concernant l'accès aux zones d'utilisation traditionnelle du territoire;
- La poursuite de la mise en œuvre et de l'amélioration des programmes de gestion environnementale, de communication et de conformité en appui aux activités du projet.

Les résultats de suivi recueillis au cours de la période visée indiquent que les conditions environnementales sont demeurées généralement conformes aux conditions de référence et aux données historiques. Les données sur la qualité des eaux de surface, la qualité et les niveaux des eaux souterraines, les niveaux d'eau des lacs, les résultats du suivi des milieux humides et les données sur la qualité de l'air n'ont révélé aucun effet lié au projet nécessitant la mise en place de mesures d'atténuation additionnelles. Toutes les concentrations mesurées de contaminants atmosphériques réglementés sont demeurées inférieures aux critères provinciaux applicables. Aucun impact sur l'habitat du poisson, les oiseaux migrateurs, les milieux

humides, les ressources en eaux souterraines ou les activités traditionnelles d'utilisation du territoire n'a été relevé dans le cadre des programmes de suivi réalisés durant la période visée.

Un accident à déclaration obligatoire est survenu durant la période visée, soit un incendie dans une excavatrice en activité dans la fosse Howse. L'incident a été géré conformément au Plan d'intervention en cas d'accident ou de défaillance du projet Howse, y compris les avis réglementaires et les rapports de suivi requis. De plus, six déversements opérationnels mineurs ont été signalés et traités au moyen de mesures immédiates de nettoyage et d'actions correctives. Aucun effet environnemental négatif résiduel n'a été constaté à la suite de la clôture de ces incidents.

TSMC demeure engagée à mettre en œuvre le projet Howse de façon à protéger l'environnement, à respecter les intérêts des peuples autochtones et à se conformer à l'ensemble des exigences réglementaires applicables. Les programmes de surveillance environnementale, les activités de suivi, les mesures de gestion adaptative et les initiatives de mobilisation communautaire se poursuivront au cours des prochaines phases de développement et d'exploitation du projet afin d'assurer le maintien de la performance environnementale et de la conformité réglementaire.

# 1. HOWSE PROPERTY PROJECT UPDATE

Tata Steel Minerals Canada (TSMC) commenced construction on the Howse Project on February 23, 2025. Following the preparatory activities completed during the previous reporting period, the Project has progressed into its early stages of construction and operations. Initial efforts had focused on planning, scheduling, and establishing the necessary compliance frameworks, including monitoring systems, infrastructure, and follow-up programs required to support project execution in alignment with regulatory requirements.

During the current reporting period (2025–2026), activities have transitioned to active operations, including the continued development of the pit. Environmental monitoring programs, community engagement initiatives, and implementation of the Howse Project Follow-up Programs have been carried out in accordance with the established project schedule and regulatory commitments. These activities continue to support compliance with the conditions of the Newfoundland and Labrador provincial environmental release and the federal Impact Assessment Agency of Canada (IAAC) Decision Statement.

TSMC continues to implement and refine its compliance and monitoring programs as outlined in the approved Follow-up Plans. These programs are being executed in alignment with the phased development of the Project and are subject to ongoing review and improvement to ensure effectiveness and regulatory adherence.

Engagement with Indigenous groups and local communities remains a key priority. TSMC has maintained active and ongoing dialogue with communities on project-related activities, environmental performance, and areas of interest or concern. Feedback received through these engagements continues to inform adaptive management measures, with a focus on minimizing environmental impacts and optimizing project operations.

As required under the Howse Property Iron Mine Project Decision Statement (June 2018), this report summarizes construction and operational activities, environmental monitoring results, follow-up program implementation, and community engagement efforts for the reporting period.

A Table of Concordance for Conditions is provided at the end of the text.

# 2. GENERAL CONDITIONS

Section 2 covers the General Conditions 2.1 to 2.13 of the IAAC Decision Statement for the Howse Project.

The activities conducted to meet and comply with the requirements of Conditions 2.1 to 2.13 are outlined in the Table of Concordance at the end of the text.

All Annual Reports and Follow-up Programs required by Condition 2.10 are available for public access on TSMC's website: https://www.tatasteelcanada.com/.

# 3. FISH AND FISH HABITAT

## *3.1 Erosion and Sediment Control*

Erosion and sediment control measures and mitigations are an integral part of the various project infrastructure. Planning to ensure that sediment and erosion control objectives are achieved has been incorporated into the various permanent and temporary water management infrastructures that will be utilized during the project construction and operations. Expansions to the initial water management ditches and sumps created during the initial construction were conducted in the current reporting period. The expansions were conducted to scale with the pit surface area to ensure effective management of surface runoff is in place. Pumping is conducted from the drainage collections sumps around the pit and pumped towards the water

management infrastructures. A minor overflow of sump water occurred on 22 May 2025 due to pump not operating. All overflow was on land was contained by building up the sump, and the pump issues were resolved on the same day. To avoid recurrence, increased sump sizing and redundant pumps have been incorporated into the planning for the spring-melt in the upcoming year as a part of improvements from lessons learned.

## *3.2 Follow-up Program*

There were no updates made to the content of the fish and fish habitat follow-up plan during the reporting period. The program was implemented throughout the Spring to Fall period during which seasonal conditions allowed access to the monitoring points.

### 3.2.1 Surface Water Quality Monitoring

Surface water quality samples were taken between June 8 and October 8, 2025, for four quarters (taken at least 1 month apart). These samples are collected for the purpose of monitoring surface water quality through the Water Chemistry Analysis Program in the creeks and lakes potentially affected by the Howse project. The locations sampled are Triangle Lake (TL), Burnetta Creek (BC), Burnetta Lake (BL), Morley Lake (ML), Pinette Lake (SW5) and 4 points along Goodream Creek and its tributaries (SW1, 2, 3 and 4) which are located into the watersheds that might be affected by Howse operations.

Results for all parameters on the samples collected in 2025 remain within the average of historical results collected since 2016 as part of the baseline monitoring program. Therefore, there were no detectable effects from the activities at the Howse project on the surface water quality in creeks and lakes surrounding the Project.

Certificates of Analyses for sampling results of the 2025 surface water quality monitoring program are presented in Appendix I.

### 3.2.2 Lake Water Levels Monitoring

Lake water levels were measured in summer and fall 2025. However, all activities conducted in the reporting period at the Howse project occurred at surface level and were not susceptible of affecting water levels in the lakes surrounding the Project.

The water depth probes and barometers were installed on June 8, 2025, and programmed to start logging simultaneously on June 9, 2025, at midnight. They were removed for the winter period on September 27, 2025. They will be reinstalled as soon as conditions allow access to the lakes for data collection throughout the ice-free period in 2026.

Results of the measurements collected in 2025 show no apparent impact on lake water levels from project activities. Data indicated that the water surface elevations during the monitoring period remained broadly consistent with historical conditions observed between 2019 and 2024.

The measurements collected during this period and the comparative analysis conducted with results from previous years are presented in the report included in Appendix II.

## *3.3 Groundwater Quality and Levels*

Activities conducted in 2025 at the Howse project occurred mostly at surface level, and pit development remained well above the anticipated groundwater level. Dewatering was therefore not required, and activities had no influence on groundwater levels and quality.

Groundwater levels in the wells on the Howse Property were measured four times between June 30 and October 9, 2025. Water quality sampling was conducted twice between September 2 and October 9, 2025. The reduced sampling frequency was due to challenges in procuring and operating suitable equipment for deep well sampling at the start of the monitoring season. Newly acquired equipment did not perform as expected at the Howse well depths, and despite trouble shooting with the vendor, sample extraction could not be

achieved. It was therefore not possible to collect the four sets of samples that were originally planned as an alternative, sampling was initiated with bailers and manual drawing equipment.

The water levels measured in the wells generally remained consistent throughout the monitoring period and only reflected seasonal variations that were also observed in other areas monitored by TSMC. Given that project activities remained above the groundwater table, the water quality data and the recorded water level data collected are considered representative baseline conditions for future comparison as the Project advances.

Certificates of Analyses showing the results of the samples collected in 2025 along with well water level measurements are presented in Appendix III.

Groundwater levels will be measured, and samples will be collected four times in 2026, as per the monitoring program, starting in early summer when access to all the wells become possible.

# 4. MIGRATORY BIRDS

## *4.1 Bank Swallow*

No Bank Swallows were observed in the designated Howse project area or in any of the surrounding areas between April 1, 2025, to March 31, 2026.

Pit construction was not started during the 2025 bank swallow nesting period and activities in this period occurred only in areas where there is no suitable bank swallow habitat. It was therefore not required to have the presence of bank swallows surveyed by a qualified individual.

The pit walls will be surveyed by a qualified individual at the start of the 2026 nesting season.

## *4.2 Howse Wetland Monitoring (Avifauna Habitat)*

Wetland water levels were measured seven times in 2024, between June 27 and October 27. The results collected during these visits were compared with baseline results from previous years to identify any impacts from activities conducted at the Howse project.

A second wetland vegetation survey was also conducted in 2025 following the start of construction activities. Results of this survey were compared with those of the previous survey conducted in 2022. The comparative analysis shows that no significant change in the plant species diversity was observed between 2022 and 2025; therefore, no change in wetland functions beneficial to migratory birds were identified. The next survey will be conducted in 2030 as per condition 4.8.1 of the Decision Statement

The results of wetland well measurements collected in 2025, and the analysis performed with previous year's results are presented in Appendix IV.

The wetland vegetation survey is presented in Appendix V.

# 5. HEALTH AND SOCIO-ECONOMIC CONDITIONS OF INDIGENOUS PEOPLES

## *5.1 Air Quality*

TSMC's Follow-Up Program for air quality was implemented from the start of construction and will remain in place until the end of decommissioning of the Designated Project. There were no updates made to the content of the air quality follow-up plan during the reporting period.

Air quality monitoring in 2025 was started as soon as access to all stations became possible following the snowmelt period. As detailed in the Follow-Up Program, air quality monitoring comprises three main aspects:

real-time surveillance of PM2.5, PM10, TPM, nitrogen dioxide ($NO_2$) and carbon monoxide (CO) concentrations using Aeroqual AQS1 monitors, dustfall monitoring using dust jars, and sulfur dioxide ($SO_2$) concentrations using passive samplers. These three types of monitoring are conducted at all stations required under condition 5.9.1 of the Decision Statement. Additionally, a BAM 1020 PM2.5 monitor and a T200 $NO_x$ monitor are located at TSMC's camp (station R40) and are operated year-round.

Monitoring results are compared with air quality standards applicable in the Province of Newfoundland and Labrador. There were no exceedances of applicable criteria noted in 2025.

A few instances of high hourly averages for particulates concentrations (PM2.5, PM10 and TPM) were detected but daily averages remained below applicable daily average criteria. (25, 50 and 120 µg/$m^3$ respectively). The highest hourly values were experienced during periods where the Howse project and surrounding areas were frequently impacted by smoke from the forest fires occurring in the Prairie provinces at the time.

The applicable criteria for dustfall deposition is 7g/$m^2$/30days. One exceedance was noted at station R3 located near Howell's river with a value of 9.1g/$m^2$/30-days in the period between September 14 and October 16. However, this exceedance does not appear to have been caused by activities on the Howse Project and was most likely caused by dust of biological origin such as plant matter since the station is located in a semi-forested area. Indeed, dust deposition at stations located closer to Howse activities were lower during the same period. Iron concentration at R3 was also significantly lower than in any other sample collected during the same period.

Measured concentrations of $NO_2$, $SO_2$, and CO all remained well below any applicable criteria at all stations including the ones located closest to the Project.

It should be noted that any concentration of contaminants detected by these monitoring programs should not all be directly attributed to operations at the Howse Project since operations associated with the DSO3 area including mining, ore transport and processing, rail car loading, electricity generation, etc. all occur within 3 to 5 kilometers of the Howse project. Some of the monitoring stations required by the Decision Statement are also located closer to DSO3 infrastructures than to those of the Howse Project.

Certificates of analyses for $SO_2$ and dustfall analyses along with a table showing calculated dust deposition rates are presented in Appendix VI.

The 12-hour (July month sampling only) and daily (24 hour) averaging results for the datasheets downloaded from the AQS1 monitors are presented in Appendix VII. The hourly and 5 min datasheets are too voluminous to be presented in this report but can be made available upon request.

### *5.2 Country Foods*

TSMC is committed to duplicating the Country Foods sampling program 2 years after the commencement of the Howse Operations phase and, subsequently, every five years for the duration of the operations phase.

There were no updates made to the content of the country foods follow-up plan during the reporting period. The survey will be conducted as per the Project schedule in the upcoming reporting period.

## 6. CURRENT USE OF LANDS AND RESOURCES FOR TRADITIONAL PURPOSES

### *6.1 Bypass Roads*

Maintenance and upgrade works were carried out to the existing DSO Timmins Project bypass roads which are a part of the Howse bypass roads. The following maintenance and upgrade activities were undertaken:

- Grading and levelling of road from S-turn bypass road entrance to Km.4.

- Grading and levelling of road from Km.4 to Km.13.
- Bypass road intersections along the Kivivic 3 property were maintained.
- Berms were installed and strengthened where required.
- Additional signage installed for safe movement of traffic.

The construction of the proposed additional bypass, referred to as the Howse bypass, was planned during the construction phase. This bypass road section would run along an existing exploration road which runs from Km.13 of the DSO Timmins Project bypass roads, where it intersects with TSMC's Goodwood Haul Road, towards the community traditional and recreational land use areas near the Howse project.

The Howse bypass was discussed with the Indigenous groups to ensure access is in place during the construction phase. Feedback was provided to TSMC by the Indigenous groups opposing the proposed Howse bypass due to the lengthier travel time, added fuel cost and vehicle wear and tear when accessing these areas. Alternative access through TSMC site to these areas was selected as the preferred access by the Indigenous groups. TSMC has historically provided the Indigenous groups access to their traditional and recreational land use areas near the Howse Project through the main DSO Timmins Project site gate. Local recreational and traditional land users utilize the wide and well-maintained road from the town of Schefferville to reach the DSO Timmins Project site gate, at which point they are escorted by TSMC Security staff to the entrance of the access roads near the Howse Project to ensure their onsite safety in a heavy-vehicle traffic area. TSMC will ensure that these measures are in place for the life of the Project.

### *6.2 Caribou*

No caribou sightings were recorded within the defined monitoring thresholds during the reporting period. While some caribou observations were reported, all were located beyond the threshold distances that would trigger additional mitigation measures. Accordingly, activities were conducted in accordance with standard survey requirements, monitoring protocols, and precautionary operational procedures.

Due to data sensitivity, TSMC no longer maintains a formal arrangement to receive data from the Caribou Ungava program. In its absence, TSMC has continued to implement the Caribou Follow-up Plan in accordance with the Decision Statement by maintaining ongoing engagement with Indigenous groups to track and communicate caribou presence in the broader project area. To resolve this gap, TSMC met with representatives of Québec's Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (MELCCFP), which is responsible for monitoring migratory caribou herds in the region, including the George River and Leaf River herds. As a result, a collaborative approach was established whereby MELCCFP will notify TSMC of any radio-collared caribou detected within or approaching the defined threshold distances in the Caribou Follow-up Plan. This approach supports the timely implementation of mitigation measures and enhances coordination across jurisdictions.

TSMC also engaged with the Government of Newfoundland and Labrador to ensure that any caribou observations are communicated to the appropriate authorities for guidance and response.

To support coordinated communication and follow-up, a Howse Project Working Group was also established with participating Indigenous communities. This forum facilitates discussion of follow-up programs, including caribou monitoring, and supports the development of effective reporting pathways. The first document reviewed as a group was the Caribou Follow-up Plan. As a result of these discussions, the Plan was further refined and redistributed to participating Indigenous groups for additional review and comment. The plan is currently under review with the Community inputs and further feedback, and changes will be incorporated into

.

### *6.3 Communications*

TSMC communicated progress and high-level results of its current monitoring programs to Indigenous groups during its Joint Community Health, Safety and Environment Committee meetings, held in this reporting period on 15 July 2025 and 14 November 2025. Site visits were also conducted during the reporting period by Environmental liaisons and leadership from the Indigenous groups.

With a view to strengthening the engagement process with Indigenous communities, a Follow-up Plan Working Group was established during the reporting year to review and update Follow-up Plans. A meeting was held on 10 November 2025 with Indigenous groups and further meetings will be held in the next reporting year, thus establishing a more collaborative approach to consultation on the Follow-up Plans.

Appendix VIII details the communications with communities in relation to the Howse Project.

## 7. PHYSICAL AND CULTURAL HERITAGE AND STRUCTURES, SITES OR THINGS OF HISTORICAL, ARCHAEOLOGICAL, PALEONTOLOGICAL OR ARCHITECTURAL SIGNIFICANCE

### *7.1 Follow-up Program*

The follow-up plan concerning the use of cultural and other sites from resulting noise levels was updated to be made fully compliant with Condition 7.5 of the decision statement and to present the equipment that will be used to monitor noise levels. Mitigation measures to be put in place in case of noise exceedances were also presented in this update.

There were no updates made to the content of the follow-up plan during the reporting period.

### *7.2 Noise Complaint Protocol and Cultural Heritage Control Plan*

There were no significant updates made to the content of the noise complaint protocol, which is included in the communication plan, and the Cultural Heritage Control plan. The documents were updated to a new standard format used for all follow-up programs and contacts were updated to reflect changes in TSMC personnel.

There were no updates made to this protocol during the reporting period.

### *7.3 Noise monitoring*

Noise monitoring could not be conducted during the reporting period. The noise monitoring equipment that was procured for the Project monitoring requirements proved to be non-functional despite several troubleshooting attempts in-house and in collaboration with the vendor. It was eventually determined through discussion with the vendor and manufacturer that the firmware included with the monitors was causing the malfunctions. Monitors had to be returned to the vendor to install a new firmware. By the time monitors were returned, the onset of winter conditions did not allow access to the monitoring stations required under the Decision Statement. The functioning of all monitors was tested, reviewed and confirmed during the winter period to ensure adherence going forward.

TSMC is committed to conduct noise monitoring in compliance with the Follow-Up Plan in 2026, throughout the period during which the stations are accessible.

# 8. CUMULATIVE EFFECTS

There were no requests made by a relevant authority or the Town of Schefferville to participate in regional initiatives relating to the monitoring, assessment and management of cumulative environmental effects during the period of the reporting year following the start of construction.

# 9. ACCIDENTS AND MALFUNCTIONS

There was one reportable incident on Howse Project as defined in the Howse Project Accidents and Malfunctions Plan. The incident involved an excavator having caught fire inside the Howse Pit. A 24-Hour Immediate Notification was sent to all the Agency and the Indigenous Groups as outlined in the Howse Project Accidents and Malfunctions Plan followed by a 30-Day Detailed Incident Report.

Six minor operational spills occurred during the reporting period at the Howse Project. All spill incidents were followed up by cleanup and corrective actions immediately.

## *9.1 Accidents and Malfunctions Response Plan*

A complete accident and response plan was developed in compliance with Condition 9.2 of the decision statement. Responses to be implemented in case of accidents and malfunctions that may cause adverse environmental effects, such as slope failures, sedimentation pond failures, ditch failures, destabilization of waste rock piles and overburden stockpiles, or rockslides are presented in this plan.

No changes have been made to the Accidents and Malfunctions Plan submitted to the five concerned Indigenous groups on January 14, 2025. The version submitted for consultation was also submitted to the Agency on February 2, 2025.

# 10. SCHEDULES AND RECORD KEEPING

Conditions 10.1-10.4 of the Howse Property Decision Statement indicate how the Proponent will submit to the Agency schedules associated with the Howse Property Project after the start of construction.

TSMC has maintained all records required to demonstrate compliance with the conditions of the release of the Howse Property Project.

The Annual Report requirements under conditions 2.8 and 2.9 of the Howse Property Iron Mine Project Decision Statement issued in June 2018 are presented below for the reporting period of April 1, 2025, to March 31, 2026.

The schedule is presented in Appendix IX.

# TABLE OF CONCORDANCE FOR CONDITIONS

| IAAC Release Condition | | 2024-2025 Activities |
|---|---|---|
| **2. General Conditions** | | |
| 2.1 | The Proponent shall ensure that its actions in meeting the conditions set out in this Decision Statement are considered in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time the Proponent takes action, including community and Indigenous traditional knowledge, are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically and technically feasible technologies. | TSMC is committed to follow best practices for all its activities. |
| 2.2 | The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement: | TSMC has continued to consult with stakeholders and Indigenous groups on IAAC conditions and related topics. TSMC is committed to follow this requirement for all consultation activities. |
| | 2.2.1 provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation; | |
| | 2.2.2 provide sufficient information on the scope and the subject matter of the consultation and a reasonable period of time to permit the party or parties being consulted to prepare their views and information; | |
| | 2.2.3 undertake an impartial consideration of all views and information presented by the party or parties being consulted on the subject matter of the consultation; and | |
| | 2.2.4 advise in a timely manner the party or parties being consulted on how the views and information received have been considered by the Proponent. | |
| 2.3 | The Proponent shall, where consultation with Indigenous groups is a requirement of a condition set out in this Decision Statement, communicate with each Indigenous group with respect to the manner by which to satisfy the consultation requirements referred to in condition 2.2, including methods of notification, the type of information, the period of time to be provided when seeking input, the process to be used by the Proponent to undertake impartial consideration of all views and information presented on the subject of the consultation, the period of time to advise Indigenous groups of how their views and information were considered by the Proponent and the means by which Indigenous groups will be advised. | TSMC has continued to consult with stakeholders and Indigenous groups on IAAC conditions and related topics. TSMC is committed to follow this requirement for all consultation activities. |
| 2.4 | The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement, determine the following information, for each follow-up program: | The current Follow-up Programs for TSMC's Howse project include this information. |
| | 2.4.1 the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program; | |
| | 2.4.2 the scope, content and frequency of reporting of the results of the follow-up program; | |
| | 2.4.3 the levels of environmental change relative to baseline conditions that would require the Proponent to implement modified or additional mitigation measure(s), including instances where the Proponent may require Designated Project activities to be stopped; and | |
| | 2.4.4 the technically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.4.3 have been reached or exceeded. | |
| 2.5 | The Proponent shall submit the information referred to in condition 2.4 to the Agency prior to the implementation of each follow-up program. The Proponent shall update that information in consultation with Indigenous groups and relevant authorities during the implementation of each follow-up program, and shall provide the updated information to the Agency, Indigenous groups and relevant authorities within 30 days of the information being updated. | Updated plans were submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plans have been implemented. |
| 2.6 | The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement: | TSMC is committed to follow these requirements for all follow-up programs. |
| | 2.6.1 conduct the follow-up program according to the information determined pursuant to condition 2.4; | |
| | 2.6.2 undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s); | |

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| | 2.6.3 determine whether modified or additional mitigation measures are required based on the monitoring and analysis undertaken pursuant to condition 2.6.2; and | The programs have been updated for completeness to comply with all applicable conditions. |
| | 2.6.4 if modified or additional mitigation measures are required pursuant to condition 2.6.3, implement these mitigation measures in a timely manner and monitor them pursuant to condition 2.6.2. | |
| 2.7 | Where consultation with Indigenous groups is a requirement of a follow-up program, the Proponent shall discuss with each Indigenous group opportunities for the participation of that Indigenous group in the implementation of the follow-up program, including the analysis of the follow-up results and whether modified or additional mitigation measures are required, as set out in condition 2.6. | TSMC is committed to follow this requirement for all consultation activities. |
| 2.8 | The Proponent shall, commencing in the reporting year during which the Proponent begins the implementation of the conditions set out in this Decision Statement, prepare an annual report that sets out: | TSMC has produced an annual report for its activities in each reporting period since 2018; and the current report covers 2025-2026 activities. |
| | 2.8.1 the activities undertaken by the Proponent in the reporting year to comply with each of the conditions set out in this Decision Statement; | |
| | 2.8.2 how the Proponent complied with condition 2.1; | |
| | 2.8.3 for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation; | |
| | 2.8.4 the information referred to in conditions 2.4 and 2.5 for each follow-up program; | |
| | 2.8.5 the results of the follow-up program requirements identified in conditions 3.6, 4.7, 4.8, 5.9, 5.10, 6.6, 6.7, and 7.5; and | |
| | 2.8.6 any modified or additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.6. | |
| 2.9 | The Proponent shall submit to the Agency the annual report referred to in condition 2.8, including an executive summary in both official languages, no later than June 30 following the reporting year to which the annual report applies. | TSMC is committed to comply with this condition. |
| 2.10 | The Proponent shall publish on the Internet, or any medium which is publicly available, the annual reports and the executive summaries referred to in conditions 2.8 and 2.9, the dust management strategy referred to in condition 5.7, the communication plan referred to in condition 6.8, the cultural heritage control plan referred to in condition 7.6, the communication plan referred to in condition 9.5, the schedules referred to in conditions 10.1, and 10.2, and any update(s) or revision(s) to the above documents, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available for 25 years following the end of operation, or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall notify the Agency and Indigenous groups of the availability of these documents within 48 hours of their publication. | Annual reports, schedules. and the Follow-up Program Documents have been published on TSMC's website for public access: https://www.tatasteelcanada.com/ |
| 2.11 | The Proponent shall notify the Agency and Indigenous groups in writing no later than 60 days after the day on which there is a transfer of ownership, care, control or management of the Designated Project in whole or in part. | No transfer has occurred to date. |
| 2.12 | The Proponent shall consult with Indigenous groups prior to initiating any material change(s) to the Designated Project that may result in adverse environmental effects and shall notify the Agency in writing no later than 60 days prior to initiating the change(s). | No changes to the Designated Project that may result in adverse environmental effects have been proposed/initiated to date. |
| 2.13 | In notifying the Agency pursuant to condition 2.12, the Proponent shall provide the Agency with a description of the potential adverse environmental effects of the change(s) to the Designated Project, the proposed mitigation measures and follow-up requirements to be implemented by the Proponent and the results of the consultation with Indigenous groups. | No changes to the Designated Project that may result in adverse environmental effects have been proposed/initiated to date. |
| **3. Fish and Fish Habitat** | | |
| 3.1 | The Proponent shall implement erosion and sedimentation control measures within the Designated Project area during all phases of the Designated Project to avoid the deposit of deleterious substances in waters frequented by fish. | There was no deposition of deleterious substances in waters frequented by fish in relation to the Howse Property Project during the reporting period. A minor overflow of sump water occurred on 22 May 2025 due to pump not operating. All overflow was on land was contained by building up the sump, and the pump issues were |

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| | | resolved on the same day. To avoid recurrence, increased sump sizing and redundant pumps have been incorporated into the planning for the spring-melt in the upcoming year as a part of improvements from lessons learned. All runoff from project infrastructure was collected via ditches into Timmins 4 Sedimentation Pond 3. There was no discharge from the sedimentation pond in the reporting period.<br>Erosion and sedimentation control measures will be implemented as required during construction and operations. |
| 3.2 | The Proponent shall collect site runoff and pit dewatering water into HowseA and Timmins4 sedimentations ponds. The Proponent shall treat water at the sedimentation ponds prior to its discharge into the environment, if necessary, to meet the requirements of subsection 36(3) of the Fisheries Act. | No site runoff was generated, and pit dewatering was not required during the reporting period. |
| 3.3 | The Proponent shall use a time delay blasting technique when blasting. | All blasts during the reporting period complied with time-delay requirements. TSMC is committed to comply with this condition for all blasting events at the Designated Project. |
| 3.4 | The Proponent shall not set the blast charge per delay to above 1092 kilograms. | All blasts during the reporting period complied with blast charge per delay requirements. TSMC is committed to comply with this condition for all blasting events at the Designated Project. |
| 3.5 | The Proponent shall manage waste rock acid generation taking into account the Mine Environment Neutral Drainage program's Prediction Manual for Drainage Chemistry from Sulphidic Geological Materials. | TSMC is committed to comply with this condition once the production phase of the Project starts. |
| 3.6 | The Proponent shall develop, prior to construction, a follow-up program to verify the accuracy of the environmental assessment as it pertains to fish and fish habitat and to determine the effectiveness of mitigation measures referred to in conditions 3.1 to 3.5. The Proponent shall provide the follow-up program to the Agency prior to construction. The Proponent shall implement the follow-up program from the start of construction to the end of decommissioning. The Proponent shall review and update the follow-up program in consultation with Indigenous groups and relevant authorities and shall provide this update to the Agency prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. As part of the follow-up program, the Proponent shall: | Reformatted plan was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2, 2025. The plan has been implemented. |
| | 3.6.1 monitor water quality and quantity parameters as per the Water Management Plan (October 2015) in the environmental impact statement and at locations outlined in figure 1 of the Proponent's final response to Information Request 106 (July 24, 2017), including: | TSMC is committed to comply with this condition, see below. |
| | 3.6.1.1 water levels in Triangle Lake, Morley Lake, Burnetta Lake and Pinette Lake; | Water gauges were first installed at these locations in fall 2017 and replaced by a new probe system in 2023.<br><br>Data collection was done in each year since 2023. |
| | 3.6.1.2 groundwater levels at monitoring well locations outlined in figure 1 or equivalent locations where groundwater may be impacted by the Designated Project; | Groundwater levels were measured four times between June and October 2025. Additional monitoring well will be installed during the construction phase near Triangle Lake. |
| | 3.6.1.3 iron concentration at the final discharge points of the HowseA and Timmins 4 sedimentation ponds; | There was no effluent discharge during the reporting period. Monitoring will be conducted whenever discharge occurs. |
| | 3.6.1.4 effluent quality at the final discharge points of the HowseA and Timmins 4 sedimentation ponds, in accordance with the Metal Mining Effluent Regulations and taking into account the Canadian Council of Ministers of the Environment's Water Quality Guidelines for the Protection of Aquatic Life; and | There was no effluent discharge during the reporting period. Monitoring will be conducted whenever discharge occurs. |
| | 3.6.1.5 water quality between the HowseA sedimentation pond final discharge point and Triangle Lake, and in Triangle Lake, Burnetta Lake and Pinette Lake. | Water quality baseline monitoring has been conducted since 2016. Monitoring will continue throughout the life of the Project. |

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| | | Samples were collected four times between June and October 2025. |
| | 3.6.2 update the hydrogeological groundwater model from the Proponent's final response to Information Request 106 (July 24, 2017) at the end of mining phases I, II and III based on the results from 3.6.1; and | Updates will be done following the mining phases as indicated in the schedule. |
| | 3.6.3 monitor fish and fish habitat in Triangle Lake, Burnetta Lake, Pinette Lake and Goodream Creek. | Monitoring will start as required when seasonal conditions allow. |
| **4. Migratory Birds** | | |
| 4.1 | The Proponent shall carry out the Designated Project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's Avoidance Guidelines. The Proponent's actions when taking into account the Avoidance Guidelines shall be in compliance with the Migratory Birds Convention Act, 1994 and with the Species at Risk Act. | TSMC is committed to comply with this condition. Construction stripping activities were started in winter conditions during Feb and March 2025 and are planned for completion prior to the bird migration season. |
| 4.2 | The Proponent shall have a qualified individual survey, during operation, the mine pit walls annually during the nesting period to determine if bank swallows (Riparia riparia) are using the open pit as a nesting site. The Proponent shall conduct an additional survey one to two days prior to undertaking any new activity associated with the Designated Project during the nesting period areas where bank swallows (Riparia riparia) may occur. The Proponent shall identify, in consultation with Environment and Climate Change Canada and other relevant authorities, and implement a setback distance in which no Designated Project activity shall take place around any bank swallow (Riparia riparia) nest(s) found and shall maintain the setback distance until the young have permanently left the area of the nest. The Proponent shall implement additional measures to deter bank swallows (Riparia riparia) from nesting in the area prior to the next breeding period. | Pit construction was not started during the 2025 bank swallow nesting period and activities in this period occurred only in areas where bank swallows do not occur. |
| 4.3 | The Proponent shall notify Environment and Climate Change Canada if it finds bank swallow (Riparia riparia) nests within the Designated Project area. | Bank Swallow were not observed in the project area during the reporting year. |
| 4.4 | The Proponent shall control lighting required for the construction, operation and decommissioning of the Designated Project, including direction, timing and intensity, to avoid adverse effects on migratory birds, while meeting health and safety requirements. | TSMC is committed to comply with this condition. |
| 4.5 | The Proponent shall prohibit vehicles and heavy equipment associated with the Designated Project from entering wetlands except those affected by components of the Designated Project as identified in figure 7-33 of the environmental impact statement. | No vehicles and/or heavy equipment entered wetlands not affected by components of the Designated Project during the reporting year. |
| 4.6 | The Proponent shall not undertake vehicle, machinery and equipment cleaning, fueling and maintenance and shall not store substance with the potential to cause harmful effects to the receiving environment, within 20 metres of any wetland. | TSMC is committed to comply with this condition. |
| 4.7 | The Proponent shall develop, prior to construction and in consultation with relevant authorities, a follow-up program to determine the effectiveness of all mitigation measures to avoid harm to migratory birds, their eggs and nests. The Proponent shall provide the follow-up program to the Agency prior to construction. The Proponent shall implement the follow-up program during all phases of the Designated Project. The Proponent shall review and update the follow-up program in consultation with Indigenous groups and relevant authorities and shall provide this update to the Agency prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. As part of the follow-up program, the Proponent shall: | Reformatted plan was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| | 4.7.1 conduct migratory bird surveys in the Triangle Lake, Burnetta Lake and Pinette Lake watersheds every year for the first three years following completion of construction. After three years, the Proponent shall determine, in consultation with Indigenous groups and relevant authorities, the frequency of additional surveys based on the results of the follow-up program. | Not applicable at this time. Pre-construction baseline surveys were conducted. Surveys will continue following construction. |
| 4.8 | The Proponent shall develop, prior to construction, and implement a follow-up program to verify the predictions of the environmental assessment as it pertains to the adverse environmental effects of the Designated Project on wetland functions that support migratory birds, and to determine the effectiveness of the mitigation measures referred to in conditions 4.5 and 4.6 during all phases of the Designated Project. The Proponent shall provide the follow-up program to the Agency prior to construction. The Proponent shall review and update the follow-up program in consultation with Indigenous | Reformatted plan was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |

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| | groups and Environment and Climate Change Canada and shall provide this update to the Agency prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. As part of the follow-up program, the Proponent shall: | |
| | 4.8.1 have a qualified individual conduct a wetland disturbance survey every five years, with the first survey conducted at the start of construction, to assess wetland functions that support migratory birds; and | Pre-construction Survey done in 2022. Second survey done at the start of construction in summer 2025. |
| | 4.8.2 monitor groundwater levels associated with the wetlands located north of the open pit to verify the effects of pit dewatering on wetlands. Monitoring wells shall be spaced no more than 50 metres apart and measurements shall be taken every two weeks during operation. | Wetland water level monitoring was conducted throughout summer 2025. |
| **5. Health and socio-economic conditions of Indigenous peoples** | | |
| 5.1 | The Proponent shall, in consultation with Indigenous groups, undertake progressive reclamation of the areas disturbed by the Designated Project, including by stabilizing, compacting and revegetating with native plant species overburden stockpiles and waste rock piles. | Progressive reclamation will be carried out as components of the project become available for initiation of reclamation measures. No reclamation activities were conducted during the reporting period. |
| 5.2 | Using a qualified individual, the Proponent shall design overburden stockpiles and waste rock piles, in consultation with Indigenous groups and relevant authorities, and in consideration of reducing effects to viewscapes. The Proponent shall implement the design throughout all phases of the Designated Project. | The design of the overburden stockpiles and waste rock piles was completed during the Howse EIS.<br><br>To further improve viewscapes and reduce the environmental footprint (reduced ground disturbance and associated drainage) of the stockpiles, TSMC is utilizing existing mined out pits under its operation to backfill waste and overburden. |
| 5.3 | The Proponent shall apply dust suppressant on the Howse haul road during all phases of the Designated Project to control the release of dust. The Proponent shall select, in consultation with relevant authorities, dust suppressants with the least potential effects on human health and the environment. | Not applicable during the reporting year. Dust suppressants will be used as required. |
| 5.4 | The Proponent shall control dust, if observed visually, during the unloading of ore from trucks, except if not feasible for safety reasons. | TSMC is committed to comply with this condition whenever required. |
| 5.5 | The Proponent shall implement measures to mitigate dust emissions at the conveyor transfer and drop points when the conveyor is active, in the drum scrubber when ore is mixed and at the crude ore recovery tunnel, the secondary crusher and the dryer during ore processing activities | TSMC is committed to comply with this condition whenever required. |
| 5.6 | The Proponent shall fill borehole necks with clean crushed rock to reduce dust and gas emissions from blasting during construction and operation. | TSMC is committed to comply with this condition for all blasting events. |
| 5.7 | The Proponent shall develop, prior to construction, a dust management strategy to control dust generated by vehicles associated with the Designated Project using the road to Schefferville and for vehicles entering Schefferville. The Proponent shall implement the strategy during all phases of the Designated Project. The Proponent shall provide the dust management strategy to the Agency prior to the start of construction. The Proponent shall review and update the dust management strategy in consultation with Indigenous groups, relevant authorities and the Town of Schefferville prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. | An updated version of the Strategy was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| 5.8 | Throughout all phases of the Designated Project, the Proponent shall implement incentive measures to reduce the number of vehicles from the Designated Project, including by providing shuttle buses to transport workers to and from the Designated Project area. | TSMC is complying with this condition. Shuttle buses are in operation for worker transport. |
| 5.9 | The Proponent shall develop, prior to construction, a follow-up program to verify the accuracy of the environmental assessment as it pertains to air quality and the effects of dust on the health of Indigenous peoples and to determine the effectiveness of the mitigation measures referred to in conditions 5.3 to 5.8. The Proponent shall provide the follow-up program to the Agency prior to the start of construction. The Proponent shall implement the follow-up program from the start of construction to the end of decommissioning of the Designated Project. The Proponent shall review and update the follow-up program in consultation with Indigenous groups and relevant authorities and shall provide the update to the Agency prior | The Air Quality Follow-up Plan has been implemented.<br>Air monitoring was conducted during the reporting period in meeting with conditions 5.9.1, 5.9.2, 5.9.3 and 5.9.4. |

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| | to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. As part of the follow-up program, the Proponent shall: | |
| | 5.9.1 monitor air quality at receptors R3, R9, R10, R16, R18, R24, R36, R38 and R40 identified by the Proponent in Table 7-13 of the environmental impact statement, including for total particulate matter, particulate matter less than 10 microns, particulate matter less than 2.5 microns, dustfall, nitrogen oxides, sulfur oxides, carbon monoxide, and periodic monitoring of nitrogen dioxides after blasting activities; | |
| | 5.9.2 monitor dust generation and deposition from the Designated Project at locations potentially affected by the Designated Project, using a dust tracking system and mobile monitoring equipment; | |
| | 5.9.3 analyse concentrations of contaminants of concern in dust, including a minimum of one sampling of heavy metal content between the months of June and August of every year that analyses are conducted; and | |
| | 5.9.4 if the results of the follow-up program demonstrate that modified or additional mitigation measures are required, as determined in condition 2.6, at the Howse mini-plant, Designated Project roads, waste rock piles or overburden stockpiles, the Proponent shall implement modified or additional mitigation measures. | |
| 5.10 | The Proponent shall develop, prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first, and in consultation with Indigenous groups and relevant authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to country foods. Country foods may include game birds, mammals, fish, and plant species. The Proponent shall implement the follow-up program. As part of the follow-up program, the Proponent shall: | The Country Foods Follow-Plan has been implemented. As per schedule, the first sampling will occur during the next reporting period in compliance with conditions 5.10.1, 5.10.2, 5.10.3 and 5.10.4. |
| | 5.10.1 sample country food species commonly consumed by Indigenous groups and identified in consultation with Indigenous groups including brook trout (Salvelinus fontinalis) and lake trout (Salvelinus namaycush); | |
| | 5.10.2 sample species identified in condition 5.10.1 for heavy metals, and other contaminants of concern identified in consultation with Indigenous groups and relevant authorities; | |
| | 5.10.3 sample in areas where Indigenous groups harvest country foods and that may be adversely affected by the Designated Project and in a control site that is not affected by activities of the Designated Project. Fish sampling shall include sampling in Goodream Creek, Triangle Lake, and Pinette Lake; and | |
| | 5.10.4 start sampling two years after the start of operation and continue sampling at a frequency and for a duration determined in consultation with Indigenous groups and relevant authorities. | |
| **6. Current use of lands and resources for traditional purposes** | | |
| 6.1 | The Proponent shall upgrade, from the start of construction, a bypass road around the Designated Project in order to provide access for Indigenous groups to Pinette Lake, Kauteitnat and the Howells River Valley. The Proponent shall maintain the bypass road at least twice per calendar year until the end of decommissioning to ensure its usability. | The construction of the proposed additional bypass, referred to as the Howse bypass, was planned during the construction phase. This bypass road section will run along an existing exploration road which runs from Km.13 of the DSO Timmins Project bypass roads, where it intersects with TSMC's Goodwood Haul Road, towards the community traditional and recreational areas near the Howse project.<br><br>The Howse bypass was discussed with the Indigenous groups to ensure access is in place during the construction phase. Feedback was provided to TSMC with the Indigenous groups opposed to the proposed Howse bypass due to the lengthier travel time, added fuel cost and vehicle wear and tear when accessing these areas. TSMC has historically provided the Indigenous groups access to their traditional and recreational areas near the Howse Project through the main DSO Timmins Project site gate. Local recreational and traditional users utilize the wide and well-maintained road from the |

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| | | town of Schefferville to reach the DSO Timmins Project site gate, at which point they are escorted by TSMC Security staff to the entrance of the access roads near the Howse Project to ensure their safety around onsite heavy-vehicle traffic movement. |
| 6.2 | The Proponent shall upgrade, from the start of construction, a bypass road around the Direct Shipping Ore 4 area in order to provide access for Indigenous groups to hunting grounds to the northwest of the Designated Project near the Kivivic and Goodwood deposits. The Proponent shall maintain the bypass road at least twice per calendar year until the end of decommissioning to ensure its usability. | Maintenance and upgrade works were carried out to the existing DSO Timmins Project bypass roads which are a part of the Howse bypass roads. The following maintenance and upgrade activities were undertaken:<br>• Grading and levelling of road from S bypass entrance to Km.4.<br>• Grading and levelling of road from Km.4 to Km.13.<br>• Bypass road intersections along the Kivivic 3 property were maintained.<br>• Berms were installed and strengthened where required.<br>• Additional signage installed for safe movement of traffic. |
| 6.3 | The Proponent shall not use the bypass roads, referred to in conditions 6.1 and 6.2, for Designated Project activities, except when undertaking the maintenance of those bypass roads as required by conditions 6.1 and 6.2, or if required for safety or emergency reasons. | TSMC has not used the bypass road for any Project activities during the reporting year (this road is accessed only for the purposes of environmental monitoring, and only when no other access exists). |
| 6.4 | The Proponent shall prohibit employees and contractors associated with the Designated Project from fishing and hunting within the designated project area, unless an employee or a contractor is provided access by the Proponent for traditional purposes or for exercising Aboriginal rights, to the extent that such access is safe. | As per TSMC policy, employees and contractors (other than local Indigenous land users) are prohibited from fishing, hunting or interfering with wildlife in any manner in all areas. This is communicated to all site personnel during the employee induction process and through periodic reminders. This policy will be enforced for the life of the Project. |
| 6.5 | If the Proponent is made aware of or observes caribou within a 20-kilometre radius of the active pit or of the Howse mini-plant, the Proponent shall consult the Newfoundland and Labrador Department of Fisheries and Land Resources to determine the appropriate course of action. | No caribou were reported within a 20km radius of the active pit during the reporting period. |
| 6.6 | The Proponent shall develop, prior to construction, and implement during all phases of the Designated Project, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse effects of the Designated Project on the current use of lands and resources for traditional purposes and to determine the effectiveness of the mitigation measures referred to in conditions 6.1 to 6.4, including maintenance of the bypass roads. The Proponent shall provide the follow-up program to the Agency prior to the start of construction. The Proponent shall review and update the follow-up program in consultation with Indigenous groups and shall provide this update to the Agency prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. | Reformatted plan was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| 6.7 | The Proponent shall develop, prior to construction, and implement during all phases of the Designated Project, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse effects of the Designated Project on the George River herd of Eastern migratory caribou (Rangifer tarandus caribou). The Proponent shall provide the follow-up program to the Agency prior to the start of construction. The Proponent the issuance of this Decision Statement, whichever comes first. As part of the follow-up program, the Proponent shall monitor movement of the George River herd of Eastern migratory caribou (Rangifer tarandus caribou) and develop and implement modified or additional mitigation measures if the range of the George River herd of Eastern migratory caribou (Rangifer tarandus caribou) expands to occupy areas within a 20-kilometre radius of the Designated Project. | Reformatted plan was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| 6.8 | The Proponent shall develop, prior to construction and in consultation with Indigenous groups, a communication plan to share information related to the Designated Project with Indigenous groups. The Proponent shall implement and maintain the communication plan up to date during all phases of the Designated Project. The communication plan shall include procedures, including timing, for sharing information on the following: | An updated version of the communication plan with up-to-date key contacts was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on |

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| | 6.8.1 the Designated Project activities requiring notification to Indigenous groups and the timing of these notifications. For blasting, the Proponent shall advertise blasting schedules via local radio stations and directly to Indigenous groups at a minimum 48 hours prior to each blasting event; | February 2nd, 2025. The plan will be implemented as per the determined schedules and as required for conditional activities. |
| | 6.8.2 follow-up activities and monitoring results referred to in conditions 3.6, 4.7, 4.8, 5.9, 5.10, 6.6, 6.7, and 7.5; and | |
| | 6.8.3 temporary and permanent restrictions on access to traditional territories, including the location and timing of these restrictions, the availability of alternate routes, and the timing of maintenance activities for the bypass roads as per 6.1 and 6.2. | |
| 6.9 | The Proponent shall develop, as part of the communication plan referred to in condition in 6.8, procedures for Indigenous groups to provide feedback to the Proponent about adverse environmental effects caused by the Designated Project related to access to and use of traditional territories, traffic, air quality, including dust and dust deposition, and country foods and procedures for the Proponent to document and respond in a timely manner to the feedback received and demonstrate how issues have been addressed. The Proponent shall implement these procedures during all phases of the Designated Project. | These procedures were in place during the reporting year. |
| 6.10 | The Proponent shall provide Indigenous groups with the schedules referred to in conditions 10.1 and 10.2 and updates or revisions to the initial schedules pursuant to condition 10.3 and 10.4 at the same time these documents are provided to the Agency. | The updated schedules were submitted to the 5 indigenous groups and to the Agency on March 18th, 2025. No changes were made to the initial schedules submitted during the reporting year. |
| **7. Physical and cultural heritage and structures, sites or things of historical, archaeological, paleontological or architectural significance** | | |
| 7.1 | If requested by Indigenous groups 48 hours prior to their planned use of Kauteitnat, the Proponent shall refrain from blasting for a period of 24 hours during that time of planned use of Kauteitnat, or less if Indigenous groups are no longer using Kauteitnat. | TSMC is committed to comply with this condition. |
| 7.2 | The Proponent shall not conduct any Designated Project activity to the south of proposed water diversion ditch, identified in figure 2 in the environmental assessment report, except for activities required for the construction and maintenance of the diversion ditch. The Proponent shall clearly identify the exclusion zone with signage on the ground, within its lease area, posted at the edge of the exclusion zone. | TSMC is committed to comply with this condition. Signs to identify exclusion zones will be posted at the limits of the exclusion zone. |
| 7.3 | During the months of June, July, August and September, the Proponent shall not blast more than twice in a week and more than five times per month. | TSMC is committed to plan and conduct all blasting events in compliance with this condition. |
| 7.4 | The Proponent shall develop, prior to construction, and implement during all phases of the Designated Project, a protocol for receiving complaints related to the exposure to noise from the Designated Project. The Proponent shall provide the protocol to the Agency and Indigenous groups prior to the start of construction. The Proponent shall review and update the protocol in consultation with Indigenous groups and shall provide this update to the whichever comes first. The Proponent shall respond to any noise complaints within 48 hours of the complaint being received and shall implement corrective actions to reduce exposure to noise in a timely manner. | An updated version of the communication plan which includes a protocol for receiving noise complaints was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The protocol is in place |
| 7.5 | The Proponent shall develop prior to construction, and implement during all phases of the Designated Project, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the effects of the Designated Project on the use of cultural and other sites as a result of noise levels. The Proponent shall provide the follow-up program to the Agency prior to the start of construction. The Proponent shall review and update the follow-up program in consultation with Indigenous groups and shall provide this update to the Agency prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. As part of the follow-up program, the Proponent shall: | An updated version of the follow-up plan was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented.<br>Due to issues with the newly acquired noise monitors, TSMC could not conduct noise monitoring during the reporting year. This was communicated with the Agency during the site visit and as a follow-up. The issues have been identified and the necessary fixes implemented for a successful deployment in the upcoming reporting period. |
| | 7.5.1 monitor noise levels at receptor sites R9, R10, R11, R13 and R24 identified by the Proponent in figure 7.10 of the environmental impact statement. The Proponent shall implement modified or additional mitigation measures if noise levels at these sites exceed 5 decibels above the baseline noise levels as a result of the Designated Project, except during blasting. | |
| 7.6 | The Proponent shall develop, prior to construction, and implement during all phases of the Designated Project a cultural heritage control plan. The Proponent shall provide the cultural heritage control plan to the Agency prior to the start of construction. The Proponent shall review and update the plan in consultation with Indigenous groups and the Government of Newfoundland and Labrador and shall provide this update to the Agency prior to operation or within 120 days of the issuance | An updated version of the cultural heritage control plan with up-to-date key contacts was submitted for consultation to the five |

| | IAAC Release Condition | 2024-2025 Activities |
|---|---|---|
| | of this Decision Statement, whichever comes first. If any previously unidentified structures, sites or things of historical, archaeological, paleontological or architectural significance are discovered within the Designated Project area by the Proponent or brought to the attention of the Proponent by an Indigenous group or another party during construction, the Proponent shall: | concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| | 7.6.2 delineate an area of at least 30 metres around the discovery as a no-work zone. The no-work requirement shall not apply to action(s) required to be undertaken to protect the integrity of the discovery; | |
| | 7.6.3 have a qualified individual conduct an assessment at the location of the discovery; | |
| | 7.6.4 inform Indigenous groups within 24 hours of the discovery, and allow for monitoring by Indigenous groups during work related to the discovery; and | |
| | 7.6.5 comply, in consultation with Indigenous groups and relevant authorities, with all applicable legislative or legal requirements and associated regulations and protocols respecting the discovery, recording, transferring and safekeeping of previously unidentified structures, sites or things of historical, archaeological, paleontological or architectural significance. | |
| **8. Cumulative Effects** | | |
| 8.1 | The Proponent shall participate in regional initiative(s), if requested by a relevant authority or the Town of Schefferville, relating to the monitoring, assessment and management of cumulative environmental effects, including cumulative health effects related to dust likely to result from the Designated Project in combination with other mining activities that have or will be carried out in the region, should there be any such initiative(s) during the construction and operation phases of the Designated Project. | TSMC will continue to participate in regional initiatives if requested by regional Indigenous groups and/or authorities. |
| **9. Accidents and malfunctions** | | |
| 9.1 | The Proponent shall take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects. The measures taken by the Proponent shall include measures to prevent slope failures, sedimentation pond failures, ditch failures, destabilization of waste rock piles and overburden stockpiles, and rockslides. | An accident and malfunction response plan specific for the Howse project was developed and submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| 9.2 | The Proponent shall develop, prior to construction, and implement during all phases of the Designated Project, an accident and malfunction response plan. The accident and malfunction plan shall include the types of accidents and malfunctions that may cause adverse environmental effects, and response plans for slope failures, sedimentation pond failures, ditch failures, destabilization of waste rock piles and overburden stockpiles, or rock slides in addition to all emergency response plans identified in the environmental impact statement. The Proponent shall provide the accident and malfunction response plan to the Agency prior to the start of construction. | See 9.1 above. |
| 9.3 | The Proponent shall review and update the measures to be implemented to prevent accidents and malfunctions and the accidents and malfunctions response plan in consultation with Indigenous groups and relevant authorities prior to operation or within 120 days of the issuance of this Decision Statement, whichever comes first. | See 9.1 above. |
| 9.4 | In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall implement the accidents and malfunctions response plan referred to in condition 9.2 or any subsequent update(s) referred to in condition 9.3 and shall: | There was one reportable incident on Howse Project as defined in the Howse Project Accidents and Malfunctions Plan. The incident involved an excavator having caught fire inside the Howse Pit. A 24-Hour Immediate Notification was sent to all the Agency and the Indigenous Groups as outlined in the Howse Project Accidents and Malfunctions Plan followed by a 30-Day Detailed Incident Report. |
| | 9.4.1 notify, as soon as possible, Indigenous groups and relevant authorities of the accident or malfunction, and notify the Agency in writing no later than 24 hours following the accident or malfunction. When notifying Indigenous groups and in the notification to the Agency, the Proponent shall specify; | |
| | 9.4.1.1 the date the accident or malfunction occurred; | |
| | 9.4.1.2 a description of the accident or malfunction; | |
| | 9.4.1.3 a list of all substances potentially released in the environment as a result of the accident or malfunction. | |
| | 9.4.3 submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction took place. The written report shall include: | |

| IAAC Release Condition | | 2024-2025 Activities |
|---|---|---|
| | 9.4.3.1 a description of the accident or malfunction and of its adverse environmental effects; | |
| | 9.4.3.2 the measures that were taken by the Proponent to mitigate the adverse environmental effects caused by the accident or malfunction; | |
| | 9.4.3.3 any view(s) from Indigenous groups and advice from relevant authorities received with respect to the accident or malfunction, its adverse environmental effects and the measures taken by the Proponent to mitigate these adverse environmental effects; | |
| | 9.4.3.4 a description of any residual adverse environmental effects and any modified or additional measures required by the Proponent to mitigate residual adverse environmental effects; and | |
| | 9.4.3.5 details concerning the implementation of the accident or malfunction response plan referred to in condition | |
| | 9.4.4 submit a written report to the Agency no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction and on the implementation of any modified or additional measure(s) to mitigate and monitor residual adverse environmental effects and to carry out any required progressive reclamation, taking into account the information submitted in the written report pursuant to condition 9.4.3. The report shall include all additional views from Indigenous groups and advice from relevant authorities since the views and advice referred to in condition 9.4.3.3 have been received by the Proponent. | |
| 9.5 | The Proponent shall develop a communication plan in consultation with Indigenous groups. The Proponent shall develop the communication plan prior to construction and shall implement and keep it up to date during all phases of the Designated Project. The plan shall include: | An updated version of the communication plan which includes a protocol for communicating details about accidents or malfunctions was submitted for consultation to the five concerned Indigenous groups on January 14th, 2025, and to the Agency on February 2nd, 2025. The plan has been implemented. |
| | 9.5.1 the types of accidents and malfunctions requiring the Proponent to notify the respective Indigenous groups; | |
| | 9.5.2 the manner by which Indigenous group shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Indigenous groups to assist in the response to the accident or malfunction; and | |
| | 9.5.3 the contact information of the representatives of the Proponent that the Indigenous groups may contact and of the representatives of the respective Indigenous groups to which the Proponent provides notification. | |
| **10. Schedules** | | |
| 10.1 | The Proponent shall submit to the Agency a schedule for all conditions set out in this Decision Statement no later than 30 days after the start of construction. The schedule shall detail all activities planned to fulfill each condition set out in this Decision Statement and the commencement and estimated completion month(s) and year(s) for each of these activities. | The schedule was submitted to the Agency on March 18th, 2025. |
| 10.2 | The Proponent shall submit to the Agency a schedule outlining all activities required to carry out all phases of the Designated Project no later than 30 days after the start of construction. The schedule shall indicate the commencement and estimated completion month(s) and year(s) and duration of each of these activities. | |
| 10.3 | The Proponent shall submit to the Agency in writing an update to schedules referred to in conditions 10.1 and 10.2 every year no later than June 30, until completion of all activities referred to in each schedule. | There have been no updates to the schedules after they were submitted to the Agency on March 18th, 2025. |
| 10.4 | The Proponent shall provide to the Agency revised schedules if any change(s) are made to the initial schedules referred to in condition 10.1 and 10.2 or to any subsequent update(s) referred to in condition 10.3, upon revision of the schedules. | Updated schedules will be submitted as required. |
| **11. Record Keeping** | | |
| 11.1 | The Proponent shall maintain all records required to demonstrate compliance with the conditions set out in this Decision Statement. The Proponent shall provide the aforementioned records to the Agency upon demand within a timeframe specified by the Agency. | TSMC is committed to comply with this condition. |
| 11.2 | The Proponent shall retain all records referred to in condition 11.1 at a facility in Canada. The records shall be retained and made available throughout construction and operation and for 25 years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall notify the Agency at least 30 days | TSMC is committed to comply with this condition. |

| IAAC Release Condition | | 2024-2025 Activities |
|---|---|---|
| | prior to any change to the physical location of the facility where the records are retained, and shall provide to the Agency the address of the new location. | |

# Appendix I – Surface Water Quality Certificates

Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 175003

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/06/26**
Report #: R3050645
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C530066**
**Received: 2025/06/10, 08:45**

Sample Matrix: Surface Water
# Samples Received: 9

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 9 | N/A | 2025/06/11 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 6 | N/A | 2025/06/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Anions in water | 3 | N/A | 2025/06/11 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 9 | N/A | 2025/06/10 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 5 | N/A | 2025/06/10 | STL SOP-00038 | SM 24 2510-B m |
| Conductivity in waters | 4 | N/A | 2025/06/16 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 9 | 2025/06/16 | 2025/06/16 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 3 | 2025/06/24 | 2025/06/25 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 9 | N/A | 2025/06/12 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 9 | 2025/06/14 | 2025/06/16 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 8 | N/A | 2025/06/17 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Ammonia Nitrogen in water | 1 | N/A | 2025/06/18 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 6 | N/A | 2025/06/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 3 | N/A | 2025/06/11 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 9 | N/A | 2025/06/10 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 9 | N/A | 2025/06/10 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 9 | N/A | 2025/06/10 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 9 | N/A | 2025/06/13 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site)- waters | 9 | N/A | 2025/06/10 | | Field measurement |
| Ortho Phosphate-water | 9 | N/A | 2025/06/10 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 9 | 2025/06/18 | 2025/06/20 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 9 | N/A | 2025/06/13 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 9 | N/A | 2025/06/10 | | Thermometer |
| Turbidity-water | 9 | N/A | 2025/06/10 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 5 | 2025/06/12 | 2025/06/13 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| TEH in Water (PIRI) (1) | 3 | 2025/06/13 | 2025/06/13 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 9 | 2025/06/19 | 2025/06/19 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 8 | 2025/06/10 | 2025/06/17 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 9 | 2025/06/16 | 2025/06/16 | ATL SOP 00130 | Atl. RBCA v3.1 m |



Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 175003

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/06/26**
Report #: R3050645
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C530066**
**Received: 2025/06/10, 08:45**

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.


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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 175003

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/06/26**
Report #: R3050645
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C530066**
**Received: 2025/06/10, 08:45**

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
26 Jun 2025 12:26:45

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | OM4107 | OM4108 | | OM4109 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 17:24 | 2025/06/08 16:00 | | 2025/06/08 16:14 | | |
| COC Number | | 175003 | 175003 | | 175003 | | |
| | Units | HOW-SW1-Q1-2025 | HOW-SW2-Q1-2025 | QC Batch | HOW-SW3-Q1-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | | |
| Reactive silica (SiO2) † | mg/L | 4.1 | 3.2 | 2658771 | 2.2 | 0.50 | 2658771 |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | 2657074 | <0.050 | 0.050 | 2658777 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | 2657074 | <0.050 | 0.050 | 2658777 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | 2657074 | <0.090 | 0.090 | 2658777 |
| Return to baseline at C32 † | mg/L | NA | NA | 2657074 | NA | N/A | 2658777 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | 2657074 | NA | N/A | 2658777 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 92 | 83 | 2657074 | 97 | N/A | 2658777 |
| n-Dotriacontane - Extractable | % | 95 | 88 | 2657074 | 105 | N/A | 2658777 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

| Bureau Veritas ID | | OM4110 | OM4111 | OM4112 | OM4113 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 16:54 | 2025/06/08 11:48 | 2025/06/08 12:20 | 2025/06/08 14:45 | | |
| COC Number | | 175003 | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW4-Q1-2025 | HOW-SW5-Q1-2025 | HOW-BC-Q1-2025 | HOW-BL-Q1-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | | |
| Reactive silica (SiO2) † | mg/L | 3.5 | 1.7 | 2.7 | 5.2 | 0.50 | 2658771 |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | N/A | <0.050 | 0.050 | 2657074 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | N/A | <0.050 | 0.050 | 2657074 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | N/A | <0.090 | 0.090 | 2657074 |
| Return to baseline at C32 † | mg/L | NA | NA | N/A | NA | N/A | 2657074 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | N/A | NA | N/A | 2657074 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 92 | 91 | N/A | 88 | N/A | 2657074 |
| n-Dotriacontane - Extractable | % | 96 | 95 | N/A | 92 | N/A | 2657074 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | OM4114 | OM4115 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 12:45 | 2025/06/09 10:03 | | |
| COC Number | | 175003 | 175003 | | |
| | Units | HOW-TL-Q1-2025 | HOW-ML-Q1-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | |
| Reactive silica (SiO2) † | mg/L | 4.7 | 0.98 | 0.50 | 2658771 |
| **PETROLEUM HYDROCARBONS** | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | 0.050 | 2658777 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | 0.050 | 2658777 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | 0.090 | 2658777 |
| Return to baseline at C32 † | mg/L | NA | NA | N/A | 2658777 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | N/A | 2658777 |
| **Surrogate Recovery (%)** | | | | | |
| Isobutylbenzene - Extractable | % | 104 | 100 | N/A | 2658777 |
| n-Dotriacontane - Extractable | % | 113 | 113 | N/A | 2658777 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OM4107 | OM4108 | OM4109 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 17:24 | 2025/06/08 16:00 | 2025/06/08 16:14 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW1-Q1-2025 | HOW-SW2-Q1-2025 | HOW-SW3-Q1-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | <0.000010 | 0.000010 | 2660046 |
| Total Extractable Aluminum (Al) | ug/L | 22 | 120 | 99 | 10 | 2656062 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | 3.3 | 2.1 | 2.0 | 2656062 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2656062 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2656062 |
| Total Extractable Calcium (Ca) | ug/L | 2200 | <500 | <500 | 500 | 2656062 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2656062 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 13000 | <1000 | <1000 | 1000 | 2656062 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Iron (Fe) | ug/L | 63 | N/A | 200 | 60 | 2656062 |
| Total Extractable Magnesium (Mg) | ug/L | 1700 | 210 | 220 | 100 | 2656062 |
| Total Extractable Manganese (Mn) | ug/L | 3.8 | 37 | 9.9 | 1.0 | 2656062 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2656062 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2656062 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2656062 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2656062 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2656062 |
| Total Extractable Sodium (Na) | ug/L | 550 | <500 | <500 | 500 | 2656062 |
| Total Extractable Strontium (Sr) † | ug/L | 4.5 | 2.9 | 2.0 | 2.0 | 2656062 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2656062 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited


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## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OM4107 | OM4108 | OM4109 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 17:24 | 2025/06/08 16:00 | 2025/06/08 16:14 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW1-Q1-2025 | HOW-SW2-Q1-2025 | HOW-SW3-Q1-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2656062 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OM4110 | OM4111 | OM4112 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 16:54 | 2025/06/08 11:48 | 2025/06/08 12:20 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW4-Q1-2025 | HOW-SW5-Q1-2025 | HOW-BC-Q1-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Aluminum (Al) | ug/L | 24 | 42 | 150 | 10 | 2656062 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2656062 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2656062 |
| Total Extractable Calcium (Ca) | ug/L | 1800 | <500 | <500 | 500 | 2656062 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2656062 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 10000 | <1000 | 1400 | 1000 | 2656062 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Iron (Fe) | ug/L | <60 | 100 | 110 | 60 | 2656062 |
| Total Extractable Magnesium (Mg) | ug/L | 1400 | 230 | 340 | 100 | 2656062 |
| Total Extractable Manganese (Mn) | ug/L | 1.1 | 27 | 8.8 | 1.0 | 2656062 |
| Total Extractable Mercury (Hg) | ug/L | <0.10 | <0.10 | <0.10 | 0.10 | 2656062 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2656062 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2656062 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2656062 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2656062 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2656062 |
| Total Extractable Sodium (Na) | ug/L | <500 | <500 | <500 | 500 | 2656062 |
| Total Extractable Strontium (Sr) † | ug/L | 4.3 | 2.4 | <2.0 | 2.0 | 2656062 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2656062 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OM4110 | OM4111 | OM4112 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 16:54 | 2025/06/08 11:48 | 2025/06/08 12:20 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW4-Q1-2025 | HOW-SW5-Q1-2025 | HOW-BC-Q1-2025 | RDL | QC Batch |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2656062 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OM4113 | OM4114 | OM4115 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 14:45 | 2025/06/08 12:45 | 2025/06/09 10:03 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-BL-Q1-2025 | HOW-TL-Q1-2025 | HOW-ML-Q1-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Aluminum (Al) | ug/L | <10 | 34 | 51 | 10 | 2656062 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | 3.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2656062 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2656062 |
| Total Extractable Calcium (Ca) | ug/L | 5000 | 2600 | 2100 | 500 | 2656062 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2656062 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 26000 | 14000 | 11000 | 1000 | 2656062 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Iron (Fe) | ug/L | <60 | 100 | 87 | 60 | 2656062 |
| Total Extractable Magnesium (Mg) | ug/L | 3300 | 1900 | 1400 | 100 | 2656062 |
| Total Extractable Manganese (Mn) | ug/L | 1.8 | 81 | 8.1 | 1.0 | 2656062 |
| Total Extractable Mercury (Hg) | ug/L | <0.10 | <0.10 | <0.10 | 0.10 | 2656062 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | 3.1 | 3.9 | 2.0 | 2656062 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2656062 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2656062 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2656062 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2656062 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2656062 |
| Total Extractable Sodium (Na) | ug/L | 750 | <500 | <500 | 500 | 2656062 |
| Total Extractable Strontium (Sr) † | ug/L | 6.0 | 4.6 | 4.3 | 2.0 | 2656062 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2656062 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2656062 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2656062 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OM4113 | OM4114 | OM4115 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 14:45 | 2025/06/08 12:45 | 2025/06/09 10:03 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-BL-Q1-2025 | HOW-TL-Q1-2025 | HOW-ML-Q1-2025 | RDL | QC Batch |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2656062 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OM4107 | OM4107 | | OM4108 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 17:24 | 2025/06/08 17:24 | | 2025/06/08 16:00 | | |
| COC Number | | 175003 | 175003 | | 175003 | | |
| | Units | HOW-SW1-Q1-2025 | HOW-SW1-Q1-2025 Lab-Dup | QC Batch | HOW-SW2-Q1-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | |
| Conductivity | mS/cm | 0.029 | N/A | 2654189 | 0.0039 | 0.0010 | 2654189 |
| Dissolved organic carbon † | mg/L | 1.3 | N/A | 2656612 | 4.9 | 0.20 | 2656612 |
| Dissolved oxygen † | mg/L | 10 | N/A | 2654271 | 9.8 | 1.0 | 2654272 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.17 | N/A | 2654233 | <0.020 | 0.020 | 2654233 |
| Nitrates (N-NO3-) | mg/L | 0.17 | N/A | 2654233 | <0.020 | 0.020 | 2654233 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | 2654233 | <0.020 | 0.020 | 2654233 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | N/A | 2657620 | 0.11 | 0.020 | 2657062 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | 2654218 | <0.050 | 0.050 | 2654218 |
| pH | pH | 6.57 | N/A | 2654186 | 5.82 | N/A | 2654186 |
| pH (15° C) † | pH | 7.02 | N/A | 2654190 | 5.57 | N/A | 2654190 |
| Phenols-4AAP | mg/L | <0.0020 | N/A | 2655845 | <0.0020 | 0.0020 | 2655845 |
| Real Color | UCV | 11 | N/A | 2654224 | 41 | 2.0 | 2654224 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | 2657369 | <0.020 | 0.020 | 2657369 |
| Turbidity | NTU | 0.67 | N/A | 2654243 | 1.1 | 0.10 | 2654243 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 9.9 | N/A | 2654188 | 2.4 | 1.0 | 2654188 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 9.9 | N/A | 2654188 | 2.4 | 1.0 | 2654188 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | N/A | 2654188 | <1.0 | 1.0 | 2654188 |
| Chloride (Cl) | mg/L | 0.35 | N/A | 2654234 | 0.18 | 0.050 | 2654234 |
| Sulfates (SO4) | mg/L | 2.5 | N/A | 2654234 | 0.68 | 0.50 | 2654234 |
| Total Dissolved Solids | mg/L | 35 | N/A | 2655883 | 40 | 10 | 2655883 |
| Total suspended solids (TSS) | mg/L | 2.0 | N/A | 2655324 | 2.0 | 2.0 | 2655324 |
| **On-site Measurements** | | | | | | | |
| pH (on-site) † | pH | 6.70 | N/A | ONSITE | 5.40 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 6.720 | N/A | ONSITE | 9.100 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OM4109 | OM4110 | OM4111 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 16:14 | 2025/06/08 16:54 | 2025/06/08 11:48 | | |
| COC Number | | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW3-Q1-2025 | HOW-SW4-Q1-2025 | HOW-SW5-Q1-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.0039 | 0.024 | 0.0038 | 0.0010 | 2654189 |
| Dissolved organic carbon † | mg/L | 5.5 | 1.7 | 1.6 | 0.20 | 2656612 |
| Dissolved oxygen † | mg/L | 9.3 | 10 | 10 | 1.0 | 2654271 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 0.16 | <0.020 | 0.020 | 2654233 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 0.16 | <0.020 | 0.020 | 2654233 |
| Nitrites (N-NO2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2654233 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2657062 |
| Orthophosphate (P) | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2654218 |
| pH | pH | 5.63 | 6.15 | 6.06 | N/A | 2654186 |
| pH (15° C) † | pH | 5.48 | 6.88 | 6.24 | N/A | 2654190 |
| Phenols-4AAP | mg/L | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2655845 |
| Real Color | UCV | 47 | 14 | 15 | 2.0 | 2654224 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2657369 |
| Turbidity | NTU | 0.78 | 1.3 | 2.3 | 0.10 | 2654243 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 2.0 | 6.9 | 2.7 | 1.0 | 2654188 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 2.0 | 6.9 | 2.7 | 1.0 | 2654188 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | <1.0 | <1.0 | 1.0 | 2654188 |
| Chloride (Cl) | mg/L | 0.081 | 0.43 | 0.23 | 0.050 | 2654234 |
| Sulfates (SO4) | mg/L | <0.50 | 3.1 | <0.50 | 0.50 | 2654234 |
| Total Dissolved Solids | mg/L | 31 | 20 | 13 | 10 | 2655883 |
| Total suspended solids (TSS) | mg/L | 2.0 | 4.0 | 3.0 | 2.0 | 2655324 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 5.34 | 6.48 | 6.22 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 8.100 | 7.300 | 8.400 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OM4112 | | OM4113 | | OM4114 | | |
|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 12:20 | | 2025/06/08 14:45 | | 2025/06/08 12:45 | | |
| COC Number | | 175003 | | 175003 | | 175003 | | |
| | Units | HOW-BC-Q1-2025 | QC Batch | HOW-BL-Q1-2025 | QC Batch | HOW-TL-Q1-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | | |
| Conductivity | mS/cm | 0.0039 | 2654189 | 0.053 | 2654189 | 0.031 | 0.0010 | 2654189 |
| Dissolved organic carbon † | mg/L | 5.8 | 2656612 | 0.61 | 2656612 | 1.9 | 0.20 | 2656612 |
| Dissolved oxygen † | mg/L | 9.9 | 2654271 | 10 | 2654272 | 10 | 1.0 | 2654271 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 2654233 | 0.021 | 2654233 | 0.073 | 0.020 | 2654233 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 2654233 | 0.021 | 2654233 | 0.073 | 0.020 | 2654233 |
| Nitrites (N-NO2-) | mg/L | <0.020 | 2654233 | <0.020 | 2654233 | <0.020 | 0.020 | 2654233 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | 2657062 | <0.020 | 2657062 | <0.020 | 0.020 | 2657062 |
| Orthophosphate (P) | mg/L | <0.050 | 2654218 | <0.050 | 2654218 | <0.050 | 0.050 | 2654218 |
| pH | pH | 5.27 | 2654186 | 6.38 | 2654186 | 6.41 | N/A | 2654186 |
| pH (15° C) † | pH | 5.36 | 2654190 | 7.23 | 2654190 | 7.04 | N/A | 2654190 |
| Phenols-4AAP | mg/L | <0.0020 | 2655845 | <0.0020 | 2655845 | <0.0020 | 0.0020 | 2655845 |
| Real Color | UCV | 45 | 2654224 | 4.7 | 2654224 | 21 | 2.0 | 2654224 |
| Sulfides (S2-) | mg/L | <0.020 | 2657369 | <0.020 | 2657369 | <0.020 | 0.020 | 2657369 |
| Turbidity | NTU | 0.60 | 2654243 | 0.15 | 2654243 | 0.85 | 0.10 | 2654243 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 1.4 | 2654188 | 25 | 2654188 | 13 | 1.0 | 2654188 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 1.4 | 2654188 | 25 | 2654188 | 13 | 1.0 | 2654188 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | 2654188 | <1.0 | 2654188 | <1.0 | 1.0 | 2654188 |
| Chloride (Cl) | mg/L | 0.082 | 2654234 | 0.20 | 2654234 | 0.30 | 0.050 | 2654234 |
| Sulfates (SO4) | mg/L | 0.53 | 2654234 | 2.2 | 2654234 | 2.0 | 0.50 | 2654234 |
| Total Dissolved Solids | mg/L | <10 | 2655883 | <10 | 2655883 | 35 | 10 | 2655883 |
| Total suspended solids (TSS) | mg/L | <2.0 | 2655324 | <2.0 | 2655324 | 2.0 | 2.0 | 2655324 |
| **On-site Measurements** | | | | | | | | |
| pH (on-site) † | pH | 6.30 | ONSITE | 6.88 | ONSITE | 6.57 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 5.090 | ONSITE | 6.500 | ONSITE | 7.200 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OM4114 | | OM4115 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 12:45 | | 2025/06/09 10:03 | | |
| COC Number | | 175003 | | 175003 | | |
| | Units | HOW-TL-Q1-2025 Lab-Dup | QC Batch | HOW-ML-Q1-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | N/A | 2654189 | 0.022 | 0.0010 | 2654189 |
| Dissolved organic carbon † | mg/L | N/A | 2656612 | 2.2 | 0.20 | 2656612 |
| Dissolved oxygen † | mg/L | N/A | 2654271 | 10 | 1.0 | 2654271 |
| Nitrate (N) and Nitrite(N) | mg/L | N/A | 2654233 | <0.020 | 0.020 | 2654322 |
| Nitrates (N-NO3-) | mg/L | N/A | 2654233 | <0.020 | 0.020 | 2654322 |
| Nitrites (N-NO2-) | mg/L | N/A | 2654233 | <0.020 | 0.020 | 2654322 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | N/A | 2657062 | <0.020 | 0.020 | 2657062 |
| Orthophosphate (P) | mg/L | N/A | 2654218 | <0.050 | 0.050 | 2654221 |
| pH | pH | N/A | 2654186 | 6.28 | N/A | 2654186 |
| pH (15° C) † | pH | N/A | 2654190 | 7.05 | N/A | 2654190 |
| Phenols-4AAP | mg/L | <0.0020 | 2655845 | <0.0020 | 0.0020 | 2655845 |
| Real Color | UCV | N/A | 2654224 | 20 | 2.0 | 2654224 |
| Sulfides (S2-) | mg/L | N/A | 2657369 | <0.020 | 0.020 | 2657369 |
| Turbidity | NTU | N/A | 2654243 | 2.3 | 0.10 | 2654243 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | N/A | 2654188 | 8.4 | 1.0 | 2654188 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | N/A | 2654188 | 8.4 | 1.0 | 2654188 |
| Carbonate (CO3 as CaCO3) † | mg/L | N/A | 2654188 | <1.0 | 1.0 | 2654188 |
| Chloride (Cl) | mg/L | N/A | 2654234 | 0.056 | 0.050 | 2654323 |
| Sulfates (SO4) | mg/L | N/A | 2654234 | 2.8 | 0.50 | 2654323 |
| Total Dissolved Solids | mg/L | N/A | 2655883 | 33 | 10 | 2655883 |
| Total suspended solids (TSS) | mg/L | N/A | 2655324 | 3.0 | 2.0 | 2655324 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | N/A | ONSITE | 7.20 | N/A | ONSITE |
| Temperature (°C) † | Celsius | N/A | ONSITE | 8.700 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | OM4107 | OM4108 | OM4109 | OM4110 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 17:24 | 2025/06/08 16:00 | 2025/06/08 16:14 | 2025/06/08 16:54 | | |
| COC Number | | 175003 | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW1-Q1-2025 | HOW-SW2-Q1-2025 | HOW-SW3-Q1-2025 | HOW-SW4-Q1-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2657072 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2657072 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2657072 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2657072 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2657072 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2657073 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

| Bureau Veritas ID | | OM4111 | OM4112 | OM4113 | OM4114 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/08 11:48 | 2025/06/08 12:20 | 2025/06/08 14:45 | 2025/06/08 12:45 | | |
| COC Number | | 175003 | 175003 | 175003 | 175003 | | |
| | Units | HOW-SW5-Q1-2025 | HOW-BC-Q1-2025 | HOW-BL-Q1-2025 | HOW-TL-Q1-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2657072 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2657072 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2657072 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2657072 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2657072 |
| Modified TPH (Tier1) † | mg/L | <0.090 | N/A | <0.090 | <0.090 | 0.090 | 2657073 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | OM4115 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/06/09 10:03 | | |
| COC Number | | 175003 | | |
| | Units | HOW-ML-Q1-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | |
| Benzene † | mg/L | <0.0010 | 0.0010 | 2657072 |
| Toluene † | mg/L | <0.0010 | 0.0010 | 2657072 |
| Ethylbenzene † | mg/L | <0.0010 | 0.0010 | 2657072 |
| Total_Xylenes † | mg/L | <0.0020 | 0.0020 | 2657072 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | 0.090 | 2657072 |
| Modified TPH (Tier1) † | mg/L | <0.090 | 0.090 | 2657073 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site)- waters was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Dissolved Oxygen: Holding time already past upon reception: OM4107
pH in water: Holding time already past upon reception: OM4107
pH Measured @ 15° C: Holding time already past upon reception: OM4107
Dissolved Oxygen: Holding time already past upon reception: OM4108
pH in water: Holding time already past upon reception: OM4108
pH Measured @ 15° C: Holding time already past upon reception: OM4108
Dissolved Oxygen: Holding time already past upon reception: OM4109
pH in water: Holding time already past upon reception: OM4109
pH Measured @ 15° C: Holding time already past upon reception: OM4109
Dissolved Oxygen: Holding time already past upon reception: OM4110
pH in water: Holding time already past upon reception: OM4110
pH Measured @ 15° C: Holding time already past upon reception: OM4110
pH in water: Holding time already past upon reception: OM4111
pH Measured @ 15° C: Holding time already past upon reception: OM4111
Dissolved Oxygen: Analyses requested past holding time: OM4112
pH Measured @ 15° C: Analyses requested past holding time: OM4112
Dissolved Oxygen: Analyses requested past holding time: OM4113
pH in water: Analyses requested past holding time: OM4113
pH Measured @ 15° C: Holding time already past upon reception: OM4113
Dissolved Oxygen: Holding time already past upon reception: OM4114
pH in water: Holding time already past upon reception: OM4114
pH Measured @ 15° C: Analyses requested past holding time: OM4114

**CONVENTIONAL PARAMETERS (SURFACE WATER)**

pH, pH (15° C), Oxygène dissous: Délai d'analyse non respecté. OM4107, OM4108, OM4109, OM4110, OM4111, OM4112, OM4113, OM4114

**Results relate only to the items tested.**


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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2654186 | SXU | Spiked Blank | pH | 2025/06/10 | | 101 | % |
| 2654188 | SXU | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/06/11 | | 98 | % |
| 2654188 | SXU | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/06/11 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/06/11 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/06/11 | <1.0 | | mg/L |
| 2654189 | SXU | Spiked Blank | Conductivity | 2025/06/10 | | 102 | % |
| 2654189 | SXU | Method Blank | Conductivity | 2025/06/10 | <0.0010 | | mS/cm |
| 2654190 | BDA | Spiked Blank | pH (15° C) | 2025/06/10 | | 100 | % |
| 2654218 | SD9 | Spiked Blank | Orthophosphate (P) | 2025/06/10 | | 98 | % |
| 2654218 | SD9 | Method Blank | Orthophosphate (P) | 2025/06/10 | <0.050 | | mg/L |
| 2654221 | SD9 | Spiked Blank | Orthophosphate (P) | 2025/06/10 | | 98 | % |
| 2654221 | SD9 | Method Blank | Orthophosphate (P) | 2025/06/10 | <0.050 | | mg/L |
| 2654224 | K1K | Spiked Blank | Real Color | 2025/06/10 | | 108 | % |
| 2654224 | K1K | Method Blank | Real Color | 2025/06/10 | <2.0 | | UCV |
| 2654233 | RIY | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/06/11 | | 104 | % |
| | | | Nitrates (N-NO3-) | 2025/06/11 | | 105 | % |
| | | | Nitrites (N-NO2-) | 2025/06/11 | | 103 | % |
| 2654233 | RIY | Method Blank | Nitrate (N) and Nitrite(N) | 2025/06/11 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/06/11 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/06/11 | <0.020 | | mg/L |
| 2654234 | RIY | Spiked Blank | Chloride (Cl) | 2025/06/11 | | 101 | % |
| | | | Sulfates (SO4) | 2025/06/11 | | 102 | % |
| 2654234 | RIY | Method Blank | Chloride (Cl) | 2025/06/11 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/06/11 | <0.50 | | mg/L |
| 2654243 | GPC | Spiked Blank | Turbidity | 2025/06/10 | | 105 | % |
| 2654243 | GPC | Method Blank | Turbidity | 2025/06/10 | <0.10 | | NTU |
| 2654322 | KME | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/06/11 | | 98 | % |
| | | | Nitrates (N-NO3-) | 2025/06/11 | | 98 | % |
| | | | Nitrites (N-NO2-) | 2025/06/11 | | 98 | % |
| 2654322 | KME | Method Blank | Nitrate (N) and Nitrite(N) | 2025/06/11 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/06/11 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/06/11 | <0.020 | | mg/L |
| 2654323 | KME | Spiked Blank | Chloride (Cl) | 2025/06/11 | | 98 | % |
| | | | Sulfates (SO4) | 2025/06/11 | | 101 | % |
| 2654323 | KME | Method Blank | Chloride (Cl) | 2025/06/11 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/06/11 | <0.50 | | mg/L |
| 2655324 | SAB | Spiked Blank | Total suspended solids (TSS) | 2025/06/12 | | 94 | % |
| 2655324 | SAB | Method Blank | Total suspended solids (TSS) | 2025/06/12 | <2.0 | | mg/L |
| 2655845 | HGU | Spiked Blank | Phenols-4AAP | 2025/06/13 | | 98 | % |
| 2655845 | HGU | Method Blank | Phenols-4AAP | 2025/06/13 | <0.0020 | | mg/L |
| 2655883 | S2S | Spiked Blank | Total Dissolved Solids | 2025/06/13 | | 102 | % |
| 2655883 | S2S | Method Blank | Total Dissolved Solids | 2025/06/13 | <10 | | mg/L |
| 2656062 | WWO | Spiked Blank | Total Extractable Aluminum (Al) | 2025/06/16 | | 101 | % |
| | | | Total Extractable Antimony (Sb) | 2025/06/16 | | 106 | % |
| | | | Total Extractable Silver (Ag) | 2025/06/16 | | 98 | % |
| | | | Total Extractable Arsenic (As) | 2025/06/16 | | 99 | % |
| | | | Total Extractable Barium (Ba) | 2025/06/16 | | 101 | % |
| | | | Total Extractable Beryllium (Be) | 2025/06/16 | | 101 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/06/16 | | 107 | % |
| | | | Total Extractable Boron (B) | 2025/06/16 | | 103 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/06/16 | | 101 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Calcium (Ca) | 2025/06/16 | | 101 | % |
| | | | Total Extractable Chromium (Cr) | 2025/06/16 | | 90 | % |
| | | | Total Extractable Cobalt (Co) | 2025/06/16 | | 98 | % |
| | | | Total Extractable Copper (Cu) | 2025/06/16 | | 98 | % |
| | | | Total Extractable Tin (Sn) | 2025/06/16 | | 104 | % |
| | | | Total Extractable Iron (Fe) | 2025/06/16 | | 102 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/06/16 | | 101 | % |
| | | | Total Extractable Manganese (Mn) | 2025/06/16 | | 100 | % |
| | | | Total Extractable Mercury (Hg) | 2025/06/16 | | 104 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/06/16 | | 106 | % |
| | | | Total Extractable Nickel (Ni) | 2025/06/16 | | 88 | % |
| | | | Total Extractable Total phosphorous | 2025/06/16 | | 96 | % |
| | | | Total Extractable Lead (Pb) | 2025/06/16 | | 104 | % |
| | | | Total Extractable Potassium (K) | 2025/06/16 | | 101 | % |
| | | | Total Extractable Selenium (Se) | 2025/06/16 | | 104 | % |
| | | | Total Extractable Sodium (Na) | 2025/06/16 | | 110 | % |
| | | | Total Extractable Strontium (Sr) | 2025/06/16 | | 100 | % |
| | | | Total Extractable Thallium (Tl) | 2025/06/16 | | 99 | % |
| | | | Total Extractable Titanium (Ti) | 2025/06/16 | | 102 | % |
| | | | Total Extractable Uranium (U) | 2025/06/16 | | 103 | % |
| | | | Total Extractable Vanadium (V) | 2025/06/16 | | 102 | % |
| | | | Total Extractable Zinc (Zn) | 2025/06/16 | | 96 | % |
| 2656062 | WWO | Method Blank | Total Extractable Aluminum (Al) | 2025/06/16 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/06/16 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/06/16 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/06/16 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/06/16 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/06/16 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/06/16 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/06/16 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/06/16 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/06/16 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/06/16 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Mercury (Hg) | 2025/06/16 | <0.10 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/06/16 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/06/16 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/06/16 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/06/16 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/06/16 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/06/16 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/06/16 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/06/16 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/06/16 | <2.0 | | ug/L |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Titanium (Ti) | 2025/06/16 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/06/16 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/06/16 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/06/16 | <7.0 | | ug/L |
| 2656612 | BAG | Spiked Blank | Dissolved organic carbon | 2025/06/16 | | 106 | % |
| 2656612 | BAG | Method Blank | Dissolved organic carbon | 2025/06/16 | <0.20 | | mg/L |
| 2657062 | SD9 | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/06/17 | | 103 | % |
| 2657062 | SD9 | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/06/18 | <0.020 | | mg/L |
| 2657072 | THL | Matrix Spike | Benzene | 2025/06/16 | | 83 | % |
| | | | Toluene | 2025/06/16 | | 89 | % |
| | | | Ethylbenzene | 2025/06/16 | | 90 | % |
| | | | Total_Xylenes | 2025/06/16 | | 92 | % |
| 2657072 | THL | Spiked Blank | Benzene | 2025/06/16 | | 93 | % |
| | | | Toluene | 2025/06/16 | | 99 | % |
| | | | Ethylbenzene | 2025/06/16 | | 99 | % |
| | | | Total_Xylenes | 2025/06/16 | | 101 | % |
| 2657072 | THL | Method Blank | Benzene | 2025/06/16 | <0.0010 | | mg/L |
| | | | Toluene | 2025/06/16 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/06/16 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/06/16 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/06/16 | <0.090 | | mg/L |
| 2657074 | YPN | Matrix Spike | Isobutylbenzene - Extractable | 2025/06/13 | | 94 | % |
| | | | n-Dotriacontane - Extractable | 2025/06/13 | | 95 | % |
| | | | >C10-C16 Hydrocarbons | 2025/06/13 | | 92 | % |
| | | | >C16-C21 Hydrocarbons | 2025/06/13 | | 109 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/06/13 | | 106 | % |
| 2657074 | YPN | Spiked Blank | Isobutylbenzene - Extractable | 2025/06/13 | | 91 | % |
| | | | n-Dotriacontane - Extractable | 2025/06/13 | | 104 | % |
| | | | >C10-C16 Hydrocarbons | 2025/06/13 | | 93 | % |
| | | | >C16-C21 Hydrocarbons | 2025/06/13 | | 110 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/06/13 | | 105 | % |
| 2657074 | YPN | Method Blank | Isobutylbenzene - Extractable | 2025/06/13 | | 90 | % |
| | | | n-Dotriacontane - Extractable | 2025/06/13 | | 99 | % |
| | | | >C10-C16 Hydrocarbons | 2025/06/13 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/06/13 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/06/13 | <0.090 | | mg/L |
| 2657369 | ABX | Spiked Blank | Sulfides (S2-) | 2025/06/20 | | 103 | % |
| 2657369 | ABX | Method Blank | Sulfides (S2-) | 2025/06/20 | <0.020 | | mg/L |
| 2657620 | SD9 | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/06/18 | | 103 | % |
| 2657620 | SD9 | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/06/18 | <0.020 | | mg/L |
| 2658771 | éC7 | Matrix Spike | Reactive silica (SiO2) | 2025/06/19 | | 93 | % |
| 2658771 | éC7 | Spiked Blank | Reactive silica (SiO2) | 2025/06/19 | | 95 | % |
| 2658771 | éC7 | Method Blank | Reactive silica (SiO2) | 2025/06/19 | <0.50 | | mg/L |
| 2658777 | éE6 | Matrix Spike [OM4115-10] | Isobutylbenzene - Extractable | 2025/06/13 | | 100 | % |
| | | | n-Dotriacontane - Extractable | 2025/06/13 | | 125 | % |
| | | | >C10-C16 Hydrocarbons | 2025/06/13 | | 93 | % |
| | | | >C16-C21 Hydrocarbons | 2025/06/13 | | 96 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/06/13 | | 97 | % |
| 2658777 | éE6 | Spiked Blank | Isobutylbenzene - Extractable | 2025/06/13 | | 103 | % |
| | | | n-Dotriacontane - Extractable | 2025/06/13 | | 126 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | >C10-C16 Hydrocarbons | 2025/06/13 | | 97 | % |
| | | | >C16-C21 Hydrocarbons | 2025/06/13 | | 98 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/06/13 | | 99 | % |
| 2658777 | éE6 | Method Blank | Isobutylbenzene - Extractable | 2025/06/13 | | 101 | % |
| | | | n-Dotriacontane - Extractable | 2025/06/13 | | 117 | % |
| | | | >C10-C16 Hydrocarbons | 2025/06/13 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/06/13 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/06/13 | <0.090 | | mg/L |
| 2660046 | DPA | Spiked Blank | Total Extractable Mercury (Hg) | 2025/06/25 | | 98 | % |
| 2660046 | DPA | Method Blank | Total Extractable Mercury (Hg) | 2025/06/25 | <0.000010 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

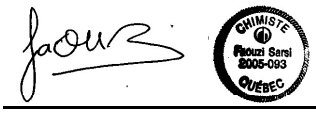

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## VALIDATION SIGNATURE PAGE

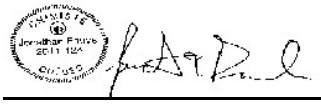
The analytical data and all QC contained in this report were reviewed and validated by:



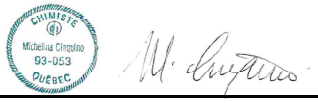

Caroline Bougie, B.Sc. Chemist, Montreal, Senior Analyst 2 - Signer



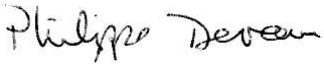

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst



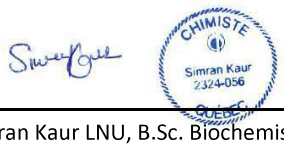
Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist




Michelina Cinquino, Analyst II



Phil Deveau, Scientific Specialist (Organics)




Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2




Shu Yang, B.Sc. Chemist, Montreal, Analyst II


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 180679

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/08/11**
Report #: R3069532
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C541116**
**Received: 2025/07/28, 12:00**

Sample Matrix: Surface Water
# Samples Received: 5

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 5 | N/A | 2025/07/30 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 5 | N/A | 2025/07/29 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 5 | N/A | 2025/07/29 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 5 | N/A | 2025/07/30 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 5 | 2025/07/29 | 2025/07/29 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 2 | 2025/07/30 | 2025/08/01 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 5 | N/A | 2025/07/29 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 5 | 2025/07/30 | 2025/08/01 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 5 | N/A | 2025/07/31 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 5 | N/A | 2025/07/29 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 5 | N/A | 2025/07/29 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 5 | N/A | 2025/07/30 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 5 | N/A | 2025/07/28 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 5 | N/A | 2025/08/01 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 5 | N/A | 2025/07/28 | | Field measurement |
| Ortho Phosphate-water | 5 | N/A | 2025/07/31 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 5 | 2025/07/30 | 2025/08/01 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 5 | N/A | 2025/07/29 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 5 | N/A | 2025/07/28 | | Field Measurement |
| Turbidity-water | 5 | N/A | 2025/07/29 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 5 | 2025/07/30 | 2025/07/30 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 5 | 2025/08/01 | 2025/08/05 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 5 | 2025/07/28 | 2025/07/31 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 5 | 2025/07/30 | 2025/07/30 | ATL SOP 00130 | Atl. RBCA v3.1 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in



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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 180679

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/08/11**
Report #: R3069532
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C541116**
**Received: 2025/07/28, 12:00**

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
11 Aug 2025 12:44:09

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

Bureau Veritas Job #: C541116
Report Date: 2025/08/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | OR8997 | OR8998 | OR8999 | OR9000 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 21:58 | 2025/07/16 23:00 | 2025/07/16 21:30 | 2025/07/16 11:38 | | |
| COC Number | | 180679 | 180679 | 180679 | 180679 | | |
| | Units | HOW-SW1-Q2-2025 | HOW-SW3-Q2-2025 | HOW-SW4-Q2-2025 | HOW-SW5-Q1-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | | |
| Reactive silica (SiO2) † | mg/L | 5.0 | 1.7 | 4.6 | 1.2 | 0.50 | 2676239 |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2676238 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2676238 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2676238 |
| Return to baseline at C32 † | mg/L | NA | NA | NA | NA | N/A | 2676238 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | NA | NA | N/A | 2676238 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 91 | 91 | 95 | 96 | N/A | 2676238 |
| n-Dotriacontane - Extractable | % | 86 | 92 | 95 | 95 | N/A | 2676238 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

| Bureau Veritas ID | | OR9001 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/07/16 08:37 | | |
| COC Number | | 180679 | | |
| | Units | HOW-ML-Q1-2025 | RDL | QC Batch |
| **INORGANICS** | | | | |
| Reactive silica (SiO2) † | mg/L | <0.50 | 0.50 | 2676239 |
| **PETROLEUM HYDROCARBONS** | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | 0.050 | 2676238 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | 0.050 | 2676238 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | 0.090 | 2676238 |
| Return to baseline at C32 † | mg/L | NA | N/A | 2676238 |
| Hydrocarbon Resemblance † | mg/L | NA | N/A | 2676238 |
| **Surrogate Recovery (%)** | | | | |
| Isobutylbenzene - Extractable | % | 93 | N/A | 2676238 |
| n-Dotriacontane - Extractable | % | 96 | N/A | 2676238 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OR8997 | OR8998 | OR8999 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 21:58 | 2025/07/16 23:00 | 2025/07/16 21:30 | | |
| COC Number | | 180679 | 180679 | 180679 | | |
| | Units | HOW-SW1-Q2-2025 | HOW-SW3-Q2-2025 | HOW-SW4-Q2-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | N/A | 0.000010 | 2674215 |
| Total Extractable Aluminum (Al) | ug/L | <10 | 150 | <10 | 10 | 2674586 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | 3.1 | <2.0 | 2.0 | 2674586 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2674586 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2674586 |
| Total Extractable Calcium (Ca) | ug/L | 2900 | 890 | 2300 | 500 | 2674586 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2674586 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 17000 | 5000 | 13000 | 1000 | 2674586 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Iron (Fe) | ug/L | <60 | 1400 | <60 | 60 | 2674586 |
| Total Extractable Magnesium (Mg) | ug/L | 2300 | 660 | 1900 | 100 | 2674586 |
| Total Extractable Manganese (Mn) | ug/L | 2.7 | 120 | <1.0 | 1.0 | 2674586 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2674586 |
| Total Extractable Total phosphorous | ug/L | <10 | 10 | <10 | 10 | 2674586 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2674586 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2674586 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2674586 |
| Total Extractable Sodium (Na) | ug/L | 700 | 610 | 590 | 500 | 2674586 |
| Total Extractable Strontium (Sr) † | ug/L | 6.4 | 4.9 | 5.9 | 2.0 | 2674586 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2674586 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674586 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OR8997 | OR8998 | OR8999 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 21:58 | 2025/07/16 23:00 | 2025/07/16 21:30 | | |
| COC Number | | 180679 | 180679 | 180679 | | |
| | Units | HOW-SW1-Q2-2025 | HOW-SW3-Q2-2025 | HOW-SW4-Q2-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2674586 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OR9000 | OR9001 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 11:38 | 2025/07/16 08:37 | | |
| COC Number | | 180679 | 180679 | | |
| | Units | HOW-SW5-Q1-2025 | HOW-ML-Q1-2025 | RDL | QC Batch |
| **METALS** | | | | | |
| Total Extractable Aluminum (Al) | ug/L | 13 | 21 | 10 | 2674586 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | 50 | 2674586 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | 0.20 | 2674586 |
| Total Extractable Calcium (Ca) | ug/L | <500 | 2000 | 500 | 2674586 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | 5.0 | 2674586 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 1400 | 11000 | 1000 | 2674586 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Iron (Fe) | ug/L | <60 | <60 | 60 | 2674586 |
| Total Extractable Magnesium (Mg) | ug/L | 190 | 1500 | 100 | 2674586 |
| Total Extractable Manganese (Mn) | ug/L | 6.1 | 2.9 | 1.0 | 2674586 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | 25 | 2674586 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | 10 | 2674586 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | 0.50 | 2674586 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | 500 | 2674586 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | 3.0 | 2674586 |
| Total Extractable Sodium (Na) | ug/L | <500 | <500 | 500 | 2674586 |
| Total Extractable Strontium (Sr) † | ug/L | <2.0 | 4.8 | 2.0 | 2674586 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | 10 | 2674586 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | 1.0 | 2674586 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | 2.0 | 2674586 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | 7.0 | 2674586 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited



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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OR8997 | OR8997 | OR8998 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 21:58 | 2025/07/16 21:58 | 2025/07/16 23:00 | | |
| COC Number | | 180679 | 180679 | 180679 | | |
| | Units | HOW-SW1-Q2-2025 | HOW-SW1-Q2-2025 Lab-Dup | HOW-SW3-Q2-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.037 | N/A | 0.013 | 0.0010 | 2674392 |
| Dissolved organic carbon † | mg/L | 0.54 | N/A | 7.7 | 0.20 | 2673954 |
| Dissolved oxygen † | mg/L | 9.5 | N/A | 9.1 | 1.0 | 2674033 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.22 | N/A | <0.020 | 0.020 | 2673823 |
| Nitrates (N-NO3-) | mg/L | 0.22 | N/A | <0.020 | 0.020 | 2673823 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2673823 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | 0.078 | N/A | <0.020 | 0.020 | 2674203 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | <0.050 | 0.050 | 2674962 |
| pH | pH | 6.93 | N/A | 5.98 | N/A | 2674390 |
| pH (15° C) † | pH | 7.65 | N/A | 6.05 | N/A | 2674519 |
| Phenols-4AAP | mg/L | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2675241 |
| Real Color | UCV | 2.8 | N/A | 89 | 2.0 | 2673822 |
| Sulfides (S2-) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2674231 |
| Turbidity | NTU | 0.17 | N/A | 0.96 | 0.10 | 2674017 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 15 | N/A | 4.8 | 1.0 | 2674393 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 15 | N/A | 4.8 | 1.0 | 2674393 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | N/A | <1.0 | 1.0 | 2674393 |
| Chloride (Cl) | mg/L | 0.54 | N/A | 0.28 | 0.050 | 2673830 |
| Sulfates (SO4) | mg/L | 2.4 | N/A | <0.50 | 0.50 | 2673830 |
| Total Dissolved Solids | mg/L | 40 | N/A | 69 | 10 | 2673852 |
| Total suspended solids (TSS) | mg/L | 2.0 | N/A | 4.0 | 2.0 | 2673788 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 7.07 | N/A | 5.91 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 7.900 | N/A | 15.40 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OR8999 | OR9000 | OR9001 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 21:30 | 2025/07/16 11:38 | 2025/07/16 08:37 | | |
| COC Number | | 180679 | 180679 | 180679 | | |
| | Units | HOW-SW4-Q2-2025 | HOW-SW5-Q1-2025 | HOW-ML-Q1-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.031 | 0.0027 | 0.026 | 0.0010 | 2674392 |
| Dissolved organic carbon † | mg/L | 0.64 | 1.5 | 2.1 | 0.20 | 2673954 |
| Dissolved oxygen † | mg/L | 9.8 | 10 | 10 | 1.0 | 2674033 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.33 | <0.020 | <0.020 | 0.020 | 2673823 |
| Nitrates (N-NO3-) | mg/L | 0.33 | <0.020 | <0.020 | 0.020 | 2673823 |
| Nitrites (N-NO2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2673823 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2674203 |
| Orthophosphate (P) | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2674962 |
| pH | pH | 6.70 | 6.23 | 6.72 | N/A | 2674390 |
| pH (15° C) † | pH | 6.92 | 6.45 | 6.89 | N/A | 2674519 |
| Phenols-4AAP | mg/L | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2675241 |
| Real Color | UCV | 2.5 | 3.9 | 7.1 | 2.0 | 2673822 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2674231 |
| Turbidity | NTU | 0.10 | 0.44 | 0.55 | 0.10 | 2674017 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 11 | 2.6 | 9.2 | 1.0 | 2674393 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 11 | 2.6 | 9.2 | 1.0 | 2674393 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | <1.0 | <1.0 | 1.0 | 2674393 |
| Chloride (Cl) | mg/L | 0.65 | 0.24 | 0.15 | 0.050 | 2673830 |
| Sulfates (SO4) | mg/L | 2.3 | <0.50 | 3.3 | 0.50 | 2673830 |
| Total Dissolved Solids | mg/L | 27 | 17 | 18 | 10 | 2673852 |
| Total suspended solids (TSS) | mg/L | 2.0 | 4.0 | 5.0 | 2.0 | 2673788 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 6.92 | 6.68 | 6.67 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 8.000 | 17.30 | 13.80 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OR9001 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/07/16 08:37 | | |
| COC Number | | 180679 | | |
| | Units | HOW-ML-Q1-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | |
| Sulfides (S2-) | mg/L | <0.020 | 0.020 | 2674231 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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Bureau Veritas Job #: C541116
Report Date: 2025/08/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | OR8997 | OR8998 | OR8999 | OR9000 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/16 21:58 | 2025/07/16 23:00 | 2025/07/16 21:30 | 2025/07/16 11:38 | | |
| COC Number | | 180679 | 180679 | 180679 | 180679 | | |
| | Units | HOW-SW1-Q2-2025 | HOW-SW3-Q2-2025 | HOW-SW4-Q2-2025 | HOW-SW5-Q1-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2676236 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2676236 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2676236 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2676236 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2676236 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2676237 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

| Bureau Veritas ID | | OR9001 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/07/16 08:37 | | |
| COC Number | | 180679 | | |
| | Units | HOW-ML-Q1-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | |
| Benzene † | mg/L | <0.0010 | 0.0010 | 2676236 |
| Toluene † | mg/L | <0.0010 | 0.0010 | 2676236 |
| Ethylbenzene † | mg/L | <0.0010 | 0.0010 | 2676236 |
| Total_Xylenes † | mg/L | <0.0020 | 0.0020 | 2676236 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | 0.090 | 2676236 |
| Modified TPH (Tier1) † | mg/L | <0.090 | 0.090 | 2676237 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Dissolved Oxygen: Holding time already past upon reception: OR8997
Real Color: Holding time already past upon reception: OR8997
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OR8997
pH in water: Holding time already past upon reception: OR8997
Turbidity-water: Holding time already past upon reception: OR8997
Dissolved Oxygen: Holding time already past upon reception: OR8998
Real Color: Holding time already past upon reception: OR8998
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OR8998
pH in water: Holding time already past upon reception: OR8998
Turbidity-water: Holding time already past upon reception: OR8998
pH Measured @ 15° C: Holding time already past upon reception: OR8998
Dissolved Oxygen: Holding time already past upon reception: OR8999
Real Color: Holding time already past upon reception: OR8999
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OR8999
pH in water: Holding time already past upon reception: OR8999
Turbidity-water: Holding time already past upon reception: OR8999
pH Measured @ 15° C: Holding time already past upon reception: OR8999
Dissolved Oxygen: Holding time already past upon reception: OR9000
Real Color: Holding time already past upon reception: OR9000
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OR9000
pH in water: Holding time already past upon reception: OR9000
Turbidity-water: Holding time already past upon reception: OR9000
pH Measured @ 15° C: Holding time already past upon reception: OR9000
Dissolved Oxygen: Holding time already past upon reception: OR9001
Real Color: Holding time already past upon reception: OR9001
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OR9001
pH in water: Holding time already past upon reception: OR9001
Turbidity-water: Holding time already past upon reception: OR9001
pH Measured @ 15° C: Holding time already past upon reception: OR9001

**CONVENTIONAL PARAMETERS (SURFACE WATER)**

Total dissolved solids, Total suspended solids: Samples received after hold time.

Disolved oxygen: Presence of headspace (OR8997)

Dissolved organic carbon :Samples received after hold time.

Nitrate and nitrite:Holding time not respected.

**Results relate only to the items tested.**


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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2673788 | AVV | Spiked Blank | Total suspended solids (TSS) | 2025/07/29 | | 91 | % |
| 2673788 | AVV | Method Blank | Total suspended solids (TSS) | 2025/07/29 | <2.0 | | mg/L |
| 2673822 | GKR | Spiked Blank | Real Color | 2025/07/29 | | 104 | % |
| 2673822 | GKR | Method Blank | Real Color | 2025/07/29 | <2.0 | | UCV |
| 2673823 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/07/29 | | 98 | % |
| | | | Nitrates (N-NO3-) | 2025/07/29 | | 99 | % |
| | | | Nitrites (N-NO2-) | 2025/07/29 | | 96 | % |
| 2673823 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/07/29 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/07/29 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/07/29 | <0.020 | | mg/L |
| 2673830 | YDH | Spiked Blank | Chloride (Cl) | 2025/07/29 | | 99 | % |
| | | | Sulfates (SO4) | 2025/07/29 | | 98 | % |
| 2673830 | YDH | Method Blank | Chloride (Cl) | 2025/07/29 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/07/29 | <0.50 | | mg/L |
| 2673852 | SAB | Spiked Blank | Total Dissolved Solids | 2025/07/29 | | 95 | % |
| 2673852 | SAB | Method Blank | Total Dissolved Solids | 2025/07/29 | <10 | | mg/L |
| 2673954 | TDO | Spiked Blank | Dissolved organic carbon | 2025/07/29 | | 104 | % |
| 2673954 | TDO | Method Blank | Dissolved organic carbon | 2025/07/29 | <0.20 | | mg/L |
| 2674017 | BDA | Spiked Blank | Turbidity | 2025/07/29 | | 93 | % |
| 2674017 | BDA | Method Blank | Turbidity | 2025/07/29 | <0.10 | | NTU |
| 2674203 | M1P | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/07/31 | | 95 | % |
| 2674203 | M1P | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/07/31 | <0.020 | | mg/L |
| 2674215 | CYU | Spiked Blank | Total Extractable Mercury (Hg) | 2025/07/31 | | 84 | % |
| 2674215 | CYU | Method Blank | Total Extractable Mercury (Hg) | 2025/07/31 | <0.000010 | | mg/L |
| 2674231 | ABX | Spiked Blank | Sulfides (S2-) | 2025/08/01 | | 88 | % |
| 2674231 | ABX | Method Blank | Sulfides (S2-) | 2025/08/01 | <0.020 | | mg/L |
| 2674390 | LTA | Spiked Blank | pH | 2025/07/30 | | 101 | % |
| 2674392 | LTA | Spiked Blank | Conductivity | 2025/07/30 | | 103 | % |
| 2674392 | LTA | Method Blank | Conductivity | 2025/07/30 | <0.0010 | | mS/cm |
| 2674393 | LTA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/07/30 | | 97 | % |
| 2674393 | LTA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/07/30 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/07/30 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/07/30 | <1.0 | | mg/L |
| 2674519 | S28 | Spiked Blank | pH (15° C) | 2025/07/30 | | 101 | % |
| 2674586 | DPA | Spiked Blank | Total Extractable Aluminum (Al) | 2025/08/01 | | 97 | % |
| | | | Total Extractable Antimony (Sb) | 2025/08/01 | | 108 | % |
| | | | Total Extractable Silver (Ag) | 2025/08/01 | | 99 | % |
| | | | Total Extractable Arsenic (As) | 2025/08/01 | | 102 | % |
| | | | Total Extractable Barium (Ba) | 2025/08/01 | | 97 | % |
| | | | Total Extractable Beryllium (Be) | 2025/08/01 | | 108 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/08/01 | | 108 | % |
| | | | Total Extractable Boron (B) | 2025/08/01 | | 107 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/08/01 | | 100 | % |
| | | | Total Extractable Calcium (Ca) | 2025/08/01 | | 95 | % |
| | | | Total Extractable Chromium (Cr) | 2025/08/01 | | 95 | % |
| | | | Total Extractable Cobalt (Co) | 2025/08/01 | | 96 | % |
| | | | Total Extractable Copper (Cu) | 2025/08/01 | | 95 | % |
| | | | Total Extractable Tin (Sn) | 2025/08/01 | | 107 | % |
| | | | Total Extractable Iron (Fe) | 2025/08/01 | | 106 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/08/01 | | 99 | % |
| | | | Total Extractable Manganese (Mn) | 2025/08/01 | | 98 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Molybdenum (Mo) | 2025/08/01 | | 103 | % |
| | | | Total Extractable Nickel (Ni) | 2025/08/01 | | 98 | % |
| | | | Total Extractable Total phosphorous | 2025/08/01 | | 99 | % |
| | | | Total Extractable Lead (Pb) | 2025/08/01 | | 107 | % |
| | | | Total Extractable Potassium (K) | 2025/08/01 | | 98 | % |
| | | | Total Extractable Selenium (Se) | 2025/08/01 | | 105 | % |
| | | | Total Extractable Sodium (Na) | 2025/08/01 | | 101 | % |
| | | | Total Extractable Strontium (Sr) | 2025/08/01 | | 105 | % |
| | | | Total Extractable Thallium (Tl) | 2025/08/01 | | 102 | % |
| | | | Total Extractable Titanium (Ti) | 2025/08/01 | | 97 | % |
| | | | Total Extractable Uranium (U) | 2025/08/01 | | 104 | % |
| | | | Total Extractable Vanadium (V) | 2025/08/01 | | 97 | % |
| | | | Total Extractable Zinc (Zn) | 2025/08/01 | | 99 | % |
| 2674586 | DPA | Method Blank | Total Extractable Aluminum (Al) | 2025/08/01 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/08/01 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/08/01 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/08/01 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/08/01 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/08/01 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/08/01 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/08/01 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/08/01 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/08/01 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/08/01 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/08/01 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/08/01 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/08/01 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/08/01 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/08/01 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/08/01 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/08/01 | <7.0 | | ug/L |
| 2674962 | KME | Spiked Blank | Orthophosphate (P) | 2025/07/31 | | 103 | % |
| 2674962 | KME | Method Blank | Orthophosphate (P) | 2025/07/31 | <0.050 | | mg/L |
| 2675241 | KME | Spiked Blank | Phenols-4AAP | 2025/08/01 | | 100 | % |
| 2675241 | KME | Method Blank | Phenols-4AAP | 2025/08/01 | <0.0020 | | mg/L |
| 2676236 | A1M | Matrix Spike | Benzene | 2025/07/30 | | 98 | % |
| | | | Toluene | 2025/07/30 | | 100 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Ethylbenzene | 2025/07/30 | | 99 | % |
| | | | Total_Xylenes | 2025/07/30 | | 104 | % |
| 2676236 | A1M | Spiked Blank | Benzene | 2025/07/30 | | 98 | % |
| | | | Toluene | 2025/07/30 | | 98 | % |
| | | | Ethylbenzene | 2025/07/30 | | 101 | % |
| | | | Total_Xylenes | 2025/07/30 | | 105 | % |
| 2676236 | A1M | Method Blank | Benzene | 2025/07/30 | <0.0010 | | mg/L |
| | | | Toluene | 2025/07/30 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/07/30 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/07/30 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/07/30 | <0.090 | | mg/L |
| 2676238 | YPN | Matrix Spike | Isobutylbenzene - Extractable | 2025/07/30 | | 91 | % |
| | | | n-Dotriacontane - Extractable | 2025/07/30 | | 97 | % |
| | | | >C10-C16 Hydrocarbons | 2025/07/30 | | 88 | % |
| | | | >C16-C21 Hydrocarbons | 2025/07/30 | | 95 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/07/30 | | 85 | % |
| 2676238 | YPN | Spiked Blank | Isobutylbenzene - Extractable | 2025/07/30 | | 76 | % |
| | | | n-Dotriacontane - Extractable | 2025/07/30 | | 101 | % |
| | | | >C10-C16 Hydrocarbons | 2025/07/30 | | 93 | % |
| | | | >C16-C21 Hydrocarbons | 2025/07/30 | | 98 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/07/30 | | 90 | % |
| 2676238 | YPN | Method Blank | Isobutylbenzene - Extractable | 2025/07/30 | | 75 | % |
| | | | n-Dotriacontane - Extractable | 2025/07/30 | | 101 | % |
| | | | >C10-C16 Hydrocarbons | 2025/07/30 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/07/30 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/07/30 | <0.090 | | mg/L |
| 2676239 | EMT | Matrix Spike | Reactive silica (SiO2) | 2025/08/05 | | 93 | % |
| 2676239 | EMT | Spiked Blank | Reactive silica (SiO2) | 2025/08/05 | | 99 | % |
| 2676239 | EMT | Method Blank | Reactive silica (SiO2) | 2025/08/05 | <0.50 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.



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## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 180823

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/08/18**
Report #: R3080507
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C542437**
**Received: 2025/08/04, 12:45**

Sample Matrix: Surface Water
# Samples Received: 3

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 3 | N/A | 2025/08/06 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 3 | N/A | 2025/08/07 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 3 | N/A | 2025/08/06 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 3 | N/A | 2025/08/06 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 3 | 2025/08/05 | 2025/08/05 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 2 | 2025/08/06 | 2025/08/12 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 3 | N/A | 2025/08/05 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 3 | 2025/08/05 | 2025/08/10 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 3 | N/A | 2025/08/06 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 3 | N/A | 2025/08/07 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 3 | N/A | 2025/08/04 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 3 | N/A | 2025/08/06 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 3 | N/A | 2025/08/04 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 3 | N/A | 2025/08/07 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 3 | N/A | 2025/08/04 | | Field measurement |
| Ortho Phosphate-water | 3 | N/A | 2025/08/06 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 1 | 2025/08/14 | 2025/08/14 | STL SOP-00273 | SM 24 4500-S2 m |
| Sulfides (as S2-)-water | 2 | 2025/08/15 | 2025/08/15 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 3 | N/A | 2025/08/06 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 3 | N/A | 2025/08/04 | | Field Measurement |
| Turbidity-water | 3 | N/A | 2025/08/05 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 3 | 2025/08/07 | 2025/08/07 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 3 | 2025/08/12 | 2025/08/12 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 3 | 2025/08/04 | 2025/08/08 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 2 | 2025/08/07 | 2025/08/07 | ATL SOP 00130 | Atl. RBCA v3.1 m |
| VPH in Water (PIRI) (1) | 1 | 2025/08/07 | 2025/08/08 | ATL SOP 00130 | Atl. RBCA v3.1 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.



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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 180823

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/08/18**
Report #: R3080507
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C542437**
**Received: 2025/08/04, 12:45**

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key




Bureau Veritas
18 Aug 2025 11:14:46

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C542437
Report Date: 2025/08/18

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | OS6527 | OS6528 | OS6529 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 08:29 | 2025/07/17 09:06 | 2025/07/17 10:19 | | |
| COC Number | | 180823 | 180823 | 180823 | | |
| | Units | HOW-BC-Q2-2025 | HOW-TL-Q2-2025 | HOW-BL-Q2-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | |
| Reactive silica (SiO2) † | mg/L | 4.8 | 4.5 | 5.6 | 0.50 | 2678890 |
| **PETROLEUM HYDROCARBONS** | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2678889 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2678889 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | <0.090 | 0.090 | 2678889 |
| Return to baseline at C32 † | mg/L | NA | NA | NA | N/A | 2678889 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | NA | N/A | 2678889 |
| **Surrogate Recovery (%)** | | | | | | |
| Isobutylbenzene - Extractable | % | 90 | 94 | 96 | N/A | 2678889 |
| n-Dotriacontane - Extractable | % | 100 | 102 | 104 | N/A | 2678889 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OS6527 | OS6528 | OS6529 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 08:29 | 2025/07/17 09:06 | 2025/07/17 10:19 | | |
| COC Number | | 180823 | 180823 | 180823 | | |
| | Units | HOW-BC-Q2-2025 | HOW-TL-Q2-2025 | HOW-BL-Q2-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | N/A | 0.000010 | 2676634 |
| Total Extractable Aluminum (Al) | ug/L | 110 | 13 | <10 | 10 | 2676313 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Barium (Ba) | ug/L | 3.0 | 2.9 | <2.0 | 2.0 | 2676313 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2676313 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2676313 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2676313 |
| Total Extractable Calcium (Ca) | ug/L | <500 | 3500 | 5400 | 500 | 2676313 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2676313 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 3400 | 20000 | 29000 | 1000 | 2676313 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2676313 |
| Total Extractable Iron (Fe) | ug/L | 360 | 67 | <60 | 60 | 2676313 |
| Total Extractable Magnesium (Mg) | ug/L | 530 | 2700 | 3900 | 100 | 2676313 |
| Total Extractable Manganese (Mn) | ug/L | 40 | 5.8 | 1.6 | 1.0 | 2676313 |
| Total Extractable Mercury (Hg) | ug/L | N/A | N/A | <0.10 | 0.10 | 2676313 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | 5.7 | <2.0 | 2.0 | 2676313 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2676313 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2676313 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2676313 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2676313 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2676313 |
| Total Extractable Sodium (Na) | ug/L | 500 | 580 | 710 | 500 | 2676313 |
| Total Extractable Strontium (Sr) † | ug/L | 2.6 | 6.2 | 6.7 | 2.0 | 2676313 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2676313 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited



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Bureau Veritas Job #: C542437
Report Date: 2025/08/18

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OS6527 | OS6528 | OS6529 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 08:29 | 2025/07/17 09:06 | 2025/07/17 10:19 | | |
| COC Number | | 180823 | 180823 | 180823 | | |
| | Units | HOW-BC-Q2-2025 | HOW-TL-Q2-2025 | HOW-BL-Q2-2025 | RDL | QC Batch |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2676313 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2676313 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2676313 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2676313 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OS6527 | OS6527 | OS6528 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 08:29 | 2025/07/17 08:29 | 2025/07/17 09:06 | | |
| COC Number | | 180823 | 180823 | 180823 | | |
| | Units | HOW-BC-Q2-2025 | HOW-BC-Q2-2025 Lab-Dup | HOW-TL-Q2-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.0079 | N/A | 0.040 | 0.0010 | 2676496 |
| Dissolved organic carbon † | mg/L | 3.1 | N/A | 0.94 | 0.20 | 2676261 |
| Dissolved oxygen † | mg/L | 11 | N/A | 11 | 1.0 | 2676029 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | N/A | 0.084 | 0.020 | 2676846 |
| Nitrates (N-NO3-) | mg/L | <0.020 | N/A | 0.084 | 0.020 | 2676846 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2676846 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2676266 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | <0.050 | 0.050 | 2676706 |
| pH | pH | 5.94 | N/A | 6.77 | N/A | 2676494 |
| pH (15° C) † | pH | 5.92 | N/A | 7.51 | N/A | 2676032 |
| Phenols-4AAP | mg/L | <0.0020 | N/A | <0.0020 | 0.0020 | 2677367 |
| Real Color | UCV | 24 | N/A | 5.6 | 2.0 | 2676962 |
| Sulfides (S2-) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2680464 |
| Turbidity | NTU | 0.92 | N/A | 0.56 | 0.10 | 2676399 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 2.9 | N/A | 17 | 1.0 | 2676495 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 2.9 | N/A | 17 | 1.0 | 2676495 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | N/A | <1.0 | 1.0 | 2676495 |
| Chloride (Cl) | mg/L | 0.32 | N/A | 0.38 | 0.050 | 2676848 |
| Sulfates (SO4) | mg/L | 0.77 | N/A | 2.5 | 0.50 | 2676848 |
| Total Dissolved Solids | mg/L | 17 | N/A | 31 | 10 | 2676787 |
| Total suspended solids (TSS) | mg/L | 3.0 | 2.0 | 2.0 | 2.0 | 2676206 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 5.70 | N/A | 6.99 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 10.00 | N/A | 15.20 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OS6529 | OS6529 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 10:19 | 2025/07/17 10:19 | | |
| COC Number | | 180823 | 180823 | | |
| | Units | HOW-BL-Q2-2025 | HOW-BL-Q2-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | | |
| Conductivity | mS/cm | 0.057 | 0.056 | 0.0010 | 2676496 |
| Dissolved organic carbon † | mg/L | 0.28 | N/A | 0.20 | 2676261 |
| Dissolved oxygen † | mg/L | 11 | N/A | 1.0 | 2676029 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.022 | N/A | 0.020 | 2676846 |
| Nitrates (N-NO3-) | mg/L | 0.022 | N/A | 0.020 | 2676846 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | 0.020 | 2676846 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | N/A | 0.020 | 2676266 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | 0.050 | 2676706 |
| pH | pH | 6.93 | 6.77 | N/A | 2676494 |
| pH (15° C) † | pH | 7.23 | N/A | N/A | 2676032 |
| Phenols-4AAP | mg/L | 0.0021 | N/A | 0.0020 | 2677367 |
| Real Color | UCV | <2.0 | N/A | 2.0 | 2676962 |
| Sulfides (S2-) | mg/L | <0.020 | N/A | 0.020 | 2679957 |
| Turbidity | NTU | 0.40 | N/A | 0.10 | 2676399 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 21 | 22 | 1.0 | 2676495 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 21 | 22 | 1.0 | 2676495 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | <1.0 | 1.0 | 2676495 |
| Chloride (Cl) | mg/L | 0.31 | N/A | 0.050 | 2676848 |
| Sulfates (SO4) | mg/L | 2.1 | N/A | 0.50 | 2676848 |
| Total Dissolved Solids | mg/L | 38 | N/A | 10 | 2676787 |
| Total suspended solids (TSS) | mg/L | <2.0 | N/A | 2.0 | 2676206 |
| **On-site Measurements** | | | | | |
| pH (on-site) † | pH | 7.18 | N/A | N/A | ONSITE |
| Temperature (°C) † | Celsius | 10.10 | N/A | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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Bureau Veritas Job #: C542437
Report Date: 2025/08/18

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | OS6527 | OS6528 | | OS6529 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 08:29 | 2025/07/17 09:06 | | 2025/07/17 10:19 | | |
| COC Number | | 180823 | 180823 | | 180823 | | |
| | Units | HOW-BC-Q2-2025 | HOW-TL-Q2-2025 | QC Batch | HOW-BL-Q2-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | 2678887 | <0.0010 | 0.0010 | 2678524 |
| Toluene † | mg/L | <0.0010 | <0.0010 | 2678887 | <0.0010 | 0.0010 | 2678524 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | 2678887 | <0.0010 | 0.0010 | 2678524 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | 2678887 | <0.0020 | 0.0020 | 2678524 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | 2678887 | <0.090 | 0.090 | 2678524 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | 2678888 | <0.090 | 0.090 | 2678888 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Dissolved Oxygen: Holding time already past upon reception: OS6527
Total Suspended Solids: Holding time already past upon reception: OS6527
Total Dissolved Solids: Holding time already past upon reception: OS6527
Total Alkalinity (end point 4.5)-waters: Holding time already past upon reception: OS6527
Real Color: Holding time already past upon reception: OS6527
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OS6527
pH in water: Holding time already past upon reception: OS6527
Ortho Phosphate-water: Holding time already past upon reception: OS6527
VPH in Water (PIRI): Holding time already past upon reception: OS6527
TEH in Water (PIRI): Holding time already past upon reception: OS6527
ModTPH (T1) Calc. for Water: Holding time already past upon reception: OS6527
pH Measured @ 15° C: Holding time already past upon reception: OS6527
Turbidity-water: Holding time already past upon reception: OS6527
Dissolved Oxygen: Holding time already past upon reception: OS6528
Total Suspended Solids: Holding time already past upon reception: OS6528
Total Dissolved Solids: Holding time already past upon reception: OS6528
Total Alkalinity (end point 4.5)-waters: Holding time already past upon reception: OS6528
Real Color: Holding time already past upon reception: OS6528
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OS6528
pH in water: Holding time already past upon reception: OS6528
Ortho Phosphate-water: Holding time already past upon reception: OS6528
VPH in Water (PIRI): Holding time already past upon reception: OS6528
TEH in Water (PIRI): Holding time already past upon reception: OS6528
ModTPH (T1) Calc. for Water: Holding time already past upon reception: OS6528
pH Measured @ 15° C: Holding time already past upon reception: OS6528
Turbidity-water: Holding time already past upon reception: OS6528
Dissolved Oxygen: Holding time already past upon reception: OS6529
Total Suspended Solids: Holding time already past upon reception: OS6529
Total Dissolved Solids: Holding time already past upon reception: OS6529
Total Alkalinity (end point 4.5)-waters: Holding time already past upon reception: OS6529
Real Color: Holding time already past upon reception: OS6529
Nitrates(NO3-), Nitrites(NO2-)-water: Holding time already past upon reception: OS6529
pH in water: Holding time already past upon reception: OS6529
Ortho Phosphate-water: Holding time already past upon reception: OS6529
VPH in Water (PIRI): Holding time already past upon reception: OS6529
TEH in Water (PIRI): Holding time already past upon reception: OS6529
ModTPH (T1) Calc. for Water: Holding time already past upon reception: OS6529
pH Measured @ 15° C: Holding time already past upon reception: OS6529
Turbidity-water: Holding time already past upon reception: OS6529

**CONVENTIONAL PARAMETERS (SURFACE WATER)**

Nitrate and nitrite; Dissolved Oxygen, Turbidity, Total Dissolved Solids: Holding time not respected.

Sulfides (S2-): Holding time not respected. (OS6527, OS6528)

**Results relate only to the items tested.**


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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2676032 | K1K | Spiked Blank | pH (15° C) | 2025/08/04 | | 101 | % |
| 2676206 | HET | Spiked Blank | Total suspended solids (TSS) | 2025/08/05 | | 90 | % |
| 2676206 | HET | Method Blank | Total suspended solids (TSS) | 2025/08/05 | <2.0 | | mg/L |
| 2676261 | BAG | Spiked Blank | Dissolved organic carbon | 2025/08/05 | | 99 | % |
| 2676261 | BAG | Method Blank | Dissolved organic carbon | 2025/08/05 | <0.20 | | mg/L |
| 2676266 | M1P | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/08/06 | | 104 | % |
| 2676266 | M1P | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/08/06 | <0.020 | | mg/L |
| 2676313 | TEX | Spiked Blank | Total Extractable Aluminum (Al) | 2025/08/09 | | 103 | % |
| | | | Total Extractable Antimony (Sb) | 2025/08/09 | | 111 | % |
| | | | Total Extractable Silver (Ag) | 2025/08/09 | | 110 | % |
| | | | Total Extractable Arsenic (As) | 2025/08/09 | | 107 | % |
| | | | Total Extractable Barium (Ba) | 2025/08/09 | | 103 | % |
| | | | Total Extractable Beryllium (Be) | 2025/08/09 | | 111 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/08/09 | | 111 | % |
| | | | Total Extractable Boron (B) | 2025/08/09 | | 110 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/08/09 | | 108 | % |
| | | | Total Extractable Calcium (Ca) | 2025/08/09 | | 101 | % |
| | | | Total Extractable Chromium (Cr) | 2025/08/09 | | 103 | % |
| | | | Total Extractable Cobalt (Co) | 2025/08/09 | | 103 | % |
| | | | Total Extractable Copper (Cu) | 2025/08/09 | | 102 | % |
| | | | Total Extractable Tin (Sn) | 2025/08/09 | | 111 | % |
| | | | Total Extractable Iron (Fe) | 2025/08/09 | | 104 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/08/09 | | 103 | % |
| | | | Total Extractable Manganese (Mn) | 2025/08/09 | | 102 | % |
| | | | Total Extractable Mercury (Hg) | 2025/08/09 | | 117 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/08/09 | | 106 | % |
| | | | Total Extractable Nickel (Ni) | 2025/08/09 | | 105 | % |
| | | | Total Extractable Total phosphorous | 2025/08/09 | | 104 | % |
| | | | Total Extractable Lead (Pb) | 2025/08/09 | | 110 | % |
| | | | Total Extractable Potassium (K) | 2025/08/09 | | 101 | % |
| | | | Total Extractable Selenium (Se) | 2025/08/09 | | 114 | % |
| | | | Total Extractable Sodium (Na) | 2025/08/09 | | 103 | % |
| | | | Total Extractable Strontium (Sr) | 2025/08/09 | | 107 | % |
| | | | Total Extractable Thallium (Tl) | 2025/08/09 | | 105 | % |
| | | | Total Extractable Titanium (Ti) | 2025/08/09 | | 104 | % |
| | | | Total Extractable Uranium (U) | 2025/08/09 | | 108 | % |
| | | | Total Extractable Vanadium (V) | 2025/08/09 | | 105 | % |
| | | | Total Extractable Zinc (Zn) | 2025/08/09 | | 108 | % |
| 2676313 | TEX | Method Blank | Total Extractable Aluminum (Al) | 2025/08/09 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/08/09 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/08/09 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/08/09 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/08/09 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/08/09 | <1.0 | | ug/L |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Copper (Cu) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/08/09 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/08/09 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/08/09 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Mercury (Hg) | 2025/08/09 | <0.10 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/08/09 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/08/09 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/08/09 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/08/09 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/08/09 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/08/09 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/08/09 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/08/09 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/08/09 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/08/09 | <7.0 | | ug/L |
| 2676399 | K1K | Spiked Blank | Turbidity | 2025/08/05 | | 107 | % |
| 2676399 | K1K | Method Blank | Turbidity | 2025/08/05 | <0.10 | | NTU |
| 2676494 | JNA | Spiked Blank | pH | 2025/08/06 | | 101 | % |
| 2676495 | JNA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/08/06 | | 98 | % |
| 2676495 | JNA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/08/06 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/08/06 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/08/06 | <1.0 | | mg/L |
| 2676496 | JNA | Spiked Blank | Conductivity | 2025/08/06 | | 101 | % |
| 2676496 | JNA | Method Blank | Conductivity | 2025/08/06 | <0.0010 | | mS/cm |
| 2676634 | ADI | Spiked Blank | Total Extractable Mercury (Hg) | 2025/08/12 | | 148 (1) | % |
| 2676634 | ADI | Method Blank | Total Extractable Mercury (Hg) | 2025/08/12 | <0.000010 | | mg/L |
| 2676706 | SXU | QC Standard | Orthophosphate (P) | 2025/08/06 | | 112 | % |
| 2676706 | SXU | Spiked Blank | Orthophosphate (P) | 2025/08/06 | | 104 | % |
| 2676706 | SXU | Method Blank | Orthophosphate (P) | 2025/08/06 | <0.050 | | mg/L |
| 2676787 | AJM | Spiked Blank | Total Dissolved Solids | 2025/08/06 | | 96 | % |
| 2676787 | AJM | Method Blank | Total Dissolved Solids | 2025/08/06 | <10 | | mg/L |
| 2676846 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/08/06 | | 99 | % |
| | | | Nitrates (N-NO3-) | 2025/08/06 | | 100 | % |
| | | | Nitrites (N-NO2-) | 2025/08/06 | | 97 | % |
| 2676846 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/08/06 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/08/06 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/08/06 | <0.020 | | mg/L |
| 2676848 | YDH | Spiked Blank | Chloride (Cl) | 2025/08/06 | | 100 | % |
| | | | Sulfates (SO4) | 2025/08/06 | | 99 | % |
| 2676848 | YDH | Method Blank | Chloride (Cl) | 2025/08/06 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/08/06 | <0.50 | | mg/L |
| 2676962 | BDA | Spiked Blank | Real Color | 2025/08/06 | | 105 | % |
| 2676962 | BDA | Method Blank | Real Color | 2025/08/06 | <2.0 | | UCV |
| 2677367 | KME | Spiked Blank | Phenols-4AAP | 2025/08/07 | | 97 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2677367 | KME | Method Blank | Phenols-4AAP | 2025/08/07 | <0.0020 | | mg/L |
| 2678524 | A1M | Matrix Spike | Benzene | 2025/08/08 | | 109 | % |
| | | | Toluene | 2025/08/08 | | 112 | % |
| | | | Ethylbenzene | 2025/08/08 | | 111 | % |
| | | | Total_Xylenes | 2025/08/08 | | 116 | % |
| 2678524 | A1M | Spiked Blank | Benzene | 2025/08/07 | | 102 | % |
| | | | Toluene | 2025/08/07 | | 103 | % |
| | | | Ethylbenzene | 2025/08/07 | | 106 | % |
| | | | Total_Xylenes | 2025/08/07 | | 110 | % |
| 2678524 | A1M | Method Blank | Benzene | 2025/08/07 | <0.0010 | | mg/L |
| | | | Toluene | 2025/08/07 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/08/07 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/08/07 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/08/07 | <0.090 | | mg/L |
| 2678887 | A1M | Matrix Spike | Benzene | 2025/08/07 | | 97 | % |
| | | | Toluene | 2025/08/07 | | 100 | % |
| | | | Ethylbenzene | 2025/08/07 | | 99 | % |
| | | | Total_Xylenes | 2025/08/07 | | 101 | % |
| 2678887 | A1M | Spiked Blank | Benzene | 2025/08/07 | | 98 | % |
| | | | Toluene | 2025/08/07 | | 99 | % |
| | | | Ethylbenzene | 2025/08/07 | | 102 | % |
| | | | Total_Xylenes | 2025/08/07 | | 106 | % |
| 2678887 | A1M | Method Blank | Benzene | 2025/08/07 | <0.0010 | | mg/L |
| | | | Toluene | 2025/08/07 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/08/07 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/08/07 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/08/07 | <0.090 | | mg/L |
| 2678889 | éE6 | Matrix Spike | Isobutylbenzene - Extractable | 2025/08/07 | | 95 | % |
| | | | n-Dotriacontane - Extractable | 2025/08/07 | | 106 | % |
| | | | >C10-C16 Hydrocarbons | 2025/08/07 | | 95 | % |
| | | | >C16-C21 Hydrocarbons | 2025/08/07 | | 100 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/08/07 | | 85 | % |
| 2678889 | éE6 | Spiked Blank | Isobutylbenzene - Extractable | 2025/08/07 | | 89 | % |
| | | | n-Dotriacontane - Extractable | 2025/08/07 | | 110 | % |
| | | | >C10-C16 Hydrocarbons | 2025/08/07 | | 98 | % |
| | | | >C16-C21 Hydrocarbons | 2025/08/07 | | 101 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/08/07 | | 88 | % |
| 2678889 | éE6 | Method Blank | Isobutylbenzene - Extractable | 2025/08/07 | | 84 | % |
| | | | n-Dotriacontane - Extractable | 2025/08/07 | | 111 | % |
| | | | >C10-C16 Hydrocarbons | 2025/08/07 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/08/07 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/08/07 | <0.090 | | mg/L |
| 2678890 | EMT | Matrix Spike | Reactive silica (SiO2) | 2025/08/12 | | 92 | % |
| 2678890 | EMT | Spiked Blank | Reactive silica (SiO2) | 2025/08/12 | | 93 | % |
| 2678890 | EMT | Method Blank | Reactive silica (SiO2) | 2025/08/12 | <0.50 | | mg/L |
| 2679957 | BDA | Spiked Blank | Sulfides (S2-) | 2025/08/14 | | 84 | % |
| 2679957 | BDA | Method Blank | Sulfides (S2-) | 2025/08/14 | <0.020 | | mg/L |
| 2680464 | HGU | Spiked Blank | Sulfides (S2-) | 2025/08/15 | | 97 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2680464 | HGU | Method Blank | Sulfides (S2-) | 2025/08/15 | <0.020 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria


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Bureau Veritas Job #: C542437
Report Date: 2025/08/18

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Caroline Bougie, B.Sc. Chemist, Montreal, Senior Analyst 2 - Signer

Cansu Bolukbas
Membre OCQ#2324-095
Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Julie Rochette, M.Sc., Chemist, Ste-Foy, Scientific Specialist

Phil Deveau, Scientific Specialist (Organics)

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Shu Yang, B.Sc. Chemist, Montreal, Analyst II


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Automated Statchk

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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 185565

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/11**
Report #: R3112857
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C548192**
**Received: 2025/08/28, 08:30**

Sample Matrix: Surface Water
# Samples Received: 5

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 5 | N/A | 2025/08/28 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 5 | N/A | 2025/08/29 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 5 | N/A | 2025/08/28 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 5 | N/A | 2025/08/28 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 5 | 2025/09/05 | 2025/09/05 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 2 | 2025/09/03 | 2025/09/05 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 5 | N/A | 2025/09/02 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 5 | 2025/09/02 | 2025/09/03 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 5 | N/A | 2025/09/03 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 5 | N/A | 2025/08/29 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 5 | N/A | 2025/08/28 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 5 | N/A | 2025/08/28 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 5 | N/A | 2025/08/28 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 5 | N/A | 2025/08/30 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 5 | N/A | 2025/08/28 | | Field measurement |
| Ortho Phosphate-water | 5 | N/A | 2025/08/28 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 5 | 2025/09/02 | 2025/09/03 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 5 | N/A | 2025/09/02 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 5 | N/A | 2025/08/28 | | Field Measurement |
| Turbidity-water | 5 | N/A | 2025/08/29 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 5 | 2025/09/02 | 2025/09/02 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 5 | 2025/09/03 | 2025/09/03 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 5 | 2025/08/28 | 2025/09/05 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 5 | 2025/09/02 | 2025/09/03 | ATL SOP 00130 | Atl. RBCA v3.1 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in



Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 185565

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/11**
Report #: R3112857
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C548192**
**Received: 2025/08/28, 08:30**

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
11 Sep 2025 16:38:07

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.



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Bureau Veritas Job #: C548192
Report Date: 2025/09/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | OV2581 | OV2582 | OV2583 | OV2584 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 08:47 | 2025/08/27 09:18 | 2025/08/27 08:11 | 2025/08/27 10:36 | | |
| COC Number | | 185565 | 185565 | 185565 | 185565 | | |
| | Units | HOW-BC-Q3-2025 | HOW-TL-Q3-2025 | HOW-BL-Q3-2025 | HOW-ML-Q3-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | | |
| Reactive silica (SiO2) † | mg/L | 5.3 | 4.7 | 5.7 | <0.50 | 0.50 | 2687595 |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2688088 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2688088 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2688088 |
| Return to baseline at C32 † | mg/L | NA | NA | NA | NA | N/A | 2688088 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | NA | NA | N/A | 2688088 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 94 | 103 | 104 | 106 | N/A | 2688088 |
| n-Dotriacontane - Extractable | % | 95 | 105 | 106 | 107 | N/A | 2688088 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

| Bureau Veritas ID | | OV2585 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/08/27 09:53 | | |
| COC Number | | 185565 | | |
| | Units | HOW-SW5-Q3-2025 | RDL | QC Batch |
| **INORGANICS** | | | | |
| Reactive silica (SiO2) † | mg/L | 1.0 | 0.50 | 2687595 |
| **PETROLEUM HYDROCARBONS** | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | 0.050 | 2688088 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | 0.050 | 2688088 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | 0.090 | 2688088 |
| Return to baseline at C32 † | mg/L | NA | N/A | 2688088 |
| Hydrocarbon Resemblance † | mg/L | NA | N/A | 2688088 |
| **Surrogate Recovery (%)** | | | | |
| Isobutylbenzene - Extractable | % | 104 | N/A | 2688088 |
| n-Dotriacontane - Extractable | % | 103 | N/A | 2688088 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV2581 | OV2582 | OV2583 | OV2583 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 08:47 | 2025/08/27 09:18 | 2025/08/27 08:11 | 2025/08/27 08:11 | | |
| COC Number | | 185565 | 185565 | 185565 | 185565 | | |
| | Units | HOW-BC-Q3-2025 | HOW-TL-Q3-2025 | HOW-BL-Q3-2025 | HOW-BL-Q3-2025 Lab-Dup | RDL | QC Batch |
| **METALS** | | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | N/A | N/A | 0.000010 | 2686923 |
| Total Extractable Aluminum (Al) | ug/L | 200 | <10 | <10 | <10 | 10 | 2686560 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Barium (Ba) | ug/L | 2.9 | 2.8 | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | <50 | 50 | 2686560 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | <0.20 | 0.20 | 2686560 |
| Total Extractable Calcium (Ca) | ug/L | <500 | 3500 | 4400 | 4600 | 500 | 2686560 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 2686560 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 2700 | 20000 | 24000 | 25000 | 1000 | 2686560 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Iron (Fe) | ug/L | 250 | <60 | <60 | <60 | 60 | 2686560 |
| Total Extractable Magnesium (Mg) | ug/L | 420 | 2700 | 3200 | 3200 | 100 | 2686560 |
| Total Extractable Manganese (Mn) | ug/L | 24 | 4.3 | 4.5 | 4.6 | 1.0 | 2686560 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable P2O5 †† | ug/L | 27 | <25 | <25 | <25 | 25 | 2686560 |
| Total Extractable Total phosphorous | ug/L | 12 | <10 | <10 | <10 | 10 | 2686560 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 2686560 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | <500 | 500 | 2686560 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | <3.0 | 3.0 | 2686560 |
| Total Extractable Sodium (Na) | ug/L | <500 | 610 | 740 | 740 | 500 | 2686560 |
| Total Extractable Strontium (Sr) † | ug/L | 2.6 | 6.0 | 6.1 | 6.2 | 2.0 | 2686560 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | <10 | 10 | 2686560 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited


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Bureau Veritas Job #: C548192
Report Date: 2025/09/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV2581 | OV2582 | OV2583 | OV2583 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 08:47 | 2025/08/27 09:18 | 2025/08/27 08:11 | 2025/08/27 08:11 | | |
| COC Number | | 185565 | 185565 | 185565 | 185565 | | |
| | Units | HOW-BC-Q3-2025 | HOW-TL-Q3-2025 | HOW-BL-Q3-2025 | HOW-BL-Q3-2025 Lab-Dup | RDL | QC Batch |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | 7.1 | <7.0 | 7.0 | 2686560 |

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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV2584 | OV2585 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 10:36 | 2025/08/27 09:53 | | |
| COC Number | | 185565 | 185565 | | |
| | Units | HOW-ML-Q3-2025 | HOW-SW5-Q3-2025 | RDL | QC Batch |
| **METALS** | | | | | |
| Total Extractable Aluminum (Al) | ug/L | 15 | <10 | 10 | 2686560 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | 50 | 2686560 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | 0.20 | 2686560 |
| Total Extractable Calcium (Ca) | ug/L | 1900 | <500 | 500 | 2686560 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | 5.0 | 2686560 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 11000 | 1700 | 1000 | 2686560 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Iron (Fe) | ug/L | <60 | 61 | 60 | 2686560 |
| Total Extractable Magnesium (Mg) | ug/L | 1500 | 190 | 100 | 2686560 |
| Total Extractable Manganese (Mn) | ug/L | 2.0 | 4.5 | 1.0 | 2686560 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | 25 | 2686560 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | 10 | 2686560 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | 0.50 | 2686560 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | 500 | 2686560 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | 3.0 | 2686560 |
| Total Extractable Sodium (Na) | ug/L | <500 | <500 | 500 | 2686560 |
| Total Extractable Strontium (Sr) † | ug/L | 4.1 | <2.0 | 2.0 | 2686560 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | 2.0 | 2686560 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | 10 | 2686560 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | 1.0 | 2686560 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | 2.0 | 2686560 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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Bureau Veritas Job #: C548192
Report Date: 2025/09/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV2584 | OV2585 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 10:36 | 2025/08/27 09:53 | | |
| COC Number | | 185565 | 185565 | | |
| | Units | HOW-ML-Q3-2025 | HOW-SW5-Q3-2025 | RDL | QC Batch |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | 7.0 | 2686560 |

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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OV2581 | OV2581 | | OV2582 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 08:47 | 2025/08/27 08:47 | | 2025/08/27 09:18 | | |
| COC Number | | 185565 | 185565 | | 185565 | | |
| | Units | HOW-BC-Q3-2025 | HOW-BC-Q3-2025 Lab-Dup | RDL | HOW-TL-Q3-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | |
| Conductivity | mS/cm | 0.0087 | N/A | 0.0010 | 0.044 | 0.0010 | 2685494 |
| Dissolved organic carbon † | mg/L | 7.5 | N/A | 0.20 | 0.86 | 0.20 | 2688175 |
| Dissolved oxygen † | mg/L | 8.4 | N/A | 1.0 | 9.9 | 1.0 | 2685587 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | N/A | 0.020 | 0.042 | 0.020 | 2685572 |
| Nitrates (N-NO3-) | mg/L | <0.020 | N/A | 0.020 | 0.042 | 0.020 | 2685572 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | 0.020 | <0.020 | 0.020 | 2685572 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.040 | N/A | 0.040 | <0.020 | 0.020 | 2686334 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | 0.050 | <0.050 | 0.050 | 2685564 |
| pH | pH | 5.86 | N/A | N/A | 6.90 | N/A | 2685490 |
| pH (15° C) † | pH | 5.38 | N/A | N/A | 7.46 | N/A | 2685611 |
| Phenols-4AAP | mg/L | <0.0020 | N/A | 0.0020 | <0.0020 | 0.0020 | 2686341 |
| Real Color | UCV | 50 | N/A | 2.0 | 4.4 | 2.0 | 2685371 |
| Sulfides (S2-) | mg/L | <0.020 | N/A | 0.020 | <0.020 | 0.020 | 2686523 |
| Turbidity | NTU | 0.52 | N/A | 0.10 | 0.26 | 0.10 | 2685886 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 2.7 | N/A | 1.0 | 20 | 1.0 | 2685495 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 2.7 | N/A | 1.0 | 20 | 1.0 | 2685495 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | N/A | 1.0 | <1.0 | 1.0 | 2685495 |
| Chloride (Cl) | mg/L | 0.16 | N/A | 0.050 | 0.29 | 0.050 | 2685577 |
| Sulfates (SO4) | mg/L | <0.50 | N/A | 0.50 | 2.5 | 0.50 | 2685577 |
| Total Dissolved Solids | mg/L | 72 | 63 | 10 | 28 | 10 | 2686676 |
| Total suspended solids (TSS) | mg/L | 2.0 | N/A | 2.0 | 2.0 | 2.0 | 2686818 |
| **On-site Measurements** | | | | | | | |
| pH (on-site) † | pH | 5.15 | N/A | N/A | 7.11 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 9.400 | N/A | N/A | 11.50 | N/A | ONSITE |

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N/A = Not Applicable
† Parameter is not accreditable


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Bureau Veritas Job #: C548192
Report Date: 2025/09/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OV2582 | OV2583 | OV2584 | OV2584 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 09:18 | 2025/08/27 08:11 | 2025/08/27 10:36 | 2025/08/27 10:36 | | |
| COC Number | | 185565 | 185565 | 185565 | 185565 | | |
| | Units | HOW-TL-Q3-2025 Lab-Dup | HOW-BL-Q3-2025 | HOW-ML-Q3-2025 | HOW-ML-Q3-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | |
| Conductivity | mS/cm | N/A | 0.052 | 0.024 | N/A | 0.0010 | 2685494 |
| Dissolved organic carbon † | mg/L | N/A | 0.55 | 2.0 | 2.0 | 0.20 | 2688175 |
| Dissolved oxygen † | mg/L | N/A | 9.5 | 9.7 | N/A | 1.0 | 2685587 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.045 | <0.020 | <0.020 | N/A | 0.020 | 2685572 |
| Nitrates (N-NO3-) | mg/L | 0.045 | <0.020 | <0.020 | N/A | 0.020 | 2685572 |
| Nitrites (N-NO2-) | mg/L | <0.020 | <0.020 | <0.020 | N/A | 0.020 | 2685572 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | N/A | <0.020 | <0.020 | N/A | 0.020 | 2686334 |
| Orthophosphate (P) | mg/L | N/A | <0.050 | <0.050 | N/A | 0.050 | 2685564 |
| pH | pH | N/A | 7.05 | 6.82 | N/A | N/A | 2685490 |
| pH (15° C) † | pH | N/A | 7.24 | 7.13 | N/A | N/A | 2685611 |
| Phenols-4AAP | mg/L | N/A | <0.0020 | <0.0020 | N/A | 0.0020 | 2686341 |
| Real Color | UCV | N/A | 3.6 | 5.6 | 5.7 | 2.0 | 2685371 |
| Sulfides (S2-) | mg/L | N/A | <0.020 | <0.020 | N/A | 0.020 | 2686523 |
| Turbidity | NTU | N/A | 0.37 | 0.41 | N/A | 0.10 | 2685886 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | N/A | 27 | 8.9 | N/A | 1.0 | 2685495 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | N/A | 27 | 8.9 | N/A | 1.0 | 2685495 |
| Carbonate (CO3 as CaCO3) † | mg/L | N/A | <1.0 | <1.0 | N/A | 1.0 | 2685495 |
| Chloride (Cl) | mg/L | 0.28 | 0.16 | 0.078 | N/A | 0.050 | 2685577 |
| Sulfates (SO4) | mg/L | 2.5 | 2.0 | 3.1 | N/A | 0.50 | 2685577 |
| Total Dissolved Solids | mg/L | N/A | 52 | 38 | N/A | 10 | 2686676 |
| Total suspended solids (TSS) | mg/L | N/A | 2.0 | 3.0 | N/A | 2.0 | 2686818 |
| **On-site Measurements** | | | | | | | |
| pH (on-site) † | pH | N/A | 6.77 | 6.88 | N/A | N/A | ONSITE |
| Temperature (°C) † | Celsius | N/A | 7.000 | 11.90 | N/A | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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Bureau Veritas Job #: C548192
Report Date: 2025/09/11

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OV2585 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/08/27 09:53 | | |
| COC Number | | 185565 | | |
| | Units | HOW-SW5-Q3-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | |
| Conductivity | mS/cm | 0.0027 | 0.0010 | 2685494 |
| Dissolved organic carbon † | mg/L | 1.6 | 0.20 | 2688175 |
| Dissolved oxygen † | mg/L | 9.6 | 1.0 | 2685587 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 0.020 | 2685572 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 0.020 | 2685572 |
| Nitrites (N-NO2-) | mg/L | <0.020 | 0.020 | 2685572 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | 0.020 | 2686334 |
| Orthophosphate (P) | mg/L | <0.050 | 0.050 | 2685564 |
| pH | pH | 6.27 | N/A | 2685490 |
| pH (15° C) † | pH | 6.42 | N/A | 2685611 |
| Phenols-4AAP | mg/L | <0.0020 | 0.0020 | 2686341 |
| Real Color | UCV | 5.8 | 2.0 | 2685371 |
| Sulfides (S2-) | mg/L | <0.020 | 0.020 | 2686523 |
| Turbidity | NTU | 0.49 | 0.10 | 2685886 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 2.2 | 1.0 | 2685495 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 2.2 | 1.0 | 2685495 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | 1.0 | 2685495 |
| Chloride (Cl) | mg/L | 0.082 | 0.050 | 2685577 |
| Sulfates (SO4) | mg/L | <0.50 | 0.50 | 2685577 |
| Total Dissolved Solids | mg/L | 25 | 10 | 2686676 |
| Total suspended solids (TSS) | mg/L | 4.0 | 2.0 | 2686818 |
| **On-site Measurements** | | | | |
| pH (on-site) † | pH | 7.04 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 12.00 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | OV2581 | OV2582 | OV2583 | OV2584 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/27 08:47 | 2025/08/27 09:18 | 2025/08/27 08:11 | 2025/08/27 10:36 | | |
| COC Number | | 185565 | 185565 | 185565 | 185565 | | |
| | Units | HOW-BC-Q3-2025 | HOW-TL-Q3-2025 | HOW-BL-Q3-2025 | HOW-ML-Q3-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2688086 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2688086 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2688086 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2688086 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2688086 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2688087 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

| Bureau Veritas ID | | OV2585 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/08/27 09:53 | | |
| COC Number | | 185565 | | |
| | Units | HOW-SW5-Q3-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | |
| Benzene † | mg/L | <0.0010 | 0.0010 | 2688086 |
| Toluene † | mg/L | <0.0010 | 0.0010 | 2688086 |
| Ethylbenzene † | mg/L | <0.0010 | 0.0010 | 2688086 |
| Total_Xylenes † | mg/L | <0.0020 | 0.0020 | 2688086 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | 0.090 | 2688086 |
| Modified TPH (Tier1) † | mg/L | <0.090 | 0.090 | 2688087 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

**CONVENTIONAL PARAMETERS (SURFACE WATER)**

Reported detection limits are multiplied by dilution factors used for sample analysis.

Nitrogen Ammonia: Due to the sample matrix, a better detection limit cannot be reported. OV2581

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2685371 | K1K | Spiked Blank | Real Color | 2025/08/28 | | 104 | % |
| 2685371 | K1K | Method Blank | Real Color | 2025/08/28 | <2.0 | | UCV |
| 2685490 | SXU | Spiked Blank | pH | 2025/08/28 | | 101 | % |
| 2685494 | SXU | Spiked Blank | Conductivity | 2025/08/28 | | 101 | % |
| 2685494 | SXU | Method Blank | Conductivity | 2025/08/28 | <0.0010 | | mS/cm |
| 2685495 | SXU | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/08/28 | | 120 | % |
| 2685495 | SXU | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/08/28 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/08/28 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/08/28 | <1.0 | | mg/L |
| 2685564 | M1P | Spiked Blank | Orthophosphate (P) | 2025/08/28 | | 97 | % |
| 2685564 | M1P | Method Blank | Orthophosphate (P) | 2025/08/28 | <0.050 | | mg/L |
| 2685572 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/08/28 | | 96 | % |
| | | | Nitrates (N-NO3-) | 2025/08/28 | | 97 | % |
| | | | Nitrites (N-NO2-) | 2025/08/28 | | 94 | % |
| 2685572 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/08/28 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/08/28 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/08/28 | <0.020 | | mg/L |
| 2685577 | YDH | Spiked Blank | Chloride (Cl) | 2025/08/28 | | 98 | % |
| | | | Sulfates (SO4) | 2025/08/28 | | 98 | % |
| 2685577 | YDH | Method Blank | Chloride (Cl) | 2025/08/28 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/08/28 | <0.50 | | mg/L |
| 2685611 | K1K | Spiked Blank | pH (15° C) | 2025/08/28 | | 101 | % |
| 2685886 | BDA | Spiked Blank | Turbidity | 2025/08/29 | | 109 | % |
| 2685886 | BDA | Method Blank | Turbidity | 2025/08/29 | <0.10 | | NTU |
| 2686334 | KME | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/09/03 | | 98 | % |
| 2686334 | KME | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/09/03 | <0.020 | | mg/L |
| 2686341 | SAO | Spiked Blank | Phenols-4AAP | 2025/08/30 | | 103 | % |
| 2686341 | SAO | Method Blank | Phenols-4AAP | 2025/08/30 | <0.0020 | | mg/L |
| 2686523 | ABX | Spiked Blank | Sulfides (S2-) | 2025/09/03 | | 99 | % |
| 2686523 | ABX | Method Blank | Sulfides (S2-) | 2025/09/03 | <0.020 | | mg/L |
| 2686560 | ST5 | Spiked Blank | Total Extractable Aluminum (Al) | 2025/09/03 | | 102 | % |
| | | | Total Extractable Antimony (Sb) | 2025/09/03 | | 104 | % |
| | | | Total Extractable Silver (Ag) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Arsenic (As) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Barium (Ba) | 2025/09/03 | | 98 | % |
| | | | Total Extractable Beryllium (Be) | 2025/09/03 | | 106 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Boron (B) | 2025/09/03 | | 117 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/09/03 | | 102 | % |
| | | | Total Extractable Calcium (Ca) | 2025/09/03 | | 104 | % |
| | | | Total Extractable Chromium (Cr) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Cobalt (Co) | 2025/09/03 | | 100 | % |
| | | | Total Extractable Copper (Cu) | 2025/09/03 | | 98 | % |
| | | | Total Extractable Tin (Sn) | 2025/09/03 | | 107 | % |
| | | | Total Extractable Iron (Fe) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Manganese (Mn) | 2025/09/03 | | 101 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/09/03 | | 102 | % |
| | | | Total Extractable Nickel (Ni) | 2025/09/03 | | 98 | % |
| | | | Total Extractable Total phosphorous | 2025/09/03 | | 99 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Lead (Pb) | 2025/09/03 | | 105 | % |
| | | | Total Extractable Potassium (K) | 2025/09/03 | | 103 | % |
| | | | Total Extractable Selenium (Se) | 2025/09/03 | | 108 | % |
| | | | Total Extractable Sodium (Na) | 2025/09/03 | | 104 | % |
| | | | Total Extractable Strontium (Sr) | 2025/09/03 | | 100 | % |
| | | | Total Extractable Thallium (Tl) | 2025/09/03 | | 99 | % |
| | | | Total Extractable Titanium (Ti) | 2025/09/03 | | 104 | % |
| | | | Total Extractable Uranium (U) | 2025/09/03 | | 99 | % |
| | | | Total Extractable Vanadium (V) | 2025/09/03 | | 102 | % |
| | | | Total Extractable Zinc (Zn) | 2025/09/03 | | 99 | % |
| 2686560 | ST5 | Method Blank | Total Extractable Aluminum (Al) | 2025/09/03 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/09/03 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/09/03 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/09/03 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/09/03 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/09/03 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/09/03 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/09/03 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/09/03 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/09/03 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/09/03 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/09/03 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/09/03 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/09/03 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/09/03 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/09/03 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/09/03 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/09/03 | <7.0 | | ug/L |
| 2686676 | AVV | Spiked Blank | Total Dissolved Solids | 2025/09/02 | | 91 | % |
| 2686676 | AVV | Method Blank | Total Dissolved Solids | 2025/09/02 | <10 | | mg/L |
| 2686818 | S2S | Spiked Blank | Total suspended solids (TSS) | 2025/09/02 | | 96 | % |
| 2686818 | S2S | Method Blank | Total suspended solids (TSS) | 2025/09/02 | <2.0 | | mg/L |
| 2686923 | CYU | Spiked Blank | Total Extractable Mercury (Hg) | 2025/09/05 | | 132 (1) | % |
| 2686923 | CYU | Method Blank | Total Extractable Mercury (Hg) | 2025/09/05 | <0.000010 | | mg/L |
| 2687595 | EMT | Matrix Spike | Reactive silica (SiO2) | 2025/09/03 | | 95 | % |
| 2687595 | EMT | Spiked Blank | Reactive silica (SiO2) | 2025/09/03 | | 95 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2687595 | EMT | Method Blank | Reactive silica (SiO2) | 2025/09/03 | <0.50 | | mg/L |
| 2688086 | A1M | Matrix Spike | Benzene | 2025/09/03 | | 89 | % |
| | | | Toluene | 2025/09/03 | | 91 | % |
| | | | Ethylbenzene | 2025/09/03 | | 91 | % |
| | | | Total_Xylenes | 2025/09/03 | | 95 | % |
| 2688086 | A1M | Spiked Blank | Benzene | 2025/09/03 | | 95 | % |
| | | | Toluene | 2025/09/03 | | 95 | % |
| | | | Ethylbenzene | 2025/09/03 | | 98 | % |
| | | | Total_Xylenes | 2025/09/03 | | 102 | % |
| 2688086 | A1M | Method Blank | Benzene | 2025/09/03 | <0.0010 | | mg/L |
| | | | Toluene | 2025/09/03 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/09/03 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/09/03 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/09/03 | <0.090 | | mg/L |
| 2688088 | éE9 | Matrix Spike [OV2585-10] | Isobutylbenzene - Extractable | 2025/09/02 | | 108 | % |
| | | | n-Dotriacontane - Extractable | 2025/09/02 | | 116 | % |
| | | | >C10-C16 Hydrocarbons | 2025/09/02 | | 108 | % |
| | | | >C16-C21 Hydrocarbons | 2025/09/02 | | 101 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/09/02 | | 103 | % |
| 2688088 | éE9 | Spiked Blank | Isobutylbenzene - Extractable | 2025/09/02 | | 91 | % |
| | | | n-Dotriacontane - Extractable | 2025/09/02 | | 120 | % |
| | | | >C10-C16 Hydrocarbons | 2025/09/02 | | 107 | % |
| | | | >C16-C21 Hydrocarbons | 2025/09/02 | | 100 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/09/02 | | 101 | % |
| 2688088 | éE9 | Method Blank | Isobutylbenzene - Extractable | 2025/09/02 | | 88 | % |
| | | | n-Dotriacontane - Extractable | 2025/09/02 | | 108 | % |
| | | | >C10-C16 Hydrocarbons | 2025/09/02 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/09/02 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/09/02 | <0.090 | | mg/L |
| 2688175 | BAG | Spiked Blank | Dissolved organic carbon | 2025/09/05 | | 98 | % |
| 2688175 | BAG | Method Blank | Dissolved organic carbon | 2025/09/05 | <0.20 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria


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## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader

Michelina Cinquino, Analyst II


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Mira El Masri, M.Sc. Chemist, Montréal, Analyst II

Phil Deveau, Scientific Specialist (Organics)




Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 185742

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/15**
Report #: R3113467
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C548589**
**Received: 2025/08/29, 09:10**

Sample Matrix: Surface Water
# Samples Received: 4

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 1 | N/A | 2025/08/30 | STL SOP-00038 | SM 24 2320-B m |
| Total Alkalinity (end point 4.5)-waters | 3 | N/A | 2025/09/02 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 4 | N/A | 2025/08/29 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 4 | N/A | 2025/08/30 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 4 | N/A | 2025/08/30 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 4 | 2025/09/06 | 2025/09/06 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 2 | 2025/09/03 | 2025/09/05 | STL SOP-00276 | EPA 1631,rev. E m |
| Mercury (Hg) low limit - Cold Vapour AF | 2 | 2025/09/08 | 2025/09/09 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 4 | N/A | 2025/09/03 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 4 | 2025/09/03 | 2025/09/04 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 4 | N/A | 2025/09/03 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 4 | N/A | 2025/08/29 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 4 | N/A | 2025/08/29 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 4 | N/A | 2025/08/30 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 4 | N/A | 2025/08/29 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 4 | N/A | 2025/09/03 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 4 | N/A | 2025/08/29 | | Field measurement |
| Ortho Phosphate-water | 4 | N/A | 2025/08/29 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 3 | 2025/09/04 | 2025/09/04 | STL SOP-00273 | SM 24 4500-S2 m |
| Sulfides (as S2-)-water | 1 | 2025/09/04 | 2025/09/05 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 4 | N/A | 2025/09/02 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 4 | N/A | 2025/08/29 | | Field Measurement |
| Turbidity-water | 4 | N/A | 2025/08/30 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 4 | 2025/09/03 | 2025/09/04 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 4 | 2025/09/04 | 2025/09/04 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 4 | 2025/08/29 | 2025/09/05 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 4 | 2025/09/03 | 2025/09/04 | ATL SOP 00130 | Atl. RBCA v3.1 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau



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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 185742

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/15**
Report #: R3113467
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C548589**
**Received: 2025/08/29, 09:10**

Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
15 Sep 2025 08:55:36

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C548589
Report Date: 2025/09/15

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | OV4592 | OV4593 | OV4594 | OV4595 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:49 | 2025/08/28 09:44 | 2025/08/28 09:53 | 2025/08/28 08:20 | | |
| COC Number | | 185742 | 185742 | 185742 | 185742 | | |
| | Units | HOW-SW1-Q3-2025 | HOW-SW2-Q3-2025 | HOW-SW3-Q3-2025 | HOW-SW4-Q3-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | | |
| Reactive silica (SiO2) † | mg/L | 4.7 | 5.6 | 2.6 | 4.5 | 0.50 | 2688277 |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2688276 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2688276 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2688276 |
| Return to baseline at C32 † | mg/L | NA | NA | NA | NA | N/A | 2688276 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | NA | NA | N/A | 2688276 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 93 | 93 | 93 | 95 | N/A | 2688276 |
| n-Dotriacontane - Extractable | % | 99 | 95 | 100 | 97 | N/A | 2688276 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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Bureau Veritas Job #: C548589
Report Date: 2025/09/15

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV4592 | OV4593 | | OV4594 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:49 | 2025/08/28 09:44 | | 2025/08/28 09:53 | | |
| COC Number | | 185742 | 185742 | | 185742 | | |
| | Units | HOW-SW1-Q3-2025 | HOW-SW2-Q3-2025 | QC Batch | HOW-SW3-Q3-2025 | RDL | QC Batch |
| **METALS** | | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | 2686923 | <0.000010 | 0.000010 | 2688875 |
| Total Extractable Aluminum (Al) | ug/L | <10 | 160 | 2686840 | 200 | 10 | 2686840 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Barium (Ba) | ug/L | 2.3 | 6.0 | 2686840 | 4.2 | 2.0 | 2686840 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | 2686840 | <2.0 | 2.0 | 2686840 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | 2686840 | <50 | 50 | 2686840 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | 2686840 | <0.20 | 0.20 | 2686840 |
| Total Extractable Calcium (Ca) | ug/L | 3100 | 770 | 2686840 | 1100 | 500 | 2686840 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | 2686840 | <5.0 | 5.0 | 2686840 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 19000 | 4200 | 2686840 | 6000 | 1000 | 2686840 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | 2686840 | <2.0 | 2.0 | 2686840 |
| Total Extractable Iron (Fe) | ug/L | 110 | 1600 | 2686840 | 1400 | 60 | 2686840 |
| Total Extractable Magnesium (Mg) | ug/L | 2600 | 550 | 2686840 | 790 | 100 | 2686840 |
| Total Extractable Manganese (Mn) | ug/L | 6.6 | 240 | 2686840 | 89 | 1.0 | 2686840 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | 2.1 | 2686840 | <2.0 | 2.0 | 2686840 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | 2686840 | 32 | 25 | 2686840 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | 2686840 | 14 | 10 | 2686840 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | 2686840 | <0.50 | 0.50 | 2686840 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | 2686840 | <500 | 500 | 2686840 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | 2686840 | <3.0 | 3.0 | 2686840 |
| Total Extractable Sodium (Na) | ug/L | 790 | 690 | 2686840 | 840 | 500 | 2686840 |
| Total Extractable Strontium (Sr) † | ug/L | 7.2 | 7.7 | 2686840 | 6.4 | 2.0 | 2686840 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | 2686840 | <2.0 | 2.0 | 2686840 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | 2686840 | <10 | 10 | 2686840 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | 2686840 | <1.0 | 1.0 | 2686840 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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Bureau Veritas Job #: C548589
Report Date: 2025/09/15

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV4592 | OV4593 | | OV4594 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:49 | 2025/08/28 09:44 | | 2025/08/28 09:53 | | |
| COC Number | | 185742 | 185742 | | 185742 | | |
| | Units | HOW-SW1-Q3-2025 | HOW-SW2-Q3-2025 | QC Batch | HOW-SW3-Q3-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | 2686840 | <2.0 | 2.0 | 2686840 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | 2686840 | <7.0 | 7.0 | 2686840 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV4595 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:20 | | |
| COC Number | | 185742 | | |
| | Units | HOW-SW4-Q3-2025 | RDL | QC Batch |
| **METALS** | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | 0.000010 | 2688875 |
| Total Extractable Aluminum (Al) | ug/L | <10 | 10 | 2686840 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Barium (Ba) | ug/L | 2.5 | 2.0 | 2686840 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | 2.0 | 2686840 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Boron (B) | ug/L | <50 | 50 | 2686840 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | 0.20 | 2686840 |
| Total Extractable Calcium (Ca) | ug/L | 3300 | 500 | 2686840 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | 5.0 | 2686840 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 23000 | 1000 | 2686840 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | 2.0 | 2686840 |
| Total Extractable Iron (Fe) | ug/L | <60 | 60 | 2686840 |
| Total Extractable Magnesium (Mg) | ug/L | 3700 | 100 | 2686840 |
| Total Extractable Manganese (Mn) | ug/L | 1.2 | 1.0 | 2686840 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | 1.0 | 2686840 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | 2.0 | 2686840 |
| Total Extractable P2O5 †† | ug/L | <25 | 25 | 2686840 |
| Total Extractable Total phosphorous | ug/L | <10 | 10 | 2686840 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | 0.50 | 2686840 |
| Total Extractable Potassium (K) † | ug/L | <500 | 500 | 2686840 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | 3.0 | 2686840 |
| Total Extractable Sodium (Na) | ug/L | 1200 | 500 | 2686840 |
| Total Extractable Strontium (Sr) † | ug/L | 10 | 2.0 | 2686840 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | 2.0 | 2686840 |
| Total Extractable Titanium (Ti) | ug/L | <10 | 10 | 2686840 |
| Total Extractable Uranium (U) | ug/L | <1.0 | 1.0 | 2686840 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
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Bureau Veritas Job #: C548589
Report Date: 2025/09/15

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | OV4595 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:20 | | |
| COC Number | | 185742 | | |
| | Units | HOW-SW4-Q3-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | 2.0 | 2686840 |
| Total Extractable Zinc (Zn) | ug/L | 7.6 | 7.0 | 2686840 |

RDL = Reportable Detection Limit
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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OV4592 | OV4593 | OV4593 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:49 | 2025/08/28 09:44 | 2025/08/28 09:44 | | |
| COC Number | | 185742 | 185742 | 185742 | | |
| | Units | HOW-SW1-Q3-2025 | HOW-SW2-Q3-2025 | HOW-SW2-Q3-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.036 | 0.0097 | N/A | 0.0010 | 2686170 |
| Dissolved organic carbon † | mg/L | 0.92 | 6.1 | N/A | 0.20 | 2688625 |
| Dissolved oxygen † | mg/L | 10 | 9.7 | N/A | 1.0 | 2686171 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.20 | <0.020 | N/A | 0.020 | 2686113 |
| Nitrates (N-NO3-) | mg/L | 0.20 | <0.020 | N/A | 0.020 | 2686113 |
| Nitrites (N-NO2-) | mg/L | <0.020 | <0.020 | N/A | 0.020 | 2686113 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | <0.020 | N/A | 0.020 | 2686498 |
| Orthophosphate (P) | mg/L | <0.050 | 0.073 | N/A | 0.050 | 2686009 |
| pH | pH | 7.08 | 6.03 | N/A | N/A | 2686139 |
| pH (15° C) † | pH | 7.18 | 6.02 | N/A | N/A | 2686135 |
| Phenols-4AAP | mg/L | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2686673 |
| Real Color | UCV | 6.8 | 65 | N/A | 2.0 | 2686363 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | N/A | 0.020 | 2687551 |
| Turbidity | NTU | 0.34 | 1.4 | N/A | 0.10 | 2686367 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 14 | 3.1 | N/A | 1.0 | 2686169 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 14 | 3.1 | N/A | 1.0 | 2686169 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | <1.0 | N/A | 1.0 | 2686169 |
| Chloride (Cl) | mg/L | 0.40 | 0.073 | N/A | 0.050 | 2686115 |
| Sulfates (SO4) | mg/L | 2.1 | <0.50 | N/A | 0.50 | 2686115 |
| Total Dissolved Solids | mg/L | 52 | 61 | N/A | 10 | 2686676 |
| Total suspended solids (TSS) | mg/L | 4.0 | 5.0 | N/A | 2.0 | 2687298 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 6.87 | 5.54 | N/A | N/A | ONSITE |
| Temperature (°C) † | Celsius | 5.400 | 9.100 | N/A | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | OV4594 | | OV4595 | OV4595 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/28 09:53 | | 2025/08/28 08:20 | 2025/08/28 08:20 | | |
| COC Number | | 185742 | | 185742 | 185742 | | |
| | Units | HOW-SW3-Q3-2025 | QC Batch | HOW-SW4-Q3-2025 | HOW-SW4-Q3-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | |
| Conductivity | mS/cm | 0.0092 | 2686170 | 0.034 | N/A | 0.0010 | 2686188 |
| Dissolved organic carbon † | mg/L | 7.1 | 2688625 | 0.64 | N/A | 0.20 | 2688625 |
| Dissolved oxygen † | mg/L | 9.2 | 2686171 | 10 | N/A | 1.0 | 2686171 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 2686113 | 0.34 | N/A | 0.020 | 2686113 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 2686113 | 0.34 | N/A | 0.020 | 2686113 |
| Nitrites (N-NO2-) | mg/L | <0.020 | 2686113 | <0.020 | N/A | 0.020 | 2686113 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | 2686498 | <0.020 | N/A | 0.020 | 2686498 |
| Orthophosphate (P) | mg/L | <0.050 | 2686009 | <0.050 | <0.050 | 0.050 | 2686009 |
| pH | pH | 5.81 | 2686139 | 6.75 | N/A | N/A | 2686187 |
| pH (15° C) † | pH | 5.90 | 2686135 | 7.00 | N/A | N/A | 2686135 |
| Phenols-4AAP | mg/L | <0.0020 | 2686673 | <0.0020 | N/A | 0.0020 | 2686673 |
| Real Color | UCV | 67 | 2686363 | 3.4 | N/A | 2.0 | 2686363 |
| Sulfides (S2-) | mg/L | <0.020 | 2687551 | <0.020 | N/A | 0.020 | 2687551 |
| Turbidity | NTU | 0.88 | 2686367 | 0.16 | N/A | 0.10 | 2686367 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 2.5 | 2686169 | 13 | N/A | 1.0 | 2686189 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 2.5 | 2686169 | 13 | N/A | 1.0 | 2686189 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | 2686169 | <1.0 | N/A | 1.0 | 2686189 |
| Chloride (Cl) | mg/L | 0.22 | 2686115 | 0.60 | N/A | 0.050 | 2686115 |
| Sulfates (SO4) | mg/L | <0.50 | 2686115 | 2.0 | N/A | 0.50 | 2686115 |
| Total Dissolved Solids | mg/L | 59 | 2686676 | 38 | N/A | 10 | 2686676 |
| Total suspended solids (TSS) | mg/L | 5.0 | 2687298 | <2.0 | N/A | 2.0 | 2687298 |
| **On-site Measurements** | | | | | | | |
| pH (on-site) † | pH | 5.65 | ONSITE | 6.54 | N/A | N/A | ONSITE |
| Temperature (°C) † | Celsius | 11.30 | ONSITE | 5.500 | N/A | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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Bureau Veritas Job #: C548589
Report Date: 2025/09/15

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | OV4592 | OV4593 | OV4594 | OV4595 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/28 08:49 | 2025/08/28 09:44 | 2025/08/28 09:53 | 2025/08/28 08:20 | | |
| COC Number | | 185742 | 185742 | 185742 | 185742 | | |
| | Units | HOW-SW1-Q3-2025 | HOW-SW2-Q3-2025 | HOW-SW3-Q3-2025 | HOW-SW4-Q3-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2688274 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2688274 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2688274 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2688274 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2688274 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2688275 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2686009 | M1P | Spiked Blank | Orthophosphate (P) | 2025/08/29 | | 100 | % |
| 2686009 | M1P | Method Blank | Orthophosphate (P) | 2025/08/29 | <0.050 | | mg/L |
| 2686113 | M1P | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/08/29 | | 96 | % |
| | | | Nitrates (N-NO3-) | 2025/08/29 | | 96 | % |
| | | | Nitrites (N-NO2-) | 2025/08/29 | | 95 | % |
| 2686113 | M1P | Method Blank | Nitrate (N) and Nitrite(N) | 2025/08/29 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/08/29 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/08/29 | <0.020 | | mg/L |
| 2686115 | M1P | Spiked Blank | Chloride (Cl) | 2025/08/29 | | 95 | % |
| | | | Sulfates (SO4) | 2025/08/29 | | 99 | % |
| 2686115 | M1P | Method Blank | Chloride (Cl) | 2025/08/29 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/08/29 | <0.50 | | mg/L |
| 2686135 | BDA | Spiked Blank | pH (15° C) | 2025/08/29 | | 100 | % |
| 2686139 | TOO | Spiked Blank | pH | 2025/08/29 | | 101 | % |
| 2686169 | TOO | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/09/02 | | 97 | % |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/09/02 | | 97 | % |
| 2686169 | TOO | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/09/02 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/09/02 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/09/02 | <1.0 | | mg/L |
| 2686170 | TOO | Spiked Blank | Conductivity | 2025/08/29 | | 101 | % |
| 2686170 | TOO | Method Blank | Conductivity | 2025/08/29 | <0.0010 | | mS/cm |
| 2686187 | JNA | Spiked Blank | pH | 2025/08/30 | | 101 | % |
| 2686188 | JNA | Spiked Blank | Conductivity | 2025/08/30 | | 101 | % |
| 2686188 | JNA | Method Blank | Conductivity | 2025/08/30 | <0.0010 | | mS/cm |
| 2686189 | JNA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/08/30 | | 94 | % |
| 2686189 | JNA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/08/30 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/08/30 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/08/30 | <1.0 | | mg/L |
| 2686363 | BDA | Spiked Blank | Real Color | 2025/08/30 | | 101 | % |
| 2686363 | BDA | Method Blank | Real Color | 2025/08/30 | <2.0 | | UCV |
| 2686367 | K1K | Spiked Blank | Turbidity | 2025/08/30 | | 108 | % |
| 2686367 | K1K | Method Blank | Turbidity | 2025/08/30 | <0.10 | | NTU |
| 2686498 | M1P | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/09/03 | | 96 | % |
| 2686498 | M1P | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/09/03 | <0.020 | | mg/L |
| 2686673 | HGU | Spiked Blank | Phenols-4AAP | 2025/09/02 | | 95 | % |
| 2686673 | HGU | Method Blank | Phenols-4AAP | 2025/09/02 | <0.0020 | | mg/L |
| 2686676 | AVV | Spiked Blank | Total Dissolved Solids | 2025/09/02 | | 91 | % |
| 2686676 | AVV | Method Blank | Total Dissolved Solids | 2025/09/02 | <10 | | mg/L |
| 2686840 | A4A | Spiked Blank | Total Extractable Aluminum (Al) | 2025/09/04 | | 103 | % |
| | | | Total Extractable Antimony (Sb) | 2025/09/04 | | 112 | % |
| | | | Total Extractable Silver (Ag) | 2025/09/04 | | 106 | % |
| | | | Total Extractable Arsenic (As) | 2025/09/04 | | 114 | % |
| | | | Total Extractable Barium (Ba) | 2025/09/04 | | 104 | % |
| | | | Total Extractable Beryllium (Be) | 2025/09/04 | | 108 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/09/04 | | 107 | % |
| | | | Total Extractable Boron (B) | 2025/09/04 | | 117 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/09/04 | | 107 | % |
| | | | Total Extractable Calcium (Ca) | 2025/09/04 | | 88 | % |
| | | | Total Extractable Chromium (Cr) | 2025/09/04 | | 114 | % |
| | | | Total Extractable Cobalt (Co) | 2025/09/04 | | 113 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Copper (Cu) | 2025/09/04 | | 112 | % |
| | | | Total Extractable Tin (Sn) | 2025/09/04 | | 114 | % |
| | | | Total Extractable Iron (Fe) | 2025/09/04 | | 115 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/09/04 | | 111 | % |
| | | | Total Extractable Manganese (Mn) | 2025/09/04 | | 115 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/09/04 | | 107 | % |
| | | | Total Extractable Nickel (Ni) | 2025/09/04 | | 113 | % |
| | | | Total Extractable Total phosphorous | 2025/09/04 | | 105 | % |
| | | | Total Extractable Lead (Pb) | 2025/09/04 | | 111 | % |
| | | | Total Extractable Potassium (K) | 2025/09/04 | | 114 | % |
| | | | Total Extractable Selenium (Se) | 2025/09/04 | | 93 | % |
| | | | Total Extractable Sodium (Na) | 2025/09/04 | | 114 | % |
| | | | Total Extractable Strontium (Sr) | 2025/09/04 | | 107 | % |
| | | | Total Extractable Thallium (Tl) | 2025/09/04 | | 104 | % |
| | | | Total Extractable Titanium (Ti) | 2025/09/04 | | 115 | % |
| | | | Total Extractable Uranium (U) | 2025/09/04 | | 105 | % |
| | | | Total Extractable Vanadium (V) | 2025/09/04 | | 116 | % |
| | | | Total Extractable Zinc (Zn) | 2025/09/04 | | 110 | % |
| 2686840 | A4A | Method Blank | Total Extractable Aluminum (Al) | 2025/09/04 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/09/04 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/09/04 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/09/04 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/09/04 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/09/04 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/09/04 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/09/04 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/09/04 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/09/04 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/09/04 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/09/04 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/09/04 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/09/04 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/09/04 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/09/04 | <7.0 | | ug/L |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2686923 | CYU | Spiked Blank | Total Extractable Mercury (Hg) | 2025/09/05 | | 132 (1) | % |
| 2686923 | CYU | Method Blank | Total Extractable Mercury (Hg) | 2025/09/05 | <0.000010 | | mg/L |
| 2687298 | AJM | Spiked Blank | Total suspended solids (TSS) | 2025/09/03 | | 95 | % |
| 2687298 | AJM | Method Blank | Total suspended solids (TSS) | 2025/09/03 | <2.0 | | mg/L |
| 2687551 | ABX | Spiked Blank | Sulfides (S2-) | 2025/09/04 | | 94 | % |
| 2687551 | ABX | Method Blank | Sulfides (S2-) | 2025/09/04 | <0.020 | | mg/L |
| 2688274 | A1M | Matrix Spike | Benzene | 2025/09/04 | | 94 | % |
| | | | Toluene | 2025/09/04 | | 99 | % |
| | | | Ethylbenzene | 2025/09/04 | | 99 | % |
| | | | Total_Xylenes | 2025/09/04 | | 104 | % |
| 2688274 | A1M | Spiked Blank | Benzene | 2025/09/04 | | 97 | % |
| | | | Toluene | 2025/09/04 | | 101 | % |
| | | | Ethylbenzene | 2025/09/04 | | 105 | % |
| | | | Total_Xylenes | 2025/09/04 | | 110 | % |
| 2688274 | A1M | Method Blank | Benzene | 2025/09/04 | <0.0010 | | mg/L |
| | | | Toluene | 2025/09/04 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/09/04 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/09/04 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/09/04 | <0.090 | | mg/L |
| 2688276 | éE9 | Matrix Spike | Isobutylbenzene - Extractable | 2025/09/04 | | 88 | % |
| | | | n-Dotriacontane - Extractable | 2025/09/04 | | 91 | % |
| | | | >C10-C16 Hydrocarbons | 2025/09/04 | | 80 | % |
| | | | >C16-C21 Hydrocarbons | 2025/09/04 | | 86 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/09/04 | | 82 | % |
| 2688276 | éE9 | Spiked Blank | Isobutylbenzene - Extractable | 2025/09/04 | | 95 | % |
| | | | n-Dotriacontane - Extractable | 2025/09/04 | | 105 | % |
| | | | >C10-C16 Hydrocarbons | 2025/09/04 | | 92 | % |
| | | | >C16-C21 Hydrocarbons | 2025/09/04 | | 101 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/09/04 | | 99 | % |
| 2688276 | éE9 | Method Blank | Isobutylbenzene - Extractable | 2025/09/04 | | 96 | % |
| | | | n-Dotriacontane - Extractable | 2025/09/04 | | 99 | % |
| | | | >C10-C16 Hydrocarbons | 2025/09/04 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/09/04 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/09/04 | <0.090 | | mg/L |
| 2688277 | EMT | Matrix Spike | Reactive silica (SiO2) | 2025/09/04 | | 88 | % |
| 2688277 | EMT | Spiked Blank | Reactive silica (SiO2) | 2025/09/04 | | 91 | % |
| 2688277 | EMT | Method Blank | Reactive silica (SiO2) | 2025/09/04 | <0.50 | | mg/L |
| 2688625 | BAG | Spiked Blank | Dissolved organic carbon | 2025/09/06 | | 100 | % |
| 2688625 | BAG | Method Blank | Dissolved organic carbon | 2025/09/06 | <0.20 | | mg/L |
| 2688875 | ADI | Spiked Blank | Total Extractable Mercury (Hg) | 2025/09/09 | | 115 | % |
| 2688875 | ADI | Method Blank | Total Extractable Mercury (Hg) | 2025/09/09 | <0.000010 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria



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Bureau Veritas Job #: C548589
Report Date: 2025/09/15

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JFD

## VALIDATION SIGNATURE PAGE

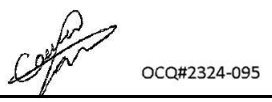
The analytical data and all QC contained in this report were reviewed and validated by:




Afifah Naila Bestari, B. Sc. Chemist, Montreal, Analyst II



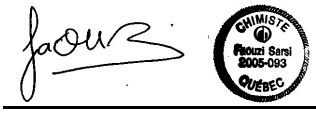

Caroline Bougie, B.Sc. Chemist, Montreal, Senior Analyst 2 - Signer



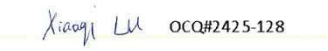

Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II



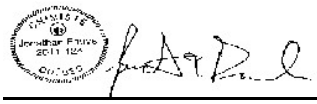
Ernlie Publicover, Scientific Specialist




Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst




George Xiaoqi Lu, B.SC., Chimiste, Montreal, Analyst 2




Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader

Michelina Cinquino, Analyst II

Phil Deveau, Scientific Specialist (Organics)

Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 190636

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124589
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558396**
**Received: 2025/10/09, 09:00**

Sample Matrix: Surface Water
# Samples Received: 6

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 6 | N/A | 2025/10/16 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 6 | N/A | 2025/10/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 6 | N/A | 2025/10/09 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 6 | N/A | 2025/10/10 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 6 | 2025/10/10 | 2025/10/10 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 6 | 2025/10/20 | 2025/10/23 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 6 | N/A | 2025/10/14 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 6 | 2025/10/15 | 2025/10/16 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 6 | N/A | 2025/10/17 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 6 | N/A | 2025/10/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 6 | N/A | 2025/10/09 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 6 | N/A | 2025/10/16 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 6 | N/A | 2025/10/09 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 6 | N/A | 2025/10/16 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 6 | N/A | 2025/10/09 | | Field measurement |
| Ortho Phosphate-water | 6 | N/A | 2025/10/09 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 6 | 2025/10/16 | 2025/10/16 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 6 | N/A | 2025/10/14 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 6 | N/A | 2025/10/09 | | Field Measurement |
| Turbidity-water | 6 | N/A | 2025/10/09 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 6 | 2025/10/15 | 2025/10/16 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 6 | 2025/10/16 | 2025/10/16 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 6 | 2025/10/09 | 2025/10/17 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 6 | 2025/10/15 | 2025/10/15 | ATL SOP 00130 | Atl. RBCA v3.1 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in



Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 190636

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124589
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558396**
**Received: 2025/10/09, 09:00**

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
24 Oct 2025 09:34:37

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2661

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For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.



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Bureau Veritas Job #: C558396
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | PA1978 | PA1979 | PA1980 | PA1981 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 08:55 | 2025/10/07 09:35 | 2025/10/07 09:59 | 2025/10/07 10:45 | | |
| COC Number | | 190636 | 190636 | 190636 | 190636 | | |
| | Units | HOW-ML-Q4-2025 | HOW-SW4-Q4-2025 | HOW-SW1-Q4-2025 | HOW-SW2-Q4-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | | |
| Reactive silica (SiO2) † | mg/L | 0.99 | 4.5 | 5.0 | 5.7 | 0.50 | 2705207 |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2705153 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | <0.050 | 0.050 | 2705153 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2705153 |
| Return to baseline at C32 † | mg/L | NA | NA | NA | NA | N/A | 2705153 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | NA | NA | N/A | 2705153 |
| **Surrogate Recovery (%)** | | | | | | | |
| Isobutylbenzene - Extractable | % | 89 | 99 | 93 | 86 | N/A | 2705153 |
| n-Dotriacontane - Extractable | % | 100 | 110 | 102 | 95 | N/A | 2705153 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable

| Bureau Veritas ID | | PA1982 | PA1983 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 10:56 | 2025/10/07 11:32 | | |
| COC Number | | 190636 | 190636 | | |
| | Units | HOW-SW3-Q4-2025 | HOW-SW5-Q4-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | |
| Reactive silica (SiO2) † | mg/L | 3.8 | 1.1 | 0.50 | 2705207 |
| **PETROLEUM HYDROCARBONS** | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | 0.050 | 2705153 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | 0.050 | 2705153 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | 0.090 | 2705153 |
| Return to baseline at C32 † | mg/L | NA | NA | N/A | 2705153 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | N/A | 2705153 |
| **Surrogate Recovery (%)** | | | | | |
| Isobutylbenzene - Extractable | % | 87 | 88 | N/A | 2705153 |
| n-Dotriacontane - Extractable | % | 97 | 97 | N/A | 2705153 |

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Bureau Veritas Job #: C558396
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | PA1978 | PA1979 | PA1980 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 08:55 | 2025/10/07 09:35 | 2025/10/07 09:59 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-ML-Q4-2025 | HOW-SW4-Q4-2025 | HOW-SW1-Q4-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | <0.000010 | 0.000010 | 2706023 |
| Total Extractable Aluminum (Al) | ug/L | 14 | <10 | <10 | 10 | 2703927 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2703927 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2703927 |
| Total Extractable Calcium (Ca) | ug/L | 2100 | 2300 | 2600 | 500 | 2703927 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2703927 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 12000 | 13000 | 15000 | 1000 | 2703927 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Iron (Fe) | ug/L | <60 | <60 | 140 | 60 | 2703927 |
| Total Extractable Magnesium (Mg) | ug/L | 1600 | 1900 | 2000 | 100 | 2703927 |
| Total Extractable Manganese (Mn) | ug/L | 2.2 | 1.1 | 9.0 | 1.0 | 2703927 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2703927 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2703927 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2703927 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2703927 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2703927 |
| Total Extractable Sodium (Na) | ug/L | 510 | 790 | 800 | 500 | 2703927 |
| Total Extractable Strontium (Sr) † | ug/L | 5.3 | 6.1 | 6.2 | 2.0 | 2703927 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2703927 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |

RDL = Reportable Detection Limit
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†† Parameter is not accreditable
† Parameter is not accredited


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Bureau Veritas Job #: C558396
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | PA1978 | PA1979 | PA1980 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 08:55 | 2025/10/07 09:35 | 2025/10/07 09:59 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-ML-Q4-2025 | HOW-SW4-Q4-2025 | HOW-SW1-Q4-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2703927 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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Bureau Veritas Job #: C558396
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | PA1981 | PA1982 | PA1983 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 10:45 | 2025/10/07 10:56 | 2025/10/07 11:32 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-SW2-Q4-2025 | HOW-SW3-Q4-2025 | HOW-SW5-Q4-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | <0.000010 | 0.000010 | 2706023 |
| Total Extractable Aluminum (Al) | ug/L | 120 | 90 | <10 | 10 | 2703927 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Barium (Ba) | ug/L | 4.4 | 2.4 | <2.0 | 2.0 | 2703927 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2703927 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2703927 |
| Total Extractable Calcium (Ca) | ug/L | 570 | 1000 | <500 | 500 | 2703927 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2703927 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 2700 | 5700 | 1600 | 1000 | 2703927 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Iron (Fe) | ug/L | 700 | 600 | <60 | 60 | 2703927 |
| Total Extractable Magnesium (Mg) | ug/L | 320 | 780 | 200 | 100 | 2703927 |
| Total Extractable Manganese (Mn) | ug/L | 92 | 22 | 4.1 | 1.0 | 2703927 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | 25 | 2703927 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2703927 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2703927 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | 500 | 2703927 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2703927 |
| Total Extractable Sodium (Na) | ug/L | 720 | 950 | 710 | 500 | 2703927 |
| Total Extractable Strontium (Sr) † | ug/L | 5.1 | 4.8 | <2.0 | 2.0 | 2703927 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2703927 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2703927 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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Bureau Veritas Job #: C558396
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | PA1981 | PA1982 | PA1983 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 10:45 | 2025/10/07 10:56 | 2025/10/07 11:32 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-SW2-Q4-2025 | HOW-SW3-Q4-2025 | HOW-SW5-Q4-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2703927 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | 7.0 | 2703927 |

RDL = Reportable Detection Limit
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2025/10/24 09:33

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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | PA1978 | PA1978 | PA1979 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 08:55 | 2025/10/07 08:55 | 2025/10/07 09:35 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-ML-Q4-2025 | HOW-ML-Q4-2025 Lab-Dup | HOW-SW4-Q4-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.029 | N/A | 0.032 | 0.0010 | 2702884 |
| Dissolved organic carbon † | mg/L | 2.2 | N/A | 0.88 | 0.20 | 2702734 |
| Dissolved oxygen † | mg/L | 10 | N/A | 11 | 1.0 | 2702468 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | N/A | 0.25 | 0.020 | 2702322 |
| Nitrates (N-NO3-) | mg/L | <0.020 | N/A | 0.25 | 0.020 | 2702322 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2702322 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | N/A | <0.020 | 0.020 | 2704735 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | <0.050 | 0.050 | 2702480 |
| pH | pH | 6.83 | N/A | 6.52 | N/A | 2704207 |
| pH (15° C) † | pH | 7.01 | N/A | 7.00 | N/A | 2702513 |
| Phenols-4AAP | mg/L | <0.0020 | N/A | <0.0020 | 0.0020 | 2703926 |
| Real Color | UCV | 8.2 | N/A | 5.0 | 2.0 | 2702275 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2704555 |
| Turbidity | NTU | 0.79 | N/A | 0.19 | 0.10 | 2702368 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 11 | N/A | 11 | 1.0 | 2704203 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 11 | N/A | 11 | 1.0 | 2704203 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | N/A | <1.0 | 1.0 | 2704203 |
| Chloride (Cl) | mg/L | 0.12 | N/A | 0.55 | 0.050 | 2702407 |
| Sulfates (SO4) | mg/L | 3.4 | N/A | 2.8 | 0.50 | 2702407 |
| Total Dissolved Solids | mg/L | 33 | N/A | 41 | 10 | 2703457 |
| Total suspended solids (TSS) | mg/L | 2.0 | N/A | <2.0 | 2.0 | 2703321 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 6.46 | N/A | 6.42 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 7.200 | N/A | 5.300 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable



Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | PA1979 | PA1980 | PA1980 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 09:35 | 2025/10/07 09:59 | 2025/10/07 09:59 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-SW4-Q4-2025 Lab-Dup | HOW-SW1-Q4-2025 | HOW-SW1-Q4-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | N/A | 0.035 | N/A | 0.0010 | 2702884 |
| Dissolved organic carbon † | mg/L | N/A | 1.1 | N/A | 0.20 | 2702734 |
| Dissolved oxygen † | mg/L | N/A | 10 | N/A | 1.0 | 2702468 |
| Nitrate (N) and Nitrite(N) | mg/L | N/A | 0.19 | N/A | 0.020 | 2702322 |
| Nitrates (N-NO3-) | mg/L | N/A | 0.19 | N/A | 0.020 | 2702322 |
| Nitrites (N-NO2-) | mg/L | N/A | <0.020 | N/A | 0.020 | 2702322 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | N/A | <0.020 | N/A | 0.020 | 2704735 |
| Orthophosphate (P) | mg/L | N/A | <0.050 | N/A | 0.050 | 2702480 |
| pH | pH | N/A | 6.53 | 6.49 | N/A | 2704207 |
| pH (15° C) † | pH | 6.99 | 7.07 | N/A | N/A | 2702513 |
| Phenols-4AAP | mg/L | N/A | <0.0020 | N/A | 0.0020 | 2703926 |
| Real Color | UCV | N/A | 9.2 | N/A | 2.0 | 2702275 |
| Sulfides (S2-) | mg/L | N/A | <0.020 | N/A | 0.020 | 2704555 |
| Turbidity | NTU | N/A | 0.21 | N/A | 0.10 | 2702368 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | N/A | 14 | 14 | 1.0 | 2704203 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | N/A | 14 | 14 | 1.0 | 2704203 |
| Carbonate (CO3 as CaCO3) † | mg/L | N/A | <1.0 | <1.0 | 1.0 | 2704203 |
| Chloride (Cl) | mg/L | N/A | 0.51 | N/A | 0.050 | 2702407 |
| Sulfates (SO4) | mg/L | N/A | 2.4 | N/A | 0.50 | 2702407 |
| Total Dissolved Solids | mg/L | N/A | 41 | N/A | 10 | 2703457 |
| Total suspended solids (TSS) | mg/L | N/A | 2.0 | N/A | 2.0 | 2703321 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | N/A | 6.67 | N/A | N/A | ONSITE |
| Temperature (°C) † | Celsius | N/A | 4.900 | N/A | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | PA1981 | PA1982 | PA1983 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 10:45 | 2025/10/07 10:56 | 2025/10/07 11:32 | | |
| COC Number | | 190636 | 190636 | 190636 | | |
| | Units | HOW-SW2-Q4-2025 | HOW-SW3-Q4-2025 | HOW-SW5-Q4-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.0083 | 0.014 | 0.0025 | 0.0010 | 2702884 |
| Dissolved organic carbon † | mg/L | 6.0 | 6.4 | 1.5 | 0.20 | 2702734 |
| Dissolved oxygen † | mg/L | 10 | 9.9 | 10 | 1.0 | 2702468 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 0.033 | <0.020 | 0.020 | 2702322 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 0.033 | <0.020 | 0.020 | 2702322 |
| Nitrites (N-NO2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2702322 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2704735 |
| Orthophosphate (P) | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2702480 |
| pH | pH | 5.79 | 6.04 | 6.17 | N/A | 2704207 |
| pH (15° C) † | pH | 5.79 | 6.34 | 6.47 | N/A | 2702513 |
| Phenols-4AAP | mg/L | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2703926 |
| Real Color | UCV | 62 | 58 | 6.0 | 2.0 | 2702275 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | <0.020 | 0.020 | 2704555 |
| Turbidity | NTU | 0.60 | 0.57 | 0.34 | 0.10 | 2702368 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 1.6 | 4.7 | 2.2 | 1.0 | 2704203 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 1.6 | 4.7 | 2.2 | 1.0 | 2704203 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | <1.0 | <1.0 | 1.0 | 2704203 |
| Chloride (Cl) | mg/L | 0.51 | 0.62 | 0.096 | 0.050 | 2702407 |
| Sulfates (SO4) | mg/L | <0.50 | <0.50 | <0.50 | 0.50 | 2702407 |
| Total Dissolved Solids | mg/L | 27 | 46 | 20 | 10 | 2703457 |
| Total suspended solids (TSS) | mg/L | 2.0 | 3.0 | 2.0 | 2.0 | 2703321 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 6.69 | 6.10 | 6.96 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 7.000 | 6.600 | 8.300 | N/A | ONSITE |

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† Parameter is not accreditable
N/A = Not Applicable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | PA1983 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/07 11:32 | | |
| COC Number | | 190636 | | |
| | Units | HOW-SW5-Q4-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | |
| Dissolved organic carbon † | mg/L | 1.5 | 0.20 | 2702734 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 0.020 | 2702322 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 0.020 | 2702322 |
| Nitrites (N-NO2-) | mg/L | <0.020 | 0.020 | 2702322 |
| Turbidity | NTU | 0.38 | 0.10 | 2702368 |
| Chloride (Cl) | mg/L | 0.090 | 0.050 | 2702407 |
| Sulfates (SO4) | mg/L | <0.50 | 0.50 | 2702407 |

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† Parameter is not accreditable


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | PA1978 | PA1979 | PA1980 | PA1981 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 08:55 | 2025/10/07 09:35 | 2025/10/07 09:59 | 2025/10/07 10:45 | | |
| COC Number | | 190636 | 190636 | 190636 | 190636 | | |
| | Units | HOW-ML-Q4-2025 | HOW-SW4-Q4-2025 | HOW-SW1-Q4-2025 | HOW-SW2-Q4-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2705151 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2705151 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2705151 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2705151 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2705151 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | <0.090 | <0.090 | 0.090 | 2705154 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

| Bureau Veritas ID | | PA1982 | PA1983 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/10/07 10:56 | 2025/10/07 11:32 | | |
| COC Number | | 190636 | 190636 | | |
| | Units | HOW-SW3-Q4-2025 | HOW-SW5-Q4-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | 0.0010 | 2705151 |
| Toluene † | mg/L | <0.0010 | <0.0010 | 0.0010 | 2705151 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | 0.0010 | 2705151 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | 0.0020 | 2705151 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | 0.090 | 2705151 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | 0.090 | 2705154 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

Dissolved Oxygen: Holding time already past upon reception: PA1978
pH in water: Holding time already past upon reception: PA1978
pH Measured @ 15° C: Holding time already past upon reception: PA1978
Dissolved Oxygen: Holding time already past upon reception: PA1979
pH in water: Holding time already past upon reception: PA1979
pH Measured @ 15° C: Holding time already past upon reception: PA1979
Dissolved Oxygen: Holding time already past upon reception: PA1980
pH in water: Holding time already past upon reception: PA1980
pH Measured @ 15° C: Holding time already past upon reception: PA1980
Dissolved Oxygen: Holding time already past upon reception: PA1981
pH in water: Holding time already past upon reception: PA1981
pH Measured @ 15° C: Holding time already past upon reception: PA1981
Dissolved Oxygen: Holding time already past upon reception: PA1982
pH in water: Holding time already past upon reception: PA1982
pH Measured @ 15° C: Holding time already past upon reception: PA1982
Dissolved Oxygen: Holding time already past upon reception: PA1983
pH in water: Holding time already past upon reception: PA1983
pH Measured @ 15° C: Holding time already past upon reception: PA1983

**CONVENTIONAL PARAMETERS (SURFACE WATER)**

Oxygène dissous, pH: Délai d'analyse non respecté.

**Results relate only to the items tested.**


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2702275 | K1K | Spiked Blank | Real Color | 2025/10/09 | | 103 | % |
| 2702275 | K1K | Method Blank | Real Color | 2025/10/09 | <2.0 | | UCV |
| 2702322 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/10/10 | | 100 | % |
| | | | Nitrates (N-NO3-) | 2025/10/10 | | 99 | % |
| | | | Nitrites (N-NO2-) | 2025/10/10 | | 100 | % |
| 2702322 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/10/10 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/10/10 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/10/10 | <0.020 | | mg/L |
| 2702368 | K1K | Spiked Blank | Turbidity | 2025/10/09 | | 102 | % |
| 2702368 | K1K | Method Blank | Turbidity | 2025/10/09 | <0.10 | | NTU |
| 2702407 | YDH | Spiked Blank | Chloride (Cl) | 2025/10/10 | | 100 | % |
| | | | Sulfates (SO4) | 2025/10/10 | | 99 | % |
| 2702407 | YDH | Method Blank | Chloride (Cl) | 2025/10/10 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/10/10 | <0.50 | | mg/L |
| 2702480 | M1P | Spiked Blank | Orthophosphate (P) | 2025/10/09 | | 92 | % |
| 2702480 | M1P | Method Blank | Orthophosphate (P) | 2025/10/09 | <0.050 | | mg/L |
| 2702513 | K1K | Spiked Blank | pH (15° C) | 2025/10/09 | | 100 | % |
| 2702734 | TAR | Spiked Blank | Dissolved organic carbon | 2025/10/10 | | 103 | % |
| 2702734 | TAR | Method Blank | Dissolved organic carbon | 2025/10/10 | <0.20 | | mg/L |
| 2702884 | SXU | Spiked Blank | Conductivity | 2025/10/10 | | 103 | % |
| 2702884 | SXU | Method Blank | Conductivity | 2025/10/10 | <0.0010 | | mS/cm |
| 2703321 | HET | Spiked Blank | Total suspended solids (TSS) | 2025/10/14 | | 95 | % |
| 2703321 | HET | Method Blank | Total suspended solids (TSS) | 2025/10/14 | <2.0 | | mg/L |
| 2703457 | SUZ | Spiked Blank | Total Dissolved Solids | 2025/10/14 | | 97 | % |
| 2703457 | SUZ | Method Blank | Total Dissolved Solids | 2025/10/14 | <10 | | mg/L |
| 2703926 | ABX | Spiked Blank | Phenols-4AAP | 2025/10/16 | | 101 | % |
| 2703926 | ABX | Method Blank | Phenols-4AAP | 2025/10/16 | <0.0020 | | mg/L |
| 2703927 | NET | Spiked Blank | Total Extractable Aluminum (Al) | 2025/10/16 | | 87 | % |
| | | | Total Extractable Antimony (Sb) | 2025/10/16 | | 113 | % |
| | | | Total Extractable Silver (Ag) | 2025/10/16 | | 103 | % |
| | | | Total Extractable Arsenic (As) | 2025/10/16 | | 97 | % |
| | | | Total Extractable Barium (Ba) | 2025/10/16 | | 100 | % |
| | | | Total Extractable Beryllium (Be) | 2025/10/16 | | 107 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/10/16 | | 106 | % |
| | | | Total Extractable Boron (B) | 2025/10/16 | | 133 (1) | % |
| | | | Total Extractable Cadmium (Cd) | 2025/10/16 | | 98 | % |
| | | | Total Extractable Calcium (Ca) | 2025/10/16 | | 98 | % |
| | | | Total Extractable Chromium (Cr) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Cobalt (Co) | 2025/10/16 | | 93 | % |
| | | | Total Extractable Copper (Cu) | 2025/10/16 | | 92 | % |
| | | | Total Extractable Tin (Sn) | 2025/10/16 | | 111 | % |
| | | | Total Extractable Iron (Fe) | 2025/10/16 | | 96 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/10/16 | | 93 | % |
| | | | Total Extractable Manganese (Mn) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/16 | | 102 | % |
| | | | Total Extractable Nickel (Ni) | 2025/10/16 | | 92 | % |
| | | | Total Extractable Total phosphorous | 2025/10/16 | | 84 | % |
| | | | Total Extractable Lead (Pb) | 2025/10/16 | | 106 | % |
| | | | Total Extractable Potassium (K) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Selenium (Se) | 2025/10/16 | | 115 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Sodium (Na) | 2025/10/16 | | 101 | % |
| | | | Total Extractable Strontium (Sr) | 2025/10/16 | | 112 | % |
| | | | Total Extractable Thallium (Tl) | 2025/10/16 | | 103 | % |
| | | | Total Extractable Titanium (Ti) | 2025/10/16 | | 91 | % |
| | | | Total Extractable Uranium (U) | 2025/10/16 | | 107 | % |
| | | | Total Extractable Vanadium (V) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Zinc (Zn) | 2025/10/16 | | 92 | % |
| 2703927 | NET | Method Blank | Total Extractable Aluminum (Al) | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/10/16 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/10/16 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/10/16 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/10/16 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/10/16 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/10/16 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/10/16 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/10/16 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/10/16 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/10/16 | <7.0 | | ug/L |
| 2704203 | LTA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/16 | | 100 | % |
| 2704203 | LTA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/16 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/10/16 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/10/16 | <1.0 | | mg/L |
| 2704207 | LTA | Spiked Blank | pH | 2025/10/16 | | 102 | % |
| 2704555 | HGU | Spiked Blank | Sulfides (S2-) | 2025/10/16 | | 87 | % |
| 2704555 | HGU | Method Blank | Sulfides (S2-) | 2025/10/16 | <0.020 | | mg/L |
| 2704735 | YDH | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | | 100 | % |
| 2704735 | YDH | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | <0.020 | | mg/L |
| 2705151 | THL | Matrix Spike | Benzene | 2025/10/15 | | 93 | % |
| | | | Toluene | 2025/10/15 | | 100 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Ethylbenzene | 2025/10/15 | | 103 | % |
| | | | Total_Xylenes | 2025/10/15 | | 109 | % |
| 2705151 | THL | Spiked Blank | Benzene | 2025/10/15 | | 99 | % |
| | | | Toluene | 2025/10/15 | | 103 | % |
| | | | Ethylbenzene | 2025/10/15 | | 110 | % |
| | | | Total_Xylenes | 2025/10/15 | | 116 | % |
| 2705151 | THL | Method Blank | Benzene | 2025/10/15 | <0.0010 | | mg/L |
| | | | Toluene | 2025/10/15 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/10/15 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/10/15 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/10/15 | <0.090 | | mg/L |
| 2705153 | éE6 | Matrix Spike [PA1978-11] | Isobutylbenzene - Extractable | 2025/10/16 | | 90 | % |
| | | | n-Dotriacontane - Extractable | 2025/10/16 | | 109 | % |
| | | | >C10-C16 Hydrocarbons | 2025/10/16 | | 87 | % |
| | | | >C16-C21 Hydrocarbons | 2025/10/16 | | 93 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/10/16 | | 100 | % |
| 2705153 | éE6 | Spiked Blank | Isobutylbenzene - Extractable | 2025/10/16 | | 94 | % |
| | | | n-Dotriacontane - Extractable | 2025/10/16 | | 112 | % |
| | | | >C10-C16 Hydrocarbons | 2025/10/16 | | 87 | % |
| | | | >C16-C21 Hydrocarbons | 2025/10/16 | | 92 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/10/16 | | 97 | % |
| 2705153 | éE6 | Method Blank | Isobutylbenzene - Extractable | 2025/10/16 | | 93 | % |
| | | | n-Dotriacontane - Extractable | 2025/10/16 | | 104 | % |
| | | | >C10-C16 Hydrocarbons | 2025/10/16 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/10/16 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/10/16 | <0.090 | | mg/L |
| 2705207 | éC7 | Matrix Spike | Reactive silica (SiO2) | 2025/10/16 | | NC | % |
| | | | Reactive silica (SiO2) | 2025/10/16 | | NC | % |
| 2705207 | éC7 | Spiked Blank | Reactive silica (SiO2) | 2025/10/16 | | 96 | % |
| | | | Reactive silica (SiO2) | 2025/10/16 | | 96 | % |
| 2705207 | éC7 | Method Blank | Reactive silica (SiO2) | 2025/10/16 | <0.50 | | mg/L |
| | | | Reactive silica (SiO2) | 2025/10/16 | <0.50 | | mg/L |
| 2706023 | TDO | Spiked Blank | Total Extractable Mercury (Hg) | 2025/10/22 | | 166 (1) | % |
| 2706023 | TDO | Method Blank | Total Extractable Mercury (Hg) | 2025/10/22 | <0.000010 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria


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TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Afifah Naila Bestari, B. Sc. Chemist, Montreal, Analyst II

OCQ#2324-095

Cansu Bolukbas, B.Sc., Chemist, Montreal, Analyst II

Christina Ruffini, B.Sc., Chemist, Supervisor-Sample Processing

Frédéric Arnau, B.Sc., Chemist, Montreal, Scientific Service Specialist

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader

Michelina Cinquino, Analyst II


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

Phil Deveau, Scientific Specialist (Organics)

Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2

Automated Statchk

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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 190853

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124590
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558536**
**Received: 2025/10/09, 09:00**

Sample Matrix: Surface Water
# Samples Received: 3

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 3 | N/A | 2025/10/18 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 3 | N/A | 2025/10/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 3 | N/A | 2025/10/10 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 3 | N/A | 2025/10/10 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 3 | 2025/10/16 | 2025/10/16 | STL SOP-00243 | SM 23 5310-B m |
| Mercury (Hg) low limit - Cold Vapour AF | 3 | 2025/10/20 | 2025/10/23 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Suspended Solids | 3 | N/A | 2025/10/15 | STL SOP-00015 | MA.104–S.S. 2.0 m |
| Total Extractable Metals | 3 | 2025/10/15 | 2025/10/16 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 3 | N/A | 2025/10/17 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 3 | N/A | 2025/10/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 3 | N/A | 2025/10/09 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 3 | N/A | 2025/10/10 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 3 | N/A | 2025/10/16 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 3 | N/A | 2025/10/09 | | Field measurement |
| Ortho Phosphate-water | 3 | N/A | 2025/10/10 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 3 | 2025/10/15 | 2025/10/15 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 3 | N/A | 2025/10/15 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 3 | N/A | 2025/10/09 | | Field Measurement |
| Turbidity-water | 3 | N/A | 2025/10/10 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| TEH in Water (PIRI) (1) | 3 | 2025/10/16 | 2025/10/16 | ATL SOP 00113 | Atl. RBCA v3.1 m |
| Reactive Silica(SiO2) (1) | 3 | 2025/10/20 | 2025/10/20 | ATL SOP 00022 | EPA 366.0 m |
| ModTPH (T1) Calc. for Water (1) | 3 | 2025/10/09 | 2025/10/17 | N/A | Atl. RBCA v3 m |
| VPH in Water (PIRI) (1) | 3 | 2025/10/16 | 2025/10/16 | ATL SOP 00130 | Atl. RBCA v3.1 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are



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Your P.O. #: 3000001868
Your Project #: Howse surface water
Site Location: Howse
Your C.O.C. #: 190853

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124590
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558536**
**Received: 2025/10/09, 09:00**

reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
24 Oct 2025 09:41:06

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2661

==========

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For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

Bureau Veritas Job #: C558536
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## RESULTS OF ANALYSES OF SURFACE WATER

| Bureau Veritas ID | | PA2955 | PA2956 | PA2957 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/08 09:49 | 2025/10/08 10:12 | 2025/10/08 10:38 | | |
| COC Number | | 190853 | 190853 | 190853 | | |
| | Units | HOW-BL-Q4-2025 | HOW-BC-Q4-2025 | HOW-TL-Q4-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | |
| Reactive silica (SiO2) † | mg/L | 6.2 | 5.6 | 5.2 | 0.50 | 2706376 |
| **PETROLEUM HYDROCARBONS** | | | | | | |
| >C10-C16 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2706378 |
| >C16-C21 Hydrocarbons † | mg/L | <0.050 | <0.050 | <0.050 | 0.050 | 2706378 |
| >C21-<C32 Hydrocarbons † | mg/L | <0.090 | <0.090 | <0.090 | 0.090 | 2706378 |
| Return to baseline at C32 † | mg/L | NA | NA | NA | N/A | 2706378 |
| Hydrocarbon Resemblance † | mg/L | NA | NA | NA | N/A | 2706378 |
| **Surrogate Recovery (%)** | | | | | | |
| Isobutylbenzene - Extractable | % | 90 | 89 | 89 | N/A | 2706378 |
| n-Dotriacontane - Extractable | % | 81 | 83 | 81 | N/A | 2706378 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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Bureau Veritas Job #: C558536
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | PA2955 | PA2956 | PA2956 | PA2957 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/08 09:49 | 2025/10/08 10:12 | 2025/10/08 10:12 | 2025/10/08 10:38 | | |
| COC Number | | 190853 | 190853 | 190853 | 190853 | | |
| | Units | HOW-BL-Q4-2025 | HOW-BC-Q4-2025 | HOW-BC-Q4-2025 Lab-Dup | HOW-TL-Q4-2025 | RDL | QC Batch |
| **METALS** | | | | | | | |
| Total Extractable Mercury (Hg) †† | mg/L | <0.000010 | <0.000010 | N/A | <0.000010 | 0.000010 | 2706024 |
| Total Extractable Aluminum (Al) | ug/L | <10 | 140 | 150 | <10 | 10 | 2703924 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | 2.6 | 2.6 | 2.9 | 2.0 | 2703924 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2703924 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | <50 | 50 | 2703924 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | <0.20 | 0.20 | 2703924 |
| Total Extractable Calcium (Ca) | ug/L | 4700 | <500 | <500 | 3200 | 500 | 2703924 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | <5.0 | 5.0 | 2703924 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 25000 | 1400 | 1400 | 18000 | 1000 | 2703924 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2703924 |
| Total Extractable Iron (Fe) | ug/L | <60 | 280 | 210 | 71 | 60 | 2703924 |
| Total Extractable Magnesium (Mg) | ug/L | 3300 | 340 | 340 | 2500 | 100 | 2703924 |
| Total Extractable Manganese (Mn) | ug/L | 7.0 | 20 | 20 | 5.1 | 1.0 | 2703924 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2703924 |
| Total Extractable P2O5 †† | ug/L | <25 | <25 | <25 | <25 | 25 | 2703924 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | <10 | 10 | 2703924 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | 2703924 |
| Total Extractable Potassium (K) † | ug/L | <500 | <500 | <500 | <500 | 500 | 2703924 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | <3.0 | 3.0 | 2703924 |
| Total Extractable Sodium (Na) | ug/L | 870 | 590 | 600 | 680 | 500 | 2703924 |
| Total Extractable Strontium (Sr) † | ug/L | 7.4 | 2.5 | 2.6 | 6.7 | 2.0 | 2703924 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2703924 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | <10 | 10 | 2703924 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | 2703924 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
N/A = Not Applicable
† Parameter is not accredited


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Bureau Veritas Job #: C558536
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## TOTAL EXTRACTABLE METALS (SURFACE WATER)

| Bureau Veritas ID | | PA2955 | PA2956 | PA2956 | PA2957 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/08 09:49 | 2025/10/08 10:12 | 2025/10/08 10:12 | 2025/10/08 10:38 | | |
| COC Number | | 190853 | 190853 | 190853 | 190853 | | |
| | Units | HOW-BL-Q4-2025 | HOW-BC-Q4-2025 | HOW-BC-Q4-2025 Lab-Dup | HOW-TL-Q4-2025 | RDL | QC Batch |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | <2.0 | 2.0 | 2703924 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | <7.0 | <7.0 | 7.0 | 2703924 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | PA2955 | PA2955 | PA2956 | PA2957 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/08 09:49 | 2025/10/08 09:49 | 2025/10/08 10:12 | 2025/10/08 10:38 | | |
| COC Number | | 190853 | 190853 | 190853 | 190853 | | |
| | Units | HOW-BL-Q4-2025 | HOW-BL-Q4-2025 Lab-Dup | HOW-BC-Q4-2025 | HOW-TL-Q4-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | |
| Conductivity | mS/cm | 0.058 | N/A | 0.0076 | 0.042 | 0.0010 | 2702884 |
| Dissolved organic carbon † | mg/L | 0.91 | 0.88 | 6.3 | 1.1 | 0.20 | 2704610 |
| Dissolved oxygen † | mg/L | 11 | N/A | 9.8 | 11 | 1.0 | 2702468 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.028 | N/A | <0.020 | 0.085 | 0.020 | 2702511 |
| Nitrates (N-NO3-) | mg/L | 0.028 | N/A | <0.020 | 0.085 | 0.020 | 2702511 |
| Nitrites (N-NO2-) | mg/L | <0.020 | N/A | <0.020 | <0.020 | 0.020 | 2702511 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | N/A | <0.020 | <0.020 | 0.020 | 2704740 |
| Orthophosphate (P) | mg/L | <0.050 | N/A | <0.050 | <0.050 | 0.050 | 2702784 |
| pH | pH | 6.44 | N/A | 5.60 | 6.30 | N/A | 2702536 |
| Phenols-4AAP | mg/L | <0.0020 | N/A | <0.0020 | <0.0020 | 0.0020 | 2703907 |
| Real Color | UCV | 4.6 | N/A | 43 | 6.6 | 2.0 | 2702864 |
| Sulfides (S2-) | mg/L | <0.020 | N/A | <0.020 | <0.020 | 0.020 | 2703993 |
| Turbidity | NTU | 0.15 | N/A | 0.25 | 0.24 | 0.10 | 2702991 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 28 | N/A | 1.0 | 18 | 1.0 | 2705565 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 28 | N/A | 1.0 | 18 | 1.0 | 2705565 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | N/A | <1.0 | <1.0 | 1.0 | 2705565 |
| Chloride (Cl) | mg/L | 0.18 | N/A | 0.45 | 0.33 | 0.050 | 2702512 |
| Sulfates (SO4) | mg/L | 3.2 | N/A | <0.50 | 2.5 | 0.50 | 2702512 |
| Total Dissolved Solids | mg/L | 62 | N/A | 41 | 44 | 10 | 2704142 |
| Total suspended solids (TSS) | mg/L | <2.0 | N/A | 2.0 | 2.0 | 2.0 | 2704225 |
| **On-site Measurements** | | | | | | | |
| pH (on-site) † | pH | 6.40 | N/A | 6.97 | 6.89 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 4.800 | N/A | 5.900 | 6.700 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
† Parameter is not accreditable


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## CONVENTIONAL PARAMETERS (SURFACE WATER)

| Bureau Veritas ID | | PA2957 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/08 10:38 | | |
| COC Number | | 190853 | | |
| | Units | HOW-TL-Q4-2025 Lab-Dup | RDL | QC Batch |
| **CONVENTIONALS** | | | | |
| Sulfides (S2-) | mg/L | <0.020 | 0.020 | 2703993 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 18 | 1.0 | 2705565 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 18 | 1.0 | 2705565 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | 1.0 | 2705565 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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Bureau Veritas Job #: C558536
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse surface water
Site Location: Howse
Your P.O. #: 3000001868

## SUBCONTRACTED ANALYSIS (SURFACE WATER)

| Bureau Veritas ID | | PA2955 | PA2956 | PA2957 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/08 09:49 | 2025/10/08 10:12 | 2025/10/08 10:38 | | |
| COC Number | | 190853 | 190853 | 190853 | | |
| | Units | HOW-BL-Q4-2025 | HOW-BC-Q4-2025 | HOW-TL-Q4-2025 | RDL | QC Batch |
| **PETROLEUM HYDROCARBONS** | | | | | | |
| Benzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2706377 |
| Toluene † | mg/L | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2706377 |
| Ethylbenzene † | mg/L | <0.0010 | <0.0010 | <0.0010 | 0.0010 | 2706377 |
| Total_Xylenes † | mg/L | <0.0020 | <0.0020 | <0.0020 | 0.0020 | 2706377 |
| C6 - C10 (less BTEX) † | mg/L | <0.090 | <0.090 | <0.090 | 0.090 | 2706377 |
| Modified TPH (Tier1) † | mg/L | <0.090 | <0.090 | <0.090 | 0.090 | 2705154 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2702511 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/10/10 | | 92 | % |
| | | | Nitrates (N-NO3-) | 2025/10/10 | | 92 | % |
| | | | Nitrites (N-NO2-) | 2025/10/10 | | 92 | % |
| 2702511 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/10/10 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/10/10 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/10/10 | <0.020 | | mg/L |
| 2702512 | YDH | Spiked Blank | Chloride (Cl) | 2025/10/15 | | 100 | % |
| | | | Sulfates (SO4) | 2025/10/15 | | 103 | % |
| 2702512 | YDH | Method Blank | Chloride (Cl) | 2025/10/10 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/10/10 | <0.50 | | mg/L |
| 2702536 | JNA | Spiked Blank | pH | 2025/10/10 | | 102 | % |
| 2702784 | M1P | QC Standard | Orthophosphate (P) | 2025/10/10 | | 96 | % |
| 2702784 | M1P | Spiked Blank | Orthophosphate (P) | 2025/10/10 | | 89 | % |
| 2702784 | M1P | Method Blank | Orthophosphate (P) | 2025/10/10 | <0.050 | | mg/L |
| 2702864 | K1K | Spiked Blank | Real Color | 2025/10/10 | | 102 | % |
| 2702864 | K1K | Method Blank | Real Color | 2025/10/10 | <2.0 | | UCV |
| 2702884 | SXU | Spiked Blank | Conductivity | 2025/10/10 | | 103 | % |
| 2702884 | SXU | Method Blank | Conductivity | 2025/10/10 | <0.0010 | | mS/cm |
| 2702991 | BDA | Spiked Blank | Turbidity | 2025/10/10 | | 98 | % |
| 2702991 | BDA | Method Blank | Turbidity | 2025/10/10 | <0.10 | | NTU |
| 2703907 | ABX | Spiked Blank | Phenols-4AAP | 2025/10/16 | | 101 | % |
| 2703907 | ABX | Method Blank | Phenols-4AAP | 2025/10/16 | <0.0020 | | mg/L |
| 2703924 | NET | Spiked Blank | Total Extractable Aluminum (Al) | 2025/10/16 | | 89 | % |
| | | | Total Extractable Antimony (Sb) | 2025/10/16 | | 114 | % |
| | | | Total Extractable Silver (Ag) | 2025/10/16 | | 104 | % |
| | | | Total Extractable Arsenic (As) | 2025/10/16 | | 100 | % |
| | | | Total Extractable Barium (Ba) | 2025/10/16 | | 102 | % |
| | | | Total Extractable Beryllium (Be) | 2025/10/16 | | 107 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/10/16 | | 107 | % |
| | | | Total Extractable Boron (B) | 2025/10/16 | | 123 (1) | % |
| | | | Total Extractable Cadmium (Cd) | 2025/10/16 | | 103 | % |
| | | | Total Extractable Calcium (Ca) | 2025/10/16 | | 100 | % |
| | | | Total Extractable Chromium (Cr) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Cobalt (Co) | 2025/10/16 | | 95 | % |
| | | | Total Extractable Copper (Cu) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Tin (Sn) | 2025/10/16 | | 113 | % |
| | | | Total Extractable Iron (Fe) | 2025/10/16 | | 98 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Manganese (Mn) | 2025/10/16 | | 95 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/16 | | 106 | % |
| | | | Total Extractable Nickel (Ni) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Total phosphorous | 2025/10/16 | | 87 | % |
| | | | Total Extractable Lead (Pb) | 2025/10/16 | | 108 | % |
| | | | Total Extractable Potassium (K) | 2025/10/16 | | 95 | % |
| | | | Total Extractable Selenium (Se) | 2025/10/16 | | 117 | % |
| | | | Total Extractable Sodium (Na) | 2025/10/16 | | 102 | % |
| | | | Total Extractable Strontium (Sr) | 2025/10/16 | | 114 | % |
| | | | Total Extractable Thallium (Tl) | 2025/10/16 | | 105 | % |
| | | | Total Extractable Titanium (Ti) | 2025/10/16 | | 93 | % |
| | | | Total Extractable Uranium (U) | 2025/10/16 | | 109 | % |
| | | | Total Extractable Vanadium (V) | 2025/10/16 | | 97 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Zinc (Zn) | 2025/10/16 | | 94 | % |
| 2703924 | NET | Method Blank | Total Extractable Aluminum (Al) | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/10/16 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/10/16 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/10/16 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/10/16 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/10/16 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/10/16 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable P2O5 | 2025/10/16 | <25 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/10/16 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/10/16 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/10/16 | <7.0 | | ug/L |
| 2703993 | HGU | Spiked Blank | Sulfides (S2-) | 2025/10/15 | | 86 | % |
| 2703993 | HGU | Method Blank | Sulfides (S2-) | 2025/10/15 | <0.020 | | mg/L |
| 2704142 | AVV | Spiked Blank | Total Dissolved Solids | 2025/10/15 | | 96 | % |
| 2704142 | AVV | Method Blank | Total Dissolved Solids | 2025/10/15 | <10 | | mg/L |
| 2704225 | HET | Spiked Blank | Total suspended solids (TSS) | 2025/10/15 | | 97 | % |
| 2704225 | HET | Method Blank | Total suspended solids (TSS) | 2025/10/15 | <2.0 | | mg/L |
| 2704610 | BAG | Spiked Blank | Dissolved organic carbon | 2025/10/16 | | 101 | % |
| 2704610 | BAG | Method Blank | Dissolved organic carbon | 2025/10/16 | <0.20 | | mg/L |
| 2704740 | YDH | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | | 102 | % |
| 2704740 | YDH | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | <0.020 | | mg/L |
| 2705565 | JNA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/18 | | 105 | % |
| 2705565 | JNA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/18 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/10/18 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/10/18 | <1.0 | | mg/L |
| 2706024 | TDO | Spiked Blank | Total Extractable Mercury (Hg) | 2025/10/23 | | 134 (1) | % |
| 2706024 | TDO | Method Blank | Total Extractable Mercury (Hg) | 2025/10/23 | <0.000010 | | mg/L |
| 2706376 | éC7 | Matrix Spike | Reactive silica (SiO2) | 2025/10/20 | | 99 | % |
| 2706376 | éC7 | Spiked Blank | Reactive silica (SiO2) | 2025/10/20 | | 101 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2706376 | éC7 | Method Blank | Reactive silica (SiO2) | 2025/10/20 | <0.50 | | mg/L |
| 2706377 | THL | Matrix Spike | Benzene | 2025/10/16 | | 83 | % |
| | | | Toluene | 2025/10/16 | | 92 | % |
| | | | Ethylbenzene | 2025/10/16 | | 95 | % |
| | | | Total_Xylenes | 2025/10/16 | | 94 | % |
| 2706377 | THL | Spiked Blank | Benzene | 2025/10/16 | | 88 | % |
| | | | Toluene | 2025/10/16 | | 96 | % |
| | | | Ethylbenzene | 2025/10/16 | | 102 | % |
| | | | Total_Xylenes | 2025/10/16 | | 101 | % |
| 2706377 | THL | Method Blank | Benzene | 2025/10/16 | <0.0010 | | mg/L |
| | | | Toluene | 2025/10/16 | <0.0010 | | mg/L |
| | | | Ethylbenzene | 2025/10/16 | <0.0010 | | mg/L |
| | | | Total_Xylenes | 2025/10/16 | <0.0020 | | mg/L |
| | | | C6 - C10 (less BTEX) | 2025/10/16 | <0.090 | | mg/L |
| 2706378 | éFC | Matrix Spike | Isobutylbenzene - Extractable | 2025/10/16 | | 89 | % |
| | | | n-Dotriacontane - Extractable | 2025/10/16 | | 90 | % |
| | | | >C10-C16 Hydrocarbons | 2025/10/16 | | 97 | % |
| | | | >C16-C21 Hydrocarbons | 2025/10/16 | | 101 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/10/16 | | 98 | % |
| 2706378 | éFC | Spiked Blank | Isobutylbenzene - Extractable | 2025/10/16 | | 91 | % |
| | | | n-Dotriacontane - Extractable | 2025/10/16 | | 97 | % |
| | | | >C10-C16 Hydrocarbons | 2025/10/16 | | 100 | % |
| | | | >C16-C21 Hydrocarbons | 2025/10/16 | | 104 | % |
| | | | >C21-<C32 Hydrocarbons | 2025/10/16 | | 101 | % |
| 2706378 | éFC | Method Blank | Isobutylbenzene - Extractable | 2025/10/16 | | 90 | % |
| | | | n-Dotriacontane - Extractable | 2025/10/16 | | 91 | % |
| | | | >C10-C16 Hydrocarbons | 2025/10/16 | <0.050 | | mg/L |
| | | | >C16-C21 Hydrocarbons | 2025/10/16 | <0.050 | | mg/L |
| | | | >C21-<C32 Hydrocarbons | 2025/10/16 | <0.090 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria


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## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



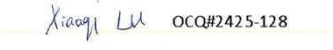

Afifah Naila Bestari, B. Sc. Chemist, Montreal, Analyst II




Frédéric Arnau, B.Sc., Chemist, Montreal, Scientific Service Specialist



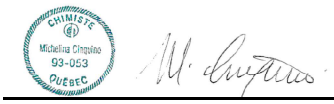

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst




George Xiaoqi Lu, B.SC., Chimiste, Montreal, Analyst 2




Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader



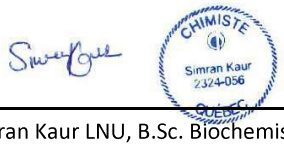

Michelina Cinquino, Analyst II

Phil Deveau, Scientific Specialist (Organics)


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




Automated Statchk

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## Appendix II – Lake Water Levels Monitoring Report

Aquasphera

February 13, 2026

Tata Steel Minerals Canada Ltd
1000, rue Sherbrooke West, bureau 1120
Montreal (Québec) H3A 3G4

Attention: Mr. Pallav Sinha, Environmental Manager

**Subject: Monitoring Report – Lakes Water Levels for 2025 and Corrective Measures**

---

Dear Mr. Sinha,

We are pleased to submit the monitoring report carried out by our firm for the above-mentioned project. Please do not hesitate to contact our office if you have any questions or comments.

# 1 INTRODUCTION

This monitoring report presents estimated daily water surface elevations based on hydrometric data recorded at five sites (Morley, Triangle, Pinette, Burnetta, and O'Nelly lakes).

For the period from June 9, 2025, to September 27, 2025, water depths were monitored using *Levelogger 5* data loggers (manufactured by Solinst). Atmospheric pressure was monitored at all sites using *Barologger 5* data loggers (manufactured by Solinst).

# 2 WATER LEVEL MONITORING

## 2.1 FIELD DATA

### 2.1.1 COORDINATES AND ELEVATIONS

For the 2025 data collection period, probe coordinates and elevations are based on a survey conducted on September 13 to 17, 2025. Surveys were performed by TSMC staff to record marker, probe, and water levels at Morley, Triangle, Pinette and O'Nelly lakes sites.

For the Burnetta Lake site, it was not possible to record coordinates since no signal is available in this remote area. However, the coordinates from a handheld GPS taken in 2018 by Groupe Hémisphères (now Groupe Géos) can be considered for now.

### 2.1.2 DATA

Data used for this report was collected by a TSMC environmental technician and submitted to Aquasphera and Groupe Géos for processing.

Meteorological data from the Environment and Climate Change Canada Schefferville Cote-Nord station were compiled by Aquasphera.

## 2.2 RESULTS

Figures 1 to 5 present estimated water levels for Burnetta, Morley, O'Nelly, Pinette and Triangle lakes. The water depths were converted into absolute elevations using data from the survey conducted from September 13 to 17, 2025, as well as from atmospheric pressure data. The conversion was roughly estimated for the Burnetta Lake site, as only coordinates from a handheld GPS in 2018 are available.

To convert water depths to water elevations, probe elevation must be determined. Typically, the water elevation is surveyed using a precise GPS, and water depth given by the probe at the same moment is noted. The difference between these two values gives the probe elevation.

Probe elevations are presented in Table 1. These values come from the survey carried out in September 2025, as well as the previous survey carried out in September 2024. It is important to note that the probes were removed at the end of the data collection period in 2024 to avoid ice-induced damage during the winter months. The probes were reinstalled in June 2025, which may explain the differences in the probe elevations when comparing the 2024 and 2025 results.

**Table 1: Probe Elevation**

| Site | 2024 | 2025 |
|---|---|---|
| Burnetta | 524 | 524 |
| Morley | 674.82 | 674.83 |
| O'Nelly | 661.16 | 661.15 |
| Pinette | 635.18 | 635.09 |
| Triangle | 583.48 | 583.50 |

### 2.2.1 RESULTS FOR THE YEAR 2025

**Burnetta Lake**

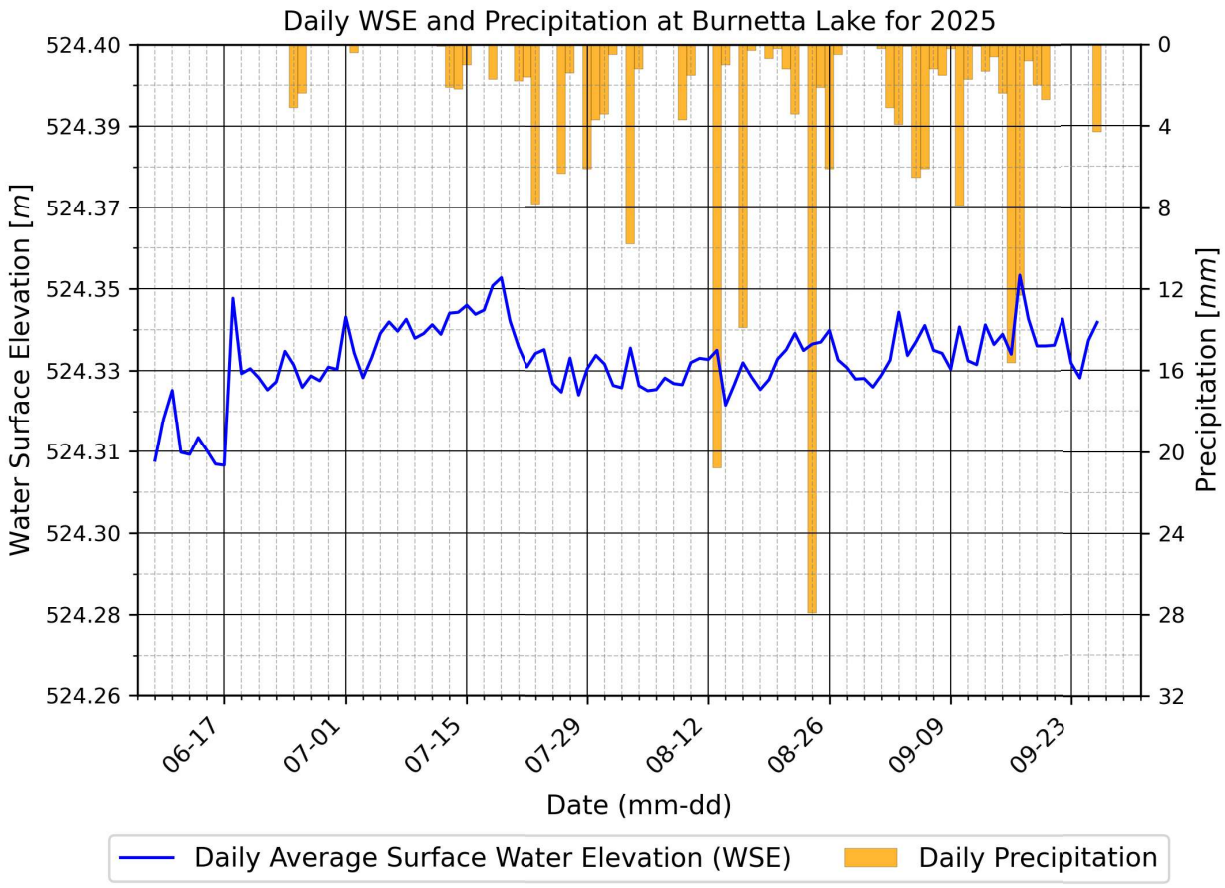



**Figure 1: Daily average Water Surface Elevation and Precipitation at Burnetta Lake site**

## Morley Lake

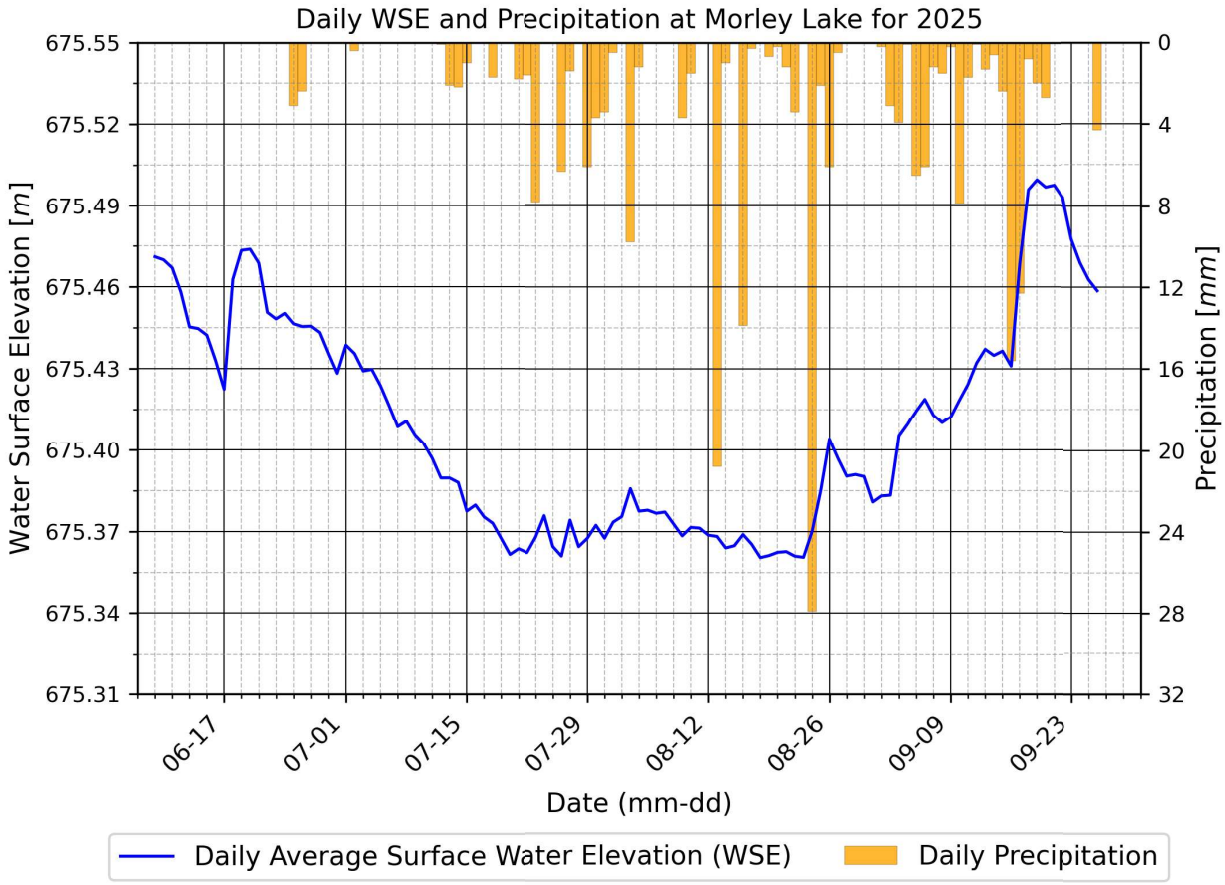



**Figure 2: Daily average Water Surface Elevation and Precipitation at Morley Lake site**

## O'Nelly Lake

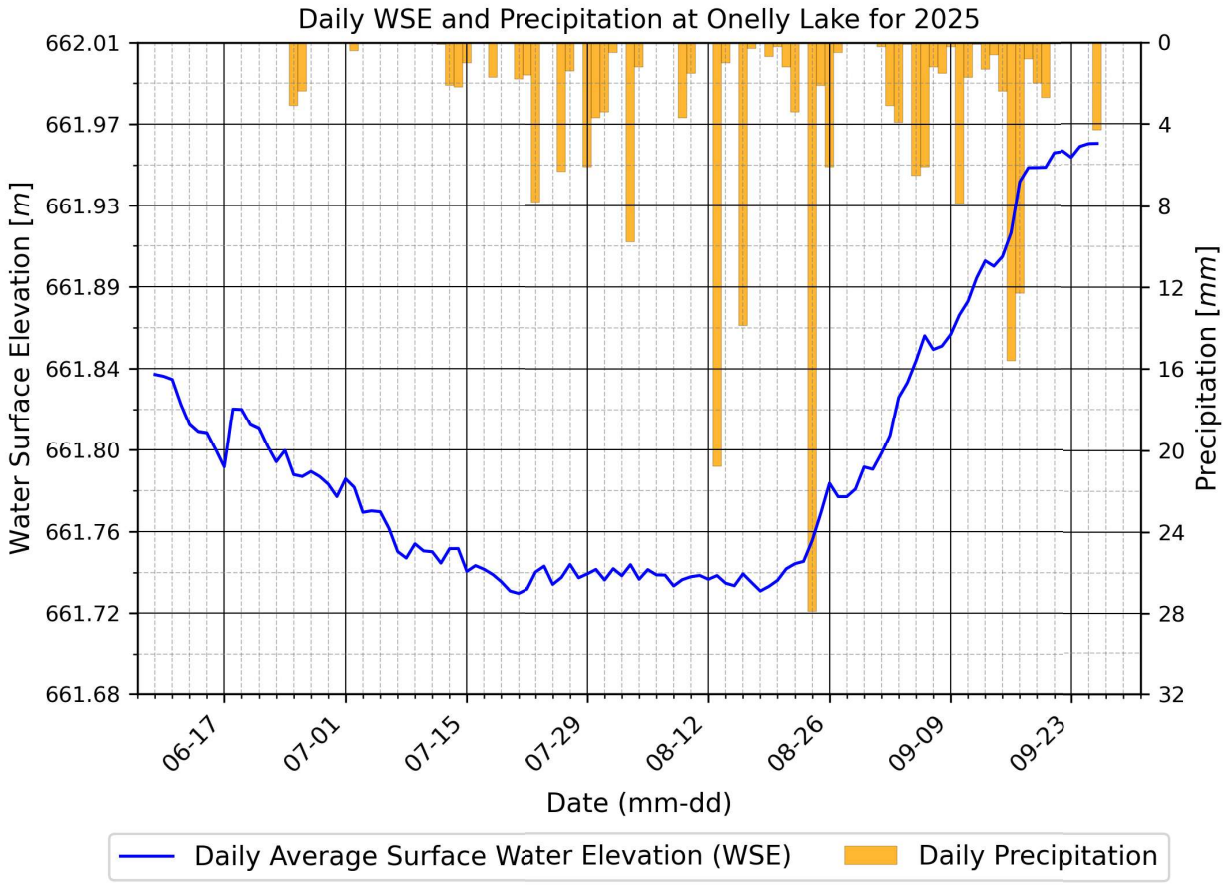



**Figure 3: Daily average Water Surface Elevation and Precipitation at O'Nelly Lake site**

## Pinette Lake

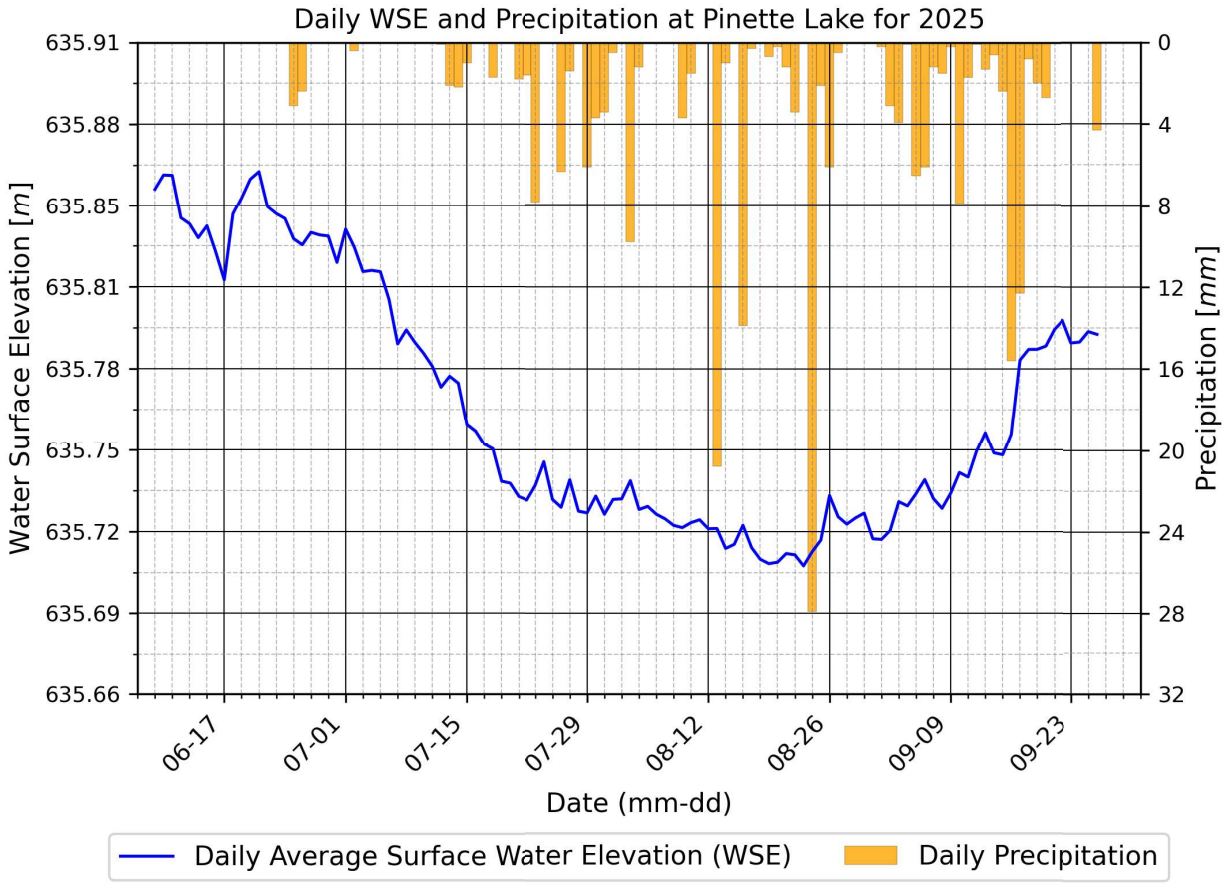



**Figure 4: Daily average Water Surface Elevation and Precipitation at Pinette Lake site**

**Triangle Lake**

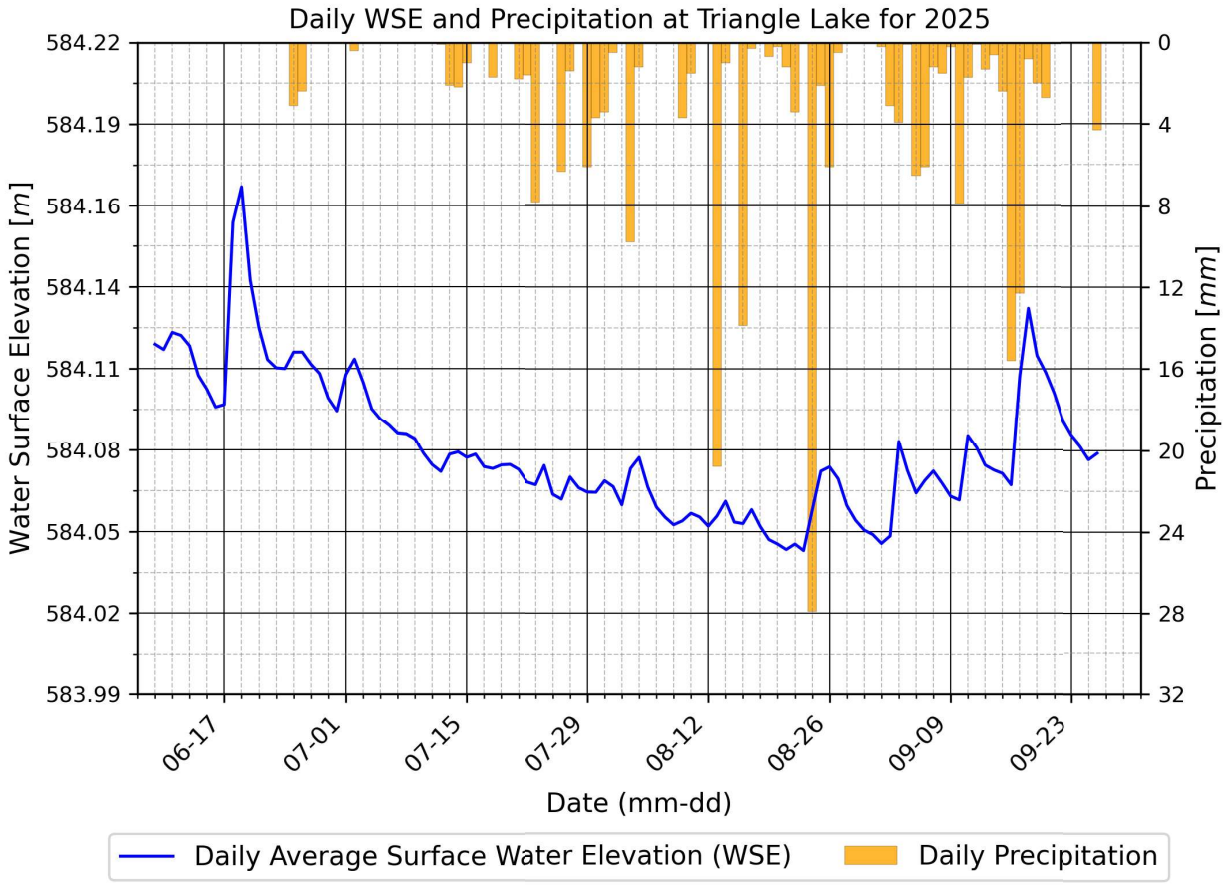



**Figure 5: Daily average Water Surface Elevation and Precipitation at Triangle Lake site**

### 2.2.2 ANNUAL WATER SURFACE ELEVATION (WSE) STATISTICS

Annual statistics of WSE variations were calculated by combining recent results with the ones used in the 2019-2024 reports. Table 2 shows the extremes and the average annual value of daily WSE at each site.

### Table 2: Annual water surface elevation statistics

| Year | Min (m) | Max (m) | Average (m) |
|---|---|---|---|
| **Burnetta** | | | |
| **2019-2024** | 524.16 | 524.59 | 524.40 |
| **2025** | 524.31 | 524.35 | 524.33 |
| **Morley** | | | |
| **2019-2024** | 674.82 | 675.52 | 675.28 |
| **2025** | 675.36 | 675.50 | 675.41 |
| **O'Nelly** | | | |
| **2019-2024** | 661.27 | 661.81 | 661.68 |
| **2025** | 661.73 | 661.96 | 661.80 |
| **Pinette** | | | |
| **2019-2024** | 635.33 | 636.33 | 635.64 |
| **2025** | 635.71 | 635.86 | 635.77 |
| **Triangle** | | | |
| **2019-2024** | 583.80 | 584.51 | 583.99 |
| **2025** | 584.04 | 584.17 | 584.08 |

Overall, a slight increase in average WSE is noted at most sites in 2025 compared to the 2019-2024 period, ranging from a few centimeters to approximately 13 cm. Morley Lake shows the most pronounced increase in average WSE; however, both the minimum and maximum recorded levels remain within the historical range. In contrast, Burnetta Lake shows a slight decrease in average WSE compared to the 2019-2024 average.

It should be noted that no topographic survey has been conducted at the Burnetta Lake site since 2018. As a result, the exact vertical positioning of the monitoring probe is not known for any of the monitoring years. Consequently, historical water level comparisons cannot be reliably performed for this site, as the probe may have been installed at slightly different elevations from one year to another.

# 3 CONCLUSIONS AND RECOMMENDATIONS

Water-level data was compiled for five lakes (Burnetta, Morley, O'Nelly, Pinette Triangle lakes) from June 9 to September 27, 2025. Data indicate that the WSE during this period remained generally consistent with values reported between 2019 to 2024. However, one notable deviation was observed at Morley Lake, where the recorded minimum WSE was approximately 17 cm lower than in previous years, despite the average WSE remaining stable.

For most sites, a slight increase in average WSE was observed in 2025 relative to the 2019-2024 period, generally in the order of a few centimeters. Morley Lake exhibited the most pronounced increase in average WSE; however, both the minimum and maximum recorded water levels remained within the historical range. In contrast, Burnetta Lake showed a slight decrease in average WSE compared to the 2019-2024 average. As previously mentioned, historical water level comparisons cannot be reliably performed for the Burnetta Lake site as there was no topographical survey conducted after 2018.

The following recommendations from the 2023 and 2024 reports, are maintained:

1. The surface water temperature must be constantly monitored to ensure that probes are removed before the lakes freeze over. Probes should not be removed too early to ensure that as much data as possible is collected.
2. A minimum of three site visits should be scheduled per year: one to install the probes after thaw periods, one to maintain the equipment (floating plants, etc.), and one to collect the data and remove the probes prior to the freezing period.
3. There is still no good survey data available for Burnetta Lake and a proper field survey should be completed to collect probe elevation, marker, and water levels. This information is needed to ensure that loggers operate properly and that water levels are appropriately calculated.
4. Rain gauges should be installed at each lake, or at least at TSMC environmental team's building, to ensure that more precise precipitation data from the area is collected.
5. Probe elevation should be verified with the survey nail after the freeze period when the equipment is reinstalled. Since the survey nail remains stationary throughout the seasons, re-measuring the probe elevation relative to the nail after the freezing period, during reinstallation, allows for the detection of any vertical displacement of the probe between monitoring seasons.

# 4 SCOPE AND LIMITATIONS

This document is published in accordance with and subject to an agreement between Aquasphera, Groupe Géos and the Client (TSMC) for whom it has been prepared. It is limited to issues raised by the Client in its commitment and prepared using the standard skill and care commonly exercised by Engineering Scientists in the preparation of such documents. It has been prepared using data collected by TSMC, Groupe Géos and Aquasphera. This document is meant to be read as a whole, and sections or parts thereof should not be read or interpreted out of context. This document is confidential and the property of the Client.

**Prepared by:**

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Water Resources Engineer
Technical Manager
OIQ 144 155

# Appendix III – Groundwater Well Level Measurements and Groundwater Quality Analysis Certificates

**GROUNDWATER WELL WATER LEVELS MONITORING**

| WELL ID | Water depth below casing (m) | | | | |
|---|---|---|---|---|---|
| | 2021-07-21 | 2025-06-30 | 2025-08-02 | 2025-09-02 | 2025-10-09 |
| HOW-RC15-WE05R | 72.8 | 80.66 | 79.73 | 79.86 | 80.58 |
| HOW-RC15-WE06R | 87.8 | 93.35 | 93.08 | 93.07 | 91.73 |
| HOW-RC15-WE07R | 55.5 | 59.97 | 60.09 | 60.84 | 60.42 |
| HOW-RC15-WE08R | 42.4 | 47.1 | 46.4 | 46.67 | 46.30 |
| HOW-RC15-WE09R | 35.7 | 39.97 | 40.24 | 40.54 | 41.73 |

Your P.O. #: 3000001868
Your Project #: Howse Groundwater
Site#: 00025
Site Location: Howse
Your C.O.C. #: 186060

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/17**
Report #: R3114261
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C549114**
**Received: 2025/09/03, 08:45**

Sample Matrix: Ground Water
# Samples Received: 3

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 3 | N/A | 2025/09/03 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 1 | N/A | 2025/09/04 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Anions in water | 2 | N/A | 2025/09/09 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 3 | N/A | 2025/09/03 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 3 | N/A | 2025/09/03 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 3 | 2025/09/08 | 2025/09/09 | STL SOP-00243 | SM 23 5310-B m |
| Dissolved Mercury (Hg) - Cold Vapour AF | 3 | N/A | 2025/09/09 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Extractable Metals | 3 | 2025/09/04 | 2025/09/05 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 3 | N/A | 2025/09/06 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 3 | N/A | 2025/09/04 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 3 | N/A | 2025/09/03 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 3 | N/A | 2025/09/03 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 3 | N/A | 2025/09/03 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 3 | N/A | 2025/09/04 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| Ortho Phosphate-water | 3 | N/A | 2025/09/04 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 3 | 2025/09/05 | 2025/09/05 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 3 | N/A | 2025/09/07 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Turbidity-water | 3 | N/A | 2025/09/03 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| Reactive Silica(SiO2) (1) | 3 | 2025/09/08 | 2025/09/09 | ATL SOP 00022 | EPA 366.0 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or



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Your P.O. #: 3000001868
Your Project #: Howse Groundwater
Site#: 00025
Site Location: Howse
Your C.O.C. #: 186060

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/17**
Report #: R3114261
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C549114**
**Received: 2025/09/03, 08:45**

implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
17 Sep 2025 09:37:56

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Aglaia Yannakis, General Manager responsible for Quebec Environmental laboratory operations.

Bureau Veritas Job #: C549114
Report Date: 2025/09/17

TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868

## RESULTS OF ANALYSES OF GROUND WATER

| Bureau Veritas ID | | OV7199 | OV7200 | OV7201 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/02 08:47 | 2025/09/02 08:07 | 2025/09/02 09:54 | | |
| COC Number | | 186060 | 186060 | 186060 | | |
| | Units | HOW-WE05R-Q1-2025 | HOW-WE08R-Q1-2025 | HOW-WE07R-Q1-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | | |
| Reactive silica (SiO2) † | mg/L | 5.7 | 6.9 | 5.5 | 0.50 | 2689744 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868

## DISSOLVED METALS (GROUND WATER)

| Bureau Veritas ID | | OV7199 | OV7200 | OV7201 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/02 08:47 | 2025/09/02 08:07 | 2025/09/02 09:54 | | |
| COC Number | | 186060 | 186060 | 186060 | | |
| | Units | How-WE05R-Q1-2025 | How-WE08R-Q1-2025 | How-WE07R-Q1-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Dissolved Mercury (Hg) † | mg/L | <0.000010 | <0.000010 | <0.000010 | 0.000010 | 2688878 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868

## TOTAL EXTRACTABLE METALS (GROUND WATER)

| Bureau Veritas ID | | OV7199 | OV7200 | OV7201 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/02 08:47 | 2025/09/02 08:07 | 2025/09/02 09:54 | | |
| COC Number | | 186060 | 186060 | 186060 | | |
| | Units | How-WE05R-Q1-2025 | How-WE08R-Q1-2025 | How-WE07R-Q1-2025 | RDL | QC Batch |
| **METALS** | | | | | | |
| Total Extractable Aluminum (Al) | ug/L | 160 | <10 | <10 | 10 | 2687409 |
| Total Extractable Antimony (Sb) | ug/L | 13 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Barium (Ba) | ug/L | 57 | <2.0 | 3.0 | 2.0 | 2687409 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2687409 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | <50 | 50 | 2687409 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | <0.20 | 0.20 | 2687409 |
| Total Extractable Calcium (Ca) | ug/L | 4800 | 3300 | 2500 | 500 | 2687409 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | <5.0 | 5.0 | 2687409 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Copper (Cu) | ug/L | 3.2 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 21000 | 16000 | 14000 | 1000 | 2687409 |
| Total Extractable Tin (Sn) | ug/L | 14 | <2.0 | <2.0 | 2.0 | 2687409 |
| Total Extractable Iron (Fe) | ug/L | 690 | <60 | <60 | 60 | 2687409 |
| Total Extractable Magnesium (Mg) | ug/L | 2200 | 2000 | 1900 | 100 | 2687409 |
| Total Extractable Manganese (Mn) | ug/L | 74 | 1.3 | <1.0 | 1.0 | 2687409 |
| Total Extractable Mercury (Hg) | ug/L | <0.10 | <0.10 | <0.10 | 0.10 | 2687409 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Nickel (Ni) | ug/L | 5.1 | <2.0 | <2.0 | 2.0 | 2687409 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | <10 | 10 | 2687409 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | <0.50 | 0.50 | 2687409 |
| Total Extractable Potassium (K) † | ug/L | 2000 | <500 | <500 | 500 | 2687409 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | <3.0 | 3.0 | 2687409 |
| Total Extractable Sodium (Na) | ug/L | 2800 | 970 | 820 | 500 | 2687409 |
| Total Extractable Strontium (Sr) † | ug/L | 9.0 | 7.8 | 4.6 | 2.0 | 2687409 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2687409 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | <10 | 10 | 2687409 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | <1.0 | 1.0 | 2687409 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | <2.0 | 2.0 | 2687409 |
| Total Extractable Zinc (Zn) | ug/L | 420 | 7.2 | 8.0 | 7.0 | 2687409 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited



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## CONVENTIONAL PARAMETERS (GROUND WATER)

| Bureau Veritas ID | | OV7199 | OV7200 | | OV7201 | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/02 08:47 | 2025/09/02 08:07 | | 2025/09/02 09:54 | | |
| COC Number | | 186060 | 186060 | | 186060 | | |
| | Units | How-WE05R-Q1-2025 | How-WE08R-Q1-2025 | QC Batch | How-WE07R-Q1-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | | |
| Conductivity | mS/cm | 0.058 | 0.036 | 2687261 | 0.036 | 0.0010 | 2687261 |
| Dissolved organic carbon † | mg/L | 0.77 | 0.28 | 2689075 | 0.41 | 0.20 | 2689075 |
| Dissolved oxygen † | mg/L | 8.3 | 10 | 2687280 | 9.1 | 1.0 | 2687280 |
| Nitrate (N) and Nitrite(N) | mg/L | <0.020 | 0.096 | 2687244 | 0.79 | 0.020 | 2687244 |
| Nitrates (N-NO3-) | mg/L | <0.020 | 0.096 | 2687244 | 0.79 | 0.020 | 2687244 |
| Nitrites (N-NO2-) | mg/L | <0.020 | <0.020 | 2687244 | <0.020 | 0.020 | 2687244 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | <0.020 | 2688207 | <0.020 | 0.020 | 2688207 |
| Orthophosphate (P) | mg/L | <0.050 | <0.050 | 2687657 | <0.050 | 0.050 | 2687657 |
| pH | pH | 6.69 | 6.76 | 2687258 | 6.61 | N/A | 2687258 |
| pH (15° C) † | pH | 6.76 | 6.95 | 2687282 | 6.64 | N/A | 2687282 |
| Phenols-4AAP | mg/L | <0.0020 | <0.0020 | 2687652 | <0.0020 | 0.0020 | 2687652 |
| Real Color | UCV | 11 | 12 | 2687184 | <2.0 | 2.0 | 2687184 |
| Sulfides (S2-) | mg/L | <0.020 | <0.020 | 2688075 | <0.020 | 0.020 | 2688075 |
| Turbidity | NTU | 28 | 2.4 | 2687353 | 0.37 | 0.10 | 2687353 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 16 | 17 | 2687260 | 10 | 1.0 | 2687260 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 16 | 17 | 2687260 | 10 | 1.0 | 2687260 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | <1.0 | 2687260 | <1.0 | 1.0 | 2687260 |
| Chloride (Cl) | mg/L | 0.23 | 0.29 | 2689369 | 1.8 | 0.050 | 2687248 |
| Sulfates (SO4) | mg/L | 10 | 0.84 | 2689369 | 1.4 | 0.50 | 2687248 |
| Total Dissolved Solids | mg/L | 47 | 29 | 2688751 | 16 | 10 | 2688751 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## GENERAL COMMENTS

Samples temperature is above 10°C.: OV7199, OV7199, OV7199, OV7199, OV7199, OV7199, OV7199
Total Extractable Metals: Insufficient preservative, pH adjusted upon receipt at the laboratory: OV7199
Samples temperature is above 10°C.: OV7199, OV7199, OV7199, OV7199, OV7199, OV7199, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7200, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201, OV7201

**Results relate only to the items tested.**



Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2687184 | BDA | Spiked Blank | Real Color | 2025/09/03 | | 100 | % |
| 2687184 | BDA | Method Blank | Real Color | 2025/09/03 | <2.0 | | UCV |
| 2687244 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/09/03 | | 97 | % |
| | | | Nitrates (N-NO3-) | 2025/09/03 | | 99 | % |
| | | | Nitrites (N-NO2-) | 2025/09/03 | | 96 | % |
| 2687244 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/09/04 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/09/04 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/09/04 | <0.020 | | mg/L |
| 2687248 | YDH | Spiked Blank | Chloride (Cl) | 2025/09/03 | | 96 | % |
| | | | Sulfates (SO4) | 2025/09/03 | | 100 | % |
| 2687248 | YDH | Method Blank | Chloride (Cl) | 2025/09/04 | 0.078, RDL=0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/09/04 | <0.50 | | mg/L |
| 2687258 | SXU | Spiked Blank | pH | 2025/09/03 | | 101 | % |
| 2687260 | SXU | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/09/03 | | 97 | % |
| 2687260 | SXU | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/09/03 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/09/03 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/09/03 | <1.0 | | mg/L |
| 2687261 | SXU | Spiked Blank | Conductivity | 2025/09/03 | | 103 | % |
| 2687261 | SXU | Method Blank | Conductivity | 2025/09/03 | <0.0010 | | mS/cm |
| 2687282 | K1K | Spiked Blank | pH (15° C) | 2025/09/03 | | 101 | % |
| 2687353 | K1K | Spiked Blank | Turbidity | 2025/09/03 | | 100 | % |
| 2687353 | K1K | Method Blank | Turbidity | 2025/09/03 | <0.10 | | NTU |
| 2687409 | TEX | Spiked Blank | Total Extractable Aluminum (Al) | 2025/09/04 | | 95 | % |
| | | | Total Extractable Antimony (Sb) | 2025/09/04 | | 106 | % |
| | | | Total Extractable Silver (Ag) | 2025/09/04 | | 102 | % |
| | | | Total Extractable Arsenic (As) | 2025/09/04 | | 102 | % |
| | | | Total Extractable Barium (Ba) | 2025/09/04 | | 99 | % |
| | | | Total Extractable Beryllium (Be) | 2025/09/04 | | 98 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/09/04 | | 104 | % |
| | | | Total Extractable Boron (B) | 2025/09/04 | | 100 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/09/04 | | 102 | % |
| | | | Total Extractable Calcium (Ca) | 2025/09/04 | | 97 | % |
| | | | Total Extractable Chromium (Cr) | 2025/09/04 | | 98 | % |
| | | | Total Extractable Cobalt (Co) | 2025/09/04 | | 96 | % |
| | | | Total Extractable Copper (Cu) | 2025/09/04 | | 95 | % |
| | | | Total Extractable Tin (Sn) | 2025/09/04 | | 107 | % |
| | | | Total Extractable Iron (Fe) | 2025/09/04 | | 97 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/09/04 | | 95 | % |
| | | | Total Extractable Manganese (Mn) | 2025/09/04 | | 95 | % |
| | | | Total Extractable Mercury (Hg) | 2025/09/04 | | 102 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/09/04 | | 101 | % |
| | | | Total Extractable Nickel (Ni) | 2025/09/04 | | 94 | % |
| | | | Total Extractable Total phosphorous | 2025/09/04 | | 93 | % |
| | | | Total Extractable Lead (Pb) | 2025/09/04 | | 100 | % |
| | | | Total Extractable Potassium (K) | 2025/09/04 | | 95 | % |
| | | | Total Extractable Selenium (Se) | 2025/09/04 | | 100 | % |
| | | | Total Extractable Sodium (Na) | 2025/09/04 | | 97 | % |
| | | | Total Extractable Strontium (Sr) | 2025/09/04 | | 105 | % |
| | | | Total Extractable Thallium (Tl) | 2025/09/04 | | 99 | % |
| | | | Total Extractable Titanium (Ti) | 2025/09/04 | | 100 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Uranium (U) | 2025/09/04 | | 105 | % |
| | | | Total Extractable Vanadium (V) | 2025/09/04 | | 102 | % |
| | | | Total Extractable Zinc (Zn) | 2025/09/04 | | 99 | % |
| 2687409 | TEX | Method Blank | Total Extractable Aluminum (Al) | 2025/09/04 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/09/04 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/09/04 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/09/04 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/09/04 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/09/04 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/09/04 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/09/04 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Mercury (Hg) | 2025/09/04 | <0.10 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/09/04 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/09/04 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/09/04 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/09/04 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/09/04 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/09/04 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/09/04 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/09/04 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/09/04 | <7.0 | | ug/L |
| 2687652 | HGU | Spiked Blank | Phenols-4AAP | 2025/09/04 | | 99 | % |
| 2687652 | HGU | Method Blank | Phenols-4AAP | 2025/09/04 | <0.0020 | | mg/L |
| 2687657 | M1P | QC Standard | Orthophosphate (P) | 2025/09/04 | | 98 | % |
| 2687657 | M1P | Spiked Blank | Orthophosphate (P) | 2025/09/04 | | 94 | % |
| 2687657 | M1P | Method Blank | Orthophosphate (P) | 2025/09/04 | <0.050 | | mg/L |
| 2688075 | SAO | Spiked Blank | Sulfides (S2-) | 2025/09/05 | | 91 | % |
| 2688075 | SAO | Method Blank | Sulfides (S2-) | 2025/09/05 | <0.020 | | mg/L |
| 2688207 | M1P | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/09/06 | | 96 | % |
| 2688207 | M1P | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/09/06 | <0.020 | | mg/L |
| 2688751 | SAB | Spiked Blank | Total Dissolved Solids | 2025/09/07 | | 100 | % |
| 2688751 | SAB | Method Blank | Total Dissolved Solids | 2025/09/07 | <10 | | mg/L |
| 2688878 | ADI | Spiked Blank | Dissolved Mercury (Hg) | 2025/09/09 | | 118 | % |
| 2688878 | ADI | Method Blank | Dissolved Mercury (Hg) | 2025/09/09 | <0.000010 | | mg/L |
| 2689075 | NJG | Spiked Blank | Dissolved organic carbon | 2025/09/09 | | 100 | % |
| 2689075 | NJG | Method Blank | Dissolved organic carbon | 2025/09/09 | <0.20 | | mg/L |
| 2689369 | LTA | Spiked Blank | Chloride (Cl) | 2025/09/09 | | 97 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Sulfates (SO4) | 2025/09/09 | | 101 | % |
| 2689369 | LTA | Method Blank | Chloride (Cl) | 2025/09/09 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/09/09 | <0.50 | | mg/L |
| 2689744 | EMT | Matrix Spike | Reactive silica (SiO2) | 2025/09/09 | | 100 | % |
| 2689744 | EMT | Spiked Blank | Reactive silica (SiO2) | 2025/09/09 | | 95 | % |
| 2689744 | EMT | Method Blank | Reactive silica (SiO2) | 2025/09/09 | <0.50 | | mg/L |

RDL = Reportable Detection Limit

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



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## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Caroline Bougie, B.Sc. Chemist, Montreal, Senior Analyst 2 - Signer

Faouzi Sarsi, B.Sc. Chemist, Montréal, SR Analyst

George Xiaoqi Lu, B.SC., Chimiste, Montreal, Analyst 2

Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist

Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader

Marc-Antoine Arvisais, B.Sc., Chemist in training, Analyst II

Michelina Cinquino, Analyst II



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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Mira El Masri, M.Sc. Chemist, Montréal, Analyst II




Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




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Your P.O. #: 3000001868
Your Project #: Howse Groundwater
Site Location: Howse
Your C.O.C. #: 190854

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/26**
Report #: R3125092
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558546**
**Received: 2025/10/09, 09:00**

Sample Matrix: Ground Water
# Samples Received: 1

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 1 | N/A | 2025/10/16 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 1 | N/A | 2025/10/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 1 | N/A | 2025/10/10 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 1 | N/A | 2025/10/10 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 1 | 2025/10/16 | 2025/10/16 | STL SOP-00243 | SM 23 5310-B m |
| Dissolved Mercury (Hg) - Cold Vapour AF | 1 | N/A | 2025/10/23 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Extractable Metals | 1 | 2025/10/15 | 2025/10/16 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 1 | N/A | 2025/10/17 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 1 | N/A | 2025/10/10 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 1 | N/A | 2025/10/09 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 1 | N/A | 2025/10/10 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 1 | N/A | 2025/10/16 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 1 | N/A | 2025/10/09 | | Field measurement |
| Ortho Phosphate-water | 1 | N/A | 2025/10/10 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 1 | 2025/10/14 | 2025/10/15 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 1 | N/A | 2025/10/11 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 1 | N/A | 2025/10/09 | | Field Measurement |
| Turbidity-water | 1 | N/A | 2025/10/10 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| Reactive Silica(SiO2) (1) | 1 | 2025/10/20 | 2025/10/20 | ATL SOP 00022 | EPA 366.0 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or



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Your P.O. #: 3000001868
Your Project #: Howse Groundwater
Site Location: Howse
Your C.O.C. #: 190854

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/26**
Report #: R3125092
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558546**
**Received: 2025/10/09, 09:00**

implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key




Bureau Veritas
26 Oct 2025 12:42:00

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2661

==========

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Bureau Veritas Job #: C558546
Report Date: 2025/10/26

TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868

## RESULTS OF ANALYSES OF GROUND WATER

| Bureau Veritas ID | | PA3058 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/08 11:15 | | |
| COC Number | | 190854 | | |
| | Units | How-WE08R-Q2-2025 | RDL | QC Batch |
| **INORGANICS** | | | | |
| Reactive silica (SiO2) † | mg/L | 7.2 | 0.50 | 2706376 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868

## DISSOLVED METALS (GROUND WATER)

| Bureau Veritas ID | | PA3058 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/08 11:15 | | |
| COC Number | | 190854 | | |
| | Units | How-WE08R-Q2-2025 | RDL | QC Batch |
| **METALS** | | | | |
| Dissolved Mercury (Hg) † | mg/L | <0.000010 | 0.000010 | 2707161 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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## TOTAL EXTRACTABLE METALS (GROUND WATER)

| Bureau Veritas ID | | PA3058 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/08 11:15 | | |
| COC Number | | 190854 | | |
| | Units | How-WE08R-Q2-2025 | RDL | QC Batch |
| **METALS** | | | | |
| Total Extractable Aluminum (Al) | ug/L | <10 | 10 | 2703924 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Barium (Ba) | ug/L | <2.0 | 2.0 | 2703924 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | 2.0 | 2703924 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Boron (B) | ug/L | <50 | 50 | 2703924 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | 0.20 | 2703924 |
| Total Extractable Calcium (Ca) | ug/L | 3000 | 500 | 2703924 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | 5.0 | 2703924 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 15000 | 1000 | 2703924 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | 2.0 | 2703924 |
| Total Extractable Iron (Fe) | ug/L | <60 | 60 | 2703924 |
| Total Extractable Magnesium (Mg) | ug/L | 1800 | 100 | 2703924 |
| Total Extractable Manganese (Mn) | ug/L | 1.3 | 1.0 | 2703924 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | 2.0 | 2703924 |
| Total Extractable Total phosphorous | ug/L | <10 | 10 | 2703924 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | 0.50 | 2703924 |
| Total Extractable Potassium (K) † | ug/L | <500 | 500 | 2703924 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | 3.0 | 2703924 |
| Total Extractable Sodium (Na) | ug/L | 940 | 500 | 2703924 |
| Total Extractable Strontium (Sr) † | ug/L | 8.2 | 2.0 | 2703924 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | 2.0 | 2703924 |
| Total Extractable Titanium (Ti) | ug/L | <10 | 10 | 2703924 |
| Total Extractable Uranium (U) | ug/L | <1.0 | 1.0 | 2703924 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | 2.0 | 2703924 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | 7.0 | 2703924 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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## CONVENTIONAL PARAMETERS (GROUND WATER)

| Bureau Veritas ID | | PA3058 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/08 11:15 | | |
| COC Number | | 190854 | | |
| | Units | How-WE08R-Q2-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | |
| Conductivity | mS/cm | 0.037 | 0.0010 | 2702884 |
| Dissolved organic carbon † | mg/L | 0.22 | 0.20 | 2704610 |
| Dissolved oxygen † | mg/L | 11 | 1.0 | 2702468 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.13 | 0.020 | 2702511 |
| Nitrates (N-NO3-) | mg/L | 0.13 | 0.020 | 2702511 |
| Nitrites (N-NO2-) | mg/L | <0.020 | 0.020 | 2702511 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | 0.020 | 2704745 |
| Orthophosphate (P) | mg/L | <0.050 | 0.050 | 2702784 |
| pH | pH | 6.23 | N/A | 2702536 |
| Phenols-4AAP | mg/L | <0.0020 | 0.0020 | 2703907 |
| Real Color | UCV | <2.0 | 2.0 | 2702864 |
| Sulfides (S2-) | mg/L | <0.020 | 0.020 | 2703445 |
| Turbidity | NTU | 0.49 | 0.10 | 2702991 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 17 | 1.0 | 2704189 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 17 | 1.0 | 2704189 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | 1.0 | 2704189 |
| Chloride (Cl) | mg/L | 0.31 | 0.050 | 2702512 |
| Sulfates (SO4) | mg/L | 1.0 | 0.50 | 2702512 |
| Total Dissolved Solids | mg/L | 18 | 10 | 2703130 |
| **On-site Measurements** | | | | |
| pH (on-site) † | pH | 6.84 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 3.900 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2702511 | YDH | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/10/10 | | 92 | % |
| | | | Nitrates (N-NO3-) | 2025/10/10 | | 92 | % |
| | | | Nitrites (N-NO2-) | 2025/10/10 | | 92 | % |
| 2702511 | YDH | Method Blank | Nitrate (N) and Nitrite(N) | 2025/10/10 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/10/10 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/10/10 | <0.020 | | mg/L |
| 2702512 | YDH | Spiked Blank | Chloride (Cl) | 2025/10/15 | | 100 | % |
| | | | Sulfates (SO4) | 2025/10/15 | | 103 | % |
| 2702512 | YDH | Method Blank | Chloride (Cl) | 2025/10/10 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/10/10 | <0.50 | | mg/L |
| 2702536 | JNA | Spiked Blank | pH | 2025/10/10 | | 102 | % |
| 2702784 | M1P | QC Standard | Orthophosphate (P) | 2025/10/10 | | 96 | % |
| 2702784 | M1P | Spiked Blank | Orthophosphate (P) | 2025/10/10 | | 89 | % |
| 2702784 | M1P | Method Blank | Orthophosphate (P) | 2025/10/10 | <0.050 | | mg/L |
| 2702864 | K1K | Spiked Blank | Real Color | 2025/10/10 | | 102 | % |
| 2702864 | K1K | Method Blank | Real Color | 2025/10/10 | <2.0 | | UCV |
| 2702884 | SXU | Spiked Blank | Conductivity | 2025/10/10 | | 103 | % |
| 2702884 | SXU | Method Blank | Conductivity | 2025/10/10 | <0.0010 | | mS/cm |
| 2702991 | BDA | Spiked Blank | Turbidity | 2025/10/10 | | 98 | % |
| 2702991 | BDA | Method Blank | Turbidity | 2025/10/10 | <0.10 | | NTU |
| 2703130 | AVV | Spiked Blank | Total Dissolved Solids | 2025/10/11 | | 98 | % |
| 2703130 | AVV | Method Blank | Total Dissolved Solids | 2025/10/11 | <10 | | mg/L |
| 2703445 | HGU | Spiked Blank | Sulfides (S2-) | 2025/10/15 | | 88 | % |
| 2703445 | HGU | Method Blank | Sulfides (S2-) | 2025/10/15 | <0.020 | | mg/L |
| 2703907 | ABX | Spiked Blank | Phenols-4AAP | 2025/10/16 | | 101 | % |
| 2703907 | ABX | Method Blank | Phenols-4AAP | 2025/10/16 | <0.0020 | | mg/L |
| 2703924 | NET | Spiked Blank | Total Extractable Aluminum (Al) | 2025/10/16 | | 89 | % |
| | | | Total Extractable Antimony (Sb) | 2025/10/16 | | 114 | % |
| | | | Total Extractable Silver (Ag) | 2025/10/16 | | 104 | % |
| | | | Total Extractable Arsenic (As) | 2025/10/16 | | 100 | % |
| | | | Total Extractable Barium (Ba) | 2025/10/16 | | 102 | % |
| | | | Total Extractable Beryllium (Be) | 2025/10/16 | | 107 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/10/16 | | 107 | % |
| | | | Total Extractable Boron (B) | 2025/10/16 | | 123 (1) | % |
| | | | Total Extractable Cadmium (Cd) | 2025/10/16 | | 103 | % |
| | | | Total Extractable Calcium (Ca) | 2025/10/16 | | 100 | % |
| | | | Total Extractable Chromium (Cr) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Cobalt (Co) | 2025/10/16 | | 95 | % |
| | | | Total Extractable Copper (Cu) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Tin (Sn) | 2025/10/16 | | 113 | % |
| | | | Total Extractable Iron (Fe) | 2025/10/16 | | 98 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Manganese (Mn) | 2025/10/16 | | 95 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/16 | | 106 | % |
| | | | Total Extractable Nickel (Ni) | 2025/10/16 | | 94 | % |
| | | | Total Extractable Total phosphorous | 2025/10/16 | | 87 | % |
| | | | Total Extractable Lead (Pb) | 2025/10/16 | | 108 | % |
| | | | Total Extractable Potassium (K) | 2025/10/16 | | 95 | % |
| | | | Total Extractable Selenium (Se) | 2025/10/16 | | 117 | % |
| | | | Total Extractable Sodium (Na) | 2025/10/16 | | 102 | % |
| | | | Total Extractable Strontium (Sr) | 2025/10/16 | | 114 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Thallium (Tl) | 2025/10/16 | | 105 | % |
| | | | Total Extractable Titanium (Ti) | 2025/10/16 | | 93 | % |
| | | | Total Extractable Uranium (U) | 2025/10/16 | | 109 | % |
| | | | Total Extractable Vanadium (V) | 2025/10/16 | | 97 | % |
| | | | Total Extractable Zinc (Zn) | 2025/10/16 | | 94 | % |
| 2703924 | NET | Method Blank | Total Extractable Aluminum (Al) | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/10/16 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/10/16 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/10/16 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/10/16 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/10/16 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/10/16 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/10/16 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/10/16 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/10/16 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/10/16 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/10/16 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/10/16 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/10/16 | <7.0 | | ug/L |
| 2704189 | LTA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/16 | | 98 | % |
| 2704189 | LTA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/16 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/10/16 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/10/16 | <1.0 | | mg/L |
| 2704610 | BAG | Spiked Blank | Dissolved organic carbon | 2025/10/16 | | 101 | % |
| 2704610 | BAG | Method Blank | Dissolved organic carbon | 2025/10/16 | <0.20 | | mg/L |
| 2704745 | YDH | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | | 98 | % |
| 2704745 | YDH | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | <0.020 | | mg/L |
| 2706376 | éC7 | Matrix Spike | Reactive silica (SiO2) | 2025/10/20 | | 99 | % |
| 2706376 | éC7 | Spiked Blank | Reactive silica (SiO2) | 2025/10/20 | | 101 | % |
| 2706376 | éC7 | Method Blank | Reactive silica (SiO2) | 2025/10/20 | <0.50 | | mg/L |
| 2707161 | TDO | Spiked Blank | Dissolved Mercury (Hg) | 2025/10/23 | | 85 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2707161 | TDO | Method Blank | Dissolved Mercury (Hg) | 2025/10/23 | <0.000010 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria


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## VALIDATION SIGNATURE PAGE

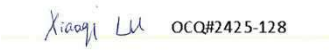
The analytical data and all QC contained in this report were reviewed and validated by:



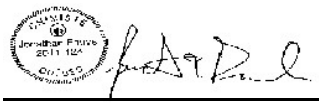

Afifah Naila Bestari, B. Sc. Chemist, Montreal, Analyst II




Frédéric Arnau, B.Sc., Chemist, Montreal, Scientific Service Specialist



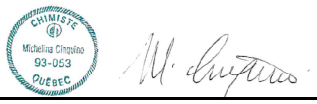

George Xiaoqi Lu, B.SC., Chimiste, Montreal, Analyst 2




Jonathan Fauvel, B.Sc., Chemist, Montreal, Scientific Specialist




Miryam Assayag, B.Sc. Chemist, Montréal, Team Leader




Michelina Cinquino, Analyst II




Simran Kaur LNU, B.Sc. Biochemist, Montreal, Analyst 2


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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




Automated Statchk

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Your P.O. #: 3000001868
Your Project #: Howse Groundwater
Site Location: Howse
Your C.O.C. #: 191039

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124582
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558791**
**Received: 2025/10/10, 08:30**

Sample Matrix: Ground Water
# Samples Received: 2

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Total Alkalinity (end point 4.5)-waters | 2 | N/A | 2025/10/11 | STL SOP-00038 | SM 24 2320-B m |
| Anions in water | 2 | N/A | 2025/10/12 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Real Color | 2 | N/A | 2025/10/10 | STL SOP-00046 | MA103 - Col. 2.0 |
| Conductivity in waters | 2 | N/A | 2025/10/15 | STL SOP-00038 | SM 24 2510-B m |
| Dissolved Organic Carbon (2) | 2 | 2025/10/17 | 2025/10/18 | STL SOP-00243 | SM 23 5310-B m |
| Dissolved Mercury (Hg) - Cold Vapour AF | 2 | N/A | 2025/10/21 | STL SOP-00276 | EPA 1631,rev. E m |
| Total Extractable Metals | 2 | 2025/10/16 | 2025/10/19 | STL SOP-00062 | MA.200–Mét. 1.2 R9 m |
| Ammonia Nitrogen in water | 2 | N/A | 2025/10/17 | STL SOP-00040 | MA.300–N 2.0 R2 m |
| Nitrates(NO3-), Nitrites(NO2-)-water | 2 | N/A | 2025/10/12 | STL SOP-00014 | MA.300–Ions 1.3 R6 m |
| Dissolved Oxygen | 2 | N/A | 2025/10/10 | STL SOP-00008 | MA.315–DBO 1.1 R6 m |
| pH in water | 2 | N/A | 2025/10/11 | STL SOP-00038 | MA.100–pH 1.1 R6 m |
| pH Measured @ 15° C | 1 | N/A | 2025/10/10 | STL SOP-00016 | MA.100–pH 1.1 R6 m |
| Total Phenols by 4-AAP in water | 2 | N/A | 2025/10/17 | STL SOP-00033 | MA404–I.Phé 2.2 R2 m |
| pH (site) - water | 2 | N/A | 2025/10/10 | | Field measurement |
| Ortho Phosphate-water | 2 | N/A | 2025/10/11 | STL SOP-00003 | MA.303–P 1.1 R6 m |
| Sulfides (as S2-)-water | 2 | 2025/10/16 | 2025/10/16 | STL SOP-00273 | SM 24 4500-S2 m |
| Total Dissolved Solids | 2 | N/A | 2025/10/12 | STL SOP-00050 | MA.115–S.D. 1.0 R4 m |
| Temperature (site) | 2 | N/A | 2025/10/10 | | Field Measurement |
| Turbidity-water | 2 | N/A | 2025/10/10 | STL SOP-00022 | MA.103–Tur. 1.0 R5 m |
| Reactive Silica(SiO2) (1) | 2 | 2025/10/20 | 2025/10/20 | ATL SOP 00022 | EPA 366.0 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.



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Your P.O. #: 3000001868
Your Project #: Howse Groundwater
Site Location: Howse
Your C.O.C. #: 191039

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124582
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C558791**
**Received: 2025/10/10, 08:30**

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Bedford, Suit 105, 200 Bluewater Rd. , Bedford, NS, B4B1G9
(2) DOC present in the sample should be considered as non-purgeable DOC

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
24 Oct 2025 09:22:34

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2661

==========

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Bureau Veritas Job #: C558791
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## RESULTS OF ANALYSES OF GROUND WATER

| Bureau Veritas ID | | PA4417 | PA4418 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/10/09 09:07 | 2025/10/09 11:14 | | |
| COC Number | | 191039 | 191039 | | |
| | Units | How-WE07R-Q2-2025 | How-WE09R-Q2-2025 | RDL | QC Batch |
| **INORGANICS** | | | | | |
| Reactive silica (SiO2) † | mg/L | 5.4 | <0.50 | 0.50 | 2706376 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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Bureau Veritas Job #: C558791
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## DISSOLVED METALS (GROUND WATER)

| Bureau Veritas ID | | PA4417 | PA4418 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/10/09 09:07 | 2025/10/09 11:14 | | |
| COC Number | | 191039 | 191039 | | |
| | Units | How-WE07R-Q2-2025 | How-WE09R-Q2-2025 | RDL | QC Batch |
| **METALS** | | | | | |
| Dissolved Mercury (Hg) † | mg/L | <0.000010 | <0.000010 | 0.000010 | 2705812 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable



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## TOTAL EXTRACTABLE METALS (GROUND WATER)

| Bureau Veritas ID | | PA4417 | PA4418 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/10/09 09:07 | 2025/10/09 11:14 | | |
| COC Number | | 191039 | 191039 | | |
| | Units | How-WE07R-Q2-2025 | How-WE09R-Q2-2025 | RDL | QC Batch |
| **METALS** | | | | | |
| Total Extractable Aluminum (Al) | ug/L | <10 | <10 | 10 | 2704734 |
| Total Extractable Antimony (Sb) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Silver (Ag) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Arsenic (As) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Barium (Ba) | ug/L | 2.8 | 20 | 2.0 | 2704734 |
| Total Extractable Beryllium (Be) | ug/L | <2.0 | <2.0 | 2.0 | 2704734 |
| Total Extractable Bismuth (Bi) †† | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Boron (B) | ug/L | <50 | <50 | 50 | 2704734 |
| Total Extractable Cadmium (Cd) | ug/L | <0.20 | <0.20 | 0.20 | 2704734 |
| Total Extractable Calcium (Ca) | ug/L | 2400 | 5500 | 500 | 2704734 |
| Total Extractable Chromium (Cr) | ug/L | <5.0 | <5.0 | 5.0 | 2704734 |
| Total Extractable Cobalt (Co) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Copper (Cu) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Total Hardness (CaCO3) †† | ug/L | 14000 | 16000 | 1000 | 2704734 |
| Total Extractable Tin (Sn) | ug/L | <2.0 | <2.0 | 2.0 | 2704734 |
| Total Extractable Iron (Fe) | ug/L | <60 | 320 | 60 | 2704734 |
| Total Extractable Magnesium (Mg) | ug/L | 2000 | 630 | 100 | 2704734 |
| Total Extractable Manganese (Mn) | ug/L | <1.0 | 140 | 1.0 | 2704734 |
| Total Extractable Molybdenum (Mo) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Nickel (Ni) | ug/L | <2.0 | <2.0 | 2.0 | 2704734 |
| Total Extractable Total phosphorous | ug/L | <10 | <10 | 10 | 2704734 |
| Total Extractable Lead (Pb) | ug/L | <0.50 | <0.50 | 0.50 | 2704734 |
| Total Extractable Potassium (K) † | ug/L | <500 | 1300 | 500 | 2704734 |
| Total Extractable Selenium (Se) | ug/L | <3.0 | <3.0 | 3.0 | 2704734 |
| Total Extractable Sodium (Na) | ug/L | 800 | 1700 | 500 | 2704734 |
| Total Extractable Strontium (Sr) † | ug/L | 4.5 | 52 | 2.0 | 2704734 |
| Total Extractable Thallium (Tl) | ug/L | <2.0 | <2.0 | 2.0 | 2704734 |
| Total Extractable Titanium (Ti) | ug/L | <10 | <10 | 10 | 2704734 |
| Total Extractable Uranium (U) | ug/L | <1.0 | <1.0 | 1.0 | 2704734 |
| Total Extractable Vanadium (V) | ug/L | <2.0 | <2.0 | 2.0 | 2704734 |
| Total Extractable Zinc (Zn) | ug/L | <7.0 | <7.0 | 7.0 | 2704734 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
†† Parameter is not accreditable
† Parameter is not accredited


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## CONVENTIONAL PARAMETERS (GROUND WATER)

| Bureau Veritas ID | | PA4417 | | PA4418 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/09 09:07 | | 2025/10/09 11:14 | | |
| COC Number | | 191039 | | 191039 | | |
| | Units | How-WE07R-Q2-2025 | RDL | How-WE09R-Q2-2025 | RDL | QC Batch |
| **CONVENTIONALS** | | | | | | |
| Conductivity | mS/cm | 0.035 | 0.0010 | 0.057 | 0.0010 | 2703638 |
| Dissolved organic carbon † | mg/L | 0.22 | 0.20 | 200 | 4.0 | 2705234 |
| Dissolved oxygen † | mg/L | 11 | 1.0 | 6.1 | 1.0 | 2703024 |
| Nitrate (N) and Nitrite(N) | mg/L | 0.74 | 0.020 | <0.020 | 0.020 | 2703113 |
| Nitrates (N-NO3-) | mg/L | 0.74 | 0.020 | <0.020 | 0.020 | 2703113 |
| Nitrites (N-NO2-) | mg/L | <0.020 | 0.020 | <0.020 | 0.020 | 2703113 |
| Nitrogen ammonia (N-NH4+ and N-NH3) | mg/L | <0.020 | 0.020 | 0.94 | 0.020 | 2705134 |
| Orthophosphate (P) | mg/L | <0.050 | 0.050 | <0.050 | 0.050 | 2703164 |
| pH | pH | 6.14 | N/A | 6.16 | N/A | 2703047 |
| pH (15° C) † | pH | 6.77 | N/A | N/A | N/A | 2702998 |
| Phenols-4AAP | mg/L | <0.0020 | 0.0020 | 0.0086 | 0.0020 | 2705112 |
| Real Color | UCV | <2.0 | 2.0 | 5.1 | 2.0 | 2702864 |
| Sulfides (S2-) | mg/L | <0.020 | 0.020 | <0.020 | 0.020 | 2704566 |
| Turbidity | NTU | 0.17 | 0.10 | 13 | 0.10 | 2702991 |
| Alkalinity Total (as CaCO3) pH 4.5 † | mg/L | 10 | 1.0 | 14 | 1.0 | 2703048 |
| Bicarbonates (HCO3 as CaCO3) † | mg/L | 10 | 1.0 | 14 | 1.0 | 2703048 |
| Carbonate (CO3 as CaCO3) † | mg/L | <1.0 | 1.0 | <1.0 | 1.0 | 2703048 |
| Chloride (Cl) | mg/L | 1.8 | 0.050 | 1.6 | 0.050 | 2703115 |
| Sulfates (SO4) | mg/L | 1.4 | 0.50 | 7.3 | 0.50 | 2703115 |
| Total Dissolved Solids | mg/L | 42 | 10 | 33 | 10 | 2703262 |
| **On-site Measurements** | | | | | | |
| pH (on-site) † | pH | 6.73 | N/A | 7.07 | N/A | ONSITE |
| Temperature (°C) † | Celsius | 4.200 | N/A | 5.100 | N/A | ONSITE |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
N/A = Not Applicable


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## GENERAL COMMENTS

Please note that the test pH (site) - water was performed on site by the client.
Please note that the test Temperature (site) was performed on site by the client.

**CONVENTIONAL PARAMETERS (GROUND WATER)**

Reported detection limits are multiplied by dilution factors used for sample analysis.

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2702864 | K1K | Spiked Blank | Real Color | 2025/10/10 | | 102 | % |
| 2702864 | K1K | Method Blank | Real Color | 2025/10/10 | <2.0 | | UCV |
| 2702991 | BDA | Spiked Blank | Turbidity | 2025/10/10 | | 98 | % |
| 2702991 | BDA | Method Blank | Turbidity | 2025/10/10 | <0.10 | | NTU |
| 2702998 | BDA | Spiked Blank | pH (15° C) | 2025/10/10 | | 101 | % |
| 2703047 | JNA | Spiked Blank | pH | 2025/10/11 | | 101 | % |
| 2703048 | JNA | Spiked Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/11 | | 100 | % |
| 2703048 | JNA | Method Blank | Alkalinity Total (as CaCO3) pH 4.5 | 2025/10/11 | <1.0 | | mg/L |
| | | | Bicarbonates (HCO3 as CaCO3) | 2025/10/11 | <1.0 | | mg/L |
| | | | Carbonate (CO3 as CaCO3) | 2025/10/11 | <1.0 | | mg/L |
| 2703113 | SXU | Spiked Blank | Nitrate (N) and Nitrite(N) | 2025/10/12 | | 92 | % |
| | | | Nitrates (N-NO3-) | 2025/10/12 | | 93 | % |
| | | | Nitrites (N-NO2-) | 2025/10/12 | | 92 | % |
| 2703113 | SXU | Method Blank | Nitrate (N) and Nitrite(N) | 2025/10/12 | <0.020 | | mg/L |
| | | | Nitrates (N-NO3-) | 2025/10/12 | <0.020 | | mg/L |
| | | | Nitrites (N-NO2-) | 2025/10/12 | <0.020 | | mg/L |
| 2703115 | SXU | Spiked Blank | Chloride (Cl) | 2025/10/12 | | 93 | % |
| | | | Sulfates (SO4) | 2025/10/12 | | 97 | % |
| 2703115 | SXU | Method Blank | Chloride (Cl) | 2025/10/12 | <0.050 | | mg/L |
| | | | Sulfates (SO4) | 2025/10/12 | <0.50 | | mg/L |
| 2703164 | M1P | Spiked Blank | Orthophosphate (P) | 2025/10/11 | | 91 | % |
| 2703164 | M1P | Method Blank | Orthophosphate (P) | 2025/10/11 | <0.050 | | mg/L |
| 2703262 | SUZ | Spiked Blank | Total Dissolved Solids | 2025/10/12 | | 94 | % |
| 2703262 | SUZ | Method Blank | Total Dissolved Solids | 2025/10/12 | <10 | | mg/L |
| 2703638 | JNA | Spiked Blank | Conductivity | 2025/10/15 | | 100 | % |
| 2703638 | JNA | Method Blank | Conductivity | 2025/10/15 | <0.0010 | | mS/cm |
| 2704566 | HGU | Spiked Blank | Sulfides (S2-) | 2025/10/16 | | 91 | % |
| 2704566 | HGU | Method Blank | Sulfides (S2-) | 2025/10/16 | <0.020 | | mg/L |
| 2704734 | NET | Spiked Blank | Total Extractable Aluminum (Al) | 2025/10/18 | | 97 | % |
| | | | Total Extractable Antimony (Sb) | 2025/10/18 | | 110 | % |
| | | | Total Extractable Silver (Ag) | 2025/10/18 | | 106 | % |
| | | | Total Extractable Arsenic (As) | 2025/10/18 | | 113 | % |
| | | | Total Extractable Barium (Ba) | 2025/10/18 | | 107 | % |
| | | | Total Extractable Beryllium (Be) | 2025/10/18 | | 110 | % |
| | | | Total Extractable Bismuth (Bi) | 2025/10/18 | | 106 | % |
| | | | Total Extractable Boron (B) | 2025/10/18 | | 120 | % |
| | | | Total Extractable Cadmium (Cd) | 2025/10/18 | | 104 | % |
| | | | Total Extractable Calcium (Ca) | 2025/10/18 | | 97 | % |
| | | | Total Extractable Chromium (Cr) | 2025/10/18 | | 110 | % |
| | | | Total Extractable Cobalt (Co) | 2025/10/18 | | 110 | % |
| | | | Total Extractable Copper (Cu) | 2025/10/18 | | 109 | % |
| | | | Total Extractable Tin (Sn) | 2025/10/18 | | 127 (1) | % |
| | | | Total Extractable Iron (Fe) | 2025/10/18 | | 110 | % |
| | | | Total Extractable Magnesium (Mg) | 2025/10/18 | | 107 | % |
| | | | Total Extractable Manganese (Mn) | 2025/10/18 | | 111 | % |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/18 | | 105 | % |
| | | | Total Extractable Nickel (Ni) | 2025/10/18 | | 109 | % |
| | | | Total Extractable Total phosphorous | 2025/10/18 | | 106 | % |
| | | | Total Extractable Lead (Pb) | 2025/10/18 | | 107 | % |
| | | | Total Extractable Potassium (K) | 2025/10/18 | | 109 | % |



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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| | | | Total Extractable Selenium (Se) | 2025/10/18 | | 105 | % |
| | | | Total Extractable Sodium (Na) | 2025/10/18 | | 108 | % |
| | | | Total Extractable Strontium (Sr) | 2025/10/18 | | 108 | % |
| | | | Total Extractable Thallium (Tl) | 2025/10/18 | | 106 | % |
| | | | Total Extractable Titanium (Ti) | 2025/10/18 | | 113 | % |
| | | | Total Extractable Uranium (U) | 2025/10/18 | | 106 | % |
| | | | Total Extractable Vanadium (V) | 2025/10/18 | | 111 | % |
| | | | Total Extractable Zinc (Zn) | 2025/10/18 | | 108 | % |
| 2704734 | NET | Method Blank | Total Extractable Aluminum (Al) | 2025/10/18 | <10 | | ug/L |
| | | | Total Extractable Antimony (Sb) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Silver (Ag) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Arsenic (As) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Barium (Ba) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Beryllium (Be) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Bismuth (Bi) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Boron (B) | 2025/10/18 | <50 | | ug/L |
| | | | Total Extractable Cadmium (Cd) | 2025/10/18 | <0.20 | | ug/L |
| | | | Total Extractable Calcium (Ca) | 2025/10/18 | <500 | | ug/L |
| | | | Total Extractable Chromium (Cr) | 2025/10/18 | <5.0 | | ug/L |
| | | | Total Extractable Cobalt (Co) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Copper (Cu) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Total Hardness (CaCO3) | 2025/10/18 | <1000 | | ug/L |
| | | | Total Extractable Tin (Sn) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Iron (Fe) | 2025/10/18 | <60 | | ug/L |
| | | | Total Extractable Magnesium (Mg) | 2025/10/18 | <100 | | ug/L |
| | | | Total Extractable Manganese (Mn) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Molybdenum (Mo) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Nickel (Ni) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Total phosphorous | 2025/10/18 | <10 | | ug/L |
| | | | Total Extractable Lead (Pb) | 2025/10/18 | <0.50 | | ug/L |
| | | | Total Extractable Potassium (K) | 2025/10/18 | <500 | | ug/L |
| | | | Total Extractable Selenium (Se) | 2025/10/18 | <3.0 | | ug/L |
| | | | Total Extractable Sodium (Na) | 2025/10/18 | <500 | | ug/L |
| | | | Total Extractable Strontium (Sr) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Thallium (Tl) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Titanium (Ti) | 2025/10/18 | <10 | | ug/L |
| | | | Total Extractable Uranium (U) | 2025/10/18 | <1.0 | | ug/L |
| | | | Total Extractable Vanadium (V) | 2025/10/18 | <2.0 | | ug/L |
| | | | Total Extractable Zinc (Zn) | 2025/10/18 | <7.0 | | ug/L |
| 2705112 | HGU | Spiked Blank | Phenols-4AAP | 2025/10/17 | | 98 | % |
| 2705112 | HGU | Method Blank | Phenols-4AAP | 2025/10/17 | <0.0020 | | mg/L |
| 2705134 | S2S | Spiked Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | | 94 | % |
| 2705134 | S2S | Method Blank | Nitrogen ammonia (N-NH4+ and N-NH3) | 2025/10/17 | <0.020 | | mg/L |
| 2705234 | BAG | Spiked Blank | Dissolved organic carbon | 2025/10/17 | | 102 | % |
| 2705234 | BAG | Method Blank | Dissolved organic carbon | 2025/10/17 | <0.20 | | mg/L |
| 2705812 | TDO | Spiked Blank | Dissolved Mercury (Hg) | 2025/10/21 | | 120 | % |
| 2705812 | TDO | Method Blank | Dissolved Mercury (Hg) | 2025/10/21 | <0.000010 | | mg/L |
| 2706376 | éC7 | Matrix Spike | Reactive silica (SiO2) | 2025/10/20 | | 99 | % |
| 2706376 | éC7 | Spiked Blank | Reactive silica (SiO2) | 2025/10/20 | | 101 | % |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2706376 | éC7 | Method Blank | Reactive silica (SiO2) | 2025/10/20 | <0.50 | | mg/L |

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria


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Bureau Veritas Job #: C558791
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Groundwater
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JT

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Afifah Naila Bestari, B. Sc. Chemist, Montreal, Analyst II

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## VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




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## Appendix IV – Wetland Well Measurements

www.groupegeos.ca

Montréal, December 19, 2025

By email

Pallav Sinha
Corporate Environmental Manager
TATA Steel Minerals Canada Limited
1000, Sherbrooke West, Suite 1120
Montréal (Québec) H3A 3G4

**Object: Howse wetland water levels, 2025 campaign**
**Direct Shipping Ore (DSO) Project—Newfoundland and Labrador**

**Ref.: Q-0639**

Mr. Sinha,

We are pleased to submit the technical report on the above-mentioned project.

## 1 CONTEXT

Tata Steel Minerals Canada (TSMC) is developing and operating an open-pit iron ore mine in Newfoundland and Labrador, with an estimated extraction of approximately 46 Mt of iron ore over the Howse Property Iron Mine Project's (Howse Project) 15-year lifespan.

In 2014, an environmental assessment was conducted in accordance with the requirements of the *Canadian Environmental Assessment Act, 2012*. As a result, the Howse Project was approved with several conditions. In compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*, TSMC must ensure that migratory bird populations and their habitat are not adversely affected by the Howse Project development, operation, and decommissioning.

To meet these requirements, TSMC worked with Groupe GÉOS (formerly Groupe Hémisphères) to develop a follow-up program. This program assesses the potential adverse effects of the Howse Project on wetland functions that support migratory birds. It also evaluates the effectiveness of the proposed mitigation measures. The objectives of the water-level monitoring program are to (1) document interannual variability in wetland hydrology, (2) detect potential changes associated with mining activities, and (3) support the assessment of wetland functions related to migratory bird habitat.

This document presents the work mandated to Groupe GÉOS by TSMC regarding wetland water-level monitoring. Results from the seventh monitoring year are presented along with monitoring data from previous years (2018 to 2025).

## 2 METHODOLOGY

The bottom of water wells, anchored in deep mineral soil, are used to monitor water level fluctuations across wetlands. The surface elevation of wetland soil is not constant: it expands and contracts as it becomes waterlogged or dries out. Therefore, using soil levels next to wells as a reference altitude would provide inaccurate data. While water levels measured from the well bottom cannot be used to compare absolute levels between wells, this method ensures precise interannual comparisons and allows the comparison of water-level variations across wetlands.

Water levels were measured once in 2020, 2021, 2023, three times in 2024 and seven times in 2025. No measurements were taken in 2022.

## 3 RESULTS

This section presents well data collected from 2018 to 2025.

### 3.1 Initial installation

In 2018, a total of 21 wells were installed in wetlands located in proximity to the Howse project. The types of wetlands within which each well was installed as well as installation depths are presented in Table 3.1. Well locations are presented in Figure 1 of Appendix A.

**Table 3.1 Well installation details – wetland type and depth**

| Wells | Wetland type | Depth (m) |
|---|---|---|
| **WMW01** | Black Spruce Bog | 0.81 |
| **WMW02** | Uniform Fluvial Shrub Fen | 0.84 |
| **WMW03** | Uniform Herb Fen | 1.20 |
| **WMW04** | Uniform Herb Fen | 0.82 |
| **WMW05** | Uniform Herb Fen | 1.11 |
| **WMW06** | Uniform Herb Fen | 0.91 |
| **WMW08** | Uniform Fluvial Shrub Fen | 1.02 |
| **WMW11** | Black Spruce/Tamarack Forested Swamp | 0.81 |
| **WMW12** | Uniform Herb Fen | 1.22 |
| **WMW13** | Black Spruce/Tamarack Forested Swamp | 1.22 |
| **WMW16** | Black Spruce/Tamarack Forested Swamp | 0.79 |
| **WMW18** | Black Spruce/Tamarack Forested Swamp | 1.22 |
| **WMW19** | Black Spruce/Tamarack Forested Swamp | 0.71 |

| Wells | Wetland type | Depth (m) |
|---|---|---|
| **WMW21** | Black Spruce/Tamarack Forested Swamp | 0.91 |
| **WMW22** | Black Spruce/Tamarack Forested Swamp | 0.84 |
| **WMW24** | Black Spruce/Tamarack Forested Swamp | 0.76 |
| **WMW25** | Uniform Herb Fen | 0.71 |
| **WMW26** | Black Spruce Bog | 0.81 |
| **WMW27** | Uniform Herb Fen | 1.22 |
| **WMW29** | Uniform Fluvial Shrub Fen | 0.69 |
| **WMW30** | Black Spruce Bog | 0.81 |

## 3.2 Conditions of observation

Table 3.2 presents water well measurement dates as well as the 1 month and 6-month total precipitations within the Schefferville area. The precipitation data was obtained from the Schefferville weather station, located more than 25 km away from the wells. Therefore, the data serves as an indicator of seasonal dryness rather than a measurement of local precipitation.

In 2019, wells WMW05, -06, -08, -24 and -29 could not be measured due to unfavourable field conditions or because of jammed water well caps. In 2024, wells WMW01, -08 and -29 were often dry and therefore were not included in the water-level calculations. Similarly, in 2025, well WMW29 was often dry and removed from the calculations.

**Table 3.2 Water level measurement periods and precipitation data**

| Year | Dates | Sampled wells | Past precipitations[1] (mm) | |
|---|---|---|---|---|
| | | | 1 month | 6 months |
| **2018** | 08-17 to 08-20 | Wells WMW01, 02, 03, 04, 05, 18 and 19 | 157 | 361 |
| | 09-09 to 09-10 | All wells except WMW08 | 129 | 463 |
| | 09-15 to 09-16 | All wells | 113 | 465 |
| | 09-30 to 10-03 | All wells | 64[2] | 507 |
| **2019** | 08-01 to 08-02 | All wells except WMW05, 06, 08, 24, and 29 | 110[2] | 245 |
| **2020** | 08-23 to 09-07 | All wells | 99 | 372 |
| **2021** | 07-03 | All wells | 10 | 203 |
| **2022** | - | No measurements carried out in 2022 | --- | --- |
| **2023** | 08-02 to 08-03 | All wells | 92 | 232 |

| Year | Dates | Sampled wells | Past precipitations[1] (mm) | |
|---|---|---|---|---|
| | | | 1 month | 6 months |
| **2024** | 07-20 | All wells, WMW29 was dry | 57 | 214 |
| | 08-16 | All wells, WMW01, 08 and 29 were dry | 45 | 248 |
| | 10-05 to 10-06 | All wells, WMW01, 08 and 29 were dry | 40 | 278 |
| **2025** | 06-27 to 06-28 | All wells | 3[2] | 119 |
| | 07-26 | All wells | 31 | 105 |
| | 08-23 | All wells, WMW29 was dry | 89 | 179 |
| | 09-12 to 09-13 | All wells, WMW29 was dry | 111 | 232 |
| | 09-26 | All wells, WMW29 was dry | 79 | 263 |
| | 10-12 | All wells, WMW29 was dry | 111 | 290 |
| | 10-26 to 10-27 | All wells, WMW29 was dry, WMW19, 21 and 27 were frozen | 48 | 290 |

**Note 1**. Sum of total precipitation for the months before the measurements, data from the Schefferville weather station; missing data were considered as no precipitation. **Note 2**. More than 10% of data was missing.

## 3.3 Average Water-Level

Average water levels as well as variations in water levels were grouped into three areas for comparison. Total wells per area are as follows: north-west of Howse pit (12 wells); south-east of Howse pit (7 wells); and the Triangle Lake area (2 wells) (Table 3.3).

Average water levels were relatively similar across all three areas. However, since water levels depend on the installation depth of each well (which can vary between wells), water-level variation is a more reliable indicator of site conditions.

**Table 3.3 Average yearly water-level**

| Well | Average water levels in the wells (m) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 | 2023 | 2024 | 2025 | Average[1] |
| **North-west of Howse pit** | | | | | | | | |
| **WMW11** | 0.58 | 0.72 | 0.63 | 0.56 | 0.55 | 0.40 | 0.55 | 0.57 ±0.04 |
| **WMW12** | 1.10 | 1.14 | 1.05 | 1.07 | 1.02 | 0.98 | 1.05 | 1.06 ±0.02 |
| **WMW13** | 0.62 | 1.02 | 1.09 | 1.07 | 1.08 | 0.94 | 1.06 | 0.98 ±0.06 |
| **WMW16** | 0.69 | 0.70 | 0.67 | 0.71 | 0.71 | 0.63 | 0.62 | 0.68 ±0.01 |
| **WMW18** | 0.81 | 0.94 | 0.07 | 0.81 | 0.86 | 0.68 | 0.91 | 0.73 ±0.11 |
| **WMW19** | 0.71 | 0.97 | 0.88 | 1.13 | 0.86 | 1.05 | 0.90 | 0.93 ±0.05 |

| Well | Average water levels in the wells (m) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 | 2023 | 2024 | 2025 | Average[1] |
| **WMW21** | 0.77 | 0.74 | 0.73 | 0.71 | 0.74 | 0.47 | 0.73 | 0.70±0.04 |
| **WMW22** | 0.71 | 0.73 | 0.25 | 0.70 | 0.71 | 0.40 | 0.66 | 0.60±0.07 |
| **WMW24** | 0.66 | --- | 0.13 | 0.56 | 0.60 | 0.35 | 0.60 | 0.48±0.08 |
| **WMW25** | 0.52 | 0.48 | 0.57 | 0.02 | 0.52 | 0.26 | 0.47 | 0.40±0.07 |
| **WMW26** | 0.73 | 0.74 | 0.24 | 0.67 | 0.75 | 0.61 | 0.72 | 0.64±0.07 |
| **WMW27** | 1.16 | 1.07 | 0.99 | 0.99 | 0.92 | 0.82 | 0.89 | 0.98±0.04 |
| **Average** | 0.75±0.06 | 0.84±0.06 | 0.61±0.1 | 0.75±0.09 | 0.78±0.05 | 0.63±0.08 | 0.76±0.06 | 0.73±0.06 |
| **South-east of Howse pit** | | | | | | | | |
| **WMW01** | 0.73 | 0.75 | 0.23 | 0.75 | 0.79 | 0.32 | 0.71 | 0.61±0.09 |
| **WMW02** | 0.56 | 0.62 | 0.60 | 0.47 | 0.55 | 0.44 | 0.55 | 0.54±0.03 |
| **WMW03** | 1.20 | 1.17 | 0.48 | 1.05 | 1.14 | 1.03 | 1.09 | 1.02±0.09 |
| **WMW04** | 0.63 | 0.67 | 0.51 | 0.52 | 0.66 | 0.42 | 0.59 | 0.57±0.04 |
| **WMW05** | 1.05 | --- | 0.17 | 1.04 | 1.12 | 0.96 | 1.09 | 0.90±0.15 |
| **WMW06** | 0.74 | --- | 0.87 | 1.05 | 0.84 | 0.78 | 0.83 | 0.85±0.04 |
| **WMW08** | 0.98 | --- | 0.99 | 0.98 | 0.91 | 0.24 | 0.76 | 0.81±0.12 |
| **Average** | 0.84±0.09 | 0.80±0.13 | 0.55±0.11 | 0.84±0.1 | 0.86±0.08 | 0.60±0.12 | 0.80±0.08 | 0.76±0.07 |
| **Triangle Lake Area** | | | | | | | | |
| **WMW29** | 0.90 | --- | 0.77 | 0.91 | --- | --- | 0.75 | 0.83±0.04 |
| **WMW30** | 0.75 | 1.27 | 0.67 | 0.62 | 0.57 | 0.50 | 0.64 | 0.72±0.10 |
| **Average** | 0.82±0.07 | 1.27 | 0.72±0.05 | 0.77±0.14 | 0.57 | 0.50 | 0.70±0.06 | 0.78±0.06 |

**Note 1.** Average and standard error.

## 3.4 Water-Level Variation

In general, measurements from 2020 and 2024 indicated low water levels, suggesting dry seasons for those years. Those from 2018 and 2019 showed high water levels, suggesting wet seasons for those years (Table 3.3). Water levels between well areas varied in certain years.

In 2021 and 2023, water levels were average in the north-west wells, high in the south-east wells and low in the Triangle Lake area wells (Table 4.3). The water levels for 2025 were around average values in all three areas.

The areas to the north-west and south-east of the Howse pit exhibited comparable water level variations and followed similar trends over the years. In contrast, the Triangle Lake Area appeared

to follow a distinct pattern. Since only two wells are installed in this area, the observed trend may be influenced by the small sample size. Although no statistical analyses were conducted, precipitation levels over the past months seem to explain the interannual pattern in both north-west and south-east wells.

Summer precipitations reached their highest levels in 2018 and 2019 among monitored years, while 2024 recorded a significantly dryer season. Measured precipitations in 2025 indicate a relatively dry season, with the lowest reported precipitations for the first months of summer (Table 3.2). However, the percentage of missing data could be an explanation for those numbers.

**Table 4.3 Annual Water-level Variation per Area**

| Area | Water level variation (annual - average) (m) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 | 2023 | 2024 | 2025 |
| North-west | **-0.04±0.06**<br>Min: -0.27<br>Max: 0.37 | **-0.02±0.06**<br>Min: -0.38<br>Max: 0.28 | **0.01±0.12**<br>Min: -0.53<br>Max: 0.49 | **-0.03±0.09**<br>Min: -0.22<br>Max: 0.35 | **-0.02±0.05**<br>Min: -0.28<br>Max: 0.29 | **0.02±0.08**<br>Min: -0.36<br>Max: 0.43 | **-0.01±0.06**<br>Min: -0.31<br>Max: 0.29 |
| South-east | **0.05 ±0.09**<br>Min: -0.23<br>Max: 0.41 | **-0.06±0.13**<br>Min: -0.24<br>Max: 0.31 | **-0.05±0.12**<br>Min: -0.43<br>Max: 0.39 | **0.05±0.10**<br>Min: -0.31<br>Max: 0.27 | **0.07±0.09**<br>Min: -0.25<br>Max: 0.35 | **-0.02±0.12**<br>Min: -0.38<br>Max: 0.42 | **0.03±0.08**<br>Min: -0.22<br>Max: 0.32 |
| Triangle Lake | **0.03±0.07**<br>Min: -0.04<br>Max: 0.12 | **0.41**<br>Min: ---<br>Max: 0.41 | **0.12±0.06**<br>Min: 0.07<br>Max: 0.18 | **-0.02±0.15**<br>Min: -0.16<br>Max: 0.13 | **-0.22**<br>Min: ---<br>Max: -0.22 | **-0.11**<br>Min: ---<br>Max: -0.11 | **-0.08±0.05**<br>Min: -0.13<br>Max: -0.02 |

**Note**. Presented are annual averages per area ± standard error.

## 4 RECOMMENDATIONS

Wells WMW01, WMW08, and WMW29 were often dry. While these results are informative, they are difficult to incorporate into the analysis. Additionally, well WMW25 has shown critically low water levels in certain years. Since mining activities are expected to lower water levels in nearby wetlands, increasing the frequency of this type of result, it is recommended to deepen wells WMW01, WMW08, WMW25, and WMW29 by installing new PVC piping.

It is recommended that wetland water-level monitoring be continued in subsequent years using the same measurement frequency as implemented in 2025. Maintaining this sampling intensity during the early stages of mine development will provide adequate temporal resolution to document seasonal and short-term hydrological variability and to support comparisons with baseline conditions established during the 2018–2024 reference period. This approach will strengthen the monitoring program’s capacity to detect potential deviations from baseline conditions as development activities progress, while ensuring continuity and consistency of the dataset.

# 5 CONCLUSIONS

The wetland water-level monitoring program conducted between 2018 and 2025 provides a comprehensive baseline of interannual hydrological variability in wetlands located in proximity to the Howse Project. The monitoring period up to 2024 represents reference conditions prior to the initiation of mine development activities, while 2025 corresponds to the early site preparation phase, during which mining-related activities had only recently begun.

Overall, water-level variations observed during the reference period (2018–2024) are primarily attributable to regional climatic conditions, particularly seasonal precipitation patterns. Years characterized by higher precipitation (e.g., 2018 and 2019) generally exhibited higher water levels, whereas drier years, notably 2020 and 2024, were associated with lower water levels across most monitored areas. These variations fall within the range of natural interannual hydrological fluctuations observed since the beginning of the monitoring program. The dataset collected up to 2024 establishes a robust hydrological reference framework against which future monitoring results can be compared. Continued water-level monitoring during the subsequent phases of mine development and operation will be essential to detect potential deviations from baseline conditions and to assess potential effects on wetland functions associated with migratory bird habitat.

Water levels measured in 2025 were generally consistent with historical variability documented during the reference period. Given that mine development activities had only recently commenced at the time of the 2025 monitoring, the data do not allow for the identification of potential project-related hydrological effects at this stage. As such, the 2025 results should be considered transitional and interpreted with caution in the context of impact assessment.

Comparable water-level trends were observed in wetlands located north-west and south-east of the Howse pit throughout the monitoring period, suggesting similar hydrological responses in these areas under reference conditions. Wetlands in the Triangle Lake area exhibited a distinct pattern; however, the limited number of monitoring wells in this area restricts the interpretation of observed trends.

The recommendation to deepen selected wells aims to improve data continuity and analytical robustness, particularly in wetlands that demonstrate recurrent low water levels limit data interpretation. Implementing these improvements will strengthen the monitoring program’s capacity to detect hydrological changes associated with future phases of the Howse Project.

## 6 QUALITY ASSURANCE

Groupe GÉOS possesses an internal quality control program based on a review and approval of all concepts and document production by a senior professional. The program considers the management, the control of documentation, the personnel's continuous training, as well as the quality assurance of the deliverables. The system also includes a tight control of the field work and the prevention and safety measures specific to the project.

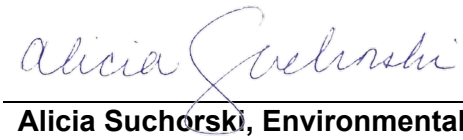
In the hope that everything is compliant, please accept, Mr. Sinha, our cordial regards.

**Written by:**



**Laurent Fraser, Biologist, M.Sc.**
Project manager

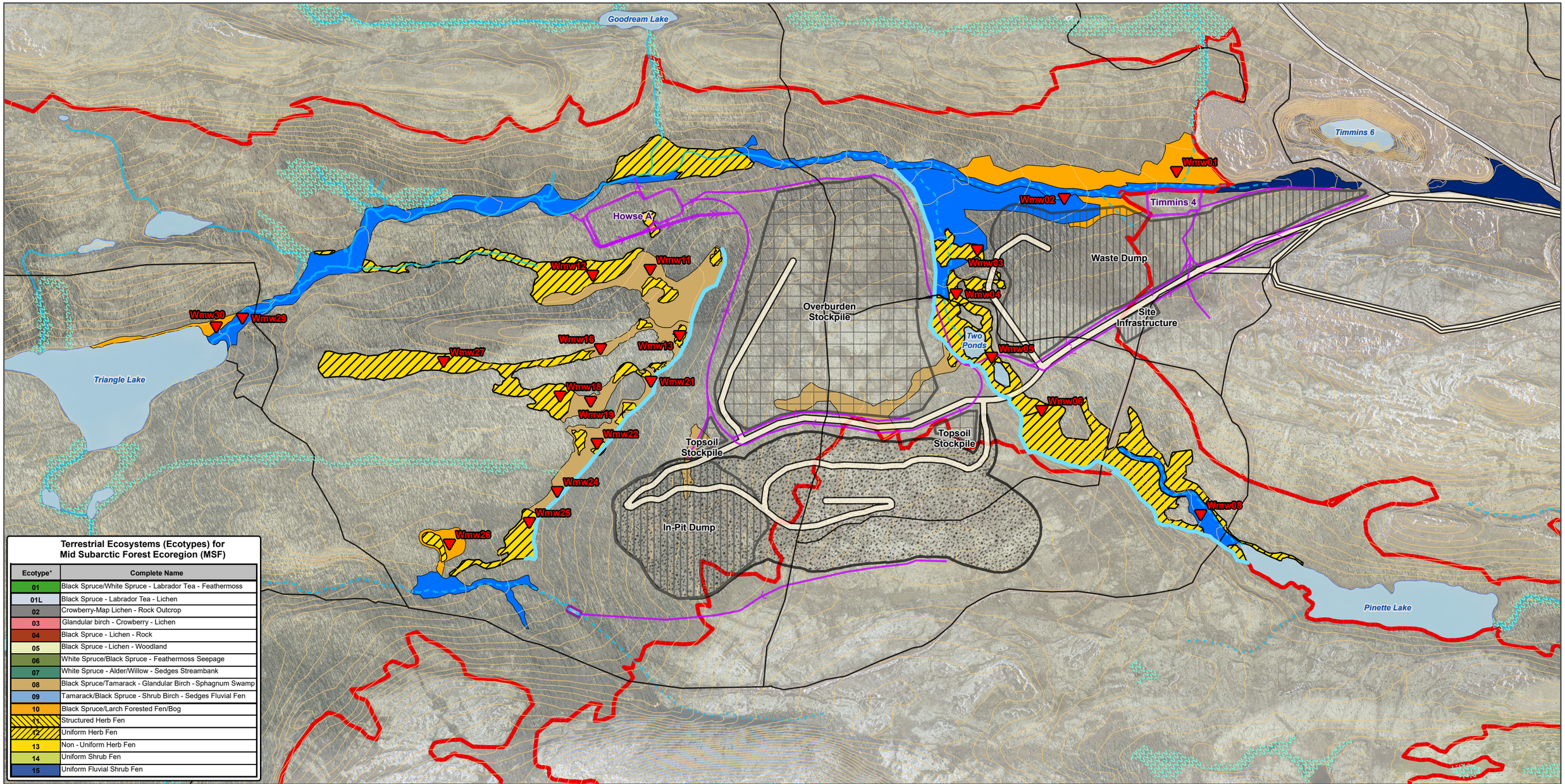
**Reviewed by:**



**Alicia Suchorski, Environmental Scientist, M. Sc., EP®**
Project director

# APPENDIX A
# Maps

**Figure 1 Water well locations**




**Terrestrial Ecosystems (Ecotypes) for Mid Subarctic Forest Ecoregion (MSF)**

| Ecotype* | Complete Name |
|---|---|
| 01 | Black Spruce/White Spruce - Labrador Tea - Feathermoss |
| 01L | Black Spruce - Labrador Tea - Lichen |
| 02 | Crowberry-Map Lichen - Rock Outcrop |
| 03 | Glandular birch - Crowberry - Lichen |
| 04 | Black Spruce - Lichen - Rock |
| 05 | Black Spruce - Lichen - Woodland |
| 06 | White Spruce/Black Spruce - Feathermoss Seepage |
| 07 | White Spruce - Alder/Willow - Sedges Streambank |
| 08 | Black Spruce/Tamarack - Glandular Birch - Sphagnum Swamp |
| 09 | Tamarack/Black Spruce - Shrub Birch - Sedges Fluvial Fen |
| 10 | Black Spruce/Larch Forested Fen/Bog |
| 11 | Structured Herb Fen |
| 12 | Uniform Herb Fen |
| 13 | Non - Uniform Herb Fen |
| 14 | Uniform Shrub Fen |
| 15 | Uniform Fluvial Shrub Fen |

**LEGEND**

Wetland survey
- Wetland water well
- Wetland Delineation

**Basemap**
- Contour Line (5m)
- Ecoregion Boundary
- Existing Road

**Howse Proposed Infrastructures**
- Proposed Howse Pit
- Proposed Topsoil/Overburden Stockpile
- Proposed Waste Dump/In-Pit Dump
- Proposed Site Infrastructure
- Proposed Sedimentation Pond
- Proposed Dissipation Pool
- Haul Road
- Proposed Ditch and Outlet

**Hydrography**
- Permanent Watercourse
- Intermittent Watercourse
- Storm Runoff
- Water Body
- Other Wetland

FILE : HOWSE F2 WetlandsWaterWells
AUTHOR : fxlafortune
DATE : 2025-12-16

N

0 150 300 450 600
Meters

UTM 19N NAD 83 SCALE: 1:15 000

SOURCES:
Basemap
Government of Canada, NTDB, 1:50,000, 1979 Government of NL and government of Quebec, Boundary used for claims
SNC Lavalin, Groupe Hémisphères, Hydrology update, 2013

Infrastructure and Mining Components
New Millennium Capital Corp., Mining sites and roads
Howse Minerals Limited/ MET-CHEM Howse Deposit Design for General Layout, 2015

HOWSE PROPERTY PROJECT

# Wetlands water wells

***Follow Up Program***

GROUPE GEOS

**Figure 1**

# APPENDIX B
# Tables

**Table A 1 Well water measurements from 2018 to 2025**

**Table A1** **Well water measurements from 2018 to 2025**

| Well | Water height in the wells (m) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2018 | | | | 2019 | 2020 | | | 2021 | 2023 | 2024 | | | 2025 | | | | | |
| | Aug. 17 to Aug. 20 | Sept. 9 to Sept. 10 | Sept. 15 to Sept. 16 | Sept. 28 to Oct. 3 | Aug. 1st | Aug. 23 to Aug. 26 | Sept. 5 to Sept. 7 | Oct. 2nd | July 3rd | Aug. 2nd to Aug. 3rd | July 20 | Aug. 16 | Oct. 5 to Oct. 6 | June 27 to June 28 | July 26 | August 23 | Sept. 12 to Sept. 13 | Sept. 27 | Oct. 12 | Oct. 26 to Oct. 27 |
| **WMW01** | 0.72 | 0.60 | 0.76 | 0.82 | 0.75 | -- | 0.23 | -- | 0.75 | 0.79 | 0.32 | DRY | DRY | 0.71 | 0.59 | 0.63 | 0.77 | 0.77 | 0.78 | 0.75 |
| **WMW02** | 0.36 | 0.62 | 0.59 | 0.67 | 0.62 | -- | 0.60 | -- | 0.47 | 0.55 | 0.44 | 0.42 | 0.45 | 0.64 | 0.46 | 0.48 | 0.59 | 0.59 | 0.58 | 0.55 |
| **WMW03** | 1.21 | 1.20 | 1.18 | 1.19 | 1.17 | 0.48 | -- | -- | 1.05 | 1.14 | 1.06 | 0.99 | 1.04 | 1.10 | 1.06 | 1.09 | 1.11 | 1.11 | 1.10 | 1.10 |
| **WMW04** | 0.66 | 0.63 | 0.58 | 0.65 | 0.67 | 0.51 | -- | -- | 0.52 | 0.66 | 0.44 | 0.39 | 0.42 | 0.65 | 0.44 | 0.55 | 0.64 | 0.63 | 0.63 | 0.59 |
| **WMW05** | 1.03 | 0.92 | 1.12 | 1.12 | DRY | 0.16 | -- | -- | 1.04 | PUSH | 1.05 | 0.91 | 0.93 | 1.03 | 1.02 | 1.07 | 1.13 | 1.13 | 1.12 | 1.11 |
| **WMW06** | -- | 0.59 | 0.79 | 0.83 | DRY | -- | 0.87 | -- | 1.05 | 0.84 | 0.87 | 0.74 | 0.73 | 0.80 | 0.84 | 0.81 | 0.82 | 0.80 | 0.88 | 0.86 |
| **WMW08** | -- | -- | 0.94 | 1.02 | DRY | -- | 0.98 | -- | 0.98 | PUSH | 0.24 | DRY | DRY | 0.96 | 0.39 | 0.28 | 0.94 | 0.95 | 0.95 | 0.89 |
| **WMW11** | -- | 0.55 | 0.59 | 0.59 | 0.72 | -- | 0.63 | -- | 0.56 | 0.55 | 0.45 | 0.28 | 0.48 | 0.59 | 0.39 | 0.49 | 0.60 | 0.58 | 0.61 | 0.60 |
| **WMW12** | -- | 1.12 | 1.08 | 1.11 | 1.14 | -- | 1.05 | -- | 1.07 | 1.02 | 1.02 | 0.97 | 0.95 | 1.07 | 1.00 | 1.03 | 1.09 | 1.06 | 1.07 | 1.05 |
| **WMW13** | -- | 0.55 | 0.61 | 0.71 | 1.02 | -- | 1.09 | -- | 1.07 | 1.08 | 1.01 | 0.91 | 0.90 | 0.99 | 1.01 | 1.08 | 1.11 | 1.07 | 1.09 | 1.06 |
| **WMW16** | -- | 0.70 | 0.67 | 0.71 | 0.70 | -- | 0.67 | -- | 0.71 | 0.71 | 0.74 | 0.69 | 0.47 | 0.66 | 0.55 | 0.59 | 0.66 | 0.62 | 0.64 | 0.64 |
| **WMW18** | 0.51 | 0.98 | 0.95 | DRY | 0.94 | -- | 0.07 | -- | 0.81 | PUSH | 0.78 | 0.69 | 0.57 | 0.93 | 0.81 | 0.84 | 0.93 | 0.94 | 0.97 | 0.93 |
| **WMW19** | 0.90 | 0.67 | 0.56 | DRY | 0.97 | -- | 0.88 | -- | 1.13 | 0.86 | 1.27 | 1.02 | 0.86 | 1.06 | 0.84 | 0.84 | 0.92 | 0.87 | 0.85 | FROZEN |
| **WMW21** | -- | 0.78 | 0.75 | DRY | 0.74 | -- | 0.73 | -- | 0.71 | 0.74 | 0.66 | 0.49 | 0.26 | 0.73 | 0.68 | 0.72 | 0.77 | 0.75 | 0.75 | FROZEN |
| **WMW22** | -- | 0.67 | 0.71 | 0.74 | 0.73 | -- | 0.25 | -- | 0.70 | 0.71 | 0.57 | 0.23 | DRY | 0.65 | 0.55 | 0.61 | 0.69 | 0.66 | 0.72 | 0.74 |
| **WMW24** | -- | 0.67 | 0.64 | DRY | DRY | -- | 0.13 | -- | 0.56 | 0.60 | 0.46 | 0.34 | 0.24 | 0.58 | 0.42 | 0.58 | 0.65 | 0.64 | 0.65 | 0.70 |
| **WMW25** | -- | 0.49 | 0.53 | 0.53 | 0.48 | -- | -- | 0.57 | 0.02 | 0.52 | 0.43 | 0.26 | 0.08 | 0.43 | 0.37 | 0.45 | 0.50 | 0.49 | 0.51 | 0.51 |
| **WMW26** | -- | 0.74 | 0.70 | 0.74 | 0.74 | -- | 0.24 | -- | 0.67 | 0.75 | 0.69 | 0.51 | 0.63 | 0.74 | 0.60 | 0.73 | 0.75 | 0.73 | 0.74 | 0.77 |
| **WMW27** | -- | 1.17 | 1.15 | 1.17 | 1.07 | 0.99 | -- | -- | 0.99 | PUSH | 0.83 | 0.81 | 0.81 | 0.91 | 0.81 | 0.84 | 0.89 | 0.91 | 0.99 | FROZEN |
| **WMW29** | -- | 0.94 | 0.87 | 0.88 | DRY | -- | 0.77 | -- | 0.91 | DRY | DRY | DRY | DRY | 0.79 | 0.71 | DRY | DRY | DRY | DRY | DRY |
| **WMW30** | -- | 0.72 | 0.68 | 0.85 | 1.27 | 0.66 | -- | -- | 0.62 | 0.57 | 0.55 | 0.50 | 0.45 | 0.71 | 0.57 | 0.62 | 0.47 | 0.72 | 0.71 | 0.70 |

**Notes**. PUSH = Well was observed pushed up during the winter. DRY = no water was observed in the well. FROZEN = no liquid water was observed in the well.

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 2025-06-27 | 10:30 | JFD, RG | 99.6 | |
| **WMW02** | 2025-06-27 | 12:07 | JFD, RG | 107.4 | |
| **WMW03** | 2025-06-27 | 11:58 | JFD, RG | 61.1 | |
| **WMW04** | 2025-06-27 | 11:53 | JFD, RG | 105.7 | |
| **WMW05** | 2025-06-27 | 12:26 | JFD, RG | 67.8 | |
| **WMW06** | 2025-06-27 | 11:36 | JFD, RG | 91 | |
| **WMW08** | 2025-06-27 | 11:05 | JFD, RG | 75.2 | |
| **WMW11** | 2025-06-28 | 14:05 | JFD, RG | 112.3 | |
| **WMW12** | 2025-06-28 | 13:56 | JFD, RG | 63.8 | |
| **WMW13** | 2025-06-28 | 14:15 | JFD, RG | 71.7 | |
| **WMW16** | 2025-06-28 | 13:49 | JFD, RG | 105.5 | |
| **WMW18** | 2025-06-28 | 12:44 | JFD, RG | 78 | |
| **WMW19** | 2025-06-28 | 12:36 | JFD, RG | 65.1 | |
| **WMW21** | 2025-06-28 | 14:22 | JFD, RG | 98.4 | |
| **WMW22** | 2025-06-28 | 12:28 | JFD, RG | 106.3 | |
| **WMW24** | 2025-06-28 | 12:17 | JFD, RG | 113 | |
| **WMW25** | 2025-06-28 | 12:09 | JFD, RG | 128.2 | |
| **WMW26** | 2025-06-28 | 11:58 | JFD, RG | 96.7 | |
| **WMW27** | 2025-06-28 | 12:58 | JFD, RG | 80.2 | |
| **WMW29** | 2025-06-27 | 10:20 | JFD, RG | 92.4 | |
| **WMW30** | 2025-06-27 | 10:30 | JFD, RG | 100.2 | |

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 2025-07-26 | 13:18 | JFD | 112.3 | |
| **WMW02** | 2025-07-26 | 12:51 | JFD | 125.4 | |
| **WMW03** | 2025-07-26 | 12:40 | JFD | 65.5 | |
| **WMW04** | 2025-07-26 | 12:35 | JFD | 127.1 | |
| **WMW05** | 2025-07-26 | 12:18 | JFD | 69.5 | |
| **WMW06** | 2025-07-26 | 12:10 | JFD | 87 | |
| **WMW08** | 2025-07-26 | 8:27 | JFD | 132.4 | |
| **WMW11** | 2025-07-26 | 10:59 | JFD | 132.1 | |
| **WMW12** | 2025-07-26 | 11:06 | JFD | 70.8 | |
| **WMW13** | 2025-07-26 | 10:49 | JFD | 69.7 | |
| **WMW16** | 2025-07-26 | 10:33 | JFD | 116.2 | |
| **WMW18** | 2025-07-26 | 10:21 | JFD | 90.5 | |
| **WMW19** | 2025-07-26 | 10:15 | JFD | 87.3 | |
| **WMW21** | 2025-07-26 | 10:41 | JFD | 103 | |
| **WMW22** | 2025-07-26 | 10:08 | JFD | 116.3 | |
| **WMW24** | 2025-07-26 | 9:59 | JFD | 129.3 | |
| **WMW25** | 2025-07-26 | 9:52 | JFD | 134.2 | |
| **WMW26** | 2025-07-26 | 9:40 | JFD | 111.4 | |
| **WMW27** | 2025-07-26 | 11:28 | JFD | 89.6 | |
| **WMW29** | 2025-07-26 | 8:53 | JFD | 99.7 | |
| **WMW30** | 2025-07-26 | 9:01 | JFD | 114.2 | |

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 2025-08-23 | 4:35 | RG | 108.2 | |
| **WMW02** | 2025-08-23 | 3:52 | RG | 122.9 | |
| **WMW03** | 2025-08-23 | 3:40 | RG | 62.4 | |
| **WMW04** | 2025-08-23 | 3:34 | RG | 115.8 | |
| **WMW05** | 2025-08-23 | 4:10 | RG | 64.1 | |
| **WMW06** | 2025-08-23 | 4:19 | RG | 89.9 | |
| **WMW08** | 2025-08-23 | 9:33 | RG | 143.3 | |
| **WMW11** | 2025-08-23 | 11:53 | RG | 122.1 | |
| **WMW12** | 2025-08-23 | 11:59 | RG | 67.7 | |
| **WMW13** | 2025-08-23 | 11:41 | RG | 63 | |
| **WMW16** | 2025-08-23 | 11:27 | RG | 112.2 | |
| **WMW18** | 2025-08-23 | 11:15 | RG | 87.3 | |
| **WMW19** | 2025-08-23 | 11:21 | RG | 87.5 | |
| **WMW21** | 2025-08-23 | 11:34 | RG | 99.3 | |
| **WMW22** | 2025-08-23 | 11:08 | RG | 109.8 | |
| **WMW24** | 2025-08-23 | 11:01 | RG | 113.5 | |
| **WMW25** | 2025-08-23 | 10:54 | RG | 125.6 | |
| **WMW26** | 2025-08-23 | 10:43 | RG | 98 | |
| **WMW27** | 2025-08-23 | 12:41 | RG | 86.9 | |
| **WMW29** | 2025-08-23 | 10:08 | RG | DRY | |
| **WMW30** | 2025-08-23 | 10:14 | RG | 109.1 | |

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 2025-09-13 | 12:41 | JT/GC | 93.7 | |
| **WMW02** | 2025-09-13 | 12:52 | JT/GC | 112.2 | |
| **WMW03** | 2025-09-13 | 13:24 | JT/GC | 60.2 | |
| **WMW04** | 2025-09-13 | 13:18 | JT/GC | 107.4 | |
| **WMW05** | 2025-09-13 | 13:11 | JT/GC | 58.2 | |
| **WMW06** | 2025-09-13 | 13:37 | JT/GC | 89 | |
| **WMW08** | 2025-09-13 | 13:53 | JT/GC | 77.5 | |
| **WMW11** | 2025-09-12 | 15:42 | DH/JT/GC | 111 | |
| **WMW12** | 2025-09-12 | 15:35 | DH/JT/GC | 62.1 | |
| **WMW13** | 2025-09-12 | 15:56 | DH/JT/GC | 60.1 | |
| **WMW16** | 2025-09-12 | 16:13 | DH/JT/GC | 105 | |
| **WMW18** | 2025-09-12 | 16:26 | DH/JT/GC | 78 | |
| **WMW19** | 2025-09-12 | 16:19 | DH/JT/GC | 79.2 | artesian cond. |
| **WMW21** | 2025-09-12 | 16:05 | DH/JT/GC | 94.5 | |
| **WMW22** | 2025-09-12 | 16:31 | DH/JT/GC | 101.8 | |
| **WMW24** | 2025-09-12 | 16:39 | DH/JT/GC | 105.7 | |
| **WMW25** | 2025-09-12 | 16:46 | DH/JT/GC | 121 | |
| **WMW26** | 2025-09-12 | 16:55 | DH/JT/GC | 96 | |
| **WMW27** | 2025-09-12 | 15:14 | DH/JT/GC | 81.7 | |
| **WMW29** | 2025-09-12 | 14:36 | DH/JT/GC | DRY | |
| **WMW30** | 2025-09-12 | 14:27 | DH/JT/GC | 124 | |

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 2025-09-27 | 17:26 | JFD | 93.7 | |
| **WMW02** | 2025-09-27 | 16:55 | JFD | 112.1 | |
| **WMW03** | 2025-09-27 | 16:41 | JFD | 60.3 | |
| **WMW04** | 2025-09-27 | 16:35 | JFD | 108 | |
| **WMW05** | 2025-09-27 | 17:16 | JFD | 57.6 | |
| **WMW06** | 2025-09-27 | 16:26 | JFD | 91.5 | |
| **WMW08** | 2025-09-27 | 16:11 | JFD | 75.6 | |
| **WMW11** | 2025-09-27 | 14:32 | JFD | 113.3 | |
| **WMW12** | 2025-09-27 | 14:39 | JFD | 65.4 | |
| **WMW13** | 2025-09-27 | 14:21 | JFD | 63.7 | |
| **WMW16** | 2025-09-27 | 14:04 | JFD | 109.2 | |
| **WMW18** | 2025-09-27 | 13:50 | JFD | 77.5 | |
| **WMW19** | 2025-09-27 | 13:56 | JFD | 83.7 | artesian cond. |
| **WMW21** | 2025-09-27 | 14:13 | JFD | 96 | |
| **WMW22** | 2025-09-27 | 13:43 | JFD | 105 | |
| **WMW24** | 2025-09-27 | 13:37 | JFD | 106.8 | |
| **WMW25** | 2025-09-27 | 13:28 | JFD | 122.1 | |
| **WMW26** | 2025-09-27 | 13:18 | JFD | 97.6 | |
| **WMW27** | 2025-09-27 | 15:05 | JFD | 79.9 | |
| **WMW29** | 2025-09-27 | 15:37 | JFD | dry | |
| **WMW30** | 2025-09-27 | 15:48 | JFD | 99.4 | |

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 2025-10-12 | 10:41 | JT/GC | 93 | |
| **WMW02** | 2025-10-12 | 10:53 | JT/GC | 113.5 | |
| **WMW03** | 2025-10-12 | 11:18 | JT/GC | 60.8 | |
| **WMW04** | 2025-10-12 | 11:13 | JT/GC | 108 | |
| **WMW05** | 2025-10-12 | 11:31 | JT/GC | 59 | |
| **WMW06** | 2025-10-12 | 11:40 | JT/GC | 83 | |
| **WMW08** | 2025-10-12 | 11:53 | JT/GC | 76.3 | |
| **WMW11** | 2025-10-12 | 16:01 | DH | 109.9 | |
| **WMW12** | 2025-10-12 | 16:13 | DH | 63.9 | |
| **WMW13** | 2025-10-12 | 15:45 | DH | 61.6 | |
| **WMW16** | 2025-10-12 | 16:22 | DH | 107 | |
| **WMW18** | 2025-10-12 | 16:42 | DH | 74.4 | |
| **WMW19** | 2025-10-12 | 16:37 | DH | 86.5 | Artesian |
| **WMW21** | 2025-10-12 | 16:29 | DH | 96.4 | |
| **WMW22** | 2025-10-12 | 16:38 | JT/GC | 98.8 | |
| **WMW24** | 2025-10-12 | 16:30 | JT/GC | 105.8 | |
| **WMW25** | 2025-10-12 | 16:23 | JT/GC | 120.4 | |
| **WMW26** | 2025-10-12 | 16:15 | JT/GC | 97.5 | |
| **WMW27** | 2025-10-12 | 16:53 | DH | 72.2 | |
| **WMW29** | 2025-10-12 | 17:16 | JT/GC | DRY | |
| **WMW30** | 2025-10-12 | 17:21 | DH | 99.8 | |

| Well | Date (AA/MM/DD) | Time (HH:MM) | Observer | Water Depth (cm) | Comment |
|---|---|---|---|---|---|
| **WMW01** | 25/10/26 | 14:23 | RG/GC | 96.2 | |
| **WMW02** | 25/10/26 | 14:34 | RG/GC | 116 | |
| **WMW03** | 25/10/26 | 13:52 | RG/GC | 61 | |
| **WMW04** | 25/10/26 | 13:47 | RG/GC | 112 | |
| **WMW05** | 25/10/26 | 14:01 | RG/GC | 60.5 | |
| **WMW06** | 25/10/26 | 14:10 | RG/GC | 85.2 | |
| **WMW08** | 25/10/26 | 14:51 | RG/GC | 82.5 | |
| **WMW11** | 25/10/27 | 15:34 | RG/GC | 111.5 | |
| **WMW12** | 25/10/27 | 15:41 | RG/GC | 66.2 | |
| **WMW13** | 25/10/27 | 16:32 | RG/GC | 64.7 | |
| **WMW16** | 25/10/27 | 16:20 | RG/GC | 107.2 | |
| **WMW18** | 25/10/27 | 16:11 | RG/GC | 77.7 | |
| **WMW19** | 25/10/27 | 16:15 | RG/GC | 90.5 | Frozen |
| **WMW21** | 25/10/27 | 16:27 | RG/GC | 94 | Frozen |
| **WMW22** | 25/10/26 | 15:55 | RG/GC | 97 | |
| **WMW24** | 25/10/26 | 15:49 | RG/GC | 101 | |
| **WMW25** | 25/10/26 | 15:44 | RG/GC | 120 | |
| **WMW26** | 25/10/26 | 15:36 | RG/GC | 94 | |
| **WMW27** | 25/10/27 | 15:57 | RG/GC | 75.3 | Frozen |
| **WMW29** | 25/10/26 | 15:11 | RG/GC | DRY | |
| **WMW30** | 25/10/26 | 15:15 | RG/GC | 101 | |

# Appendix V – Wetland Vegetation Survey



# Howse property wetlands monitoring - 2025, TSMC mining site

TSMC — Howse Project area
Newfoundland & Labrador (north-west of Schefferville)

Preliminary report prepared for:
TATA Steel Minerals Canada limited

March 23, 2026
Ref.: Q-0639

**Environnement**
**Milieu naturel**
**Ingénierie**

| REPORT REVISION LOG | |
|---|---|
| **DATE** | **VERSION** |
| 2026-02-17 | Preliminary |
| 2026-03-23 | Final |

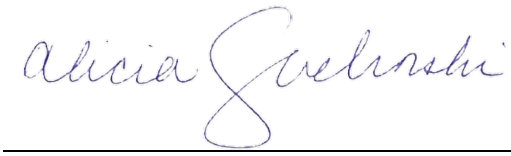
## SIGNATURES

**Prepared by:**




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Appendix D ..... Species diversity data

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| % | percentage |
| ± | plus-minus |
| cm | centimeter |
| EIA | environmental impact assessment |
| FAC | facultative |
| GÉOS | Groupe GÉOS inc. |
| km | kilometer |
| m | meter |
| max | maximum |
| MELCCFP | *ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs* |
| min | minimum |
| MSF | mid-subarctic forest |
| Mt | megaton |
| N | number of stations |
| NAD83 | North American Datum of 1983 |
| Nb | Number |
| NI | non-indicator |
| OBL | obligate |
| p | p-value, measures of probability |
| PcoA | principal coordinate analysis |
| SD | standard deviation |
| SE | standard error |
| TSMC | Tata Steel Minerals Canada |

# 1 INTRODUCTION

## 1.1 PROJECT BACKGROUND

Tata Steel Minerals Canada (TSMC) is developing an open-pit iron ore mine in Newfoundland and Labrador. Approximately 46 Mt of iron ore will be extracted over the course of the Howse Property Iron Mine Project's lifespan ("Howse Project"), which will last approximately 15 years.

In 2014, an environmental impact assessment (EIA) of the Howse Project was conducted in accordance with the requirements of the *Canadian Environmental Assessment Act, 2012*. As a result, the Howse Project was accepted with several requirements. TSMC, in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*, must ensure that migratory bird populations and their habitat are not negatively impacted by the Howse Project development, operation, and decommission.

Consequently, TSMC and Groupe GÉOS inc. (GÉOS) developed a follow-up program to monitor and detect any adverse environmental effects of the Howse Project on wetland functions that support migratory birds, and to determine the effectiveness of the proposed mitigation measures.

In 2018, vegetation and water-level survey was conducted in predefined locations, to start recording the biotic and abiotic characteristics of the landscape potentially affected by the Howse Project (Groupe Hémisphères, 2018). In 2022, data were recorded in the same locations to compare the evolution of plant species diversity between 2018 and 2022 and to assess the environmental effects of the Howse Project (Groupe Hémisphères, 2023). The Howse project had not yet been initiated during the fieldwork carried out in the summer of 2022; therefore, no project activities were being undertaken in the vicinity of inventory areas.

## 1.2 MANDATE

GÉOS was mandated by TSMC to characterize wetlands and assess their water levels in 2025. As this was the first survey to be carried out since minor development of the Howse Project has begun, the specific objectives were to characterize wetland vegetation and measure the natural water levels and their variations in wetlands in a way that enables a follow-up during the Howse Project.

The assessment of wetland water levels is presented in a separate report submitted to TSMC (Groupe GÉOS, 2025).

The study area is presented in Map 1 (Appendix A). It is located approximately 25 km to the north-west of the town of Schefferville (Québec) but is entirely in Labrador. Specifically, the study area is the area surrounding the ultimate footprint of the Howse pit to the north, east and west (in a radius of approximately 2 km).

# 2 METHODOLOGY

## 2.1 SELECTION OF WETLANDS

As stated in the Howse EIA, dewatering may potentially affect wetlands in the study area by modifying the hydrography and hydrology of the area. Based on the wetlands' characteristics and the information provided by the hydrogeology survey, it was stated that only wetlands close to the pit might be affected by dewatering. Wetlands requiring characterization were selected based on mapping previously carried out for the study area (Appendix A). Wetlands were separated into two categories:

- Wetlands possibly affected by the Howse Project, located near future installations.
- Control wetlands located far enough from the installations that they should not be affected.

This distinction was carried out for the purposes of detecting seasonal and local changes like drought or flooding that may not be attributed to the Howse Project, but more so associated to the wetland type. Table 1 presents the characteristics of the various ecotypes assessed in the study area.

**Table 1 Wetland ecotype descriptions**

| Ecotype | Type | Short Name | Description | Vegetation |
|---|---|---|---|---|
| **MSF08** | Swamp | Black spruce / Tamarack Forested Swamp | Found on slopes or on flat expanses. These wetlands are not connected hydrologically. Soils are characterized by humic gleysol, with an organic horizon of less than 30 cm in thickness and a water-retentive horizon (composed of silt and clay). | Black spruce dominates the tree stratum, along with Tamarack. The shrub layer is diverse, with cloudberry being the most common species. An assortment of species makes up the herb layer. |
| **MSF10** | Bog | Black spruce Bog | This type of wetland is hydrologically fed by precipitation and runoff only. These bogs occur in isolation or as part of larger wetland complexes. The soils are relatively thick, organic in nature with little decomposition. Some bogs are found on an underlaying of boulders and rocks. | Trees are present but sparse, with Black spruce being the dominant species. The shrub layer is diverse and composed of several willows and ericaceous species. Sedges are the main type of herbaceous species. |
| **MSF12** | Fen | Uniform Herb Fen | These fens are found on wide plains and are not generally connected to a watercourse, although they are usually inundated. Soils are always organic and usually fibric. | Trees are absent from this type of fen. Black spruce and tamarack may be present in shrub form. Shrubs are mostly composed of ericaceous species. Sedge species dominate the herb layer. |
| **MSF15** | Fen | Uniform Fluvial Shrub Fen | This ecotype is found exclusively adjacent to water courses. It is a diverse ecosystem which is enriched by inundation from the watercourse. Soils are regosol or humic gleysol. | The tree layer is absent or negligible. The shrub layer is dense and composed of willows, glandular birch, and sweet gale. The herb layer is diverse. |

**Notes.** MSF = Mid-subarctic forest

## 2.2 WETLAND VEGETATION SURVEY

Any alteration to local hydrology resulting from the Howse Project could affect wetland vegetation, with changes in herbaceous cover and species composition likely to be the first indicators of such a shift. To detect a long-term change, 29 permanent vegetation survey points ("stations") were positioned in wetlands close to the future installations as well as in wetlands that will not be affected. Location data were retrieved from a previous study conducted in the same area (Groupe Hémisphères, 2018).

The 2018 wetland vegetation survey was designed to be repeated at five-year intervals. A permanent marker was installed on a tree near each sampling station, and its position relative to the plot (distance and bearing) was documented during the initial field campaign (Table 2). However, during the 2022 survey, it was not possible to re-establish the 1 m² sampling plots at the exact same locations.

Accordingly, the methodology was modified to better support future surveys. At each sampling point, vegetation was surveyed within a 2 m radius to minimize variability associated with sampling location. Plant species were identified and their percent cover estimated. The assessment focused on low vegetation, including small shrubs, herbaceous species, mosses, and lichens, for which percent cover was recorded. Vegetation survey points locations are presented in Map 1 of Appendix A.

**Table 2 Wetland vegetation survey points locations**

| Station | Ecotype | Ecotype—Short Name | Coordinates (NAD83/UTM 19N) | |
|---|---|---|---|---|
| | | | Latitude | Longitude |
| **WVP02** | MSF10 | Black Spruce Bog | -67.1087525 | 54.9073847 |
| **WVP03** | MSF15 | Uniform Fluvial Shrub Fen | -67.1150303 | 54.9097968 |
| **WVP04** | MSF10 | Black Spruce Bog | -67.1170855 | 54.9127609 |
| **WVP05** | MSF15 | Uniform Fluvial Shrub Fen | -67.1190738 | 54.9142474 |
| **WVP06** | MSF12 | Uniform Herb Fen | -67.1210609 | 54.9113755 |
| **WVP07** | MSF12 | Uniform Herb Fen | -67.1247678 | 54.9104409 |
| **WVP08** | MSF12 | Uniform Herb Fen | -67.1268306 | 54.9089107 |
| **WVP09** | MSF12 | Uniform Herb Fen | -67.1256956 | 54.9080426 |
| **WVP10** | MSF12 | Uniform Herb Fen | -67.1253977 | 54.9059099 |
| **WVP12** | MSF15 | Uniform Fluvial Shrub Fen | -67.123564 | 54.8981871 |
| **WVP13** | MSF12 | Uniform Herb Fen | -67.1294545 | 54.9201857 |
| **WVP14** | MSF08 | Black Spruce / Tamarack Forested Swamp | -67.1331222 | 54.9173500 |
| **WVP17** | MSF12 | Uniform Herb Fen | -67.1385522 | 54.9201654 |
| **WVP18** | MSF08 | Black Spruce / Tamarack Forested Swamp | -67.1362730 | 54.9192713 |
| **WVP19** | MSF12 | Uniform Herb Fen | -67.1358511 | 54.9179795 |
| **WVP20** | MSF08 | Black Spruce / Tamarack Forested Swamp | -67.1376620 | 54.9167924 |
| **WVP21** | MSF12 | Uniform Herb Fen | -67.1404672 | 54.9163355 |
| **WVP22** | MSF08 | Black Spruce / Tamarack Forested Swamp | -67.1409567 | 54.9181145 |
| **WVP23** | MSF12 | Uniform Herb Fen | -67.1449198 | 54.9181180 |

| Station | Ecotype | Ecotype—Short Name | Coordinates (NAD83/UTM 19N) | |
|---|---|---|---|---|
| | | | Latitude | Longitude |
| **WVP24** | MSF08 | Black Spruce / Tamarack Forested Swamp | -67.1448411 | 54.9173103 |
| **WVP25** | MSF08 | Black Spruce / Tamarack Forested Swamp | -67.1455879 | 54.9160162 |
| **WVP27** | MSF12 | Uniform Herb Fen | -67.1572330 | 54.9175224 |
| **WVP28** | MSF15 | Uniform Fluvial Shrub Fen | -67.1565827 | 54.9152970 |
| **WVP29** | MSF15 | Uniform Fluvial Shrub Fen | -67.1595474 | 54.9167695 |
| **WVP30** | MSF10 | Black Spruce Bog | -67.1561195 | 54.9174682 |
| **WVP32** | MSF12 | Uniform Herb Fen | -67.1485404 | 54.9277659 |
| **WVP33** | MSF15 | Uniform Fluvial Shrub Fen | -67.1550156 | 54.9282191 |
| **WVP34** | MSF10 | Black Spruce Bog | -67.1563450 | 54.9288842 |
| **WVP35** | MSF10 | Black Spruce Bog | -67.1615262 | 54.9309000 |

## 2.3 STATISTICAL ANALYSIS

Statistical analyses were conducted to compare results between the 2022 and 2025 surveys. Using R software, datasets from both years were analyzed to determine whether significant differences could be detected in sampled vegetation communities. A *t*-test was applied to compare variation in each statistical parameter.

Statistical significance was determined at a *p*-value of 0.05 ($p \leq 0.05$ the result is statistically significant; $p > 0.05$ the result is not statistically significant).

Field investigations were based on two datasets: (1) relative plant cover at each station; and (2) the proportion of species by wetland indicator status at each station.

To ensure adequate sample sizes for statistical testing, stations were grouped by ecotype (MSF08, MSF10, MSF12, and MSF15). Changes in vegetation over time were assessed using the relative cover of each species within each vegetation stratum. In addition, temporal variation in species composition was evaluated based on wetland indicator status.

Three wetland indicator status categories were considered:

- Non-indicators (NI), representing species not indicative of wetlands;
- Facultative (FAC), representing species likely to occur in both wetland and non-wetland environments; and
- Obligate wetland (OBL), representing species that occur almost exclusively in wetlands.

Wetland indicator status was determined using the *List of Hydrological (Wetland Indicator) Status Categories for Northern Québec Plant Species Occurring Between the 49th and 56th Parallels* (MELCCFP, 2024), complemented by the proposed lists for Arctic and subarctic species (FloraQuebeca, 2018). Species richness was also assessed for each ecotype across survey years. Overall, five distinct analyses were conducted using different data subsets to evaluate temporal patterns in vegetation composition.

A principal coordinate analysis (PCoA) was conducted using species cover data at each station, applying the Bray-Curtis dissimilarity index. Analyses were performed in R using the *ape* package. The resulting ordination illustrates the degree of dissimilarity in plant community composition between the 2022 and 2025 surveys.

# 3 RESULTS

## 3.1 WETLAND VEGETATION CHARACTERIZATION

The results of the 2025 wetland vegetation survey, together with those from the 2022 monitoring campaign, are presented in detail in Appendix B. Species composition was compared between 2022 (pre-mining) and 2025 (post-mining activities) based on wetland indicator status, at both the station and ecotype levels.

Across all ecotypes, an increase in the number of non-indicator species was observed. Facultative species showed a slight decrease in relative importance among ecotypes, while obligate wetland species exhibited a modest increase. This trend was most pronounced in the MSF15 ecotype, which showed a greater increase in obligate wetland species compared to other ecotypes (Figure 1; Table 3).

It should be noted, however, that a slightly higher number of plant species was recorded in 2025 than in 2022, which may partly explain the variations observed among wetland indicator status categories.

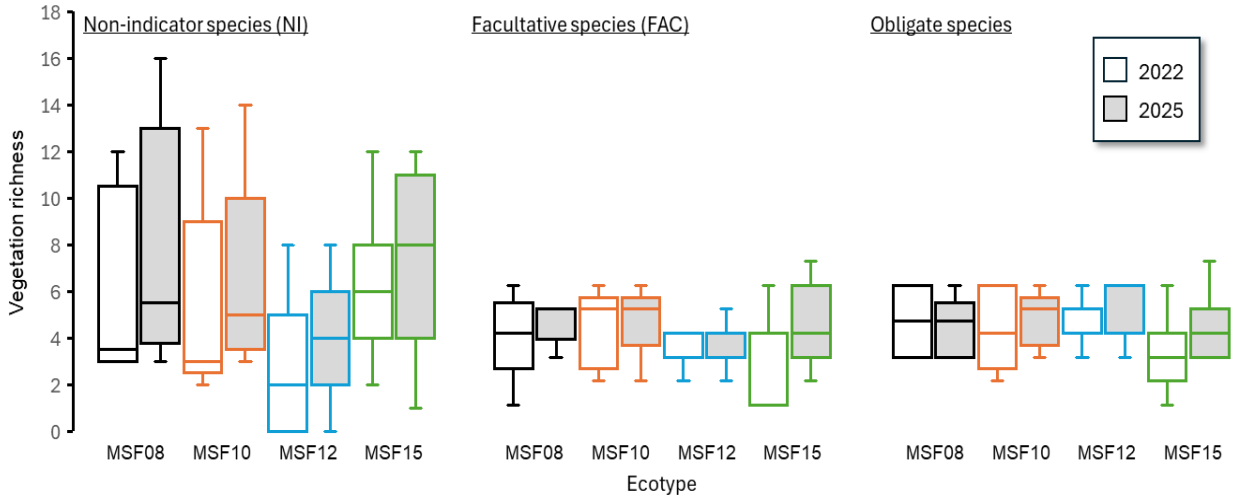



**Figure 1 Species composition changes per ecotype and year**

A Welch two-sample *t*-test (Student's *t*-test) was used to compare plant community wetland indicator status within each ecotype between the 2022 and 2025 surveys. Comparisons at the station level were not performed due to statistical limitations. For each comparison presented below, *p*-values were calculated by grouping data from multiple stations within the same ecotype. Raw wetland indicator status data are presented in Appendix C.

None of the resulting *p*-values indicated statistically significant differences, suggesting that the number of non-indicator, facultative, and obligate species remained comparable between survey years across all ecotypes.

**Table 3 Wetland indicator status of vegetation, 2022 and 2025**

| Ecotype | Station | Wetland indicator status | | | | | | | | | | | | TOTAL 2025 | TOTAL 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NI | | | | FAC | | | | OBL | | | | | |
| | | 2025 | | 2022 | | 2025 | | 2022 | | 2025 | | 2022 | | | |
| | | Nb | % | Nb | % | Nb | % | Nb | % | Nb | % | Nb | % | | |
| MSF08 | WVP14 | 16 | 69.6 | 12 | 75.0 | 5 | 21.7 | 1 | 6.3 | 3 | 8.7 | 3 | 18.8 | 23 | 16 |
| | WVP18 | 12 | 66.7 | 10 | 58.8 | 3 | 16.7 | 3 | 17.7 | 6 | 16.7 | 4 | 23.5 | 18 | 17 |
| | WVP20 | 7 | 38.9 | 3 | 20.0 | 5 | 27.8 | 6 | 40.0 | 4 | 33.3 | 6 | 40.0 | 18 | 15 |
| | WVP22 | 4 | 33.3 | 4 | 33.3 | 5 | 41.7 | 5 | 41.7 | 5 | 25.0 | 3 | 25.0 | 12 | 12 |
| | WVP24 | 4 | 26.7 | 3 | 25.0 | 4 | 26.7 | 4 | 33.3 | 5 | 46.7 | 5 | 41.7 | 15 | 12 |
| | WVP25 | 3 | 20.0 | 3 | 23.1 | 5 | 33.3 | 4 | 30.8 | 3 | 46.7 | 6 | 46.2 | 15 | 13 |
| | **Average** | **7.7** | **42.5** | **5.8** | **39.2** | **4.5** | **28.0** | **3.8** | **28.3** | **4.6** | **29.5** | **4.5** | **32.5** | **16.8** | **14.2** |
| MSF10 | WVP02 | 5 | 38.5 | 3 | 33.3 | 5 | 38.5 | 3 | 33.3 | 3 | 23.1 | 3 | 33.3 | 13 | 9 |
| | WVP04 | 3 | 20.0 | 3 | 20.0 | 6 | 40.0 | 6 | 40.0 | 6 | 40.0 | 6 | 40.0 | 15 | 15 |
| | WVP30 | 6 | 40.0 | 5 | 41.7 | 5 | 33.3 | 5 | 41.7 | 4 | 26.7 | 2 | 16.7 | 15 | 12 |
| | WVP34 | 4 | 28.6 | 2 | 15.4 | 5 | 35.7 | 5 | 38.5 | 5 | 35.7 | 6 | 46.2 | 14 | 13 |
| | WVP35 | 14 | 66.7 | 13 | 68.4 | 2 | 9.5 | 2 | 10.5 | 5 | 23.8 | 4 | 21.1 | 21 | 19 |
| | **Average** | **6.4** | **38.7** | **5.2** | **35.8** | **4.6** | **31.4** | **4.2** | **32.8** | **4.6** | **29.9** | **4.2** | **31.4** | **15.6** | **13.6** |
| MSF12 | WVP06 | 3 | 25.0 | 0 | 0.0 | 4 | 33.3 | 2 | 28.6 | 5 | 41.7 | 5 | 71.4 | 12 | 6 |
| | WVP07 | 8 | 42.1 | 2 | 14.3 | 5 | 26.3 | 7 | 50.0 | 6 | 31.6 | 5 | 35.7 | 19 | 14 |
| | WVP08 | 6 | 35.3 | 8 | 50.0 | 6 | 35.3 | 4 | 25.0 | 5 | 29.4 | 4 | 25.0 | 17 | 16 |
| | WVP09 | 7 | 50.0 | 6 | 40.0 | 4 | 28.6 | 4 | 26.7 | 3 | 21.4 | 5 | 33.3 | 14 | 15 |
| | WVP10 | 0 | 0.0 | 0 | 0.0 | 1 | 20.0 | 3 | 42.9 | 4 | 80.0 | 4 | 57.1 | 5 | 7 |
| | WVP13 | 3 | 25.0 | 2 | 22.2 | 3 | 25.0 | 4 | 44.4 | 6 | 50.0 | 3 | 33.3 | 12 | 9 |
| | WVP17 | 1 | 11.1 | 0 | 0.0 | 2 | 25.0 | 3 | 37.5 | 6 | 66.7 | 5 | 62.5 | 9 | 8 |
| | WVP19 | 6 | 37.5 | 5 | 33.3 | 4 | 31.3 | 4 | 26.7 | 6 | 37.5 | 6 | 40.0 | 16 | 16 |
| | WVP21 | 6 | 30.0 | 2 | 13.3 | 4 | 20.0 | 6 | 40.0 | 10 | 50.0 | 7 | 46.7 | 20 | 15 |
| | WVP23 | 2 | 18.2 | 1 | 14.3 | 3 | 27.3 | 2 | 28.6 | 6 | 54.6 | 4 | 57.1 | 11 | 7 |
| | WVP32 | 4 | 40.0 | 2 | 28.6 | 3 | 30.0 | 3 | 42.9 | 3 | 30.0 | 2 | 28.6 | 10 | 7 |
| | **Average** | **4.2** | **28.6** | **2.5** | **19.6** | **3.5** | **26.6** | **3.8** | **35,7** | **5.5** | **44,8** | **4,5** | **44,6** | **13.2** | **10.9** |
| MSF15 | WVP03 | 5 | 26.3 | 4 | 25.0 | 7 | 36.8 | 6 | 37.5 | 7 | 36.8 | 6 | 37.5 | 19 | 16 |
| | WVP05 | 8 | 44.5 | 6 | 42.9 | 6 | 33.3 | 4 | 28.6 | 4 | 22.2 | 4 | 28.6 | 18 | 14 |
| | WVP12 | 8 | 57.1 | 6 | 75.0 | 3 | 21.4 | 1 | 12.5 | 3 | 21.4 | 1 | 12.5 | 14 | 8 |
| | WVP27 | 1 | 14.3 | 2 | 22.2 | 3 | 42.9 | 3 | 33.3 | 3 | 42.9 | 4 | 44.4 | 7 | 9 |
| | WVP28 | 11 | 55.0 | 8 | 53.3 | 4 | 20.0 | 4 | 26.7 | 5 | 25.0 | 3 | 20.0 | 20 | 15 |
| | WVP29 | 4 | 26.7 | 5 | 41.7 | 6 | 40.0 | 4 | 33.3 | 5 | 33.3 | 3 | 25.0 | 15 | 12 |
| | WVP33 | 12 | 70.6 | 12 | 80.0 | 2 | 11.8 | 1 | 6.7 | 3 | 17.7 | 2 | 13.3 | 17 | 15 |
| | **Average** | **7.0** | **42.1** | **6.1** | **48.6** | **4.4** | **29.5** | **3.3** | **25.5** | **4.3** | **28.5** | **3.3** | **25.9** | **15.7** | **12.7** |

## 3.2 WETLAND INDICATOR STATUS ACROSS YEARS

A Welch two-sample *t*-test (Student's *t*-test) was used to compare plant community wetland indicator status within each ecotype between the 2022 and 2025 surveys. Comparisons at the station level were not performed due to statistical limitations. For each comparison presented

below, *p*-values were calculated by grouping data from multiple stations within the same ecotype. Raw wetland indicator status data are presented in Appendix C.

T-tests were performed to compare the number species per wetland indicator between years within each ecotype (Table 4). None of the resulting *p*-values indicated statistically significant differences, suggesting that the number of non-indicator, facultative and obligate species remained comparable between survey years across all ecotypes.

**Table 4 T-test per species wetland indicator per ecotype, between 2022 and 2025**

| Ecotype | Year | N | NI species number | | | | FAC species number | | | | OBL species number | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Average ± SE | Min — Max | SD | *p* | Average ± SE | Min — Max | SD | *p* | Average ± SE | Min — Max | SD | *p* |
| MSF08 | 2025 | 6 | 7.7 ±2.1 | 3 – 16 | 5.2 | 0.5 | 4.5 ±0.3 | 3 – 5 | 0.8 | 0.4 | 4.7 ±0.9 | 2 – 7 | 2.3 | 0.9 |
| | 2022 | 6 | 6.0 ±4.1 | 12 – 16 | 5.8 | | 3.8 ±0.7 | 1 – 6 | 1.7 | | 4.5 ±0.6 | 3 – 6 | 1.4 | |
| MSF10 | 2025 | 5 | 6.4 ±2.0 | 3 – 14 | 4.4 | 0.7 | 4.6 ±0.7 | 2 – 6 | 1.5 | 0.7 | 4.6 ±0.5 | 3 – 6 | 1.1 | 0.7 |
| | 2022 | 5 | 5.2 ±2.0 | 2 – 13 | 4.5 | | 4.2 ±0.7 | 2 – 6 | 1.6 | | 4.2 ±0.8 | 2 – 6 | 1.8 | |
| MSF12 | 2025 | 11 | 4.2 ±0.8 | 0 – 8 | 2.6 | 0.2 | 3.6 ±0.4 | 1 – 6 | 1.4 | 0.7 | 5.5 ±0.6 | 3 – 10 | 1.9 | 0.2 |
| | 2022 | 11 | 2.6 ±0.8 | 0 – 8 | 2.7 | | 3.8 ±0.5 | 2 – 7 | 1.5 | | 4.5 ±0.4 | 2 – 7 | 1.4 | |
| MSF15 | 2025 | 7 | 7.0 ±1.5 | 1 – 12 | 3.9 | 0.7 | 4.4 ±0.7 | 2 – 7 | 1.9 | 0.3 | 3.3 ±0.6 | 1 – 6 | 1.6 | 0.3 |
| | 2022 | 7 | 6.1 ±1.2 | 2 – 12 | 3.2 | | 3.3 ±0.7 | 1 – 6 | 1.8 | | 4.3 ±0.6 | 3 – 7 | 1.5 | |

**Notes.** N = Number of stations. SE = Standard error. SD = standard deviation; Min = Minimum number of species. Max = Maximum number of species. *p* = p-value.

## 3.3 SPECIES RICHNESS ACROSS YEARS

A final *t*-test was performed to compare species riches between the 2022 and 2025 surveys within each ecotype (Table 5) None of the resulting *p*-values indicated statistically significant differences, suggesting that species richness remained comparable between survey years across all ecotypes. Annual relative cover of plant species (in raw data form) is presented in Appendix D.

The ordination plot (PCoA) indicates high similarity in plant community composition between 2022 and 2025. The 95% confidence ellipses for the two survey years largely overlap.

**Table 5 T-test for species richness per ecotype between 2022 and 2025**

| Ecotype | Year | N | Average ± SE | Min — Max | SD | *p* |
|---|---|---|---|---|---|---|
| **MSF08** | 2025 | 6 | 16.8 ±1.5 | 12 – 23 | 3.8 | 0.17 |
| | 2022 | 6 | 14.2 ±0.9 | 12- 17 | 2.1 | |
| **MSF10** | 2025 | 5 | 15.6 ±1.4 | 13 – 21 | 3.1 | 0.32 |
| | 2022 | 5 | 13.4 ±1.5 | 9 – 18 | 3.4 | |
| **MSF12** | 2025 | 11 | 13.2 ±1.4 | 5 – 20 | 4.5 | 0.16 |
| | 2022 | 11 | 10.6 ±1.1 | 7 – 15 | 3.7 | |
| **MSF15** | 2025 | 7 | 15.7 ±1.7 | 7 – 20 | 4.4 | 0.16 |
| | 2022 | 7 | 12.4 ±1.4 | 6 – 16 | 3.7 | |

**Notes.** N = Number of stations. SE = Standard error. SD = standard deviation; Min = Minimum number of species. Max = Maximum number of species. *p* = p-value.

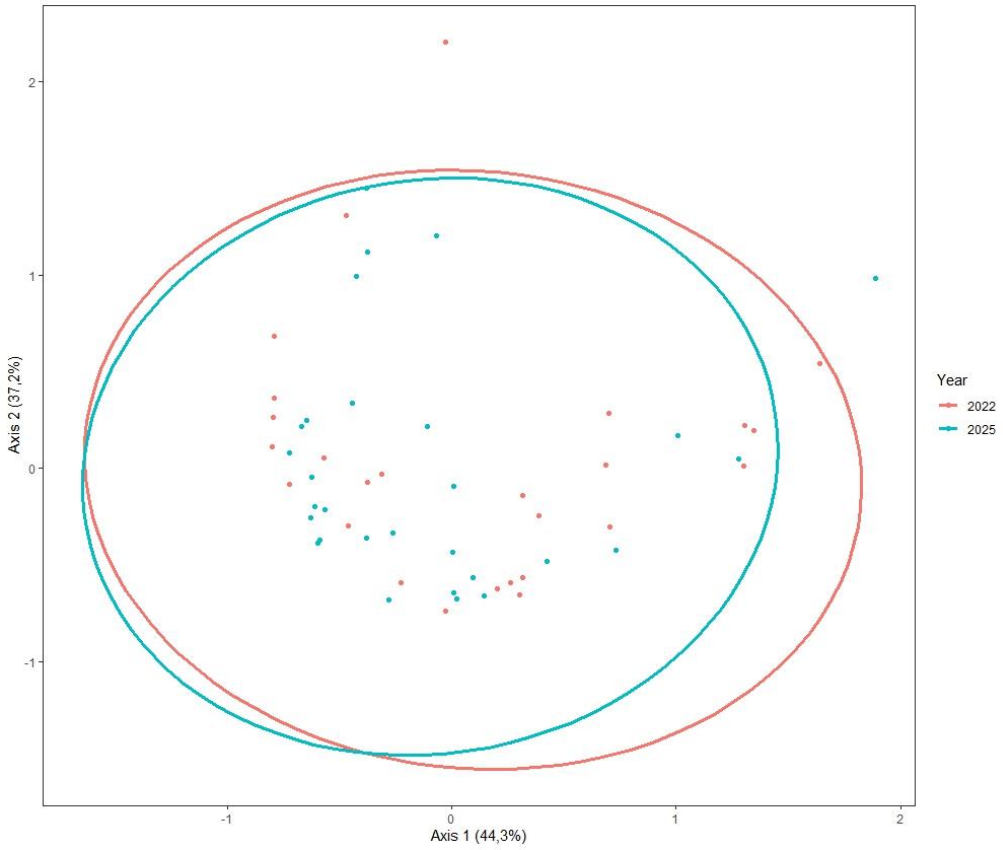



**Figure 2 PCoA showing weak dissimilarities between 2022 and 2025 plant communities**

# 4 CONCLUSIONS AND SUBSEQUENT STUDIES

According to the decision statement released as part of the EIA for the Howse Project, TSMC must ensure that migratory bird populations and their habitat are not negatively impacted by the Howse Project development, operation, and decommission.

Consequently, TSMC and GÉOS developed a follow-up program to monitor and detect any adverse environmental effects of the Howse Project on wetland functions that support migratory birds, and to determine the effectiveness of the proposed mitigation measures.

The wetlands monitoring survey carried out in 2025, the first year of development of the Howse Project, was done so with the objective of determining if any change in plant species diversity had occurred since the previous survey in 2022.

Statistical *t*-tests were performed to compare the number of non-indicator, facultative, and obligate wetland species between the 2022 and 2025 surveys within each ecotype. Across all ecotypes, the following trends were noted:

- An increase in the number of non-indicator species was observed.
- Facultative species showed a slight decrease in relative importance.
- Obligate wetland species increased in number.

Overall, no significant change in the plant species diversity was observed between 2022 and 2025; therefore, no change in wetland functions beneficial to migratory birds were identified.

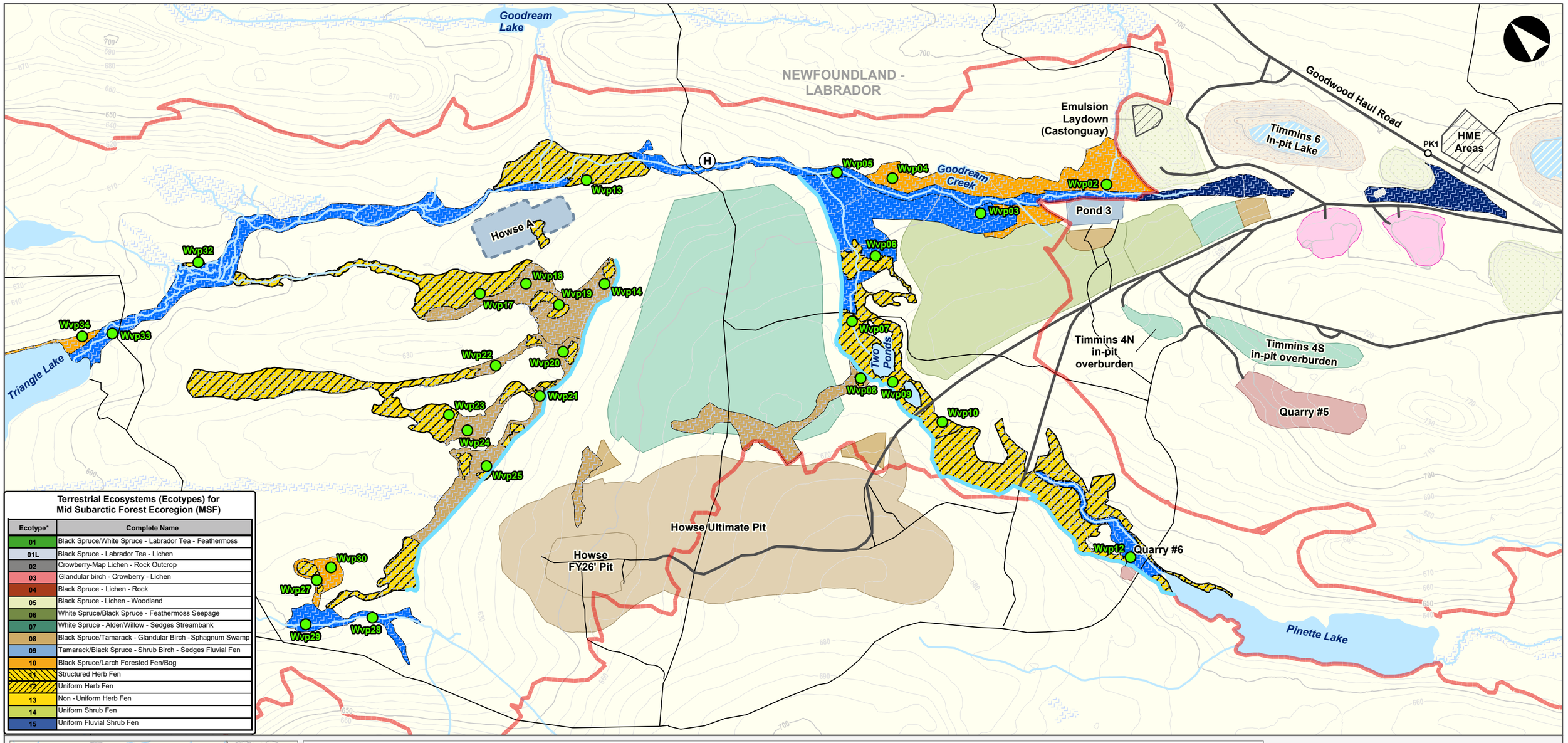
The subsequent monitoring study is planned to be carried out in 2030, according to the five-year schedule established as part of the conditions of the EIA decision statement.

# 5 QUALITY ASSURANCE

GÉOS has an internal quality control system based on the verification and approval of all concepts and document production by a senior professional. This system considers management responsibility, documentation and data control, ongoing staff training, and quality assurance for deliverables. It also includes rigorous monitoring of fieldwork and project-specific prevention and safety measures.

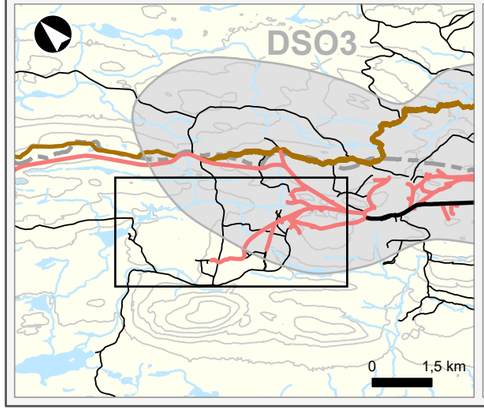
# APPENDIX A
# MAPS

**Map 1** **Study Area**




**Terrestrial Ecosystems (Ecotypes) for Mid Subarctic Forest Ecoregion (MSF)**

| Ecotype* | Complete Name |
|---|---|
| 01 | Black Spruce/White Spruce - Labrador Tea - Feathermoss |
| 01L | Black Spruce - Labrador Tea - Lichen |
| 02 | Crowberry-Map Lichen - Rock Outcrop |
| 03 | Glandular birch - Crowberry - Lichen |
| 04 | Black Spruce - Lichen - Rock |
| 05 | Black Spruce - Lichen - Woodland |
| 06 | White Spruce/Black Spruce - Feathermoss Seepage |
| 07 | White Spruce - Alder/Willow - Sedges Streambank |
| 08 | Black Spruce/Tamarack - Glandular Birch - Sphagnum Swamp |
| 09 | Tamarack/Black Spruce - Shrub Birch - Sedges Fluvial Fen |
| 10 | Black Spruce/Larch Forested Fen/Bog |
| 11 | Structured Herb Fen |
| 12 | Uniform Herb Fen |
| 13 | Non - Uniform Herb Fen |
| 14 | Uniform Shrub Fen |
| 15 | Uniform Fluvial Shrub Fen |




- Ecoregion Boundary
- Major contour line (50 m)
- Minor contour line (10 m)

**Wetland survey**
- Wetland vegetation point
- Wetland Delineation

**Roads**
- Haul Road
- Access Road
- Kilometer Marker

**Hydrography**
- Waterbody
- In-Pit Lake
- Other wetland
- Stream

**Mining Components**
- Pit
- Mined-out Pit
- Topsoil
- Overburden
- Waste Rock
- Historical Waste Rock
- Low-grade
- Quarry
- Active Sedimentation Pond
- Proposed Sedimentation Pond
- Infrastructure Footprint
- Helipad

0 150 300 450 600 m

Échelle : 1/14 000

Projection : NAD 1983 UTM Zone 19N

TATA

**HOWSE PROPERTY PROJECT**
***FOLLOW UP PROGRAM***

## Wetlands monitoring stations

GROUPE GEOS

Date: 2025-12-17
Author: François-Xavier Lafortune
Ref.: HOWSE F1et2 Wetlands

**Figure 1**

# APPENDIX B

## WETLAND VEGETATION DESCRIPTIONS ACCORDING TO STATION

| WVP02 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Larix laricina* | Tamarack | 5 | | |
| *Salix pellita* | Satiny Willow | 15 | | |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Rubus arcticus* | Arctic Raspberry | 2 | | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 20 | |
| *Juncus effusus* | Soft Rush | | 20 | |
| *Viola macloskeyi* | Small White Violet | | 5 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Agrostis mertensii* | Northern Bentgrass | | 5 | |
| *Solidago macrophylla* | Large-leaved goldenrod | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Polytrichum sp.* | Common Haircap Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 40 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Raspberry | 4 | | |
| *Viola macloskeyi* | Small White Violet | | 25 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 20 | |
| *Carex limosa* | Mud Sedge | | 15 | |
| *Juncus effusus* | Soft Rush | | 5 | |
| *Agrostis mertensii* | Northern Bentgrass | | 4 | |
| *Sphagnum sp.* | Sphagnum | | | 98 |
| *Polytrichum sp.* | Common Haircap Moss | | | 1 |

| WVP03 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 10 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Betula glandulosa* | Glandular Birch | 2 | | |
| *Salix pedicellaris* | Bog Willow | 2 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Rubus arcticus* | Arctic Raspberry | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 25 | |
| *Eurybia radula* | Low Rough Aster | | 25 | |
| *Juncus effusus* | Soft Rush | | 20 | |
| *Agrostis mertensii* | Northern Bentgrass | | 15 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 5 | |
| *Equisetum sylvaticum* | Woodland horsetail | | 2 | |
| *Solidago uliginosa* | Bog goldenrod | | 1 | |
| *Viola macloskeyi* | Small White Violet | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 90 |
| *Polytrichum sp.* | Common Haircap Moss | | | 2 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 10 | | |
| *Betula glandulosa* | Glandular Birch | 7 | | |
| *Salix pedicellaris* | Bog Willow | 5 | | |
| *Larix laricina* | Tamarack | 4 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 1 | | |
| *Rubus chamaemorus* | Cloudberry | 1 | | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 7 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 7 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 5 | |
| *Eurybia radula* | Low Rough Aster | | 3 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 2 | |
| *Coptis trifolia* | Goldthread | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |
| *Polytrichum sp.* | Common Haircap Moss | | | 3 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 3 |

| WVP04 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Rubus chamaemorus* | Cloudberry | 15 | | |
| *Larix laricina* | Tamarack | 10 | | |
| *Betula glandulosa* | Glandular Birch | 10 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 5 | | |
| *Salix pellita* | Satiny Willow | 2 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Eurybia radula* | Low Rough Aster | | 20 | |
| *Juncus effusus* | Soft Rush | | 20 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 20 | |
| *Equisetum sylvaticum* | Woodland horsetail | | 10 | |
| *Carex echinata subsp. echinata* | Star sedge | | 10 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 5 | |
| *Maianthemum trifolium* | Three-leaved false-Solomon's seal | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Rubus chamaemorus* | Cloudberry | 20 | | |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Larix laricina* | Tamarack | 10 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 4 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 1 | | |
| *Salix pellita* | Satiny Willow | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.1 | | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 5 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 5 | |
| *Eurybia radula* | Low Rough Aster | | 4 | |
| *Juncus effusus* | Soft Rush | | 3 | |
| *Sphagnum sp.* | Sphagnum | | | 99 |
| *Polytrichum sp.* | Common Haircap Moss | | | 1 |

| WVP05 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 40 | | |
| *Salix pellita* | Satiny Willow | 20 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 10 | | |
| *Rubus arcticus* | Arctic Raspberry | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Larix laricina* | Tamarack | 1 | | |
| *Equisetum sylvaticum* | Woodland horsetail | | 15 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 10 | |
| *Eurybia radula* | Low Rough Aster | | 5 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Juncus effusus* | Soft Rush | | 5 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 5 | |
| *Solidago macrophylla* | Large-leaved goldenrod | | 2 | |
| *Carex aquatilis* | Water Sedge | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 60 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 10 |
| *Polytrichum sp.* | Common Haircap Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 40 | | |
| *Betula glandulosa* | Glandular Birch | 35 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 4 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Raspberry | 3 | | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 5 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 5 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 5 | |
| *Eurybia radula* | Low Rough Aster | | 4 | |
| *Coptis trifolia* | Goldthread | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Polytrichum sp.* | Common Haircap Moss | | | 15 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |

| WVP06 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 10 | | |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Larix laricina* | Tamarack | 2 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 2 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 40 | |
| *Carex limosa* | Mud Sedge | | 7 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 5 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Maianthemum trifolium* | Three-leaved false-Solomon's seal | | 2 | |
| *Eurybia radula* | Low Rough Aster | | 2 | |
| *Agrostis mertensii* | Northern bentgrass | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 7 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.1 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 30 | |
| *Carex limosa* | Mud Sedge | | 20 | |
| *Carex rostrata* | Swollen Beaked Sedge | | 4 | |
| *Sphagnum sp.* | Sphagnum | | | 90 |

| WVP07 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 10 | | |
| *Vaccinium uliginosum* | Bog bilberry | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Rubus chamaemorus* | Cloudberry | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Empetrum nigrum* | Black crowberry | 2 | | |
| *Rhododendron groenlandicum* | Labrador tea | 2 | | |
| *Vaccinium oxycoccos* | Small cranberry | 1 | | |
| *Carex aquatilis* | Water Sedge | | 20 | |
| *Carex limosa* | Mud Sedge | | 20 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 20 | |
| *Juncus effusus* | Soft Rush | | 10 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 5 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Polytrichum sp.* | Common Haircap Moss | | | 2 |
| *Cladonia sp.* | Reindeer Lichen | | | 1 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Larix laricina* | Tamarack | 3 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 1 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Rasberry | 1 | | |
| *Rubus chamaemorus* | Cloudberry | 1 | | |
| *Carex limosa* | Mud Sedge | | 10 | |
| *Juncus effusus* | Soft Rush | | 10 | |
| *Coptis trifolia* | Goldthread | | 7 | |
| *Carex oligosperma* | Few-Feeded Sedge | | 5 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 5 | |
| *Carex aquatilis* | Water Sedge | | 3 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |

| WVP08 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Larix laricina* | Tamarack | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 5 | | |
| *Vaccinium uliginosum* | Bog bilberry | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Rhododendron groenlandicum* | Labrador tea | 2 | | |
| *Betula glandulosa* | Glandular Birch | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Empetrum nigrum* | Black crowberry | 2 | | |
| *Vaccinium oxycoccos* | Small cranberry | 2 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 40 | |
| *Juncus effusus* | Soft Rush | | 40 | |
| *Coptis trifolia* | Goldthread | | 10 | |
| *Carex oligosperma* | Few-seeded sedge | | 10 | |
| *Solidago uliginosa* | Bog goldenrod | | 2 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 50 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.1 | | |
| *Rhododendron groenlandicum* | Common Labrador Tea | 1 | | |
| *Vaccinium uliginosum* | Bog Bilberry | 1 | | |
| *Vaccinium vitis-idaea* | Mountain Cranberry | 1 | | |
| *Empetrum nigrum* | Black Crowberry | 1 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 10 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 10 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Carex aquatilis* | Water Sedge | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |
| *Cladonia rangiferina* | Reindeer Lichen | | | 2 |

| WVP09 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Larix laricina* | Tamarack | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 5 | | |
| *Betula glandulosa* | Glandular Birch | 2 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 2 | | |
| *Empetrum nigrum* | Black Crowberry | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 2 | | |
| *Picea mariana* | Black spruce | 1 | | |
| *Carex oligosperma* | Few-Seeded Sedge | | 45 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 20 | |
| *Coptis trifolia* | Goldthread | | 10 | |
| *Lysimachia borealis* | Northern Starflower | | 2 | |
| *Spinulum annotinum* | Stiff clubmoss | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 50 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 3 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 3 | | |
| *Larix laricina* | Tamarack | 2 | | |
| *Empetrum nigrum* | Black Crowberry | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Carex limosa* | Mud Sedge | | 20 | |
| *Carex oligosperma* | Few-Seeded Sedge | | 15 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 10 | |
| *Coptis trifolia* | Goldthread | | 10 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 15 | |
| *Lysimachia borealis* | Northern Starflower | | 3 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Mousse sp.* | Moss | | | 3 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 1 |

| WVP10 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Vaccinium oxycoccos* | Small Cranberry | 5 | | |
| *Carex limosa* | Mud Sedge | | 40 | |
| *Carex rostrata* | Swollen Beaked Sedge | | 30 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 10 | |
| *Sphagnum sp.* | Sphagnum | | | 40 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 3 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.1 | | |
| *Carex limosa* | Mud Sedge | | 25 | |
| *Carex rostrata* | Swollen Beaked Sedge | | 15 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 10 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |

| WVP12 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 80 | | |
| *Salix pellita* | Satiny Willow | 40 | | |
| *Lonicera caerulea* | Blue fly-honeysuckle | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 2 | | |
| *Rubus arcticus* | Arctic raspberry | 2 | | |
| *Carex echinata subsp. echinata* | Star sedge | | 80 | |
| *Solidago macrophylla* | Large-leaved goldenrod | | 20 | |
| *Chamaenerion angustifolium* | Fireweed | | 5 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Anthoxanthum nitens* | Vanilla sweetgrass | | 2 | |
| *Deschampsia cespitosa* | Tufted hairgrass | | 2 | |
| *Luzula parviflora* | Small-flowered woodrush | | 2 | |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 40 | | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 70 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 20 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Anthoxanthum nitens* | Vanilla Sweetgrass | | 2 | |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 30 |
| *Polytrichum sp.* | Common Haircap Moss | | | 5 |

| WVP13 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Salix pellita* | Satiny Willow | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 5 | | |
| *Salix pedicellaris* | Bog willow | 2 | | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 20 | |
| *Carex aquatilis* | Water Sedge | | 20 | |
| *Carex limosa* | Mud Sedge | | 20 | |
| *Comarum palustre* | Marsh cinquefoil | | 2 | |
| *Carex pauciflora* | Few-flowered sedge | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Polytrichum sp.* | Common Haircap Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 30 | | |
| *Betula glandulosa* | Glandular Birch | 10 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 3 | | |
| *Larix laricina* | Tamarack | 1 | | |
| *Carex aquatilis* | Water Sedge | | 20 | |
| *Carex limosa* | Mud Sedge | | 10 | |
| *Sphagnum sp.* | Sphagnum | | | 90 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 7 |
| *Polytrichum sp.* | Common Haircap Moss | | | 3 |

| WVP14 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pedicellaris* | Bog Willow | 10 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Rhododendron groenlandicum* | Common Labrador Tea | 5 | | |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Empetrum nigrum* | Black Crowberry | 2 | | |
| *Rubus arcticus* | Arctic raspberry | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Vaccinium vitis-idaea* | Mountain cranberry | 2 | | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 20 | |
| *Cornus canadensis* | Bunchberry | | 10 | |
| *Carex canescens* | Hoary Sedge | | 10 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 2 | |
| *Spinulum annotinum* | Stiff clubmoss | | 2 | |
| *Mitella nuda* | Naked mitrewort | | 2 | |
| *Pyrola minor* | Lesser pyrola | | 2 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 2 | |
| *Linnaea borealis* | Twinflower | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 50 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 20 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Vaccinium uliginosum* | Alpine Bilberry | 25 | | |
| *Rhododendron groenlandicum* | Common Labrador Tea | 5 | | |
| *Salix pedicellaris* | Bog Willow | 5 | | |
| *Betula glandulosa* | Glandular Birch | 4 | | |
| *Empetrum nigrum* | Black Crowberry | 2 | | |
| *Vaccinium vitis-idaea* | Mountain Cranberry | 0.5 | | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 10 | |
| *Carex canescens* | Hoary Sedge | | 5 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 3 | |
| *Cornus canadensis* | Bunchberry | | 3 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 2 | |
| *Coptis trifolia* | Goldthread | | 1 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 1 | |
| *Spinulum annotinum* | Stiff Clubmoss | | 1 | |

| | | | | |
|---|---|---|---|---|
| *Sphagnum sp.* | Sphagnum | | | 100 |

| WVP17 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 25 | | |
| *Andromeda polifolia var. latifolia* | Glaucous-leaved bog rosemary | 25 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 10 | | |
| *Empetrum nigrum* | Black Crowberry | 2 | | |
| *Chamaedaphne calyculata* | Leatherleaf | 2 | | |
| *Carex oligosperma* | Few-Seeded Sedge | | 60 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 20 | |
| *Carex pauciflora* | Few-flowered sedge | | 5 | |
| *Sphagnum sp.* | Sphagnum | | | 60 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Andromeda polifolia var. latifolia* | Glaucous-Leaved Bog Rosemary | 7 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Carex limosa* | Mud Sedge | | 25 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 15 | |
| *Carex oligosperma* | Few-Seeded Sedge | | 5 | |
| *Sphagnum sp.* | Sphagnum | | | 70 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 15 |

| WVP18 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Bog Willow | 35 | | |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Rubus arcticus* | Arctic Raspberry | 2 | | |
| *Linnaea borealis* | Twinflower | | 15 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 10 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Viola macloskeyi* | Small White Violet | | 5 | |
| *Chamaenerion angustifolium* | Fireweed | | 5 | |
| *Spinulum annotinum* | Stiff clubmoss | | 5 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Cornus canadensis* | Bunchberry | | 2 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 2 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Orthilia secunda* | One-sided wintergreen | | 2 | |
| *Lysimachia borealis* | Northern starflower | | 2 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 10 | | |
| *Salix pedicellaris* | Bog Willow | 10 | | |
| *Salix pellita* | Satiny Willow | 5 | | |
| *Rubus arcticus* | Arctic Raspberry | 1 | | |
| *Pyrola minor* | Lesser Pyrola | 1 | | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 10 | |
| *Viola macloskeyi* | Small White Violet | | 7 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Linnaea borealis* | Twinflower | | 5 | |
| *Coptis trifolia* | Goldthread | | 4 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 4 | |
| *Chamaenerion angustifolium* | Fireweed | | 3 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 3 | |
| *Cornus canadensis* | Bunchberry | | 2 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 90 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |

| WVP19 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 5 | | |
| *Larix laricina* | Tamarack | 2 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 2 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 2 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 30 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 15 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 15 | |
| *Eurybia radula* | Low Rough Aster | | 10 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Agrostis mertensii* | Northern Bentgrass | | 5 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 2 | |
| *Lysimachia borealis* | Northern Starflower | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 30 |
| *Scorpidium scorpioides* | Hooked Scorpion Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Vaccinium uliginosum* | Alpine Bilberry | 8 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 2 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 20 | |
| *Carex limosa* | Mud Sedge | | 15 | |
| *Eurybia radula* | Low Rough Aster | | 15 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 15 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 10 | |
| *Lysimachia borealis* | Northern Starflower | | 1 | |
| *Agrostis mertensii* | Northern Bentgrass | | 0.5 | |
| *Coptis trifolia* | Goldthread | | 0.5 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Scorpidium scorpioides* | Hooked Scorpion Moss | | | 5 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |

| WVP20 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Rubus chamaemorus* | Cloudberry | 5 | | |
| *Salix pedicellaris* | Bog willow | 5 | | |
| *Larix laricina* | Tamarack | 2 | | |
| *Salix interior* | Sandbar willow | 2 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 20 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 15 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 10 | |
| *Eurybia radula* | Low rough aster | | 10 | |
| *Agrostis mertensii* | Northern Bentgrass | | 10 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 5 | |
| *Linnaea borealis* | Twinflower | | 5 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Juncus effusus* | Soft Rush | | 2 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 30 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 3 | | |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 3 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Salix interior* | Sandbar Willow | 15 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 30 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 7 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 5 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 4 | |
| *Juncus effusus* | Soft Rush | | 4 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 4 | |
| *Carex aquatilis* | Water Sedge | | 3 | |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 25 |
| *Scorpidium scorpioides* | Hooked Scorpion Moss | | | 15 |
| *Sphagnum sp.* | Sphagnum | | | 50 |

| WVP21 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Pale Bog Laurel | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Lonicera caerulea* | Small Cranberry | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Vaccinium uliginosum* | Tufted Clubrush | 2 | | |
| *Rhododendron groenlandicum* | Labrador tea | 2 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Salix pellita* | Satiny willow | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 2 | | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 25 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 20 | |
| *Eriophorum russeolum* | Tawny Cottongrass | | 10 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Platanthera dilatata* | Tall White Bog Orchid | | 2 | |
| *Eriophorum gracile* | Slender cottongrass | | 2 | |
| *Viola macloskeyi* | Small White Violet | | 2 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 70 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Lonicera caerulea* | Mountain Fly-Honeysuckle | 5 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 5 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Larix larinica* | Tamarack | 5 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 20 | |
| *Carex limosa* | Mud Sedge | | 15 | |
| *Eriophorum virginicum* | Tawny Cottongrass | | 5 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 3 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 2 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Platanthera dilatata* | Tall White Bog Orchid | | 1 | |
| *Viola macloskeyi* | Small White Violet | | 0.5 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |

| WVP22 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 8 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 4 | | |
| *Larix laricina* | Tamarack | 4 | | |
| *Vaccinium uliginosum* | Bog Bilberry | 3 | | |
| *Rubus arcticus* | Arctic raspberry | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Picea mariana* | Black spruce | 1 | | |
| *Juncus effusus* | Soft Rush | | 15 | |
| *Coptis trifolia* | Goldthread | | 7 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 3 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 8 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 4 | | |
| *Larix laricina* | Tamarack | 4 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Vaccinium uliginosum* | Bog Bilberry | 3 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Juncus effusus* | Soft Rush | | 10 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 3 | |
| *Lysimachia borealis* | Northern Starflower | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |

| WVP23 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Vaccinium uliginosum* | Bog Bilberry | 5 | | |
| *Betula glandulosa* | Glandular Birch | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 2 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 30 | |
| *Carex limosa* | Mud Sedge | | 30 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 25 | |
| *Eriophorum russeolum* | Russet Cottongrass | | 5 | |
| *Eriophorum angustifolium* | Narrow-leaved Cottongrass | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 90 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Betula glandulosa* | Glandular Birch | 3 | | |
| *Carex limosa* | Mud Sedge | | 20 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 10 | |
| *Eriophorum russeolum* | Russet Cottongrass | | 5 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |

| WVP24 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 10 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 5 | | |
| *Andromeda polifolia var. latifolia* | Glaucous-Leaved Bog Rosemary | 5 | | |
| *Betula glandulosa* | Glandular Birch | 2 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Chamaedaphne calyculata* | Leatherleaf | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 60 | |
| *Carex limosa* | Mud Sedge | | 20 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 2 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 40 |
| *Mousse sp.* | Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Larix laricina* | Tamarack | 15 | | |
| *Andromeda polifolia var. latifolia* | Glaucous-Leaved Bog Rosemary | 4 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 4 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 4 | | |
| *Picea mariana* | Black Spruce | 3 | | |
| *Rubus chamaemorus* | Cloudberry | 1 | | |
| *Carex limosa* | Mud Sedge | | 25 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 25 | |
| *Carex pauciflora* | Few-Flowered Sedge | | 5 | |
| *Mousse sp.* | Moss | | | 25 |
| *Sphagnum sp.* | Sphagnum | | | 20 |
| *Scorpidium scorpioides* | Hooked Scorpion Moss | | | 5 |

| WVP25 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 20 | | |
| *Larix laricina* | Tamarack | 5 | | |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 5 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 2 | | |
| *Juncus effusus* | Soft Rush | | 40 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 10 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 10 | |
| *Carex rostrata* | Swollen Beaked Sedge | | 10 | |
| *Eriophorum russeolum* | Russet Cottongrass | | 5 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Carex pauciflora* | Few-flowered sedge | | 5 | |
| *Sphagnum sp.* | Sphagnum | | | 60 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Kalmia polifolia* | Pale Bog Laurel | 7 | | |
| *Betula glandulosa* | Glandular Birch | 3 | | |
| *Picea mariana* | Black spruce | 2 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Carex limosa* | Mud Sedge | | 10 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 10 | |
| *Trichophorum cespitosum* | Tufted Clubrush | | 10 | |
| *Juncus effusus* | Soft Rush | | 5 | |
| *Carex rostrata* | Swollen Beaked Sedge | | 3 | |
| *Eriophorum russeolum* | Russet Cottongrass | | 3 | |
| *Sphagnum sp.* | Sphagnum | | | 40 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 2 |
| *Polytrichum sp.* | Hollyfern | | | 0.5 |

| WVP27 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 1 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 1 | | |
| *Rubus chamaemorus* | Cloudberry | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Carex oligosperma* | Few-Feeded Sedge | | 30 | |
| *Carex limosa* | Mud Sedge | | 15 | |
| *Sphagnum sp.* | Sphagnum | | | 100 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Vaccinium uliginosum* | Alpine Bilberry | 2 | | |
| *Betula glandulosa* | Glandular Birch | 1 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 1 | | |
| *Rubus chamaemorus* | Cloudberry | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Carex limosa* | Mud Sedge | | 40 | |
| *Carex oligosperma* | Few-Feeded Sedge | | 20 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon’s Seal | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 100 |

| WVP28 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 30 | | |
| *Betula glandulosa* | Glandular Birch | 25 | | |
| *Rubus chamaemorus* | Cloudberry | 10 | | |
| *Vaccinium uliginosum* | Bog bilberry | 5 | | |
| *Rhododendron groenlandicum* | Labrador tea | 5 | | |
| *Rubus arcticus* | Arctic Raspberry | 2 | | |
| *Equisetum sylvaticum* | Woodland horsetail | | 20 | |
| *Viola macloskeyi* | Small White Violet | | 10 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 10 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 10 | |
| *Cornus canadensis* | Bunchberry | | 5 | |
| *Coptis trifolia* | Goldthread | | 5 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 5 | |
| *Chamaenerion angustifolium* | Fireweed | | 2 | |
| *Carex trisperma* | Three-Seeded Sedge | | 2 | |
| *Galium triflorum* | Three-Flowered Bedstraw | | 2 | |
| *Carex limosa* | Mud Sedge | | 2 | |
| *Carex rostrata* | Swollen beaked sedge | | 2 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Salix pellita* | Satiny Willow | 5 | | |
| *Rubus chamaemorus* | Cloudberry | 4 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Raspberry | 2 | | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 20 | |
| *Carex trisperma* | Three-Seeded Sedge | | 10 | |
| *Cornus canadensis* | Bunchberry | | 5 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 5 | |
| *Viola macloskeyi* | Small White Violet | | 5 | |
| *Carex limosa* | Mud Sedge | | 3 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 2 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Chamaenerion angustifolium* | Fireweed | | 1 | |
| *Galium triflorum* | Three-Flowered Bedstraw | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |

| WVP29 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 70 | | |
| *Betula glandulosa* | Glandular Birch | 10 | | |
| *Lonicera caerulea* | Mountain Fly Honeysuckle | 10 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Rubus arcticus* | Rubus arcticus | 2 | | |
| *Viola macloskeyi* | Small White Violet | | 15 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Carex trisperma* | Three-seeded sedge | | 5 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Galium triflorum* | Three-Flowered Bedstraw | | 2 | |
| *Maianthemum trifolium* | Three-leaved false-Solomon's seal | | 2 | |
| *Juncus effusus* | Soft rush | | 2 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 2 | |
| *Epilobium palustre* | Marsh willowherb | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 80 | | |
| *Betula glandulosa* | Glandular Birch | 10 | | |
| *Lonicera caerulea* | Mountain Fly Honeysuckle | 5 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Raspberry | 2 | | |
| *Carex trisperma* | Three-Seeded Sedge | | 40 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 5 | |
| *Viola macloskeyi* | Small White Violet | | 5 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 3 | |
| *Chamaenerion angustifolium* | Fireweed | | 3 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 2 | |
| *Galium triflorum* | Three-Flowered Bedstraw | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 100 |

| WVP30 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Rubus chamaemorus* | Cloudberry | 30 | | |
| *Rhododendron groenlandicum* | Labrador tea | 15 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 15 | | |
| *Larix laricina* | Tamarack | 10 | | |
| *Vaccinium uliginosum* | Bog bilberry | 10 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 2 | | |
| *Empetrum nigrum* | Black crowberry | 2 | | |
| *Carex oligosperma* | Few-seeded sedge | | 20 | |
| *Carex pauciflora* | Few-Flower Sedge | | 10 | |
| *Carex limosa* | Mud sedge | | 2 | |
| *Sphagnum sp.* | Sphagnum | | | 50 |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 25 |
| *Polytrichum sp.* | Hollyfern | | | 5 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |
| *Cladonia sp.* | Reindeer Lichen | | | 2 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Rubus chamaemorus* | Cloudberry | 70 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 20 | | |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Larix laricina* | Tamarack | 8 | | |
| *Vaccinium vitis-idaea* | Mountain Cranberry | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Carex pauciflora* | Few-Flower Sedge | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 95 |
| *Polytrichum sp.* | Hollyfern | | | 3 |
| *Cladonia sp.* | Reindeer Lichen | | | 1 |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 1 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 1 |

| WVP32 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 40 | | |
| *Rubus arcticus* | Arctic Raspberry | 3 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 1 | | |
| *Carex aquatilis* | Water Sedge | | 35 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Pyrola minor* | Lesser pyrola | | 1 | |
| *Equisetum sylvaticum* | Woodland horsetail | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 85 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 1 |
| *Mnium sp.* | Leafy Moss | | | 1 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 40 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Raspberry | 3 | | |
| *Carex aquatilis* | Water Sedge | | 35 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 5 | |
| *Sphagnum sp.* | Sphagnum | | | 85 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 3 |
| *Mnium sp.* | Leafy Moss | | | 2 |

| WVP33 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 75 | | |
| *Betula glandulosa* | Glandular Birch | 15 | | |
| *Vaccinium angustifolium* | Early lowbush blueberry | 2 | | |
| *Anthoxanthum nitens* | Vanilla sweetgrass | | 20 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 15 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 15 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 10 | |
| *Fragaria vesca subsp. americana* | American Woodland Strawberry | | 5 | |
| *Chamaenerion angustifolium* | Fireweed | | 5 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Achillea borealis* | Wooly Yarrow | | 5 | |
| *Mitella nuda* | Naked Mitrewort | | 2 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Viola macloskeyi* | Small White Violet | | 2 | |
| *Equisetum palustre* | Woodland Horsetail | | 2 | |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 40 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 5 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pellita* | Satiny Willow | 95 | | |
| *Lonicera caerulea* | Mountain Fly Honeysuckle | 0.5 | | |
| *Carex sp.* | Sedge | | 15 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 15 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 5 | |
| *Fragaria vesca subsp. americana* | American Woodland Strawberry | | 5 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 3 | |
| *Mitella nuda* | Naked Mitrewort | | 3 | |
| *Achillea borealis* | Wooly Yarrow | | 2 | |
| *Chamaenerion angustifolium* | Fireweed | | 1 | |
| *Luzula parviflora* | Small-Flowered Woodrush | | 1 | |
| *Viola macloskeyi* | Small White Violet | | 1 | |
| *Coptis trifolia* | Goldthread | | 0.5 | |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 40 |

| WVP34 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Larix laricina* | Tamarack | 15 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 10 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 5 | | |
| *Betula glandulosa* | Glandular Birch | 5 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 5 | | |
| *Salix pellita* | Satiny Willow | 2 | | |
| *Rubus arcticus* | Arctic raspberry | 2 | | |
| *Empetrum nigrum* | Black crowberry | 2 | | |
| *Rubus chamaemorus* | Cloudberry | 2 | | |
| *Carex aquatilis* | Water Sedge | | 30 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 10 | |
| *Carex pauciflora* | Few-Flower Sedge | | 5 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 80 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Salix pedicellaris* | Bog Willow | 7 | | |
| *Betula glandulosa* | Glandular Birch | 4 | | |
| *Larix laricina* | Tamarack | 3 | | |
| *Kalmia polifolia* | Pale Bog Laurel | 2 | | |
| *Vaccinium uliginosum* | Alpine Bilberry | 1 | | |
| *Vaccinium oxycoccos* | Small Cranberry | 0.5 | | |
| *Carex aquatilis* | Water Sedge | | 25 | |
| *Carex limosa* | Mud Sedge | | 5 | |
| *Carex pauciflora* | Few-Flower Sedge | | 3 | |
| *Juncus effusus* | Soft Rush | | 1 | |
| *Maianthemum trifolium* | Three-Leaved False Solomon's Seal | | 1 | |
| *Sphagnum sp.* | Sphagnum | | | 70 |
| *Tomentypnum nitens* | Golden Fuzzy Fen Moss | | | 10 |

| WVP35 | | | | |
|---|---|---|---|---|
| **Vegetation description (2025)** | | | | |
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 25 | | |
| *Salix pellita* | Satiny Willow | 20 | | |
| *Vaccinium angustifolium* | Early lowbush blueberry | 2 | | |
| *Rubus arcticus* | Arctic Raspberry | 2 | | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 15 | |
| *Anthoxanthum nitens* | Vanilla sweetgrass | | 15 | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 10 | |
| *Linnaea borealis* | Twinflower | | 5 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 5 | |
| *Cerastium alpinum* | Alpine Chickweed | | 5 | |
| *Chamaenerion angustifolium* | Fireweed | | 5 | |
| *Luzula parviflora* | Small-Flowered Woodrush | | 5 | |
| *Equisetum palustre* | Marsh horsetail | | 5 | |
| *Equisetum sylvaticum* | Woodland Horsetail | | 2 | |
| *Viola macloskeyi* | Small White Violet | | 2 | |
| *Cornus canadensis* | Bunchberry | | 2 | |
| *Coptis trifolia* | Goldthread | | 2 | |
| *Carex oligosperma* | Few-seeded sedge | | 2 | |
| *Veronica wormskjoldii* | Wormskjold's Alpine Speedwell | | 2 | |
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 30 |
| *Mnium sp.* | Leafy Moss | | | 2 |

| **Vegetation description (2022)** | | | | |
|---|---|---|---|---|
| Latin Name | English Name | % of Cover | | |
| | | Shrubs | Herbs | Moss |
| *Betula glandulosa* | Glandular Birch | 25 | | |
| *Salix pellita* | Satiny Willow | 25 | | |
| *Rubus arcticus subsp.arcticus* | Arctic Raspberry | 1 | | |
| *Solidago macrophylla* | Large-Leaved Goldenrod | | 40 | |
| *Agrostis mertensii* | Northern Bentgrass | | 15 | |
| *Cerastium alpinum* | Alpine Chickweed | | 15 | |
| *Viola macloskeyi* | Small White Violet | | 7 | |
| *Deschampsia cespitosa* | Tufted Hairgrass | | 5 | |
| *Luzula parviflora* | Small-Flowered Woodrush | | 5 | |
| *Coptis trifolia* | Goldthread | | 3 | |
| *Petasites frigidus var. palmatus* | Palmate Coltsfoot | | 3 | |
| *Calamagrostis canadensis* | Bluejoint Reedgrass | | 2 | |
| *Cornus canadensis* | Bunchberry | | 1 | |
| *Equisetum arvense* | Field Horsetail | | 1 | |
| *Phleum alpinum* | Alpine Thimothy | | 1 | |
| *Veronica wormskjoldii* | Wormskjold's Alpine Speedwell | | 0.5 | |
| *Mousse sp.* | Moss | | | 40 |
| *Mnium sp.* | Leafy Moss | | | 5 |

| | | | | |
|---|---|---|---|---|
| *Pleurozium schreberi* | Schreber's Big Red Stem Moss | | | 1 |

# APPENDIX C
# WETLAND INDICATOR STATUS DATA

| ID | year | station | Ecotype | NI | FACH | OBL | Total | % NI | % FACH | % OBL | Total abundance | Richness | Shannon entropy | Shannon diversity | Gini Simpson entropy | Gini Simpson diversity | Pielou Evenness | Shannon Evenness | Simpson Evenness |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WVP02_2022 | 2022 | WVP02 | FSM10 | 3 | 3 | 3 | 9 | 33.33 | 33.33 | 33.33 | 9 | 3 | 1.098612289 | 3 | 0.666666667 | 3 | 1 | 1 | 1 |
| WVP02_2025 | 2025 | WVP02 | FSM10 | 5 | 5 | 3 | 13 | 38.46 | 38.46 | 23.08 | 13 | 3 | 1.073394281 | 2.925291931 | 0.650887574 | 2.86440678 | 0.97704558 | 0.97509731 | 0.95480226 |
| WVP03_2022 | 2022 | WVP03 | FSM15 | 4 | 6 | 6 | 16 | 25 | 37.5 | 37.5 | 16 | 3 | 1.08219553 | 2.951151786 | 0.65625 | 2.909090909 | 0.985056822 | 0.983717262 | 0.96969697 |
| WVP03_2025 | 2025 | WVP03 | FSM15 | 5 | 7 | 7 | 19 | 26.32 | 36.84 | 36.84 | 19 | 3 | 1.087074156 | 2.965584528 | 0.659279778 | 2.93495935 | 0.989497539 | 0.988528176 | 0.978319783 |
| WVP04_2022 | 2022 | WVP04 | FSM10 | 3 | 6 | 6 | 15 | 20 | 40 | 40 | 15 | 3 | 1.054920168 | 2.871745887 | 0.64 | 2.777777778 | 0.960229718 | 0.957248629 | 0.925925926 |
| WVP04_2025 | 2025 | WVP04 | FSM10 | 3 | 6 | 6 | 15 | 20 | 40 | 40 | 15 | 3 | 1.054920168 | 2.871745887 | 0.64 | 2.777777778 | 0.960229718 | 0.957248629 | 0.925925926 |
| WVP05_2022 | 2022 | WVP05 | FSM15 | 6 | 4 | 4 | 14 | 42.86 | 28.57 | 28.57 | 14 | 3 | 1.078992208 | 2.941713421 | 0.653061224 | 2.882352941 | 0.982141033 | 0.98057114 | 0.960784314 |
| WVP05_2025 | 2025 | WVP05 | FSM15 | 8 | 6 | 4 | 18 | 44.45 | 33.33 | 22.22 | 18 | 3 | 1.060856947 | 2.888845517 | 0.641975309 | 2.793103448 | 0.965633607 | 0.962948506 | 0.931034483 |
| WVP06_2022 | 2022 | WVP06 | FSM12 | 0 | 2 | 5 | 7 | 0 | 28.57 | 71.43 | 7 | 2 | 0.598269589 | 1.818968512 | 0.408163265 | 1.689655172 | 0.863120569 | 0.909484256 | 0.844827586 |
| WVP06_2025 | 2025 | WVP06 | FSM12 | 3 | 4 | 5 | 12 | 25 | 33.33 | 41.67 | 12 | 3 | 1.077556327 | 2.937492502 | 0.652777778 | 2.88 | 0.980834038 | 0.979164167 | 0.96 |
| WVP07_2022 | 2022 | WVP07 | FSM12 | 2 | 7 | 5 | 14 | 14.29 | 50 | 35.71 | 14 | 3 | 0.992281975 | 2.697382814 | 0.602040816 | 2.512820513 | 0.903213977 | 0.899127605 | 0.837606838 |
| WVP07_2025 | 2025 | WVP07 | FSM12 | 8 | 5 | 6 | 19 | 42.1 | 26.32 | 31.58 | 19 | 3 | 1.079529573 | 2.943294621 | 0.653739612 | 2.888 | 0.982630164 | 0.981098207 | 0.962666667 |
| WVP08_2022 | 2022 | WVP08 | FSM12 | 8 | 4 | 4 | 16 | 50 | 25 | 25 | 16 | 3 | 1.039720771 | 2.828427125 | 0.625 | 2.666666667 | 0.94639463 | 0.942809042 | 0.888888889 |
| WVP08_2025 | 2025 | WVP08 | FSM12 | 6 | 6 | 5 | 17 | 35.3 | 35.29 | 29.41 | 17 | 3 | 1.095077862 | 2.989415437 | 0.664359862 | 2.979381443 | 0.996782826 | 0.996471812 | 0.993127148 |
| WVP09_2022 | 2022 | WVP09 | FSM12 | 6 | 4 | 5 | 15 | 40 | 26.67 | 33.33 | 15 | 3 | 1.085188613 | 2.95999806 | 0.657777778 | 2.922077922 | 0.987781244 | 0.98666602 | 0.974025974 |
| WVP09_2025 | 2025 | WVP09 | FSM12 | 7 | 4 | 3 | 14 | 50 | 28.57 | 21.43 | 14 | 3 | 1.034601233 | 2.813983888 | 0.62244898 | 2.648648649 | 0.941734626 | 0.937994629 | 0.882882883 |
| WVP10_2022 | 2022 | WVP10 | FSM12 | 0 | 3 | 4 | 7 | 0 | 42.86 | 57.14 | 7 | 2 | 0.682908105 | 1.97962633 | 0.489795918 | 1.96 | 0.985228136 | 0.989813165 | 0.98 |
| WVP10_2025 | 2025 | WVP10 | FSM12 | 0 | 1 | 4 | 5 | 0 | 20 | 80 | 5 | 2 | 0.500402424 | 1.649384888 | 0.32 | 1.470588235 | 0.721928095 | 0.824692444 | 0.735294118 |
| WVP12_2022 | 2022 | WVP12 | FSM15 | 6 | 1 | 1 | 8 | 75 | 12.5 | 12.5 | 8 | 3 | 0.73562194 | 2.08677944 | 0.40625 | 1.684210526 | 0.669591946 | 0.695593147 | 0.561403509 |
| WVP12_2025 | 2025 | WVP12 | FSM15 | 8 | 3 | 3 | 14 | 57.14 | 21.43 | 21.43 | 14 | 3 | 0.979971182 | 2.664379459 | 0.581632653 | 2.390243902 | 0.892008211 | 0.888126486 | 0.796747967 |
| WVP13_2022 | 2022 | WVP13 | FSM12 | 2 | 4 | 3 | 9 | 22.22 | 44.44 | 33.33 | 9 | 3 | 1.060856947 | 2.888845517 | 0.641975309 | 2.793103448 | 0.965633607 | 0.962948506 | 0.931034483 |
| WVP13_2025 | 2025 | WVP13 | FSM12 | 3 | 3 | 6 | 12 | 25 | 25 | 50 | 12 | 3 | 1.039720771 | 2.828427125 | 0.625 | 2.666666667 | 0.94639463 | 0.942809042 | 0.888888889 |
| WVP14_2022 | 2022 | WVP14 | FSM08 | 12 | 1 | 3 | 16 | 75 | 6.25 | 18.75 | 16 | 3 | 0.702918931 | 2.019639299 | 0.3984375 | 1.662337662 | 0.639824384 | 0.6732131 | 0.554112554 |
| WVP14_2025 | 2025 | WVP14 | FSM08 | 16 | 5 | 2 | 23 | 69.57 | 21.74 | 8.69 | 23 | 3 | 0.796585369 | 2.217954487 | 0.461247637 | 1.856140351 | 0.72508325 | 0.739318162 | 0.61871345 |
| WVP17_2022 | 2022 | WVP17 | FSM12 | 0 | 3 | 5 | 8 | 0 | 37.5 | 62.5 | 8 | 2 | 0.661563238 | 1.937819241 | 0.46875 | 1.882352941 | 0.954434003 | 0.96890962 | 0.941176471 |
| WVP17_2025 | 2025 | WVP17 | FSM12 | 1 | 2 | 6 | 9 | 11.11 | 22.22 | 66.67 | 9 | 3 | 0.848685558 | 2.336573541 | 0.49382716 | 1.975609756 | 0.772506886 | 0.778857847 | 0.658536585 |
| WVP18_2022 | 2022 | WVP18 | FSM08 | 10 | 3 | 4 | 17 | 58.82 | 17.65 | 23.53 | 17 | 3 | 0.958691859 | 2.608282241 | 0.567474048 | 2.312 | 0.872638937 | 0.869427414 | 0.770666667 |
| WVP18_2025 | 2025 | WVP18 | FSM08 | 12 | 3 | 3 | 18 | 66.66 | 16.67 | 16.67 | 18 | 3 | 0.867563228 | 2.381101578 | 0.5 | 2 | 0.789690082 | 0.793700526 | 0.666666667 |
| WVP19_2022 | 2022 | WVP19 | FSM12 | 5 | 4 | 6 | 15 | 33.33 | 26.67 | 40 | 15 | 3 | 1.085188613 | 2.95999806 | 0.657777778 | 2.922077922 | 0.987781244 | 0.98666602 | 0.974025974 |
| WVP19_2025 | 2025 | WVP19 | FSM12 | 6 | 4 | 6 | 16 | 37.5 | 25 | 37.5 | 16 | 3 | 1.08219553 | 2.951151786 | 0.65625 | 2.909090909 | 0.985056822 | 0.983717262 | 0.96969697 |
| WVP20_2022 | 2022 | WVP20 | FSM08 | 3 | 6 | 6 | 15 | 20 | 40 | 40 | 15 | 3 | 1.054920168 | 2.871745887 | 0.64 | 2.777777778 | 0.960229718 | 0.957248629 | 0.925925926 |
| WVP20_2025 | 2025 | WVP20 | FSM08 | 7 | 5 | 6 | 18 | 38.89 | 27.78 | 33.33 | 18 | 3 | 1.089309679 | 2.972221577 | 0.660493827 | 2.945454545 | 0.9915324 | 0.990740526 | 0.981818182 |
| WVP21_2022 | 2022 | WVP21 | FSM12 | 2 | 6 | 7 | 15 | 13.33 | 40 | 46.67 | 15 | 3 | 0.990835386 | 2.693483632 | 0.604444444 | 2.528089888 | 0.901897236 | 0.897827877 | 0.842696629 |
| WVP21_2025 | 2025 | WVP21 | FSM12 | 6 | 4 | 10 | 20 | 30 | 20 | 50 | 20 | 3 | 1.029653014 | 2.800094073 | 0.62 | 2.631578947 | 0.937230563 | 0.933364691 | 0.877192982 |
| WVP22_2022 | 2022 | WVP22 | FSM08 | 4 | 5 | 3 | 12 | 33.33 | 41.67 | 25 | 12 | 3 | 1.077556327 | 2.937492502 | 0.652777778 | 2.88 | 0.980834038 | 0.979164167 | 0.96 |
| WVP22_2025 | 2025 | WVP22 | FSM08 | 4 | 5 | 3 | 12 | 33.33 | 41.67 | 25 | 12 | 3 | 1.077556327 | 2.937492502 | 0.652777778 | 2.88 | 0.980834038 | 0.979164167 | 0.96 |
| WVP23_2022 | 2022 | WVP23 | FSM12 | 1 | 2 | 4 | 7 | 14.29 | 28.57 | 57.14 | 7 | 3 | 0.955699891 | 2.600490006 | 0.571428571 | 2.333333333 | 0.86991553 | 0.866830002 | 0.777777778 |
| WVP23_2025 | 2025 | WVP23 | FSM12 | 2 | 3 | 6 | 11 | 18.18 | 27.27 | 54.55 | 11 | 3 | 0.994923633 | 2.704517796 | 0.595041322 | 2.469387755 | 0.905618518 | 0.901505932 | 0.823129252 |
| WVP24_2022 | 2022 | WVP24 | FSM08 | 3 | 4 | 5 | 12 | 25 | 33.33 | 41.67 | 12 | 3 | 1.077556327 | 2.937492502 | 0.652777778 | 2.88 | 0.980834038 | 0.979164167 | 0.96 |
| WVP24_2025 | 2025 | WVP24 | FSM08 | 4 | 4 | 7 | 15 | 26.67 | 26.67 | 46.66 | 15 | 3 | 1.060601806 | 2.888108546 | 0.64 | 2.777777778 | 0.965401367 | 0.962702849 | 0.925925926 |
| WVP25_2022 | 2022 | WVP25 | FSM08 | 3 | 4 | 6 | 13 | 23.08 | 30.77 | 46.15 | 13 | 3 | 1.057905425 | 2.880331595 | 0.639053254 | 2.770491803 | 0.962947016 | 0.960110532 | 0.923497268 |
| WVP25_2025 | 2025 | WVP25 | FSM08 | 3 | 5 | 7 | 15 | 20 | 33.33 | 46.67 | 15 | 3 | 1.043757036 | 2.839866478 | 0.631111111 | 2.710843373 | 0.950068598 | 0.946622159 | 0.903614458 |
| WVP27_2022 | 2022 | WVP27 | FSM15 | 2 | 3 | 4 | 9 | 22.22 | 33.33 | 44.44 | 9 | 3 | 1.060856947 | 2.888845517 | 0.641975309 | 2.793103448 | 0.965633607 | 0.962948506 | 0.931034483 |
| WVP27_2025 | 2025 | WVP27 | FSM15 | 1 | 3 | 3 | 7 | 14.28 | 42.86 | 42.86 | 7 | 3 | 1.004242473 | 2.729838563 | 0.612244898 | 2.578947368 | 0.914100892 | 0.909946188 | 0.859649123 |
| WVP28_2022 | 2022 | WVP28 | FSM15 | 8 | 4 | 3 | 15 | 53.33 | 26.67 | 20 | 15 | 3 | 1.009613758 | 2.744540754 | 0.604444444 | 2.528089888 | 0.918990046 | 0.914846918 | 0.842696629 |
| WVP28_2025 | 2025 | WVP28 | FSM15 | 11 | 4 | 5 | 20 | 55 | 20 | 25 | 20 | 3 | 0.997271523 | 2.710875169 | 0.595 | 2.469135802 | 0.90775566 | 0.903625056 | 0.823045267 |
| WVP29_2022 | 2022 | WVP29 | FSM15 | 5 | 4 | 3 | 12 | 41.67 | 33.33 | 25 | 12 | 3 | 1.077556327 | 2.937492502 | 0.652777778 | 2.88 | 0.980834038 | 0.979164167 | 0.96 |
| WVP29_2025 | 2025 | WVP29 | FSM15 | 4 | 6 | 5 | 15 | 26.67 | 40 | 33.33 | 15 | 3 | 1.085188613 | 2.95999806 | 0.657777778 | 2.922077922 | 0.987781244 | 0.98666602 | 0.974025974 |
| WVP30_2022 | 2022 | WVP30 | FSM10 | 5 | 5 | 2 | 12 | 41.67 | 41.67 | 16.67 | 12 | 3 | 1.028183859 | 2.795983322 | 0.625 | 2.666666667 | 0.935893281 | 0.931994441 | 0.888888889 |
| WVP30_2025 | 2025 | WVP30 | FSM10 | 6 | 5 | 4 | 15 | 40 | 33.33 | 26.67 | 15 | 3 | 1.085188613 | 2.95999806 | 0.657777778 | 2.922077922 | 0.987781244 | 0.98666602 | 0.974025974 |
| WVP32_2022 | 2022 | WVP32 | FSM12 | 2 | 3 | 2 | 7 | 28.57 | 42.86 | 28.57 | 7 | 3 | 1.078992208 | 2.941713421 | 0.653061224 | 2.882352941 | 0.982141033 | 0.98057114 | 0.960784314 |
| WVP32_2025 | 2025 | WVP32 | FSM12 | 4 | 3 | 3 | 10 | 40 | 30 | 30 | 10 | 3 | 1.088899975 | 2.971004097 | 0.66 | 2.941176471 | 0.991159471 | 0.990334699 | 0.980392157 |
| WVP33_2022 | 2022 | WVP33 | FSM15 | 12 | 1 | 2 | 15 | 80 | 6.67 | 13.33 | 15 | 3 | 0.627705257 | 1.873306886 | 0.337777778 | 1.510067114 | 0.571361948 | 0.624435629 | 0.503355705 |
| WVP33_2025 | 2025 | WVP33 | FSM15 | 12 | 2 | 3 | 17 | 70.59 | 11.76 | 17.65 | 17 | 3 | 0.803742107 | 2.233884743 | 0.456747405 | 1.840764331 | 0.731597594 | 0.744628248 | 0.61358811 |
| WVP34_2022 | 2022 | WVP34 | FSM10 | 2 | 5 | 6 | 13 | 15.38 | 38.46 | 46.15 | 13 | 3 | 1.012330839 | 2.752008033 | 0.615384615 | 2.6 | 0.92146324 | 0.917336011 | 0.866666667 |
| WVP34_2025 | 2025 | WVP34 | FSM10 | 4 | 5 | 5 | 14 | 28.58 | 35.71 | 35.71 | 14 | 3 | 1.093374718 | 2.984328363 | 0.663265306 | 2.96969697 | 0.995232557 | 0.994776121 | 0.98989899 |
| WVP35_2022 | 2022 | WVP35 | FSM10 | 13 | 2 | 4 | 19 | 68.42 | 10.53 | 21.05 | 19 | 3 | 0.824659324 | 2.281103515 | 0.476454294 | 1.91005291 | 0.750637265 | 0.760367838 | 0.636684303 |
| WVP35_2025 | 2025 | WVP35 | FSM10 | 14 | 2 | 5 | 21 | 66.67 | 9.52 | 23.81 | 21 | 3 | 0.835937364 | 2.306975512 | 0.489795918 | 1.96 | 0.76090298 | 0.768991837 | 0.653333333 |

# APPENDIX D
# SPECIES DIVERSITY DATA

| ID | year | station | Ecotype | *Achillea borealis* | *Agrostis mertensii* | *Andromeda polifolia var latifolia* | *Anthoxanthum nitens* | *Betula glandulosa* | *Calamagrostis canadensis* | *Carex aquatilis* | *Carex canescens* | *Carex echinata subsp echinata* | *Carex limosa* | *Carex oligosperma* | *Carex pauciflora* | *Carex rostrata* | *Carex sp* | *Carex trisperma* | *Cerastium alpinum* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WVP02_2025 | 2025 | WVP02 | FSM10 | 0 | 4.310344828 | 0 | 0 | 12.93103448 | 17.24137931 | 0 | 0 | 0 | 4.310344828 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP03_2025 | 2025 | WVP03 | FSM15 | 0 | 2.024291498 | 0 | 0 | 0.809716599 | 2.024291498 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP04_2025 | 2025 | WVP04 | FSM10 | 0 | 0 | 0 | 0 | 7.194244604 | 0 | 0 | 0 | 7.194244604 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP05_2025 | 2025 | WVP05 | FSM15 | 0 | 0 | 0 | 0 | 11.17318436 | 1.396648045 | 0.279329609 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP06_2025 | 2025 | WVP06 | FSM12 | 0 | 0.913242009 | 0 | 0 | 2.283105023 | 0 | 0 | 0 | 0 | 3.196347032 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP07_2025 | 2025 | WVP07 | FSM12 | 0 | 0 | 0 | 0 | 10 | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP08_2025 | 2025 | WVP08 | FSM12 | 0 | 0 | 0 | 0 | 2.272727273 | 0 | 0 | 0 | 0 | 0 | 11.36363636 | 1.136363636 | 0 | 0 | 0 | 0 |
| WVP09_2025 | 2025 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 2.06185567 | 0 | 0 | 0 | 0 | 0 | 46.39175258 | 0 | 0 | 0 | 0 | 0 |
| WVP10_2025 | 2025 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74.07407407 | 0 | 0 | 55.55555556 | 0 | 0 | 0 |
| WVP12_2025 | 2025 | WVP12 | FSM15 | 0 | 0 | 0 | 2.702702703 | 108.1081081 | 0 | 0 | 0 | 108.1081081 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP13_2025 | 2025 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 14.1509434 | 18.86792453 | 18.86792453 | 0 | 0 | 18.86792453 | 0 | 1.886792453 | 0 | 0 | 0 | 0 |
| WVP14_2025 | 2025 | WVP14 | FSM08 | 0 | 0 | 0 | 0 | 1.893939394 | 1.893939394 | 0 | 3.787878788 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP17_2025 | 2025 | WVP17 | FSM12 | 0 | 0 | 40.98360656 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98.36065574 | 8.196721311 | 0 | 0 | 0 | 0 |
| WVP18_2025 | 2025 | WVP18 | FSM08 | 0 | 0 | 0 | 0 | 12.5 | 4.166666667 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP19_2025 | 2025 | WVP19 | FSM12 | 0 | 4.761904762 | 0 | 0 | 4.761904762 | 1.904761905 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP20_2025 | 2025 | WVP20 | FSM08 | 0 | 9.615384615 | 0 | 0 | 4.807692308 | 1.923076923 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP21_2025 | 2025 | WVP21 | FSM12 | 0 | 0 | 0 | 0 | 14.70588235 | 7.352941176 | 0 | 0 | 0 | 7.352941176 | 0 | 2.941176471 | 0 | 0 | 0 | 0 |
| WVP22_2025 | 2025 | WVP22 | FSM08 | 0 | 0 | 0 | 0 | 6.956521739 | 0 | 0 | 0 | 0 | 4.347826087 | 0 | 2.608695652 | 0 | 0 | 0 | 0 |
| WVP23_2025 | 2025 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 5.555555556 | 0 | 0 | 0 | 0 | 83.33333333 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP24_2025 | 2025 | WVP24 | FSM08 | 0 | 0 | 5.263157895 | 0 | 2.105263158 | 0 | 0 | 0 | 0 | 21.05263158 | 0 | 2.105263158 | 0 | 0 | 0 | 0 |
| WVP25_2025 | 2025 | WVP25 | FSM08 | 0 | 0 | 0 | 0 | 5.434782609 | 0 | 0 | 0 | 0 | 5.434782609 | 0 | 5.434782609 | 10.86956522 | 0 | 0 | 0 |
| WVP27_2025 | 2025 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 0.980392157 | 0 | 0 | 0 | 0 | 14.70588235 | 29.41176471 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2025 | 2025 | WVP28 | FSM15 | 0 | 0 | 0 | 0 | 5.952380952 | 2.380952381 | 0 | 0 | 0 | 0.476190476 | 0 | 0 | 0.476190476 | 0 | 0.476190476 | 0 |
| WVP29_2025 | 2025 | WVP29 | FSM15 | 0 | 0 | 0 | 0 | 1.075268817 | 0.537634409 | 0 | 0 | 0 | 0.537634409 | 0 | 0 | 0 | 0 | 0.537634409 | 0 |
| WVP30_2025 | 2025 | WVP30 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.256081946 | 2.560819462 | 1.280409731 | 0 | 0 | 0 | 0 |
| WVP32_2025 | 2025 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 5.376344086 | 37.6344086 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP33_2025 | 2025 | WVP33 | FSM15 | 1.792114695 | 0 | 0 | 7.168458781 | 5.376344086 | 3.584229391 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP34_2025 | 2025 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 10 | 20 | 60 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| WVP35_2025 | 2025 | WVP35 | FSM10 | 0 | 0 | 0 | 15 | 25 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| WVP02_2022 | 2022 | WVP02 | FSM10 | 0 | 3.669724771 | 0 | 0 | 0 | 18.34862385 | 0 | 0 | 0 | 13.76146789 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP03_2022 | 2022 | WVP03 | FSM15 | 0 | 0 | 0 | 0 | 6.930693069 | 2.53164557 | 0 | 0 | 0 | 0 | 0 | 6.329113924 | 0 | 0 | 0 | 0 |
| WVP04_2022 | 2022 | WVP04 | FSM10 | 0 | 0 | 0 | 0 | 25.86206897 | 0 | 0 | 0 | 0 | 9.708737864 | 0 | 9.708737864 | 0 | 0 | 0 | 0 |
| WVP05_2022 | 2022 | WVP05 | FSM15 | 0 | 0 | 0 | 0 | 68.62745098 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP06_2022 | 2022 | WVP06 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111.1111111 | 0 | 0 | 22.22222222 | 0 | 0 | 0 |
| WVP07_2022 | 2022 | WVP07 | FSM12 | 0 | 0 | 0 | 0 | 12.34567901 | 0 | 9.677419355 | 0 | 0 | 32.25806452 | 16.12903226 | 0 | 0 | 0 | 0 | 0 |
| WVP08_2022 | 2022 | WVP08 | FSM12 | 0 | 0 | 0 | 0 | 3.389830508 | 0 | 15.38461538 | 0 | 0 | 0 | 0 | 76.92307692 | 0 | 0 | 0 | 0 |
| WVP09_2022 | 2022 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 11.11111111 | 0 | 0 | 0 | 0 | 64.51612903 | 48.38709677 | 32.25806452 | 0 | 0 | 0 | 0 |
| WVP10_2022 | 2022 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51.02040816 | 0 | 0 | 30.6122449 | 0 | 0 | 0 |
| WVP12_2022 | 2022 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP13_2022 | 2022 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 71.42857143 | 0 | 100 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP14_2022 | 2022 | WVP14 | FSM08 | 0 | 0 | 0 | 0 | 11.62790698 | 3.75 | 0 | 6.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP17_2022 | 2022 | WVP17 | FSM12 | 0 | 0 | 31.81818182 | 0 | 0 | 0 | 0 | 0 | 0 | 208.3333333 | 41.66666667 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2022 | 2022 | WVP18 | FSM08 | 0 | 0 | 0 | 0 | 40 | 3.278688525 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP19_2022 | 2022 | WVP19 | FSM12 | 0 | 0.227272727 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.818181818 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP20_2022 | 2022 | WVP20 | FSM08 | 0 | 0 | 0 | 0 | 9.836065574 | 0 | 8.571428571 | 0 | 0 | 0 | 0 | 14.28571429 | 0 | 0 | 0 | 0 |
| WVP21_2022 | 2022 | WVP21 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.818181818 | 0 | 0.909090909 | 0 | 0 | 0 | 0 |
| WVP22_2022 | 2022 | WVP22 | FSM08 | 0 | 0 | 0 | 0 | 47.05882353 | 0 | 0 | 0 | 0 | 4.464285714 | 0 | 2.678571429 | 0 | 0 | 0 | 0 |
| WVP23_2022 | 2022 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 37.03703704 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP24_2022 | 2022 | WVP24 | FSM08 | 0 | 0 | 6.451612903 | 0 | 0 | 0 | 0 | 0 | 0 | 166.6666667 | 0 | 33.33333333 | 0 | 0 | 0 | 0 |
| WVP25_2022 | 2022 | WVP25 | FSM08 | 0 | 0 | 0 | 0 | 8.333333333 | 0 | 0 | 0 | 0 | 90.90909091 | 0 | 0 | 27.27272727 | 0 | 0 | 0 |
| WVP27_2022 | 2022 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 2.631578947 | 0 | 0 | 0 | 0 | 500 | 250 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2022 | 2022 | WVP28 | FSM15 | 0 | 0 | 0 | 0 | 15 | 1.777777778 | 0 | 0 | 0 | 2.666666667 | 0 | 0 | 0 | 0 | 8.888888889 | 0 |
| WVP29_2022 | 2022 | WVP29 | FSM15 | 0 | 0 | 0 | 0 | 18.51851852 | 1.851851852 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24.69135802 | 0 |
| WVP30_2022 | 2022 | WVP30 | FSM10 | 0 | 0 | 0 | 0 | 44.11764706 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 |
| WVP32_2022 | 2022 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 50 | 350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP33_2022 | 2022 | WVP33 | FSM15 | 0.888888889 | 0 | 0 | 0 | 0 | 1.333333333 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.666666667 | 0 | 0 |
| WVP34_2022 | 2022 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 12.6984127 | 0 | 250 | 0 | 0 | 50 | 0 | 30 | 0 | 0 | 0 | 0 |
| WVP35_2022 | 2022 | WVP35 | FSM10 | 0 | 5.514705882 | 0 | 0 | 78.125 | 0.735294118 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5.514705882 |

| ID | year | station | Ecotype | *Chamaedaphne calyculata* | *Chamaenerion angustifolium* | *Cladonia rangiferina* | *Cladonia sp* | *Comarum palustre* | *Coptis trifolia* | *Cornus canadensis* | *Deschampsia cespitosa* | *Empetrum nigrum* | *Epilobium palustre* | *Equisetum palustre* | *Equisetum sylvaticum* | *Eriophorum angustifolium* | *Eriophorum gracile* | *Eriophorum russeolum* | *Eriophorum virginicum* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WVP02_2025 | 2025 | WVP02 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP03_2025 | 2025 | WVP03 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.12145749 | 0 | 0 | 0 | 0.809716599 | 0 | 0 | 0 | 0 |
| WVP04_2025 | 2025 | WVP04 | FSM10 | 0 | 0 | 0 | 0 | 0 | 3.597122302 | 0 | 14.38848921 | 0 | 0 | 0 | 7.194244604 | 0 | 0 | 0 | 0 |
| WVP05_2025 | 2025 | WVP05 | FSM15 | 0 | 0 | 0 | 0 | 0 | 1.396648045 | 0 | 1.396648045 | 0 | 0 | 0 | 4.189944134 | 0 | 0 | 0 | 0 |
| WVP06_2025 | 2025 | WVP06 | FSM12 | 0 | 0 | 0 | 0 | 0 | 2.283105023 | 0 | 2.283105023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP07_2025 | 2025 | WVP07 | FSM12 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP08_2025 | 2025 | WVP08 | FSM12 | 0 | 0 | 0 | 0 | 0 | 11.36363636 | 0 | 0 | 2.272727273 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP09_2025 | 2025 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 0 | 10.30927835 | 0 | 0 | 2.06185567 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP10_2025 | 2025 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP12_2025 | 2025 | WVP12 | FSM15 | 0 | 6.756756757 | 0 | 0 | 0 | 27.02702703 | 0 | 2.702702703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP13_2025 | 2025 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 1.886792453 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP14_2025 | 2025 | WVP14 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0.757575758 | 3.787878788 | 0 | 0.757575758 | 0 | 0 | 7.575757576 | 0 | 0 | 0 | 0 |
| WVP17_2025 | 2025 | WVP17 | FSM12 | 3.278688525 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.278688525 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2025 | 2025 | WVP18 | FSM08 | 0 | 4.166666667 | 0 | 0 | 0 | 1.666666667 | 1.666666667 | 1.666666667 | 0 | 0 | 0 | 8.333333333 | 0 | 0 | 0 | 0 |
| WVP19_2025 | 2025 | WVP19 | FSM12 | 0 | 0 | 0 | 0 | 0 | 4.761904762 | 0 | 14.28571429 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP20_2025 | 2025 | WVP20 | FSM08 | 0 | 0 | 0 | 0 | 0 | 1.923076923 | 0 | 14.42307692 | 0 | 0 | 0 | 4.807692308 | 0 | 0 | 0 | 0 |
| WVP21_2025 | 2025 | WVP21 | FSM12 | 0 | 0 | 0 | 0 | 0 | 7.352941176 | 0 | 36.76470588 | 0 | 0 | 0 | 0 | 0 | 2.941176471 | 14.70588235 | 0 |
| WVP22_2025 | 2025 | WVP22 | FSM08 | 0 | 0 | 0 | 0 | 0 | 6.086956522 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP23_2025 | 2025 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.777777778 | 0 | 13.88888889 | 0 |
| WVP24_2025 | 2025 | WVP24 | FSM08 | 2.105263158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP25_2025 | 2025 | WVP25 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5.434782609 | 0 |
| WVP27_2025 | 2025 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2025 | 2025 | WVP28 | FSM15 | 0 | 0.476190476 | 0 | 0 | 0 | 1.19047619 | 1.19047619 | 0.476190476 | 0 | 0 | 0 | 4.761904762 | 0 | 0 | 0 | 0 |
| WVP29_2025 | 2025 | WVP29 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.215053763 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP30_2025 | 2025 | WVP30 | FSM10 | 0 | 0 | 0 | 0.256081946 | 0 | 0 | 0 | 0 | 0.256081946 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP32_2025 | 2025 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.075268817 | 0 | 0 | 0 | 0 |
| WVP33_2025 | 2025 | WVP33 | FSM15 | 0 | 1.792114695 | 0 | 0 | 0 | 0.716845878 | 0 | 0 | 0 | 0 | 0.716845878 | 5.376344086 | 0 | 0 | 0 | 0 |
| WVP34_2025 | 2025 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP35_2025 | 2025 | WVP35 | FSM10 | 0 | 5 | 0 | 0 | 0 | 2 | 2 | 15 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| WVP02_2022 | 2022 | WVP02 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP03_2022 | 2022 | WVP03 | FSM15 | 0 | 0 | 0 | 0 | 0 | 1.265822785 | 0 | 8.860759494 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP04_2022 | 2022 | WVP04 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9.708737864 | 0 | 0 | 0 | 0 |
| WVP05_2022 | 2022 | WVP05 | FSM15 | 0 | 0 | 0 | 0 | 0 | 4.545454545 | 0 | 22.72727273 | 0 | 0 | 0 | 22.72727273 | 0 | 0 | 0 | 0 |
| WVP06_2022 | 2022 | WVP06 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP07_2022 | 2022 | WVP07 | FSM12 | 0 | 0 | 0 | 0 | 0 | 22.58064516 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP08_2022 | 2022 | WVP08 | FSM12 | 0 | 0 | 1.459854015 | 0 | 0 | 76.92307692 | 0 | 0 | 1.694915254 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP09_2022 | 2022 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 0 | 32.25806452 | 0 | 0 | 1.111111111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP10_2022 | 2022 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP12_2022 | 2022 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 0 | 27.77777778 | 0 | 388.8888889 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP13_2022 | 2022 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP14_2022 | 2022 | WVP14 | FSM08 | 0 | 0 | 0 | 0 | 0 | 1.25 | 3.75 | 1.25 | 4.651162791 | 0 | 0 | 12.5 | 0 | 0 | 0 | 0 |
| WVP17_2022 | 2022 | WVP17 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2022 | 2022 | WVP18 | FSM08 | 0 | 1.967213115 | 0 | 0 | 0 | 2.62295082 | 1.31147541 | 1.967213115 | 0 | 0 | 0 | 2.62295082 | 0 | 0 | 0 | 0 |
| WVP19_2022 | 2022 | WVP19 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0.227272727 | 0 | 4.545454545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP20_2022 | 2022 | WVP20 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11.42857143 | 0 | 0 | 0 | 0 |
| WVP21_2022 | 2022 | WVP21 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0.909090909 | 0 | 1.363636364 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.272727273 |
| WVP22_2022 | 2022 | WVP22 | FSM08 | 0 | 0 | 0 | 0 | 0 | 4.464285714 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP23_2022 | 2022 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9.259259259 | 0 |
| WVP24_2022 | 2022 | WVP24 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP25_2022 | 2022 | WVP25 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27.27272727 | 0 |
| WVP27_2022 | 2022 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2022 | 2022 | WVP28 | FSM15 | 0 | 0.888888889 | 0 | 0 | 0 | 1.777777778 | 4.444444444 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP29_2022 | 2022 | WVP29 | FSM15 | 0 | 1.851851852 | 0 | 0 | 0 | 0 | 0 | 3.086419753 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP30_2022 | 2022 | WVP30 | FSM10 | 0 | 0 | 0 | 0.373831776 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP32_2022 | 2022 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP33_2022 | 2022 | WVP33 | FSM15 | 0 | 0.444444444 | 0 | 0 | 0 | 0.222222222 | 0 | 0 | 0 | 0 | 0 | 2.222222222 | 0 | 0 | 0 | 0 |
| WVP34_2022 | 2022 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP35_2022 | 2022 | WVP35 | FSM10 | 0 | 0 | 0 | 0 | 0 | 1.102941176 | 0.367647059 | 1.838235294 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| ID | year | station | Ecotype | *Eurybia radula* | *Fragaria vesca subsp americana* | *Galium triflorum* | *Juncus effusus* | *Kalmia polifolia* | *Larix laricina* | *Linnaea borealis* | *Lonicera caerulea* | *Luzula parviflora* | *Spinulum annotinum* | *Lysimachia borealis* | *Maianthemum trifolium* | *Mitella nuda* | *Mnium sp* | *Mousse sp* | *Orthilia secunda* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WVP02_2025 | 2025 | WVP02 | FSM10 | 0 | 0 | 0 | 17.24137931 | 0 | 4.310344828 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP03_2025 | 2025 | WVP03 | FSM15 | 10.12145749 | 0 | 0 | 8.097165992 | 0.809716599 | 2.024291498 | 0 | 4.048582996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP04_2025 | 2025 | WVP04 | FSM10 | 14.38848921 | 0 | 0 | 14.38848921 | 1.438848921 | 7.194244604 | 0 | 3.597122302 | 0 | 0 | 0 | 1.438848921 | 0 | 0 | 0 | 0 |
| WVP05_2025 | 2025 | WVP05 | FSM15 | 1.396648045 | 0 | 0 | 1.396648045 | 0 | 0.279329609 | 0 | 2.793296089 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP06_2025 | 2025 | WVP06 | FSM12 | 0.913242009 | 0 | 0 | 0 | 4.566210046 | 0.913242009 | 0 | 0.913242009 | 0 | 0 | 0 | 0.913242009 | 0 | 0 | 0 | 0 |
| WVP07_2025 | 2025 | WVP07 | FSM12 | 0 | 0 | 0 | 10 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| WVP08_2025 | 2025 | WVP08 | FSM12 | 0 | 0 | 0 | 45.45454545 | 5.681818182 | 5.681818182 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP09_2025 | 2025 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 5.154639175 | 5.154639175 | 0 | 0 | 0 | 2.06185567 | 2.06185567 | 0 | 0 | 0 | 0 | 0 |
| WVP10_2025 | 2025 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP12_2025 | 2025 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.756756757 | 2.702702703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP13_2025 | 2025 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 4.716981132 | 4.716981132 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP14_2025 | 2025 | WVP14 | FSM08 | 0 | 0 | 0 | 0 | 0 | 1.893939394 | 0.757575758 | 0 | 0 | 0.757575758 | 0 | 0 | 0.757575758 | 0 | 0 | 0 |
| WVP17_2025 | 2025 | WVP17 | FSM12 | 0 | 0 | 0 | 0 | 40.98360656 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2025 | 2025 | WVP18 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 12.5 | 0 | 0 | 4.166666667 | 1.666666667 | 0 | 0 | 0 | 0 | 1.666666667 |
| WVP19_2025 | 2025 | WVP19 | FSM12 | 9.523809524 | 0 | 0 | 0 | 1.904761905 | 1.904761905 | 0 | 1.904761905 | 0 | 0 | 1.904761905 | 14.28571429 | 0 | 0 | 0 | 0 |
| WVP20_2025 | 2025 | WVP20 | FSM08 | 9.615384615 | 0 | 0 | 1.923076923 | 1.923076923 | 1.923076923 | 4.807692308 | 0 | 0 | 0 | 0 | 9.615384615 | 0 | 0 | 0 | 0 |
| WVP21_2025 | 2025 | WVP21 | FSM12 | 0 | 0 | 0 | 0 | 2.941176471 | 7.352941176 | 0 | 7.352941176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP22_2025 | 2025 | WVP22 | FSM08 | 0 | 0 | 0 | 13.04347826 | 3.47826087 | 3.47826087 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP23_2025 | 2025 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 27.77777778 | 13.88888889 | 0 | 0 | 0 | 0 | 0 | 69.44444444 | 0 | 0 | 0 | 0 |
| WVP24_2025 | 2025 | WVP24 | FSM08 | 0 | 0 | 0 | 0 | 10.52631579 | 5.263157895 | 0 | 0 | 0 | 0 | 0 | 2.105263158 | 0 | 0 | 5.263157895 | 0 |
| WVP25_2025 | 2025 | WVP25 | FSM08 | 0 | 0 | 0 | 43.47826087 | 21.73913043 | 5.434782609 | 0 | 0 | 0 | 0 | 0 | 10.86956522 | 0 | 0 | 0 | 0 |
| WVP27_2025 | 2025 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 0.980392157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2025 | 2025 | WVP28 | FSM15 | 0 | 0 | 0.476190476 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP29_2025 | 2025 | WVP29 | FSM15 | 0 | 0 | 0.215053763 | 0.215053763 | 0 | 0 | 0 | 1.075268817 | 0 | 0 | 0 | 0.215053763 | 0 | 0 | 0 | 0 |
| WVP30_2025 | 2025 | WVP30 | FSM10 | 0 | 0 | 0 | 0 | 1.920614597 | 1.280409731 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP32_2025 | 2025 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.075268817 | 0 | 0 |
| WVP33_2025 | 2025 | WVP33 | FSM15 | 0 | 1.792114695 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.716845878 | 0 | 0 | 0 |
| WVP34_2025 | 2025 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 20 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| WVP35_2025 | 2025 | WVP35 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| WVP02_2022 | 2022 | WVP02 | FSM10 | 0 | 0 | 0 | 4.587155963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP03_2022 | 2022 | WVP03 | FSM15 | 3.797468354 | 0 | 0 | 0 | 1.98019802 | 3.96039604 | 0 | 0.99009901 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP04_2022 | 2022 | WVP04 | FSM10 | 7.766990291 | 0 | 0 | 5.825242718 | 6.896551724 | 17.24137931 | 0 | 1.724137931 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP05_2022 | 2022 | WVP05 | FSM15 | 18.18181818 | 0 | 0 | 0 | 0 | 0 | 0 | 7.843137255 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP06_2022 | 2022 | WVP06 | FSM12 | 0 | 0 | 0 | 0 | 77.77777778 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP07_2022 | 2022 | WVP07 | FSM12 | 0 | 0 | 0 | 32.25806452 | 2.469135802 | 7.407407407 | 0 | 0 | 0 | 0 | 0 | 3.225806452 | 0 | 0 | 0 | 0 |
| WVP08_2022 | 2022 | WVP08 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP09_2022 | 2022 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 3.333333333 | 5.555555556 | 0 | 0 | 0 | 0 | 9.677419355 | 0 | 0 | 0 | 2.985074627 | 0 |
| WVP10_2022 | 2022 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 6.666666667 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP12_2022 | 2022 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP13_2022 | 2022 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 27.27272727 | 7.142857143 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP14_2022 | 2022 | WVP14 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.25 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP17_2022 | 2022 | WVP17 | FSM12 | 0 | 0 | 0 | 0 | 9.090909091 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2022 | 2022 | WVP18 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 3.278688525 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP19_2022 | 2022 | WVP19 | FSM12 | 6.818181818 | 0 | 0 | 0 | 8.333333333 | 0 | 0 | 20.83333333 | 0 | 0 | 0.454545455 | 6.818181818 | 0 | 0 | 0 | 0 |
| WVP20_2022 | 2022 | WVP20 | FSM08 | 0 | 0 | 0 | 11.42857143 | 6.557377049 | 0 | 0 | 9.836065574 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 |
| WVP21_2022 | 2022 | WVP21 | FSM12 | 0 | 0 | 0 | 0 | 3.305785124 | 8.26446281 | 0 | 8.26446281 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP22_2022 | 2022 | WVP22 | FSM08 | 0 | 0 | 0 | 8.928571429 | 23.52941176 | 23.52941176 | 0 | 0 | 0 | 0 | 0.892857143 | 0 | 0 | 0 | 0 | 0 |
| WVP23_2022 | 2022 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 13.33333333 | 0 | 0 | 0 | 0 | 0 | 0 | 18.51851852 | 0 | 0 | 0 | 0 |
| WVP24_2022 | 2022 | WVP24 | FSM08 | 0 | 0 | 0 | 0 | 6.451612903 | 24.19354839 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22.62443439 | 0 |
| WVP25_2022 | 2022 | WVP25 | FSM08 | 0 | 0 | 0 | 45.45454545 | 19.44444444 | 0 | 0 | 0 | 0 | 0 | 0 | 90.90909091 | 0 | 0 | 0 | 0 |
| WVP27_2022 | 2022 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 2.631578947 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 |
| WVP28_2022 | 2022 | WVP28 | FSM15 | 0 | 0 | 0.888888889 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP29_2022 | 2022 | WVP29 | FSM15 | 0 | 0 | 0.617283951 | 0 | 0 | 0 | 0 | 9.259259259 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP30_2022 | 2022 | WVP30 | FSM10 | 0 | 0 | 0 | 0 | 58.82352941 | 23.52941176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP32_2022 | 2022 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.816530427 | 0 | 0 |
| WVP33_2022 | 2022 | WVP33 | FSM15 | 0 | 2.222222222 | 0 | 0 | 0 | 0 | 0 | 2.5 | 0.444444444 | 0 | 0 | 0 | 1.333333333 | 0 | 0 | 0 |
| WVP34_2022 | 2022 | WVP34 | FSM10 | 0 | 0 | 0 | 10 | 6.349206349 | 9.523809524 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| WVP35_2022 | 2022 | WVP35 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.838235294 | 0 | 0 | 0 | 0 | 2.083333333 | 16.66666667 | 0 |

| ID | year | station | Ecotype | *Petasites frigidus var palmatus* | *Phleum alpinum* | *Picea mariana* | *Platanthera dilatata* | *Pleurozium schreberi* | *Polychidium sp* | *Polytrichum sp* | *Pyrola minor* | *Rhododendron groenlandicum* | *Rubus arcticus subsp acaulis* | *Rubus chamaemorus* | *Salix pedicellaris* | *Salix pellita* | *Scorpidium scorpioides* | *Solidago macrophylla* | *Solidago uliginosa* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WVP02_2025 | 2025 | WVP02 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 4.310344828 | 0 | 0 | 1.724137931 | 1.724137931 | 0 | 12.93103448 | 0 | 1.724137931 | 0 |
| WVP03_2025 | 2025 | WVP03 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0.809716599 | 0 | 0 | 0 | 0.809716599 | 0.809716599 | 0.809716599 | 4.048582996 | 0 | 0 | 0.4048583 |
| WVP04_2025 | 2025 | WVP04 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.79136691 | 0 | 1.438848921 | 0 | 0 | 0 |
| WVP05_2025 | 2025 | WVP05 | FSM15 | 2.793296089 | 0 | 0.558659218 | 0 | 0 | 0 | 1.396648045 | 0 | 0 | 1.396648045 | 0 | 0 | 5.586592179 | 0 | 0.558659218 | 0 |
| WVP06_2025 | 2025 | WVP06 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP07_2025 | 2025 | WVP07 | FSM12 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| WVP08_2025 | 2025 | WVP08 | FSM12 | 0 | 0 | 2.272727273 | 0 | 0 | 0 | 0 | 0 | 2.272727273 | 0 | 2.272727273 | 0 | 0 | 0 | 0 | 2.272727273 |
| WVP09_2025 | 2025 | WVP09 | FSM12 | 0 | 0 | 1.030927835 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP10_2025 | 2025 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP12_2025 | 2025 | WVP12 | FSM15 | 0 | 0 | 2.702702703 | 0 | 2.702702703 | 0 | 0 | 0 | 0 | 2.702702703 | 0 | 0 | 54.05405405 | 0 | 27.02702703 | 0 |
| WVP13_2025 | 2025 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 4.716981132 | 0 | 0 | 0 | 0 | 1.886792453 | 9.433962264 | 0 | 0 | 0 |
| WVP14_2025 | 2025 | WVP14 | FSM08 | 0.757575758 | 0 | 0.757575758 | 0 | 0 | 0 | 0 | 0.757575758 | 1.893939394 | 0.757575758 | 0.757575758 | 3.787878788 | 0 | 0 | 0.757575758 | 0 |
| WVP17_2025 | 2025 | WVP17 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2025 | 2025 | WVP18 | FSM08 | 4.166666667 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41.66666667 | 0 | 0 | 29.16666667 | 0 | 1.666666667 | 0 |
| WVP19_2025 | 2025 | WVP19 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.761904762 | 0 | 0 |
| WVP20_2025 | 2025 | WVP20 | FSM08 | 4.807692308 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.807692308 | 4.807692308 | 1.923076923 | 0 | 0 | 0 |
| WVP21_2025 | 2025 | WVP21 | FSM12 | 0 | 0 | 2.941176471 | 2.941176471 | 0 | 0 | 0 | 0 | 2.941176471 | 0 | 0 | 0 | 2.941176471 | 0 | 0 | 0 |
| WVP22_2025 | 2025 | WVP22 | FSM08 | 0 | 0 | 0.869565217 | 0 | 0 | 0 | 0 | 0 | 0 | 1.739130435 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP23_2025 | 2025 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP24_2025 | 2025 | WVP24 | FSM08 | 0 | 0 | 2.105263158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.105263158 | 0 | 0 | 0 | 0 | 0 |
| WVP25_2025 | 2025 | WVP25 | FSM08 | 0 | 0 | 2.173913043 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP27_2025 | 2025 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.980392157 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2025 | 2025 | WVP28 | FSM15 | 2.380952381 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.19047619 | 0.476190476 | 2.380952381 | 0 | 7.142857143 | 0 | 1.19047619 | 0 |
| WVP29_2025 | 2025 | WVP29 | FSM15 | 0.215053763 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.215053763 | 0.215053763 | 0 | 7.52688172 | 0 | 0 | 0 |
| WVP30_2025 | 2025 | WVP30 | FSM10 | 0 | 0 | 0 | 0 | 3.201024328 | 0 | 0.640204866 | 0 | 1.920614597 | 0 | 3.841229193 | 0 | 0 | 0 | 0 | 0 |
| WVP32_2025 | 2025 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.075268817 | 0 | 3.225806452 | 0 | 0 | 43.01075269 | 0 | 0 | 0 |
| WVP33_2025 | 2025 | WVP33 | FSM15 | 1.792114695 | 0 | 0 | 0 | 14.33691756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26.88172043 | 0 | 5.376344086 | 0 |
| WVP34_2025 | 2025 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 4 | 0 | 0 | 0 |
| WVP35_2025 | 2025 | WVP35 | FSM10 | 5 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 20 | 0 | 10 | 0 |
| WVP02_2022 | 2022 | WVP02 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 1.242236025 | 0 | 0 | 133.3333333 | 0 | 0 | 1333.333333 | 0 | 0 | 0 |
| WVP03_2022 | 2022 | WVP03 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 19.86754967 | 0 | 0 | 0 | 0.99009901 | 4.95049505 | 9.900990099 | 0 | 0 | 0 |
| WVP04_2022 | 2022 | WVP04 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 34.48275862 | 0 | 1.724137931 | 20.83333333 | 0 | 0 |
| WVP05_2022 | 2022 | WVP05 | FSM15 | 22.72727273 | 0 | 0 | 0 | 0 | 0 | 23.04147465 | 0 | 0 | 5.882352941 | 0 | 0 | 78.43137255 | 51.72413793 | 22.72727273 | 0 |
| WVP06_2022 | 2022 | WVP06 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.524886878 | 0 | 0 |
| WVP07_2022 | 2022 | WVP07 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.469135802 | 2.469135802 | 0 | 0 | 0 | 0 | 0 |
| WVP08_2022 | 2022 | WVP08 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.694915254 | 0 | 1.694915254 | 0 | 0 | 0 | 0 | 0 |
| WVP09_2022 | 2022 | WVP09 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP10_2022 | 2022 | WVP10 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP12_2022 | 2022 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 18.18181818 | 0 | 3.03030303 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111.1111111 | 0 |
| WVP13_2022 | 2022 | WVP13 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 18.18181818 | 0 | 0 | 0 | 0 | 0 | 272.7272727 | 0 | 0 | 0 |
| WVP14_2022 | 2022 | WVP14 | FSM08 | 6.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11.62790698 | 0 | 0 | 11.62790698 | 0 | 0 | 2.5 | 0 |
| WVP17_2022 | 2022 | WVP17 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP18_2022 | 2022 | WVP18 | FSM08 | 6.557377049 | 0 | 0 | 0 | 0 | 0 | 0 | 0.655737705 | 0 | 0.655737705 | 0 | 40 | 20 | 0 | 1.31147541 | 0 |
| WVP19_2022 | 2022 | WVP19 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP20_2022 | 2022 | WVP20 | FSM08 | 11.42857143 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.557377049 | 0 | 49.18032787 | 0 | 0 | 0 |
| WVP21_2022 | 2022 | WVP21 | FSM12 | 0 | 0 | 0 | 0.454545455 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP22_2022 | 2022 | WVP22 | FSM08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11.76470588 | 0 | 0 | 0 | 0 | 0 |
| WVP23_2022 | 2022 | WVP23 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP24_2022 | 2022 | WVP24 | FSM08 | 0 | 0 | 4.838709677 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.612903226 | 0 | 0 | 0 | 0 | 0 |
| WVP25_2022 | 2022 | WVP25 | FSM08 | 0 | 0 | 5.555555556 | 0 | 0 | 0 | 14.28571429 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WVP27_2022 | 2022 | WVP27 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.631578947 | 0 | 0 | 0 | 0 | 0 |
| WVP28_2022 | 2022 | WVP28 | FSM15 | 17.77777778 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 5 | 0 | 4.444444444 | 0 |
| WVP29_2022 | 2022 | WVP29 | FSM15 | 1.234567901 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.703703704 | 0 | 0 | 148.1481481 | 0 | 0 | 0 |
| WVP30_2022 | 2022 | WVP30 | FSM10 | 0 | 0 | 0 | 0 | 0.373831776 | 0 | 1.121495327 | 0 | 0 | 0 | 205.8823529 | 0 | 0 | 0 | 0 | 0 |
| WVP32_2022 | 2022 | WVP32 | FSM12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 200 | 0 | 0 | 0 |
| WVP33_2022 | 2022 | WVP33 | FSM15 | 2.222222222 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 475 | 0 | 6.666666667 | 0 |
| WVP34_2022 | 2022 | WVP34 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22.22222222 | 0 | 0 | 0 | 0 |
| WVP35_2022 | 2022 | WVP35 | FSM10 | 1.102941176 | 0.367647059 | 0 | 0 | 0.416666667 | 0 | 0 | 0 | 0 | 3.125 | 0 | 0 | 78.125 | 0 | 14.70588235 | 0 |

| ID | year | station | Ecotype | *Sphagnum sp* | *Tomentypnum nitens* | *Trichophorum cespitosum* | *Vaccinium angustifolium* | *Vaccinium oxycoccos* | *Vaccinium uliginosum* | *Vaccinium vitis-idaea* | *Veronica wormskjoldii* | *Viola macloskeyi* | Abondance Total | Richness | Shannon entropy | Shannon diversity | Gini Simpson entropy | Gini Simpson diversity | Pielou Evenness | Shannon Evenness | Simpson Evenness |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WVP02_2025 | 2025 | WVP02 | FSM10 | 68.96551724 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.310344828 | 156.0345 | 13 | 1.905526 | 6.722943 | 0.762309 | 4.20714 | 0.74291 | 0.517149 | 0.323626 |
| WVP03_2025 | 2025 | WVP03 | FSM15 | 36.43724696 | 0 | 2.024291498 | 0 | 0 | 0 | 0 | 0 | 0.4048583 | 87.44939 | 19 | 2.070714 | 7.930487 | 0.783951 | 4.628571 | 0.703263 | 0.417394 | 0.243609 |
| WVP04_2025 | 2025 | WVP04 | FSM10 | 57.55395683 | 0 | 3.597122302 | 0 | 0 | 0 | 0 | 0 | 0 | 155.3957 | 15 | 2.174673 | 8.799311 | 0.821845 | 5.61309 | 0.80304 | 0.586621 | 0.374206 |
| WVP05_2025 | 2025 | WVP05 | FSM15 | 16.75977654 | 2.793296089 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57.5419 | 18 | 2.30879 | 10.06224 | 0.851305 | 6.725198 | 0.798787 | 0.559014 | 0.373622 |
| WVP06_2025 | 2025 | WVP06 | FSM12 | 36.52968037 | 0 | 18.26484018 | 0 | 0 | 0 | 0 | 0 | 0 | 73.9726 | 12 | 1.594772 | 4.927205 | 0.685871 | 3.183406 | 0.641783 | 0.4106 | 0.265284 |
| WVP07_2025 | 2025 | WVP07 | FSM12 | 80 | 0 | 5 | 0 | 1 | 10 | 0 | 0 | 0 | 203 | 19 | 2.167867 | 8.739621 | 0.80531 | 5.136358 | 0.736258 | 0.45998 | 0.270335 |
| WVP08_2025 | 2025 | WVP08 | FSM12 | 56.81818182 | 2.272727273 | 45.45454545 | 0 | 2.272727273 | 5.681818182 | 0 | 0 | 0 | 206.8182 | 17 | 2.061176 | 7.855204 | 0.818621 | 5.513316 | 0.727505 | 0.462071 | 0.324313 |
| WVP09_2025 | 2025 | WVP09 | FSM12 | 51.54639175 | 2.06185567 | 20.6185567 | 0 | 2.06185567 | 2.06185567 | 0 | 0 | 0 | 154.6392 | 14 | 1.839703 | 6.294666 | 0.773156 | 4.408307 | 0.697106 | 0.449619 | 0.314879 |
| WVP10_2025 | 2025 | WVP10 | FSM12 | 74.07407407 | 0 | 18.51851852 | 0 | 9.259259259 | 0 | 0 | 0 | 0 | 231.4815 | 5 | 1.402559 | 4.065591 | 0.7296 | 3.698225 | 0.871459 | 0.813118 | 0.739645 |
| WVP12_2025 | 2025 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 0 | 2.702702703 | 0 | 0 | 0 | 356.7568 | 14 | 1.809634 | 6.108212 | 0.780791 | 4.561854 | 0.685712 | 0.436301 | 0.325847 |
| WVP13_2025 | 2025 | WVP13 | FSM12 | 75.47169811 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175.4717 | 12 | 1.8803 | 6.55547 | 0.768413 | 4.318023 | 0.756688 | 0.546289 | 0.359835 |
| WVP14_2025 | 2025 | WVP14 | FSM08 | 18.93939394 | 7.575757576 | 0 | 0 | 0 | 3.787878788 | 0.757575758 | 0 | 0 | 65.90909 | 23 | 2.536307 | 12.63294 | 0.872903 | 7.867983 | 0.808902 | 0.549258 | 0.342086 |
| WVP17_2025 | 2025 | WVP17 | FSM12 | 98.36065574 | 0 | 32.78688525 | 0 | 16.39344262 | 0 | 0 | 0 | 0 | 342.623 | 9 | 1.772835 | 5.887519 | 0.79435 | 4.862629 | 0.806852 | 0.654169 | 0.540292 |
| WVP18_2025 | 2025 | WVP18 | FSM08 | 66.66666667 | 4.166666667 | 0 | 0 | 0 | 0 | 0 | 0 | 4.166666667 | 205.8333 | 18 | 2.143118 | 8.525982 | 0.822174 | 5.623468 | 0.741468 | 0.473666 | 0.312415 |
| WVP19_2025 | 2025 | WVP19 | FSM12 | 28.57142857 | 0 | 28.57142857 | 0 | 1.904761905 | 4.761904762 | 0 | 0 | 0 | 130.4762 | 16 | 2.314923 | 10.12414 | 0.866855 | 7.510604 | 0.834932 | 0.632759 | 0.469413 |
| WVP20_2025 | 2025 | WVP20 | FSM08 | 28.84615385 | 0 | 19.23076923 | 0 | 0 | 0 | 0 | 0 | 0 | 131.7308 | 18 | 2.523997 | 12.47838 | 0.893495 | 9.389195 | 0.873243 | 0.693243 | 0.521622 |
| WVP21_2025 | 2025 | WVP21 | FSM12 | 102.9411765 | 0 | 29.41176471 | 0 | 2.941176471 | 2.941176471 | 0 | 0 | 2.941176471 | 264.7059 | 20 | 2.204447 | 9.065236 | 0.805864 | 5.151033 | 0.735862 | 0.453262 | 0.257552 |
| WVP22_2025 | 2025 | WVP22 | FSM08 | 82.60869565 | 0 | 0 | 0 | 0.869565217 | 2.608695652 | 0 | 0 | 0 | 128.6957 | 12 | 1.412 | 4.104154 | 0.568846 | 2.319356 | 0.56823 | 0.342013 | 0.19328 |
| WVP23_2025 | 2025 | WVP23 | FSM12 | 250 | 0 | 83.33333333 | 0 | 5.555555556 | 13.88888889 | 0 | 0 | 0 | 569.4444 | 11 | 1.715856 | 5.561433 | 0.745175 | 3.924269 | 0.715567 | 0.505585 | 0.356752 |
| WVP24_2025 | 2025 | WVP24 | FSM08 | 42.10526316 | 0 | 63.15789474 | 0 | 2.105263158 | 5.263157895 | 0 | 0 | 0 | 172.6316 | 15 | 1.94103 | 6.965922 | 0.783314 | 4.614962 | 0.716763 | 0.464395 | 0.307664 |
| WVP25_2025 | 2025 | WVP25 | FSM08 | 65.2173913 | 5.434782609 | 10.86956522 | 0 | 5.434782609 | 2.173913043 | 0 | 0 | 0 | 205.4348 | 15 | 2.166028 | 8.723562 | 0.829708 | 5.872267 | 0.799848 | 0.581571 | 0.391484 |
| WVP27_2025 | 2025 | WVP27 | FSM15 | 98.03921569 | 0 | 0 | 0 | 0.980392157 | 0 | 0 | 0 | 0 | 146.0784 | 7 | 0.955801 | 2.600752 | 0.498716 | 1.994878 | 0.491184 | 0.371536 | 0.284983 |
| WVP28_2025 | 2025 | WVP28 | FSM15 | 19.04761905 | 0 | 0 | 0 | 0 | 1.19047619 | 0 | 0 | 2.380952381 | 55.71429 | 20 | 2.314176 | 10.11658 | 0.837863 | 6.167605 | 0.772491 | 0.505829 | 0.30838 |
| WVP29_2025 | 2025 | WVP29 | FSM15 | 8.602150538 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.612903226 | 23.01075 | 15 | 1.774972 | 5.900115 | 0.741724 | 3.87183 | 0.655443 | 0.393341 | 0.258122 |
| WVP30_2025 | 2025 | WVP30 | FSM10 | 6.402048656 | 0.640204866 | 0 | 0 | 0.256081946 | 1.280409731 | 0 | 0 | 0 | 25.99232 | 15 | 2.308367 | 10.05799 | 0.872819 | 7.862812 | 0.852409 | 0.670533 | 0.524187 |
| WVP32_2025 | 2025 | WVP32 | FSM12 | 91.39784946 | 1.075268817 | 0 | 0 | 1.075268817 | 0 | 0 | 0 | 0 | 186.0215 | 10 | 1.332709 | 3.791301 | 0.662902 | 2.966498 | 0.578788 | 0.37913 | 0.29665 |
| WVP33_2025 | 2025 | WVP33 | FSM15 | 0 | 1.792114695 | 0 | 0.716845878 | 0 | 0 | 0 | 0 | 0.716845878 | 80.64516 | 17 | 2.201269 | 9.036478 | 0.83121 | 5.924517 | 0.776952 | 0.531558 | 0.348501 |
| WVP34_2025 | 2025 | WVP34 | FSM10 | 160 | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 348 | 14 | 1.842938 | 6.315064 | 0.740983 | 3.86075 | 0.698332 | 0.451076 | 0.275768 |
| WVP35_2025 | 2025 | WVP35 | FSM10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 160 | 21 | 2.570244 | 13.06902 | 0.896875 | 9.69697 | 0.844219 | 0.622334 | 0.46176 |
| WVP02_2022 | 2022 | WVP02 | FSM10 | 121.7391304 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22.93577982 | 1652.951 | 9 | 0.752999 | 2.123359 | 0.337006 | 1.508308 | 0.342705 | 0.235929 | 0.16759 |
| WVP03_2022 | 2022 | WVP03 | FSM15 | 629.1390728 | 19.86754967 | 8.860759494 | 0 | 0 | 0 | 0 | 0 | 0 | 730.2227 | 16 | 0.729328 | 2.073686 | 0.255442 | 1.343079 | 0.263049 | 0.129605 | 0.083942 |
| WVP04_2022 | 2022 | WVP04 | FSM10 | 396 | 0 | 0 | 0 | 0.172413793 | 0 | 0 | 0 | 0 | 551.6552 | 15 | 1.237234 | 3.446067 | 0.474731 | 1.903785 | 0.456873 | 0.229738 | 0.126919 |
| WVP05_2022 | 2022 | WVP05 | FSM15 | 122.8878648 | 7.680491551 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 479.7546 | 14 | 2.242542 | 9.41724 | 0.862093 | 7.251242 | 0.849751 | 0.67266 | 0.517946 |
| WVP06_2022 | 2022 | WVP06 | FSM12 | 100 | 0 | 166.6666667 | 0 | 1.111111111 | 0 | 0 | 0 | 0 | 483.4138 | 7 | 1.524263 | 4.591757 | 0.757419 | 4.122342 | 0.783316 | 0.655965 | 0.588906 |
| WVP07_2022 | 2022 | WVP07 | FSM12 | 3200 | 80 | 16.12903226 | 0 | 0 | 0 | 0 | 0 | 0 | 3439.419 | 14 | 0.397574 | 1.48821 | 0.133543 | 1.154125 | 0.15065 | 0.106301 | 0.082438 |
| WVP08_2022 | 2022 | WVP08 | FSM12 | 74.21875 | 1.459854015 | 76.92307692 | 0 | 0.169491525 | 1.694915254 | 1.694915254 | 0 | 0 | 335.3262 | 14 | 1.719651 | 5.582579 | 0.790769 | 4.7794 | 0.651616 | 0.398756 | 0.341386 |
| WVP09_2022 | 2022 | WVP09 | FSM12 | 79.60199005 | 0.995024876 | 48.38709677 | 0 | 0.555555556 | 3.333333333 | 0 | 0 | 0 | 344.066 | 15 | 2.102882 | 8.189736 | 0.851799 | 6.747595 | 0.77653 | 0.545982 | 0.44984 |
| WVP10_2022 | 2022 | WVP10 | FSM12 | 3200 | 80 | 20.40816327 | 0 | 0.222222222 | 0 | 0 | 0 | 0 | 3388.93 | 7 | 0.291965 | 1.339056 | 0.107485 | 1.120429 | 0.15004 | 0.191294 | 0.160061 |
| WVP12_2022 | 2022 | WVP12 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 648.9899 | 6 | 1.157303 | 3.181341 | 0.585241 | 2.411037 | 0.645903 | 0.530224 | 0.401839 |
| WVP13_2022 | 2022 | WVP13 | FSM12 | 545.4545455 | 42.42424242 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1134.632 | 9 | 1.531144 | 4.623463 | 0.695175 | 3.280575 | 0.696854 | 0.513718 | 0.364508 |
| WVP14_2022 | 2022 | WVP14 | FSM08 | 100 | 0 | 0 | 0 | 0 | 58.13953488 | 1.162790698 | 0 | 0 | 237.5872 | 16 | 1.862776 | 6.441595 | 0.750526 | 4.008427 | 0.671854 | 0.4026 | 0.250527 |
| WVP17_2022 | 2022 | WVP17 | FSM12 | 333.3333333 | 71.42857143 | 125 | 0 | 2.272727273 | 0 | 0 | 0 | 0 | 822.9437 | 8 | 1.555091 | 4.735519 | 0.737053 | 3.803048 | 0.747841 | 0.59194 | 0.475381 |
| WVP18_2022 | 2022 | WVP18 | FSM08 | 295.0819672 | 16.39344262 | 0 | 0 | 0 | 0 | 0 | 0 | 4.590163934 | 442.2951 | 17 | 1.312197 | 3.714326 | 0.534551 | 2.148462 | 0.463148 | 0.21849 | 0.12638 |
| WVP19_2022 | 2022 | WVP19 | FSM12 | 333.3333333 | 20.83333333 | 9.090909091 | 0 | 2.083333333 | 33.33333333 | 0 | 0 | 0 | 453.75 | 14 | 1.127644 | 3.08837 | 0.449183 | 1.815486 | 0.42729 | 0.220598 | 0.129678 |
| WVP20_2022 | 2022 | WVP20 | FSM08 | 172.4137931 | 86.20689655 | 85.71428571 | 0 | 1.639344262 | 0 | 0 | 0 | 0 | 505.0844 | 15 | 2.036312 | 7.6623 | 0.810767 | 5.284482 | 0.751948 | 0.51082 | 0.352299 |
| WVP21_2022 | 2022 | WVP21 | FSM12 | 1000 | 25 | 9.090909091 | 0 | 1.652892562 | 8.26446281 | 0 | 0 | 0.227272727 | 1076.798 | 15 | 0.406743 | 1.501918 | 0.136707 | 1.158356 | 0.150198 | 0.100128 | 0.077224 |
| WVP22_2022 | 2022 | WVP22 | FSM08 | 100 | 0 | 0 | 0 | 2.941176471 | 17.64705882 | 0 | 0 | 0 | 247.8992 | 12 | 1.847591 | 6.344519 | 0.773687 | 4.418662 | 0.743525 | 0.52871 | 0.368222 |
| WVP23_2022 | 2022 | WVP23 | FSM12 | 100 | 0 | 0 | 0 | 6.666666667 | 0 | 0 | 0 | 0 | 204.8148 | 7 | 1.533075 | 4.6324 | 0.703864 | 3.376829 | 0.787845 | 0.661771 | 0.482404 |
| WVP24_2022 | 2022 | WVP24 | FSM08 | 18.09954751 | 0 | 166.6666667 | 0 | 1.612903226 | 6.451612903 | 0 | 0 | 0 | 459.0036 | 12 | 1.624659 | 5.076686 | 0.723544 | 3.617211 | 0.653811 | 0.423057 | 0.301434 |
| WVP25_2022 | 2022 | WVP25 | FSM08 | 1142.857143 | 57.14285714 | 90.90909091 | 0 | 2.777777778 | 0 | 0 | 0 | 0 | 1623.124 | 13 | 1.238632 | 3.450891 | 0.491969 | 1.968382 | 0.482907 | 0.265453 | 0.151414 |
| WVP27_2022 | 2022 | WVP27 | FSM15 | 100 | 0 | 0 | 0 | 1.315789474 | 5.263157895 | 0 | 0 | 0 | 889.4737 | 9 | 1.118288 | 3.059612 | 0.591519 | 2.448094 | 0.508955 | 0.339957 | 0.27201 |
| WVP28_2022 | 2022 | WVP28 | FSM15 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.444444444 | 174 | 15 | 1.647325 | 5.19307 | 0.645286 | 2.819169 | 0.608307 | 0.346205 | 0.187945 |
| WVP29_2022 | 2022 | WVP29 | FSM15 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.086419753 | 316.0494 | 12 | 1.424694 | 4.156587 | 0.66935 | 3.024343 | 0.573339 | 0.346382 | 0.252029 |
| WVP30_2022 | 2022 | WVP30 | FSM10 | 35.51401869 | 0.373831776 | 0 | 0 | 1.470588235 | 0 | 2.941176471 | 0 | 0 | 474.5217 | 12 | 1.593663 | 4.921745 | 0.735217 | 3.776673 | 0.641337 | 0.410145 | 0.314723 |
| WVP32_2022 | 2022 | WVP32 | FSM12 | 77.20254314 | 2.72479564 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 696.7439 | 7 | 1.256765 | 3.514035 | 0.647347 | 2.835651 | 0.645849 | 0.502005 | 0.405093 |
| WVP33_2022 | 2022 | WVP33 | FSM15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.444444444 | 602.6111 | 15 | 0.725559 | 2.065886 | 0.350829 | 1.540427 | 0.267927 | 0.137726 | 0.102695 |
| WVP34_2022 | 2022 | WVP34 | FSM10 | 985.915493 | 140.8450704 | 0 | 0 | 1.587301587 | 3.174603175 | 0 | 0 | 0 | 1532.316 | 13 | 1.228633 | 3.416558 | 0.549076 | 2.21767 | 0.479009 | 0.262812 | 0.17059 |
| WVP35_2022 | 2022 | WVP35 | FSM10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.183823529 | 2.573529412 | 214.3873 | 18 | 1.6615 | 5.267208 | 0.721664 | 3.592784 | 0.57484 | 0.292623 | 0.199599 |

# APPENDIX E
# REFERENCES

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# APPENDIX F
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Scientific investigations or inventories make it possible to reduce, without necessarily eliminating, the uncertainty concerning the biophysical components, the environmental or geotechnical quality of a site. The interpretation, recommendations and conclusion refer only to the data, information and results of analyzes collected during the investigation or inventory mandate or from any other information made available before or during the mandate. The interpretation of the results refers to the laws, policies and regulations in force at the time of writing.

Natural and anthropological phenomena are often singular, variable and complex. The results obtained during the mandate are deemed representative of the biophysical components and characteristics present at the locations that were the subject of an investigation or an inventory, and this, for the parameters or components selected as defined in the mandate. These results do not constitute a guarantee that the biophysical components and characteristics are identical for the places that have not been the subject of investigation or inventory. These results are only valid for the period when the inventory or investigation is carried out. Any extrapolation from the results is made on an interpretative basis and should be considered as such.

Any change in the biophysical conditions of the site, its administration, activities or use may significantly alter the conclusions and information described in this document.

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with the necessary precautions. GEOS is of the opinion that the recommendations from this document should be considered valid with a reasonable margin of error for this type of study.

Unless otherwise indicated, GEOS has not cross-checked the assumptions, data and information from the client and other sources on which its opinion may be based and consequently does not assume their accuracy and declines all responsibility in their regard. Thus, GEOS cannot be held responsible for any error, erroneous or inaccurate data or remarks contained in the report resulting from errors, omissions, misrepresentations or fraudulent acts committed by service personnel, employees or the representatives of the owner of the site under study who transmitted information to GEOS.

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## Appendix VI – Dust Deposition Rate Calculations and SO2 and Dustfall Analysis Certificates

| 2025 dust deposition rates | | | | | | |
|---|---|---|---|---|---|---|
| Sample ID | start time | end time | # of days sampled | Area sampled ($m^2$) | dust weight (g) | **Dust deposition rate ($g/m^2/30d$)** |
| **R3** | 6/10/2025 12:00 | 2025/07/08 13:40 | 28.07 | 0.017672 | 0.023 | **1.391** |
| **R9** | 6/10/2025 12:00 | 2025/07/08 18:17 | 28.26 | 0.017672 | 0.023 | **1.382** |
| **R10** | 6/10/2025 12:00 | 2025/07/08 17:32 | 28.23 | 0.017672 | 0.021 | **1.263** |
| **R16** | 6/10/2025 12:00 | 2025/07/08 22:50 | 28.45 | 0.017672 | 0.062 | **3.699** |
| **R18** | 6/10/2025 12:00 | 2025/07/08 23:18 | 28.47 | 0.017672 | 0.035 | **2.087** |
| **R24** | 6/10/2025 12:00 | 2025/07/08 14:00 | 28.08 | 0.017672 | 0.0076 | **0.459** |
| **R40** | 6/10/2025 12:00 | 2025/07/08 16:32 | 28.19 | 0.017672 | 0.036 | **2.168** |
| **R3** | 2025/07/08 13:40 | 2025/08/13 10:10 | 35.85 | 0.017672 | 0.012 | **0.568** |
| **R9** | 2025/07/08 18:17 | 2025/08/13 10:44 | 35.69 | 0.017672 | 0.07 | **3.330** |
| **R10** | 2025/07/08 17:32 | 2025/08/13 10:28 | 35.71 | 0.017672 | 0.016 | **0.761** |
| **R16** | 2025/07/08 10:50 | 2025/08/13 23:17 | 36.52 | 0.017672 | 0.039 | **1.813** |
| **R18** | 2025/07/08 11:18 | 2025/08/13 12:00 | 36.03 | 0.017672 | 0.025 | **1.178** |
| **R36** | 7/4/2025 12:00 | 2025/08/04 12:07 | 31.00 | 0.017672 | 0.0069 | **0.378** |
| **R38** | 7/17/2025 12:00 | 2025/08/13 14:55 | 27.12 | 0.017672 | 0.01 | **0.626** |
| **R40** | 7/8/2025 12:00 | 2025/08/13 13:45 | 36.07 | 0.017672 | 0.14 | **6.588** |
| **R3** | 2025/08/13 10:10 | 2025/09/14 12:21 | 32.09 | 0.017672 | 0.024 | **1.270** |
| **R9** | 2025/08/13 10:44 | 2025/09/14 11:54 | 32.05 | 0.017672 | 0.02 | **1.059** |
| **R10** | 2025/08/13 10:28 | 2025/09/14 12:36 | 32.09 | 0.017672 | 0.021 | **1.111** |
| **R16** | 2025/08/13 23:17 | 2025/09/14 13:20 | 31.59 | 0.017672 | 0.019 | **1.021** |
| **R18** | 2025/08/13 12:00 | 2025/09/14 13:48 | 32.07 | 0.017672 | 0.015 | **0.794** |
| **R24** | 2025/08/13 14:01 | 2025/09/14 12:34 | 31.94 | 0.017672 | 0.0062 | **0.330** |
| **R36** | 2025/08/04 12:07 | 2025/09/09 13:54 | 36.07 | 0.017672 | 0.012 | **0.565** |
| **R38** | 2025/08/13 14:55 | 2025/09/14 15:24 | 32.02 | 0.017672 | 0.01 | **0.530** |
| **R40** | 2025/08/13 13:45 | 2025/09/14 17:16 | 32.15 | 0.017672 | 0.1 | **5.281** |
| **R3** | 2025/09/14 12:21 | 2025/10/16 09:07 | 31.87 | 0.017672 | 0.17 | **9.057** |
| **R9** | 2025/09/14 11:54 | 2025/10/16 08:49 | 31.87 | 0.017672 | 0.049 | **2.610** |
| **R10** | 2025/09/14 12:36 | 2025/10/16 09:20 | 31.86 | 0.017672 | 0.052 | **2.770** |
| **R16** | 2025/09/14 13:20 | 2025/10/16 09:57 | 31.86 | 0.017672 | 0.058 | **3.091** |
| **R18** | 2025/09/14 13:48 | 2025/10/16 10:24 | 31.86 | 0.017672 | 0.018 | **0.959** |
| **R38** | 2025/09/14 15:24 | 2025/10/16 22:08 | 32.28 | 0.017672 | 0.02 | **1.052** |
| **R40** | 2025/09/14 17:16 | 2025/10/16 01:30 | 31.34 | 0.017672 | 0.087 | **4.712** |

Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 180826

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/08/29**
Report #: R3096053
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C544000**
**Received: 2025/08/04, 12:45**

Sample Matrix: Impinger Solution
# Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Weight of particles | 7 | N/A | 2025/08/11 | STL SOP-00020 | MA100–Part. 1.0 R8 m |
| Extractable Metals in Impinger | 7 | 2025/08/27 | 2025/08/28 | STL SOP-00075 | MA.200–Mét. 1.2 R9 m |

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All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.



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Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 180826

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/08/29**
Report #: R3096053
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C544000**
**Received: 2025/08/04, 12:45**

Encryption Key




Bureau Veritas
29 Aug 2025 09:44:57

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

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Bureau Veritas Job #: C544000
Report Date: 2025/08/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JF

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OT3829 | OT3830 | OT3831 | OT3832 | OT3833 | OT3834 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/08 13:40 | 2025/07/08 18:17 | 2025/07/08 17:32 | 2025/07/08 22:50 | 2025/07/08 23:18 | 2025/07/08 14:00 | | |
| COC Number | | 180826 | 180826 | 180826 | 180826 | 180826 | 180826 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R24 | RDL | QC Batch |
| **METALS** | | | | | | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.4 | 0.5 | 0.4 | 0.4 | 0.5 | 0.4 | 0.1 | 2684795 |
| Impinger solution Silver (Ag) † | ug | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.5 | 2684795 |
| Impinger solution Arsenic (As) † | ug | <0.1 | 0.1 | 0.1 | 0.6 | 0.1 | <0.1 | 0.1 | 2684795 |
| Impinger solution Barium (Ba) † | ug | 1.99 | 4.45 | 5.43 | 8.33 | 2.09 | 4.18 | 0.05 | 2684795 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2684795 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2684795 |
| Impinger solution Chromium (Cr) † | ug | 0.3 | 0.4 | 0.7 | 1.0 | 0.3 | 0.4 | 0.1 | 2684795 |
| Impinger solution Copper (Cu) † | ug | 1.0 | 0.9 | 1.2 | 2.4 | 1.0 | 0.4 | 0.1 | 2684795 |
| Impinger solution Iron (Fe) † | ug | 68 | 759 | 561 | 6990 | 492 | 94 | 5 | 2684795 |
| Impinger solution Manganese (Mn) † | ug | 10.5 | 12.2 | 21.9 | 95.4 | 14.9 | 13.3 | 0.1 | 2684795 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2684795 |
| Impinger solution Nickel (Ni) † | ug | 0.2 | 1.0 | 0.3 | 0.6 | 0.4 | 0.2 | 0.1 | 2684795 |
| Impinger solution Lead (Pb) † | ug | 1.3 | 0.5 | 2.0 | 3.9 | <0.5 | 0.7 | 0.5 | 2684795 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 2684795 |
| Impinger solution Vanadium (V) † | ug | <0.2 | <0.2 | <0.2 | 0.6 | <0.2 | <0.2 | 0.2 | 2684795 |
| Impinger solution Zinc (Zn) † | ug | 12.1 | 21.1 | 27.0 | 23.0 | 8.4 | 3.9 | 0.1 | 2684795 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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Bureau Veritas Job #: C544000
Report Date: 2025/08/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JF

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OT3835 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/07/08 16:32 | | |
| COC Number | | 180826 | | |
| | Units | R40 | RDL | QC Batch |
| **METALS** | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.5 | 0.1 | 2684795 |
| Impinger solution Silver (Ag) † | ug | <0.5 | 0.5 | 2684795 |
| Impinger solution Arsenic (As) † | ug | 0.4 | 0.1 | 2684795 |
| Impinger solution Barium (Ba) † | ug | 16.4 | 0.05 | 2684795 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | 0.05 | 2684795 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | 0.05 | 2684795 |
| Impinger solution Chromium (Cr) † | ug | 0.6 | 0.1 | 2684795 |
| Impinger solution Copper (Cu) † | ug | 1.8 | 0.1 | 2684795 |
| Impinger solution Iron (Fe) † | ug | 2640 | 5 | 2684795 |
| Impinger solution Manganese (Mn) † | ug | 156 | 0.1 | 2684795 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | 0.05 | 2684795 |
| Impinger solution Nickel (Ni) † | ug | 0.7 | 0.1 | 2684795 |
| Impinger solution Lead (Pb) † | ug | <0.5 | 0.5 | 2684795 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | 0.1 | 2684795 |
| Impinger solution Vanadium (V) † | ug | 0.3 | 0.2 | 2684795 |
| Impinger solution Zinc (Zn) † | ug | 29.4 | 0.1 | 2684795 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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Bureau Veritas Job #: C544000
Report Date: 2025/08/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JF

## CONVENTIONAL PARAMETERS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OT3829 | OT3830 | OT3831 | OT3832 | OT3833 | OT3834 | OT3835 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/08 13:40 | 2025/07/08 18:17 | 2025/07/08 17:32 | 2025/07/08 22:50 | 2025/07/08 23:18 | 2025/07/08 14:00 | 2025/07/08 16:32 | | |
| COC Number | | 180826 | 180826 | 180826 | 180826 | 180826 | 180826 | 180826 | | |
| | **Units** | **R3** | **R9** | **R10** | **R16** | **R18** | **R24** | **R40** | **RDL** | **QC Batch** |
| **CONVENTIONALS** | | | | | | | | | | |
| Weight of particles | g | 0.023 | 0.023 | 0.021 | 0.062 | 0.035 | 0.0076 | 0.036 | 0.0010 | 2678646 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## GENERAL COMMENTS

**Results relate only to the items tested.**



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Bureau Veritas Job #: C544000
Report Date: 2025/08/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JF

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2678646 | SAB | Spiked Blank | Weight of particles | 2025/08/11 | | 99 | % |
| 2678646 | SAB | Method Blank | Weight of particles | 2025/08/11 | <0.0010 | | g |
| 2684795 | CYU | Spiked Blank | Impinger solution Antimony (Sb) | 2025/08/28 | | 105 | % |
| | | | Impinger solution Silver (Ag) | 2025/08/28 | | 103 | % |
| | | | Impinger solution Arsenic (As) | 2025/08/28 | | 99 | % |
| | | | Impinger solution Barium (Ba) | 2025/08/28 | | 100 | % |
| | | | Impinger solution Beryllium (Be) | 2025/08/28 | | 106 | % |
| | | | Impinger solution Cadmium (Cd) | 2025/08/28 | | 103 | % |
| | | | Impinger solution Chromium (Cr) | 2025/08/28 | | 97 | % |
| | | | Impinger solution Copper (Cu) | 2025/08/28 | | 100 | % |
| | | | Impinger solution Iron (Fe) | 2025/08/28 | | 96 | % |
| | | | Impinger solution Manganese (Mn) | 2025/08/28 | | 98 | % |
| | | | Impinger solution Mercury (Hg) | 2025/08/28 | | 108 | % |
| | | | Impinger solution Nickel (Ni) | 2025/08/28 | | 100 | % |
| | | | Impinger solution Lead (Pb) | 2025/08/28 | | 104 | % |
| | | | Impinger solution Thallium (Tl) | 2025/08/28 | | 90 | % |
| | | | Impinger solution Vanadium (V) | 2025/08/28 | | 98 | % |
| | | | Impinger solution Zinc (Zn) | 2025/08/28 | | 101 | % |
| 2684795 | CYU | Method Blank | Impinger solution Antimony (Sb) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Silver (Ag) | 2025/08/28 | <0.5 | | ug |
| | | | Impinger solution Arsenic (As) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Barium (Ba) | 2025/08/28 | <0.05 | | ug |
| | | | Impinger solution Beryllium (Be) | 2025/08/28 | <0.05 | | ug |
| | | | Impinger solution Cadmium (Cd) | 2025/08/28 | <0.05 | | ug |
| | | | Impinger solution Chromium (Cr) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Copper (Cu) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Iron (Fe) | 2025/08/28 | <5 | | ug |
| | | | Impinger solution Manganese (Mn) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Mercury (Hg) | 2025/08/28 | <0.05 | | ug |
| | | | Impinger solution Nickel (Ni) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Lead (Pb) | 2025/08/28 | <0.5 | | ug |
| | | | Impinger solution Thallium (Tl) | 2025/08/28 | <0.1 | | ug |
| | | | Impinger solution Vanadium (V) | 2025/08/28 | <0.2 | | ug |
| | | | Impinger solution Zinc (Zn) | 2025/08/28 | <0.1 | | ug |

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.





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Bureau Veritas Job #: C544000
Report Date: 2025/08/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: JF

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:




Nicholas Ethier, B.Sc. Chemist, Montreal, Scientific Specialist




Shu Yang, B.Sc. Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 184196

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/29**
Report #: R3117932
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C547803**
**Received: 2025/08/27, 09:10**

Sample Matrix: Impinger Solution
# Samples Received: 8

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Weight of particles | 8 | N/A | 2025/08/27 | STL SOP-00020 | MA100–Part. 1.0 R8 m |
| Extractable Metals in Impinger | 8 | 2025/09/24 | 2025/09/25 | STL SOP-00075 | MA.200–Mét. 1.2 R9 m |

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.



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Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 184196

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/09/29**
Report #: R3117932
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C547803**
**Received: 2025/08/27, 09:10**

Encryption Key




Bureau Veritas
29 Sep 2025 18:30:27

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2660

==========

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Bureau Veritas Job #: C547803
Report Date: 2025/09/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OV0953 | OV0954 | OV0955 | OV0956 | OV0957 | OV0958 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/13 10:10 | 2025/08/13 10:44 | 2025/08/13 10:28 | 2025/08/13 23:17 | 2025/08/13 12:00 | 2025/08/04 12:07 | | |
| COC Number | | 184196 | 184196 | 184196 | 184196 | 184196 | 184196 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R36 | RDL | QC Batch |
| **METALS** | | | | | | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.1 | 2696043 |
| Impinger solution Silver (Ag) † | ug | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.5 | 2696043 |
| Impinger solution Arsenic (As) † | ug | <0.1 | <0.1 | <0.1 | 0.2 | 0.2 | <0.1 | 0.1 | 2696043 |
| Impinger solution Barium (Ba) † | ug | 2.55 | 4.90 | 5.84 | 4.38 | 1.54 | 0.89 | 0.05 | 2696043 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2696043 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | 0.07 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2696043 |
| Impinger solution Chromium (Cr) † | ug | 0.5 | 0.3 | 1.1 | 0.6 | 1.7 | 0.2 | 0.1 | 2696043 |
| Impinger solution Copper (Cu) † | ug | 0.9 | 10.0 | 1.8 | 2.3 | 1.3 | 0.9 | 0.1 | 2696043 |
| Impinger solution Iron (Fe) † | ug | 21 | 353 | 233 | 1240 | 1180 | 82 | 5 | 2696043 |
| Impinger solution Manganese (Mn) † | ug | 8.8 | 52.8 | 31.0 | 82.8 | 45.2 | 12.2 | 0.1 | 2696043 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2696043 |
| Impinger solution Nickel (Ni) † | ug | 0.2 | 0.7 | 0.2 | 0.3 | 0.9 | 0.5 | 0.1 | 2696043 |
| Impinger solution Lead (Pb) † | ug | 4.1 | <0.5 | 3.9 | 3.2 | 2.3 | 1.0 | 0.5 | 2696043 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 2696043 |
| Impinger solution Vanadium (V) † | ug | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.2 | 2696043 |
| Impinger solution Zinc (Zn) † | ug | 11.9 | 29.2 | 23.4 | 32.0 | 19.0 | 59.0 | 0.1 | 2696043 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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Bureau Veritas Job #: C547803
Report Date: 2025/09/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OV0959 | OV0960 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/08/13 14:55 | 2025/08/13 13:45 | | |
| COC Number | | 184196 | 184196 | | |
| | Units | R38 | R40 | RDL | QC Batch |
| **METALS** | | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.4 | 0.7 | 0.1 | 2696043 |
| Impinger solution Silver (Ag) † | ug | <0.5 | <0.5 | 0.5 | 2696043 |
| Impinger solution Arsenic (As) † | ug | <0.1 | 2.6 | 0.1 | 2696043 |
| Impinger solution Barium (Ba) † | ug | 0.89 | 33.8 | 0.05 | 2696043 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | 0.09 | 0.05 | 2696043 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | 0.06 | 0.05 | 2696043 |
| Impinger solution Chromium (Cr) † | ug | 0.1 | 2.3 | 0.1 | 2696043 |
| Impinger solution Copper (Cu) † | ug | 1.0 | 3.9 | 0.1 | 2696043 |
| Impinger solution Iron (Fe) † | ug | 319 | 23200 | 5 | 2696043 |
| Impinger solution Manganese (Mn) † | ug | 26.1 | 472 | 0.1 | 2696043 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | <0.05 | 0.05 | 2696043 |
| Impinger solution Nickel (Ni) † | ug | 0.2 | 1.6 | 0.1 | 2696043 |
| Impinger solution Lead (Pb) † | ug | <0.5 | 1.4 | 0.5 | 2696043 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | <0.1 | 0.1 | 2696043 |
| Impinger solution Vanadium (V) † | ug | <0.2 | 2.5 | 0.2 | 2696043 |
| Impinger solution Zinc (Zn) † | ug | 8.4 | 59.4 | 0.1 | 2696043 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable


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Bureau Veritas Job #: C547803
Report Date: 2025/09/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## CONVENTIONAL PARAMETERS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OV0953 | OV0954 | OV0955 | OV0956 | OV0957 | OV0958 | OV0959 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/13 10:10 | 2025/08/13 10:44 | 2025/08/13 10:28 | 2025/08/13 23:17 | 2025/08/13 12:00 | 2025/08/04 12:07 | 2025/08/13 14:55 | | |
| COC Number | | 184196 | 184196 | 184196 | 184196 | 184196 | 184196 | 184196 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R36 | R38 | RDL | QC Batch |
| CONVENTIONALS | | | | | | | | | | |
| Weight of particles | g | 0.012 | 0.070 | 0.016 | 0.039 | 0.025 | 0.0069 | 0.010 | 0.0010 | 2684949 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

| Bureau Veritas ID | | OV0960 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/08/13 13:45 | | |
| COC Number | | 184196 | | |
| | Units | R40 | RDL | QC Batch |
| CONVENTIONALS | | | | |
| Weight of particles | g | 0.14 | 0.0010 | 2684949 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## GENERAL COMMENTS

**METALS (IMPINGER SOLUTION)**

Mercury : Analysis done past holding time. OV0953, OV0954, OV0955, OV0956, OV0957, OV0958, OV0959, OV0960

**Results relate only to the items tested.**



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Bureau Veritas Job #: C547803
Report Date: 2025/09/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2684949 | HET | Spiked Blank | Weight of particles | 2025/08/27 | | 101 | % |
| 2684949 | HET | Method Blank | Weight of particles | 2025/08/27 | <0.0010 | | g |
| 2696043 | NET | Spiked Blank | Impinger solution Antimony (Sb) | 2025/09/25 | | 106 | % |
| | | | Impinger solution Silver (Ag) | 2025/09/25 | | 96 | % |
| | | | Impinger solution Arsenic (As) | 2025/09/25 | | 93 | % |
| | | | Impinger solution Barium (Ba) | 2025/09/25 | | 98 | % |
| | | | Impinger solution Beryllium (Be) | 2025/09/25 | | 84 | % |
| | | | Impinger solution Cadmium (Cd) | 2025/09/25 | | 94 | % |
| | | | Impinger solution Chromium (Cr) | 2025/09/25 | | 94 | % |
| | | | Impinger solution Copper (Cu) | 2025/09/25 | | 95 | % |
| | | | Impinger solution Iron (Fe) | 2025/09/25 | | 101 | % |
| | | | Impinger solution Manganese (Mn) | 2025/09/25 | | 93 | % |
| | | | Impinger solution Mercury (Hg) | 2025/09/25 | | 98 | % |
| | | | Impinger solution Nickel (Ni) | 2025/09/25 | | 95 | % |
| | | | Impinger solution Lead (Pb) | 2025/09/25 | | 99 | % |
| | | | Impinger solution Thallium (Tl) | 2025/09/25 | | 88 | % |
| | | | Impinger solution Vanadium (V) | 2025/09/25 | | 95 | % |
| | | | Impinger solution Zinc (Zn) | 2025/09/25 | | 95 | % |
| 2696043 | NET | Method Blank | Impinger solution Antimony (Sb) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Silver (Ag) | 2025/09/25 | <0.5 | | ug |
| | | | Impinger solution Arsenic (As) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Barium (Ba) | 2025/09/25 | <0.05 | | ug |
| | | | Impinger solution Beryllium (Be) | 2025/09/25 | <0.05 | | ug |
| | | | Impinger solution Cadmium (Cd) | 2025/09/25 | <0.05 | | ug |
| | | | Impinger solution Chromium (Cr) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Copper (Cu) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Iron (Fe) | 2025/09/25 | <5 | | ug |
| | | | Impinger solution Manganese (Mn) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Mercury (Hg) | 2025/09/25 | <0.05 | | ug |
| | | | Impinger solution Nickel (Ni) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Lead (Pb) | 2025/09/25 | <0.5 | | ug |
| | | | Impinger solution Thallium (Tl) | 2025/09/25 | <0.1 | | ug |
| | | | Impinger solution Vanadium (V) | 2025/09/25 | <0.2 | | ug |
| | | | Impinger solution Zinc (Zn) | 2025/09/25 | <0.1 | | ug |

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.


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Bureau Veritas Job #: C547803
Report Date: 2025/09/29

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868
Sampler Initials: DH

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 187873

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124818
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C553113**
**Received: 2025/09/17, 08:30**

Sample Matrix: Impinger Solution
# Samples Received: 9

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Weight of particles | 9 | N/A | 2025/09/18 | STL SOP-00020 | MA100–Part. 1.0 R8 m |
| Extractable Metals in Impinger | 9 | 2025/10/11 | 2025/10/14 | STL SOP-00075 | MA.200–Mét. 1.2 R9 m |

**Remarks:**

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All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.



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Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 187873

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/10/24**
Report #: R3124818
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C553113**
**Received: 2025/09/17, 08:30**

Encryption Key




Bureau Veritas
24 Oct 2025 15:36:53

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2661

==========

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Bureau Veritas Job #: C553113
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OX6439 | OX6440 | OX6441 | OX6442 | OX6443 | OX6444 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/14 12:21 | 2025/09/14 11:54 | 2025/09/14 12:36 | 2025/09/14 13:20 | 2025/09/14 13:48 | 2025/09/14 12:34 | | |
| COC Number | | 187873 | 187873 | 187873 | 187873 | 187873 | 187873 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R24 | RDL | QC Batch |
| **METALS** | | | | | | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.9 | 1.0 | 0.7 | 1.0 | 0.7 | 0.4 | 0.1 | 2703135 |
| Impinger solution Silver (Ag) † | ug | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.5 | 2703135 |
| Impinger solution Arsenic (As) † | ug | 0.1 | <0.1 | 0.2 | 0.3 | 0.1 | 0.2 | 0.1 | 2703135 |
| Impinger solution Barium (Ba) † | ug | 2.50 | 2.73 | 3.97 | 3.27 | 1.06 | 4.25 | 0.05 | 2703135 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2703135 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2703135 |
| Impinger solution Chromium (Cr) † | ug | 0.4 | 0.3 | 0.5 | 3.9 | 0.5 | 0.5 | 0.1 | 2703135 |
| Impinger solution Copper (Cu) † | ug | 1.0 | 0.7 | 0.9 | 0.7 | 0.7 | 0.5 | 0.1 | 2703135 |
| Impinger solution Iron (Fe) † | ug | 76 | 304 | 263 | 432 | 574 | 14 | 5 | 2703135 |
| Impinger solution Manganese (Mn) † | ug | 12.5 | 8.4 | 22.2 | 55.5 | 25.2 | 14.8 | 0.1 | 2703135 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2703135 |
| Impinger solution Nickel (Ni) † | ug | 0.2 | 0.6 | 0.2 | 2.7 | 0.4 | 0.2 | 0.1 | 2703135 |
| Impinger solution Lead (Pb) † | ug | 2.6 | <0.5 | 1.8 | 1.2 | 0.9 | 1.3 | 0.5 | 2703135 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 2703135 |
| Impinger solution Vanadium (V) † | ug | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.2 | 2703135 |
| Impinger solution Zinc (Zn) † | ug | 23.5 | 20.6 | 20.0 | 32.7 | 19.7 | 7.3 | 0.1 | 2703135 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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Bureau Veritas Job #: C553113
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OX6445 | OX6446 | OX6447 | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/09 13:54 | 2025/09/14 15:24 | 2025/09/14 17:16 | | |
| COC Number | | 187873 | 187873 | 187873 | | |
| | Units | R36 | R38 | R40 | RDL | QC Batch |
| **METALS** | | | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.5 | 0.4 | 0.5 | 0.1 | 2703135 |
| Impinger solution Silver (Ag) † | ug | <0.5 | <0.5 | <0.5 | 0.5 | 2703135 |
| Impinger solution Arsenic (As) † | ug | <0.1 | 0.2 | 1.7 | 0.1 | 2703135 |
| Impinger solution Barium (Ba) † | ug | 0.92 | 0.59 | 11.6 | 0.05 | 2703135 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | <0.05 | 0.07 | 0.05 | 2703135 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | <0.05 | <0.05 | 0.05 | 2703135 |
| Impinger solution Chromium (Cr) † | ug | 0.1 | 0.2 | 1.5 | 0.1 | 2703135 |
| Impinger solution Copper (Cu) † | ug | 0.4 | 0.6 | 1.7 | 0.1 | 2703135 |
| Impinger solution Iron (Fe) † | ug | 107 | 239 | 13800 | 5 | 2703135 |
| Impinger solution Manganese (Mn) † | ug | 14.5 | 23.0 | 425 | 0.1 | 2703135 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | <0.05 | <0.05 | 0.05 | 2703135 |
| Impinger solution Nickel (Ni) † | ug | 0.2 | 0.3 | 1.1 | 0.1 | 2703135 |
| Impinger solution Lead (Pb) † | ug | <0.5 | <0.5 | 1.1 | 0.5 | 2703135 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | <0.1 | <0.1 | 0.1 | 2703135 |
| Impinger solution Vanadium (V) † | ug | <0.2 | <0.2 | 1.5 | 0.2 | 2703135 |
| Impinger solution Zinc (Zn) † | ug | 43.4 | 11.0 | 110 | 0.1 | 2703135 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable





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Bureau Veritas Job #: C553113
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## CONVENTIONAL PARAMETERS (IMPINGER SOLUTION)

| Bureau Veritas ID | | OX6439 | OX6440 | OX6441 | OX6442 | OX6443 | OX6444 | OX6445 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/14 12:21 | 2025/09/14 11:54 | 2025/09/14 12:36 | 2025/09/14 13:20 | 2025/09/14 13:48 | 2025/09/14 12:34 | 2025/09/09 13:54 | | |
| COC Number | | 187873 | 187873 | 187873 | 187873 | 187873 | 187873 | 187873 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R24 | R36 | RDL | QC Batch |
| CONVENTIONALS | | | | | | | | | | |
| Weight of particles | g | 0.024 | 0.020 | 0.021 | 0.019 | 0.015 | 0.0062 | 0.012 | 0.0010 | 2693689 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

| Bureau Veritas ID | | OX6446 | OX6447 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/09/14 15:24 | 2025/09/14 17:16 | | |
| COC Number | | 187873 | 187873 | | |
| | Units | R38 | R40 | RDL | QC Batch |
| CONVENTIONALS | | | | | |
| Weight of particles | g | 0.010 | 0.10 | 0.0010 | 2693689 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch


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## GENERAL COMMENTS

**METALS (IMPINGER SOLUTION)**

Mercure : Analyse effectuée avec délai de conservation dépassé OX6439, OX6440, OX6441, OX6442, OX6443, OX6444, OX6445, OX6446, OX6447.

**Results relate only to the items tested.**



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Bureau Veritas Job #: C553113
Report Date: 2025/10/24

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2693689 | AJM | Spiked Blank | Weight of particles | 2025/09/18 | | 99 | % |
| 2693689 | AJM | Method Blank | Weight of particles | 2025/09/18 | <0.0010 | | g |
| 2703135 | VPL | Spiked Blank | Impinger solution Antimony (Sb) | 2025/10/14 | | 105 | % |
| | | | Impinger solution Silver (Ag) | 2025/10/14 | | 102 | % |
| | | | Impinger solution Arsenic (As) | 2025/10/14 | | 98 | % |
| | | | Impinger solution Barium (Ba) | 2025/10/14 | | 99 | % |
| | | | Impinger solution Beryllium (Be) | 2025/10/14 | | 102 | % |
| | | | Impinger solution Cadmium (Cd) | 2025/10/14 | | 102 | % |
| | | | Impinger solution Chromium (Cr) | 2025/10/14 | | 99 | % |
| | | | Impinger solution Copper (Cu) | 2025/10/14 | | 99 | % |
| | | | Impinger solution Iron (Fe) | 2025/10/14 | | 102 | % |
| | | | Impinger solution Manganese (Mn) | 2025/10/14 | | 98 | % |
| | | | Impinger solution Mercury (Hg) | 2025/10/14 | | 99 | % |
| | | | Impinger solution Nickel (Ni) | 2025/10/14 | | 101 | % |
| | | | Impinger solution Lead (Pb) | 2025/10/14 | | 104 | % |
| | | | Impinger solution Thallium (Tl) | 2025/10/14 | | 86 | % |
| | | | Impinger solution Vanadium (V) | 2025/10/14 | | 99 | % |
| | | | Impinger solution Zinc (Zn) | 2025/10/14 | | 101 | % |
| 2703135 | VPL | Method Blank | Impinger solution Antimony (Sb) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Silver (Ag) | 2025/10/14 | <0.5 | | ug |
| | | | Impinger solution Arsenic (As) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Barium (Ba) | 2025/10/14 | <0.05 | | ug |
| | | | Impinger solution Beryllium (Be) | 2025/10/14 | <0.05 | | ug |
| | | | Impinger solution Cadmium (Cd) | 2025/10/14 | <0.05 | | ug |
| | | | Impinger solution Chromium (Cr) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Copper (Cu) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Iron (Fe) | 2025/10/14 | <5 | | ug |
| | | | Impinger solution Manganese (Mn) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Mercury (Hg) | 2025/10/14 | <0.05 | | ug |
| | | | Impinger solution Nickel (Ni) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Lead (Pb) | 2025/10/14 | <0.5 | | ug |
| | | | Impinger solution Thallium (Tl) | 2025/10/14 | <0.1 | | ug |
| | | | Impinger solution Vanadium (V) | 2025/10/14 | <0.2 | | ug |
| | | | Impinger solution Zinc (Zn) | 2025/10/14 | 0.2, RDL=0.1 | | ug |

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.





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## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 192185

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/11/25**
Report #: R3135426
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C561526**
**Received: 2025/10/22, 08:45**

Sample Matrix: Impinger Solution
# Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Weight of particles | 7 | N/A | 2025/10/23 | STL SOP-00020 | MA100–Part. 1.0 R8 m |
| Extractable Metals in Impinger | 7 | 2025/11/20 | 2025/11/22 | STL SOP-00075 | MA.200–Mét. 1.2 R9 m |

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
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Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the Québec Ministry of the Environment, unless stated otherwise.



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Your P.O. #: 3000001868
Your Project #: Howse Dustfall
Site Location: Howse
Your C.O.C. #: 192185

**Attention: TSMC Environnement**

TATA STEEL MINERALS CANADA
1000, RUE SHERBROOKE OUEST
BUREAU 1120
MONTRÉAL, QC
CANADA H3A 3G4

**Report Date: 2025/11/25**
Report #: R3135426
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C561526**
**Received: 2025/10/22, 08:45**

Encryption Key




Bureau Veritas
25 Nov 2025 12:11:59

Please direct all questions regarding this Certificate of Analysis to:
Cloe Christine, Project Manager
Email: cloe.christine@bureauveritas.com
Phone# (438)220-2661

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Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C561526
Report Date: 2025/11/25

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | PB7911 | PB7912 | PB7913 | PB7914 | PB7915 | PB7916 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/16 09:07 | 2025/10/16 08:49 | 2025/10/16 09:20 | 2025/10/16 09:57 | 2025/10/16 10:24 | 2025/10/16 22:08 | | |
| COC Number | | 192185 | 192185 | 192185 | 192185 | 192185 | 192185 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R38 | RDL | QC Batch |
| **METALS** | | | | | | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.9 | 0.5 | 1.0 | 0.9 | 0.5 | 0.5 | 0.1 | 2720150 |
| Impinger solution Silver (Ag) † | ug | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 0.5 | 2720150 |
| Impinger solution Arsenic (As) † | ug | <0.1 | 0.1 | <0.1 | 0.3 | 0.1 | 0.1 | 0.1 | 2720150 |
| Impinger solution Barium (Ba) † | ug | 4.48 | 4.37 | 3.74 | 4.42 | 0.72 | 2.11 | 0.05 | 2720150 |
| Impinger solution Beryllium (Be) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2720150 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2720150 |
| Impinger solution Chromium (Cr) † | ug | 0.2 | 0.3 | 0.4 | 0.6 | 0.6 | 0.2 | 0.1 | 2720150 |
| Impinger solution Copper (Cu) † | ug | 1.5 | 0.9 | 0.8 | 1.0 | 0.4 | 0.4 | 0.1 | 2720150 |
| Impinger solution Iron (Fe) † | ug | 66 | 434 | 135 | 2030 | 630 | 736 | 5 | 2720150 |
| Impinger solution Manganese (Mn) † | ug | 104 | 62.8 | 71.4 | 107 | 18.0 | 63.2 | 0.1 | 2720150 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.05 | 2720150 |
| Impinger solution Nickel (Ni) † | ug | 0.7 | 0.6 | 0.2 | 0.5 | 0.2 | 0.2 | 0.1 | 2720150 |
| Impinger solution Lead (Pb) † | ug | 2.6 (1) | 3.3 (1) | 1.6 (1) | 3.3 (1) | 1.1 (1) | <0.8 (1) | 0.8 | 2720150 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 2720150 |
| Impinger solution Vanadium (V) † | ug | <0.2 | <0.2 | <0.2 | 0.2 | <0.2 | <0.2 | 0.2 | 2720150 |
| Impinger solution Zinc (Zn) † | ug | 41.5 | 481 | 27.0 | 46.5 | 19.9 | 58.7 | 0.1 | 2720150 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) The detection limit was raised due to blank contamination.


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## METALS (IMPINGER SOLUTION)

| Bureau Veritas ID | | PB7917 | | |
|---|---|---|---|---|
| Sampling Date | | 2025/10/16 01:30 | | |
| COC Number | | 192185 | | |
| | Units | R40 | RDL | QC Batch |
| **METALS** | | | | |
| Impinger solution Antimony (Sb) † | ug | 0.5 | 0.1 | 2720150 |
| Impinger solution Silver (Ag) † | ug | <0.5 | 0.5 | 2720150 |
| Impinger solution Arsenic (As) † | ug | 1.7 | 0.1 | 2720150 |
| Impinger solution Barium (Ba) † | ug | 10.2 | 0.05 | 2720150 |
| Impinger solution Beryllium (Be) † | ug | 0.07 | 0.05 | 2720150 |
| Impinger solution Cadmium (Cd) † | ug | <0.05 | 0.05 | 2720150 |
| Impinger solution Chromium (Cr) † | ug | 1.6 | 0.1 | 2720150 |
| Impinger solution Copper (Cu) † | ug | 1.4 | 0.1 | 2720150 |
| Impinger solution Iron (Fe) † | ug | 15600 | 5 | 2720150 |
| Impinger solution Manganese (Mn) † | ug | 409 | 0.1 | 2720150 |
| Impinger solution Mercury (Hg) † | ug | <0.05 | 0.05 | 2720150 |
| Impinger solution Nickel (Ni) † | ug | 1.1 | 0.1 | 2720150 |
| Impinger solution Lead (Pb) † | ug | 0.9 (1) | 0.8 | 2720150 |
| Impinger solution Thallium (Tl) † | ug | <0.1 | 0.1 | 2720150 |
| Impinger solution Vanadium (V) † | ug | 1.7 | 0.2 | 2720150 |
| Impinger solution Zinc (Zn) † | ug | 57.9 | 0.1 | 2720150 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) The detection limit was raised due to blank contamination.


Bureau Veritas Bureau Veritas 889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-462-9926

Bureau Veritas Job #: C561526
Report Date: 2025/11/25

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## CONVENTIONAL PARAMETERS (IMPINGER SOLUTION)

| Bureau Veritas ID | | PB7911 | PB7912 | PB7913 | PB7914 | PB7915 | PB7916 | PB7917 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/10/16 09:07 | 2025/10/16 08:49 | 2025/10/16 09:20 | 2025/10/16 09:57 | 2025/10/16 10:24 | 2025/10/16 22:08 | 2025/10/16 01:30 | | |
| COC Number | | 192185 | 192185 | 192185 | 192185 | 192185 | 192185 | 192185 | | |
| | Units | R3 | R9 | R10 | R16 | R18 | R38 | R40 | RDL | QC Batch |
| CONVENTIONALS | | | | | | | | | | |
| Weight of particles | g | 0.17 | 0.049 | 0.052 | 0.058 | 0.018 | 0.020 | 0.087 | 0.0010 | 2707980 |

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



2025/11/25 12:11

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## GENERAL COMMENTS

**METALS (IMPINGER SOLUTION)**

Mercury : Analysis done past holding time.

**CONVENTIONAL PARAMETERS (IMPINGER SOLUTION)**

Please note that the results have been corrected for the surrogate recoveries.

**Results relate only to the items tested.**



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Bureau Veritas Job #: C561526
Report Date: 2025/11/25

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | Units |
|---|---|---|---|---|---|---|---|
| 2707980 | HET | Spiked Blank | Weight of particles | 2025/10/23 | | 99 | % |
| 2707980 | HET | Method Blank | Weight of particles | 2025/10/23 | <0.0010 | | g |
| 2720150 | ST5 | Spiked Blank | Impinger solution Antimony (Sb) | 2025/11/22 | | 96 | % |
| | | | Impinger solution Silver (Ag) | 2025/11/22 | | 97 | % |
| | | | Impinger solution Arsenic (As) | 2025/11/22 | | 95 | % |
| | | | Impinger solution Barium (Ba) | 2025/11/22 | | 103 | % |
| | | | Impinger solution Beryllium (Be) | 2025/11/22 | | 102 | % |
| | | | Impinger solution Cadmium (Cd) | 2025/11/22 | | 97 | % |
| | | | Impinger solution Chromium (Cr) | 2025/11/22 | | 102 | % |
| | | | Impinger solution Copper (Cu) | 2025/11/22 | | 100 | % |
| | | | Impinger solution Iron (Fe) | 2025/11/22 | | 102 | % |
| | | | Impinger solution Manganese (Mn) | 2025/11/22 | | 102 | % |
| | | | Impinger solution Mercury (Hg) | 2025/11/22 | | 108 | % |
| | | | Impinger solution Nickel (Ni) | 2025/11/22 | | 101 | % |
| | | | Impinger solution Lead (Pb) | 2025/11/22 | | 95 | % |
| | | | Impinger solution Thallium (Tl) | 2025/11/22 | | 88 | % |
| | | | Impinger solution Vanadium (V) | 2025/11/22 | | 105 | % |
| | | | Impinger solution Zinc (Zn) | 2025/11/22 | | 102 | % |
| 2720150 | ST5 | Method Blank | Impinger solution Antimony (Sb) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Silver (Ag) | 2025/11/22 | <0.5 | | ug |
| | | | Impinger solution Arsenic (As) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Barium (Ba) | 2025/11/22 | <0.05 | | ug |
| | | | Impinger solution Beryllium (Be) | 2025/11/22 | <0.05 | | ug |
| | | | Impinger solution Cadmium (Cd) | 2025/11/22 | <0.05 | | ug |
| | | | Impinger solution Chromium (Cr) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Copper (Cu) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Iron (Fe) | 2025/11/22 | <5 | | ug |
| | | | Impinger solution Manganese (Mn) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Mercury (Hg) | 2025/11/22 | <0.05 | | ug |
| | | | Impinger solution Nickel (Ni) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Lead (Pb) | 2025/11/22 | <0.8 | | ug |
| | | | Impinger solution Thallium (Tl) | 2025/11/22 | <0.1 | | ug |
| | | | Impinger solution Vanadium (V) | 2025/11/22 | <0.2 | | ug |
| | | | Impinger solution Zinc (Zn) | 2025/11/22 | 0.9, RDL=0.1 | | ug |

RDL = Reportable Detection Limit

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.





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Bureau Veritas Job #: C561526
Report Date: 2025/11/25

TATA STEEL MINERALS CANADA
Client Project #: Howse Dustfall
Site Location: Howse
Your P.O. #: 3000001868

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:




Shu Yang, B.Sc. Chemist, Montreal, Analyst II




Zineb El Ouali, M.Sc.,Chemist, Montreal, Analyst II

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Your P.O. #: 3000001868
Your Project #: HOWSE PASSIVE SO2
Site#: 2025/06/10-2025/07/08
Site Location: Timmins, Newfoundland

**Attention: TSMC Environment**

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

**Report Date: 2025/07/24**
Report #: R3682034
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: G502090**
**Received: 2025/07/16, 08:00**

Sample Matrix: Air
# Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| SO2 Passive Analysis | 7 | 2025/07/16 | 2025/07/24 | PTC SOP-00149 | Passive SO2 in ATM |

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
24 Jul 2025 12:27:14

Please direct all questions regarding this Certificate of Analysis to:
Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G502090
Report Date: 2025/07/24

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## RESULTS OF CHEMICAL ANALYSES OF AIR

| Bureau Veritas ID | | DOA429 | DOA430 | DOA431 | DOA432 | DOA433 | DOA436 | DOA437 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/06/10 09:50 | 2025/06/10 08:51 | 2025/06/10 10:30 | 2025/06/10 15:15 | 2025/06/10 15:56 | 2025/06/10 13:00 | 2025/06/10 17:30 | | |
| | UNITS | R3 | R9 | R10 | R16 | R18 | R24 | R40 | RDL | QC Batch |
| **Passive Monitoring** | | | | | | | | | | |
| Calculated SO2 | ppb | 0.1 | 0.2 | <0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | C008100 |
| RDL = Reportable Detection Limit | | | | | | | | | | |



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## GENERAL COMMENTS

**Results relate only to the items tested.**



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Bureau Veritas Job #: G502090
Report Date: 2025/07/24

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| C008100 | OZ | Spiked Blank | Calculated SO2 | | | 100 | % | 90 - 110 |
| C008100 | OZ | Method Blank | Calculated SO2 | | <0.1 | | ppb | |

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



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Bureau Veritas Job #: G502090
Report Date: 2025/07/24

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Laboratory Supervisor

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Your P.O. #: 3000001868
Your Project #: HOWSE PASSIVE SO2
Site#: 2025/07/04-2025/08/13
Site Location: Timmins, Newfoundland

**Attention: TSMC Environment**

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

**Report Date: 2025/09/09**
Report #: R3688017
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: G504966**
**Received: 2025/08/28, 09:30**

Sample Matrix: Air
# Samples Received: 9

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| SO2 Passive Analysis | 9 | 2025/09/02 | 2025/09/08 | PTC SOP-00149 | Passive SO2 in ATM |

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* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
09 Sep 2025 08:06:50

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G504966
Report Date: 2025/09/09

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## RESULTS OF CHEMICAL ANALYSES OF AIR

| Bureau Veritas ID | | DOL148 | DOL149 | DOL150 | DOL151 | DOL152 | DOL153 | DOL154 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/07/08 13:10 | 2025/07/08 18:17 | 2025/07/08 17:32 | 2025/07/08 10:50 | 2025/07/08 11:18 | 2025/07/08 14:00 | 2025/07/04 16:24 | | |
| | UNITS | R3 | R9 | R10 | R16 | R18 | R24 | R36 | RDL | QC Batch |
| **Passive Monitoring** | | | | | | | | | | |
| Calculated SO2 | ppb | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | C028061 |
| RDL = Reportable Detection Limit | | | | | | | | | | |

| Bureau Veritas ID | | DOO931 | DOO932 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/07/17 16:00 | 2025/07/08 16:52 | | |
| | UNITS | R38 | R40 | RDL | QC Batch |
| **Passive Monitoring** | | | | | |
| Calculated SO2 | ppb | <0.1 | <0.1 | 0.1 | C028061 |
| RDL = Reportable Detection Limit | | | | | |



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## GENERAL COMMENTS

**Results relate only to the items tested.**



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Bureau Veritas Job #: G504966
Report Date: 2025/09/09

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| C028061 | S1T | Spiked Blank | Calculated SO2 | | | 99 | % | 90 - 110 |
| C028061 | S1T | Method Blank | Calculated SO2 | | <0.1 | | ppb | |

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



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Bureau Veritas Job #: G504966
Report Date: 2025/09/09

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Laboratory Supervisor

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Your P.O. #: 3000001868
Your Project #: HOWSE PASSIVE SO2
Site#: 2025/08/13-2025/09/14
Site Location: Timmins, Newfoundland

**Attention: TSMC Environment**

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

**Report Date: 2025/09/26**
Report #: R3690818
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: G507975**
**Received: 2025/09/18, 08:00**

Sample Matrix: Air
# Samples Received: 9

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| SO2 Passive Analysis | 9 | 2025/09/19 | 2025/09/25 | PTC SOP-00149 | Passive SO2 in ATM |

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Encryption Key

Rowena Geron
Customer Service Associate
26 Sep 2025 09:10:55

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Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G507975
Report Date: 2025/09/26

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## RESULTS OF CHEMICAL ANALYSES OF AIR

| Bureau Veritas ID | | DOW804 | DOW805 | DOW806 | DOW807 | DOW808 | DOW809 | DOW810 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/08/13 10:10 | 2025/08/13 10:44 | 2025/08/13 10:28 | 2025/08/13 11:17 | 2025/08/13 12:00 | 2025/08/13 09:10 | 2025/08/04 12:07 | | |
| | UNITS | R3 | R9 | R10 | R16 | R18 | R24 | R36 | RDL | QC Batch |
| **Passive Monitoring** | | | | | | | | | | |
| Calculated SO2 | ppb | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | 0.1 | C036667 |
| RDL = Reportable Detection Limit | | | | | | | | | | |

| Bureau Veritas ID | | DOW812 | DOW813 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/08/13 14:55 | 2025/08/13 13:45 | | |
| | UNITS | R38 | R40 | RDL | QC Batch |
| **Passive Monitoring** | | | | | |
| Calculated SO2 | ppb | <0.1 | 0.2 | 0.1 | C036667 |
| RDL = Reportable Detection Limit | | | | | |



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G507975
Report Date: 2025/09/26

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## GENERAL COMMENTS

Sample DOW810 [R36] : Sample ID R36 has different monitoring dates.

**Results relate only to the items tested.**



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G507975
Report Date: 2025/09/26

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| C036667 | OZ | Spiked Blank | Calculated SO2 | | | 97 | % | 90 - 110 |
| C036667 | OZ | Method Blank | Calculated SO2 | | <0.1 | | ppb | |

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G507975
Report Date: 2025/09/26

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Laboratory Supervisor

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001868
Your Project #: HOWSE PASSIVE SO2
Site#: 2025/09/14-2025/10/16
Site Location: Timmins, Newfoundland

**Attention: TSMC Environment**

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

**Report Date: 2025/11/07**
Report #: R3697289
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: G511952**
**Received: 2025/10/30, 08:30**

Sample Matrix: Air
# Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| SO2 Passive Analysis | 7 | 2025/10/31 | 2025/10/31 | PTC SOP-00149 | Passive SO2 in ATM |

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Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
07 Nov 2025 08:27:51

Please direct all questions regarding this Certificate of Analysis to:
Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G511952
Report Date: 2025/11/07

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## RESULTS OF CHEMICAL ANALYSES OF AIR

| Bureau Veritas ID | | DPK768 | DPK769 | DPK770 | DPK771 | DPK772 | DPK776 | DPK777 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2025/09/14 12:21 | 2025/09/14 11:54 | 2025/09/14 12:36 | 2025/09/14 13:20 | 2025/09/14 13:48 | 2025/09/14 15:25 | 2025/09/14 17:16 | | |
| | UNITS | R3 | R9 | R10 | R16 | R18 | R38 | R40 | RDL | QC Batch |
| **Passive Monitoring** | | | | | | | | | | |
| Calculated SO2 | ppb | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | C054532 |
| RDL = Reportable Detection Limit | | | | | | | | | | |



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G511952
Report Date: 2025/11/07

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## GENERAL COMMENTS

**Results relate only to the items tested.**



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G511952
Report Date: 2025/11/07

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| C054532 | OZ | Spiked Blank | Calculated SO2 | 2025/10/31 | | 101 | % | 90 - 110 |
| C054532 | OZ | Method Blank | Calculated SO2 | 2025/10/31 | <0.1 | | ppb | |

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G511952
Report Date: 2025/11/07

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Laboratory Supervisor

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Branko Banjac, General Manager responsible for Alberta Petroleum laboratory operations.



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Your P.O. #: 3000001868
Your Project #: HOWSE PASSIVE SO2
Site#: 2025/10/16-2025/11/23
Site Location: Timmins, Newfoundland

**Attention: TSMC Environment**

Tata Steel Mineral Canada
1000, Sherbrooke St West
Montreal, QC
CANADA H3A 3G4

**Report Date: 2025/12/04**
Report #: R3709209
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: G514444**
**Received: 2025/11/26, 08:00**

Sample Matrix: Air
# Samples Received: 7

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|---|---|---|---|---|---|
| Comments are listed below | 5 | N/A | 2025/11/26 | | |
| SO2 Passive Analysis | 2 | 2025/11/28 | 2025/11/28 | PTC SOP-00149 | Passive SO2 in ATM |

This report shall not be reproduced except in full, without the written approval of the laboratory.
Results relate only to the items tested.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
04 Dec 2025 07:57:16

Please direct all questions regarding this Certificate of Analysis to:
Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

==========

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Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G514444
Report Date: 2025/12/04

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## RESULTS OF CHEMICAL ANALYSES OF AIR

| Bureau Veritas ID | | DPT854 | DPT855 | DPT856 | DPT857 | DPT858 | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | | | | | | |
| | UNITS | R3 | R9 | R10 | R16 | R18 | QC Batch |
| **Industrial** | | | | | | | |
| Comment | N/A | SEE REMARK | SEE REMARK | SEE REMARK | SEE REMARK | SEE REMARK | ONSITE |

| Bureau Veritas ID | | DPT862 | DPT863 | | |
|---|---|---|---|---|---|
| Sampling Date | | 2025/10/16 13:07 | 2025/10/16 14:50 | | |
| | UNITS | R38 | R40 | RDL | QC Batch |
| **Passive Monitoring** | | | | | |
| Calculated SO2 | ppb | <0.1 | 0.2 | 0.1 | C068059 |
| RDL = Reportable Detection Limit | | | | | |



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## GENERAL COMMENTS

**Results relate only to the items tested.**



Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G514444
Report Date: 2025/12/04

Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| ONSITE | | RPD | Comment | | NC | | % | N/A |
| C068059 | OZ | Spiked Blank | Calculated SO2 | 2025/11/28 | | 101 | % | 90 - 110 |
| C068059 | OZ | Method Blank | Calculated SO2 | 2025/11/28 | <0.1 | | ppb | |

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



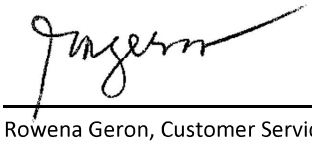
Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: G514444
Report Date: 2025/12/04

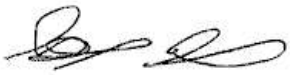
Tata Steel Mineral Canada
Client Project #: HOWSE PASSIVE SO2
Site Location: Timmins, Newfoundland
Your P.O. #: 3000001868

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Rowena Geron, Customer Service Associate



Steven Gloux, Laboratory Supervisor

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## Appendix VII – Aeroqual AQS1 Monitoring Datasheets

**Aeroqual AQS1 Datasheets – R3**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-05 to 2025-07-07 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: 12 hours | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-05 00:00:00 | 0,190 | 4,6 | 2,30 | 3,25 | 4,91 | 10,92 | 15,89 | 1,000 | 13,113 | 29,8 | 16,59 | 50,9 | | | |
| 2025-07-05 09:52:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 6/07/2025 1:52:19 p.m., current time 5/07/2025 1:52:19 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-05 09:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-05 09:56:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-05 09:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-05 12:00:00 | 0,169 | 0,9 | 5,35 | 6,09 | 7,21 | 10,37 | 12,98 | 1,000 | 13,042 | 35,3 | 23,94 | 35,3 | | | |
| 2025-07-05 15:40:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-05 16:22:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-05 16:25:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-05 17:16:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-05 17:18:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-05 17:21:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-05 17:22:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-06 00:00:00 | 0,261 | 0,3 | 13,68 | 15,04 | 16,17 | 17,52 | 18,62 | 1,000 | 12,958 | 29,9 | 16,15 | 78,2 | | | |
| 2025-07-06 12:00:00 | 0,177 | 0,3 | 0,92 | 1,34 | 1,74 | 2,26 | 2,68 | 1,000 | 12,805 | 25,9 | 10,88 | 75,2 | | | |
| 2025-07-06 17:18:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 7/07/2025 9:18:31 p.m., current time 6/07/2025 9:18:31 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-06 17:19:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-06 17:22:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-06 17:23:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-07 00:00:00 | 0,158 | 0,3 | 1,58 | 2,16 | 2,67 | 3,32 | 3,84 | 1,000 | 12,013 | 24,0 | 8,37 | 74,5 | | | |
| 2025-07-07 08:13:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-07 09:26:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 09:28:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 10:58:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 11:00:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 12:49:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 12:51:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 15:24:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 15:25:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 17:13:00 | | | | | | | | | | | | | System | Local instrument | System startup |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-08-04 to 2025-08-05 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-08-04 17:01:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-04 17:04:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-04 17:05:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-05 00:00:00 | 0,170 | 0,3 | 1,66 | 2,03 | 2,45 | 3,32 | 4,05 | 1,000 | 12,894 | 28,7 | 14,87 | 58,8 | | | |
| 2025-08-05 17:02:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 6/08/2025 9:02:00 p.m., current time 5/08/2025 9:02:00 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-05 17:06:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-05 17:07:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-05 17:22:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-05 17:58:00 | | | | | | | | | | | | | System | Local instrument | System startup |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2992) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 9/2/2025 to 9/3/2025 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025/09/02 00:00:00 | 0.211 | 0.6 | 10.99 | 13.02 | 15.16 | 18.89 | 21.95 | 1.000 | 13.032 | 27.1 | 13.15 | 79.4 | | | |
| 2025/09/02 13:48:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 3/09/2025 5:48:04 p.m., current time 2/09/2025 5:48:04 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/02 13:52:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025/09/02 13:53:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025/09/02 17:49:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/02 17:53:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025/09/02 17:54:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025/09/03 00:00:00 | 0.113 | 0.0 | 5.47 | 6.06 | 6.63 | 7.95 | 9.03 | 1.000 | 13.027 | 27.6 | 13.35 | 83.2 | | | |
| 2025/09/03 17:50:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 4/09/2025 9:50:45 p.m., current time 3/09/2025 9:50:45 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025/09/03 17:51:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/03 17:55:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

**Aeroqual AQS1 Datasheets – R9**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-08 to 2025-07-11 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-08 00:00:00 | 0,154 | 0,4 | 1,02 | 1,83 | 3,09 | 6,03 | 8,44 | 1,000 | 13,089 | 27,3 | 12,87 | 60,3 | | | |
| 2025-07-08 17:13:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 9/07/2025 9:13:49 p.m., current time 8/07/2025 9:13:49 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-08 17:14:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-08 17:18:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-08 17:41:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-08 18:14:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-08 18:17:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-08 18:18:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-09 00:00:00 | 0,167 | 1,0 | 7,13 | 12,16 | 19,70 | 36,94 | 51,14 | 1,000 | 13,050 | 28,7 | 14,85 | 58,1 | | | |
| 2025-07-09 18:14:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 10/07/2025 10:14:58 p.m., current time 9/07/2025 10:14:58 p.m. |
| 2025-07-09 18:15:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-09 18:19:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-09 18:20:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-10 00:00:00 | 0,167 | 1,2 | 10,50 | 14,13 | 18,95 | 28,01 | 35,47 | 1,000 | 12,881 | 31,1 | 18,42 | 50,3 | | | |
| 2025-07-10 18:16:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 11/07/2025 10:16:52 p.m., current time 10/07/2025 10:16:52 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-10 18:17:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-10 18:21:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-11 00:00:00 | 0,157 | 0,3 | 8,55 | 9,28 | 9,92 | 11,00 | 11,88 | 1,000 | 12,228 | 23,4 | 6,96 | 79,4 | | | |
| 2025-07-11 05:28:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 8/7/2025 to 8/8/2025 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025/08/07 00:00:00 | 0.180 | 0.3 | 5.11 | 5.55 | 5.92 | 6.57 | 7.11 | 1.000 | 12.730 | 31.8 | 19.05 | 53.6 | | | |
| 2025/08/07 16:11:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025/08/07 16:33:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/08/07 16:37:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025/08/08 00:00:00 | 0.206 | 0.7 | 12.60 | 15.09 | 18.27 | 25.26 | 31.02 | 1.000 | 13.161 | 32.4 | 20.83 | 52.9 | | | |
| 2025/08/08 16:34:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 9/08/2025 8:34:36 p.m., current time 8/08/2025 8:34:36 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025/08/08 16:35:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | System shutdown |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 9/6/2025 to 9/7/2025 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025/09/06 00:00:00 | 0.191 | 0.3 | 1.34 | 1.51 | 1.71 | 2.37 | 2.92 | 1.000 | 13.129 | 24.4 | 9.49 | 75.1 | | | |
| 2025/09/06 16:23:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/06 16:27:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025/09/07 00:00:00 | 0.201 | 0.3 | 0.83 | 0.98 | 1.17 | 1.96 | 2.60 | 1.000 | 13.001 | 25.3 | 10.75 | 73.5 | | | |
| 2025/09/07 16:24:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 8/09/2025 8:24:27 p.m., current time 7/09/2025 8:24:27 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025/09/07 16:25:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/07 16:28:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025/09/07 16:29:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

**Aeroqual AQS1 Datasheets – R10**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-07 to 2025-07-08 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: 12 hours | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-07 00:00:00 | 0,158 | 0,3 | 1,58 | 2,16 | 2,67 | 3,32 | 3,84 | 1,000 | 12,013 | 24,0 | 8,37 | 74,5 | | | |
| 2025-07-07 08:13:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-07 09:26:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 09:28:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 10:58:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 11:00:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 12:00:00 | 0,166 | 0,3 | 2,42 | 2,69 | 3,01 | 3,55 | 3,99 | 1,000 | 13,150 | 27,1 | 13,36 | 66,3 | | | |
| 2025-07-07 12:49:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 12:51:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 15:24:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 15:25:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-07 17:13:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-07 17:17:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-08 00:00:00 | 0,160 | 0,3 | 0,69 | 0,89 | 1,10 | 1,44 | 1,72 | 1,000 | 13,091 | 25,4 | 10,53 | 72,0 | | | |
| 2025-07-08 12:00:00 | 0,161 | 0,2 | 0,72 | 0,86 | 1,05 | 1,43 | 1,75 | 1,000 | 13,029 | 31,9 | 19,05 | 37,1 | | | |
| 2025-07-08 17:13:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 9/07/2025 9:13:49 p.m., current time 8/07/2025 9:13:49 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-08 17:14:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-08 17:18:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2992) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 9/4/2025 to 9/5/2025 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025/09/04 00:00:00 | 0.114 | 0.0 | 2.14 | 2.35 | 2.66 | 3.81 | 4.77 | 1.000 | 13.032 | 29.2 | 15.92 | 73.7 | | | |
| 2025/09/04 10:02:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025/09/04 10:23:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/04 10:27:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025/09/04 10:28:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025/09/05 00:00:00 | 0.119 | 0.1 | 4.83 | 5.37 | 6.10 | 7.98 | 9.52 | 1.000 | 12.994 | 29.1 | 16.09 | 79.0 | | | |
| 2025/09/05 10:24:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 6/09/2025 2:24:14 p.m., current time 5/09/2025 2:24:14 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025/09/05 10:25:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025/09/05 10:28:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025/09/05 10:29:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025/09/05 12:02:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |

**Aeroqual AQS1 Datasheets – R16**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-08-01 00:00:00 | 0,189 | 1,1 | 2,03 | 4,20 | 7,43 | 14,41 | 20,16 | 1,000 | 13,087 | 27,9 | 14,31 | 53,3 | | | |
| 2025-08-02 00:00:00 | 0,164 | 1,1 | 1,37 | 2,06 | 3,16 | 6,13 | 8,59 | 1,000 | 12,950 | 27,3 | 13,11 | 61,5 | | | |
| Aeroqual Connect · Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-31 to 2025-08-02 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 2025-08-01 08:33:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-01 08:36:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-01 08:37:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-01 09:06:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-01 10:37:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-01 10:41:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-02 10:37:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 3/08/2025 2:37:55 p.m., current time 2/08/2025 2:37:55 p.m. |
| 2025-08-02 10:38:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-02 10:42:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-08-02 10:43:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m³) | PM2.5 (µg/m³) | PM4 (µg/m³) | PM10 (µg/m³) | TSP (µg/m³) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-09-01 00:00:00 | 0,212 | 0,0 | 5,11 | 7,90 | 12,31 | 24,15 | 33,86 | 1,000 | 13,061 | 29,3 | 16,31 | 65,3 | | | |
| 2025-08-31 00:00:00 | 0,205 | 0,1 | 1,98 | 3,77 | 7,41 | 16,82 | 24,56 | 1,000 | 13,133 | 27,3 | 13,72 | 65,6 | | | |
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2992) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-08-31 to 2025-09-01 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 2025-08-31 12:56:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-31 13:00:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-01 12:57:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 2/09/2025 4:57:37 p.m., current time 1/09/2025 4:57:37 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-01 12:58:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-01 13:02:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

**Aeroqual AQS1 Datasheets – R18**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-04 to 2025-07-05 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: 12 hours | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-04 09:51:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-04 09:55:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-04 12:00:00 | 0,185 | 1,9 | 1,50 | 2,30 | 3,55 | 6,99 | 9,83 | 1,000 | 13,180 | 31,1 | 17,83 | 48,1 | | | |
| 2025-07-05 00:00:00 | 0,190 | 4,6 | 2,30 | 3,25 | 4,91 | 10,92 | 15,89 | 1,000 | 13,113 | 29,8 | 16,59 | 50,9 | | | |
| 2025-07-05 09:52:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 6/07/2025 1:52:19 p.m., current time 5/07/2025 1:52:19 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-05 09:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-05 09:56:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-05 09:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-05 12:00:00 | 0,175 | 1,8 | 4,52 | 6,00 | 8,50 | 16,02 | 22,22 | 1,000 | 13,073 | 36,6 | 25,73 | 27,8 | | | |
| 2025-07-05 15:40:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-05 16:22:00 | | | | | | | | | | | | | System | Local instrument | System startup |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-08-02 to 2025-08-04 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-08-02 00:00:00 | 0,165 | 2,9 | 1,82 | 2,49 | 3,53 | 6,39 | 8,75 | 1,000 | 13,033 | 27,4 | 13,05 | 64,7 | | | |
| 2025-08-02 10:37:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 3/08/2025 2:37:55 p.m., current time 2/08/2025 2:37:55 p.m. |
| 2025-08-02 10:38:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-02 10:42:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-08-02 10:43:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-02 14:15:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-02 15:18:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-02 15:21:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-02 15:22:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-03 00:00:00 | 0,203 | 1,1 | 7,83 | 8,60 | 9,27 | 10,59 | 11,68 | 1,000 | 13,051 | 25,4 | 10,84 | 84,4 | | | |
| 2025-08-03 15:18:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 4/08/2025 7:18:32 p.m., current time 3/08/2025 7:18:32 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-03 15:19:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-03 15:22:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-03 15:23:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-04 00:00:00 | 0,168 | 0,4 | 0,58 | 0,71 | 0,86 | 1,19 | 1,47 | 1,000 | 12,907 | 23,2 | 9,17 | 84,9 | | | |
| 2025-08-04 13:17:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2992) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-09-01 to 2025-09-02 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-09-01 00:00:00 | 0,217 | 0,1 | 7,38 | 9,72 | 13,26 | 22,70 | 30,46 | 1,000 | 13,098 | 30,7 | 18,10 | 58,8 | | | |
| 2025-09-01 12:57:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 2/09/2025 4:57:37 p.m., current time 1/09/2025 4:57:37 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-01 12:58:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-01 13:02:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-01 13:12:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-01 13:47:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-01 13:50:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-01 13:51:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-02 00:00:00 | 0,228 | 0,8 | 10,46 | 12,39 | 14,53 | 18,57 | 21,88 | 1,000 | 13,010 | 27,4 | 13,60 | 78,4 | | | |
| 2025-09-02 13:48:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 3/09/2025 5:48:04 p.m., current time 2/09/2025 5:48:04 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-02 13:52:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-02 13:53:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-02 17:49:00 | | | | | | | | | | | | | System | Local instrument | System startup |

**Aeroqual AQS1 Datasheets – R24**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2992) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-19 to 2025-07-20 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-19 00:00:00 | 0,199 | 0,0 | 0,10 | 0,20 | 0,31 | 0,55 | 0,76 | 0,999 | 13,062 | 24,4 | 11,94 | 64,6 | | | |
| 2025-07-19 17:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-19 17:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-20 00:00:00 | 0,184 | 0,0 | 0,08 | 0,17 | 0,30 | 0,61 | 0,87 | 1,000 | 12,954 | 22,4 | 7,80 | 77,6 | | | |
| 2025-07-20 17:54:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 21/07/2025 5:54:36 p.m., current time 20/07/2025 5:54:36 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-20 17:55:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-20 17:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2992) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-08-18 to 2025-08-19 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-08-18 00:00:00 | 0,184 | 0,1 | 0,37 | 0,51 | 0,65 | 0,91 | 1,09 | 1,000 | 13,108 | 22,4 | 8,48 | 67,2 | | | |
| 2025-08-18 16:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-18 16:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-19 00:00:00 | 0,193 | 0,0 | 0,63 | 0,88 | 1,13 | 1,51 | 1,83 | 1,000 | 13,002 | 25,0 | 10,74 | 69,7 | | | |
| 2025-08-19 16:54:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/08/2025 8:54:33 p.m., current time 19/08/2025 8:54:33 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-19 16:55:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-19 16:58:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-19 16:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-19 17:02:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2993) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-09-16 to 2025-09-19 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-09-16 00:00:00 | 0,221 | 0,3 | 1,99 | 2,34 | 2,97 | 5,62 | 7,82 | 1,000 | 13,184 | 27,7 | 13,97 | 76,1 | | | |
| 2025-09-16 15:44:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-16 15:47:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-16 15:48:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-17 00:00:00 | 0,230 | 0,3 | 5,17 | 5,95 | 7,12 | 10,56 | 13,40 | 1,000 | 13,103 | 30,0 | 16,94 | 85,3 | | | |
| 2025-09-17 15:45:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 18/09/2025 7:45:01 p.m., current time 17/09/2025 7:45:01 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-17 15:49:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-17 15:50:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-18 00:00:00 | 0,167 | 0,3 | 0,09 | 0,15 | 0,27 | 0,85 | 1,32 | 1,000 | 12,852 | 21,0 | 4,98 | 84,0 | | | |
| 2025-09-18 15:46:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/09/2025 7:46:39 p.m., current time 18/09/2025 7:46:39 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-18 15:47:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-18 15:51:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-19 00:00:00 | 0,150 | 0,4 | 0,20 | 0,33 | 0,48 | 0,80 | 1,06 | 1,000 | 12,101 | 16,7 | -1,14 | 79,7 | | | |
| 2025-09-19 05:25:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |

**Aeroqual AQS1 Datasheets – R36**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2991) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-04 to 2025-07-07 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-04 00:00:00 | 0,208 | 0,6 | 1,24 | 1,41 | 1,62 | 2,27 | 2,82 | 1,000 | 13,107 | 32,9 | 21,83 | 36,1 | | | |
| 2025-07-05 00:00:00 | 0,203 | 0,3 | 2,38 | 2,76 | 3,26 | 4,38 | 5,31 | 1,000 | 13,037 | 33,2 | 20,85 | 42,2 | | | |
| 2025-07-06 00:00:00 | 0,202 | 0,3 | 6,82 | 7,60 | 8,33 | 9,54 | 10,53 | 1,000 | 12,855 | 29,9 | 16,12 | 65,8 | | | |
| 2025-07-07 00:00:00 | 0,141 | 0,9 | 2,16 | 2,97 | 3,51 | 4,08 | 4,54 | 1,000 | 12,160 | 24,7 | 9,63 | 80,1 | | | |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect · Pine Evironmental Services LLC (AQS1 23042025-2994) | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | |
| 2025-07-04 to 2025-07-24 | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) |
| 2025-07-07 00:00:00 | 0,039 | 0,0 | 1,39 | 1,70 | 2,16 | 3,41 | 4,43 | 1,000 | 12,780 | 27,6 | 15,19 | 56,5 |
| 2025-07-08 00:00:00 | 0,019 | 0,1 | 1,03 | 1,26 | 1,59 | 2,37 | 3,01 | 1,000 | 12,677 | 27,3 | 13,12 | 60,1 |
| 2025-07-09 00:00:00 | 0,039 | 0,2 | 3,47 | 4,01 | 4,74 | 6,66 | 8,24 | 1,000 | 12,707 | 29,6 | 16,39 | 50,5 |
| 2025-07-10 00:00:00 | 0,069 | 0,1 | 10,16 | 11,12 | 12,01 | 13,55 | 14,81 | 1,000 | 13,015 | 33,9 | 22,02 | 39,1 |
| 2025-07-11 00:00:00 | 0,066 | 0,3 | 9,87 | 11,10 | 12,59 | 15,36 | 17,65 | 1,000 | 12,888 | 34,2 | 22,19 | 41,5 |
| 2025-07-12 00:00:00 | 0,050 | 0,8 | 4,49 | 5,01 | 5,68 | 6,82 | 7,76 | 1,000 | 13,026 | 32,8 | 20,37 | 62,6 |
| 2025-07-13 00:00:00 | 0,058 | 0,0 | 5,58 | 6,09 | 6,78 | 8,07 | 9,13 | 1,000 | 12,869 | 33,9 | 21,75 | 70,6 |
| 2025-07-14 00:00:00 | 0,343 | 0,1 | 56,12 | 60,31 | 63,31 | 66,22 | 68,59 | 1,000 | 12,789 | 34,2 | 22,45 | 62,6 |
| 2025-07-15 00:00:00 | 0,136 | 0,2 | 15,05 | 16,02 | 16,81 | 17,90 | 18,80 | 1,000 | 12,934 | 28,6 | 14,65 | 78,6 |
| 2025-07-16 00:00:00 | -0,003 | 0,1 | 1,52 | 2,37 | 3,14 | 4,16 | 4,99 | 1,000 | 12,716 | 27,0 | 12,54 | 51,7 |
| 2025-07-17 00:00:00 | 0,008 | 0,1 | 0,92 | 1,33 | 1,89 | 3,11 | 4,12 | 1,000 | 12,518 | 28,8 | 14,67 | 45,5 |
| 2025-07-18 00:00:00 | 0,007 | 0,0 | 1,25 | 1,68 | 2,30 | 3,60 | 4,68 | 1,000 | 12,380 | 28,6 | 14,28 | 56,6 |
| 2025-07-19 00:00:00 | 0,008 | 0,1 | 0,85 | 1,06 | 1,34 | 1,82 | 2,22 | 1,000 | 12,264 | 25,7 | 11,73 | 71,4 |
| 2025-07-20 00:00:00 | -0,007 | 0,4 | 0,16 | 0,27 | 0,44 | 0,79 | 1,08 | 1,000 | 12,868 | 24,7 | 9,53 | 72,1 |
| 2025-07-21 00:00:00 | 0,005 | 0,1 | 0,59 | 0,74 | 0,94 | 1,34 | 1,67 | 1,000 | 12,794 | 24,5 | 9,73 | 79,5 |
| 2025-07-22 00:00:00 | 0,030 | 0,1 | 1,43 | 1,70 | 2,00 | 2,52 | 2,96 | 1,000 | 12,931 | 26,6 | 12,45 | 74,1 |
| 2025-07-23 00:00:00 | 0,041 | 0,1 | 2,38 | 2,66 | 2,99 | 3,70 | 4,28 | 1,000 | 12,779 | 29,0 | 15,06 | 67,5 |
| 2025-07-24 00:00:00 | 0,095 | 0,3 | 9,95 | 11,46 | 13,18 | 17,19 | 20,49 | 1,000 | 11,887 | 27,2 | 15,39 | 83,1 |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2994) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-08-08 to 2025-08-28 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m³) | PM2.5 (µg/m³) | PM4 (µg/m³) | PM10 (µg/m³) | TSP (µg/m³) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-08-08 00:00:00 | 0,082 | 0,0 | 4,78 | 5,42 | 6,25 | 7,84 | 9,14 | 1,000 | 13,059 | 37,4 | 29,09 | 25,4 | | | |
| 2025-08-08 16:41:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-08 16:45:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-09 00:00:00 | 0,077 | 0,1 | 7,96 | 8,69 | 9,55 | 10,94 | 12,09 | 1,000 | 12,948 | 32,7 | 20,27 | 67,0 | | | |
| 2025-08-09 16:42:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 10/08/2025 4:42:33 p.m., current time 9/08/2025 4:42:33 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-09 16:43:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-09 16:47:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-10 00:00:00 | 0,093 | 0,2 | 9,24 | 9,75 | 10,29 | 11,19 | 11,93 | 1,000 | 12,799 | 32,4 | 19,74 | 83,3 | | | |
| 2025-08-10 16:44:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 11/08/2025 4:44:33 p.m., current time 10/08/2025 4:44:33 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-10 16:45:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-10 16:49:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-11 00:00:00 | 0,071 | 0,1 | 3,12 | 3,56 | 4,23 | 5,34 | 6,26 | 1,000 | 12,584 | 34,6 | 22,77 | 72,5 | | | |
| 2025-08-11 16:45:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 12/08/2025 4:45:47 p.m., current time 11/08/2025 4:45:47 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-11 16:46:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-11 16:50:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-11 17:25:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-11 17:27:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-11 17:31:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-11 17:32:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-12 00:00:00 | 0,097 | 0,1 | 2,52 | 3,02 | 3,84 | 5,35 | 6,60 | 1,000 | 12,927 | 35,2 | 23,46 | 63,5 | | | |
| 2025-08-12 17:28:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 13/08/2025 5:28:19 p.m., current time 12/08/2025 5:28:19 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-12 17:29:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-12 17:32:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-12 17:33:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-13 00:00:00 | 0,092 | 0,2 | 6,63 | 7,42 | 8,49 | 10,65 | 12,44 | 1,000 | 12,767 | 33,9 | 21,82 | 76,9 | | | |
| 2025-08-13 17:30:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 14/08/2025 5:30:07 p.m., current time 13/08/2025 5:30:07 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-13 17:31:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-13 17:34:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-13 17:35:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-14 00:00:00 | 0,058 | 0,1 | 1,56 | 1,77 | 2,06 | 2,87 | 3,55 | 1,000 | 12,533 | 26,2 | 13,15 | 79,1 | | | |
| 2025-08-14 08:57:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-14 20:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-14 20:56:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-14 20:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-15 00:00:00 | 0,006 | 0,0 | 0,40 | 0,96 | 1,80 | 3,55 | 4,99 | 1,000 | 12,896 | 25,0 | 10,17 | 66,9 | | | |
| 2025-08-15 20:53:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 16/08/2025 8:53:58 p.m., current time 15/08/2025 8:53:58 p.m. |
| 2025-08-15 20:54:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-15 20:58:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-15 20:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-16 00:00:00 | 0,045 | 0,2 | 2,49 | 3,33 | 4,55 | 7,13 | 9,25 | 1,000 | 12,764 | 28,2 | 14,46 | 73,3 | | | |
| 2025-08-16 20:55:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 17/08/2025 8:55:32 p.m., current time 16/08/2025 8:55:32 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-16 20:56:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-16 20:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-16 21:00:00 | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-17 00:00:00 | 0,012 | 0,1 | 0,36 | 0,49 | 0,70 | 1,16 | 1,53 | 1,000 | 12,146 | 24,1 | 10,44 | 74,8 | | | |
| 2025-08-17 13:14:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-17 14:30:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-17 14:34:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-17 14:41:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-17 16:35:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-17 16:39:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-08-17 16:40:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-17 16:46:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-17 17:07:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-17 17:11:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-08-17 17:12:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-18 00:00:00 | 0,001 | 0,0 | 0,33 | 0,52 | 0,72 | 1,00 | 1,24 | 1,000 | 12,795 | 23,1 | 7,89 | 67,2 | | | |
| 2025-08-18 17:08:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/08/2025 5:08:31 p.m., current time 18/08/2025 5:08:31 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-18 17:09:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-18 17:13:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-19 00:00:00 | 0,009 | 0,0 | 0,50 | 0,72 | 0,97 | 1,40 | 1,76 | 1,000 | 12,710 | 25,3 | 10,65 | 68,6 | | | |
| 2025-08-19 17:10:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/08/2025 5:10:15 p.m., current time 19/08/2025 5:10:15 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-19 17:11:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-19 17:14:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-19 17:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-19 19:06:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-19 19:09:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-19 19:12:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-19 19:13:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-20 00:00:00 | 0,022 | 1,0 | 0,69 | 1,23 | 2,04 | 3,88 | 5,40 | 1,000 | 12,687 | 27,7 | 13,40 | 66,2 | | | |
| 2025-08-20 19:10:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 21/08/2025 7:10:03 p.m., current time 20/08/2025 7:10:03 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-20 19:14:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-20 19:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-21 00:00:00 | 0,024 | 0,2 | 1,39 | 2,15 | 3,18 | 5,08 | 6,64 | 1,000 | 12,631 | 28,8 | 14,59 | 73,7 | | | |
| 2025-08-21 19:11:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 22/08/2025 7:11:12 p.m., current time 21/08/2025 7:11:12 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-21 19:12:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-21 19:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-21 19:16:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-21 20:08:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-21 20:12:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-21 20:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-21 20:16:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-22 00:00:00 | 0,024 | 0,1 | 0,78 | 1,04 | 1,38 | 2,22 | 2,91 | 1,000 | 12,918 | 28,1 | 13,71 | 79,9 | | | |
| 2025-08-22 20:12:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 23/08/2025 8:12:59 p.m., current time 22/08/2025 8:12:59 p.m. |
| 2025-08-22 20:13:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-22 20:17:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-22 20:18:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-23 00:00:00 | 0,023 | 0,1 | 0,66 | 1,12 | 1,79 | 3,29 | 4,53 | 1,000 | 12,751 | 28,0 | 13,73 | 61,0 | | | |
| 2025-08-23 20:14:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/08/2025 8:14:37 p.m., current time 23/08/2025 8:14:37 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-23 20:15:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-23 20:19:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-24 00:00:00 | 0,007 | 0,0 | 0,41 | 0,64 | 0,99 | 1,90 | 2,65 | 1,000 | 12,722 | 24,9 | 9,70 | 85,2 | | | |
| 2025-08-24 12:03:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-24 12:07:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-25 00:00:00 | 0,013 | 0,0 | 0,57 | 0,68 | 0,83 | 1,23 | 1,57 | 1,000 | 12,879 | 25,2 | 9,91 | 92,3 | | | |
| 2025-08-25 12:04:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 26/08/2025 12:04:35 p.m., current time 25/08/2025 12:04:35 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-25 12:05:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-25 12:09:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-26 00:00:00 | 0,026 | 0,1 | 0,56 | 0,68 | 0,86 | 2,22 | 3,35 | 1,000 | 12,805 | 26,5 | 11,71 | 90,6 | | | |
| 2025-08-26 10:23:00 | | | | | | | | | | | | | System | Local instrument | Sensor PM10 failed |
| | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5 failed |
| 2025-08-26 10:54:00 | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-26 11:00:00 | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-26 11:21:00 | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-26 12:06:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 27/08/2025 12:06:24 p.m., current time 26/08/2025 12:06:24 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-26 12:07:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-26 12:10:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-26 12:11:00 | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-26 16:54:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-08-26 16:57:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-26 17:01:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-26 17:02:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-27 00:00:00 | 0,013 | 0,0 | 0,72 | 0,93 | 1,18 | 1,74 | 2,20 | 1,000 | 12,890 | 25,4 | 10,78 | 80,3 | | | |
| 2025-08-27 16:58:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 28/08/2025 4:58:04 p.m., current time 27/08/2025 4:58:04 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-27 17:02:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-08-27 17:03:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-28 00:00:00 | 0,009 | 0,0 | 0,91 | 1,14 | 1,47 | 4,42 | 6,86 | 1,000 | 12,735 | 23,8 | 8,31 | 81,7 | | | |
| 2025-08-28 16:59:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 29/08/2025 4:59:25 p.m., current time 28/08/2025 4:59:25 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-28 17:00:00 | | | | | | | | | | | | | System | Local instrument | System startup |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2994) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-09-09 to 2025-09-24 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m³) | PM2.5 (µg/m³) | PM4 (µg/m³) | PM10 (µg/m³) | TSP (µg/m³) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-09-09 00:00:00 | 0,060 | 0,1 | 1,39 | 1,71 | 2,20 | 3,28 | 4,17 | 1,000 | 12,948 | 24,9 | 11,40 | 57,7 | | | |
| 2025-09-09 17:56:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-09 17:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-09 18:00:00 | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-10 00:00:00 | 0,062 | 0,0 | 0,94 | 1,17 | 1,50 | 2,44 | 3,21 | 1,000 | 12,776 | 26,0 | 11,38 | 82,2 | | | |
| 2025-09-10 17:56:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 11/09/2025 5:56:51 p.m., current time 10/09/2025 5:56:51 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-10 17:57:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-10 18:01:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-10 18:02:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-11 00:00:00 | 0,003 | 0,0 | 0,29 | 0,43 | 0,62 | 1,22 | 1,72 | 1,000 | 12,675 | 21,4 | 5,79 | 90,8 | | | |
| 2025-09-11 17:31:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-11 17:34:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-11 17:35:00 | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-12 00:00:00 | 0,012 | 0,0 | 0,28 | 0,42 | 0,65 | 1,45 | 2,11 | 1,000 | 12,876 | 23,0 | 7,38 | 70,7 | | | |
| 2025-09-12 17:32:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 13/09/2025 5:32:02 p.m., current time 12/09/2025 5:32:02 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-12 17:33:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-12 17:36:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-09-12 17:37:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-13 00:00:00 | 0,036 | 0,0 | 0,54 | 0,70 | 0,96 | 2,00 | 2,86 | 1,000 | 12,751 | 25,1 | 10,08 | 79,0 | | | |
| 2025-09-13 17:33:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 14/09/2025 5:33:59 p.m., current time 13/09/2025 5:33:59 p.m. |
| 2025-09-13 17:34:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-13 17:38:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-09-13 17:39:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-13 20:52:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-13 20:55:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-13 20:58:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage online |
| | | | | | | | | | | | | | System | Local instrument | Sensors AMB T, PDI ITEMP online |
| 2025-09-13 20:59:00 | | | | | | | | | | | | | System | Local instrument | Sensor Battery voltage offline |
| | | | | | | | | | | | | | System | Local instrument | Sensor Battery voltage online |
| | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-09-14 00:00:00 | 0,015 | 0,0 | 0,33 | 0,46 | 0,69 | 1,76 | 2,63 | 1,000 | 12,895 | 24,5 | 9,33 | 80,7 | | | |
| 2025-09-14 20:56:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 15/09/2025 8:56:07 p.m., current time 14/09/2025 8:56:07 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-14 20:57:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-14 21:00:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-09-14 21:01:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-15 00:00:00 | 0,029 | 0,0 | 0,50 | 0,72 | 1,06 | 2,42 | 3,54 | 1,000 | 12,806 | 24,7 | 9,78 | 80,7 | | | |
| 2025-09-15 16:39:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-15 16:41:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-15 16:45:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-15 16:46:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-16 00:00:00 | 0,035 | 0,1 | 1,51 | 1,76 | 2,22 | 4,05 | 5,57 | 1,000 | 12,839 | 25,2 | 10,37 | 82,7 | | | |
| 2025-09-16 16:42:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 17/09/2025 4:42:43 p.m., current time 16/09/2025 4:42:43 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-16 16:43:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-16 16:47:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-17 00:00:00 | 0,083 | 0,0 | 4,57 | 5,35 | 6,66 | 10,47 | 13,62 | 1,000 | 12,861 | 30,8 | 17,79 | 81,7 | | | |
| 2025-09-17 14:39:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-17 14:42:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-17 14:46:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-09-17 14:47:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-18 00:00:00 | 0,010 | 0,0 | 0,74 | 0,92 | 1,23 | 2,25 | 3,10 | 1,000 | 12,876 | 23,7 | 8,69 | 84,6 | | | |
| 2025-09-18 14:43:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/09/2025 2:43:32 p.m., current time 18/09/2025 2:43:32 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-18 14:44:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-18 14:48:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-19 00:00:00 | -0,018 | 0,0 | 0,15 | 0,25 | 0,39 | 0,77 | 1,08 | 1,000 | 12,646 | 19,1 | 2,52 | 70,2 | | | |
| 2025-09-19 14:44:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/09/2025 2:44:38 p.m., current time 19/09/2025 2:44:38 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-19 14:45:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-19 14:49:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-19 22:02:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-19 22:06:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-09-19 22:07:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-20 00:00:00 | -0,022 | 0,0 | 0,13 | 0,19 | 0,27 | 0,44 | 0,59 | 1,000 | 12,862 | 18,8 | 2,61 | 89,2 | | | |
| 2025-09-20 22:03:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 21/09/2025 10:03:49 p.m., current time 20/09/2025 10:03:49 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-20 22:04:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-20 22:08:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-20 22:09:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-21 00:00:00 | -0,009 | 0,1 | 0,53 | 0,86 | 1,17 | 1,73 | 2,20 | 1,000 | 12,420 | 21,1 | 5,55 | 67,6 | | | |
| 2025-09-21 22:05:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 22/09/2025 10:05:15 p.m., current time 21/09/2025 10:05:15 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-21 22:06:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-21 22:09:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-09-21 22:10:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-21 23:06:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-22 00:00:00 | -0,003 | 0,2 | 0,68 | 1,14 | 1,83 | 4,22 | 6,20 | 1,000 | 12,682 | 22,3 | 9,47 | 71,8 | | | |
| 2025-09-22 08:28:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-22 08:32:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-22 08:45:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-09-22 08:46:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-22 17:16:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-22 17:20:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-09-22 17:21:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-23 00:00:00 | 0,005 | 0,1 | 0,80 | 1,25 | 1,91 | 4,03 | 5,80 | 1,000 | 12,874 | 24,0 | 8,44 | 70,2 | | | |
| 2025-09-23 17:17:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/09/2025 5:17:47 p.m., current time 23/09/2025 5:17:47 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-23 17:18:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-23 17:22:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-24 00:00:00 | 0,000 | 0,8 | 0,96 | 1,46 | 2,17 | 4,03 | 5,65 | 1,000 | 12,704 | 22,3 | 6,68 | 71,1 | | | |
| 2025-09-24 16:45:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |

**Aeroqual AQS1 Datasheets – R38**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2991) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-17 to 2025-09-29 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m³) | PM2.5 (µg/m³) | PM4 (µg/m³) | PM10 (µg/m³) | TSP (µg/m³) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-17 00:00:00 | 0,159 | 0,3 | 1,10 | 1,78 | 2,81 | 5,55 | 7,82 | 1,000 | 13,145 | 31,7 | 19,39 | 31,4 | | | |
| 2025-07-17 20:07:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-17 20:11:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-18 00:00:00 | 0,155 | 0,4 | 2,76 | 5,51 | 9,24 | 16,14 | 21,82 | 1,000 | 13,064 | 29,3 | 14,94 | 58,1 | | | |
| 2025-07-18 20:08:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/07/2025 8:08:27 p.m., current time 18/07/2025 8:08:27 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-18 20:09:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-18 20:12:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-18 20:13:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-19 00:00:00 | 0,156 | 0,4 | 0,87 | 1,13 | 1,44 | 2,09 | 2,64 | 1,000 | 12,901 | 27,7 | 13,43 | 67,3 | | | |
| 2025-07-19 20:10:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/07/2025 8:10:15 p.m., current time 19/07/2025 8:10:15 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-19 20:11:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-19 20:14:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-19 20:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-19 23:13:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-19 23:16:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-19 23:17:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-20 00:00:00 | 0,140 | 0,6 | 0,17 | 0,32 | 0,51 | 0,96 | 1,33 | 1,000 | 13,052 | 25,9 | 11,21 | 67,6 | | | |
| 2025-07-20 23:13:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 21/07/2025 11:13:49 p.m., current time 20/07/2025 11:13:49 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-20 23:14:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-20 23:18:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-21 00:00:00 | 0,155 | 0,4 | 0,60 | 0,76 | 0,95 | 1,45 | 1,87 | 1,000 | 12,945 | 26,1 | 11,48 | 73,5 | | | |
| 2025-07-21 17:24:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-21 17:28:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-21 17:29:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-22 00:00:00 | 0,173 | 0,4 | 1,45 | 1,71 | 1,98 | 2,47 | 2,88 | 1,000 | 13,044 | 28,0 | 14,03 | 69,1 | | | |
| 2025-07-22 17:25:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 23/07/2025 5:25:54 p.m., current time 22/07/2025 5:25:54 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-22 17:26:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-22 17:30:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-22 17:31:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-23 00:00:00 | 0,171 | 0,4 | 2,24 | 2,54 | 2,88 | 3,69 | 4,35 | 1,000 | 12,881 | 29,6 | 15,94 | 67,2 | | | |
| 2025-07-23 17:27:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/07/2025 5:27:45 p.m., current time 23/07/2025 5:27:45 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-23 17:28:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-23 17:32:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-24 00:00:00 | 0,232 | 0,3 | 10,59 | 11,50 | 12,13 | 13,25 | 14,16 | 1,000 | 12,222 | 29,2 | 16,19 | 80,9 | | | |
| 2025-07-24 13:06:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-24 23:48:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-24 23:51:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-24 23:52:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-25 00:00:00 | 0,234 | 0,4 | 5,06 | 6,19 | 7,34 | 9,38 | 11,05 | 1,000 | 13,040 | 28,5 | 14,83 | 59,9 | | | |
| 2025-07-25 23:49:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 26/07/2025 11:49:02 p.m., current time 25/07/2025 11:49:02 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-25 23:50:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-25 23:53:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-25 23:54:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-26 00:00:00 | 0,176 | 0,4 | 1,05 | 1,35 | 1,69 | 2,44 | 3,05 | 1,000 | 12,865 | 28,4 | 14,46 | 64,2 | | | |
| 2025-07-26 23:50:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 27/07/2025 11:50:12 p.m., current time 26/07/2025 11:50:12 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-26 23:51:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-26 23:54:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-26 23:55:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-27 00:00:00 | 0,284 | 0,4 | 9,16 | 9,75 | 10,28 | 11,39 | 12,31 | 1,000 | 12,806 | 29,1 | 14,75 | 79,3 | | | |
| 2025-07-27 12:09:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-27 12:13:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-27 12:14:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-28 00:00:00 | 0,271 | 0,4 | 4,41 | 4,83 | 5,28 | 6,26 | 7,07 | 1,000 | 12,999 | 30,3 | 16,41 | 69,9 | | | |
| 2025-07-28 12:10:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 29/07/2025 12:10:48 p.m., current time 28/07/2025 12:10:48 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-28 12:11:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-28 12:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 00:00:00 | 0,228 | 0,4 | 4,92 | 5,42 | 5,93 | 7,24 | 8,31 | 1,000 | 12,894 | 28,6 | 14,38 | 74,5 | | | |
| 2025-07-29 12:12:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 30/07/2025 12:12:16 p.m., current time 29/07/2025 12:12:16 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-29 12:13:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-29 12:16:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-29 12:17:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 17:02:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-29 17:05:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-29 17:09:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-29 17:10:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-30 00:00:00 | 0,204 | 0,3 | 2,27 | 2,56 | 2,86 | 3,67 | 4,35 | 1,000 | 12,716 | 27,6 | 13,64 | 68,8 | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-07-30 17:06:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 31/07/2025 5:06:53 p.m., current time 30/07/2025 5:06:53 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-30 17:07:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-30 17:11:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-30 17:12:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-31 00:00:00 | 0,151 | 0,7 | 0,19 | 0,32 | 0,50 | 1,03 | 1,47 | 1,000 | 12,642 | 25,6 | 11,15 | 74,8 | | | | |
| 2025-07-31 16:42:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-31 16:45:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-31 16:46:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-01 00:00:00 | 0,150 | 1,5 | 0,85 | 1,10 | 1,39 | 2,04 | 2,57 | 1,000 | 12,952 | 27,8 | 13,94 | 61,7 | | | | |
| 2025-08-01 16:42:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 2/08/2025 4:42:58 p.m., current time 1/08/2025 4:42:58 p.m. |
| 2025-08-01 16:43:00 | | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-01 16:47:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-01 16:48:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-02 00:00:00 | 0,136 | 0,4 | 1,16 | 1,45 | 1,88 | 2,92 | 3,79 | 1,000 | 12,782 | 28,9 | 14,97 | 57,9 | | | | |
| 2025-08-02 16:44:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 3/08/2025 4:44:50 p.m., current time 2/08/2025 4:44:50 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-02 16:45:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-02 16:49:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-08-02 16:50:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-02 19:47:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-02 19:51:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-02 19:54:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-02 19:55:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-03 00:00:00 | 0,177 | 0,5 | 7,36 | 8,04 | 8,56 | 9,47 | 10,22 | 1,000 | 12,417 | 28,5 | 14,55 | 73,8 | | | | |
| 2025-08-03 19:52:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 4/08/2025 7:52:05 p.m., current time 3/08/2025 7:52:05 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-03 19:56:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-03 19:57:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-03 20:35:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-03 20:39:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-03 20:42:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-03 20:43:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-04 00:00:00 | 0,143 | 0,3 | 0,93 | 1,11 | 1,27 | 1,62 | 1,90 | 1,000 | 13,022 | 26,5 | 12,40 | 73,9 | | | | |
| 2025-08-04 20:39:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 5/08/2025 8:39:45 p.m., current time 4/08/2025 8:39:45 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-04 20:40:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-04 20:44:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-05 00:00:00 | 0,144 | 1,0 | 1,90 | 2,46 | 3,09 | 4,49 | 5,65 | 1,000 | 12,947 | 29,7 | 16,69 | 56,6 | | | | |
| 2025-08-05 18:04:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-05 18:08:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-05 18:11:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-05 18:12:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-06 00:00:00 | 0,141 | 1,4 | 2,00 | 2,86 | 4,06 | 7,25 | 9,89 | 1,000 | 13,051 | 30,1 | 16,81 | 54,7 | | | | |
| 2025-08-06 18:08:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 7/08/2025 6:08:10 p.m., current time 6/08/2025 6:08:10 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-06 18:09:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-06 18:12:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-06 18:13:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-07 00:00:00 | 0,172 | 0,6 | 4,45 | 5,36 | 6,59 | 9,71 | 12,29 | 1,000 | 12,922 | 34,4 | 22,92 | 42,1 | | | | |
| 2025-08-07 18:09:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 8/08/2025 6:09:46 p.m., current time 7/08/2025 6:09:46 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-07 18:10:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-07 18:14:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-08 00:00:00 | 0,195 | 0,3 | 11,00 | 12,31 | 13,80 | 17,23 | 20,07 | 1,000 | 12,537 | 34,6 | 23,11 | 44,6 | | | | |
| 2025-08-08 17:51:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-16 00:00:00 | 0,224 | 0,4 | 4,46 | 5,17 | 5,94 | 7,27 | 8,38 | 1,000 | 13,094 | 30,5 | 18,35 | 77,6 | | | | |
| 2025-08-16 17:31:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-16 17:35:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-17 00:00:00 | 0,149 | 0,3 | 0,33 | 0,46 | 0,64 | 1,11 | 1,50 | 1,000 | 12,971 | 26,6 | 12,10 | 68,8 | | | | |
| 2025-08-17 17:32:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 18/08/2025 5:32:08 p.m., current time 17/08/2025 5:32:08 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-17 17:33:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-17 17:36:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-17 17:37:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-18 00:00:00 | 0,139 | 1,1 | 0,41 | 0,73 | 1,16 | 2,43 | 3,49 | 1,000 | 12,855 | 24,5 | 9,60 | 62,6 | | | | |
| 2025-08-18 17:33:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/08/2025 5:33:24 p.m., current time 18/08/2025 5:33:24 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-18 17:34:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-18 17:37:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-18 17:38:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-18 17:46:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-18 17:48:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-18 17:52:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-19 00:00:00 | 0,143 | 1,7 | 0,69 | 1,23 | 2,08 | 4,74 | 6,94 | 1,000 | 13,023 | 26,6 | 12,53 | 63,6 | | | | |
| 2025-08-19 17:49:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/08/2025 5:49:35 p.m., current time 19/08/2025 5:49:35 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-19 17:50:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-19 17:54:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-08-19 19:48:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-19 19:51:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-19 19:54:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-19 19:55:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-20 00:00:00 | 0,149 | 0,9 | 0,99 | 2,32 | 4,57 | 10,86 | 16,10 | 1,000 | 12,857 | 28,4 | 13,89 | 65,7 | | | | |
| 2025-08-20 19:51:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 21/08/2025 7:51:39 p.m., current time 20/08/2025 7:51:39 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-20 19:52:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-20 19:56:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-21 00:00:00 | 0,159 | 0,6 | 3,65 | 5,56 | 7,51 | 10,93 | 13,74 | 1,000 | 12,729 | 28,9 | 15,02 | 73,0 | | | | |
| 2025-08-21 19:52:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 22/08/2025 7:52:46 p.m., current time 21/08/2025 7:52:46 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-21 19:53:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-21 19:57:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-21 20:43:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-21 20:51:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-21 20:55:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-22 00:00:00 | 0,149 | 0,3 | 1,13 | 1,65 | 2,24 | 3,65 | 4,82 | 1,000 | 13,013 | 25,5 | 13,16 | 85,5 | | | | |
| 2025-08-22 12:43:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-22 12:47:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-23 00:00:00 | 0,161 | 0,3 | 1,67 | 2,50 | 3,34 | 4,81 | 6,02 | 1,000 | 12,937 | 28,6 | 14,32 | 62,8 | | | | |
| 2025-08-23 12:44:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/08/2025 12:44:08 p.m., current time 23/08/2025 12:44:08 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-23 12:45:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-23 12:48:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-23 12:49:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-24 00:00:00 | 0,145 | 0,3 | 1,01 | 1,64 | 2,42 | 4,13 | 5,54 | 1,000 | 12,554 | 25,9 | 10,66 | 85,0 | | | | |
| 2025-08-24 12:45:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 25/08/2025 12:45:24 p.m., current time 24/08/2025 12:45:24 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-24 12:46:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-24 12:49:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-24 12:50:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-24 20:23:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-25 00:00:00 | 0,166 | 0,2 | 1,19 | 1,40 | 1,67 | 2,39 | 2,99 | 1,000 | 12,861 | 25,0 | 13,18 | 89,2 | | | | |
| 2025-08-25 09:16:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-25 09:19:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-25 09:20:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-25 16:34:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-25 16:38:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-26 00:00:00 | 0,162 | 0,3 | 0,48 | 0,61 | 0,76 | 1,35 | 1,84 | 1,000 | 12,998 | 27,7 | 13,02 | 87,1 | | | | |
| 2025-08-26 16:35:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 27/08/2025 4:35:40 p.m., current time 26/08/2025 4:35:40 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-26 16:36:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-26 16:40:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-27 00:00:00 | 0,148 | 0,6 | 0,71 | 0,91 | 1,12 | 1,69 | 2,15 | 1,000 | 12,922 | 27,0 | 12,54 | 74,5 | | | | |
| 2025-08-27 16:37:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 28/08/2025 4:37:28 p.m., current time 27/08/2025 4:37:28 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-27 16:38:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-27 16:41:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-27 16:42:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-27 16:56:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-27 16:59:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-27 17:03:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-27 17:04:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-28 00:00:00 | 0,150 | 0,3 | 0,78 | 0,97 | 1,22 | 2,24 | 3,10 | 1,000 | 12,994 | 26,8 | 11,84 | 67,2 | | | | |
| 2025-08-28 17:00:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 29/08/2025 5:00:43 p.m., current time 28/08/2025 5:00:43 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-28 17:01:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-28 17:05:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-29 00:00:00 | 0,156 | 0,4 | 1,16 | 1,91 | 2,99 | 5,24 | 7,09 | 1,000 | 12,948 | 27,6 | 13,67 | 57,3 | | | | |
| 2025-08-29 14:11:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-29 14:14:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-29 14:18:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-30 00:00:00 | 0,163 | 0,4 | 1,29 | 2,07 | 3,29 | 6,24 | 8,69 | 1,000 | 12,981 | 30,5 | 17,07 | 59,3 | | | | |
| 2025-08-30 14:15:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 31/08/2025 2:15:35 p.m., current time 30/08/2025 2:15:35 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-30 14:16:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-30 14:19:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-30 14:20:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-31 00:00:00 | 0,140 | 0,4 | 0,76 | 1,08 | 1,49 | 2,57 | 3,47 | 1,000 | 12,846 | 27,8 | 13,63 | 64,9 | | | | |
| 2025-08-31 14:17:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 1/09/2025 2:17:15 p.m., current time 31/08/2025 2:17:15 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-08-31 14:18:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-31 14:21:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-31 14:22:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-31 20:38:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-08-31 20:42:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-08-31 20:46:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-08-31 20:47:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-01 00:00:00 | 0,157 | 0,3 | 4,30 | 4,95 | 5,67 | 7,44 | 8,90 | 1,000 | 13,058 | 31,6 | 19,06 | 57,0 | | | | |
| 2025-09-01 20:43:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 2/09/2025 8:43:33 p.m., current time 1/09/2025 8:43:33 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-01 20:44:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-01 20:48:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-02 00:00:00 | 0,179 | 0,3 | 9,52 | 10,79 | 11,93 | 13,80 | 15,33 | 1,000 | 12,929 | 30,1 | 16,00 | 67,6 | | | | |
| 2025-09-02 19:47:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-02 19:51:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-02 19:55:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-03 00:00:00 | 0,167 | 0,3 | 5,78 | 6,37 | 6,91 | 8,27 | 9,40 | 1,000 | 12,983 | 27,9 | 13,50 | 84,5 | | | | |
| 2025-09-03 19:52:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 4/09/2025 7:52:18 p.m., current time 3/09/2025 7:52:18 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-03 19:53:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-03 19:56:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-03 19:57:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-04 00:00:00 | 0,158 | 0,3 | 1,49 | 1,65 | 1,91 | 3,88 | 5,53 | 1,000 | 12,803 | 28,7 | 14,18 | 81,4 | | | | |
| 2025-09-04 19:53:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 5/09/2025 7:53:26 p.m., current time 4/09/2025 7:53:26 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-04 19:54:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-04 19:57:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-04 19:58:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-05 00:00:00 | 0,174 | 0,2 | 4,16 | 4,59 | 5,22 | 6,84 | 8,19 | 1,000 | 11,924 | 29,5 | 15,85 | 84,5 | | | | |
| 2025-09-05 11:28:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-05 18:16:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-05 18:19:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-06 16:24:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-13 00:00:00 | 0,479 | 1,0 | 10,50 | 27,05 | 50,02 | 89,88 | 125,51 | 1,000 | 12,924 | 25,5 | 22,20 | 43,0 | | | | |
| 2025-09-13 13:18:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-13 13:22:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-13 13:23:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-14 00:00:00 | 0,166 | 0,3 | 0,46 | 0,67 | 1,13 | 4,86 | 7,95 | 1,000 | 13,162 | 27,4 | 16,46 | 48,9 | | | | |
| 2025-09-14 19:56:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-14 20:00:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-15 00:00:00 | 0,167 | 0,4 | 0,53 | 0,73 | 1,09 | 3,18 | 4,93 | 1,000 | 12,996 | 25,0 | 10,16 | 80,3 | | | | |
| 2025-09-15 19:57:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 16/09/2025 7:57:18 p.m., current time 15/09/2025 7:57:18 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-15 19:58:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-15 20:01:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-15 20:02:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-16 00:00:00 | 0,169 | 0,7 | 1,41 | 1,64 | 2,05 | 4,24 | 6,06 | 1,000 | 12,887 | 25,1 | 10,56 | 82,3 | | | | |
| 2025-09-16 18:00:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-16 18:04:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-16 18:05:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-17 00:00:00 | 0,199 | 0,4 | 4,99 | 5,96 | 7,87 | 13,86 | 18,86 | 1,000 | 12,976 | 30,7 | 17,74 | 81,6 | | | | |
| 2025-09-17 04:16:00 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-17 09:05:00 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-17 18:01:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 18/09/2025 6:01:46 p.m., current time 17/09/2025 6:01:46 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-17 18:02:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-17 18:06:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-17 22:48:00 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-17 22:49:00 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-17 22:50:00 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-18 00:00:00 | 0,145 | 0,4 | 0,70 | 0,88 | 1,23 | 3,12 | 4,69 | 1,000 | 12,786 | 25,4 | 10,50 | 78,1 | | | | |
| 2025-09-18 18:03:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/09/2025 6:03:38 p.m., current time 18/09/2025 6:03:38 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-18 18:04:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-18 18:08:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-18 21:34:00 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-18 21:37:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-18 21:41:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-18 21:42:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-19 00:00:00 | 0,114 | 0,6 | 0,17 | 0,27 | 0,39 | 0,89 | 1,29 | 1,000 | 12,965 | 19,6 | 3,27 | 69,5 | | | | |
| 2025-09-19 21:38:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/09/2025 9:38:48 p.m., current time 19/09/2025 9:38:48 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-19 21:39:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-19 21:43:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-20 00:00:00 | 0,117 | 0,4 | 0,07 | 0,12 | 0,18 | 0,47 | 0,72 | 1,000 | 12,811 | 20,2 | 4,19 | 82,6 | | | | |
| 2025-09-20 20:33:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-20 20:36:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-20 20:37:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-21 00:00:00 | 0,120 | 0,7 | 0,55 | 0,86 | 1,12 | 1,70 | 2,18 | 1,000 | 12,925 | 22,0 | 6,52 | 65,1 | | | | |
| 2025-09-21 20:34:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 22/09/2025 8:34:06 p.m., current time 21/09/2025 8:34:06 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-21 20:38:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-21 20:39:00 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-22 00:00:00 | 0,121 | 0,3 | 0,61 | 0,96 | 1,38 | 2,86 | 4,08 | 1,000 | 12,848 | 24,5 | 9,32 | 72,3 | | | | |
| 2025-09-22 17:54:00 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-22 17:58:00 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-23 00:00:00 | 0,136 | 0,3 | 0,98 | 1,40 | 1,99 | 4,67 | 6,92 | 1,000 | 12,985 | 25,9 | 11,17 | 64,6 | | | |
| 2025-09-23 17:55:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/09/2025 5:55:38 p.m., current time 23/09/2025 5:55:38 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-23 17:56:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-23 18:00:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-24 00:00:00 | 0,127 | 0,9 | 0,80 | 1,04 | 1,34 | 2,49 | 3,44 | 1,000 | 12,872 | 23,4 | 8,63 | 67,2 | | | |
| 2025-09-24 17:31:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-24 17:34:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-24 17:37:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-24 17:38:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-25 00:00:00 | 0,132 | 0,2 | 0,70 | 0,89 | 1,20 | 2,37 | 3,35 | 1,000 | 12,959 | 26,6 | 12,86 | 66,6 | | | |
| 2025-09-25 17:35:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 26/09/2025 5:35:11 p.m., current time 25/09/2025 5:35:11 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-25 17:36:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-25 17:39:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-25 17:40:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-26 00:00:00 | 0,136 | 0,2 | 1,36 | 1,66 | 2,07 | 3,34 | 4,40 | 1,000 | 12,724 | 24,6 | 9,92 | 75,1 | | | |
| 2025-09-26 12:17:00 | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-26 12:30:00 | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-26 17:37:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 27/09/2025 5:37:14 p.m., current time 26/09/2025 5:37:14 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-09-26 17:38:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-26 17:41:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-26 17:42:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-27 00:00:00 | 0,125 | 0,2 | 0,24 | 0,31 | 0,41 | 0,98 | 1,46 | 1,000 | 12,680 | 21,5 | 6,16 | 81,9 | | | |
| 2025-09-27 04:59:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-27 08:34:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-27 11:34:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-27 11:37:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-27 11:38:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-28 00:00:00 | 0,133 | 0,4 | 0,76 | 0,93 | 1,15 | 2,14 | 2,98 | 1,000 | 12,835 | 23,5 | 7,98 | 83,0 | | | |
| 2025-09-28 11:35:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 29/09/2025 11:35:01 a.m., current time 28/09/2025 11:35:01 a.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-28 11:39:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-28 11:40:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-29 00:00:00 | 0,143 | 0,8 | 0,49 | 0,63 | 0,83 | 2,32 | 3,56 | 1,000 | 12,509 | 22,9 | 7,70 | 89,1 | | | |
| 2025-09-29 11:36:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 30/09/2025 11:36:56 a.m., current time 29/09/2025 11:36:56 a.m. |
| 2025-09-29 11:37:00 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-29 11:41:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-29 11:42:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-29 13:59:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-09-29 16:18:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-09-29 16:22:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-29 16:23:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2994) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 6/10/2025 to 11/1/2025 | | | | | | | | | | | | | | | |
| (UTC-05:00) Eastern Time (US & Canada) (Summer time adjusted) | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$) | PM4 (µg/m$^3$) | PM10 (µg/m$^3$) | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-10-04 0:00 | -0.01 | 0.6 | 0.2 | 0.36 | 0.6 | 1.36 | 1.99 | 1 | 13.027 | 22.2 | 6.07 | 60.6 | | | |
| 2025-10-04 10:36 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-04 10:40 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-05 0:00 | 0.004 | 0.2 | 0.65 | 0.85 | 1.08 | 1.52 | 1.88 | 1 | 12.837 | 23.1 | 7.54 | 80.9 | | | |
| 2025-10-05 10:36 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 6/10/2025 2:36:34 p.m., current time 5/10/2025 2:36:34 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-05 10:37 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-05 10:41 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-06 0:00 | 0.051 | 0.1 | 3.59 | 4.6 | 6.03 | 8.76 | 11.01 | 1 | 12.839 | 29.1 | 15.04 | 82.8 | | | |
| 2025-10-06 10:38 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 7/10/2025 2:38:27 p.m., current time 6/10/2025 2:38:27 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-06 10:39 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-06 10:42 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-10-06 10:43 | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-06 13:05 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-10-06 13:07 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-06 13:11 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-07 0:00 | 0 | 0.7 | 0.45 | 0.62 | 0.82 | 1.39 | 1.87 | 1 | 12.733 | 22.1 | 5.04 | 75.4 | | | |
| 2025-10-07 13:07 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 8/10/2025 5:07:59 p.m., current time 7/10/2025 5:07:59 p.m. |
| 2025-10-07 13:08 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-07 13:12 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-07 13:13 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-08 0:00 | -0.016 | 0.7 | 0.24 | 0.42 | 0.61 | 1.04 | 1.39 | 1 | 12.655 | 19.5 | 2.15 | 75.8 | | | |
| 2025-10-08 13:09 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 9/10/2025 5:09:47 p.m., current time 8/10/2025 5:09:47 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-08 13:10 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-08 13:14 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-08 13:15 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-08 13:40 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-08 13:44 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-09 0:00 | -0.019 | 0.2 | 0.12 | 0.22 | 0.38 | 0.71 | 0.99 | 1 | 12.649 | 19.2 | 1.64 | 71.2 | | | |
| 2025-10-09 13:41 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 10/10/2025 5:41:21 p.m., current time 9/10/2025 5:41:21 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-09 13:42 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-09 13:45 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-10-09 13:46 | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-10 0:00 | -0.021 | 0 | 0.23 | 0.36 | 0.55 | 0.88 | 1.15 | 1 | 12.673 | 19.9 | 3.81 | 88.8 | | | |
| 2025-10-10 12:39 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-10 12:43 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-11 0:00 | -0.028 | 0.1 | 0.34 | 0.59 | 0.83 | 1.12 | 1.35 | 1 | 12.732 | 18.5 | 1 | 73.3 | | | |
| 2025-10-11 12:39 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 12/10/2025 4:39:49 p.m., current time 11/10/2025 4:39:49 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-11 12:40 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-11 12:44 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-11 12:45 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-12 0:00 | -0.016 | 0 | 0.61 | 1.02 | 1.37 | 1.69 | 1.95 | 1 | 11.975 | 20.2 | 4.62 | 58.9 | | | |
| 2025-10-12 12:41 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 13/10/2025 4:41:37 p.m., current time 12/10/2025 4:41:37 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-12 12:42 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-12 12:46 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-12 19:03 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-10-12 22:34 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-12 22:37 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-12 22:38 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-12 22:50 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-10-13 0:00 | 0.01 | -0.1 | 0.63 | 0.94 | 1.4 | 2.14 | 2.75 | 1 | 12.741 | 24.8 | 12.26 | 55.4 | | | |
| 2025-10-13 6:12 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-13 6:16 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-13 6:17 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-13 6:28 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-10-13 12:45 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-13 12:49 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-13 12:50 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-14 0:00 | 0.002 | 0.1 | 0.56 | 0.91 | 1.4 | 2.23 | 2.91 | 1 | 12.794 | 24.9 | 9.27 | 64 | | | | |
| 2025-10-14 12:46 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 15/10/2025 4:46:37 p.m., current time 14/10/2025 4:46:37 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-14 12:47 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-14 12:51 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-15 0:00 | -0.018 | 0.1 | 0.31 | 0.69 | 1.25 | 2.74 | 3.96 | 1 | 12.782 | 21.3 | 4 | 74.5 | | | | |
| 2025-10-15 12:29 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-15 12:33 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-15 12:34 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-16 0:00 | -0.018 | 0 | 0.46 | 1.17 | 2.27 | 5.39 | 7.96 | 1 | 12.787 | 20.8 | 3.49 | 70.8 | | | | |
| 2025-10-16 12:30 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 17/10/2025 4:30:46 p.m., current time 16/10/2025 4:30:46 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-16 12:31 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-16 12:35 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-16 12:36 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-17 0:00 | -0.015 | 0 | 0.29 | 0.73 | 1.42 | 3.63 | 5.45 | 1 | 12.708 | 22 | 4.83 | 75.6 | | | | |
| 2025-10-17 7:33 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-10-17 8:20 | | | | | | | | | | | | | | System | Local instrument | Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-10-17 12:31 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 18/10/2025 4:31:55 p.m., current time 17/10/2025 4:31:55 p.m. |
| 2025-10-17 12:32 | | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-17 12:36 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-17 12:37 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-17 14:47 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-10-17 14:50 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-17 14:54 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-18 0:00 | -0.015 | 0 | 0.23 | 0.34 | 0.54 | 1.15 | 1.66 | 1 | 12.841 | 23.1 | 6.85 | 81.3 | | | | |
| 2025-10-18 14:51 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 19/10/2025 6:51:04 p.m., current time 18/10/2025 6:51:04 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-18 14:52 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-18 14:55 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-18 14:56 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-19 0:00 | -0.01 | 0.2 | 0.78 | 0.99 | 1.28 | 1.86 | 2.33 | 1 | 12.847 | 24.1 | 8.27 | 84.7 | | | | |
| 2025-10-19 11:58 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-19 12:01 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-19 12:02 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-20 0:00 | 0.001 | 0.1 | 1.16 | 1.48 | 1.92 | 2.67 | 3.3 | 1 | 12.851 | 25.5 | 10.45 | 75 | | | | |
| 2025-10-20 11:58 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 21/10/2025 3:58:25 p.m., current time 20/10/2025 3:58:25 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-20 11:59 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-20 12:02 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-10-20 12:03 | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-21 0:00 | -0.001 | 0.2 | 0.3 | 0.42 | 0.6 | 0.93 | 1.2 | 1 | 12.775 | 24.8 | 8.61 | 80.3 | | | | |
| 2025-10-21 12:00 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 22/10/2025 4:00:13 p.m., current time 21/10/2025 4:00:13 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-21 12:01 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-21 12:04 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-21 12:05 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-21 17:17 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-21 17:20 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-21 17:21 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-22 0:00 | -0.007 | 0.1 | 0.43 | 0.58 | 0.78 | 1.51 | 2.11 | 1 | 12.902 | 24.8 | 8.74 | 84.2 | | | | |
| 2025-10-22 17:17 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 23/10/2025 9:17:33 p.m., current time 22/10/2025 9:17:33 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-22 17:18 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-22 17:22 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-23 0:00 | -0.005 | 0.1 | 0.23 | 0.37 | 0.56 | 1.01 | 1.39 | 1 | 12.811 | 23.9 | 8.15 | 89.3 | | | | |
| 2025-10-23 17:18 | | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/10/2025 9:18:46 p.m., current time 23/10/2025 9:18:46 p.m. |
| | | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-23 17:19 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-23 17:23 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-23 17:24 | | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-23 17:51 | | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-10-23 17:54 | | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-23 17:58 | | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-24 0:00 | -0.019 | 0.1 | 0.09 | 0.14 | 0.23 | 0.38 | 0.5 | 1 | 12.874 | 20.8 | 4.35 | 90.2 | | | |
| 2025-10-24 17:54 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 25/10/2025 9:54:47 p.m., current time 24/10/2025 9:54:47 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-24 17:55 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-24 17:59 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-24 18:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-25 0:00 | -0.02 | 0 | 0.06 | 0.09 | 0.14 | 0.22 | 0.29 | 1 | 12.858 | 20.7 | 3.2 | 87.3 | | | |
| 2025-10-25 11:16 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-25 11:19 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-25 11:20 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-26 0:00 | -0.027 | 0.1 | 0.05 | 0.08 | 0.15 | 0.24 | 0.32 | 1 | 12.788 | 19.2 | 1.5 | 76 | | | |
| 2025-10-26 11:16 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 27/10/2025 3:16:57 p.m., current time 26/10/2025 3:16:57 p.m. |
| 2025-10-26 11:17 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-26 11:21 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-26 11:22 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-27 0:00 | -0.031 | 0.1 | 0.13 | 0.18 | 0.25 | 0.31 | 0.36 | 1 | 12.737 | 18.2 | 0.7 | 79.8 | | | |
| 2025-10-27 11:18 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 28/10/2025 3:18:49 p.m., current time 27/10/2025 3:18:49 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-27 11:19 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-27 11:23 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-27 11:24 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-27 12:25 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-27 12:29 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-27 12:30 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-28 0:00 | -0.021 | 0.2 | 0.51 | 0.76 | 1.12 | 1.73 | 2.23 | 1 | 12.788 | 20.4 | 3.68 | 78 | | | |
| 2025-10-28 12:26 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 29/10/2025 4:26:02 p.m., current time 28/10/2025 4:26:02 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-28 12:30 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-28 12:31 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-29 0:00 | 0.005 | 0.6 | 1.93 | 2.78 | 4.02 | 6.17 | 7.94 | 1 | 12.826 | 24.7 | 8.24 | 79.1 | | | |
| 2025-10-29 11:17 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-29 11:21 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-10-29 11:22 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-30 0:00 | -0.008 | 0 | 1.67 | 2.2 | 2.95 | 4.15 | 5.14 | 1 | 12.792 | 22.9 | 6.69 | 83.7 | | | |
| 2025-10-30 11:18 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 31/10/2025 3:18:06 p.m., current time 30/10/2025 3:18:06 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-10-30 11:19 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-30 11:22 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-30 11:23 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-31 0:00 | -0.016 | 0 | 1.23 | 1.54 | 1.95 | 2.54 | 3.03 | 1 | 12.368 | 22.6 | 5.54 | 82.7 | | | |
| 2025-10-31 11:19 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 1/11/2025 3:19:59 p.m., current time 31/10/2025 3:19:59 p.m. |
| 2025-10-31 11:20 | | | | | | | | | | | | | System | Local instrument | System reboot |
| | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-10-31 11:24 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-10-31 11:25 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-10-31 23:32 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-11-01 0:00 | -0.063 | -0.1 | 0.15 | 0.25 | 0.41 | 0.78 | 1.09 | 1 | 8.369 | 4.8 | 0.11 | 98 | | | |
| 2025-11-01 0:32 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-11-01 0:35 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-11-01 0:36 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-11-01 0:41 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-11-01 2:19 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-11-01 2:23 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-11-01 2:24 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-11-01 2:28 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-11-01 4:44 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-11-01 4:47 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| 2025-11-01 4:48 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-11-01 4:51 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-11-01 8:10 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-11-01 8:14 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensor AMB T online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-11-01 8:17 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| | | | | | | | | | | | | | System | Local instrument | System shutdown |

**Aeroqual AQS1 Datasheets – R40**

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2990) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 2025-07-15 to 2025-07-30 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m³) | PM2.5 (µg/m³) | PM4 (µg/m³) | PM10 (µg/m³) | TSP (µg/m³) | Flow (L/min) | Battery voltage (V) | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal category | Created by | Details |
| 2025-07-15 00:00:00 | 0,248 | 0,1 | 1,42 | 3,86 | 8,50 | 24,73 | 38,22 | 1,000 | 13,128 | 24,4 | 10,06 | 62,2 | | | |
| 2025-07-15 21:03:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-15 21:07:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-15 21:08:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-16 00:00:00 | 0,266 | 1,1 | 2,20 | 4,97 | 9,57 | 24,36 | 36,62 | 1,000 | 13,043 | 24,8 | 10,29 | 55,3 | | | |
| 2025-07-16 21:04:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 17/07/2025 9:04:35 p.m., current time 16/07/2025 9:04:35 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-16 21:05:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-16 21:09:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-17 00:00:00 | 0,268 | 2,1 | 2,44 | 7,20 | 15,86 | 42,91 | 65,41 | 1,000 | 12,877 | 27,3 | 13,16 | 45,1 | | | |
| 2025-07-17 21:06:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 18/07/2025 9:06:10 p.m., current time 17/07/2025 9:06:10 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-17 21:07:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-17 21:10:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-17 21:11:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-18 00:00:00 | 0,250 | 2,3 | 3,69 | 9,82 | 20,28 | 50,65 | 75,92 | 1,000 | 12,440 | 27,1 | 13,65 | 54,9 | | | |
| 2025-07-18 09:58:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-18 10:58:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-18 11:02:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-18 11:17:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-18 16:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-18 16:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-18 16:58:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-19 00:00:00 | 0,258 | 0,2 | 0,95 | 1,26 | 1,71 | 2,95 | 3,97 | 1,000 | 13,033 | 23,9 | 9,43 | 79,8 | | | |
| 2025-07-19 16:54:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 20/07/2025 4:54:33 p.m., current time 19/07/2025 4:54:33 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-19 16:55:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-19 16:58:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-19 16:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-20 00:00:00 | 0,250 | 0,4 | 0,29 | 0,72 | 1,41 | 3,66 | 5,54 | 1,000 | 12,906 | 22,4 | 7,28 | 81,4 | | | |
| 2025-07-20 13:03:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-20 13:07:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-21 00:00:00 | 0,274 | 4,2 | 1,07 | 1,70 | 2,57 | 4,97 | 6,96 | 1,000 | 12,718 | 22,9 | 8,19 | 85,0 | | | |
| 2025-07-21 13:04:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 22/07/2025 1:04:21 p.m., current time 21/07/2025 1:04:21 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-21 13:05:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-21 13:08:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-21 13:09:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-21 13:48:00 | | | | | | | | | | | | | System | Local instrument | System shutdown |
| 2025-07-21 14:05:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-21 14:07:00 | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-21 14:22:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-21 14:39:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-21 14:46:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-21 14:50:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-21 14:51:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-22 00:00:00 | 0,284 | 3,7 | 2,29 | 3,29 | 4,54 | 7,90 | 10,68 | 1,000 | 13,147 | 25,0 | 10,70 | 80,7 | | | |
| 2025-07-22 14:47:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 23/07/2025 2:47:20 p.m., current time 22/07/2025 2:47:20 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-22 14:48:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-22 14:51:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-22 14:52:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-23 00:00:00 | 0,285 | 0,8 | 2,26 | 2,58 | 3,02 | 4,27 | 5,31 | 1,000 | 13,023 | 26,7 | 12,97 | 74,3 | | | |
| 2025-07-23 14:49:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 24/07/2025 2:49:13 p.m., current time 23/07/2025 2:49:13 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-23 14:50:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-23 14:53:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-23 14:54:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-24 00:00:00 | 0,358 | 0,6 | 11,07 | 13,72 | 17,62 | 29,29 | 39,00 | 1,000 | 13,036 | 28,1 | 14,73 | 76,0 | | | |
| 2025-07-24 14:50:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 25/07/2025 2:50:54 p.m., current time 24/07/2025 2:50:54 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-24 14:51:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-24 14:55:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-24 14:56:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-25 00:00:00 | 0,359 | 1,7 | 6,48 | 10,02 | 16,11 | 36,31 | 53,21 | 1,000 | 12,966 | 26,7 | 12,80 | 61,3 | | | |
| 2025-07-25 14:52:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 26/07/2025 2:52:21 p.m., current time 25/07/2025 2:52:21 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-25 14:53:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-25 14:56:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-25 14:57:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-26 00:00:00 | 0,287 | 0,2 | 1,17 | 1,73 | 2,72 | 6,38 | 9,44 | 1,000 | 12,687 | 24,4 | 10,11 | 80,8 | | | |
| 2025-07-26 14:54:00 | | | | | | | | | | | | | System | Local instrument | RS_UnableToContactCloudServer - last successful time or instrument restart 27/07/2025 2:54:21 p.m., current time 26/07/2025 2:54:21 p.m. |
| | | | | | | | | | | | | | System | Local instrument | System reboot |
| 2025-07-26 14:55:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-26 14:58:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-26 14:59:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-27 00:00:00 | 0,309 | 0,2 | 10,59 | 11,27 | 11,80 | 12,79 | 13,63 | 1,000 | 11,336 | 23,2 | 10,55 | 93,2 | | | |

| | | | |
|---|---|---|---|
| 2025-07-27 03:17:00 | System | Local instrument | System shutdown |
| 2025-07-27 08:18:00 | System | Local instrument | System startup |
| 2025-07-27 08:22:00 | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-27 08:23:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-27 12:56:00 | System | Local instrument | System startup |
| 2025-07-27 13:30:00 | System | Local instrument | System startup |
| 2025-07-27 16:13:00 | System | Local instrument | System startup |
| 2025-07-27 17:04:00 | System | Local instrument | System startup |
| 2025-07-27 17:37:00 | System | Local instrument | System startup |
| 2025-07-27 17:40:00 | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10 offline |
| | System | Local instrument | Sensors Battery voltage, PDI ITEMP failed |
| 2025-07-27 17:41:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-27 17:44:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-27 17:45:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-27 17:48:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 17:49:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 17:52:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 17:53:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 17:56:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 17:58:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:00:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:02:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:04:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:06:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:08:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:10:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:13:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:14:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:17:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:18:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:21:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:22:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:25:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:26:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:29:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:30:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:33:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:34:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:37:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:38:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:41:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:42:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:45:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:47:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:49:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:51:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:53:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:55:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 18:57:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 18:59:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:02:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:03:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:06:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:07:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:10:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:11:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:14:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:15:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:18:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:19:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:22:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:23:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:26:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:27:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:30:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:31:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:34:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:36:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:38:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:40:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:42:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:44:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:46:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:48:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:51:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:52:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:55:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 19:56:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 19:59:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:00:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:03:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:04:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:07:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:08:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:11:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:12:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:15:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:16:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:19:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:20:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:23:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:25:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:27:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:29:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:31:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:33:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:35:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:37:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:40:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:41:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:44:00 | System | Local instrument | Sensor PDI ITEMP offline |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-07-27 20:45:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:48:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:49:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:52:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:53:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 20:56:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 20:57:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:00:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:01:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:04:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:05:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:08:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:09:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:12:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:14:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:16:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:18:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:20:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:22:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:24:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-27 21:26:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-27 21:29:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-28 00:00:00 | 0,359 | 0,6 | 3,79 | 4,12 | 4,42 | 5,09 | 5,67 | 1,000 | 10,890 | 27,8 | 14,36 | 72,6 | | | |
| 2025-07-28 11:57:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 12:00:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 12:04:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-28 13:23:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-28 13:29:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-28 13:32:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-28 14:44:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 14:46:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 16:23:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 16:27:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-28 16:32:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 16:36:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-28 16:44:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 16:49:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 16:52:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-07-28 16:53:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-28 17:11:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-28 17:15:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-28 21:07:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-29 00:00:00 | | | | | | | | | | | | | | | |
| 2025-07-29 00:46:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-29 12:30:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| 2025-07-29 12:33:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10 offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP failed |
| 2025-07-29 12:35:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 12:38:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-29 12:39:00 | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 12:42:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 12:43:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 12:46:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 12:47:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 12:50:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 12:51:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 12:54:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 12:55:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 12:58:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 12:59:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:02:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:03:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:06:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:07:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:10:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:12:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:14:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:16:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:18:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:20:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:22:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:24:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:27:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:28:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:31:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:32:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:35:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:36:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:39:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:40:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:43:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:44:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:47:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:48:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:51:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:52:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |

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| 2025-07-29 13:55:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 13:56:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 13:59:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 14:01:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 15:57:00 | System | Local instrument | System startup |
| 2025-07-29 15:59:00 | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10 offline |
| | System | Local instrument | Sensors Battery voltage, PDI ITEMP failed |
| 2025-07-29 16:01:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 16:04:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-29 16:05:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 16:08:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:09:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:12:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:13:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:16:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:17:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:20:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:21:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:24:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:25:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:28:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:29:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:32:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:34:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:36:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:38:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:40:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:42:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 16:44:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 16:46:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:05:00 | System | Local instrument | System startup |
| 2025-07-29 18:08:00 | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10 offline |
| | System | Local instrument | Sensors Battery voltage, PDI ITEMP failed |
| 2025-07-29 18:09:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 18:12:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| 2025-07-29 18:13:00 | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |
| 2025-07-29 18:16:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:17:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:20:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:21:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:24:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:26:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:28:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:30:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:32:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:34:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:36:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:38:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:41:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:42:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:45:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:46:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:49:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:50:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:53:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:54:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 18:57:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 18:58:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:01:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:02:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:05:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:06:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:09:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:10:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:13:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:15:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:17:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:19:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:21:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:23:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:25:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:27:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:30:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:31:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:34:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:35:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:38:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:39:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:42:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:43:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:46:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:47:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:50:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:51:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:54:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:55:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 19:58:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 19:59:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:02:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:04:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:06:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:08:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:10:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:12:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:14:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:16:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:19:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:20:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:23:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:24:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:27:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:28:00 | System | Local instrument | Sensor PDI ITEMP online |

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| 2025-07-29 20:31:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:32:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:35:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:36:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:39:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:40:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:43:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:44:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:47:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:48:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:51:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:53:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:55:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 20:57:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 20:59:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:01:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:03:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:05:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:08:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:09:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:12:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:13:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:16:00 | System | Local instrument | Sensor PDI ITEMP offline |
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| 2025-07-29 21:20:00 | System | Local instrument | Sensor PDI ITEMP offline |
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| 2025-07-29 21:24:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:25:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:28:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:29:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:32:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:33:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:36:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:37:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:40:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:42:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:44:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:46:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:48:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:50:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:52:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:54:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 21:57:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 21:58:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:01:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:02:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:05:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:06:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:09:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:10:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:13:00 | System | Local instrument | Sensor PDI ITEMP offline |
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| 2025-07-29 22:17:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:18:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:21:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:22:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:25:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:26:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:29:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:31:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:33:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:35:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:37:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:39:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:41:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:43:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:46:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:47:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:50:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:51:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:54:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:55:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 22:58:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 22:59:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:02:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:03:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:06:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:07:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:10:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:11:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:14:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:16:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:18:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:20:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:22:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:24:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:26:00 | System | Local instrument | Sensor PDI ITEMP offline |
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| 2025-07-29 23:32:00 | System | Local instrument | Sensor PDI ITEMP online |
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| 2025-07-29 23:36:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:39:00 | System | Local instrument | Sensor PDI ITEMP offline |
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| 2025-07-29 23:43:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:44:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:47:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:48:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:51:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:52:00 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-29 23:55:00 | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-29 23:56:00 | System | Local instrument | Sensor PDI ITEMP online |

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| 2025-07-29 23:59:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:00:00 | 0,281 | -1,4 | 2,01 | 2,27 | 2,59 | 3,40 | 4,05 | 1,003 | 12,783 | 15,5 | 8,52 | 94,8 | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:03:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:05:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:07:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:09:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:11:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:13:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:15:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:17:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:20:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:21:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:24:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:25:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:28:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:29:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 00:32:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP offline |
| 2025-07-30 00:33:00 | | | | | | | | | | | | | System | Local instrument | Sensor PDI ITEMP online |
| 2025-07-30 11:40:00 | | | | | | | | | | | | | System | Local instrument | System startup |
| | | | | | | | | | | | | | System | Local instrument | Backup battery low |
| 2025-07-30 11:44:00 | | | | | | | | | | | | | System | Local instrument | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrument | Sensors Battery voltage, PDI ITEMP online |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect - Pine Evironmental Services LLC (AQS1 23042025-2990) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 8/14/2025 to 9/6/2025 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m$^3$) | PM2.5 (µg/m$^3$ | PM4 (µg/m$^3$) | PM10 (µg/m$^3$ | TSP (µg/m$^3$) | Flow (L/min) | Battery voltage | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal catego | Created by | Details |
| 2025-08-14 0:00 | 0.276 | 2.2 | 0.2 | 0.32 | 0.47 | 0.87 | 1.2 | 1 | 11.924 | 22.9 | 9.3 | 82.3 | | | |
| 2025-08-14 20:22 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-14 20:26 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| 2025-08-14 20:27 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-14 23:46 | | | | | | | | | | | | | System | Local instrume | System shutdown |
| 2025-08-15 0:00 | 0.272 | 0.6 | 0.28 | 0.5 | 0.88 | 2.53 | 3.91 | 1 | 13.15 | 27 | 14.17 | 45.7 | | | |
| 2025-08-15 15:32 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-15 15:35 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-15 15:36 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-16 0:00 | 0.285 | 0.1 | 3.06 | 3.57 | 4.14 | 5.22 | 6.12 | 1 | 13.011 | 25.7 | 12.15 | 83.6 | | | |
| 2025-08-16 15:32 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 17/08/2025 3:32:47 p.m., current time 16/08/2025 3:32:47 p.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-08-16 15:33 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-16 15:37 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-17 0:00 | 0.26 | 0.8 | 0.35 | 0.49 | 0.69 | 1.23 | 1.67 | 1 | 12.742 | 22.9 | 8.18 | 84.6 | | | |
| 2025-08-17 15:33 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 18/08/2025 3:33:56 p.m., current time 17/08/2025 3:33:56 p.m. |
| 2025-08-17 15:34 | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-08-17 15:35 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-17 15:38 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-17 15:39 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-18 0:00 | 0.255 | 2.2 | 0.57 | 1.26 | 2.42 | 6.36 | 9.64 | 1 | 12.603 | 20.7 | 6.96 | 69.9 | | | |
| 2025-08-18 2:45 | | | | | | | | | | | | | System | Local instrume | System shutdown |
| 2025-08-18 6:22 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-18 6:25 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-18 10:57 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-18 11:38 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-18 11:42 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-19 0:00 | 0.256 | 1.1 | 0.84 | 1.89 | 3.79 | 10.46 | 16.04 | 1 | 12.985 | 23.3 | 8.65 | 78.2 | | | |
| 2025-08-19 11:39 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 20/08/2025 11:39:27 a.m., current time 19/08/2025 11:39:27 a.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-08-19 11:40 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-19 11:43 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-19 11:44 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-20 0:00 | 0.26 | 1.1 | 1.34 | 3.92 | 8.83 | 26.02 | 40.36 | 1 | 13.016 | 26.6 | 12.25 | 67.5 | | | |
| 2025-08-20 11:41 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 21/08/2025 11:41:01 a.m., current time 20/08/2025 11:41:01 a.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-20 11:45 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-20 11:46 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-20 11:54 | | | | | | | | | | | | | System | Local instrume | System shutdown |
| 2025-08-20 11:57 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-20 12:01 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-21 0:00 | 0.264 | 0.8 | 2.02 | 3.2 | 5.1 | 11.73 | 17.21 | 1 | 13.024 | 27.2 | 13.25 | 73.5 | | | |
| 2025-08-21 11:58 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 22/08/2025 11:58:14 a.m., current time 21/08/2025 11:58:14 a.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-08-21 11:59 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-21 12:02 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-21 12:03 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-22 0:00 | 0.253 | 0.3 | 1.28 | 1.7 | 2.24 | 3.77 | 5.05 | 1 | 12.846 | 26 | 11.85 | 87.3 | | | |
| 2025-08-22 11:59 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 23/08/2025 11:59:37 a.m., current time 22/08/2025 11:59:37 a.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-08-22 12:00 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-22 12:04 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-22 21:54 | | | | | | | | | | | | | System | Local instrume | System shutdown |
| 2025-08-22 21:58 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-08-22 22:01 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-22 22:02 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-08-23 0:00 | 0.253 | 0.1 | 1.15 | 2.1 | 3.48 | 7.06 | 10.03 | 1 | 13.025 | 25.7 | 12.1 | 67.9 | | | |
| 2025-08-23 21:58 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 24/08/2025 9:58:35 p.m., current time 23/08/2025 9:58:35 p.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-08-23 21:59 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-23 22:03 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-24 0:00 | 0.253 | 0.2 | 0.31 | 0.5 | 0.79 | 1.76 | 2.57 | 1 | 12.794 | 23.3 | 8.66 | 89.3 | | |
| 2025-08-24 22:00 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 25/08/2025 10:00:23 p.m., current time 24/08/2025 10:00:23 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-08-24 22:01 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-24 22:04 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-24 22:05 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-24 22:20 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-24 22:25 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-24 23:20 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 0:00 | 0.258 | 0.1 | 0.19 | 0.25 | 0.38 | 2.12 | 3.59 | 1 | 12.09 | 23.6 | 9.08 | 97 | | |
| 2025-08-25 0:08 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 0:18 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 0:29 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 0:43 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 0:57 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 1:13 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 1:45 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 2:18 | | | | | | | | | | | | | System | Local instrume Sensor PM10 failed |
| | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5 failed |
| 2025-08-25 2:39 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 3:14 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 5:24 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 5:58 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 6:11 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 6:19 | | | | | | | | | | | | | System | Local instrume Sensors PM1, PM4, PM2.5, PM10 failed |
| | | | | | | | | | | | | | System | Local instrume Sensor TSP failed |
| 2025-08-25 6:46 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 6:59 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 7:08 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 7:17 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-25 8:13 | | | | | | | | | | | | | System | Local instrume Sensors PM2.5, PM10 failed |
| | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4 failed |
| 2025-08-25 9:00 | | | | | | | | | | | | | System | Local instrume System shutdown |
| 2025-08-25 13:21 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-25 14:18 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-25 14:22 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-25 14:23 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-26 0:00 | 0.274 | 0.5 | 0.41 | 0.55 | 0.72 | 1.86 | 2.82 | 1 | 13.001 | 25.1 | 10.57 | 93.1 | | |
| 2025-08-26 14:19 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 27/08/2025 2:19:55 p.m., current time 26/08/2025 2:19:55 p.m. |
| 2025-08-26 14:20 | | | | | | | | | | | | | System | Local instrume System reboot |
| | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-26 14:24 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| 2025-08-26 14:25 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-27 0:00 | 0.263 | 2.5 | 1.36 | 1.89 | 2.5 | 3.96 | 5.16 | 1 | 12.932 | 24.2 | 9.37 | 81.9 | | |
| 2025-08-27 14:21 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 28/08/2025 2:21:34 p.m., current time 27/08/2025 2:21:34 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-08-27 14:22 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-27 14:25 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-27 14:26 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-27 16:17 | | | | | | | | | | | | | System | Local instrume System shutdown |
| 2025-08-27 16:20 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-27 16:24 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-28 0:00 | 0.258 | 1.3 | 1.62 | 3.58 | 7.32 | 24.65 | 39.16 | 1 | 13.042 | 24.8 | 10.13 | 69.5 | | |
| 2025-08-28 8:48 | | | | | | | | | | | | | System | Local instrume Sensor PM10 failed |
| | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5 failed |
| 2025-08-28 8:54 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-28 10:08 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-28 10:25 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-28 10:52 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-28 11:09 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-28 11:16 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-08-28 16:21 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 29/08/2025 4:21:36 p.m., current time 28/08/2025 4:21:36 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-08-28 16:22 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-28 16:26 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-29 0:00 | 0.278 | 2.7 | 1.91 | 4.22 | 9.02 | 26.77 | 41.84 | 1 | 12.986 | 27.5 | 13.35 | 49.8 | | |
| 2025-08-29 15:13 | | | | | | | | | | | | | System | Local instrume System shutdown |
| 2025-08-29 15:17 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-29 15:20 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-29 15:21 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2025-08-30 0:00 | 0.261 | 1 | 1.78 | 3.36 | 6.72 | 19.8 | 30.61 | 1 | 12.982 | 28 | 14.39 | 64.7 | | |
| 2025-08-30 15:17 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 31/08/2025 3:17:37 p.m., current time 30/08/2025 3:17:37 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-08-30 15:18 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-30 15:22 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-31 0:00 | 0.244 | 2.1 | 1.8 | 4.61 | 9.5 | 24.91 | 37.74 | 1 | 12.865 | 24.4 | 9.73 | 79.8 | | |
| 2025-08-31 15:19 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 1/09/2025 3:19:07 p.m., current time 31/08/2025 3:19:07 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-08-31 15:20 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-31 15:23 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-31 15:24 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-08-31 17:58 | | | | | | | | | | | | | System | Local instrume System shutdown |
| 2025-08-31 18:02 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-08-31 18:05 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-08-31 18:06 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-09-01 0:00 | 0.257 | 0 | 6.6 | 10.96 | 20 | 50.15 | 75.66 | 1 | 13.094 | 28.2 | 15.6 | 67 | | |
| 2025-09-01 18:03 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 2/09/2025 6:03:07 p.m., current time 1/09/2025 6:03:07 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-09-01 18:04 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-01 18:07 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-01 18:08 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-09-02 0:00 | 0.284 | 0.5 | 12.54 | 14.7 | 17.6 | 25.34 | 31.81 | 1 | 12.916 | 27.6 | 13.71 | 76.3 | | |
| 2025-09-02 18:04 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 3/09/2025 6:04:42 p.m., current time 2/09/2025 6:04:42 p.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-09-02 18:05 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-02 18:09 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-09-03 0:00 | 0.305 | 0.3 | 5.43 | 5.87 | 6.42 | 10.33 | 13.6 | 1 | 12.796 | 25.3 | 11.04 | 94.3 | | |
| 2025-09-03 11:49 | | | | | | | | | | | | | System | Local instrume System shutdown |
| 2025-09-03 11:52 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-03 11:56 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| 2025-09-03 11:57 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-09-04 0:00 | 0.264 | 0.4 | 1.17 | 1.26 | 1.42 | 3 | 4.32 | 1 | 12.979 | 26 | 12.02 | 87.4 | | |
| 2025-09-04 2:10 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 3:35 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 3:57 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 4:18 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 4:46 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 4:51 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 5:04 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 5:11 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 5:34 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 5:49 | | | | | | | | | | | | | System | Local instrume Sensors PM4, PM2.5, PM10 failed |
| | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1 failed |
| 2025-09-04 6:02 | | | | | | | | | | | | | System | Local instrume Sensor PM10 failed |
| | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5 failed |
| 2025-09-04 6:51 | | | | | | | | | | | | | System | Local instrume Sensors TSP, PM1, PM4, PM2.5, PM10 failed |
| 2025-09-04 11:53 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 5/09/2025 11:53:31 a.m., current time 4/09/2025 11:53:31 a.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-09-04 11:54 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-04 11:57 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-04 11:58 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-09-05 0:00 | 0.273 | 0.8 | 4.9 | 5.29 | 5.82 | 7.49 | 8.88 | 1 | 12.776 | 27.3 | 13.93 | 91.5 | | |
| 2025-09-05 11:55 | | | | | | | | | | | | | System | Local instrume RS_UnableToContactCloudServer - last successful time or instrument restart 6/09/2025 11:55:07 a.m., current time 5/09/2025 11:55:07 a.m. |
| | | | | | | | | | | | | | System | Local instrume System reboot |
| 2025-09-05 11:56 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-05 11:59 | | | | | | | | | | | | | System | Local instrume Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-05 12:00 | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume Sensors Battery voltage, PDI ITEMP online |
| 2025-09-06 0:00 | 0.263 | 1.1 | 2.06 | 2.4 | 2.85 | 3.88 | 4.74 | 1 | 11.879 | 26.1 | 12.06 | 98.9 | | |
| 2025-09-06 4:38 | | | | | | | | | | | | | System | Local instrume System shutdown |
| 2025-09-06 5:47 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-06 5:48 | | | | | | | | | | | | | System | Local instrume Backup battery low |
| 2025-09-06 7:01 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-06 8:42 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-06 11:08 | | | | | | | | | | | | | System | Local instrume System startup |
| 2025-09-06 14:45 | | | | | | | | | | | | | System | Local instrume System startup |

| Column1 | Column2 | Column3 | Column4 | Column5 | Column6 | Column7 | Column8 | Column9 | Column10 | Column11 | Column12 | Column13 | Column14 | Column15 | Column16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aeroqual Connect · Pine Evironmental Services LLC (AQS1 23042025-2990) | | | | | | | | | | | | | | | |
| Data export | | | | | | | | | | | | | | | |
| 9/13/2025 to 9/18/2025 | | | | | | | | | | | | | | | |
| (UTC) Coordinated Universal Time | | | | | | | | | | | | | | | |
| Averaging period: Daily | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Time | CO (ppm) | NO2 (ppb) | PM1 (µg/m³) | PM2.5 (µg/m³) | PM4 (µg/m³) | PM10 (µg/m³) | TSP (µg/m³) | Flow (L/min) | Battery voltage | PDI ITEMP (°C) | AMB T (°C) | AMB RH (%) | Journal catego | Created by | Details |
| 2025-09-13 0:00 | 0.601 | 0.5 | 9.31 | 32.39 | 67.79 | 134.62 | 195.14 | 1.002 | 12.862 | 25.3 | 21.93 | 43.5 | | | |
| 2025-09-13 13:07 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-13 13:11 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-14 0:00 | 0.257 | 0.9 | 0.6 | 0.82 | 1.15 | 2.41 | 3.46 | 1 | 13.159 | 25.8 | 11.22 | 60 | | | |
| 2025-09-14 13:28 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-14 13:31 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-14 13:32 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-15 0:00 | 0.27 | 1.5 | 0.61 | 0.81 | 1.06 | 2.02 | 2.82 | 1 | 13.001 | 22.7 | 7.86 | 88.6 | | | |
| 2025-09-15 13:29 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 16/09/2025 1:29:26 p.m., current time 15/09/2025 1:29:26 p.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-09-15 13:30 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-15 13:33 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-15 13:34 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-16 0:00 | 0.283 | 1.6 | 1.8 | 2.02 | 2.35 | 3.67 | 4.77 | 1 | 12.743 | 23.4 | 8.79 | 90.8 | | | |
| 2025-09-16 13:30 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 17/09/2025 1:30:41 p.m., current time 16/09/2025 1:30:41 p.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-09-16 13:31 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-16 13:35 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-17 0:00 | 0.31 | 0.1 | 5.48 | 6.3 | 7.52 | 10.77 | 13.45 | 1 | 12.679 | 28.9 | 16.82 | 85 | | | |
| 2025-09-17 3:08 | | | | | | | | | | | | | System | Local instrume | System shutdown |
| 2025-09-17 4:24 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-17 4:26 | | | | | | | | | | | | | System | Local instrume | Backup battery low |
| 2025-09-17 6:05 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-17 7:38 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-17 10:59 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-17 11:01 | | | | | | | | | | | | | System | Local instrume | Backup battery low |
| 2025-09-17 12:52 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-17 12:55 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| 2025-09-17 12:56 | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-18 0:00 | 0.251 | 2.2 | 1.01 | 1.18 | 1.42 | 2.13 | 2.72 | 1 | 13.027 | 22.5 | 7.54 | 91.3 | | | |
| 2025-09-18 12:52 | | | | | | | | | | | | | System | Local instrume | RS_UnableToContactCloudServer - last successful time or instrument restart 19/09/2025 12:52:44 p.m., current time 18/09/2025 12:52:44 p.m. |
| | | | | | | | | | | | | | System | Local instrume | System reboot |
| 2025-09-18 12:53 | | | | | | | | | | | | | System | Local instrume | System startup |
| 2025-09-18 12:57 | | | | | | | | | | | | | System | Local instrume | Sensors CO, Flow, HTEMP, Pump Speed, NO2, AMB T, AMB RH, TSP, PM1, PM4, PM2.5, PM10, Battery voltage, PDI ITEMP online |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP offline |
| | | | | | | | | | | | | | System | Local instrume | Sensors Battery voltage, PDI ITEMP online |
| 2025-09-18 20:51 | | | | | | | | | | | | | System | Local instrume | System shutdown |

## Appendix VIII – Communications and Community Engagement

| Event Date | Communication Type | Subject(s) | Details of matter discussed / Questions / Comments | TSMC Feedback | Community Feedback / Resolution Status |
|---|---|---|---|---|---|
| 2025-04-03 | SMS from NIMLJ Community Member | Access to Howells River camps | Wish to drive to Howells River family camps and need for snow-clearing of road | Confirmed that access will be maintained for community/family members , snow clearing done and schedule followed | Expressed thanks |
| 2025-04-06 | SMS to NIMLJ Community Member | Access to Howells River camps | N/A | Confirmed that road used by NIMLJ family to Howells River was cleared of snow by TSMC | Expressed thanks |
| 2025-04-13 | SMS from NIMLJ Community Member | Access to Howells River camps | Comment that road used by family to Howells River covered in snow | Verified & confirmed that road had been cleared but a storm covered road again. Undertook to clear road again | Expressed thanks |
| 2025-04-15 | SMS to NIMLJ Community Member | Access to Howells River camps | N/A | Confirmed that road used by NIMLJ family to Howells River was cleared of snow by TSMC, second time | Expressed thanks |
| 2025-04-15 | TSMC meeting with NNK traditional land user in Schefferville | NNK hunting grounds, red water in Goodream Creek and Ski-doo trails, Bypass Rd | Land user said community members preferred taking haul road because Bypass Rd too rough | TSMC explained that maintenance is done every year to Bypass Rd; it is a safety hazard to not stop at the Checkpoint and get an escort.<br><br>TSMC invited the land user to the site the following day to discuss Howse with GM of Mining | Noted Point |
| 2025-04-16 | TSMC meeting with NNK traditional land user at Howse | Naskapi hunting grounds, red water in Goodream Creek and Ski-doo trails | Land user inquires about Howse development and access to their hunting grounds once Howse becomes fully operational | TSMC will ensure ease of access to community members hunting and camping grounds throughout the lifespan of the Howse Project. | SOP developed and followed |
| 2025-04-29 | SMS from NIMLJ Community Member | Access to Howells River camps | Request for TSMC to grade road to Howells River used by NIMLJ family | Confirmation that equipment will be sent out | Task completed |
| 2025-05-01 | TSMC and NNK community member meeting in Kawawa | Bridge repair | Community member inquires about the possibility of acquiring culverts from TSMC to replace the damaged ones located underneath the bridge | TSMC state they will provide culverts and send an engineer to assess further | TSMC provided culverts |
| 2025-05-04 | SMS to NIMLJ Community Member | Access to Howells River camps | Road clearing for access to hunting grounds | Confirmation that road has been graded to facilitate access by NIMLJ family to their camps at Howells River | Expressed thanks |
| 2025-05-07 | Meeting with ITUM | ITUM employment | Employment: Reinforce the collaboration with ITUM. Role of the Mining Liaison of ITUM. Discuss about the opportunity to be a partner at the Mining Conference september 23 to 25 2025. To put in relation PG and ITUM employment representative. | The contact with PG was made and a meeting was set up. Contact with ITUM for the Mining Conference this fall. | Noted Point |
| 2025-05-15 | TSMC Email to ITUM | Howse Follow-up Plans | Response to Email of 13 February 20205 from ITUM | Feedback taken into account. Further updates to Follow-up Plans can be done via Working Group consisting of Community representatives and TSMC | |
| 2025-05-19 | Dinner at cafeteria with NNK | NNK community member complaint | NNK mentioned complaint from community members about dust at Lac Vacher | TSMC investigated the claim and took a water sample from Lac Vacher after snow melt and confirmed no abnormal findings | NNK community member asked TSMC to come back during Goose Break in 2026 while the ice is still there |
| 2025-05-21 | Goodwood Committee meeting | Operation, Health & Safety, Environment | Updates on the Goodwood project, Health & Safety and environment efforts | All the informations was given to NNK, Kativik & Makivik about the project progress. TSMC explained water management and blasting processes. | Expressed questions regarding to water management and blasting. |
| 2025-05-26 | Congratulations letter to ITUM new band council | ITUM election May 25 | Congratulatory letter sent to new Chief & Council, signed by TSMC CEO | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| 2025-05-27 | TSMC donation of 3 large Culverts to NNK | Bridge repair on the road leading to Iron Arm | TSMC gave authorization for donation of culverts | N/A | N/A |
| 2025-05-29 | In person meeting/site visit | Bridge repair on the road leading to Iron Arm | Bridge assessed by TSMC engineering and environment departments along with NNK community members | Determined that primary cause of state of disrepair is due to damage caused by snow-clearing activities carried out by community | N/A |
| 2025-06-02 | Telephone conversation w/ ITUM community member | Contracting, employment opportunities. Commencement of Howse Project | Seeking an opportunity for truck hauling opportunity in Sept-Îles. Was told Summer 2025.<br>Community member's uncle not working currently & might wish to work at TSMC site. Will confirm.<br>Asked if IBA was signed for Howse.<br>Would like to meet TSMC at Mtl office. | Current contract in effect until March 2027 w/ Dexter & Nishk. Suggestion to discuss sub-contract with Dexter and/or Nishk.<br>Opportunities for Security Guard. Provided training info.<br>Confirmed IBA signed w/ ITUM in 2018.<br>Available to meet in Mtl | N/A |
| 2025-05-30 | Complaint from NNK community members | Red Dust nearby the water at Lake Vacher | Photos taken showing some red spot of red dust , community members asking to investigate the red dust | A report was given to NNK community member after a visit made by TSMC at the lake Vacher on friday June 7. Water sample was collected for analysis. With no exceedances and report was sent to the NNK community member | Expressed thanks. |
| 2025-06-05 | Tree Planting with JSMS | World Environment Day | 50 trees planted (yellow birch & black spruce) in front of the General store along with the grade 2 class of JSMS and tree planting at the new playground with grades 2 and 3 of JSMS | N/A | Chief and Council approved of the project. |
| 2025-06-23 | Visit to Iron Arm bridge | Iron Arm Bridge | Assesment to be done by TSMC structural engineer | N/A | N/A |
| 2025-07-04 | Installation of air monitoring station in Kawawachikamach | Installation | NNK's Deputy Chief and Environmental Officer approve installation of the dust jar | TSMC are to change the batteries every 3 days | N/A |
| 2025-07-12 | NIMLJ visit for steak night | Employment and Howse Project | NIMLJ requests:<br>- list of all First Nations employed in the mine and the percentage of the workforce they make up.<br>- site visit focused on the Howse project and Irony Mountain.<br>- accommodations made by TSMC relating to language barriers for Innu<br>- TSMC retirement savings plan for First Nation employees. | TSMC undertakes to provide information at next meeting with NIMLJ Council and organize site visit for Howse and other mining areas and response to pension plans for First Nations | N/A |
| 2025-08-15 | Site Visit from Minister of Employment and administrators from Schefferville | Employment, Operations and Howse Project | Discussion on employment for IBA FN community. TSMC explained ore mining process, refinery and sales and explained how Howse is being worked on safely and ethically. | N/A | N/A |
| 2025-07-16 | Virtual IBA meeting with ITUM | TSMC hiring process, job postings and English training. | N/A | N/A | |
| 2025-07-17 | NIMLJ air monitoring station installation in Key Lake | Installation | NIMLJ supportive of initiative | TSMC are to change the batteries every 3 days | N/A |
| 2025-08-22 | Goodwood Commitee meeting with NNK, KRG and MRC | Agenda, Health & Safety and Environment | 1.Health and Safety improvements, environtmental updates mentioning revegetation program beginning and water treatment station planned to run in 2025. | N/A | N/A |
| 2025-08-22 | Site visit with representatives of NNK KRG and MRC | Goodwood water treament unit and Goodwood revegetation project | Goodwood revegetation project was a succes and it will be put in place and TSMC plans to revegetate the site for closure works in the future. | N/A | N/A |

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| 2025-08-26 | Meeting w/ NNK and TSMC | Introduction new Mining Liaison & TSMC representatives;<br>Project Update;<br>Site Visit;<br>Job postings | -TSMC to identify areas that require better signage and message to be conveyed.<br>-Blasting: JE suggests Naskapi hunter conduct pre-blast assessment to identify any risks to land users.<br>-Caribou Protocol will be shared with NNK;<br>-Update on HEO on-site Training;<br>-GM Mining contact info to be shared;<br>-Next IBA Implementation Committee: 6 months from last one so Sept-Oct 2025 | TSMC explained that Mining always conducts a pre-blast assessment and post-blast. A Naskapi representative could also come to site to be part of the assessment for each blast. | Improvement works in progress |
| 2025-08-28 | Meeting with NIMLJ | Site visit after 8 September, On-the-job training for FN employees working in concentrator , Lake Leroy, IBA Committee meeting and NIMLJ to get in contact with every contractor on site about job postings | NIMLJ requests:<br>TSMC and Contractors post job openings in the community through social media<br>hiring more NIMLJ members depsite the policy on safety regarding English communication since 75% of their members do not speak English.<br>- follow up on Lake Leroy regarding the cabin project.<br>-site visit to go see Howse and mining operations<br>- IBA implementation meeting after 8 September. | -CR team agree to use to put postings on social media to inform the general public of the Schefferville area about job opportunities for TSMC and Sodexo.<br>-CR team plans to speak to the GM of Mining on moving forward with Lake Leroy | |
| 2025-09-02 | Meeting w/ NNK leadership | Bypass road condition and caribou | NNK leadership went on bypass road for visual assessment on road condition and lack of signage for road users | TSMC committed to putting up proper signage and improving bypass road. | N/A |
| 2025-09-04 | Teams Mtg w/ Société Atisham, ITUM | Business Opportunities for ITUM businesses | Société Atisham created by ITUM Council to support Innu entrepreneurs. SDEUM was created by ITUM Council 10 yrs ago for partnerships to get big contracts as part of IBAs. Beluga is in Fermont; Mishtau does construction, engineering, welding, mechanical. Groupe nordique & Amnor partnership | New construciton over. No opportunities currently but can have discusions in future when opportunities arise. Nishk currently has sub-contract w/ Dexter at P-Track. Might be environmental projects. TSMC & Atisham will discuss opportunities in March '26, ahead of new Fiscal Year. Atisham will be included in future communications of opportunities | N/A |
| 2025-09-17 | Bypass Road Assessment w/ NNK leadership | Bypass road condition and improper signage on the road to Greenbush | NNK requests improved signage and access road improvements. | TSMC actively working on installing proper signage and improving areas of concern on the bypass road | N/A |
| 2025-09-30 | Truth and Reconciliation Day | Truth and Reconciliation Day | CR liaison did presentation on truth and reconciliation day for employees working in admin building | N/A | N/A |
| 2025-10-02 | TSMC meeting with NIMLJ | GEOSIG work sites | GEOSIG team having problems with locals disturbing them, NIMLJ mentioned that not every councillor agreed to have GEOSIG operate in the Matimekush area | N/A | **NIMLJ Council halted all work GEOSIG work** |
| 2025-10-04 | TSMC presence in NIMLJ caribou festival | Caribou festival at Lac St Anne | NIMLJ requested sponsorship from TSMC | TSMC sponsored NIMLJ caribou festival | NIMLJ displayed TSMC logo on their banner of sponsors |
| 2025-10-06 | TSMC meeting with NIMLJ on site | Employment satisfaction | PG's claim of equipment on site, Innu employee satisfaction and possibility of moving social development funding to community development | TSMC says moving funds is possible. | |
| 2025-11-08 | NIMLJ dinner at the on site | Informal dinner | 1. PG's claim of equipment on site<br>2. Pension plans for FN employees<br>3.Travel time for locals<br>4.Concentrator and castonguay FN Numbers<br>5.Career advancement for entry level jobs language accommodations | 1. TSMC awaiting for proof of ownership for equipment.<br>2. TSMC drafting response for pension plan inquiry.<br>3. TSMC says travel time is not possible. | |

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| 2025-11-10 | Working Group Commitee Meeting Caribou FUP | General overview of Caribou Protocol | Investigation of Caribou sightings within TSMC's area. Informing Communities when TSMC goes on patrol for Caribou. Include all Caribou herds as opposed to George River Herd only. Incorporation of all comments into the Caribou FUP to make sure it's up to date and relevant. | TSMC incorporated all comments into updated Caribou FUP document. | N/A |
| 2025-11-14 | HSE Committee Meeting | Health, Safety & Environment matters | - Health and Safety highlights, including bypass road improvements, TSMC fire team equipment upgrades. - Environmental efforts including air and water sampling as well as goose migration patterns - Operational updates including the First Nation Heavy Equipment Training Program. | N/A | N/A |
| 2025-11-18 | Online Meeting Innu Nation of Labrador IBA implementation meeting | Employment, finance, safety, operations and procurement | Operational highlighsts including First Nation Heavy Equipment Training program and amount of INL applicants for the training. Employment and training including amount of First Nations employed in the mine site. Procurement,TSMC mentions that they need the INL business registry to very which INL businesses TSMC has engaged. Financial reporting noting that TSMC does not currently have any outstanding amounts owing to INL. | N/A | INL states they will send business registry soon. |
| 2025-11-21 | TSMC assesses bypass road | Bypass road condition and lack of signage | TSMC performed further visual assessments on road condition and signage. | Certain improvements made road widening and some signage installed | N/A |
| 2025-11-26 | Online NNK IBA implementation meeting | Employment, finance, safety on site and community connection | Health & Safety including and update on the firehall construction. Community connections mentioning TSMC's attendance during the NNK career fair. Naskapi Employment and Training mentioning 17 NNK full-time equivalent positions from July to September 2025. NNK mentions travel time and inquires about the possibility of local employees getting travel time for getting to site on the bus. NNK inquires about snow clearing contract and when it will be up for bidding again, TSMC states NNK will be informed prior to contract going into the open market. TSMC mentions that it is up to date on payments to NNK as of November 2025. | TSMC later says travel time is not possible. | N/A |
| 2025-12-09 | NIMLJ Councillor Site Visit | Sponsortship request and TSMC banner visibility in arena | Councillor inquired about progress of sponsorship request for hockey team, CR liaison inquired about having the TSMC banner hung up at NIMLJ arena. Councillor also inquires about the status on pension plans for locals and would like to be invited to a meeting regarding the pensions plans within the coming weeks. | Sponsorship was approved the and TSMCcommunitcated with NIMLJ regarding the approval. TSMC to get back to NIMLJ regarding the pension plans. | NIMLJ says the TSMC banner will be hung up in the arena. |
| 2026-01-09 | NIMLJ Councillor Site Visit | Status on materials for new community cabin and bridge to lac leroy | Status on materials for new community cabin and bridge materials for the Lac Leroy bridge; possibility of having wooden beams donated instead of the steel beams which would be less costly; and having Eshkan construction from Uashat build the bridge and cabin. | All materials are expected to be delivered by train by 2 Feb. | N/A |
| 2026-01-29 | NIMLJ Councillor Phone Call | Access to Goodwood haul road for semi truck with trailer | Councillor inquired about possibility of having the Goodwood haul road opened and wided to have semi with trailer attached to load caribou from KM 30, road was already widened and being worked on up to KM 16. | TSMC currently working on snow-clearing to support community | N/A |

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| 2026-02-10 | ITUM Employment & Training Working Group - Teams Mtg | Employment & Training | 1. First Nations heavy equipment training (HEO) program 2025 and 2026<br>2. TSMC's planned presence at ITUM's coming career fair<br>3. training for trades relevant to TSMC's operations<br>4. Update current FN full time equivalent emloyment numbers | 1. TSMC mentions the success of the 2025 HEO program and how TSMC plans to coordinate the next one this year TSMC agrees to put a stronger emphasis on ITUM members for selection<br>2. TSMC agrees to facilitate applications process<br>3. TSMC mentions trades that are relevant to their operations on site and suggests that ITUM and TSMC work together to see which trainings would benefit TSMC and ITUM in terms of employment on site. TSMC agrees to send list of trades to ITUM.<br>4. TSMC will update current FN full time equivalent emloyment numbers. | 1. ITUM requests that 1 ITUM member be selected for training.<br>2. ITUM requests for TSMC to facilite applications process for employment<br>3. ITUM requests list of trades relavant to TSMC's operations. |
| 2026-02-11 | TSMC Email to Community HSE Committee | Caribou Follow-up Plan | Updated Caribou Plan shared with Committee representatives | N/A | N/A |
| 2026-02-14 | Phone call with NIMLJ councillor | Phone call | Meals at cafeteria for community members, transportation of caribou and cabin materials | Request by TSMC to NIMLJ to advise in advance if meal planned at cafeteria to assist TSMC in planning for sufficient food for workers and visitors. Commnunity cabin materials to arrive by 19 Feb; window and door will arrive the week after. | NIMLJ agress and expresses gratitude for the cabin materials and says the rest of the council and the community will be happy as well. |
| 2026-02-18 | ITUM Email | Howse Update | ITUM requests update on Howse Project, including Project Schedule, Annual Report, project status, Follow-up Plans | By email 9 March, TSMC provides information requested | |
| 2026-02-19 | ITUM Career Fair | Careers with TSMC | Potential with TSMC for the youth and mention of FIrst Nations Heavy Equipment Training Program | N/A | N/A |
| 2026-02-25 | NIMLJ Career Fair | Careers with TSMC | Potential with TSMC for the youth and mention of FIrst Nations Heavy Equipment Training Program | N/A | NIMLJ Councillor was happy. |
| 2026-03-06 | NIMLJ Councillor Site Visit | Community Cabin Materials | Councillor came to site to take pictures and TSMC expects to have the rest of the materials next week. | | |
| 2026-04-09 | Phone call with NIMLJ | Skidoo rental for TSMC to perform winter sampling | Winter sampling contract for rental of 2 snow mobiles with drivers | N/A | N/A |
| 2026-03-10 | Teams mtg | 2026 Elders' Gathering @ Lac John | NIMLJ presents preliminary plan and budget for Gathering; estimated $2.5 million plus travel for 1200 participants | TSMC has limited ability to sponsor given that company is not earning profits | Agreement to discuss further |
| 2026-03-12 | Goodwood Committee Mtg via Teams | Operations Update, Health & Safety and Environment Update | Operational update summarizing mining activites, Health & Safey update mentioning completion of new firehall for the mine site. Environmental update including water and air sampling, revegetation project in the Goodwood area and water management to prevent red water. | N/A | N/A |
| 2026-03-17 | Face to face meeting | Nunacor business opportunities | Nunacor businesses & TSMC business needs | TSMC has taken note of Nunacor businesses that could meet future needs of TSMC | Nunacor can meet TSMC in Lab west to visit business facilities |
| 2026-03-19 | Face to face mtg w/ Sodexo | Hiring Update | Reviewed results of housekeeper posting; discussed possibility of local drivers on standby | TSMC will follow-up with applicants to determine interest and availability | N/A |

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| 2026-03-19 | Face to face mtg w/ NIMLJ | Leroy Bridge Repair, Contracting Opportunities, Howse Buffer | Meeting at Band Office to discuss next steps for plan to repair Leroy Bridge, Lac John church renovations<br>NIMLJ interested in contracting opportunities including:<br>-Dust Control/Road spraying between mine site and Schefferville<br>-Truck cleaning, using large sprayers for large trucks<br>-Heavy Equipment rental<br>-Howse buffer | Certain works could be discussed. HME has been providing the service consistently and reliably for several years now.<br>TSMC will await materials list from NIMLJ and undertakes to do its best to help with a portion of the cost, above and beyond IBA payments.<br>Meeting in Montreal would be possible with new CEO present | NIMLJ is interested in a portion of the heavy equipment contract.<br>Cabin: NIMLJ will remind PG to finalize detailed materials list and send to TSMC. NIMLJ would like works to take place this summer between June and August.<br>Tentative face-to-face meeting in Montreal - 14 April |
| 2026-03-25 | Face to face mtg with NIMLJ and Garage Montagnais | Garbage Collection Contract Renewal | Details of service provided to date and improvements required to ensure proper delivery of service | TSMC can extend existing PO until approx 15 April | NIMLJ interested in renewing the contract and will revert with a proposal, once it obtains additional information on service needs |
| 2026-03-25 | Email & Social Media | Heavy Equipment Operator Training Program for First Nations | Announcement via Band Offices and on Facebook | Members from 4 IBA communities invited to apply. | N/A |

## Appendix IX – Schedule

# Howse Property Iron Ore Mine Project

## Detailed IAAC Regulatory Requirements and Project Activities Schedule

| LEGEND: | |
|---|---|
| Construction | (yellow) |
| Construction and Operation | (orange) |
| Operation | (red) |
| Closure and Post-Closure | (green) |
| Milestone - Planned | • |
| Milestone - Completed | ✓ |

### KEY PROJECT PHASES AND MILESTONES / PROJECT TIMELINE, PHASES AND MILESTONES / ACTIVITIES BY PROJECT PHASE (Decision Statement Condition 10.2)

| Milestone | | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Milestone - 1** | Construction Start | Q1 ✓ | | | | | | | | | | | | | | | | | **Construction Commencement Date:** 23-Feb-2025<br>**Planned Construction Activities (Estimated Commencement to Completion):**<br>• Snow-clearing **(February 2025 to March 2025)**;<br>• Vegetation and shrub clearing **(February 2025 to March 2025)**;<br>• Stockpiling of organic matter and topsoil **(February 2025 to March 2025)**;<br>• Stripping and ground-clearing for construction of haul road, water management and first year planned pit excavation footprint **(February 2025 to March 2025)**;<br>• Follow-up Programs and Plan execution - **activity schedule detail in table of IAAC Conditions (Decision Statement Condition 10.1).** |
| **Milestone - 2** | Construction and Operation Start | Q2 • | | | | | | | | | | | | | | | | | **Planned Construction Activities (Estimated Commencement to Completion):**<br>• Snow-clearing **(January to April and October to December, until 2027)**;<br>• Vegetation and shrub clearing **(January to April and October to December, until 2027)**;<br>• Stockpiling of organic matter and topsoil **(January to April and October to December, until 2027)**;<br>• Construction of water management for surface runoff (Sedimentation Pond 3) **(April to October 2025)**;<br>• Stripping and ground-clearing for planned expansion footprints of haul road, pit and water management (HowseA Sedimentation Pond) **(January to April and October to December, until 2027)**;<br>• Construction of planned haul road, pit and water management expansions **(June to October, until 2027)**;<br>• Overburden stockpiling by backfilling into Timmins 4 mining pit **(January to April and October to December, until 2027)**;<br>• Upgrade of the Howse bypass road **(June 2025 to October 2027)**;<br>• Follow-up Programs and Plan execution - **activity schedule detail in table of IAAC Conditions (Decision Statement Condition 10.1).**<br><br>**Planned Operation Activities (Estimated Commencement to Completion):**<br>• Pit development drilling and blasting **(Year-round, until 2027)**;<br>• Waste rock removal and stockpiling by backfilling into Timmins 4 mining pit **(Year-round, until 2027)**;<br>• Iron ore extraction from Howse pit and hauling of ore from Howse pit to DSO Timmins Wet and Dry Processing Plants **(Year-round)**;<br>• Railing of finished iron ore products from facility to port **(Year-round, until 2027)**;<br>• Maintenance activities on the Howse bypass roads **(June to October, until 2027)**;<br>• Water management activities - collection, recycling and effluent discharge **(May to October, until 2027)**;<br>• Progressive rehabilitation activities **(May to October, until 2027)**;<br>• Follow-up Programs and Plans execution - **activity schedule detail in table of IAAC Conditions (Decision Statement Condition 10.1)** |
| **Milestone - 3** | Mining Phase I Completion | | | | | Q4 • | | | | | | | | | | | | | **Planned Operation Activities (Estimated Commencement to Completion):**<br>• Pit development drilling and blasting **(Year-round, until 2040)**;<br>• Waste rock removal and stockpiling by backfilling into Timmins 4 mining pit or other available mining pits **(Year-round, until 2040)**;<br>• Iron ore extraction from Howse pit and hauling of ore from Howse pit to DSO Timmins Wet and Dry Processing Plants **(Year-round, until 2040)**;<br>• Railing of finished iron ore products from facility to port **(Year-round, until 2040)**;<br>• Maintenance activities on the Howse bypass roads **(June to October, until 2040)**;<br>• Water management activities - collection, recycling and effluent discharge **(May to October, until 2040)**;<br>• Progressive rehabilitation activities **(May to October, until 2040)**;<br>• Follow-up Programs and Plans execution - **activity schedule detail in table of IAAC Conditions (Decision Statement Condition 10.1).** |
| **Milestone - 4** | Mining Phase II Completion | | | | | | | | | | Q4 • | | | | | | | | |
| **Milestone - 5** | Mining Phase III Completion | | | | | | | | | | | | | | | | Q4 • | | |
| **Milestone - 6** | Closure and Post Closure Start | | | | | | | | | | | | | | | | | Q1 • | **End of Project Operations Phase (December 2040) - Commencement of Project Closure Phase (January 2041 onwards).**<br>Execution of final closure activities and implementation of post-closure monitoring measures. |
| **CURRENT PHASE PROGRESSION** | | Q1 ↑ | | | | | | | | | | | | | | | | | |

### IAAC CONDITIONS AND DESCRIPTION / COMPLIANCE ACTIVITY TIMELINE (Decision Statement Condition 10.1) / COMPLIANCE ACTIVITIES (Decision Statement Condition 10.1)

#### 2. General Conditions - IAAC

| No. | Condition | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.1** | Ensure actions meet conditions in a careful and precautionary manner, promote sustainable development, use best information including Indigenous knowledge | Q1 ✓, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | TSMC will aim to ensure all phases of the Project are executed in a careful and precautionary manner, promote sustainable development, are informed by the best information and knowledge available at the time, including community and Indigenous traditional knowledge, are based on methods and models that are recognized by standard-setting bodies, are undertaken by qualified individuals, and have applied the best available economically and technically feasible technologies. |
| **2.2** | When consultation is required: provide written notice, provide sufficient information, undertake impartial consideration of views | | | | | | | | | | | | | | | | | | Any consultation requirement will follow the Howse Project Communication Plan developed in consultation with the Indigenous groups and relevant authorities to include these mechanisms and processes during consultation. |
| **2.3** | Consult with Indigenous groups on manner of consultation including methods, information type, timing, and advising process | | | | | | | | | | | | | | | | | | The Howse Project Communication Plan has been developed in consultation with the Indigenous groups and relevant authorities to define the consultation process and related information and will be engaged for the life of the Project. |
| **2.4** | For each follow-up program, determine methodology, location, frequency, timing, duration, reporting, thresholds | | | | | | | | | | | | | | | | | | The Howse Project Follow-Up Programs have been designed to include all information required under the Decision Statement and will be maintained for the life of the Project. |
| **2.5** | Submit follow-up program information to Agency and update in consultation with Indigenous groups and authorities | Q1 ✓ | | | | | | | | | | | | | | | | | Follow-Up Programs have been submitted to the Agency and the Indigenous groups. Any required updates will be done in consultation with Indigenous groups and relevant authorities to maintain the documents for the life of the Project.<br>**Completed: 15 January, 2025.** |
| **2.6** | Conduct follow-up programs according to determined info, verify assessment accuracy, determine if additional measures needed, implement additional mitigation measures as required | | | | | | | | | | | | | | | | | | Follow-up Programs will be conducted as prescribed by the Decision Statement. If Follow-Up results determine that modified or additional mitigations are required, they will be implemented as required and their efficiency will be monitored. This process will be maintained for the life of the Project. |
| **2.7** | Discuss with Indigenous groups opportunities for participation in implementation of follow-up programs, including analysis and mitigation based on follow-up results. | | | | | | | | | | | | | | | | | | The Howse Project Communication Plan includes quarterly meetings with Indigenous groups to allow their participation in the review of program results, analysis, feedback and mitigations.<br>These mechanisms of the Communication Plan will be maintained for the life of the Project. |
| **2.8-2.9** | Prepare and submit annual report on compliance with conditions (due June 30 each year) | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Annual reports detailing all information required under conditions 2.8.1 to 2.8.6 will be prepared each year and submitted to the Agency by June 30. They will also be published on a publicly available platform simultaneously, as per Condition 2.10.<br>**Estimated Completion: June, recurring annually.** |
| **2.10** | Publish reports and documents on Internet and keep publicly available for 25 years | | | | | | | | | | | | | | | | | | All required documentation will be published on a publicly available platform where it will remain available for 25 years following completion of the Project. |
| **2.11** | Notify Agency and Indigenous groups of ownership transfer (within 60 days) | | | | | | | | | | | | | | | | | | Conditional requirement for life of project - to be carried out within 60 days if transfer of ownership occurs. |
| **2.12-2.13** | Consult with Indigenous groups prior to material changes and notify Agency with description of effects | | | | | | | | | | | | | | | | | | Indigenous groups will be consulted prior to initiating any material change(s) that may have adverse environmental effects. The Agency will be notifyied and provided with all required information if such changes are required. The consultation process will be engaged as defined in the Howse Project Communication Plan for the life of the Project. |

#### 3. Fish and Fish Habitat - IAAC

| No. | Condition | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.1** | Implement erosion and sedimentation control measures to avoid deposit of deleterious substances | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Appropriate erosion and sediment control measures will be deployed whenever work occurs in areas where sediment or any other deleterious substance may reach fish bearing waters during the life of the Project.<br>**Estimated Completion: Spring to Fall months, recurring annually.** |
| **3.2** | Collect site runoff and pit dewatering water in sedimentation ponds and treat prior to discharge if necessary | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Surface runoff for the Howse Project will be conveyed to Sedimentation Pond 3 via ditches and/or pumping during the Construction and initial stages of the Operations phase. The surface runoff collected in Sedimentation Pond 3 will be recycled by pumping to the Timmins 2 or Timmins 6 Pit for ultilization by the Concentrate Process Plant to avoid effluent discharge in Goodream Creek. The HowseA Sedimentation Pond will be constructed, in scaling with the Project future expansion footprint, to receive and treat pit dewatering water volumes and additional surface runoff prior to effluent discharge in Goodream Creek. If results of discharged effluent exceed any applicable MDMER thresholds, coagulants or other applicable physical or chemical water treatment options will be implemented.<br>**Estimated Completion: Spring to Fall months, recurring annually.** |
| **3.3** | Use time delay blasting technique for all blasting activities | Q1 ✓, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | | Use of time delay blasting technique will be followed as standard practice for all blasts during the life of the Project. **Estimated Execution: All year round.** |
| **3.4** | Do not set blast charge per delay above 1092 kilograms | Q1 ✓, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | | Setting of blast charge per delay below 1092 kilograms will be followed as standard practice for all blasts during the life of the Project. **Estimated Execution: All year round.** |
| **3.5** | Manage waste rock acid generation during operation per Mine Environment Neutral Drainage Program | Q1 ✓, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | | Waste rock sampling program, in compliance with the Mine Environment Neutral Drainage Program, will be initiated as soon as waste rock extraction begins to confirm the predicted absence of Acid Rock Drainage and Metal Leaching potential. If potentially acid generating waste rock is discovered, it will be managed separately as per applicable guidelines and regulations. **Estimated Execution: All year round.** |
| **3.6** | Develop and implement follow-up program for fish and fish habitat | Q1 ✓ | | | | | | | | | | | | | | | | | The Howse Project Fish And Fish Habitat Follow-Up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities.<br>**Completed: 15 January, 2025.** |
| 3.6.1.1-5 | Monitor water quality and quantity parameters per Water Management Plan | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | 3.6.1.1 - Baseline monitoring using water level probes was started in 2017 and will continue for the life of the Project.<br>3.6.1.2 - Groundwater level and water quality monitoring sampling will be conducted 4 times annually from Spring to Fall months for the life of the Project.<br>3.6.1.3 and 3.6.1.4 - Water quality monitoring at the final discharge points will start as soon as effluent is deposited and will continue for the duration of the project whenever effluent is being deposited as per MDMER requirements.<br>3.6.1.5 - Baseline water quality monitoring was started in 2015 and will continue to be conducted 4 times annually from Spring to Fall months for the life of the Project<br>If any of the thresholds described in the follow-up plan are exceeded, appropriate mitigation measures will be put in place.<br>**Estimated Completion: Spring to Fall months, recurring annually.** |
| 3.6.2 | Update hydrogeological groundwater model at end of mining phases I, II, and III | | | | | | Q1 • | | | | | Q1 • | | | | | | Q1 • | Updates will be done using data collected through the groundwater monitoring program at the end of scheduled Project mining phases I, II and III. **Estimated Completion: March 2030, March 2035 and March 2041.** |
| 3.6.3 | Monitor fish and fish habitat in Triangle Lake, Burnetta Lake, Pinette Lake and Goodream Creek | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Biological studies will be carried out as per MDMER requirements as soon as effluent discharge into Goodream Creek occurs. If effects on fish population, on fish tissue or on the benthic invertebrate community has been identified, suitable mitigation measures will be conceived and deployed with the approval of the Agency and relevant authorities. Weekly visual surveys will be done at Pinette Triangle and Burnetta lakes to detect any fish mortality whenever there is blasting . If blasting mortality is confirmed, the blasting protocol will be reviewed and updated to include mitigations. **Estimated Completion: Spring to Fall months, recurring annually.** |

#### 4. Migratory Birds - IAAC

| No. | Condition | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.1** | Carry out project to protect migratory birds per Environment and Climate Change Canada's Avoidance Guidelines | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Stripping activities as well as any other activity that could potentially affect bird nests will be planned outside of the migratory bird nesting season. If such activities are required during the nesting season, nest surveys will be carried out by a qualified individual and appropriate buffer zones will be established around any nests that may be found. Climate Change Canada's Avoidance Guidelines to protect migratory birds will be adhered to for the life of the Project.<br>**Estimated Completion: Spring to Fall months (Early May to September), annually.** |
| **4.2** | Have qualified individual survey pit walls for bank swallows annually and establish setbacks if nests found | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | Q2 • | | Survey will be conducted in mid to late June as swallows have been known to arrive and begin nesting in that period. This will be adapted if migratory habits become modified due to climate change.<br>These measures will be maintained for the life of the Project. **Estimated Completion: June, annually.** |
| **4.3** | Notify Environment and Climate Change Canada if bank swallow nests are found | | | | | | | | | | | | | | | | | | ECCC will be notified immediately if bank swallow nests are found in the Project area for the life of the Project. |
| **4.4** | Control lighting to avoid effects on migratory birds while meeting health and safety requirements | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Q2 •, Q3 • | Lighting position, wavelengths, illumination levels and duration of illumination at the Project will be selected and adjusted to avoid effects on migratory birds while also maintaing the health and safety requirements for the life of the Project.<br>**Estimated Completion: Spring to Fall months (Early May to September), annually.** |
| **4.5** | Prohibit vehicles and equipment from entering wetlands except those already affected | Q1 ✓, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Prohibiton on vehicle and equipment entry into undisturbed wetlands will be enforced for the life of the Project. **Estimated Execution: All year round.** |
| **4.6** | Prohibit cleaning, fueling, maintenance, and storage of harmful substances within 20m of wetlands | Q1 ✓, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Q1 •, Q2 •, Q3 •, Q4 • | Prohibition of cleaning, fueling, maintenance, and storage of harmful substances within 20m of wetlands will be enforced for the life of the Project. **Estimated Execution: All year round.** |
| **4.7** | Develop and implement follow-up program for migratory bird mitigation effectiveness | Q1 ✓ | | | | | | | | | | | | | | | | | The Howse Project Avifauna Follow-Up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities.<br>**Completed: 15 January, 2025.** |
| 4.7.1 | Conduct migratory bird surveys in specified watersheds for first three years after construction | | | | Q2 • | Q2 • | Q2 • | | | | | Q2 • | | | | | Q2 • | | Surveys will be conducted by qualified individuals and results will be compared with the baseline surveys to detect potential changes to nesting migratory bird populations and determine effectiveness of mitigation measures. Subsequent surveys following the 3 initial surveys are currently planned every 5 years. If required, this frequency will be modified following results of the initial surveys in consultation with Indigenous groups and relevant authorities. **Estimated Completion: June 2028, 2029, 2030, 2035 and 2040.** |
| **4.8** | Develop and implement follow-up program for wetland functions that support migratory birds | Q1 ✓ | | | | | | | | | | | | | | | | | The Howse Project Wetland Follow-Up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities.<br>**Completed: 15 January, 2025.** |
| 4.8.1 | Conduct wetland disturbance survey every five years (first at start of construction) | Q3 • | | | | Q3 • | | | | | Q3 • | | | | | Q3 • | | | Surveys will be conducted by qualified individuals and results will be compared with the baseline surveys to detect potential harmful effects to wetland functions that support nesting migratory bird populations and determine effectiveness of mitigation measures. . **Estimated Completion: July 2025, 2029, 2034 and 2039.** |
| 4.8.2 | Monitor groundwater levels near wetlands every two weeks during operation | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Q2 •, Q3 •, Q4 • | Wetland groundwater level monitoring is already in place with baseline measurements collected since 2018. The program will continue to be conducted during summer months for the duration of the Project.<br>**Estimated Completion: Spring to Fall months (June to September every two weeks), annually.** |

| IAAC CONDITIONS AND DESCRIPTION | | COMPLIANCE ACTIVITY TIMELINE (Decision Statement Condition 10.1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | COMPLIANCE ACTIVITIES (Decision Statement Condition 10.1) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5. Health and Socio-Economic Conditions - IAAC | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | | 2036 | | | | 2037 | | | | 2038 | | | | 2039 | | | | 2040 | | | | 2041 | | | | Description |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| **5.1** | Undertake progressive reclamation of disturbed areas in consultation with Indigenous groups | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TSMC will engage in progressive reclamation for the Project as areas in their final footprints become available to undertake these activities, in consultation with Indigenous groups, for the life of the Project. Progressive reclamation activities will involve stabilization of areas and revegetation using only native plants. |
| **5.2** | Design overburden and waste rock piles to reduce effects to viewscapes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TSMC will continue to optimize and reduce the effective volume and shapes of overburden and waste rock piles to reduce effects to the viewscapes in the vicinity for the life of the Project. Overburden and waste rock removal operations during the initial development of the Howse pit will utilize the Timmins 4 pit, near the Howse property, for backfilling. TSMC will continue to identify and ultilize any other exhausted mining properties in the vicinity of the project to further optimize the environmental footprint of the Howse overburden and waste rock and their effects to viewscapes. |
| **5.3** | Apply dust suppressant on haul road to control dust release | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | TSMC will apply dust suppressants such as approved chemicals and water additives on the haul road to control and limit dust emissions for the life of the Project. **Estimated Execution: Spring to Fall months (Early May to September), annually.** |
| **5.4** | Control dust during ore unloading, if observed visually (except if not feasible for safety reasons) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Appropriate dust control measures will be implemented for unloading of ore from, if dust is observed visually, during the life of the Project. |
| **5.5** | Implement dust emission measures at conveyor transfer points, drum scrubber, crushers, and dryers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Measures to reduce dust at conveyor transfer points, drum scrubber, crushers, and dryers such as water spray, baggers, precipitators and enclosures are implemented and will remain in place for the life of the Project. |
| **5.6** | Fill borehole necks with clean crushed rock to reduce dust and gas emissions from blasting | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Filling of borehole necks with clean crushed rock to reduce dust and gas emissions from blasting will be followed as standard practice for all blasts during the life of the Project. |
| **5.7** | Develop and implement dust management strategy for road to Schefferville | ✓ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | The Howse Project Dust Management Strategy has been developed and will be implemented for the life of the project. Further updates to the Strategy, if required, will be carried out in consultation with Indigenous groups, relevant authorities and the Town of Schefferville. Some aspects of the strategy are already in place as part of previous commitments (shuttle buses, requirement to wash vehicles before travel to town). **Estimated Execution: All year round.** |
| **5.8** | Implement incentive measures to reduce number of vehicles (e.g., shuttle buses) | ✓ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Daily shuttle buses are utilized for employee transit from the Town of Schefferville, Kawawachikamach and Matimekush as well as all rotation change days for Fly-In-Fly-Out employees. These shuttles will remain in service for the life of the Project. **Estimated Execution: All year round.** |
| **5.9** | Develop and implement follow-up program for air quality and dust effects | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Ambient Air Quality Follow-Up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| 5.9.1 | Monitor air quality at receptors R3, R9, R10, R16, R18, R24, R36, R38 and R40 | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | Air quality monitoring will be performed from Spring to Fall months as long as weather conditions allow. Dustfall and SO2 samplers will be set up at each location for monthly samples. Particulate matter and CO will be monitored periodically with Aeroqual AQS1 monitors. If exceedances are detected, appropriate mitigation measures will be put in place. These air monitoring activities will remain in place for the life of the Project. **Estimated Completion: Spring to Fall months (June to October), annually.** |
| 5.9.2 | Monitor dust generation using dust tracking system and mobile monitoring equipment | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | WIll be done a conditional basis if areas outside of the Project, other than the receptors already considered for monitoring as part of the follow-up plan, are affected by dust. Depending on type and duration of dust events, optical dust trackers such as the Aeroqual AQS1 and/or dustfall monitoring equipment will be used. This mechanism will remain in effect for the life of the Project. **Estimated Completion: Spring to Fall months (June to October), annually.** |
| 5.9.3 | Analyze contaminant concentrations in dust (min. once between Jun-Aug yearly) | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | | • | • | • | Analysis of contaminant concentrations in dusts will be done monthly from Spring to Fall by analyzing heavy metals concentrations in samples collected in dustfall jars. These sampling activities will remain in place for the life of the Project. **Estimated Completion: Spring to Fall months (June to October), annually.** |
| 5.9.4 | Implement modified or additional mitigation measures if follow-up results demonstrate they are required at plant, roads, or stockpiles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Modification to existing measures or addtional measures will be deployed in applicable areas if the results of the air quality follow-up program demonstrates they are required during the life of the Project. |
| **5.10** | Develop and implement follow-up program for country foods | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Country Foods Follow-Up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| 5.10.1-4 | Sample country food species (inc. fish) for contaminants starting 2 years after operation | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | Baseline sampling for this program was conducted in 2015. Results of the future samples will be compared with baseline samples to determine if any increase in contaminants has occured. In the event of increases of contaminants in any of the country foods, TSMC will conduct a new Human Health Risk Assessment and a targeted action plan (results-dependent) will be also be implemented. **Estimated Completion: Summer months (July to Sept) 2027, 2032 and 2039.** |
| 6. Current Use of Lands and Resources - IAAC | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | | 2036 | | | | 2037 | | | | 2038 | | | | 2039 | | | | 2040 | | | | 2041 | | | | Description |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| **6.1** | Upgrade and maintain bypass road around project for Indigenous access to Pinette Lake, Kauteitnat and Howells River Valley | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | Required upgrades will be done in 2025 after the spring freshet and maintenance activities will be conducted in late summer. Maintenance activities in subsequent years will be conducted as required after the spring freshet and in late summer, as well as on an as-needed basis in case of damages caused by extreme weather events. Escort service from the Security Gate to the road linking Pinette Lake, Kauteitnat and Howells River Valley will also be maintained for members of Indigenous communities who do not wish to use the bypass road to access these areas. These measures will remain in place for the life of the Project. **Estimated Completion: Spring to Fall months (June to October), annually.** |
| **6.2** | Upgrade and maintain bypass road around DSO4 area for Indigenous access to hunting grounds | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | |
| **6.3** | Do not use bypass roads for project activities (except for maintenance or emergency) | ✓ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Access to some of the monitoring points included in the Follow-Up Programs will require minimal travel on the bypass roads by TSMC Environment staff. Prohibition on the use of the bypass road by TSMC vehicles and employees will remain in effect for the life of the Project. Apart from periodic road maintenance activites as per condition 6.1 and 6.2, no other Project activities using the bypass roads will be permitted. |
| **6.4** | Prohibit employees and contractors from fishing and hunting in project area | ✓ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | As per TSMC policy, employees and contractors (other than local Indigenous land users) are prohibited from fishing, hunting or interfering with wildlife in any manner in all areas. This is communicated to all site personnel during the employee induction process and through periodic reminders. This policy will be enforced for the life of the Project. |
| **6.5** | Consult NL Department if caribou observed within 20km radius of pit or plant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The NL Department of Fisheries, Forestry and Agriculture (formerly known as the Department of Fisheries and Land Resources) will be contacted immediately if Caribou are observed within a 20km radius of any Project components. This mechanism will remain in effect for the life of the Project. |
| **6.6** | Develop and implement follow-up program for land use for traditional purposes | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Follow up Program for Current Use of Land has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| **6.7** | Develop and implement follow-up program for effects on George River caribou herd | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Caribou Follow up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| **6.8** | Develop and implement communication plan with Indigenous groups | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Communication Plan has been developed and will be implemented for the life of the Project. Further updates to the Plan, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| 6.8.1 | Share project activity information, including blasting schedules (min. 48hrs in advance) | ✓ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Blasting schedule will be provided 48 hours in advance as standard practice for all blasts during the life of the Project. **Estimated Completion: 48 hours in advance of every blast event, all year round.** |
| 6.8.2 | Share follow-up activities and monitoring results from all follow-up programs with Indigenous groups | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Procedures to share follow-up activities and monitoring results from all follow-up programs are included in the Communication Plan which will be implemented for the life of the Project. |
| 6.8.3 | Share information on access restrictions, including location, timing, alternate routes, and bypass road maintenance timing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Procedures to share information on access restrictions, including location, timing, alternate routes, and bypass road maintenance activities timing are included in the Communication Plan which will be implemented for the life of the Project. |
| **6.9** | Develop and implement feedback procedures for Indigenous groups | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Feedback procedures regarding any potential adverse environmental and social effects of the Project are included in the Communication Plan which will be implemented for the life of the Project. |
| 7. Physical and Cultural Heritage - IAAC | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | | 2036 | | | | 2037 | | | | 2038 | | | | 2039 | | | | 2040 | | | | 2041 | | | | Description |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| **7.1** | Refrain from blasting for 24hrs when Kauteitnat use planned (when requested by Indigenous groups) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Blasting will be delayed for 24 hours to accommodate requests from the Indigenous communities plainning use of Kauteitnat during the life of the Project. |
| **7.2** | No activities south of water diversion ditch except for ditch work; identify exclusion zone with signage | | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | No activities are planned south of the water diversion ditch for the whole duration of the project. Exclusion signage will be maintained to ensure no unplanned activities occur south of the ditch for the life of the Project. **Estimated Completion: June, 2025** |
| **7.3** | During Jun-Sep, limit blasting to max twice per week and five times per month | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | | | | Blasting will be limited to max twice per week and five times per month as standard practice for all blasts during the life of the Project. **Estimated Execution: June to September, annually.** |
| **7.4** | Develop and implement protocol for receiving noise complaints; respond within 48hrs | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The protocol for receiving and responding to noise complaints is included in the Communication Plan and will be maintained for the life of the Project. **Completed: 15 January, 2025.** |
| **7.5** | Develop and implement follow-up program for noise effects on cultural site use | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Noise Follow-Up Program has been developed and will be implemented for the life of the Project. Further updates to the Program, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| 7.5.1 | Monitor noise levels at receptor sites R9, R10, R11, R13 and R24 | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | • | • | | | | | | Noise monitoring will be performed annually during the Spring to Fall months. If exceedances are detected, appropriate mitigation measures will be put in place. These noise monitoring activities will remain in place for the life of the Project. **Estimated Completion: Spring to Fall months (June to October), annually.** |
| **7.6** | Develop and implement cultural heritage control plan | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Cultural Heritage Control Plan has been developed and will be implemented for the life of the Project. Further updates to the Plan, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Completed: 15 January, 2025.** |
| 7.6.1-5 | Follow protocol if heritage resources discovered (halt work, delineate area, inform Indigenous groups, conduct assessment) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The protocol described in the cultural heritage control plan will be strictly followed in case of discovery of any previously unidentified structures, sites or things of historical, archaeological, paleontological or architectural significance are discovered within the Designated Project or in any area within other TSMC projects. This protocol will remain in place for the life of the Project. |
| 8. Cumulative Effects and 9. Accidents, Schedules & Records - IAAC | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | | 2036 | | | | 2037 | | | | 2038 | | | | 2039 | | | | 2040 | | | | 2041 | | | | Description |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| **8.1** | Participate in regional initiatives for cumulative effects monitoring if requested | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | TSMC will participate in any such initiaves if requested by a relevant authority or by local stakeholders during the life of the Project. |
| **9.1-9.2** | Take measures to prevent accidents and develop accident response plan | ✓ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects will be taken into consideration during all phases of the Project. The Howse Project Accidents and Malfunctions Response Plan has been developed to identify and prevent specific accidents and malfunctions that may result in adverse environmental effects. The Plan will be implemented for the life of the Project. Further updates to the Plan, if required, will be carried out in consultation with Indigenous groups and relevant authorities. **Estimated Execution: All year round.** |
| **9.3** | Review and update accident response measures and plan prior to operation | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Accidents and Malfunctions Response Plan was reviewed and updated in January 2025 prior to start of construction and operations for the Project. **Completed: 15 January, 2025.** |
| **9.4** | In event of accident, implement response plan, notify parties, submit written reports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Notification, response and reporting of all accidents and malfunctions will be conducted in accordance with the measures and timelines described in the Howse Project Accidents and Malfunctions Response Plan for the life of the Project. |
| **9.5** | Develop and implement communication plan for accidents and malfunctions | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | The Howse Project Communication Plan has been developed to include specific procedures and timelines to notify and share information on accidents and malfunctions. These procedures will be implemented for the life of the Project. **Completed: 15 January, 2025.** |
| 10. Schedules and 11. Record Keeping - IAAC | | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | | 2030 | | | | 2031 | | | | 2032 | | | | 2033 | | | | 2034 | | | | 2035 | | | | 2036 | | | | 2037 | | | | 2038 | | | | 2039 | | | | 2040 | | | | 2041 | | | | Description |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| **10.1-10.2** | Submit detailed schedules to Agency within 30 days of construction start | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Detailed schedule of compliance activites to fulfill each condition (Condition 10.1) and schedule of activities required for all phases of the Project (Condition 10.2) was submitted to the Agency in March 2025 within 30 days of Project construction start. **Completed: March 18, 2025.** |
| **10.3** | Submit annual schedule updates by June 30 each year | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | | • | | | Updated schedules will be prepared and submitted to the Agency by June 30 annually with the Howse Project Annual Report. Updated schedules will also be published on a publicly available platform simultaneously, as per Condition 2.10. **Estimated Completion: June, recurring annually.** |
| **10.4** | Provide revised schedules to the Agency if any changes are made to the initial schedules or subsequent updates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Revised schedules will be provided to the Agency if any changes are made to the initial or updated schedules during the life of the Project. |
| **11.1-11.2** | Maintain compliance records at facility in Canada for 25 years post-operation and provide to Agency if requested. Notify Agency of new physical facility location at least 30 days prior to change. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Compliance records will be maintained in TSMC servers located in Canada for 25 years post-operation and provided to Agency if requested during the life of the Project. During this period, TSMC will notify the Agency of transfer of records to a new physical facility location at least 30 days prior to change. |