

Internet Reporting

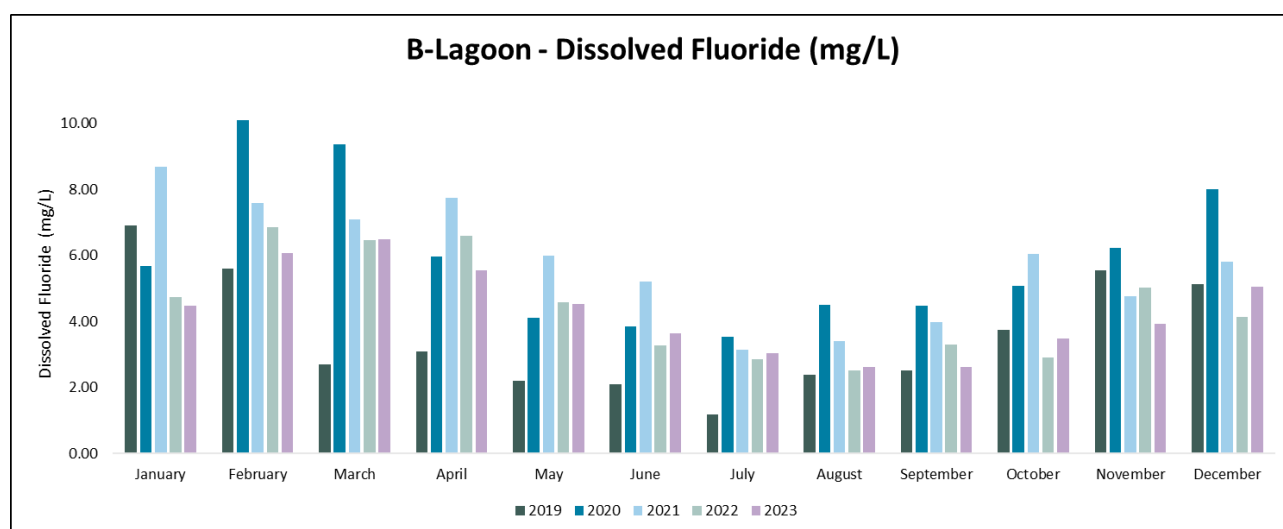
It was largely on the strength of Rio Tinto's voluntary pollution prevention (P2) planning process that the Province of British Columbia issued, in 1999, a "multimedia" environmental permit for our smelter operations. This was the first such permit ever issued in BC and establishes standards, and monitoring and reporting requirements, for a comprehensive range of emissions, effluents, and wastes. The P2 planning process is believed to have played a significant role in the more than 60 percent reduction in environmental permit non-compliances achieved at the Kitimat smelter since 1996.

Permit reporting

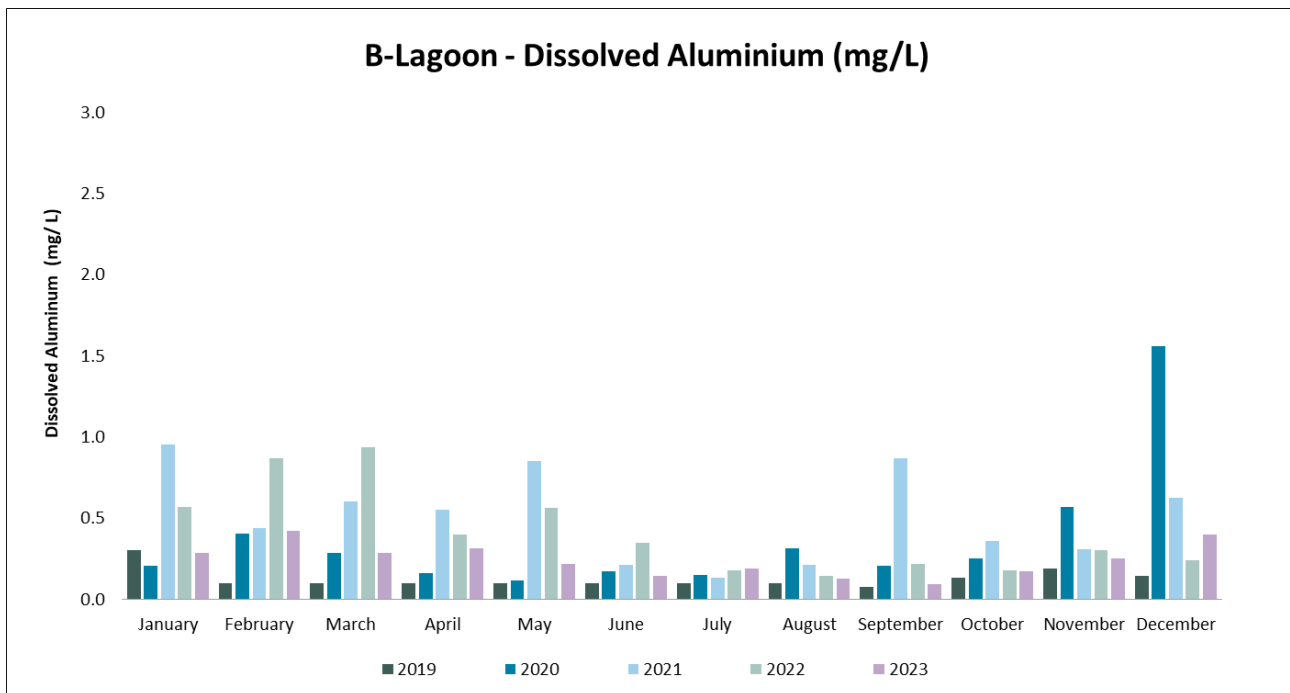
Rio Tinto's P2 Permit requires continuous reporting on several key parameters – from emissions to effluents and other wastes. The following tables and graphs satisfy the P2 Permit clause 8.1.5 for internet reporting on the B-Lagoon, Reduction Roof vent Emissions, Sulphur dioxide emissions and emission control device upsets. Additional information on our environmental performance and improvement initiatives can be found in Rio Tinto's [annual environmental report](#).

B - Lagoon

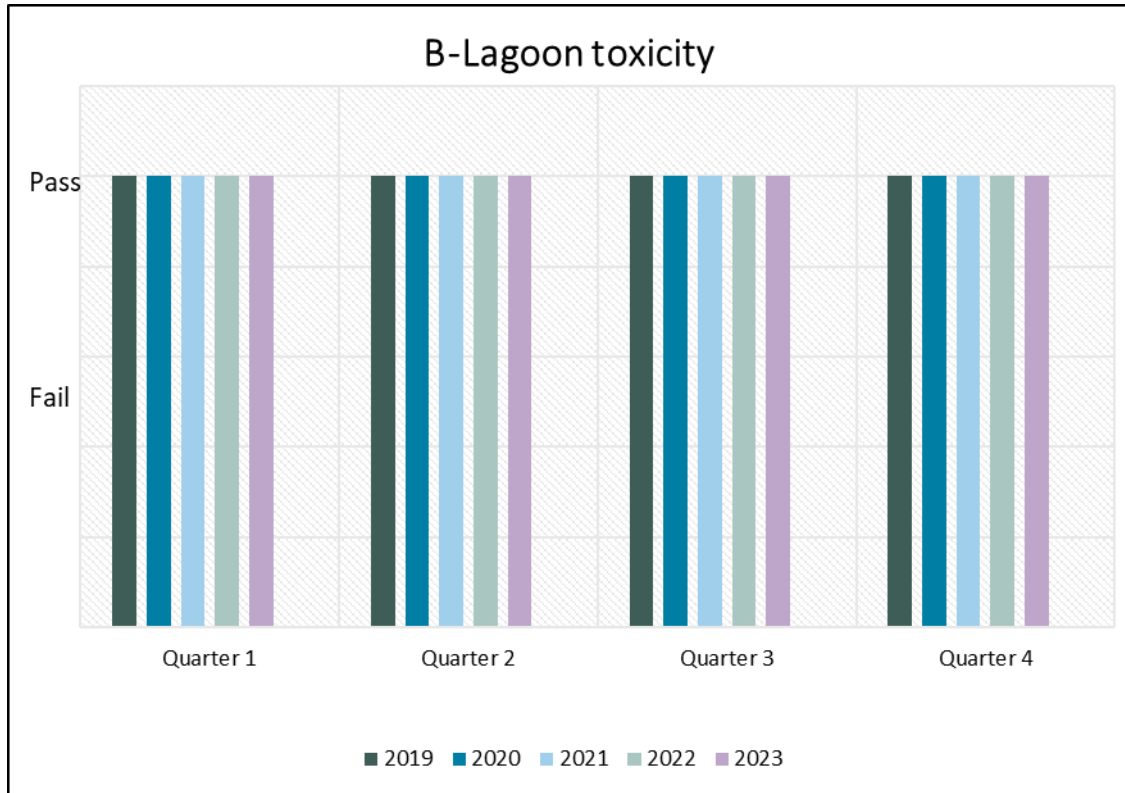
Permit section	Details
3.1 B Lagoon	<p>Dissolved fluoride originates mainly from the leaching of a legacy (no longer used) landfill, as well as from raw material losses. Ongoing housekeeping and stormwater diversion work are conducted to reduce the fluoride concentration. B lagoon is sampled daily for dissolved fluoride, and the results from the daily samples for each month are averaged and shown on the below graph.</p> <p>The permit limit for this parameter is 10.0 mg/L, and it is applied to the daily results.</p>



Permit section	Details
3.1 B Lagoon	<p>Dissolved aluminium originates when alumina comes into contact with precipitation, as well as from raw material losses. B lagoon is sampled daily for dissolved aluminium and the results from the daily samples for each month are averaged and shown on the below graph.</p> <p>The permit limit for this parameter is 3.0 mg/L, and it is applied to the daily results.</p>

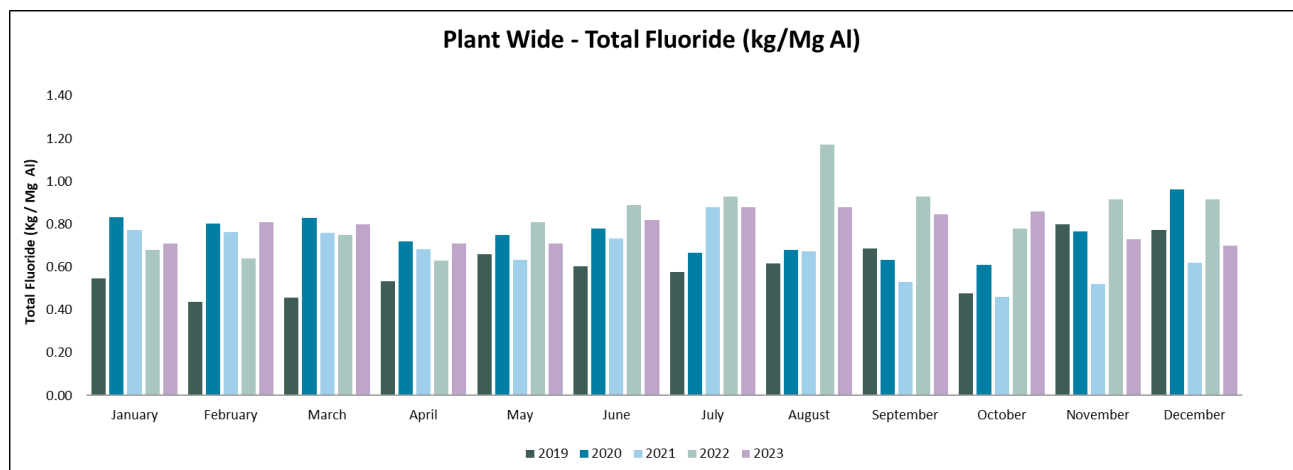


Permit section	Details
3.1 B Lagoon	The 96LC50 test measures the effect of the sampled water on rainbow trout over 96 hours. This test is completed quarterly for the discharged water from B lagoon, and the test routinely passes with 100% survivability.

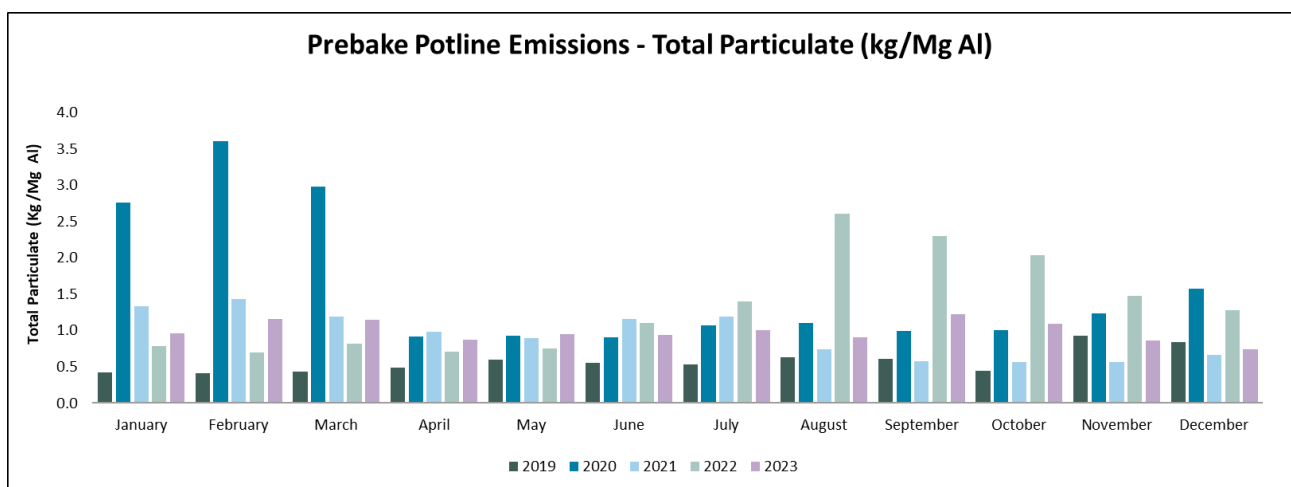


Prebake Potline Emissions

Permit section	Details
4.10 Fluoride Emissions	<p>Fluoride total (Ft) is produced during the electrolytic process. Most of the fluoride emissions are captured and treated by the two gas treatment centres. Some fugitive emissions, however, escape through roof vents in the reduction building. Our plant-wide permit limit for total fluoride includes emissions from gas treatment centers, pallet storage building, and fume treatment center. Fugitive emissions are monitored and reported monthly, with a limit of 0.9 kg of Ft/ Mg Al.</p> <p><i>Note: In July 2021, reduction operations were reduced by 75 %. From June to December 2022 and from January to October 2023, a temporary authorization was granted, which raised the permit limit up to 2.8 kg Ft / Mg Al until 96 % operational pots were achieved. 96% operational pots were achieved in August 2023, and in September 2023, the permit limit was reduced to 1.5 kg Ft / Mg Al for a stabilization phase. In November 2023, the permit limit returns to the normal operation limit of 0.9 kg Ft / Mg Al.</i></p>

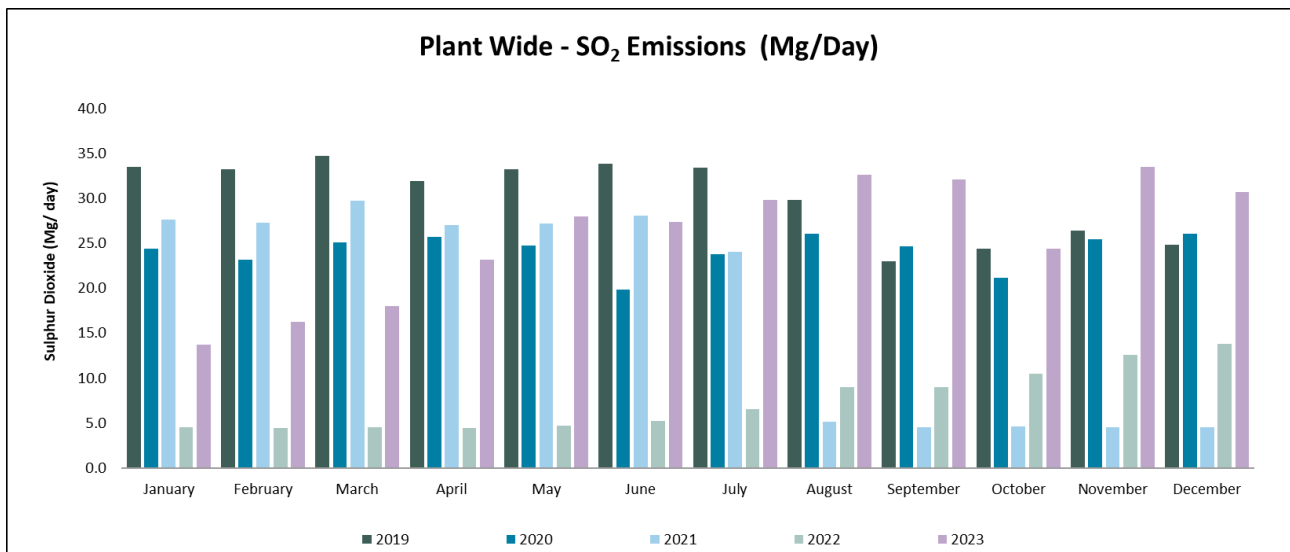


Permit section	Details
4.1.2.1 Prebake Potline Emissions	<p>Total particulates (TP) are air-borne solids that are composed mainly of alumina and are produced during the electrolytic process. Most particulate emissions are captured by the two gas treatment centres, however, some fugitive particulate emissions escape through roof vents in the reduction building. Our plant-wide permit limit for total particulates includes emissions from gas treatment centers. Fugitive emissions are monitored and reported monthly, with a limit of 1.3 kg of TP / Mg Al.</p> <p><i>Note: In July 2021, reduction operations were reduced by 75 %. From June to December 2022 and from January to October 2023, a temporary authorization was granted, which raised the permit limit up to 2.9 kg TP / Mg Al until 96 % operational pots were achieved. 96% operational pots were achieved in August 2023, and in September 2023, the permit limit was reduced to 2.0 kg TP / Mg Al for a stabilization phase. In November 2023, the permit limit returns to the normal operation limit of 1.3 kg Ft / Mg Al.</i></p>



Plant Wide Sulphur Dioxide

Permit section	Details
4.2 SO ₂ emissions	<p>Sulphur dioxide (SO₂) originates from the green coke (a by-product of petroleum refining) used to manufacture anodes, and is released both during coke calcining, anode baking and anode consumption during the electrolytic process.</p> <p>The permit limit of 42 Mg/day and is displayed in the graph below.</p> <p><i>Due to analytical equipment challenges, SO₂ emission data will be updated at a later date when all the necessary information becomes available.</i></p>



Permit section	Details
7.1.1.2	<p>Emission control devices are pieces of equipment that are designed to reduce contaminants emitted to the atmosphere from operations through scrubbing, filtration or incineration. Emission control devices are critical to reducing BC Works environmental footprint.</p> <p>At BC Works there are many minor emission control devices located throughout the operation as well as a number of critical devices such as the Fume Treatment Center (FTC), Gas Treatment Center (GTC), Liquid Pitch Incinerator (LPI) & Pyroscrubber. An upset or bypass of an emissions control device occurs when the operation continues to produce emissions, but the emissions control device is no longer treating the emissions as per specification for a period of time. Upsets may be required in order to completed scheduled maintenance safely, when scheduled maintenance works results in an upset or bypass of an emissions control device the work must be approved prior to commencing.</p> <p>The below table is a summary for all 2023 upsets/ bypasses.</p>

2023: Emission control device upset/bypass

Date	Equipment	Category	Upset Type	Duration	Cause
17-Jan-23	FC-3	Offline	Planned	18h	Routine Maintenance
17-Jan-23	FC-3	Offline	Unplanned	23h 17min	Additional repairs to put equipment back online
26-Jan-23	FTC	Mode 4	Unplanned	13min	ID fan shutdown by mistake
28-Feb-23	FC-3	Offline	Unplanned	7h 56min	Main blower 1 tripped
1-Mar-23	FTC	Mode 2	Unplanned	1h 15min	Low draft problem
4-Mar-23	West GTC	No feed	Unplanned	3h 40min	System Tripped
5-Mar-23	West GTC	Reduced feed	Unplanned	8h 25min	SPS Leak
6-Mar-23	West GTC	Reduced feed	Unplanned	16h 56min	SPS Leak
3-Apr-23	FC-3	Offline	Unplanned	1h 11min	Low inlet temperature
4-Apr-23	FC-3	Offline	Unplanned	48min	Combustion blower refused to start in auto
6-Apr-23	West GTC	Reduced Feed	Unplanned	20h 30min	SPS leak
6-Apr-23	West GTC	Reduced Feed	Unplanned	22h 27min	SPS leak
6-Apr-23	West GTC	No Feed	Unplanned	1h 30min	Sheer pin broke
6-Apr-23	West GTC	No Feed	Unplanned	26 min	Sheer pin broke
6-Apr-23	West GTC	Reduced feed	Unplanned	14h 16min	SPS issues
6-Apr-23	West GTC	Reduced feed	Unplanned	14h 35min	Sheer pin broke
10-Apr-23	West GTC	Reduced feed	Unplanned	7h	Sheer pin broke
11-Apr-23	West GTC	Reduced feed	Unplanned	24h 32min	SPS leak
11-Apr-23	East GTC	No feed	Approved	8h	Routine Maintenance
12-Apr-23	FTC	Mode 2	Unplanned	10min	Fire movement
02-May-23	3310-DCB-002 3310-DCB-003	NA	Unplanned	< 24h	Damaged filters
02-May-23	FTC	Mode 2	Unplanned	1h 3min	High temperature at cooling water outlet

10-May-23	FTC	Mode 2	Approved	9h	Routine Maintenance
25-May-23	PVT	Offline	Unplanned	1h 12min	System Tripped
19-Jun-23	LPI	Offline	Unplanned	2h 15min	Fan Tripping
21-Jun-23	West GTC	No Feed	Approved	8h	Routine maintenance
21-Jun-23	West GTC	No Feed	Unplanned	4h 30min	Part repair
21-Jun-23	East GTC	No Feed	Unplanned	1h 50min	Part adjust & system restart
25-Jun-23	LPI	Offline	Unplanned	10h 3min	System alarm & part replace
29-Jun-23	553-DC-3	Offline	Unplanned	15min	Plugged dust collector bag
7-Jul-23	LPI	Offline	Unplanned	31min	Exhaust fan tripped
10-Jul-23	LPI	Offline	Unplanned	1h 33min	Power outage
11-Jul-23	LPI	Offline	Unplanned	3h 44min	Power outage
11-Jul-23	FC-3	Offline	Unplanned	1h 1min	Power outage
12-Jul-23	FC-3	Offline	Unplanned	30min	Alarm triggered
12-Jul-23	T6-DC3A	Offline	Unplanned	21h 30min	Pulsing issue
20-Jul-23	LPI	Offline	Unplanned	25min	Low gas pressure fault
20-Jul-23	LPI	Offline	Unplanned	43min	Power outage
20-Jul-23	East GTC	No Exhaust	Unplanned	38min	Power outage
20-Jul-23	West GTC	No Exhaust	Unplanned	38min	Power outage
20-Jul-23	FTC	Mode 2	Unplanned	53min	Power outage
5-Aug-23	LPI	Offline	Unplanned	6h 39min	Equipment tripped
14-Aug-23	East GTC	No Feed	Approved	4h	Routine maintenance
15-Aug-23	East GTC	No Feed	Approved	8h 20min	Routine maintenance
16-Aug-23	LPI	Offline	Unplanned	5h 48min	Equipment tripped
17-Aug-23	East GTC	No Feed	Unplanned	4h 30min	SPS repair
22-Aug-23	FTC	Mode 2	Approved	6h 31min	Routine maintenance
28-Aug-23	FC-3	Offline	Unplanned	6h	Equipment repair
29-Aug-23	FC-3	Offline	Approved	38h	Routine maintenance
30-Aug-23	FC-3	Offline	Unplanned	1h 30min	Instrumentation error
30-Aug-23	LPI	Offline	Approved	13h	Routine maintenance
5-Sep-23	Tower 6	Offline	Unplanned	2hr 30min	Inadequate equipment cap
5-Sep-23	C12-DC4	Offline	Unplanned	20min	Equipment malfunction
6-Sep-23	FTC	Mode 2	Unplanned	4hr 43min	System condition fault
8-Sep-23	B558-Vacuum	Offline	Unplanned	10min	Plugged dust collector bags
14-Sep-23	5130-DCB-001	Offline	Unplanned	10min	Insufficient dust collector bags
12-Oct-23	East GTC	No Feed	Approved	9h 38 min	Air lift upgrade project
13-Oct-23	FTC	Mode 3	Unplanned	7 min	Loose wire
15-Oct-23	LPI	Offline	Unplanned	1h 5 min	Combustion blower fault
19-Oct-23	West GTC	No Feed	Approved	5h 45 min	Air lift upgrade project
25-Oct-23	LPI	Offline	Unplanned	5h 35 min	Power outage
25-Oct-23	FC-3	Offline	Unplanned	5h 35 min	Power outage
26-Oct-23	East GTC	No Feed	Approved	7h 30 min	Air lift upgrade project
8-Nov-23	FC-3	Offline	Unplanned	5h 45 min	Equipment Tripped
9-Nov-23	K3-DC	Offline	Unplanned	8h 30 min	Damaged filter bags
14-Nov-23	East GTC	No Feed	Unplanned	3h 20 min	Equipment repair
15-Nov-23	LPI	Offline	Unplanned	2h 37 min	Power disruption
16-Nov-23	FC-3	Offline	Unplanned	1h 23 min	Power disruption
17-Nov-23	East GTC	No Feed	Approved	5h 42 min	Equipment commissioning
21-Nov-23	East GTC	No Feed	Approved	6h	Equipment repair
21-Nov-23	FTC	Mode 2	Unplanned	16 min	Alumina feed disruption

25-Nov-23	B221 Cruces cleaner	Offline	Unplanned	20h	Broken filter bags
30-Nov-23	FTC	Mode 2	Approved	6h 30 min	Routine maintenance
4-Dec-23	FC-3	Offline	Approved	98h	Overhaul repair
8-Dec-23	FC-3	Offline	Unplanned	10h 35 min	Unstable system after repair
11-Dec-23	LPI	Offline	Approved	85h 8 min	Overhaul repair
16-Dec-23	T2-DC1A	offline	Unplanned	1h 25 min	Clogged dust collector bags
21-Dec-23	East GTC	No feed	Approved	1h 31 min	Part installation