

DEVELOP

Summary of Environmental Monitoring Data 1 – 30 November 2024

Woodlawn Copper Zinc Project

Document Review/Change History

Date	Review/ChangeType Created, Reviewed, Changed or Obsolete	Revision No.	Authors	
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Compliance summary – November 2024

Medium	Parameter	Compliant with license and project approval	Comment
Air	Deposited dust	Yes	-
	Total Suspended Particulate	Yes	-
	Particulate matter in the air with a diameter of 10 micrometres or less	Yes	-
Water	Surface water	NA	Reported quarterly – next due January 25
	Ground water	NA	Reported quarterly – next due January 25
Noise	Noise monitoring	NA	Not required – site not currently operational
Vibration	Blast monitoring	Yes	-

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1. EPL LICENCE INFORMATION

Details of the EPL licence holder and licence versions are summarised in Table 1-1.

Table 1-1 EPL details

Environment Protection License Number	20821
Licensee	Tarago Operations Pty Ltd
Licensee address	Woodlawn Mine 507 Collector Road TARAGO NSW 2580
Premises	Woodlawn Mine 507 Collector Road TARAGO NSW 2580
Link to full licence on the EPA website	<p>19 December 2023 Version: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=1635655</p> <p>22 September 2023 Version: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=284443&SYSUID=1&LICID=20821</p> <p>18 August 2022 Version: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=249503&SYSUID=1&LICID=20821</p> <p>16 Feb 2022 Version: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=236150&SYSUID=1&LICID=20821</p> <p>18 Jan 2019 Version: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=20821</p> <p>7 May 2018 Version: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=20821</p> <p>12 May 2017 Initial issue: https://app.epa.nsw.gov.au/prpoeoapp/ViewPOEONotice.aspx?DOCID=-1&SYSUID=1&LICID=20821</p>
Complaints telephone number	02 4816 6314

2. INTRODUCTION

Tarago Operations Pty Ltd, a wholly owned subsidiary of Develop Global, holds Environment Protection Licence 20821 (EPL 20821) issued by the Environment Protection Agency (EPA) under the Protection of the Environment operations Act 1997 (the Act) and operates under the conditions of Project Approval 07_0143 (MOD2) granted by the NSW Department of Planning and Infrastructure for the Woodlawn Mine Project. This report has been prepared to satisfy the reporting requirements of Section 66 (6) of the Protection of the Environment and Operations Act 1997, and also, Schedule 6, Condition 11 of the Project Approval. These documents can be found on the Develop web site (<https://develop.com.au>).

Ownership of Woodlawn mine changed on 19 May 2022 when Develop purchased the Woodlawn Mine from Heron Resources.

The EPL was first issued on 29 March 2017 and has been reviewed numerous times since as included in Table 1-1.

This report summarises environmental monitoring results for the Woodlawn Mine for the period 1 – 30 November 2024.

3. METEOROLOGICAL MONITORING

Develop is required to undertake meteorological monitoring on site. Site weather is obtained from the meteorological station located at the EPL 11436 premises. The detailed August 2024 daily weather data is shown in Table 3-2. The total annual rainfall received on site to end of November 2024 has been 707mm.

Table 3-2 Meteorological data: November 2024

Date (Nov 24)	Temp min (°C)	Temp max (°C)	Rain (mm)	No. of wet days (total)	Weather station - Hours recorded (n)	Avg wind speed (m/s)	Avg wind direction (deg)	Evapo transpiration (mm)
1	7.89	18.67	0.0	0.00	24.0	11.7	84.6	3.016
2	7.41	18.24	0.0	0.00	24.0	14.1	65.3	3.585
3	12.77	26.91	0.0	0.00	24.0	26.6	300.1	6.809
4	11.57	23.44	0.0	0.00	24.0	14.6	234.6	4.545
5	9.98	19.97	0.0	0.00	24.0	12.1	68.5	3.615
6	11.77	28.07	0.0	0.00	24.0	11.1	236.2	5.95
7	11.82	25.10	0.0	0.00	24.0	20.0	285.4	5.813
8	8.88	19.11	0.0	0.00	24.0	17.3	255.0	5.187
9	8.67	21.66	0.0	0.00	24.0	7.9	121.6	5.058
10	10.18	22.61	0.0	0.00	24.0	11.7	179.5	5.432
11	9.92	18.69	0.0	0.00	24.0	10.2	72.2	2.715
12	12.81	21.49	0.0	0.00	24.0	10.7	81.6	3.999
13	11.83	21.02	1.5	1.00	24.0	9.5	116.1	3.744
14	10.40	18.59	0.0	0.00	24.0	11.0	69.1	3.133
15	10.37	18.60	0.0	0.00	24.0	12.6	60.8	3.556
16	13.31	24.90	0.0	0.00	24.0	13.7	44.6	5.233
17	15.06	25.49	24.5	1.00	24.0	19.6	231.9	3.393
18	10.10	19.48	0.0	0.00	24.0	17.6	242.6	5.985
19	10.82	20.73	0.0	0.00	24.0	11.5	76.6	4.531
20	10.92	23.29	0.0	0.00	24.0	10.5	99.6	5.189
21	12.06	23.63	0.0	0.00	24.0	10.2	66.1	5.594
22	10.01	27.31	0.0	0.00	24.0	8.7	184.2	6.372
23	14.14	29.02	0.0	0.00	24.0	8.6	224.1	6.718
24	16.66	29.75	0.0	0.00	24.0	11.0	195.4	6.294
25	14.22	29.35	0.0	0.00	24.0	13.3	197.6	6.007
26	20.12	28.76	0.0	0.00	24.0	15.9	281.3	6.735
27	17.75	25.28	1.0	1.00	24.0	17.9	262.2	3.896
28	17.24	23.98	13.5	1.00	24.0	9.8	197.0	2.512
29	15.33	17.73	6.5	1.00	24.0	12.1	86.5	0.724
30	16.01	18.30	61.0	1.00	24.0	13.1	138.8	- ¹
Average/ Total	7.41	29.75	108.0	6.0	24.0	13.2	158.64	135.3

¹ Data not provided by the weather station owner. Assumed to be 0 due to the rainfall also experienced on the day

The wind rose in Figure 3-1 depicts the wind speed and direction recorded at 10 m above ground level. The wind rose shows a strong easterly influence in the winds experienced across site during November 2024, although the strongest winds experienced were westerly.

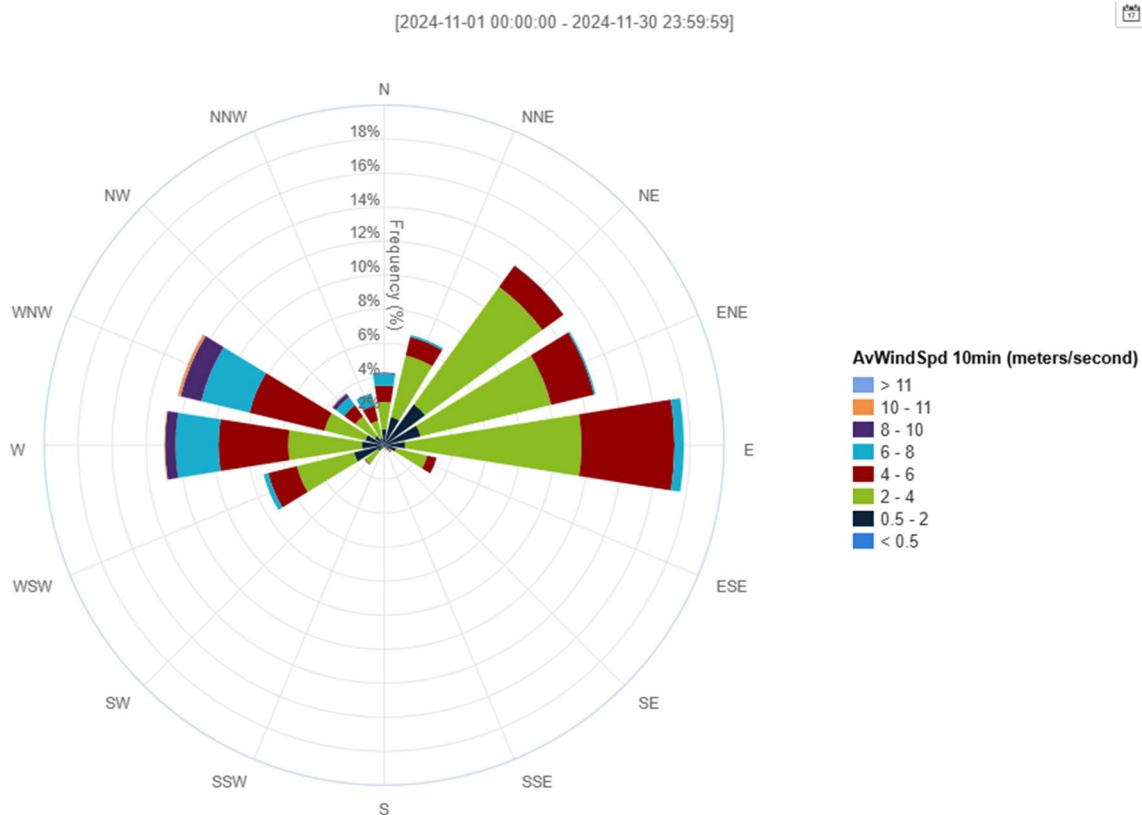


Figure 3-1 Wind rose for November 2024

4. AIR QUALITY MONITORING

Air quality monitoring is undertaken in accordance with the conditions of EPL20821. There are four dust deposition gauges and two high volume air samples monitoring for PM10 and TSP separately. Table 4-3 summarises the frequency and units for monitoring data for the reporting period.

Table 4-3 Supporting information of EPL 20821 dust monitoring requirements

Parameter	Monitoring site	Monitoring frequency	Unit of measure
Air quality monitoring: Deposited Dust (insoluble solids)	DG 22, DG28, DG33, DG34	Monthly	g/m ² /month
TSP	HVAS-1	24 hours every six days	µg/m ³
PM10	HVAS-2	24 hours every six days	µg/m ³

Explanation of units of measurement

mg/m³ = milligrams per cubic metre

g/m²/month = grams per square metre per month

µg/m³ = micrograms per cubic metre

4.1. Depositional Dust

Depositional dust monitoring around the Woodlawn site is undertaken on a monthly basis. Four depositional dust gauges DG22, DG28, DG33 and DG34 are present to monitor the levels of depositional dust. They are located on Site as follows:

- DG22 – East side of void
- DG28 – Pylara
- DG33 – MBT plant
- DG34 – Behind core shed

The limits for deposited dust are outlined in the Project Approval. The limits are summarised in Table 4-4 and only apply to the nearest sensitive receptor (identified in the management plan as DG28).

Table 4-4 Deposited dust limits

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level (Australian standard Limit)
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

^a Total impact (i.e. Incremental increase in concentrations due to the project plus background concentrations due to all other sources).

^b Incremental impact (i.e. incremental increase in concentrations due to the project on its own)

^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method.

Air quality results derived from the depositional dust gauges for November 2024 are shown in Table 4-5. The ongoing high rainfall experienced across the region is contributing to very low levels of atmospheric dust.

Table 4-5 November 2024 DDG results

DDG ID	EPL ID	Start date	End date	Insoluble solids (g/m2/month)	Rolling annual average (g/m2/month) ¹
DG22	2	07/11/2024	03/12/2024	2.1	2.23
DG28	1	07/11/2024	03/12/2024	1.7	1.45
DG33	4	07/11/2024	03/12/2024	2.9	1.29
DG34	25	07/11/2024	03/12/2024	2.2	1.23

¹ Rolling average calculated between November 23 – November 24

4.1.1. Compliance summary:

Depositional dust results are within the criteria set out in the PA and the rolling annual average emissions are within the criteria set out in the PA.

4.2. Atmospheric dust – particulate matter

The Project Approval requires monitoring of total suspended particulate (TSP) matter and particulate matter < 10µm (PM₁₀) to ensure particulate matter emissions generated by the project do not exceed the criteria listed at any residence on privately owned land. High volume air sampling (HVAS) equipment for atmospheric monitoring was installed on 16 October 2017 at Pylara Farm Homestead the nearest residence located to the east of Woodlawn Mine. Monitoring commenced on 17 October 2017 and is undertaken for a 24 hour cycle every 6 days.

The limits for TSP and PM₁₀ outlined in the Project Approval (PA) are detailed in Table 4-6. Results for November 2024 are shown in Table 4-7.

Table 4-6 TSP and PM₁₀ limits

Pollutant	Averaging Period	Criterion ^a
Total suspended particulate (TSP) matter	Annual	^b 90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	^b 30 µg/m ³
Particulate matter < 10 µm	24 hour	^b 50 µg/m ³

^a Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fog, fire incidents or any other activity agreed by the Director-General.

^b Total impact (i.e. Incremental increase in concentrations due to the project plus background concentrations due to all other sources).

Table 4-7 PM10 and TSP results November 2024

Date	PM10 (µg/m³)	PM10 rolling annual average	TSP (µg/m³)	TSP Rolling annual average
3-Nov-24	22.1	5.9	42.5	10.9
9-Nov-24	13.5	5.9	21.6	10.9
15-Nov-24	8.6	5.9	14.4	10.9
21-Nov-24	29.5	5.9	31.6	10.8
27-Nov-24	10.8	5.9	19.7	10.9

4.2.1. Compliance summary:

The PM10 and TSP results for 24 hour period are within the criteria set out in the PA. The rolling annual average emissions are within the criteria set out in the PA.

5. SURFACE WATER MONITORING

Develop carries out surface water quality monitoring at six locations designated in EPL 20821. Monitoring and reporting is undertaken for the parameters and at the frequencies prescribed in EPL 20281 Condition M2.2. The locations are:

- Site 115 - Allianoyonyiga Creek
- Site 105 - Crisps Creek
- Site 100 - Woodlawn/Wileroo Boundary South, below Waste Rock Dam
- Site 109 - Pylara Boundary below South Tailings Dam
- Site 300 - Processing Plant Pollution Control Dam
- Tailings Storage Facility 4 (TSF4)

Of the six surface monitoring locations designated in the EPL, two monitor water quality within the process water circuit, and the remaining 4 are for monitoring ephemeral analogue sites. The purpose of the surface water monitoring program is to ensure that mining operations have minimal impact on water quality.

Surface water quality results for the quarter July to September 2024 will be reported in the October 2024 report.

6. GROUND WATER MONITORING

Groundwater monitoring is carried out quarterly at 11 ground water monitoring points in accordance with the requirements of EPL 20821. Monitoring and reporting is undertaken for the parameters and at the frequencies prescribed in EPL 20821 Condition M2.2. The purpose of the groundwater monitoring program is to ensure water quality impacts associated with the mining operation are minimised. There are three analogue groundwater locations and eight groundwater monitoring points listed in the EPL. The locations are:

- MB4 – upgradient from the processing plant site
- MB5 - southern face of the rehabilitated waste rock dump
- MB6 - adjacent to mine entry
- MB8 - adjacent to Collector Road and downstream of processing plant site
- MB11 - below ED2 dam wall
- MB12 - below ED2 dam wall
- MB13 - western premises boundary
- MB14 - background ground water quality site
- MB15 - measure seepage from Rehabilitated Waste Rock Dump
- MB16 - measures seepage from Rehabilitated Waste Rock Dump
- MB17 - measures seepage from Rehabilitated Waste Rock Dump

Ground water monitoring results for the quarter July to September 2024 will be reported in the October 2024 report.

7. NOISE MONITORING

The EPL stipulates that noise from the premises must not exceed an L Aeq, 15 minute noise level of 35dB(A) at any sensitive receivers under the following meteorological conditions:

- Wind speeds up to 3 m/s at 10m above ground level or
- Temperature inversion conditions of up to 3°C/100m and wind speeds up to 2 m/s at 10 m above ground level.

Following the announcement by Heron Resources on 25 March 2020 that Woodlawn mine would enter care and maintenance, there has been no operational activities undertaken on the site. Since the purchase of Woodlawn Mine by Develop in May 2022, there have been no surface mining operations carried out. Consequently, noise monitoring was not undertaken during November 2024.

8. BLAST MONITORING

EPL 20821 stipulates the criteria to be met to ensure that air-blast overpressure level from blasting at the Woodlawn project does not exceed the criteria detailed in Table 8-8 at any residence on privately owned land.

Table 8-8 Blasting criteria

Location	Time of blasting	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on any privately-owned land	Any time	120	10	0%
	Day	115	5	5% of the total number of blasts over a period of 12 months
	Evening	-	2	5% of the total number of blasts over a period of 12 months
	Night, and all day on Sundays and public holidays	-	1	0%

All blast data and blast events that trigger the monitoring equipment is recorded with the data retained on site. Develop commenced exploration development of the underground decline on 10 August 2022. Monitoring has initially been undertaken at on-site infrastructure locations with very low PPV readings obtained. No blasting activities occurred on the site between 11 December 2023 and 7 August 2024. Blasting activities have recommenced from 8 August 2024. The blast log for November 2024 is contained in Table 9. The blast monitors require yearly calibration off site, therefore UM14301 was not installed during from 11 November onwards. UM15923 not running on 6 November due to battery failure, rectified before 7 November.

Table 9 Blast log November 2024

Date	Time	Blast Monitor ID: UM15923		Blast Monitor ID: UM14301	
		PPV (mm/s)	Monitor location	mm/s	Monitor location
6-Nov-24	11:30	Not Running ¹	On Site	Not Recorded	On Site
7-Nov-24	09:55	Not Recorded	On Site	Not Recorded	On Site
7-Nov-24	17:20	Not Recorded	On Site	Not Recorded	On Site
8-Nov-24	14:30	Not Recorded	On Site	Not Recorded	On Site
9-Nov-24	10:00	Not Recorded	On Site	Not Recorded	On Site
9-Nov-24	17:45	Not Recorded	On Site	Not Recorded	On Site
10-Nov-24	10:30	Not Recorded	On Site	Not Recorded	On Site
10-Nov-24	17:30	Not Recorded	On Site	0.344	On Site
11-Nov-24	12:45	Not Recorded	On Site	Not Recorded	On Site
11-Nov-24	17:42	Not Recorded	On Site	Not Recorded	On Site
12-Nov-24	15:00	Not Recorded	On Site	Not Installed ²	Not Installed
20-Nov-24	10:00	Not Recorded	On Site	Not Installed ²	Not Installed
20-Nov-24	17:45	Not Recorded	On Site	Not Installed ²	Not Installed
20-Nov-24	17:45	Not Recorded	On Site	Not Installed ²	Not Installed
21-Nov-24	11:00	Not Recorded	On Site	Not Installed ²	Not Installed
21-Nov-24	17:50	Not Recorded	On Site	Not Installed ²	Not Installed
22-Nov-24	10:00	Not Recorded	On Site	Not Installed ²	Not Installed
22-Nov-24	17:50	Not Recorded	On Site	Not Installed ²	Not Installed
23-Nov-24	11:00	Not Recorded	On Site	Not Installed ²	Not Installed
23-Nov-24	17:30	Not Recorded	On Site	Not Installed ²	Not Installed
24-Nov-24	10:30	Not Recorded	On Site	Not Installed ²	Not Installed
24-Nov-24	17:45	Not Recorded	On Site	Not Installed ²	Not Installed
25-Nov-24	10:00	Not Recorded	On Site	Not Installed ²	Not Installed
25-Nov-24	17:40	Not Recorded	On Site	Not Installed ²	Not Installed
26-Nov-24	11:00	Not Recorded	On Site	Not Installed ²	Not Installed
26-Nov-24	17:15	Not Recorded	On Site	Not Installed ²	Not Installed
27-Nov-24	11:30	Not Recorded	On Site	Not Installed ²	Not Installed
27-Nov-24	17:45	Not Recorded	On Site	Not Installed ²	Not Installed

¹UM15923 not running due to battery failure

²UM14301 not installed due to being sent for yearly calibration

9. COMPLAINTS

No complaints were received during the November 2024 reporting period.