

# HUNTER VALLEY OPERATIONS

## MONTHLY ENVIRONMENTAL MONITORING REPORT OCTOBER 2023

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## 1 | INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Hunter Valley Operations (HVO). This report includes all monitoring data collected for the period 1<sup>st</sup> to 31<sup>st</sup> October 2023 (the 'Reporting Period').

## 2 | AIR QUALITY

### 2.1 | METEOROLOGICAL MONITORING

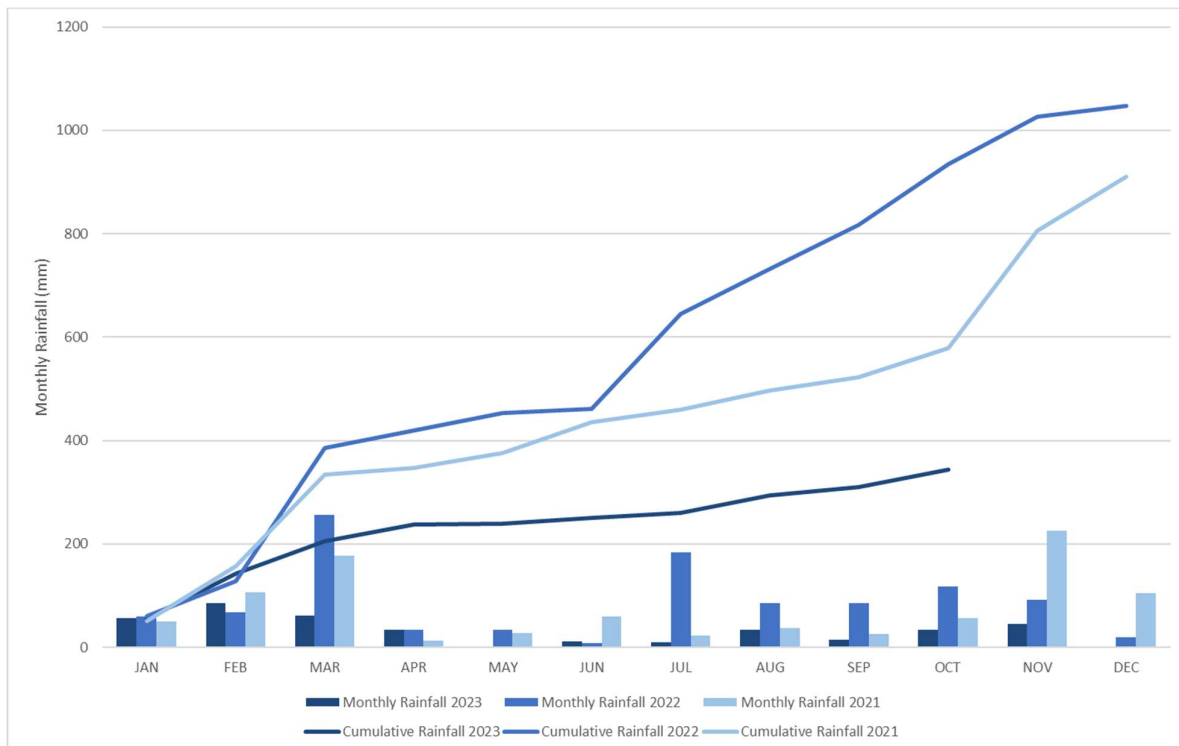
HVO maintains two meteorological stations: 'HVO Corporate' and 'Cheshunt' (refer to Figure 4).

#### 2.1.1 | RAINFALL

Rainfall recorded at the HVO Corporate weather station during the period is summarised in Table 1. The 2021, 2022 and 2023 trends are shown in Figure 1.

*Table 1 - Rainfall data for the reporting period*

2023	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
October	34.6	390.6



*Figure 1 - Rainfall Summary 2023*

**2.1.2 | WIND SPEED AND DIRECTION**

Westerly and south easterly winds were prevailing at HVO Corporate, whilst north-westerly and south easterly winds were prevailing at HVO Cheshunt during the reporting period as shown in Figure 2 (HVO Corporate) and Figure 3 (HVO Cheshunt).

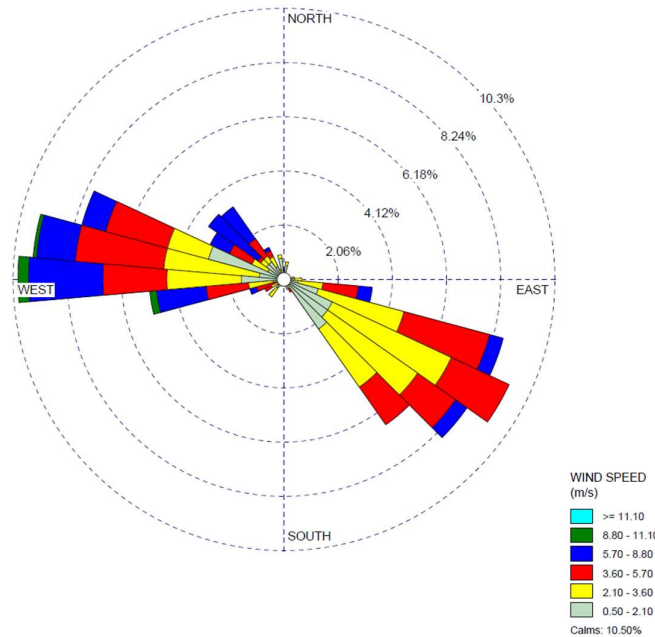


Figure 2 – HVO Corporate Wind Rose for the Reporting Period

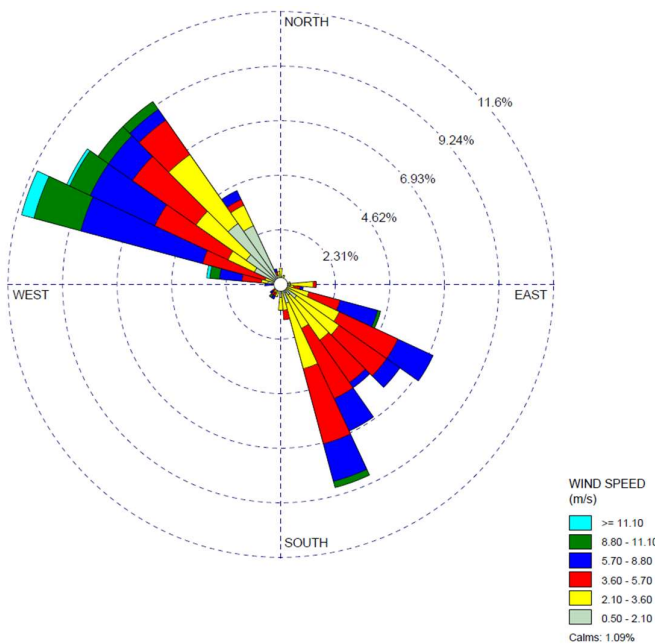


Figure 3 – HVO Cheshunt Wind Rose for the Reporting Period

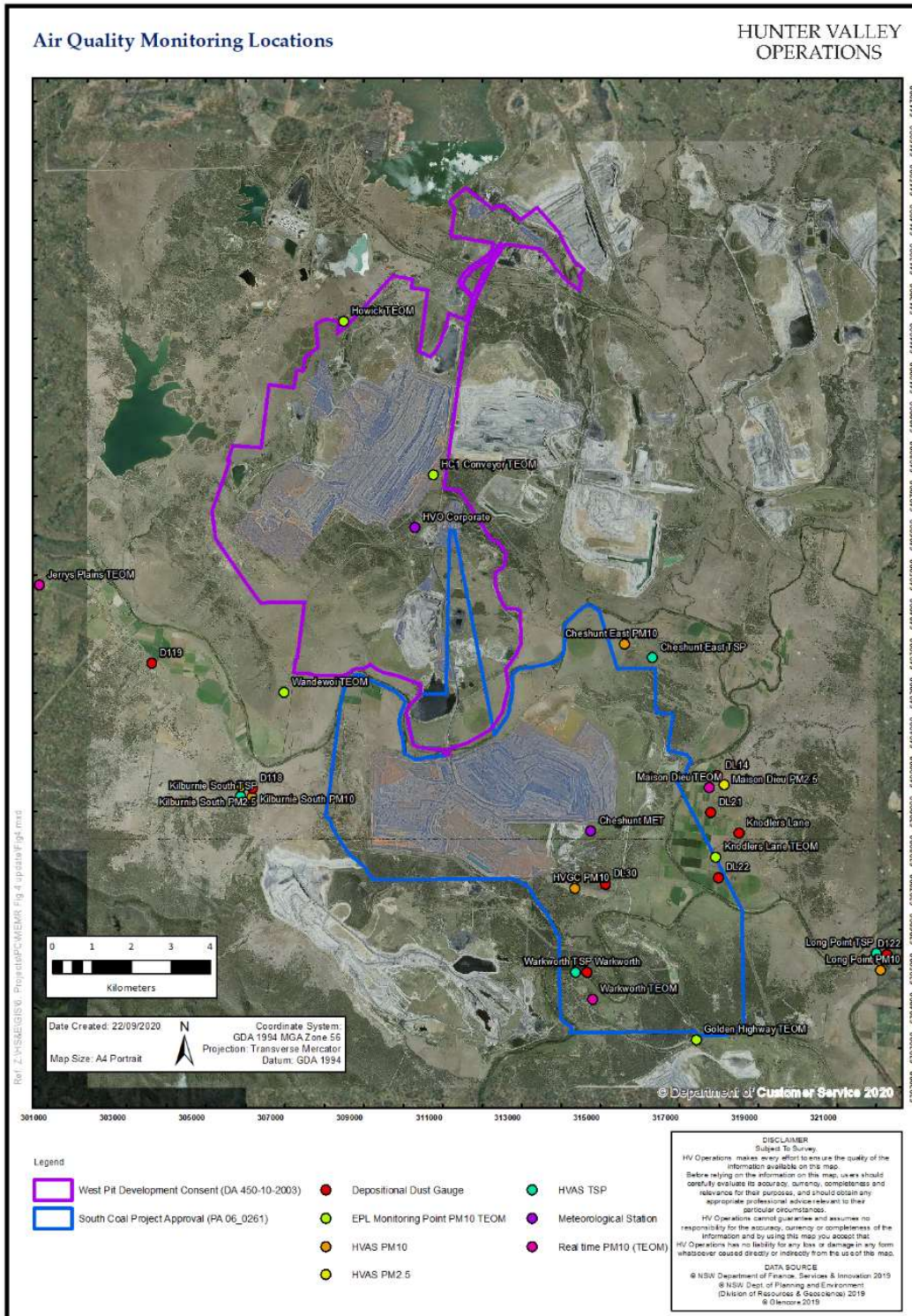


Figure 4 – Air Quality Monitoring Location Plan

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## 2.2 | DEPOSITIONAL DUST

HVO operates and maintains a network of eleven depositional dust gauges situated on private and mine owned land surrounding HVO to monitor regional air quality.

Figure 5 displays insoluble solids results from depositional dust gauges during the reporting period compared against the annual impact assessment criteria. Any monthly results deemed to be contaminated (due to presence of bird droppings, insects, etc.) are not displayed. An assessment of HVO's contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

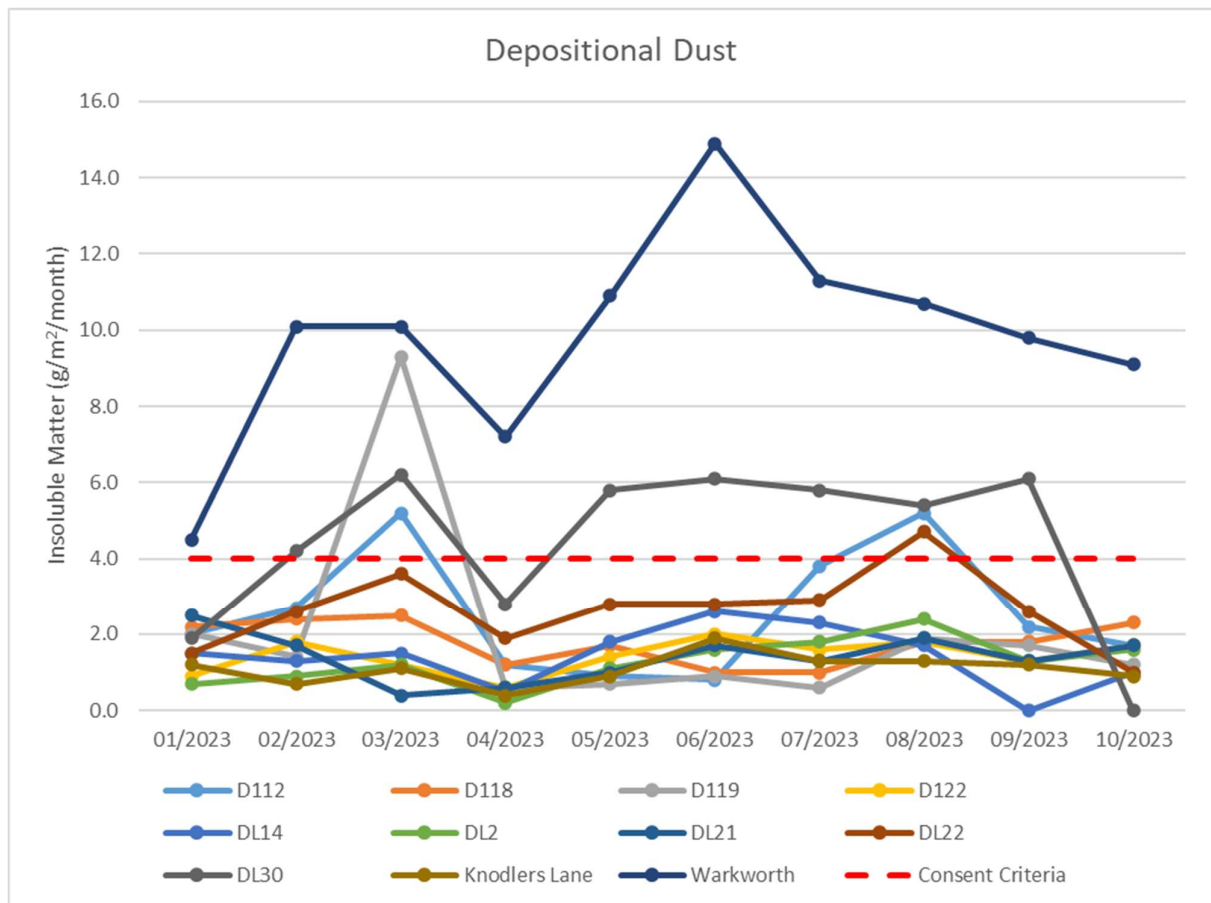


Figure 5 - Depositional Dust Results for the Reporting Period

## 2.3 | SUSPENDED PARTICLES

Suspended particles are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM10). The Kilburnie South and Maison Dieu HVAS also monitor Particulate Matter <2.5µm (PM2.5). The location of these monitors is presented in Figure 4. Each HVAS runs for 24-hours on a six-day cycle.

### 2.3.1 | HVAS PM<sub>10</sub> RESULTS

#### 2.3.1.1 | PERFORMANCE AGAINST SHORT TERM IMPACT ASSESSMENT CRITERIA

Figure 6 shows individual PM10 results at each monitoring station against the short-term impact assessment criteria of 50µg/m<sup>3</sup>. Two exceedances occurred during the reporting period as follows:

- 2 October at Gliding Club of 81.0µg/m<sup>3</sup>; and
- 2 October at Kilburnie South of 51.6µg/m<sup>3</sup>.

Internal investigation by HVO into these results deemed HVO's contribution to be below the short-term impact assessment criteria.

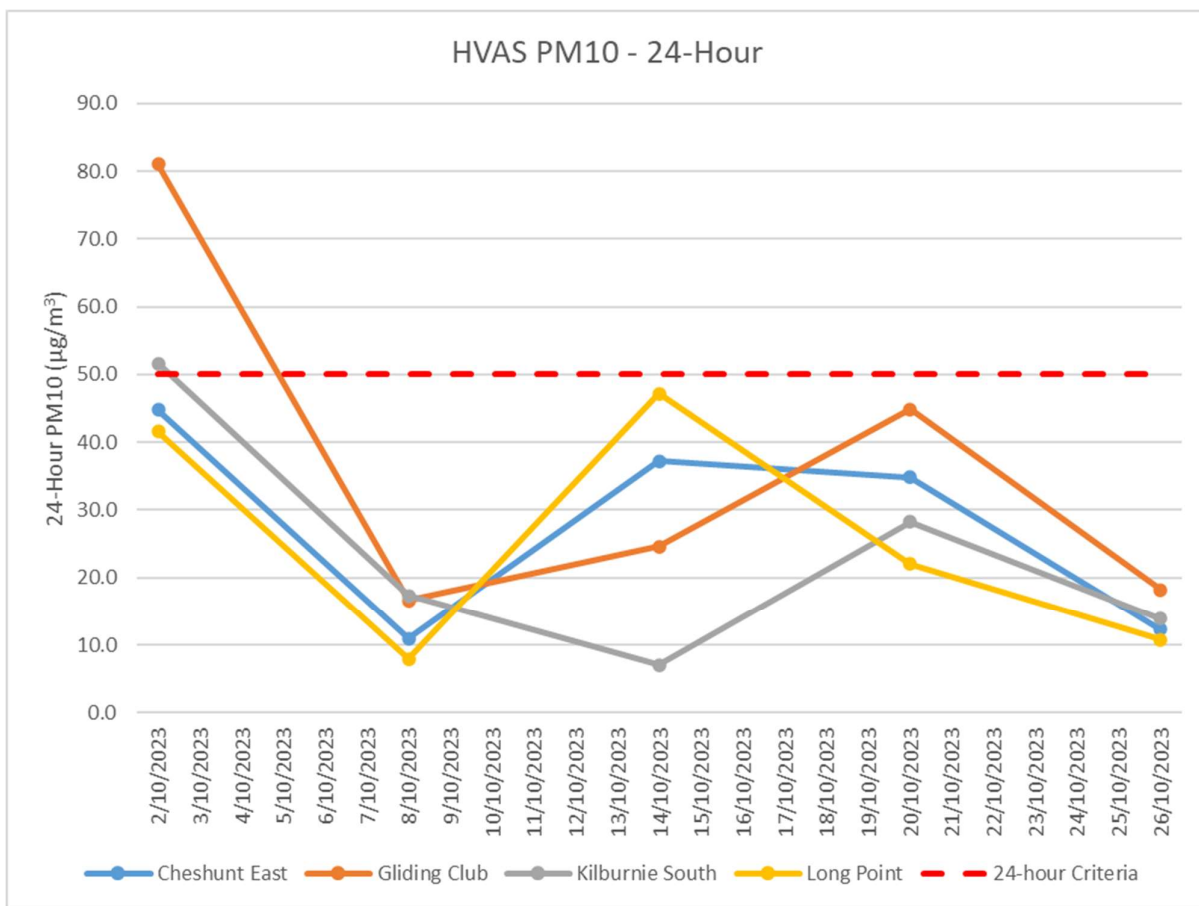


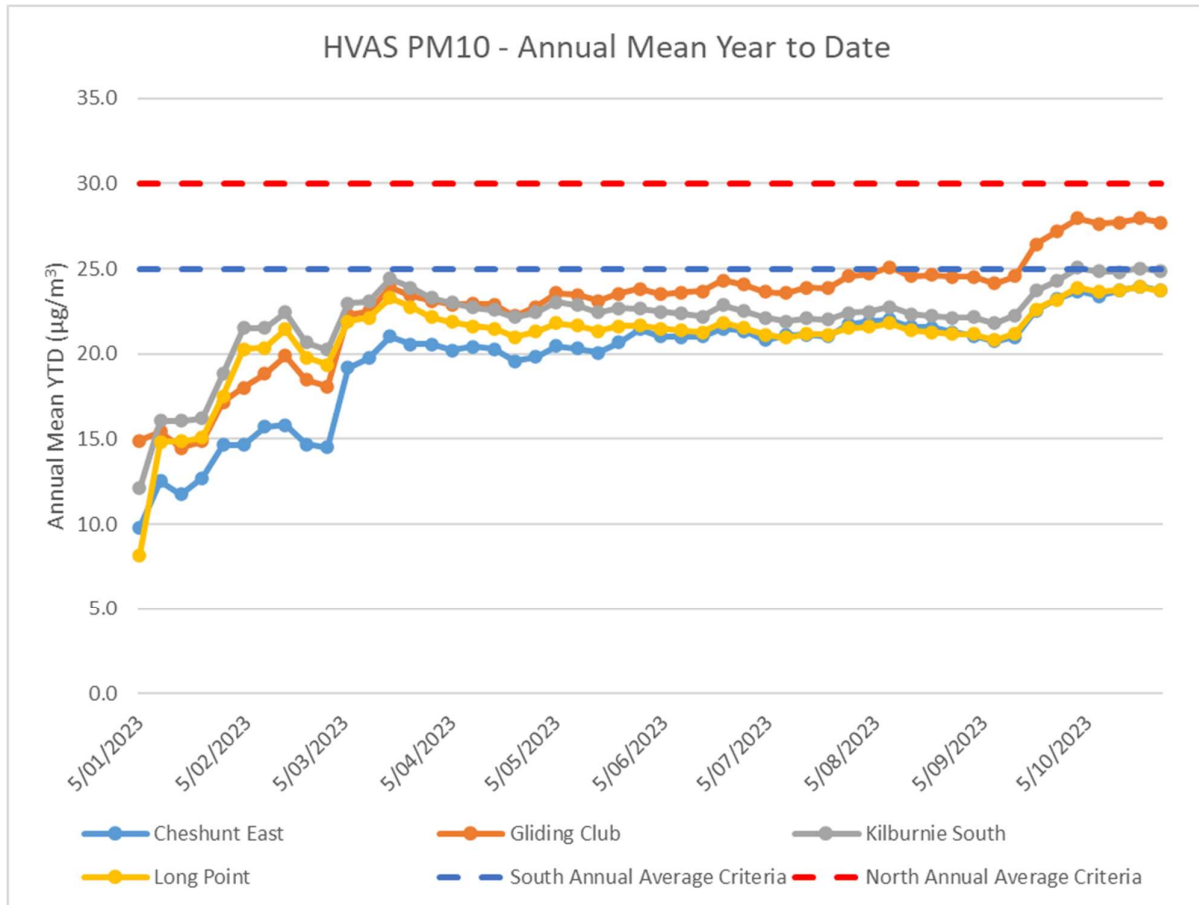
Figure 6 – Individual PM<sub>10</sub> Results for the Reporting Period



**2.3.1.2 | PERFORMANCE AGAINST LONG TERM IMPACT ASSESSMENT CRITERIA**

Figure 7 shows the year-to-date annual average PM<sub>10</sub> results. The Gliding Club monitors annual average reported a result greater than the relevant long term impact assessment criteria during the reporting period. All other monitors were below the relevant long term impact assessment criteria during the reporting period.

An assessment of HVO's contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.



*Figure 7 – Year to Date Average PM<sub>10</sub> as at end of the Reporting Period*

**2.3.2 | HVAS PM<sub>2.5</sub> RESULTS**

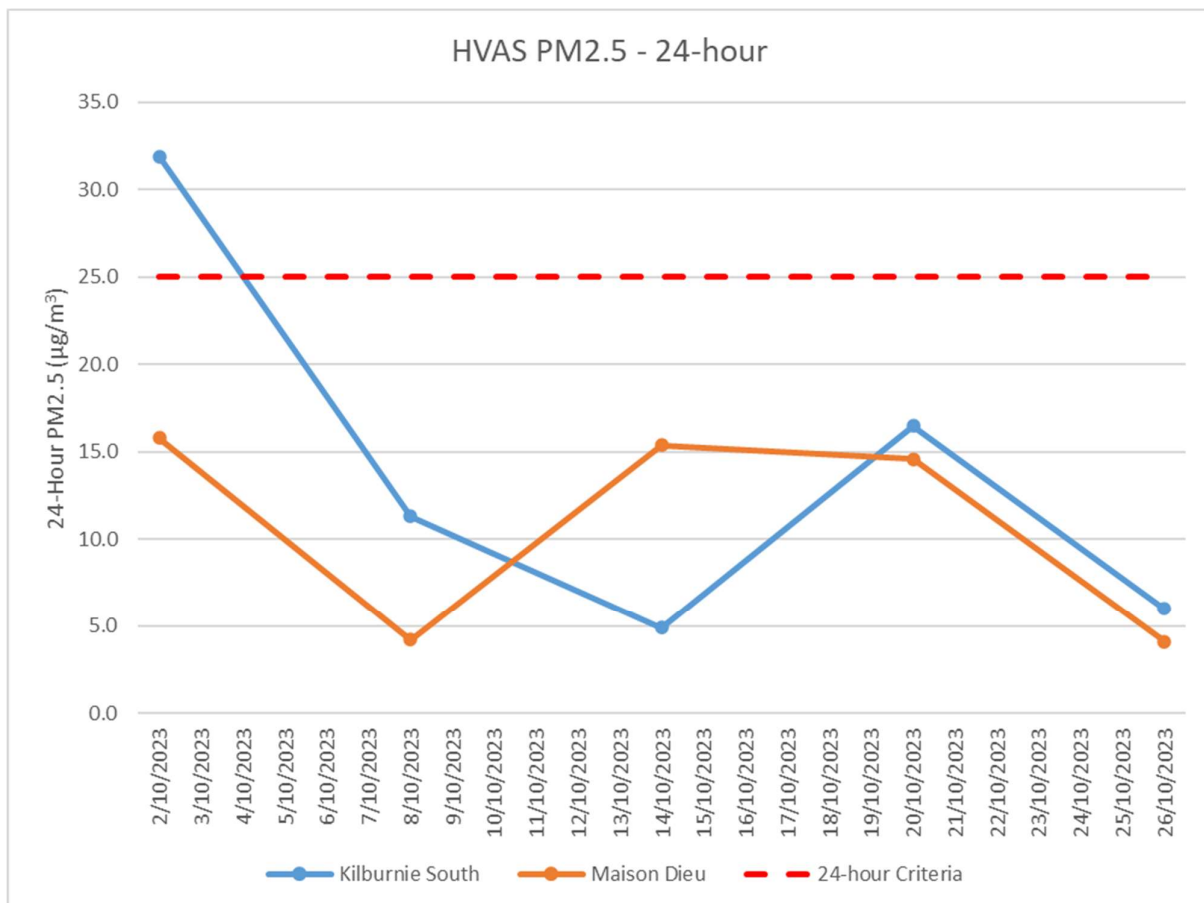
HVO monitors PM<sub>2.5</sub> at two HVAS locations, Kilburnie South and Maison Dieu.

**2.3.2.1 | HVAS PM<sub>2.5</sub> RESULTS**

Figure 8 shows individual PM<sub>2.5</sub> results at each monitoring station against the HVO South short-term impact assessment criteria of 25µg/m<sup>3</sup>. All results were within the relevant short-term impact assessment criteria during the reporting period, with the exception of:

- Kilburnie South monitor on 2 October which recorded a result greater than the relevant short-term impact assessment criteria.

An assessment of HVO's contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

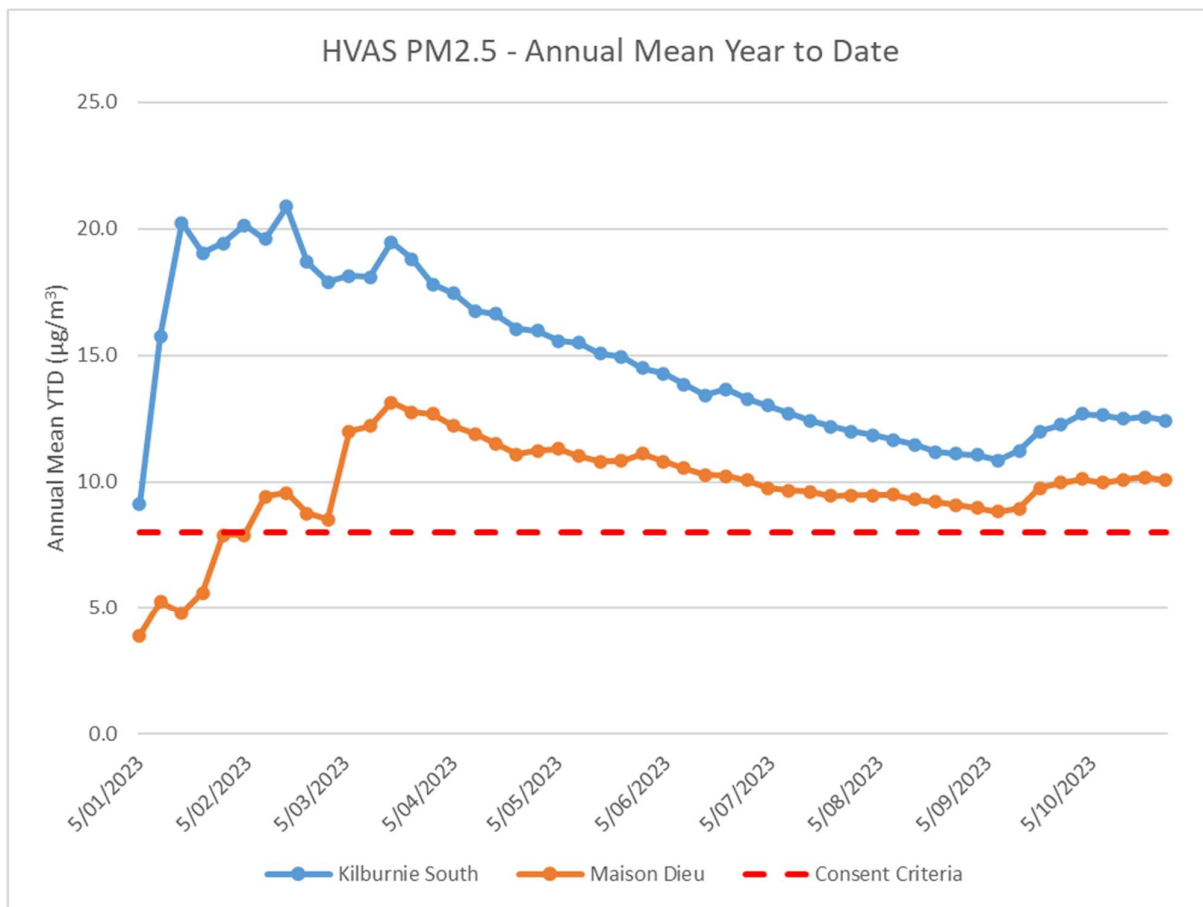


*Figure 8 - Results for the Reporting Period*

**2.3.2.2 | PERFORMANCE AGAINST LONG TERM IMPACT ASSESSMENT CRITERIA**

Figure 9 shows the year-to-date annual average PM<sub>2.5</sub> results. During the reporting period, the Maison Dieu monitor and Kilburnie South monitor annual average year to date results were above the PM<sub>2.5</sub> Annual Rolling Mean criteria of 8µg/m<sup>3</sup>.

An assessment of HVO's contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.



*Figure 9 - Year to Date Average PM<sub>2.5</sub> as at end of the Reporting Period*

**2.3.3 | TSP RESULTS**

**2.3.3.1 | PERFORMANCE AGAINST LONG TERM IMPACT ASSESSMENT CRITERIA**

Figure 10 shows the annual average TSP results compared against the long-term impact assessment criteria of 90µg/m<sup>3</sup>.

All monitors, except for Warkworth, were below the relevant long-term impact assessment criteria during the reporting period.

An assessment of HVO's contribution against the long-term impact assessment criteria will be provided in the 2023 Annual Review.

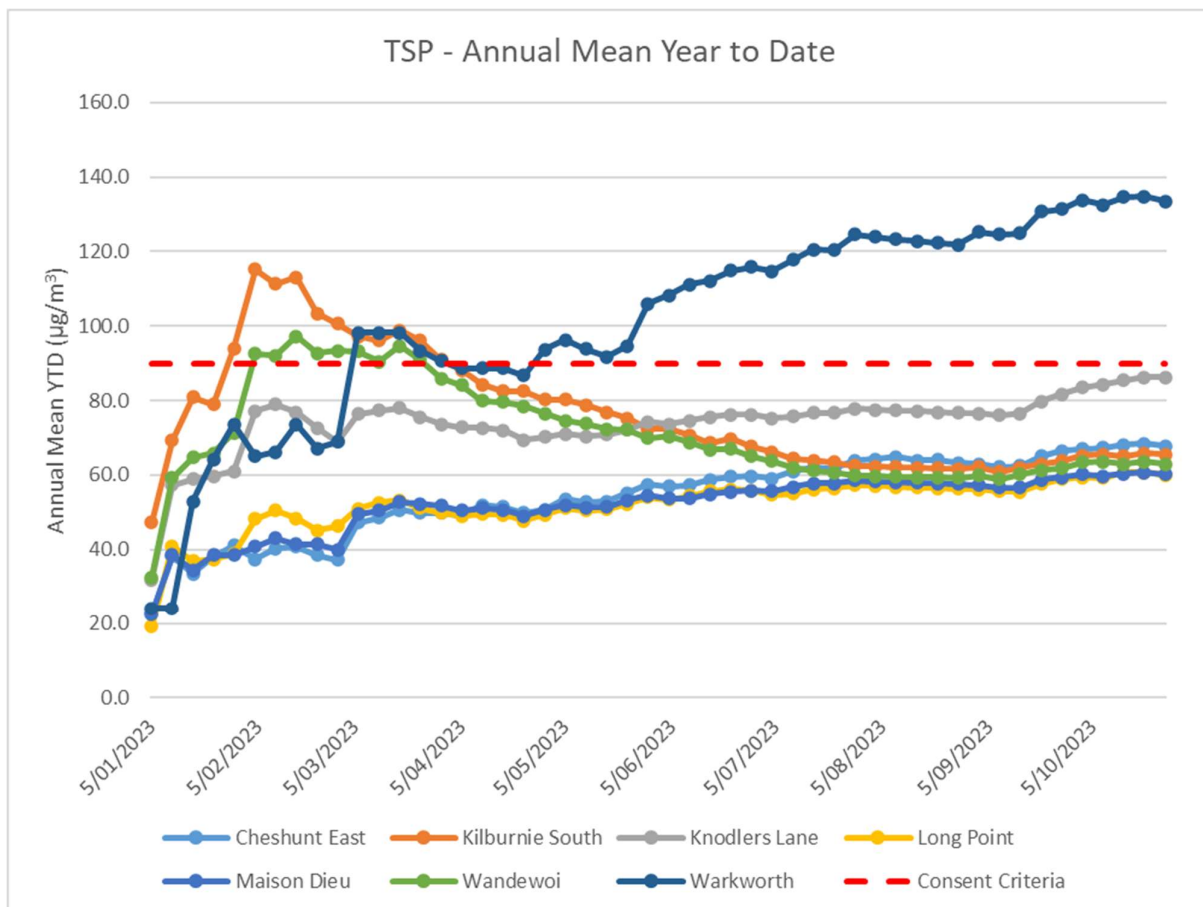


Figure 10 - Year to Date Average Total Suspended Particulates as at end of the Reporting Period

**2.3.4 | REAL TIME PM<sub>10</sub> RESULTS**

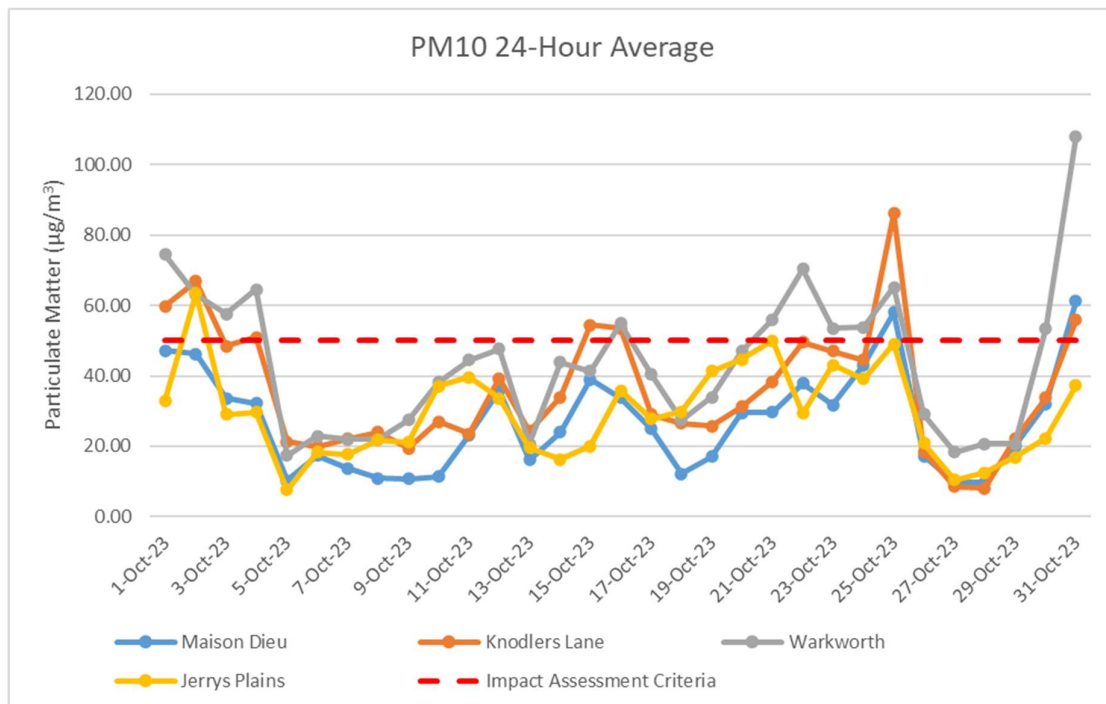
HVO maintains a network of real time PM<sub>10</sub> monitors. The real time air quality monitoring stations continuously record information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger levels. Results from real time PM<sub>10</sub> monitoring are used as a reactive measure to guide mining operations to help achieve compliance with the relevant conditions of the project approval.

Figure 11 shows the daily 24-hour average PM<sub>10</sub> result from the real time monitoring sites. During the reporting period, daily results were below the 24-hr average criteria of 50µg/m<sup>3</sup> with the exception of:

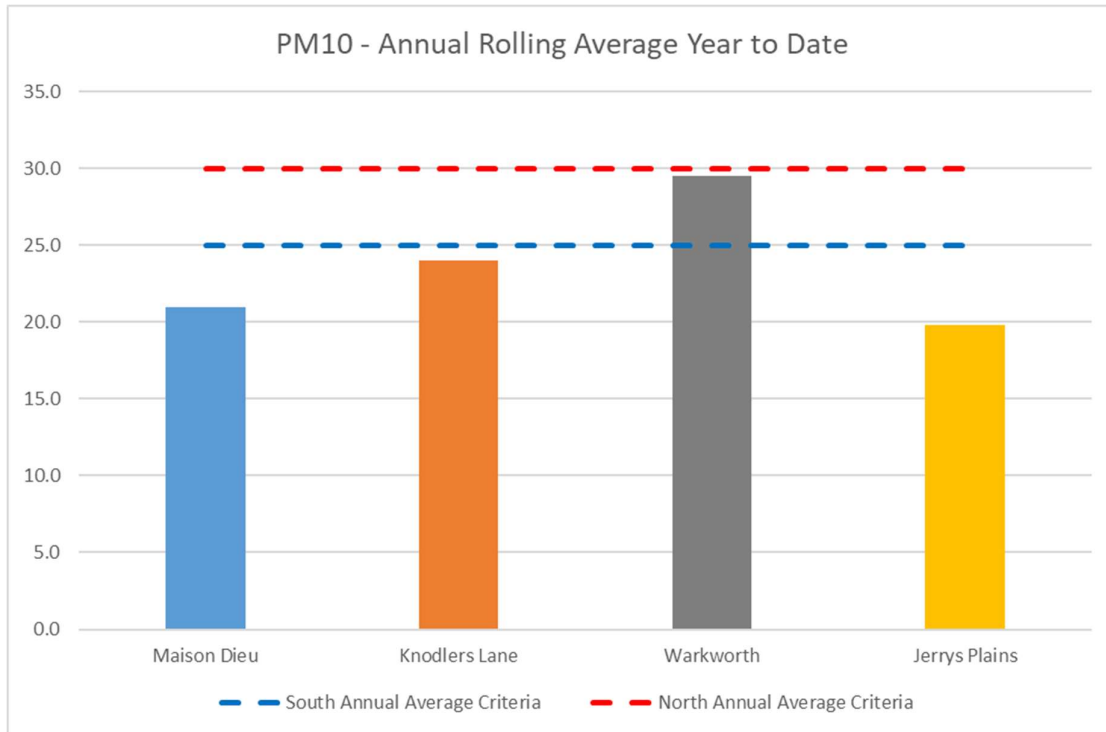
- Jerrys Plains monitor on 1 and 2 October;
- Knodlers Lane monitor on 1, 2, 15, 16, 25 and 31 October;
- Maison Dieu monitor on 25 and 31 October; and
- Warkworth on 1, 2, 3, 4, 16, 21, 22, 23, 24, 25, 30 and 31 October.

All exceedances were investigated internally by HVO and it was found that the maximum calculated HVO contribution was below the compliance limit with the exception of the Jerrys Plains event on 2 October. This result was investigated by an independent third party who found HVOs contribution was below the compliance limit.

Figure 12 shows the annual rolling average PM<sub>10</sub> results from the real time monitoring sites. The Warkworth monitors annual average result is currently greater than the relevant long-term impact assessment criteria during the reporting period.



*Figure 11 – Real Time PM<sub>10</sub> 24hr for the Reporting Period*



*Figure 12 – Real Time PM<sub>10</sub> Annual Average for the Reporting Period*

### 2.3.5 | REAL TIME ALARMS FOR AIR QUALITY

The real time monitoring system generated three hundred and fourteen (314) automated air quality related alarms during the reporting period. Fifty-one (51) alarms related to adverse weather conditions (wind or rain) and two hundred and sixty-three (263) alarms related to dust conditions.

## 3 | WATER QUALITY

HVO maintains a network of surface water and groundwater monitoring sites.

### 3.1 | SURFACE WATER

Surface watercourses are sampled on a quarterly sampling regime. Water quality is assessed through the parameters of pH, electrical conductivity (EC) and Total Suspended Solids (TSS). The location of surface water monitoring points across HVO is shown in Figure 13.

Results from monitoring on site dams, the Hunter River and other natural tributaries are provided on a quarterly basis. Results will be provided in the December 2023 Monthly Environmental Monitoring Report.



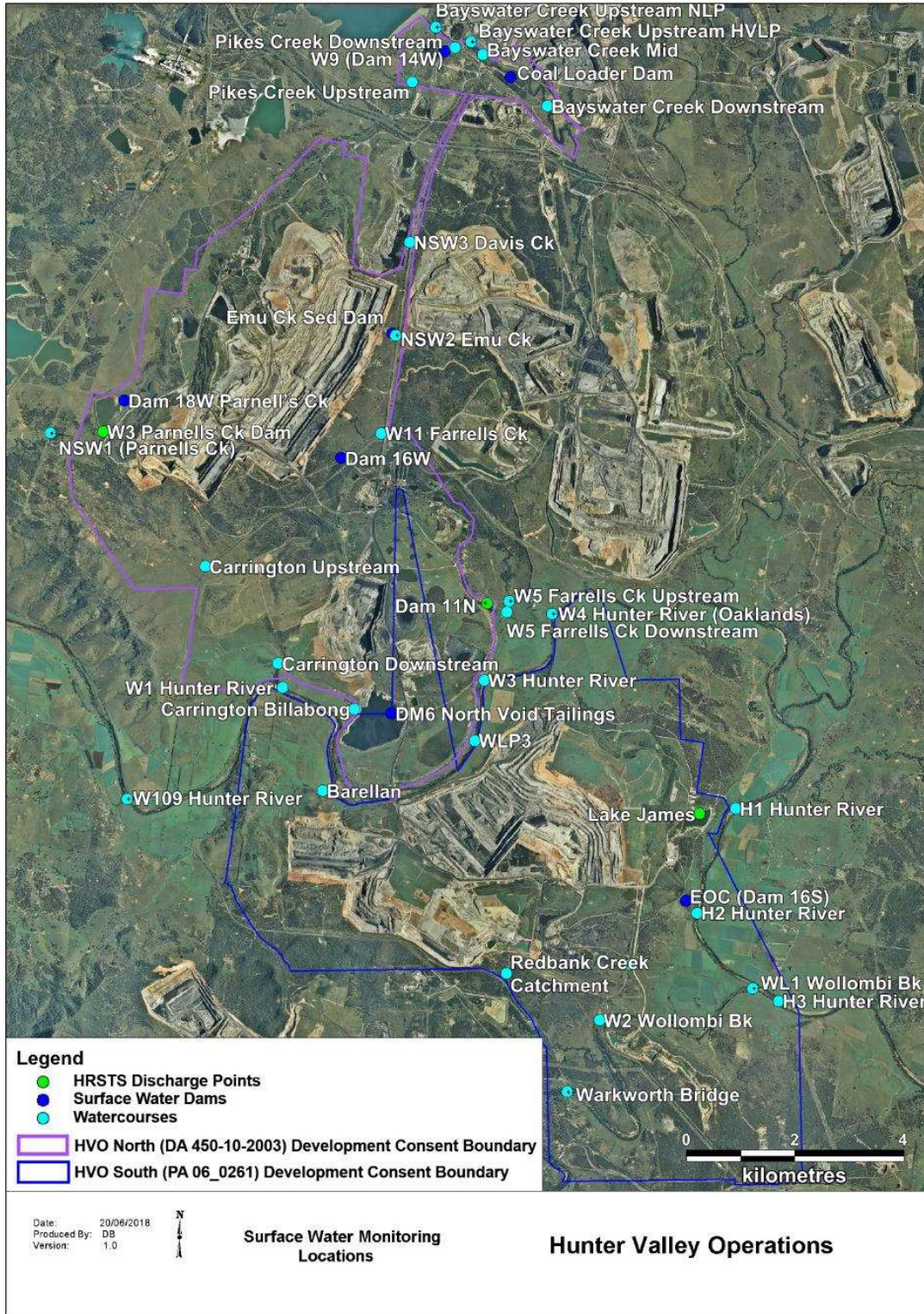


Figure 13 – HVO Surface Water Monitoring Locations

### **3.1.1 | SURFACE WATER TRIGGER TRACKING**

Internal trigger limits have been developed to assess monitoring data on an on-going basis and to highlight potentially adverse surface water impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the HVO Water Management Plan.

Surface water trigger tracking results are provided on a quarterly basis. Results will be reported in the December 2023 Monthly Environmental Monitoring Report.

### **3.2 | SITE WATER USE**

HVO is permitted to extract water from the Hunter River under water allocation licenses issued by Water NSW.

HVO did not extract water from the Hunter River during the reporting period.

### **3.3 | HRSTS DISCHARGE**

HVO participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points Dam 11N (to Farrell's Creek), Lake James (to the Hunter River) and Parnell's Dam (to Parnell's Creek). Discharges can only take place subject to HRSTS regulations.

HVO did not undertake any HRSTS discharges during the reporting period.

### **3.4 | GROUNDWATER MONITORING RESULTS**

Groundwater monitoring is undertaken on a quarterly basis in accordance with the HVO Water Management Plan and Groundwater Monitoring Programme. The location of groundwater monitoring points across HVO are show in Figure 14.

Groundwater monitoring results are provided on a quarterly basis. Results will be provided in the December 2023 Monthly Environmental Monitoring Report.



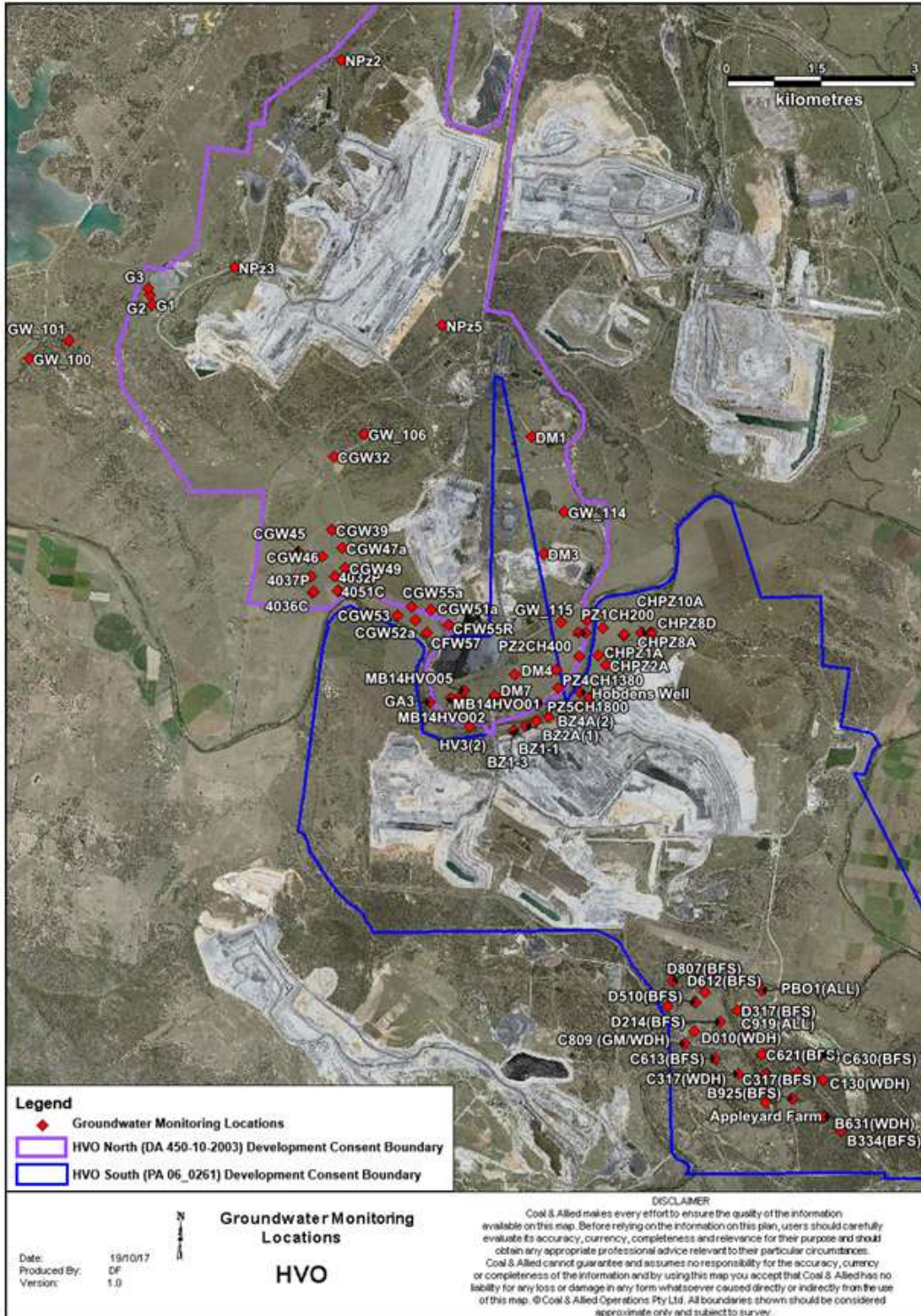


Figure 14 - Groundwater Monitoring Locations at HVO



### 3.4.1 | GROUNDWATER TRIGGER TRACKING

Internal trigger limits have been developed to assess monitoring data on an on-going basis and to highlight potentially adverse groundwater impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses is outlined in the HVO Water Management Plan.

Groundwater trigger tracking results are provided on a quarterly basis. Results will be provided in the December 2023 Monthly Environmental Monitoring Report.

## 4 | BLASTING

HVO maintains a network of blast monitoring units located at nearby privately owned residences and function as regulatory compliance monitors. The location of these monitors can be found in Figure 15. Blasting criteria for HVO are summarised in Table 2.

*Table 2 – Blasting Criteria*

<b>Airblast Overpressure (dBL)</b>	<b>Comments</b>
115	5% of the total number of blasts in a 12-month period
120	0% of blasts
<b>Ground Vibration (mm/s)</b>	<b>Comments</b>
5	5% of the total number of blasts in a 12-month period
10	0% of blasts



**4.1 | BLAST MONITORING RESULTS**

Seventeen (17) blasts were initiated at HVO during the reporting period. Blast monitoring results for the period are shown in Table 3 and Table 4.

*Table 3 – Overpressure Blast Monitoring Results for the reporting period*

<b>Date and Time</b>	<b>Moses Crossing (dBL)</b>	<b>Jerrys Plains Village (dBL)</b>	<b>Maison Dieu (dBL)</b>	<b>Warkworth (dBL)</b>	<b>Knodlers Lane (dBL)</b>
6/10/2023 13:31	97.61	98.53	105.96	97.03	105.97
6/10/2023 13:33	99.81	100.62	109.43	105.81	101.58
7/10/2023 13:11	97.01	105.94	109.07	98.48	107.24
10/10/2023 10:10	112.59	103.35	104.11	93.60	112.84
10/10/2023 13:13	97.55	102.14	99.47	92.59	95.70
11/10/2023 13:02	104.23	97.61	96.68	97.05	97.64
14/10/2023 13:50	93.97	96.15	88.31	87.31	89.40
17/10/2023 12:46	105.27	102.21	102.68	102.08	107.55
17/10/2023 12:48	98.60	105.91	99.51	99.50	103.08
17/10/2023 12:55	97.06	85.99	103.50	93.65	94.99
18/10/2023 13:07	93.13	90.40	93.57	95.88	95.14
19/10/2023 13:09	90.48	97.26	90.38	87.29	95.48
20/10/2023 13:19	91.36	98.79	92.89	86.65	92.87
24/10/2023 13:14	88.45	103.67	95.91	83.35	86.27
26/10/2023 10:01	83.20	84.05	84.82	89.77	85.05
26/10/2023 16:28	90.53	86.29	100.69	90.20	107.55
28/10/2023 13:55	102.54	82.53	103.66	90.59	104.28





*Table 4 – Ground Vibration Blast Monitoring Results for the reporting period*

<b>Date and Time</b>	<b>Moses Crossing (mm/s)</b>	<b>Jerrys Plains Village (mm/s)</b>	<b>Maison Dieu (mm/s)</b>	<b>Warkworth (mm/s)</b>	<b>Knodlers Lane (mm/s)</b>
6/10/2023 13:31	0.14	0.23	0.07	0.10	0.14
6/10/2023 13:33	0.09	0.04	0.07	0.82	0.12
7/10/2023 13:11	0.15	0.12	0.16	0.35	0.13
10/10/2023 10:10	0.09	0.05	0.06	0.25	0.11
10/10/2023 13:13	0.18	0.10	0.42	0.94	0.48
11/10/2023 13:02	0.10	0.04	0.06	0.04	0.11
14/10/2023 13:50	0.09	0.05	0.07	0.13	0.12
17/10/2023 12:46	0.13	0.09	0.14	0.38	0.14
17/10/2023 12:48	0.08	0.04	0.07	0.08	0.14
17/10/2023 12:55	0.14	0.08	0.35	0.87	0.42
18/10/2023 13:07	0.10	0.03	0.06	0.27	0.13
19/10/2023 13:09	0.09	0.05	0.09	0.34	0.13
20/10/2023 13:19	0.11	0.09	0.08	0.08	0.11
24/10/2023 13:14	0.12	0.06	0.17	0.58	0.24
26/10/2023 10:01	0.10	0.06	0.19	0.36	0.18
26/10/2023 16:28	0.08	0.04	0.07	0.17	0.12
28/10/2023 13:55	0.19	0.09	0.12	0.22	0.12

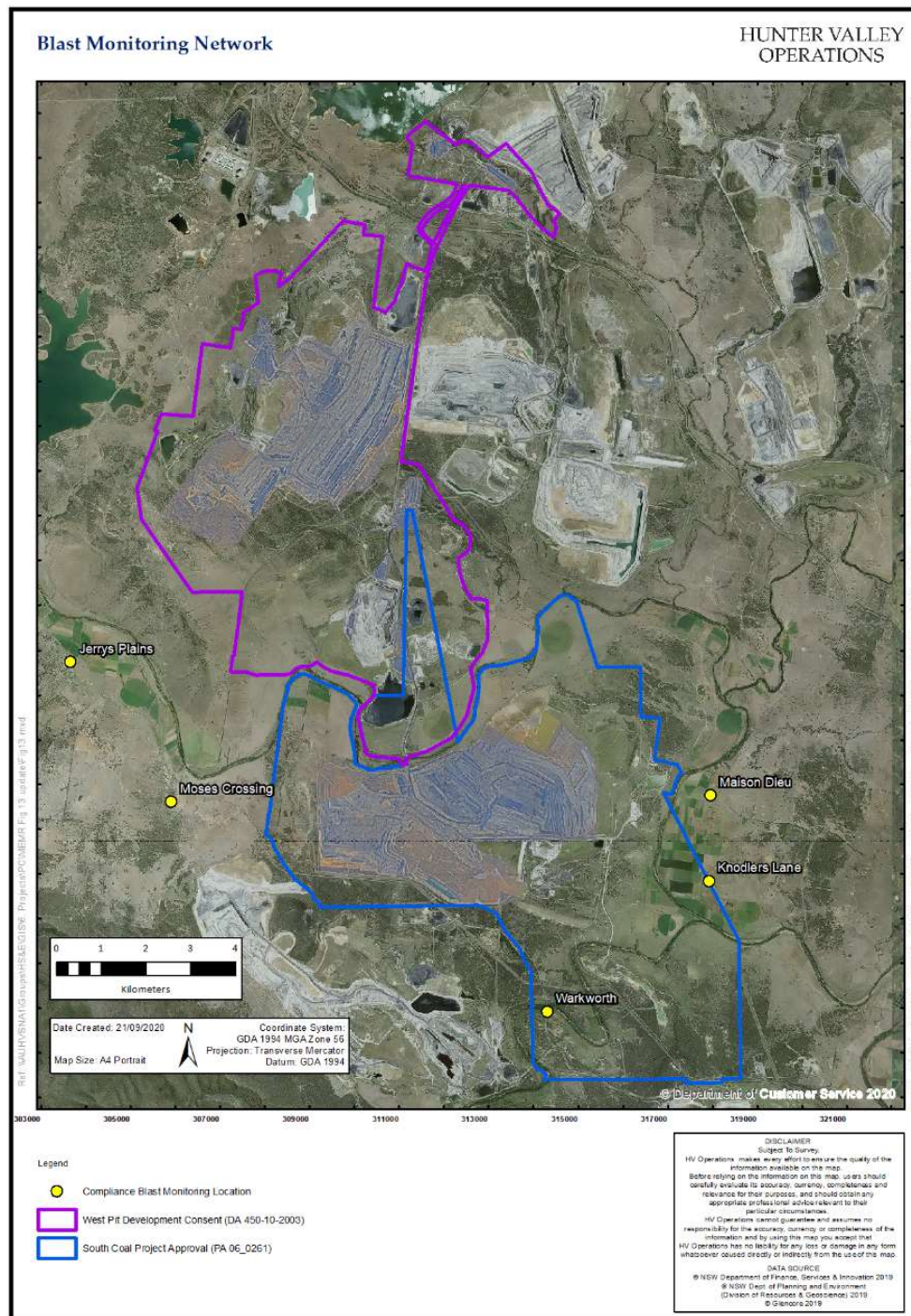


Figure 15 - Blast Monitoring Location Plan

## **5 | NOISE**

Routine attended noise monitoring occurs at defined locations around HVO, as described in the HVO Noise Monitoring Programme. The noise monitoring aims to quantify and describe the acoustic environment around the site and compare results with specified limits. The attended noise monitoring locations are displayed in Figure 16.

### **5.1 | ATTENDED NOISE MONITORING RESULTS**

Attended monitoring was conducted at receiver locations around HVO during the night period of the 18<sup>th</sup> of October 2023.

Compliance with the HVO noise impact limits ensures compliance with the land acquisition criteria. Therefore, since no noise impact exceedances occurred for the reporting period the land acquisition assessment has not been presented. These will only be reported in instances of noise impact exceedances.

Monitoring results are detailed in Table 5 and Table 6.

Table 5 - LAeq,15minute and 1minute HVO North Against Impact Assessment Criteria for the Reporting Period

Location	Start date and time	Wind		Stability class	Very enhancing? <sup>1</sup>	HVO North limits, dB <sup>1</sup>		HVO North levels, dB		Exceedances, dB	
		Speed m/s	Direction <sup>3</sup>			L <sub>Aeq,15minute</sub>	L <sub>A1,1min</sub>	L <sub>Aeq,15minute</sub> <sup>2</sup>	L <sub>A1,1min</sub>	L <sub>Aeq,15minute</sub>	L <sub>A1,1min</sub>
Shearers Lane	18/10/2023 21:00	4.2	110	D	No	35	46	IA	IA	N/A	N/A
Knodlers Lane	18/10/2023 21:41	2.7	113	D	Yes	35	46	IA	IA	Nil	Nil
Maison Dieu	18/10/2023 21:20	3.7	107	D	No	35	46	IA	IA	N/A	N/A
Long Point (Dights Crossing)	18/10/2023 22:34	2.3	113	D	Yes	35	46	IA	IA	Nil	Nil
Kilburnie South	18/10/2023 23:22	1.4	131	D	Yes	39	46	IA	IA	Nil	Nil
Jerrys Plains East	18/10/2023 22:58	1.7	118	D	Yes	39	46	IA	IA	Nil	Nil
Jerrys Plains Village	18/10/2023 21:21	3.7	107	D	No	40	46	IA	IA	N/A	N/A
Jerrys Plains West	18/10/2023 21:00	4.2	110	D	No	40	46	<25	<25	N/A	N/A
Kilburnie South	13/07/2023 22:54	0.6	100	E	Yes	39	46	IA	IA	Nil	Nil
Jerrys Plain East	13/07/2023 22:32	1	124	D	Yes	39	46	IA	IA	Nil	Nil
Jerrys Plain Village	13/07/2023 22:10	1.8	132	D	Yes	40	46	<25	28	Nil	Nil

1. Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfl.
2. Site-only LAeq,15minute, includes modifying factor penalties if applicable.
3. Degrees magnetic north, "-" indicates calm conditions.

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Table 6 - LAeq,15minute and 1minute HVO South Against Impact Assessment Criteria for the Reporting Period

Location	Start date and time	Wind		Stability class	Very enhancing? <sup>1</sup>	HVO South limits, dB <sup>1</sup>		HVO South levels, dB		Exceedances, dB	
		Speed m/s	Direction <sup>3</sup>			LAeq,15minute	LA1,1min	LAeq,15minute <sup>2</sup>	LA1,1min	LAeq,15minute	LA1,1min
Shearers Lane	18/10/2023 21:00	2.8	125	D	Yes	41	45	IA	IA	Nil	Nil
Knodlers Lane	18/10/2023 21:41	0.8	170	F	Yes	40	45	IA	IA	Nil	Nil
Maison Dieu	18/10/2023 21:20	2.6	111	D	Yes	39	45	IA	IA	Nil	Nil
Long Point (Dights Crossing)	18/10/2023 22:34	2.6	134	D	Yes	37	45	IA	IA	Nil	Nil
Kilburnie South	18/10/2023 23:22	2.4	135	D	Yes	39	45	33	35	Nil	Nil
Jerrys Plains East	18/10/2023 22:58	2.3	143	D	Yes	38	45	35	40	Nil	Nil
Jerrys Plains Village	18/10/2023 21:21	2.6	111	D	Yes	35	45	32	38	Nil	Nil
Jerrys Plains West	18/10/2023 21:00	2.8	125	D	Yes	35	45	27	30	Nil	Nil
HVGC	18/10/2023 23:52	2.0	146	E	Yes	55	-	IA	IA	Nil	Nil

- Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfl.
- Site-only LAeq,15minute, includes modifying factor penalties if applicable.
- Degrees magnetic north, "-" indicates calm conditions.

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**5.2 | LOW FREQUENCY ASSESSMENT**

In accordance with the requirements of the EPA’s Noise Policy for Industry (NPfI), the applicability of the low frequency modification penalty has been assessed. No penalties were applied for monitoring undertaken through the reporting period. The assessments for the low frequency noise are shown in Table 7 and Table 8.

*Table 7 - Modifying Factor Assessment HVO North for the Reporting Period*

Location	Start date and time	Measured HVO South $L_{Aeq}$ dB	Very enhancing? <sup>1</sup>	Intermittency modifying factor?	Tonality modifying factor?	Frequency of tonality	Low-frequency modifying factor? <sup>1,2</sup>	Exceedance of reference spectrum <sup>2,3</sup>	Total penalty dB <sup>2,3</sup>
Shearers Lane	18/10/2023 21:00	IA	No	NA	NA	NA	NA	NA	NA
Knodlers Lane	18/10/2023 21:41	IA	Yes	No	No	NA	No	NA	Nil
Maison Dieu	18/10/2023 21:20	IA	No	NA	NA	NA	NA	NA	NA
Long Point (Dights Crossing)	18/10/2023 22:34	IA	Yes	No	No	NA	No	NA	Nil
Kilburnie South	18/10/2023 23:22	IA	Yes	No	No	NA	No	NA	Nil
Jerrys Plains East	18/10/2023 22:58	IA	Yes	No	No	NA	No	NA	Nil
Jerrys Plains Village	18/10/2023 21:21	IA	No	NA	NA	NA	NA	NA	NA
Jerrys Plains West	18/10/2023 21:00	<25	No	NA	NA	NA	NA	NA	NA
Kilburnie South	13/07/2023 22:54	IA	Yes	No	No	NA	No	NA	Nil
Jerrys Plains East	13/07/2023 22:32	IA	Yes	No	No	NA	No	NA	Nil
Jerrys Plains Village	13/07/2023 22:10	<25	Yes	No	No	NA	No	NA	Nil

1. Low-frequency modifying factors are not applicable during 'very noise-enhancing meteorological conditions' in accordance with the NPfI.

2. NA denotes 'not applicable'.

3. Bold results indicate that application of NPfI modifying factor(s) is required.





*Table 8 - Modifying Factor Assessment HVO South for the Reporting Period*

Location	Start date and time	Measured HVO South LAeq dB	Very enhancing? <sup>1</sup>	Intermittency modifying factor?	Tonality modifying factor?	Frequency of tonality	Low-frequency modifying factor? <sup>1,2</sup>	Exceedance of reference spectrum <sup>2,3</sup>	Total penalty dB <sup>2,3</sup>
Shearers Lane	18/10/2023 21:00	IA	Yes	No	No	NA	No	NA	Nil
Knodlers Lane	18/10/2023 21:41	IA	Yes	No	No	NA	No	NA	Nil
Maison Dieu	18/10/2023 21:20	IA	Yes	No	No	NA	No	NA	Nil
Long Point (Dights Crossing)	18/10/2023 22:34	IA	Yes	No	No	NA	No	NA	Nil
Kilburnie South	18/10/2023 23:22	33	Yes	No	No	NA	No	NA	Nil
Jerrys Plains East	18/10/2023 22:58	35	Yes	No	No	NA	No	NA	Nil
Jerrys Plains Village	18/10/2023 21:21	32	Yes	No	No	NA	No	NA	Nil
Jerrys Plains West	18/10/2023 21:00	27	Yes	No	No	NA	No	NA	Nil
HVGC	18/10/2023 23:52	IA	Yes	No	No	NA	No	NA	Nil

1. NA denotes 'not applicable'

2. NM denotes 'not measurable'

3. Bold results indicate that application of NPfl modifying factor/s is required

### 5.3 | REAL TIME NOISE MONITORING

HVO utilises a network of real-time directional noise monitors to manage noise impacts on a continuous basis, shown in Figure 16. Noise alarms are in place at five monitoring locations (Knodlers Lane, Maison Dieu, Jerrys Plains, Moses Crossing, and Long Point) which alert HVO staff to elevated noise levels that require investigation.

HVO investigates and responds to noise alarms with appropriate modification to operations. Changes in response to a noise alarm can include replacing equipment with alternative units, changing or relocating tasks, or shutting down equipment. It should be noted that this assessment does not compliment or conflict with attended noise monitoring detailed in **Section 5.1** |. Real time monitoring data includes non-mine noise sources such as animals, road traffic and weather.

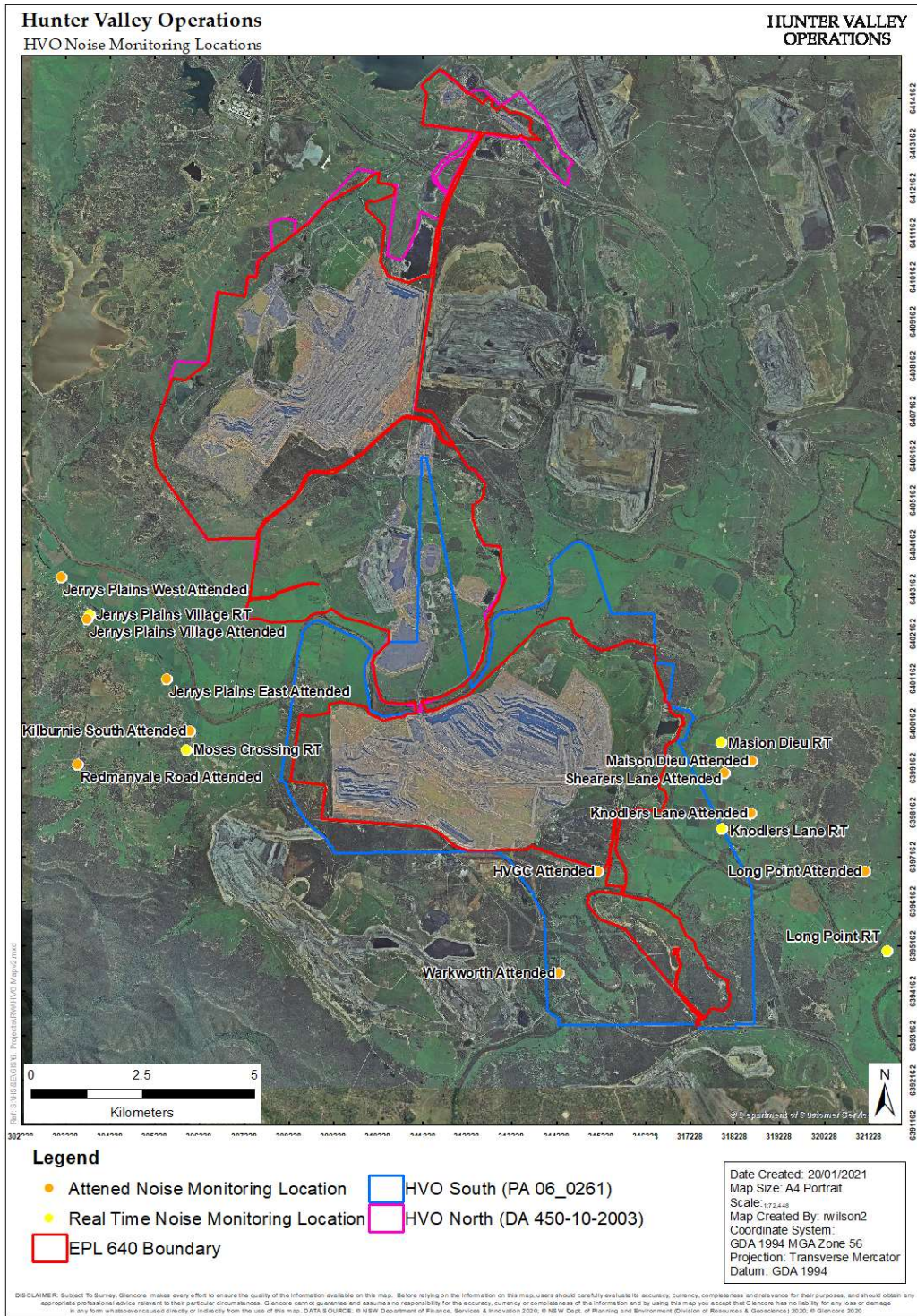


Figure 16 - Noise Monitoring Location Plan



### 6 | OPERATIONAL DOWNTIME

A total of 2,058.2 hours of equipment downtime was logged in response to real time monitoring and inspections for environmental factors such as noise and dust during the reporting period. Operational downtime by equipment type is show in Figure 17. Note that these delays are instances where operations were completely stopped and does not include occasions where operations were changed/modified but not stopped (e.g. changed from exposed dump to in-pit dump).

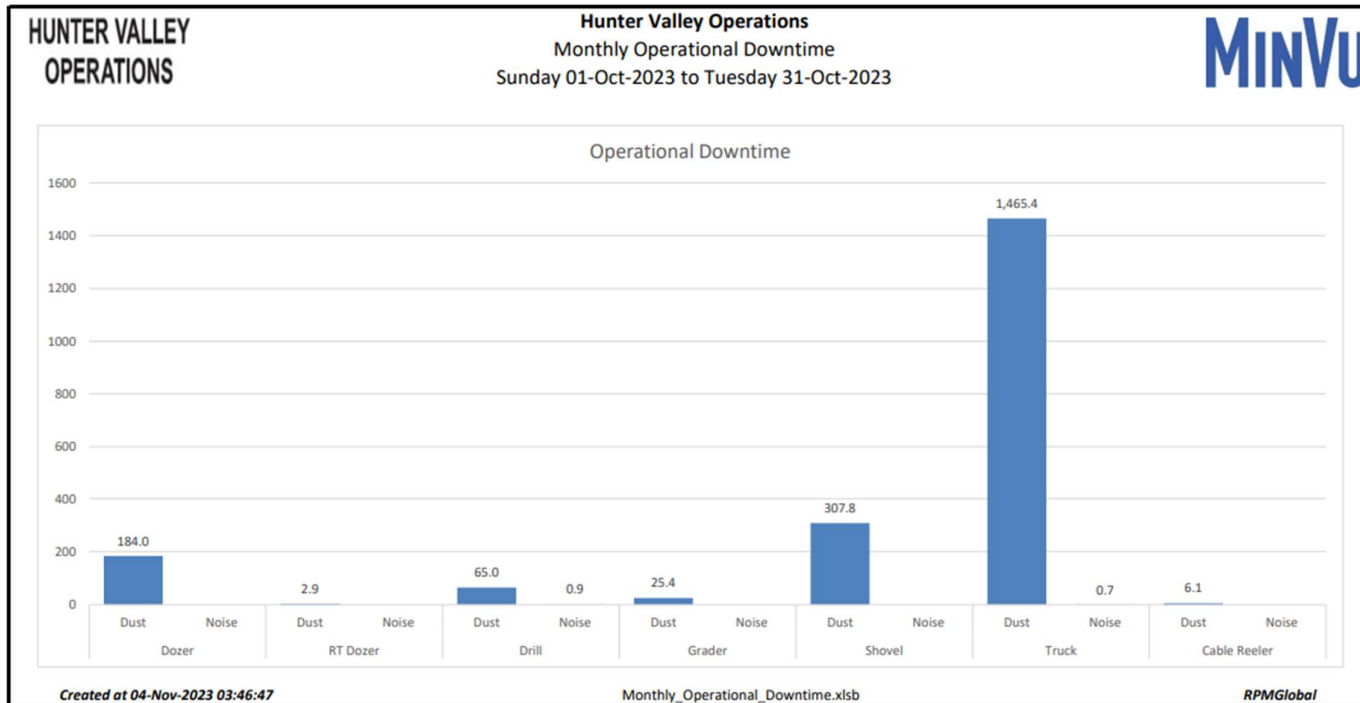


Figure 17 - Operational Downtime by Equipment Type for the Reporting Period

## 7 | REHABILITATION

The following activities related to rehabilitation were completed during the reporting period:

- 2.39 Ha of land was reshaped;
- 2.39 Ha of land was released (became available for the application of topsoil);
- 12.03 Ha of land was topsoiled; and
- 9.56 Ha of land was rehabilitated.

Year to date progress is shown in Figure 18.

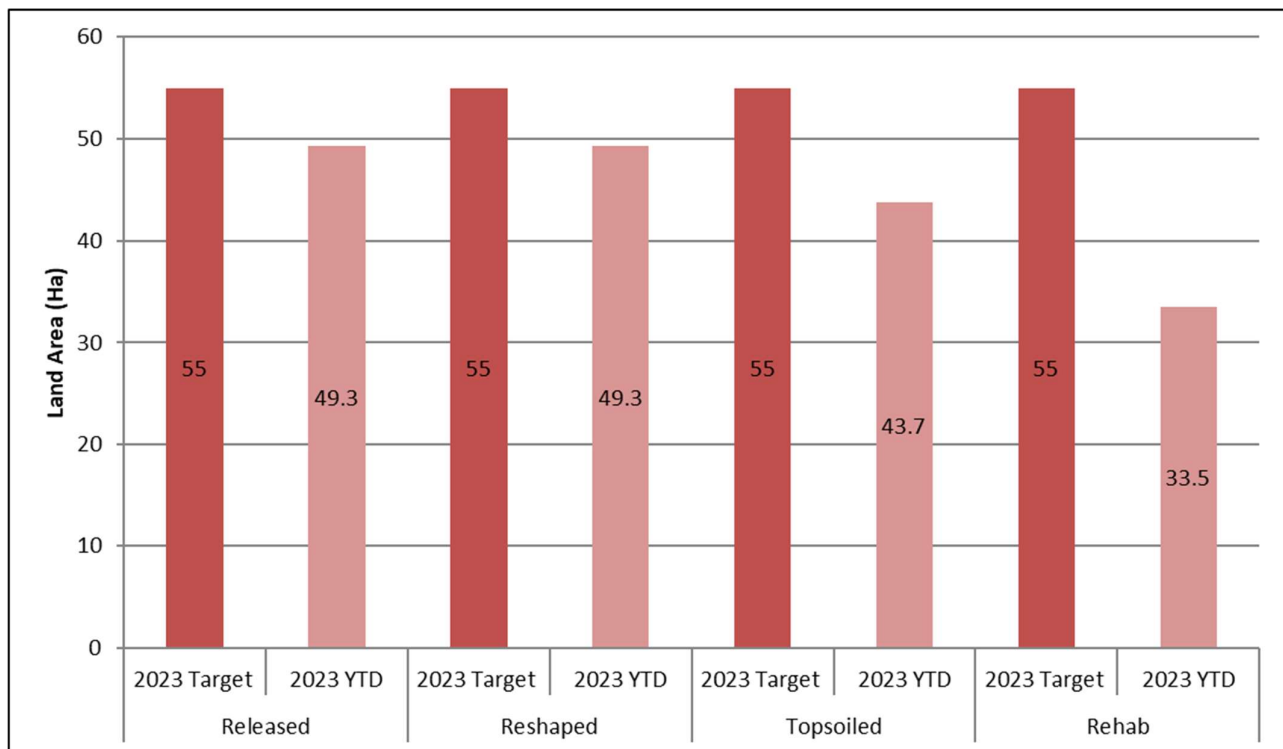


Figure 18 - Rehabilitation YTD October 2023

## 8 | COMPLAINTS

No complaints were received during the reporting period. Details of complaints received during 2023 are shown in Table 9.

*Table 9 - Complaints Summary 2023*

Complaint Number	Date	Time	Complainant ID	Nature of Complaint	Mode of Complaint	Brief Description and Response
No community complaints were received during January.						
1	1 February	12:06am	1	Lighting	Community Hotline	<ul style="list-style-type: none"> <li>A complainant of Long Point called the Community Complaints Hotline at 12.06am regarding a lighting complaint, commenting that "light from HVO was shining directly into their house keeping their family awake".</li> <li>The OCE contacted the complainant at 12:27am and shutdown the lighting plant identified to be causing the disturbance. This was verified by the complainant.</li> <li>An internal investigation conducted following the complaint found that the light from the lighting plant was likely to be visible from the complainant's location. Process changes have been made as a result of the complaint to close the identified gap in operational practices.</li> </ul>
No community complaints were received during March.						
2	11 April	7:11am	2	Traffic	Community Hotline	<ul style="list-style-type: none"> <li>A member of the public was driving east along Golden Highway near the entrance to HVO South, when a train of four cars</li> </ul>

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# REPORT | MONTHLY ENVIRONMENTAL MONITORING REPORT OCTOBER 2023

Complaint Number	Date	Time	Complainant ID	Nature of Complaint	Mode of Complaint	Brief Description and Response
						<p>pulled out in front of him.</p> <ul style="list-style-type: none"> <li>The complainant reported that the last car to pull out failed to give way to him which forced him to flash his headlights, sound the horn and take evasive action and brake heavily causing his car's ABS system to engage to slow down and prevent a collision.</li> <li>An internal investigation conducted following the complaint identified the driver of the vehicle. The employees supervisor notified them of the complaint and the importance of safe driving practices when travelling to and from site.</li> </ul>
3	29 April	1:40pm	1	Blast dust	Community Hotline	<ul style="list-style-type: none"> <li>A complainant of Long Point called the Community Complaints Hotline at 1:40pm on 29/4/2023. The OCE contacted the complainant who asked what was going on to create the dust he saw, the OCE advised that a blast had just taken place.</li> <li>The blast was fired in accordance with HVO blasting permissions for wind speed and direction. The wind direction and wind speed at the time of the blast was 2.7m/s and 268 degrees. The resident's property is located 8 kilometres from the blast location at a bearing of 295 degrees.</li> <li>A review of camera footage of the blast fired at approximately 1:30pm confirmed that a dust plume was produced but was not abnormal in its colour or volume. Low winds will have slowed</li> </ul>

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						<p>the dissipation of the dust plume.</p> <ul style="list-style-type: none"> <li>The nearest real-time PM10 monitor (Maison Dieu) located downwind of the blast, but north of the resident, issued a level 1 dust trigger (PM10 10-minute average &gt; 150u/gm3) at 2:10pm, the daily average was 27ug/m3 and below the criteria. A High-Volume Air Sampler is located within 150m of their residence and was monitoring particulates during the blast. The filter paper from the monitor is yet to be analysed.</li> </ul>
No community complaints were received during May.						
4	1 June	11:28pm	3	Blast fume	Community Hotline	<ul style="list-style-type: none"> <li>A blast fume complaint was received by a complainant who wished to remain anonymous at 11:28pm on 1/6/2023 following a blast fired at 1.18pm earlier that day in West Pit. The complainant described the blast as “disgraceful” and also voiced their concern about roads being closed off and the impacts associated with blast fume.</li> <li>A review of the camera footage confirmed a fummy blast which was reviewed and investigated by the Drill &amp; Blast team. The wind direction and wind speed at the time of the blast was 5.6m/s and 264 degrees. Blast fume travelled from WN47LLD02/03A post ignition across HC1 conveyor road and towards Ravensworth Open Cut where it dissipated.</li> <li>Pre-blast environmental assessment ranked the fume and dust risk as possible, and the blast was fired in accordance with</li> </ul>

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Complaint Number	Date	Time	Complainant ID	Nature of Complaint	Mode of Complaint	Brief Description and Response
						blasting permissions for wind speed and direction.
5	10 June	1:09pm	4	Blast dust	Community Hotline	<ul style="list-style-type: none"> <li>A complainant called the HVO Hotline at 1:09pm on 10/6/2023 following a blast in Cheshunt Pit at 12:56pm. The complainant was annoyed that dust from the blast had blown towards them.</li> <li>A review of camera footage of the blast fired confirmed that a dust plume did travel in the direction of the complainant, no fume was observed.</li> <li>The dust plume was not excessive; however it was observed to travel lower to the ground before dispersing. The nearest real-time air quality monitor (Warkworth) recorded a maximum of 21 ug/m3 in the hour following the blast against a criteria of 50 ug/m3.</li> <li>The wind direction and wind speed at 12:55pm was 4.3m/s and 314 degrees. Pre-blast environmental assessment ranked the fume and dust risk as unlikely and blast was fired in accordance with blasting permissions for wind speed and direction.</li> </ul>
6	10 July	9:34pm	1	Lighing	Community Hotline	<ul style="list-style-type: none"> <li>A resident of Long Point called the Community Complaints Hotline at 9:34pm regarding a light shining directly into their house.</li> <li>The lighting plant identified as causing the disturbance was tilted downwards and checked via a phone call by OCE with the complainant, but light was still visible by the complainant. The</li> </ul>

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Complaint Number	Date	Time	Complainant ID	Nature of Complaint	Mode of Complaint	Brief Description and Response
						<p>same lighting plant was then turned off. The disturbance experienced by the complainant was again checked by OCE via a phone call, which verified the disturbance to the complainant had ceased.</p> <ul style="list-style-type: none"> <li>An internal investigation conducted following the complaint found that lighting tower operational practices should be reviewed and updated.</li> </ul>
7	27 July	5 – 6pm	5	Traffic	Community Hotline	<ul style="list-style-type: none"> <li>A member of the public reported that whilst driving west along the Golden Highway between 5 and 6 pm, another vehicle – a twin-cab utility – began to tailgate their vehicle (&lt; half a car length). Between the eastern entry to HVO South and Comleroi Road (HVO Souths western entry) the offending vehicle sounded their horn more than once, flashed their high beam lights more than once as well as attempted to overtake on one occasion. When the vehicle attempted to overtake, oncoming traffic forced it to resume its original position.</li> <li>The member of the public reported that the offending vehicle turned off in to Comleroi Road. They reported the incident to Singleton Police.</li> <li>An internal investigation resulted in a site-wide presentation about the importance of road safety whilst travelling to and from site being undertaken at daily HCOMs.</li> </ul>

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Complaint Number	Date	Time	Complainant ID	Nature of Complaint	Mode of Complaint	Brief Description and Response
No community complaints were received during August.						
8	9 September	4:08pm	6	Blast fume	Community Hotline	<ul style="list-style-type: none"> <li>Following a blast in West Pit at 3:57pm, HVO received a community complaint from a Jerry's Plains Road resident at approximately 4.08pm on 9/9/2023. The resident said they noticed "yellow stuff in the air", but were not impacted.</li> <li>Review of the live drone footage confirmed a fume from a blast travelled in a south-easterly direction over HVO land and dispersed at height prior to reaching Lemington Road. Wind direction and wind speed at the time of the blast were 4.1m/s and 299 degrees.</li> <li>Pre-blast environmental assessment, including plume modelling, ranked the dust and fume risk as 'likely', and the blast was fired in accordance with blasting permissions for wind speed and direction.</li> <li>An internal investigation to mitigate a re-occurrence was undertaken, with an amendment made to the pre-blasting checklist to identify and assess changes to pre-blast design.</li> </ul>
9	10 September		7	Dust	Community Hotline	<ul style="list-style-type: none"> <li>A resident of Mt Thorley contacted the Community Complaints Hotline at 9:06am on 11/9/2023. The resident stated that "yesterday there was dust all day" in the vicinity of their residence.</li> <li>An environment and community officer analysed previous data</li> </ul>

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Complaint Number	Date	Time	Complainant ID	Nature of Complaint	Mode of Complaint	Brief Description and Response
						<p>from the nearest real-time PM10 monitors (Knodlers Lane and Maison Dieu). The average daily 24hr results from the two monitors were both within compliance limits. This was communicated to the resident via a phone conversation.</p> <ul style="list-style-type: none"> <li>The resident did not state where the dust was originating from, nor could they confirm it was coming from HVO when asked, but said the levels were bad due to a morning inversion event. No further action was taken.</li> </ul>
No community complaints were received during October.						

## 9 | ENVIRONMENTAL INCIDENTS

There were three reportable environmental incidents during the reporting period. Details of these incidents are outlined below:

### 20/09/2023 – PM<sub>10</sub> dust exceedance – Cheshunt East

Monitoring results received in October indicated that on 20 September 2023, the Cheshunt East High Volume Air Sampler (HVAS) recorded a total result of 86.4µg/m<sup>3</sup> for the 24-hour averaging period for PM<sub>10</sub>, exceeding the relevant criteria of 50ug/m<sup>3</sup>. HVO engaged a third party to undertake an investigation to determine HVO's contribution to the exceedance. HVO North's calculated estimated maximum PM<sub>10</sub> contribution was less than or equal to 44.9µg/m<sup>3</sup>, or 52% of the recorded measurement. While this indicates HVO was not the primary source, the criteria is based on dust from HVO and all other sources. HVO notified the DPE of this exceedance on 12 October and has submitted an incident report as well as provided required notifications in accordance with the HVO Air Quality Greenhouse Gas Management Plan

### 26/09/2023 – PM<sub>10</sub> dust exceedance – Cheshunt East

Monitoring results received in October indicated that on 26 September 2023, the Cheshunt East HVAS recorded a total result of 50.3µg/m<sup>3</sup> for the 24-hour averaging period for PM<sub>10</sub>, exceeding the relevant criteria of 50ug/m<sup>3</sup>. HVO engaged a third party to undertake an investigation to determine HVO's contribution to the exceedance. It was calculated that HVO North's estimated maximum PM<sub>10</sub> contribution to be less than or equal to 15.5µg/m<sup>3</sup>, or 31% of the recorded measurement. While this indicates HVO was not the primary source, the criteria is based on dust from HVO and all other sources. HVO notified the DPE of this exceedance on 12 October and has submitted an incident report as well as provided required notifications in accordance with the HVO Air Quality Greenhouse Gas Management Plan.

### 2/10/2023 – PM<sub>10</sub> dust exceedance – Jerrys Plains

On 2 October 2023, the Jerry's Plains real-time monitor (TEOM) recorded a total result of 63.6µg/m<sup>3</sup> for the 24-hour averaging period for PM<sub>10</sub>, exceeding the relevant criteria of 50ug/m<sup>3</sup>. HVO engaged a third party to undertake an investigation to determine HVO's contribution to the exceedance. It was calculated that HVO North's estimated maximum PM<sub>10</sub> contribution to be less than or equal to 9.0µg/m<sup>3</sup>, or 15% of the recorded measurement. While this indicates HVO was not a significant source, the criteria is based on dust from HVO and all other sources. Subsequently HVO notified the DPE of this exceedance and has submitted an incident report as well as provided required notifications in accordance with the HVO Air Quality Greenhouse Gas Management Plan.



**APPENDIX A: METEOROLOGICAL DATA (HVO CORPORATE)**

Date	Air Temp Max (°C)	Air Temp Min (°C)	Relative Humidity (Max %)	Relative Humidity (Min %)	Solar Radiation Maximum (W/Sq. M)	Average Wind Direction (°)	Average Wind Speed (m/sec)	Rainfall (mm)
1/10/2023	33.81	15.80	67.51	12.86	955.0	283.40	4.52	0.0
2/10/2023	27.95	15.25	81.70	28.09	907.0	133.60	3.15	0.0
3/10/2023	33.78	13.99	89.80	11.69	924.0	264.90	3.18	0.0
4/10/2023	25.08	10.24	90.00	20.65	789.5	277.00	3.99	0.0
5/10/2023	20.24	10.65	72.29	20.79	1055.0	279.10	6.51	0.0
6/10/2023	22.49	8.38	74.62	27.62	1227.0	189.30	3.51	0.0
7/10/2023	19.57	10.55	77.95	35.36	1488.0	119.60	3.43	0.0
8/10/2023	21.94	8.10	88.80	28.75	1186.0	122.00	2.22	0.0
9/10/2023	27.15	8.30	85.90	20.35	999.0	234.50	1.64	0.0
10/10/2023	25.61	12.21	81.00	24.87	1206.0	130.90	1.99	0.0
11/10/2023	28.20	14.04	84.80	17.55	984.0	162.20	1.55	0.0
12/10/2023	32.74	13.47	86.40	14.22	980.0	277.10	4.42	0.0
13/10/2023	26.15	10.41	54.84	12.48	1001.0	252.00	3.40	0.0
14/10/2023	27.27	12.19	57.89	21.66	968.0	275.30	3.79	0.0
15/10/2023	29.56	12.89	58.13	11.80	993.0	249.60	3.12	0.0
16/10/2023	27.14	13.34	64.03	19.12	1070.0	241.90	4.78	0.0
17/10/2023	20.53	9.39	81.50	31.14	1457.0	131.90	3.35	0.0
18/10/2023	21.99	9.32	93.70	31.95	1424.0	107.30	2.76	0.0
19/10/2023	23.68	11.35	85.20	32.83	1417.0	120.40	2.37	0.0
20/10/2023	30.91	10.91	88.70	20.67	1003.0	180.40	1.64	0.0
21/10/2023	34.27	13.75	90.50	12.58	981.0	158.40	1.37	0.0
22/10/2023	31.92	15.44	82.80	12.28	1046.0	239.00	3.98	0.0
23/10/2023	29.68	13.17	56.66	8.34	1049.0	247.00	3.58	0.0
24/10/2023	35.18	11.55	75.28	6.36	1015.0	260.30	2.08	0.0
25/10/2023	33.21	17.04	78.74	10.69	1125.0	227.80	4.64	0.0
26/10/2023	17.40	9.69	93.70	46.25	706.7	123.90	3.28	0.0
27/10/2023	17.20	10.68	86.10	53.29	1567.0	127.50	4.49	0.0
28/10/2023	20.21	8.58	88.10	38.04	1726.0	117.40	2.30	0.0
29/10/2023	26.93	8.91	87.80	18.38	1225.0	211.00	1.36	0.0
30/10/2023	32.03	13.57	68.02	13.35	1048.0	280.70	3.66	0.0
31/10/2023	31.42	14.42	73.34	4.64	1168.0	223.20	4.57	0.0