

**HUNTER VALLEY  
OPERATIONS**



**Monthly  
Environmental  
Monitoring Report**  
Hunter Valley Operations  
February 2019

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## Revision History

Version No.	Person Responsible	Document Status	Date
1.0	Environment & Community Officer	Draft	13/03/2019
1.1	Environment & Community Coordinator	Final	9/05/2019

# 1.0 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 February to 28 February 2019.

## 2.0 AIR QUALITY

### 2.1 Meteorological Monitoring

HVO maintains two meteorological stations; 'Corporate' and 'Cheshunt' (Refer to Figure 4: Air Quality Monitoring Location Plan).

#### 2.1.1 Rainfall

Rainfall for the period is summarised in Table 1, the 2019 trend and historical trend are shown in Figure 1.

Table 1: Monthly Rainfall HVO

2019	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
February	28.6	88.4

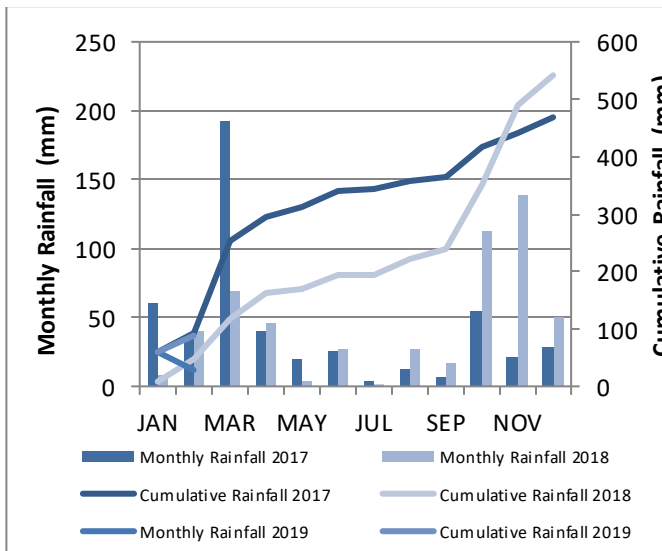


Figure 1: Rainfall Summary 2019

#### 2.1.2 Wind Speed and Direction

South-Easterly winds were dominant during February as shown in Figure 2 (HVO Corporate) and Figure 3 (HVO Cheshunt).

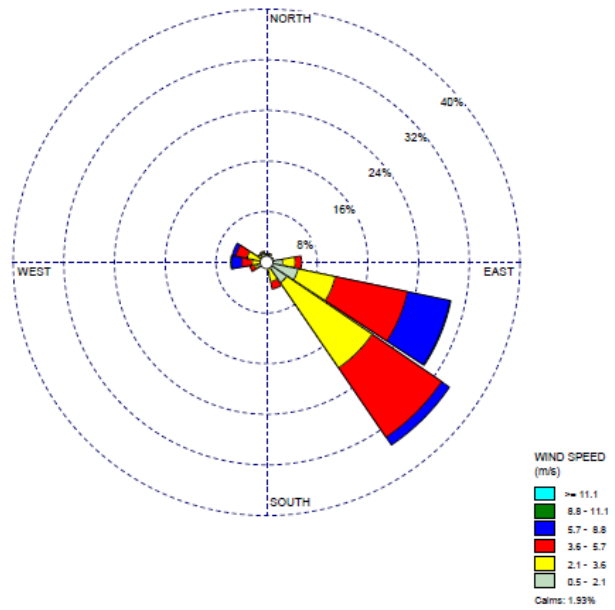


Figure 2: HVO Corporate Wind Rose - February 2019

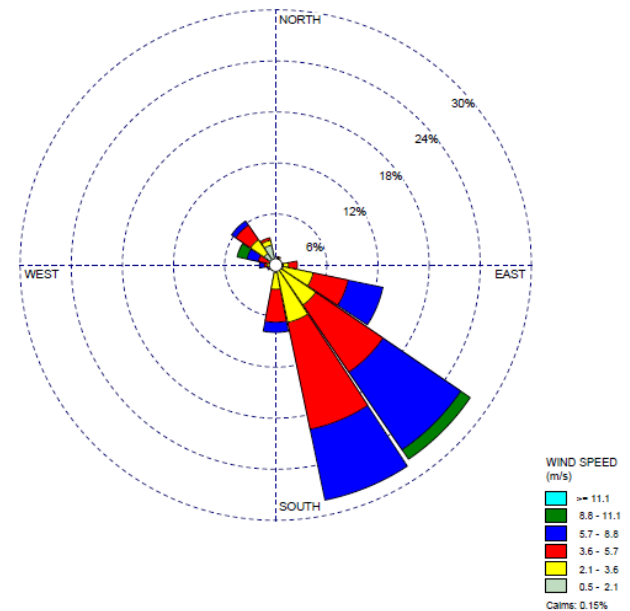


Figure 3: HVO Cheshunt Wind Rose - February 2019

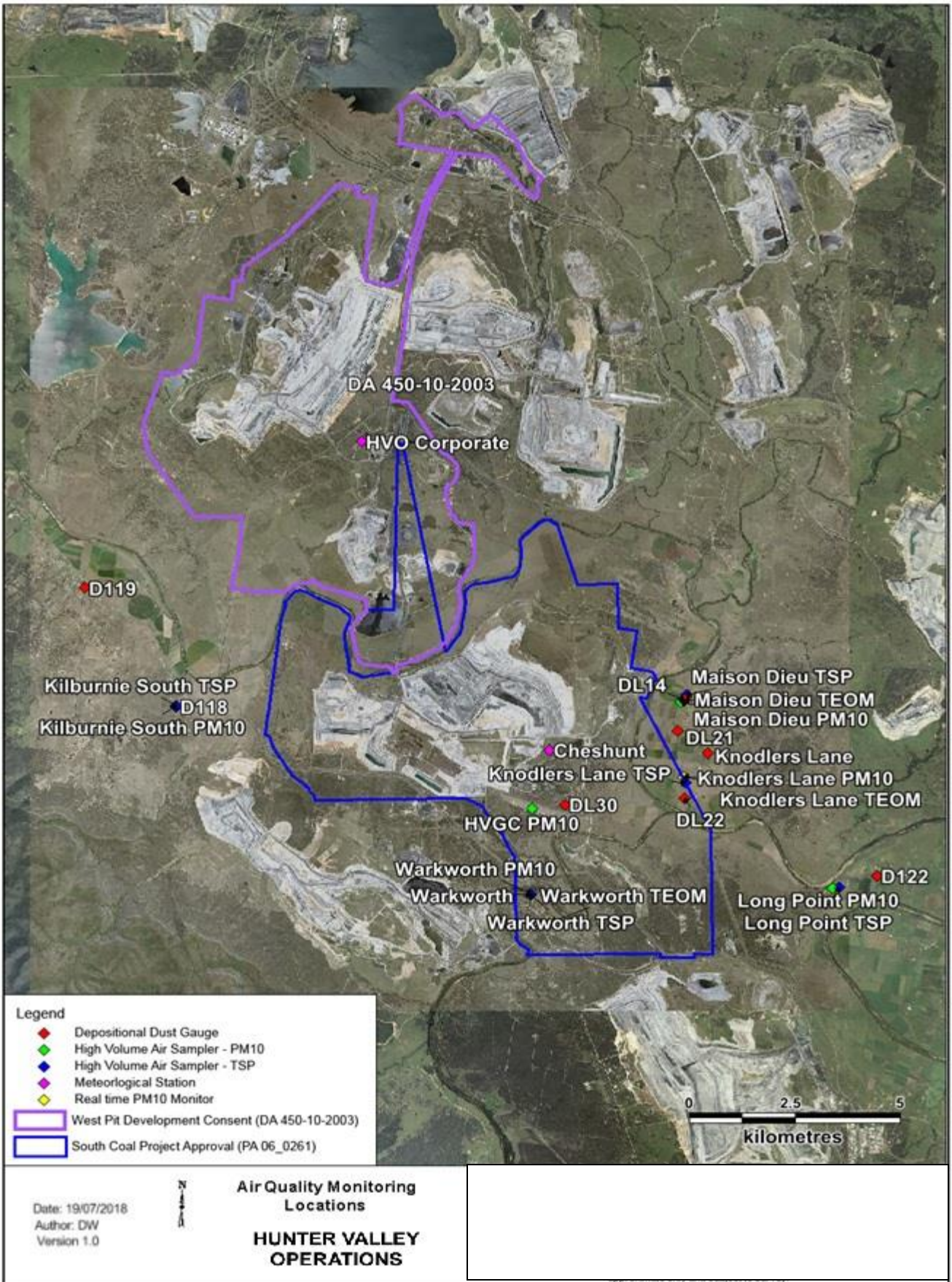


Figure 4: Air Quality Monitoring Location Plan

## 2.2 Depositional Dust

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

Figure 5 displays insoluble solids results from depositional dust gauges during the reporting period compared against the annual impact assessment criteria.

During the reporting period the DL21, DL30, D118 and Warkworth monitors recorded a monthly result above the long term impact assessment criteria of 4.0 g/m<sup>2</sup> per month. The sample from DL30 was found to be contaminated with vegetation and insects.

An assessment of HVO's contribution against the long term impact assessment criteria will be provided in the 2019 Annual Review.

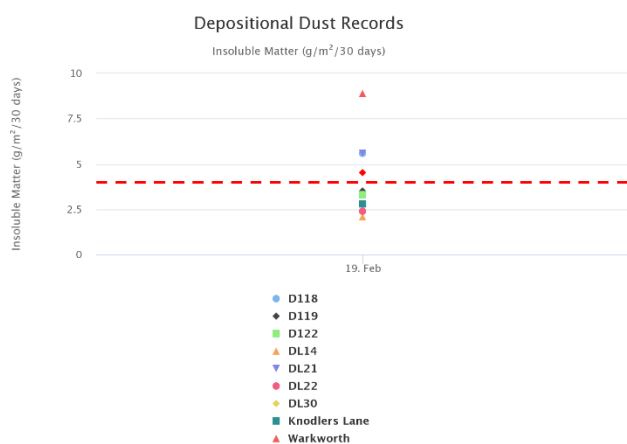


Figure 5: Depositional Dust Results – February 2019

## 2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM<sub>10</sub>). The location of these monitors can be found in Figure 4. Each HVAS was run for 24 hours on a six-day cycle.

### 2.3.1 HVAS PM<sub>10</sub> Results

Figure 6 shows individual PM<sub>10</sub> results at each monitoring station against the short term impact assessment criteria of 50 µg/m<sup>3</sup>.

On 13 February 2019, six HVAS units recorded elevated 24 hour averages, Glider Club (98.0µg/m<sup>3</sup>), Kilburnie South (73.0µg/m<sup>3</sup>), Maison Dieu (71µg/m<sup>3</sup>), Knodlers Lane (118.0µg/m<sup>3</sup>), Long Point (67µg/m<sup>3</sup>) and Warkworth (62µg/m<sup>3</sup>). Monitoring results on this day were considered to have been effected by a regional dust event which travelled from the States west. HVO's maximum contribution was calculated to be the following:

- Glider Club: 23 µg/m<sup>3</sup> or 19.5% of the total measured result.
- Kilburnie South: 2.5 µg/m<sup>3</sup> or 3.7% of the total measured result.
- Maison Dieu: deemed to be minimal HVO contribution due to prevailing wind conditions and high background levels.
- Knodlers Lane: 43 µg/m<sup>3</sup> or 36.4% of the total measured result. Higher Result considered to have been influenced by local sources to the monitor such as nearby livestock.
- Long Point: deemed to be minimal HVO contribution due to prevailing wind conditions and high background levels.
- Warkworth: deemed to be minimal HVO contribution due to prevailing wind conditions and high background levels.

On 19 February 2019, five HVAS units recorded elevated 24 hour averages, Glider Club (58.0 µg/m<sup>3</sup>), Kilburnie South (64.0 µg/m<sup>3</sup>), Knodlers Lane (113.0 µg/m<sup>3</sup>), Long Point (56 µg/m<sup>3</sup>) and Maison Dieu (73 µg/m<sup>3</sup>) with HVO's maximum contribution was calculated to be the following:

- Glider Club: 2.0 µg/m<sup>3</sup> or 1.8% of the total measured result.
- Kilburnie South: deemed to be minimal HVO contribution due to prevailing wind conditions and background levels.
- Knodlers Lane: 57.0 µg/m<sup>3</sup> or 50.4% of the total measured result.
- Long Point: deemed to be minimal HVO contribution due to prevailing wind conditions and background levels.

- Maison Dieu: 17.0  $\mu\text{g}/\text{m}^3$  or 23.3% of the total measured result.

On 25 February 2019, the Kilburnie South HVA5 unit recorded an elevated 24 hour average ( $79 \mu\text{g}/\text{m}^3$ ), upon investigation HVO's contribution was deemed to minimal due to prevailing wind conditions.

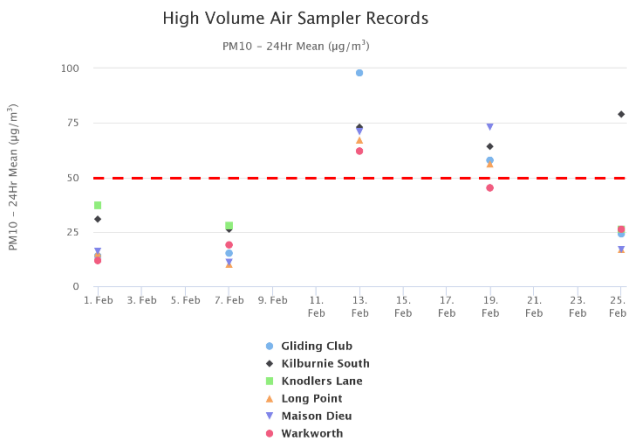


Figure 6: Individual PM<sub>10</sub> Results – February 2019

Figure 7 shows the year to date annual average PM<sub>10</sub> results.

An assessment of HVO's contribution against the long term impact assessment criteria will be provided in the 2019 Annual Review.

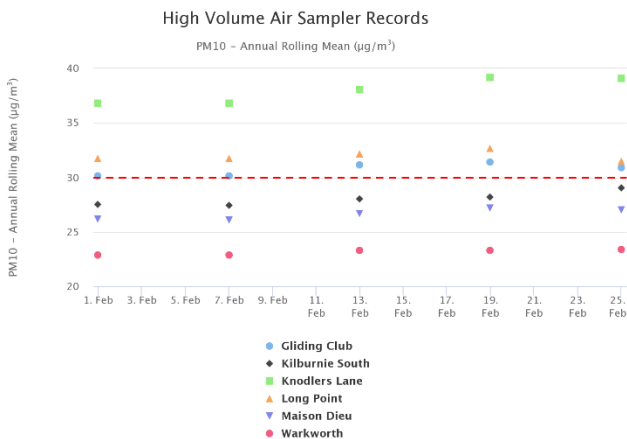


Figure 7: Year to Date Average PM<sub>10</sub> – February 2019

### 2.3.2 TSP Results

Figure 8 shows the annual average TSP results compared against the long term impact assessment criteria of  $90 \mu\text{g}/\text{m}^3$ .

An assessment of HVO's contribution against the long term impact assessment criteria will be provided in the 2019 Annual Review.

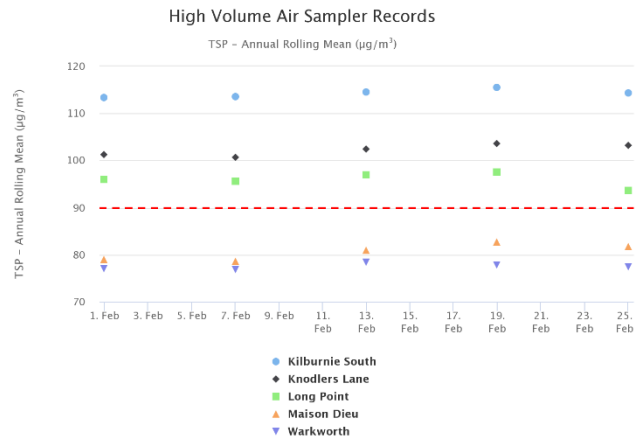


Figure 8: Year to Date Average Total Suspended Particulates – February 2019

### 2.3.3 Real Time PM<sub>10</sub> Results

Hunter Valley Operations maintains a network of real time PM<sub>10</sub> monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger limits. 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.

Results for real time dust sampling is shown in Figure 9, including the daily 24 hour average PM<sub>10</sub> result and the year to date 24 hour PM<sub>10</sub> annual average.

Results from investigations of elevated results are presented in Table 2.

### 2.3.4 Real Time Alarms for Air Quality

During February the real time monitoring system generated 145 automated air quality related alarms. 68 alarms were related to adverse weather conditions and 77 alarms relating to PM<sub>10</sub>.

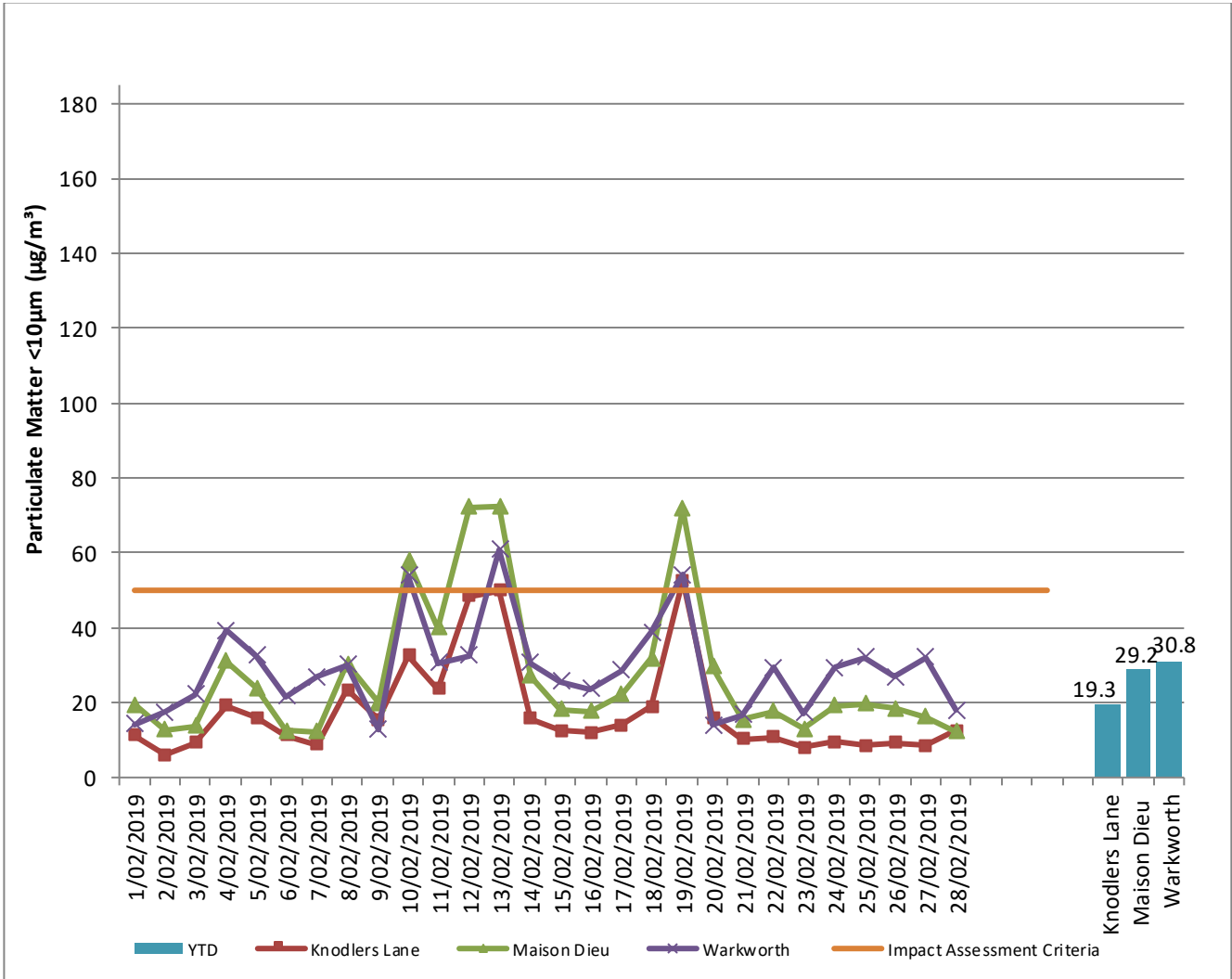


Figure 9: Real Time PM<sub>10</sub> 24hr average and YTD average – February 2019



**Table 2: Real-time PM10 Investigation Results**

<b>Date</b>	<b>Site</b>	<b>Total Measured Result (µg/m3)</b>	<b>Estimated contribution from HVO (µg/m3 / %)</b>	<b>Discussion</b>
10/2/2019	Maison Dieu TEOM	57.8	14.6 µg/m3 Or 25.1%	An internal investigation determined HVO maximum potential contribution to be in the order of 14.6 ug/m3 or 25.1% of the total measured based on prevailing wind conditions and upwind TEOM monitoring results.
10/2/2019	Warkworth TEOM	53.9	NA	An internal investigation determined HVO contribution to be minimal due to prevailing wind conditions and high Background levels.
12/2/2019	Maison Dieu TEOM	72.8	26.9 µg/m3 Or 37.2%	An internal investigation determined HVO maximum potential contribution to be in the order of 26.9 ug/m3 or 37.2% of the total measured based on prevailing wind conditions and upwind TEOM monitoring results.
13/2/2019	Maison Dieu TEOM	72.4	7.5 µg/m3 Or 10.3%	Monitoring results on this day were considered to have been effected by a regional dust event which travelled from the States west.  An internal investigation determined HVO maximum potential contribution to be in the order of 7.5 ug/m3 or 10.3% of the total measured based on prevailing wind conditions and upwind TEOM monitoring results.
13/2/2019	Warworth TEOM	60.8	NA	Monitoring results on this day were considered to have been effected by a regional dust event which travelled from the States west.  An internal investigation determined HVO contribution to be minimal due to prevailing wind conditions and high Background levels.

19/2/2019	Knodlers Lane TEOM	52.7	NA	An internal investigation determined HVO contribution to be minimal due to prevailing wind conditions and high Background levels.
19/2/2019	Maison Dieu TEOM	71.6	14.2 µg/m <sup>3</sup> Or 19.8%	An internal investigation determined HVO maximum potential contribution to be in the order of 14.2 ug/m <sup>3</sup> or 19.8% of the total measured based on prevailing wind conditions and upwind TEOM monitoring results.
19/2/2019	Warkworth TEOM	54.2	NA	An internal investigation determined HVO contribution to be minimal due to prevailing wind conditions and high Background levels.

## **3.0 WATER QUALITY**

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

### **3.1 Surface Water**

Surface water courses are sampled on a quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS).

Results of monitoring on Site Dams and the Hunter River as well as other natural tributaries are provided on a quarterly basis, results will appear in the March 2019 report.

### **3.2 Site Water Use**

Under water allocation licences issued by the Water NSW, HVO is permitted to extract water from the Hunter River. During the reporting period, HVO extracted 219.0ML of water from the Hunter River.

### **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.

During the reporting period no water was discharged under the HRSTS.

### **3.4 Groundwater Monitoring Results**

Groundwater monitoring is undertaken on a quarterly basis in accordance with the HVO Water Management Plan and Ground Water Monitoring Programme. Results of groundwater monitoring are reported quarterly and as such will be reported in the March 2019 monthly report.

## 4.0 BLASTING

HVO have a network of five blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors. The location of these monitors can be found in Figure 12.

Blasting criteria are summarised in Table 3.

**Table 3: Blasting Criteria**

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period
120	0%
Ground Vibration (mm/s)	Comments
5	5% of the total number of blasts in a 12 month period
10	0%

## 4.1 Blast Monitoring Results

During February, 16 blasts were initiated at HVO

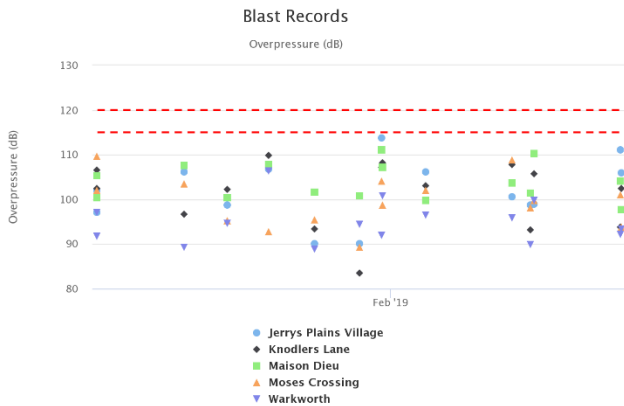


Figure 10 and 11 show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in Table 3.



**Figure 10: Overpressure Blast Monitoring Results – February 2019**



**Figure 11: Ground Vibration Blast Monitoring Results – February 2019**

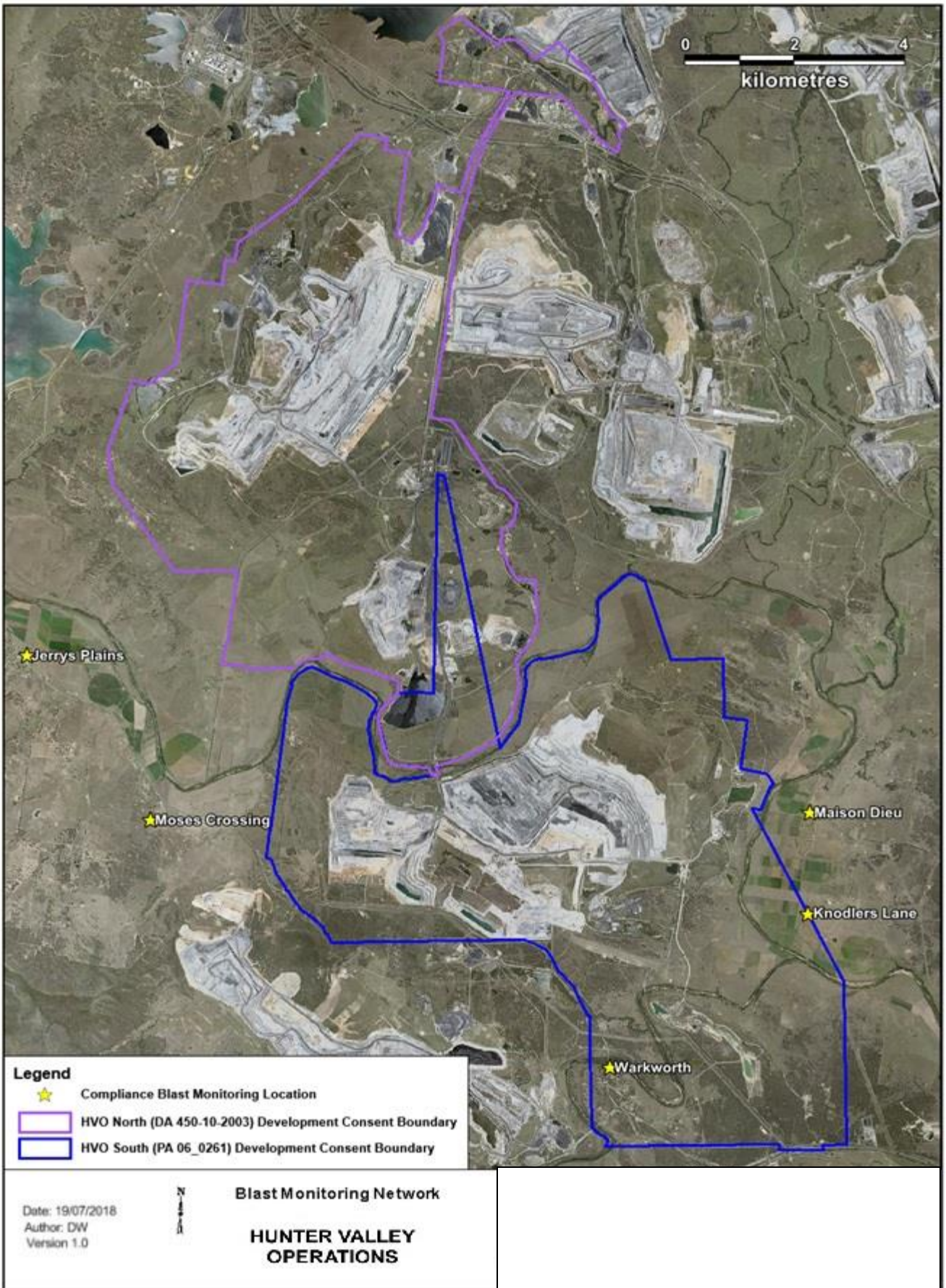


Figure 12: Blast Monitoring Location Plan

## 5.0 NOISE

Routine attended noise monitoring is carried out at defined locations around HVO as described in the HVO Noise Monitoring Programme. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Unattended monitoring (real time noise monitoring) also occurs at five sites surrounding HVO. The attended noise monitoring locations are displayed in Figure 13.

### 5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding HVO on the night of 11 February 2019. Monitoring results are detailed in Table 4 to Table 8 . During February attended noise monitoring, noise levels complied with the relevant development consent noise limits at all monitoring locations.

**Table 4: L<sub>Aeq</sub>, 15 minute HVO South - Impact Assessment Criteria – February 2019**

Location	Date and Time	Wind Speed (m/s) <sup>1</sup>	VTG °C/100m <sup>1</sup>	Criterion dB (A)	Criterion Applies? <sup>2</sup>	HVO South L <sub>Aeq</sub> dB <sup>3,4</sup>	Exceedance <sup>4,5</sup>
Knodlers Lane	11/02/2019 21:02	2.3	-1	37	Yes	27	Nil
Maison Dieu	11/02/2019 21:26	2.1	0.5	37	Yes	<30	Nil
Shearers Lane	11/02/2019 21:55	3.2	-1	41	No	38	NA
Kilburnie South	11/02/2019 22:53	2.8	0.5	36	Yes	IA	Nil
Jerrys Plains Village	11/02/2019 21:26	2.1	0.5	35	Yes	IA	Nil
Jerrys Plains East	11/02/2019 21:05	2.3	-1	35	Yes	IA	Nil
Long Point Road	11/02/2019 23:21	1.8	-1	35	Yes	IA	Nil
HVGC	11/02/2019 23:22	2.1	-1	55	Yes	<30	Nil

**Notes:**

1. Atmospheric data is sourced from the HVO Cheshunt weather station (MTW Charlton Ridge for Long Point) using logged meteorological data;
2. Assumed noise emission limits apply for wind speeds up to 3 metres per second (at a height of 10m), or temperature inversion conditions of up to 3 degrees/100m (at a height of 10m). Criterion may or may not apply due to rounding of meteorological data values;
3. Estimated or measured L<sub>Aeq</sub>,15minute attributed to HVO South Pit Area;
4. Bold results in red indicate exceedance of criteria;
5. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable;

**Table 5: L<sub>A1, 1minute</sub> HVO South - Impact Assessment Criteria – February 2019**

Location	Date and Time	Wind Speed (m/s) <sup>1</sup>	VTG °C/100m <sup>1</sup>	Criterion dB (A)	Criterion Applies? <sup>2</sup>	HVO South L <sub>A1, 1min</sub> dB <sup>3,4</sup>	Exceedance <sup>4,5</sup>
Knodlers Lane	11/02/2019 21:02	2.3	-1	45	Yes	39	Nil
Maison Dieu	11/02/2019 21:26	2.1	0.5	45	Yes	34	Nil
Shearers Lane	11/02/2019 21:55	3.2	-1	45	No	48	NA
Shearers Lane <sup>6</sup>	11/02/2019 22:26	2.9	0.5	45	Yes	37	Nil
Shearers Lane <sup>6</sup>	11/02/2019 22:28	2.9	0.5	45	Yes	32	Nil
Shearers Lane <sup>6</sup>	11/02/2019 22:29	3	0.5	45	No	33	NA
Shearers Lane <sup>6</sup>	11/02/2019 22:30	3	0.5	45	No	35	NA
Shearers Lane <sup>6</sup>	11/02/2019 22:31	3	0.5	45	No	33	NA
Kilburnie South	11/02/2019 22:53	2.8	0.5	45	Yes	IA	Nil
Jerrys Plains Village	11/02/2019 21:26	2.1	0.5	45	Yes	IA	Nil
Jerrys Plains East	11/02/2019 21:05	2.3	-1	45	Yes	IA	Nil
Long Point Road	11/02/2019 23:21	1.8	-1	45	Yes	IA	Nil
HVGC	11/02/2019 23:22	2.1	-1	Nil	NA	<30	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Cheshunt weather station (or MTW Charlton Ridge for Long Point) using logged meteorological data;
2. Assumed noise emission limits (see Section 2.3 of this report for more information) apply for wind speeds up to 3 metres per second (at a height of 10m), or temperature inversion conditions of up to 3 degrees/100m (at a height of 10m). Criterion may or may not apply due to rounding of meteorological data values;
3. These are results for HVO South Pit Area in the absence of all other noise sources;
4. Bold results in red indicate exceedance of criteria; and
5. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable; and
6. Renneasures

**Table 6: L<sub>Aeq, 15minute</sub> HVO North – Impact Assessment Criteria – February 2019**

Location	Date and Time	Wind Speed (m/s) <sup>1</sup>	VTG °C/100m <sup>1</sup>	Criterion dB (A)	Criterion Applies? <sup>2</sup>	HVO North L <sub>Aeq</sub> dB <sup>3,4</sup>	Exceedance <sup>4,5</sup>
Knodlers Lane	11/02/2019 21:02	2.3	-1	35	Yes	IA	NA
Maison Dieu	11/02/2019 21:26	2.4	-1	35	Yes	IA	Nil
Shearers Lane	11/02/2019 21:55	2.3	0.5	35	Yes	IA	Nil
Kilburnie South	11/02/2019 22:53	1.1	0.5	39	Yes	IA	Nil
Jerrys Plains Village	11/02/2019 21:26	2.4	-1	36	Yes	IA	Nil
Jerrys Plains East	11/02/2019 21:05	2.3	-1	39	No	IA	Nil
Long Point Road	11/02/2019 23:21	1.8	-1	35	Yes	IA	Nil
HVGC	11/02/2019 23:22	2.1	-1	Nil	NA	IA	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Corp. weather station (or MTW Charlton Ridge for Long Point) using logged meteorological data;
2. Noise emission limits apply under all meteorological conditions, except during periods of rain or hail, when average winds speed at microphone heights exceeds 5 metres per second, when wind speeds greater than 3 metres per second are measured at 10m above ground level, or during temperature inversion conditions greater than 3 degrees C/100m. Criterion may or may not apply due to rounding of meteorological data values;
3. Estimated or measured L<sub>Aeq,15minute</sub> attributed to HVO North Pit Area;
4. Bold results in red indicate exceedance of criteria; and
5. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable.

**Table 7: L<sub>Aeq,15minute</sub> HVO North - Land Acquisition Criteria – February 2019**

Location	Date and Time	Wind Speed (m/s) <sup>1</sup>	VTG °C/100m <sup>1</sup>	Criterion dB (A)	Criterion Applies? <sup>2</sup>	HVO North L <sub>Aeq</sub> dB <sup>3,4</sup>	Exceedance <sup>4,5</sup>
Knodlers Lane	11/02/2019 21:02	2.3	-1	35	Yes	IA	NA
Maison Dieu	11/02/2019 21:26	2.4	-1	35	Yes	IA	Nil
Shearers Lane	11/02/2019 21:55	2.3	0.5	35	Yes	IA	Nil
Kilburnie South	11/02/2019 22:53	1.1	0.5	39	Yes	IA	Nil
Jerrys Plains Village	11/02/2019 21:26	2.4	-1	36	Yes	IA	Nil
Jerrys Plains East	11/02/2019 21:05	2.3	-1	39	Yes	IA	Nil
Long Point Road	11/02/2019 23:21	1.8	-1	35	Yes	IA	Nil
HVGC	11/02/2019 23:22	2.1	-1	Nil	NA	IA	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Corp. weather station (or MTW Charlton Ridge for Long Point) using logged meteorological data;
2. Noise emission limits apply under all meteorological conditions, except during periods of rain or hail, when average winds speed at microphone heights exceeds 5 metres per second, when wind speeds greater than 3 metres per second are measured at 10m above ground level, or during temperature inversion conditions greater than 3 degrees C/100m. Criterion may or may not apply due to rounding of meteorological data values;
3. Estimated or measured L<sub>Aeq,15minute</sub> attributed to HVO North Pit Area;
4. Bold results in red indicate exceedance of criteria; and
5. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable.



**Table 8: LA1, 1Minute HVO North - Impact Assessment Criteria – February 2019**

Location	Date and Time	Wind Speed (m/s) <sup>1</sup>	VTG °C/100m <sup>1</sup>	Criterion dB (A)	Criterion Applies? <sup>2</sup>	HVO North LA1, 1min dB <sup>3,4</sup>	Exceedance <sup>45</sup>
Knodlers Lane	11/02/2019 21:02	2.3	-1	46	Yes	IA	Nil
Maison Dieu	11/02/2019 21:26	2.4	-1	46	Yes	IA	Nil
Shearers Lane	11/02/2019 21:55	2.3	0.5	46	Yes	IA	Nil
Kilburnie South	11/02/2019 22:53	1.1	0.5	46	Yes	IA	Nil
Jerrys Plains Village	11/02/2019 21:26	2.4	-1	46	Yes	IA	Nil
Jerrys Plains East	11/02/2019 21:05	2.3	-1	46	Yes	IA	Nil
Long Point Road	11/02/2019 23:21	1.8	-1	46	Yes	IA	Nil
HVGC	11/02/2019 23:22	2.1	-1	Nil	NA	IA	NA

**Notes:**

1. Atmospheric data is sourced from the HVO Corp. (or MTW Charlton Ridge for Long Point) weather station using logged meteorological data;
2. Noise emission limits apply under all meteorological conditions, except during periods of rain or hail, when average winds speed at microphone heights exceeds 5 metres per second, when wind speeds greater than 3 metres per second are measured at 10m above ground level, or during temperature inversion conditions greater than 3 degrees C/100m. Criterion may or may not apply due to rounding of meteorological data values;
3. These are results for HVO North Pit Area in the absence of all other noise sources;
4. Bold results in red indicate exceedance of criteria;
5. NA in exceedance column means atmospheric conditions outside specified in approval and so criterion is not applicable

## 5.2 NPfl Low Frequency Assessment

In accordance with the requirements of the EPA's Noise Policy for Industry (NPfl), the applicability of the low frequency modification penalty has been assessed. During February 2019 all measurements were compliant. The assessment for low frequency noise is shown in Table 9.

**Table 9: Low Frequency Noise Assessment – February 2019**

Location	Date and Time	Measured Site Only LA <sub>eq</sub> dB (Sth/Nth)	Site Only LC <sub>eq</sub> dB <sup>1</sup> (Sth/Nth)	Site-Only LC <sub>eq</sub> – LA <sub>eq</sub> dB <sup>1,2</sup> (Sth/Nth)	Result Max exceedance of ref spectrum dB <sup>1,3</sup> (Sth/Nth)	Penalty dB(A) <sup>1</sup> (Sth/Nth)
Knodlers Lane	11/02/2019 21:02	27/IA	NA/NA	NA/NA	NA/NA	NA/NA
Maison Dieu	11/02/2019 21:26	<30/IA	NA/NA	NA/NA	NA/NA	NA/NA
Shearers Lane	11/02/2019 21:55	38/IA	NA/NA	NA/NA	NA/NA	NA/NA
Kilburnie South	11/02/2019 22:53	IA/IA	NA/NA	NA/NA	NA/NA	NA/NA
Jerrys Plains Village	11/02/2019 21:26	IA/IA	NA/NA	NA/NA	NA/NA	NA/NA
Jerrys Plains East	11/02/2019 21:05	IA/IA	NA/NA	NA/NA	NA/NA	NA/NA
Long Point Road	11/02/2019 23:21	LA/IA	NA/NA	NA/NA	NA/NA	NA/NA

**Notes:**

1. Where it is not possible to determine the site only result due to the presence of other low frequency noise sources occurring during the measurement, or where criteria were not applicable due to meteorological conditions, this is noted as NA (not available) and no further assessment has been undertaken;
2. As per NPfl, if LC<sub>eq</sub> – LA<sub>eq</sub> ≥ 15 dB further assessment of low frequency noise required as detailed in Sections 2.4 and 3.3 of the attended noise report;
3. As per NPfl, compare measured spectrum against reference spectrum to determine if the low frequency modifying factor is triggered and application of penalty is required.

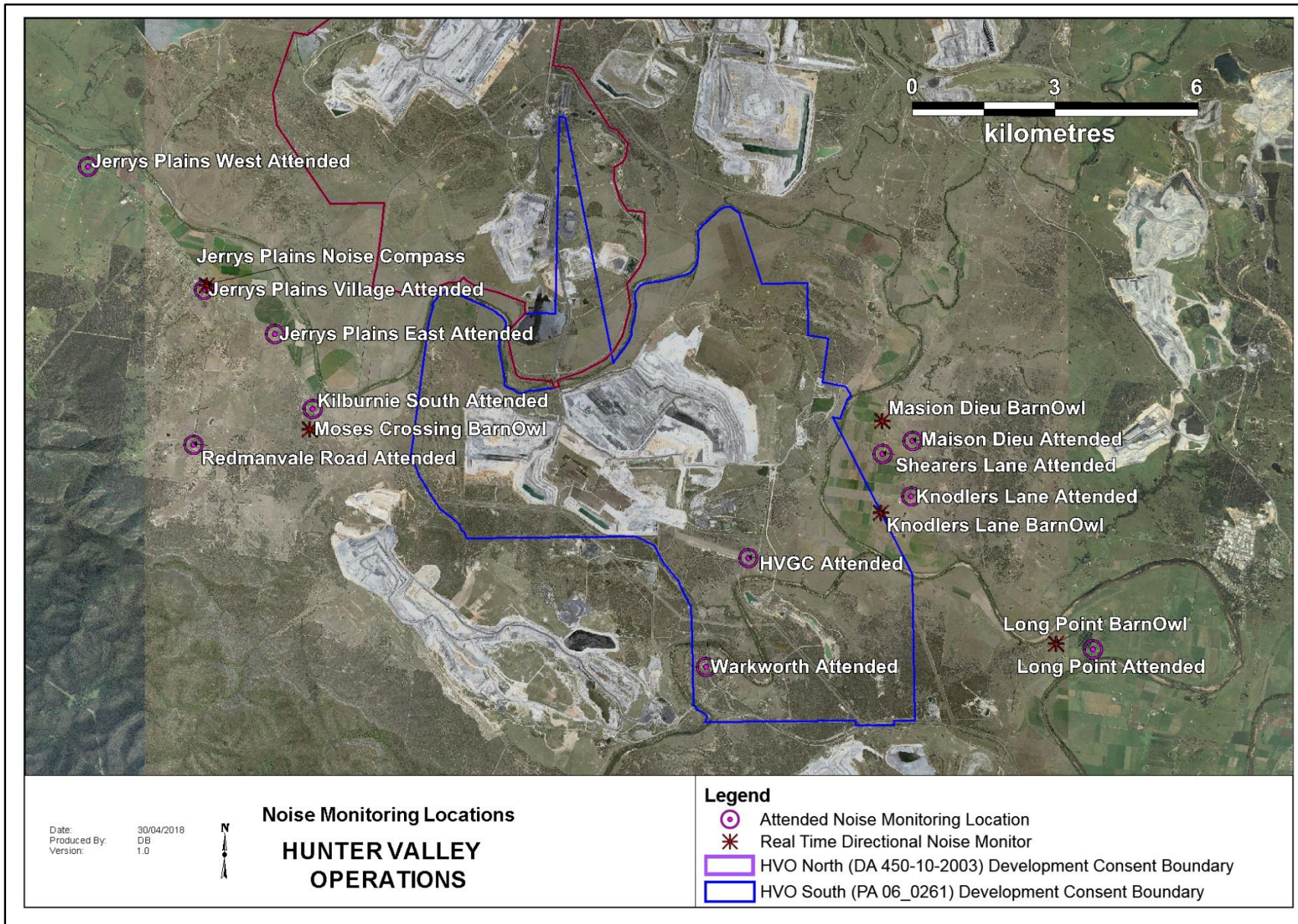


Figure 13: Noise Monitoring Location Plan

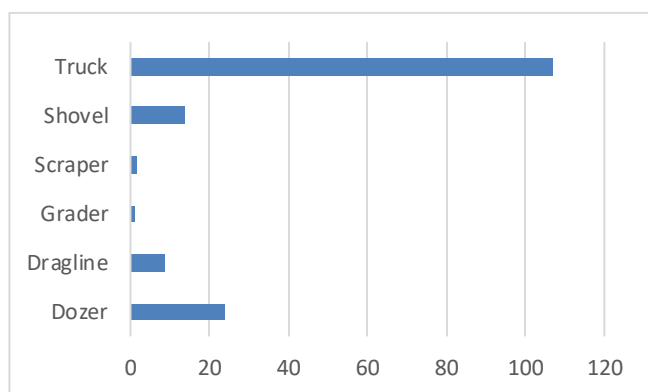
### 5.2.1 Real Time Noise Monitoring

HVO utilises a network of real-time directional noise monitors to manage noise impacts on a continuous basis. 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 likely to be attributable to HVO. Noise alarms are investigated and responded to with the appropriate level of operational modification. Changes in response to a noise alarm can include replacing equipment with quieter (noise attenuated) units, changing or relocating tasks, and shutting down equipment.

It should be noted that this assessment does not compliment or conflict with attended noise monitoring detailed in Section 5.1, and that real time monitoring data includes non-mine noise sources such as dogs, cows, or more commonly, road traffic.

## 6.0 OPERATIONAL DOWNTIME

During February, a total of 157 hours of equipment downtime was logged in response to real time monitoring and visual inspections for environmental reasons such as dust, noise and meteorological conditions. Operational downtime by equipment type is shown in Figure 14.



**Figure 14: Operational Downtime by Equipment Type – February 2019**

## 7.0 REHABILITATION

During February 0 Ha of land was released, 8.0 Ha of land was bulk shaped and 2.2 Ha of land was rehabilitated.

## 8.0 COMPLAINTS

No complaints were received during the reporting period. Details of complaints received YTD are shown in Table 10 below.

**Table 10: Complaints Summary YTD**

	Noise	Dust	Blast	Lighting	Other	Total
<b>January</b>	0	0	0	0	0	0
<b>February</b>	0	0	0	0	0	0
<b>March</b>						
<b>April</b>						
<b>May</b>						
<b>June</b>						
<b>July</b>						
<b>August</b>						
<b>September</b>						
<b>October</b>						
<b>February</b>						
<b>December</b>						
<b>Total</b>	0	0	0	0	0	0

## 9.0 ENVIRONMENTAL INCIDENTS

During the reporting period there were three recordable environmental incidents;

### **2 February 2019 – Blown hydraulic line at HVLP**

Hydraulic hose failed and caused a loss of oil onto rail tracks and bin at Hunter Valley load point. Spill kits were used to contain and clean up oil spill and remainder of oil/oily water was captured in the sump and cleaned up appropriately. The failed hose was repaired.

## **Appendix A: Meteorological Data**

**Table 11: Meteorological Data - HVO Corporate Meteorological Station – February 2019**

Date	Air Temperature Maximum (°C)	Air Temperature Minimum (°C)	Relative Humidity Maximum (%)	Relative Humidity Minimum (%)	Solar Radiation Maximum (W/Sq. M)	Wind Direction Average (°)	Wind Speed Average (m/sec)	Rainfall(mm)
1/2/2019	24	13	98	51	657	134	4	0
2/2/2019	29	13	100	50	1541	137	4	1.2
3/2/2019	35	14	99	19	1034	126	3	0
4/2/2019	38	17	80	7	1016	204	3	0
5/2/2019	35	17	78	19	1226	113	4	0
6/2/2019	33	14	91	24	1350	119	4	0
7/2/2019	34	14	89	16	1085	128	3	0
8/2/2019	35	14	100	20	1468	181	2	19.4
9/2/2019	33	14	100	20	1247	274	5	2.4
10/2/2019	30	11	67	10	1053	185	2	0
11/2/2019	35	11	87	1	1046	220	2	0
12/2/2019	36	14	73	0	1048	246	4	0
13/2/2019	31	14	76	11	863	148	4	0
14/2/2019	26	12	69	30	1431	113	4	0
15/2/2019	29	10	79	22	1023	120	5	0
16/2/2019	30	15	71	27	805	127	4	0
17/2/2019	34	11	92	8	990	160	2	0
18/2/2019	39	13	86	5	964	163	2	0
19/2/2019	40	16	84	5	1304	195	4	0
20/2/2019	29	15	86	42	1235	138	4	0
21/2/2019	24	15	100	51	1309	132	4	1.8
22/2/2019	25	12	98	39	1447	129	4	0.2
23/2/2019	26	11	100	33	1525	133	4	2.8
24/2/2019	24	10	100	40	1461	131	4	0.8
25/2/2019	27	9	98	29	1485	120	4	0
26/2/2019	30	16	70	18	991	127	3	0
27/2/2019	30	11	88	26	1310	114	4	0
28/2/2019	30	10	97	22	1253	108	3	0

“-“ Indicates that data was not available due to technical issues.