



# Hunter Valley Operations EPL Monitoring Data

Published 15 May 2018  
 FOR THE MONTH ENDING 30 April 2018

Name of Operation	Hunter Valley Operations
Environment Protection Licence	640
Licensee	HV Operations Pty Ltd
Premises	Hunter Valley Operations Lemington Road, Singleton NSW 2330 Australia
EPL Link	<a href="http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=121534&amp;SYUID=1&amp;LICID=640">http://www.epa.nsw.gov.au/prpoeoapp/V        iewPOEOLicence.aspx?DOCID=121534&amp;SY        UID=1&amp;LICID=640</a>

## 1 INTRODUCTION

This report has been compiled to provide a summary of environmental monitoring results for Hunter Valley Operations in accordance with Environment Protection Licence 640. This report includes all monitoring data collected in accordance with the aforementioned Licence for the period 1<sup>st</sup> April – 30<sup>th</sup> April 2018.

Monitoring in this report includes:

- Air quality monitoring;
- Surface water monitoring including mine water discharge; and
- Blast monitoring.

Monitoring locations are shown in Figure 1.

## 2 AIR QUALITY

In accordance with the requirements of Condition M2.2 (EPL 640), Hunter Valley Operations maintains a network of five PM<sub>10</sub> monitors. The following monitoring locations (EPA Monitoring Points 13, 14, 15, 16 and 17) are listed on the licence for the purpose of monitoring:

- EPA Identification Number 13 – Howick
- EPA Identification Number 14 – HC1
- EPA Identification Number 15 – Wandewoi
- EPA Identification Number 16 – Knodlers
- EPA Identification Number 17 – Golden Highway

Results of Particulates (PM<sub>10</sub>) monitoring (EPA Monitoring Points 13, 14, 15, 16 and 17) are shown in Table 1. Results reported represent the 24hr average PM<sub>10</sub>, derived from 10 minute average PM<sub>10</sub> values for the period midnight to midnight, for each calendar date during the reporting period. The last sampling date was 30<sup>th</sup> April 2018; the data was obtained on the 1<sup>st</sup> May 2018.

**TABLE 1: PARTICULATE MATTER <10µM MONITORING**

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/04/2018	µg/m <sup>3</sup>	Continuous	32.6	63.2	25.9	19.4	37.7
2/04/2018	µg/m <sup>3</sup>		28.9	101.5	19.3	22.0	41.3
3/04/2018	µg/m <sup>3</sup>		30.5	32.7	21.8	15.2	27.7
4/04/2018	µg/m <sup>3</sup>		23.5	19.8	16.2	12.0	25.8
5/04/2018	µg/m <sup>3</sup>		22.3	37.1	14.1	13.5	21.5
6/04/2018	µg/m <sup>3</sup>		36.1	75.5	20.4	17.9	28.9
7/04/2018	µg/m <sup>3</sup>		30.2	59.6	28.2	17.8	36.1
8/04/2018	µg/m <sup>3</sup>		28.1	92.5	22.2	22.4	39.4
9/04/2018	µg/m <sup>3</sup>		48.5	100.9	21.2	37.5	47.7
10/04/2018	µg/m <sup>3</sup>		35.4	53.4	19.8	21.3	33.7
11/04/2018	µg/m <sup>3</sup>		43.3	68.7	26.3	26.5	40.1
12/04/2018	µg/m <sup>3</sup>		41.1	129.1	18.3	29.6	37.1
13/04/2018	µg/m <sup>3</sup>		35.8	#	19.0	47.5	35.5
14/04/2018	µg/m <sup>3</sup>		26.1	69.9	10.8	24.5	24.5
15/04/2018	µg/m <sup>3</sup>		64.0	93.4	40.6	59.1	55.0
16/04/2018	µg/m <sup>3</sup>		21.9	44.3	9.4	40.4	22.5
17/04/2018	µg/m <sup>3</sup>		35.2	62.9	16.3	20.9	45.1
18/04/2018	µg/m <sup>3</sup>		29.6	32.5	16.5	18.2	33.9
19/04/2018	µg/m <sup>3</sup>		31.5	77.4	16.3	21.5	#
20/04/2018	µg/m <sup>3</sup>		24.4	35.8	12.4	12.0	#

21/04/2018	µg/m <sup>3</sup>		35.4	48.5	18.2	22.4	41.7
22/04/2018	µg/m <sup>3</sup>		32.6	23.6	16.0	12.1	38.6
23/04/2018	µg/m <sup>3</sup>		31.3	67.5	15.6	13.9	33.0
24/04/2018	µg/m <sup>3</sup>		39.3	50.5	15.2	13.4	31.5
25/04/2018	µg/m <sup>3</sup>		23.1	77.8	13.0	20.6	42.1
26/04/2018	µg/m <sup>3</sup>		29.7	52.8	11.9	21.9	30.1
27/04/2018	µg/m <sup>3</sup>		28.9	30.3	11.2	25.8	72.8
28/04/2018	µg/m <sup>3</sup>		27.3	23.9	10.1	18.2	46.7
29/04/2018	µg/m <sup>3</sup>		32.1	73.1	12.8	17.8	45.6
30/04/2018	µg/m <sup>3</sup>		21.0	31.7	8.5	15.7	32.5
Monthly Meaningful Data							
<b>April</b>	<b>µg/m<sup>3</sup></b>	<b>Minimum*</b>	21.0	19.8	8.5	12.0	21.5
<b>April</b>	<b>µg/m<sup>3</sup></b>	<b>Mean*</b>	32.3	59.7	17.6	22.7	37.4
<b>April</b>	<b>µg/m<sup>3</sup></b>	<b>Maximum*</b>	64.0	129.1	40.6	59.1	72.8
<b>April</b>	<b>µg/m<sup>3</sup></b>	<b>Median*</b>	30.9	59.6	16.3	20.8	36.6

# 24 hour data unavailable due to equipment or communications issue causing one or more missing 10 minute values

\*Data calculated with missing 10 minute values due to equipment or communication issue

### 3 SURFACE WATER

#### 3.1 Mine Water Discharge Monitoring

HVO participates in the Hunter River Salinity Trading Scheme (HRSTS), and maintains six monitoring locations associated with this scheme (EPA Monitoring Points 3, 4, 5, 6, 7 and 8, Condition M2.3) as follows:

- EPA Identification Number 3 – Discharge Pipe from Dam 11N
- EPA Identification Number 4 – Discharge end of outlet pipe on Parnell’s Dam
- EPA Identification Number 5 – At the discharge end of the alluvial lands discharge pipeline
- EPA Identification Number 6 – In Farrell’s Creek within 100m, and upstream of the confluence of flow from POINT 3
- EPA Identification Number 7 – In Farrell’s Creek within 100m, and downstream of the confluence of flow from POINT 3
- EPA Identification Number 8 – Outlet of discharge pipe from Lake James storage dam

The location of these sampling points can be viewed in Appendix A: HVO Monitoring Location Plan

Hunter Valley Operations did not receive any discharge opportunities in the reporting period and no water was discharged. As such, no samples were collected at Monitoring Points 3, 4, 5, 6, 7 and 8 during the reporting period (shown in Table 2 below).

**TABLE 2: MINE WATER DISCHARGE MONITORING**

Discharge Point	Date	Pollutant	unit of measure	Licence Limits	No. of samples required by licence	No. of samples you collected and analysed
Dam 11N Discharge / EPL Point 3	N/A	Electrical Conductivity	microsiemens per centimetre	-	0	0
		pH	pH	6.5 - 9.5	0	0
		Total Suspended Solids	milligrams per litre	120	0	0
Parnell’s Dam Discharge / EPL Point 4	N/A	Electrical Conductivity	microsiemens per centimetre	-	0	0
		pH	pH	6.5 - 9.5	0	0
		Total Suspended Solids	milligrams per litre	120	0	0
Alluvial Lands Discharge / EPL Point 5	N/A	Electrical Conductivity	microsiemens per centimetre	400	0	0
		pH	pH	-	0	0

		Total Suspended Solids	milligrams per litre	-	0	0
Farrell's Creek Upstream / EPL Point 6	N/A	Electrical Conductivity	microsiemens per centimetre	-	0	0
		pH	pH	-	0	0
		Total Suspended Solids	milligrams per litre	-	0	0
Farrell's Creek Downstream / EPL Point 7	N/A	Electrical Conductivity	microsiemens per centimetre	-	0	0
		pH	pH	-	0	0
		Total Suspended Solids	milligrams per litre	-	0	0
Lake James Discharge / EPL Point 8	N/A	Electrical Conductivity	microsiemens per centimetre	-	0	0
		pH	pH	6.5 - 9.5	0	0
		Total Suspended Solids	milligrams per litre	120	0	0

#### 4 BLAST MONITORING

In accordance with the requirements of Condition M8.1, Hunter Valley Operations maintains a network of blast monitors to measure airblast overpressure and ground vibration for all blasts carried out at HVO. The following monitoring locations (EPA Monitoring Points 9, 10, 11 and 12) are listed on the Licence for the purpose of assessing compliance with the airblast overpressure and ground vibration criteria as follows:

- EPA Identification Number 9 – Jerry’s Plains
- EPA Identification Number 10 – Moses Crossing
- EPA Identification Number 11 – Warkworth
- EPA Identification Number 12 – Maison Dieu

The location of these monitors can be found in Figure 1 – Hunter Valley Operations Monitoring Locations. The last date sampled was the 29<sup>th</sup> March 2018. The data was obtained on the 6<sup>th</sup> April 2018.

Blast monitoring results are detailed in Table 3 (Airblast Overpressure) and Table 4 (Ground Vibration).

**TABLE 3: BLAST MONITORING (AIRBLAST OVERPRESSURE)**

Blast ID	Date and Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
WN43UPG04A	3/04/2018 13:22	dB(L)	All Blasts 100%	115	120	101.0	96.6	94.2	82.8
WS47LEB01B	4/04/2018 12:03	dB(L)		115	120	99.7	103.8	98.0	92.7
WN43MPG04A	5/04/2018 13:09	dB(L)		115	120	92.3	91.3	83.5	85.9
WN47LEB01A	5/04/2018 13:10	dB(L)		115	120	94.4	97.7	93.6	90.6
RW25AFA01A	6/04/2018 14:17	dB(L)		115	120	99.2	109.5	96.1	96.0
RW26WHG01A	6/04/2018 14:39	dB(L)		115	120	108.2	101.1	104.2	106.7
WN40BAP01A	6/04/2018 16:50	dB(L)		115	120	91.9	101.0	96.0	84.6
WN40BAP01B	7/04/2018 13:05	dB(L)		115	120	86.3	82.0	89.7	83.5
CE11R0105A	9/04/2018 14:08	dB(L)		115	120	93.2	98.9	107.9	93.6
CE10R0301A	9/04/2018 14:09	dB(L)		115	120	91.9	95.2	105.5	92.1
P120R0103E	11/04/2018 16:14	dB(L)		115	120	90.9	87.2	95.2	93.3
WN45UPG04A_ WN45LEB01A	12/04/2018 13:11	dB(L)		115	120	94.9	101.3	108.1	105.2
WN40BAP01C	12/04/2018 13:12	dB(L)		115	120	91.2	91.9	110.2	102.0
P202R0603B	13/04/2018 14:20	dB(L)		115	120	92.3	117.0	107.7	107.3
P118BAC04A	14/04/2018 10:06	dB(L)		115	120	98.0	95.9	112.1	109.6
WN40LLD01A	14/04/2018 13:49	dB(L)		115	120	96.9	112.3	114.2	94.2



WN40BAP01D	16/04/2018 13:15	dB(L)	115	120	111.9	104.7	110.6	98.9
RW25AFA01B_ RW25BFP01B	17/04/2018 8:47	dB(L)	115	120	98.9	100.1	90.6	91.1
RW37GMA01B	19/04/2018 13:05	dB(L)	115	120	93.5	88.7	89.2	92.7
RW26WHG01B	19/04/2018 13:06	dB(L)	115	120	105.9	98.2	99.1	104.3
WN47LEB01B_ WS47LEB01C	21/04/2018 14:19	dB(L)	115	120	100.3	110.3	104.1	91.6
P118BAC04B	21/04/2018 16:21	dB(L)	115	120	103.3	105.9	107.6	101.8
P118BAC04C	23/04/2018 8:59	dB(L)	115	120	96.8	96.1	102.8	102.4
P205FCL02A	26/04/2018 11:44	dB(L)	115	120	96.3	98.9	112.8	101.6
WN40LLD01B	27/04/2018 13:07	dB(L)	115	120	105.7	100.7	109.1	92.2
P119R0304A	28/04/2018 13:14	dB(L)	115	120	105.6	109.8	103.2	98.2
P20707001A_ P207R70P01A	28/04/2018 13:15	dB(L)	115	120	103.8	107.9	105.2	98.0
P201R8P01A	30/04/2018 14:41	dB(L)	115	120	93.7	99.3	104.4	90.4
P205M0801A	30/04/2018 14:43	dB(L)	115	120	102.7	105.1	109.8	91.1
Monthly Meaningful Data								
<b>Minimum</b>	<b>April</b>	<b>dB(L)</b>	115	120	86.3	82.0	83.5	82.8
<b>Mean</b>	<b>April</b>	<b>dB(L)</b>	115	120	98.0	100.3	102.2	95.6
<b>Maximum</b>	<b>April</b>	<b>dB(L)</b>	115	120	111.9	117.0	114.2	109.6
<b>Median</b>	<b>April</b>	<b>dB(L)</b>	115	120	96.9	100.1	104.2	93.6

**TABLE 4: BLAST MONITORING (GROUND VIBRATION)**

Blast ID	Date and Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
WN43UPG04A	3/04/2018 13:22	mm/s	All Blasts 100%	5	10	0.03	0.03	0.02	0.04
WS47LEB01B	4/04/2018 12:03	mm/s		5	10	0.16	0.09	0.08	0.09
WN43MPG04A	5/04/2018 13:09	mm/s		5	10	0.16	0.22	0.10	0.27
WN47LEB01A	5/04/2018 13:10	mm/s		5	10	0.16	0.22	0.10	0.22
RW25AFA01A	6/04/2018 14:17	mm/s		5	10	0.08	0.04	0.08	0.26
RW26WHG01A	6/04/2018 14:39	mm/s		5	10	0.60	0.10	0.14	0.34
WN40BAP01A	6/04/2018 16:50	mm/s		5	10	0.12	0.15	0.11	0.12
WN40BAP01B	7/04/2018 13:05	mm/s		5	10	0.14	0.17	0.09	0.09
CE11R0105A	9/04/2018 14:08	mm/s		5	10	0.04	0.05	0.03	0.68
CE10R0301A	9/04/2018 14:09	mm/s		5	10	0.03	0.05	0.03	0.68
P120R0103E	11/04/2018 16:14	mm/s		5	10	0.12	0.08	0.16	0.34
WN45UPG04A_ WN45LEB01A	12/04/2018 13:11	mm/s		5	10	0.24	0.22	0.14	0.66
WN40BAP01C	12/04/2018 13:12	mm/s		5	10	0.16	0.21	0.09	0.15
P202R0603B	13/04/2018 14:20	mm/s		5	10	0.04	0.03	0.14	0.09
P118BAC04A	14/04/2018 10:06	mm/s		5	10	0.10	0.06	0.19	0.26

WN40LLD01A	14/04/2018 13:49	mm/s	5	10	0.08	0.08	0.08	0.08
WN40BAP01D	16/04/2018 13:15	mm/s	5	10	0.05	0.06	0.05	0.08
RW25AFA01B_R W25BFP01B	17/04/2018 8:47	mm/s	5	10	0.07	0.03	0.03	0.30
RW37GMA01B	19/04/2018 13:05	mm/s	5	10	0.16	0.07	0.04	0.19
RW26WHG01B	19/04/2018 13:06	mm/s	5	10	0.43	0.14	0.11	0.33
WN47LEB01B_W S47LEB01C	21/04/2018 14:19	mm/s	5	10	0.14	0.13	0.07	0.13
P118BAC04B	21/04/2018 16:21	mm/s	5	10	0.08	0.04	0.21	0.18
P118BAC04C	23/04/2018 8:59	mm/s	5	10	0.06	0.03	0.14	0.13
P205FCL02A	26/04/2018 11:44	mm/s	5	10	0.03	0.02	0.07	0.29
WN40LLD01B	27/04/2018 13:07	mm/s	5	10	0.35	0.22	0.10	0.11
P119R0304A	28/04/2018 13:14	mm/s	5	10	0.09	0.06	0.46	0.82
P20707001A_ P207R70P01A	28/04/2018 13:15	mm/s	5	10	0.16	0.07	0.46	0.82
P201R8P01A	30/04/2018 14:41	mm/s	5	10	0.05	0.04	0.20	0.14
P205M0801A	30/04/2018 14:43	mm/s	5	10	0.03	0.03	0.11	0.71
Monthly Meaningful Data								
<b>Minimum</b>	<b>April</b>	<b>mm/s</b>	5	10	0.03	0.02	0.02	0.04
<b>Mean</b>	<b>April</b>	<b>mm/s</b>	5	10	0.14	0.09	0.13	0.30
<b>Maximum</b>	<b>April</b>	<b>mm/s</b>	5	10	0.60	0.22	0.46	0.82
<b>Median</b>	<b>April</b>	<b>mm/s</b>	5	10	0.10	0.07	0.10	0.22

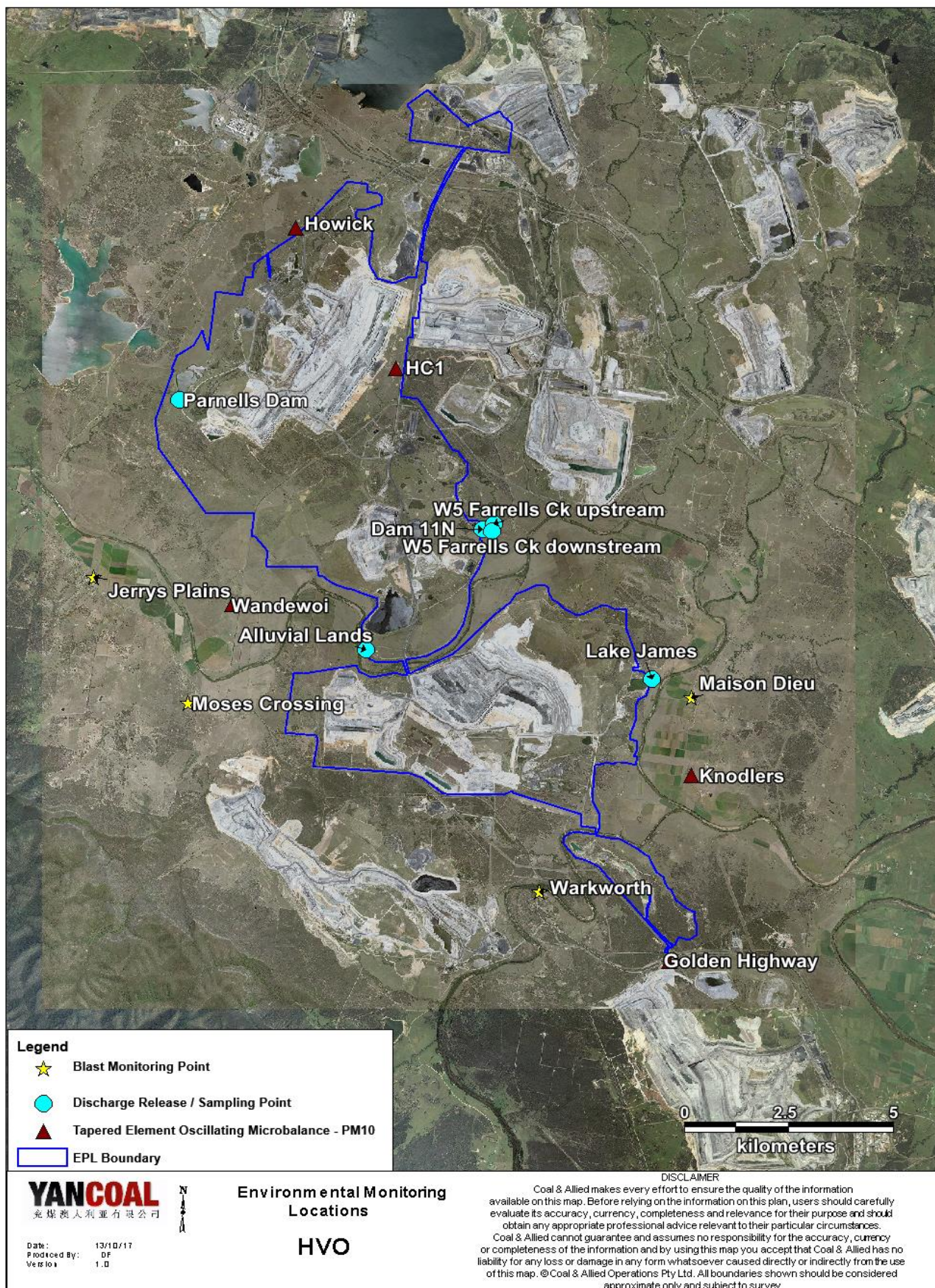


Figure 1 : Hunter Valley Operations Environmental Monitoring Locations