



Hunter Valley Operations EPL Monitoring Data

Published 21 December 2017
FOR THE MONTH ENDING 30 November 2017

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	http://www.epa.nsw.gov.au/prpoeoapp/V iewPOEOLicence.aspx?DOCID=121534&SY UID=1&LICID=640

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 1st November – 30th November 2017.

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 PM₁₀ monitors. The following monitoring locations (EPA Monitoring Points 13, 14, 15, 16 and 17) are listed on the licences 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 (PM₁₀) monitoring (EPA Monitoring Points 13, 14, 15, 16 and 17) are shown in Table 1. Results reported represent the 24hr average PM₁₀, derived from 10 minute average PM₁₀ values for the period midnight to midnight, for each calendar date during the reporting period. The last sampling date was 30th November 2017; the data was obtained on the 1st December 2017.

TABLE 1: PARTICULATE MATTER <10µM MONITORING

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/11/2017	µg/m ³	Continuous	39.0	41.3	17.3	19.2	30.4
2/11/2017	µg/m ³		40.2	82.8	20.7	29.1	60.7
3/11/2017	µg/m ³		28.9	126.0	13.2	36.4	41.3
4/11/2017	µg/m ³		19.0	17.8	6.5	10.0	17.0
5/11/2017	µg/m ³		11.3	7.9	2.6	5.3	8.5
6/11/2017	µg/m ³		#	#	#	#	#
7/11/2017	µg/m ³		26.2	36.9	8.8	10.4	18.3
8/11/2017	µg/m ³		16.4	9.9	6.3	6.4	10.3
9/11/2017	µg/m ³		31.1	24.8	11.2	#	19.7
10/11/2017	µg/m ³		25.9	16.5	9.8	8.4	13.1
11/11/2017	µg/m ³		22.6	14.5	10.0	8.7	15.7
12/11/2017	µg/m ³		26.3	15.5	14.6	11.9	19.4
13/11/2017	µg/m ³		32.4	20.9	12.5	16.2	23.3
14/11/2017	µg/m ³		#	#	14.8	13.0	19.5
15/11/2017	µg/m ³		31.3	34.5	20.9	12.1	20.2
16/11/2017	µg/m ³		#	#	15.4	12.6	24.0
17/11/2017	µg/m ³		24.9	16.2	16.5	9.3	16.0
18/11/2017	µg/m ³		19.1	14.0	7.2	6.7	9.8
19/11/2017	µg/m ³		28.3	14.1	12.4	8.2	14.3
20/11/2017	µg/m ³		33.4	31.0	12.1	11.7	21.9
21/11/2017	µg/m ³		30.5	18.1	15.8	12.4	23.2

22/11/2017	µg/m ³		22.6	17.6	14.3	11.3	17.6
23/11/2017	µg/m ³		22.4	#	12.9	10.7	17.3
24/11/2017	µg/m ³		35.2	57.9	21.5	#	43.9
25/11/2017	µg/m ³		31.0	26.7	29.3	24.1	32.8
26/11/2017	µg/m ³		25.4	16.5	16.8	12.9	14.7
27/11/2017	µg/m ³		22.9	31.4	13.8	19.2	25.9
28/11/2017	µg/m ³		25.5	15.0	18.9	16.5	20.9
29/11/2017	µg/m ³		25.4	15.7	13.8	14.6	12.7
30/11/2017	µg/m ³		23.2	18.2	15.8	14.4	#
Monthly Meaningful Data							
November	µg/m³	Minimum*	11.3	7.9	2.6	5.3	8.5
November	µg/m³	Mean*	26.7	28.5	14.0	13.8	21.9
November	µg/m³	Maximum*	40.2	126.0	29.3	36.4	60.7
November	µg/m³	Median*	25.9	18.0	13.8	12.1	19.5

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 Appendix A – Hunter Valley Operations Monitoring Locations. The last date sampled was the 30th November 2017. The data was obtained on the 15 December 2017.

During the reporting period no blasts exceeded the 115dB(L) threshold for airblast overpressure or the 5mm/s threshold for ground vibration. 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
P204FCL12A	3/11/2017 13:23	dB(L)	All Blasts 100%	115	120	91.1	104.5	106.7	100.9
WN40ULD01A	4/11/2017 10:15	dB(L)		115	120	99.9	99.9	104.5	93.4
P202R0105C	4/11/2017 13:30	dB(L)		115	120	83.4	91.9	80.9	88.2
P123H3003A	7/11/2017 13:35	dB(L)		115	120	103.3	97.9	96.2	86.3
P118R0602A	9/11/2017 14:05	dB(L)		115	120	99.5	112.2	107.7	94.8
P204M3502A	11/11/2017 16:09	dB(L)		115	120	109.1	103.8	111.7	105.1
P121P0602A	11/11/2017 16:32	dB(L)		115	120	106.0	105.8	105.2	96.0
P118R0602B	13/11/2017 9:12	dB(L)		115	120	96.8	101.9	98.4	95.1
WS39LLD02B	15/11/2017 11:09	dB(L)		115	120	90.2	97.0	93.5	83.2
WS44LEB03A, WS44LEC01A	17/11/2017 16:26	dB(L)		115	120	104.0	104.2	101.6	107.3
WW27BAP02A, WW25BAR04A	20/11/2017 15:22	dB(L)		115	120	99.2	99.9	112.4	83.0
WW27ULD02A	20/11/2017 15:49	dB(L)		115	120	110.5	112.0	108.2	93.2
P202R0401A	22/11/2017 13:15	dB(L)		115	120	95.1	114.4	96.4	93.4
P205M1P01A	22/11/2017 13:16	dB(L)		115	120	99.3	109.4	89.9	89.6

RW30PRE05A	24/11/2017 9:11	dB(L)		115	120	98.7	89.8	92.5	96.3
WN45UPP01A	27/11/2017 13:14	dB(L)		115	120	94.6	97.5	102.6	89.6
RW24BF101A	29/11/2017 10:11	dB(L)		115	120	95.2	91.4	102.2	96.9
WN40ULD02A	30/11/2017 14:09	dB(L)		115	120	90.5	104.4	103.4	90.3
Monthly Meaningful Data									
Minimum	November	dB(L)		115	120	83.4	89.8	80.9	83.0
Mean	November	dB(L)		115	120	98.1	102.1	100.8	93.5
Maximum	November	dB(L)		115	120	110.5	114.4	112.4	107.3
Median	November	dB(L)		115	120	98.9	102.8	102.4	93.4

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
P204FCL12A	3/11/2017 13:23	mm/s	All Blasts 100%	5	10	0.03	0.04	0.04	0.11
WN40ULD01A	4/11/2017 10:15	mm/s		5	10	0.11	0.11	0.09	0.07
P202R0105C	4/11/2017 13:30	mm/s		5	10	0.02	0.01	0.02	0.44
P123H3003A	7/11/2017 13:35	mm/s		5	10	0.11	0.13	0.13	0.09
P118R0602A	9/11/2017 14:05	mm/s		5	10	0.11	0.08	0.33	0.38
P204M3502A	11/11/2017 16:09	mm/s		5	10	0.03	0.03	0.09	0.09
P121P0602A	11/11/2017 16:32	mm/s		5	10	0.08	0.05	0.17	0.29
P118R0602B	13/11/2017 9:12	mm/s		5	10	0.16	0.09	0.39	0.58
WS39LLD02B	15/11/2017 11:09	mm/s		5	10	0.08	0.13	0.06	0.05
WS44LEB03A, WS44LEC01A	17/11/2017 16:26	mm/s		5	10	0.20	0.24	0.13	0.11
WW27BAPO2A, WW25BAR04A	20/11/2017 15:22	mm/s		5	10	0.16	0.15	0.09	0.15
WW27ULD02A	20/11/2017 15:49	mm/s		5	10	0.03	0.03	0.02	0.12
P202R0401A	22/11/2017 13:15	mm/s		5	10	0.17	0.06	2.05	0.70
P205M1P01A	22/11/2017 13:16	mm/s		5	10	0.03	0.04	0.13	0.35
RW30PRE05A	24/11/2017 9:11	mm/s		5	10	0.02	0.03	0.03	0.10

WN45UPP01A	27/11/2017 13:14	mm/s		5	10	0.03	0.04	0.03	0.24
RW24BF101A	29/11/2017 10:11	mm/s		5	10	0.02	0.02	0.02	0.22
WN40ULD02A	30/11/2017 14:09	mm/s		5	10	0.17	0.14	0.09	0.41
Monthly Meaningful Data									
Minimum	November	mm/s		5	10	0.02	0.01	0.02	0.05
Mean	November	mm/s		5	10	0.09	0.08	0.22	0.25
Maximum	November	mm/s		5	10	0.20	0.24	2.05	0.70
Median	November	mm/s		5	10	0.08	0.06	0.09	0.19

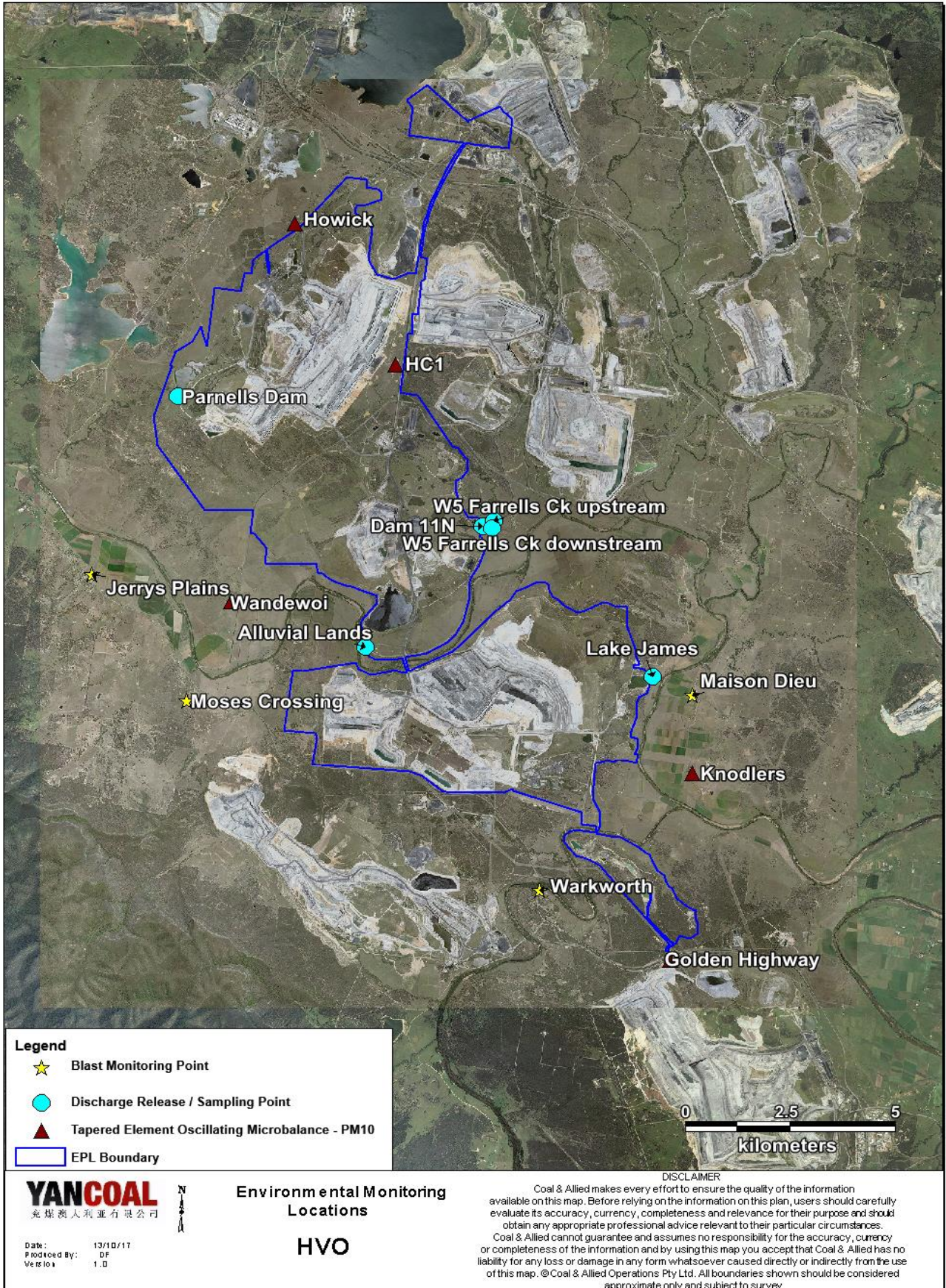


Figure 1 : Hunter Valley Operations Environmental Monitoring Locations