

HUNTER VALLEY OPERATIONS

Environment Protection Licence 640 Monitoring Data - January 2020

Published 21 April 2020

Name of Operation	Hunter Valley Operations
<i>Environment Protection Licence</i>	640
<i>Licensee</i>	<i>HV Operations Pty Ltd</i>
<i>Premises</i>	<i>Hunter Valley Operations Lemington Road, Singleton NSW 2330 Australia</i>
<i>EPL Link</i>	https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=168611&SYSUID=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 1 January – 31 January 2020.

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 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 (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 31 January 2020; the data was obtained on the 20 April 2020.

Table 1: Particulate Matter <10µm Monitoring

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
1/01/2020	µg/m ³	Continuous	159.4*	41.4	113.4	114.1	88.1
2/01/2020	µg/m ³		63.3*	27.9	40.3	52.3	45.1
3/01/2020	µg/m ³		80.8	5.1*	36.3	42.7	32.2
4/01/2020	µg/m ³		50.1*	1.2*	54.6*	45.1	20.6*
5/01/2020	µg/m ³		200.1	44.6*	141.9	143.1	41.8*
6/01/2020	µg/m ³		69.3	13.4	42.9	33.9	50.3*
7/01/2020	µg/m ³		43.5	14.1*	43.9*	33.4*	33.9*
8/01/2020	µg/m ³		83.9	41.4*	54.3*	62.8	76.8
9/01/2020	µg/m ³		48.6	15.9	18.0*	23.3	43.6
10/01/2020	µg/m ³		48.7	9.7	46.7*	26.0	38.3
11/01/2020	µg/m ³		76.9	23.8*	81.6*	45.0*	71.1
12/01/2020	µg/m ³		64.0*	5.3*	62.9	34.7	44.1*
13/01/2020	µg/m ³		55.6	None	38.7	25.1	27.3*
14/01/2020	µg/m ³		50.2	2.6	32.9	24.7	23.4*
15/01/2020	µg/m ³		47.3	8.9	27.9	15.6*	21.2*
16/01/2020	µg/m ³		36.5*	38.7	26.4*	12.0*	28.0
17/01/2020	µg/m ³		35.9	42.4	25.6	19.8*	48.4
18/01/2020	µg/m ³		22.1	22.7	18.4	9.0*	18.9
19/01/2020	µg/m ³		19.4	16.8	18.6	7.8*	19.6
20/01/2020	µg/m ³		43.8*	55.3*	37.2*	20.7*	33.6*
21/01/2020	µg/m ³		57.9	120.8	42.7*	30.6*	43.9

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
22/01/2020	µg/m ³		40.3*	65.5	38.9	18.2*	44.0*
23/01/2020	µg/m ³		68.0	291.6*	46.8*	85.7	82.1*
24/01/2020	µg/m ³		52.3	73.8	49.4	38.8*	52.9*
25/01/2020	µg/m ³		48.3	44.8	46.7	24.0*	36.3*
26/01/2020	µg/m ³		25.9	72.5	21.3	13.8*	27.1*
27/01/2020	µg/m ³		46.4	43.5	42.5	22.1*	28.5*
28/01/2020	µg/m ³		40.7	78.6	30.9*	18.8*	28.7*
29/01/2020	µg/m ³		44.4	34.6	37.2	16.8	34.9*
30/01/2020	µg/m ³		44.7	34.0	40.2	18.5	18.3*
31/01/2020	µg/m ³		13.0*	49.7	34.2	14.2*	23.3*
Monthly Meaningful Data							
January	µg/m ³	Minimum	13.0	1.2	18.0	7.8	18.3
	µg/m ³	Mean	57.5	48.9	44.9	35.2	40.0
	µg/m ³	Maximum	200.1	291.6	141.9	143.1	88.1
	µg/m ³	Median	48.6	41.4	40.2	24.7	34.9

* 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 Figure 1.

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, 11, 12 and 18) 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 – Jerrys Plains
- EPA Identification Number 18 – Moses Crossing
- EPA Identification Number 11 – Warkworth
- EPA Identification Number 12 – Maison Dieu

The location of these monitors can be found in Figure 1. The last date sampled was the 31 January 2020. The data was obtained on the 20 February 2020.

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
P204R0802A	6/01/2020 13:53	dB(L)	All Blasts 100%	115	120	112.0	110.8	111.4	102.2
WN45UPC02A	6/01/2020 16:15	dB(L)		115	120	101.8	108.5	108.4	92.2
WS47HZP01A	6/01/2020 16:16	dB(L)		115	120	98.2	107.0	110.0	105.6
P206P0601A	10/01/2020 12:24	dB(L)		115	120	90.9	91.6	94.3	98.2
P207FCL01A	10/01/2020 12:45	dB(L)		115	120	94.8	86.0	98.0	92.9
P205R0102B	11/01/2020 13:21	dB(L)		115	120	102.7	112.1	106.1	96.2
WS47HZ101A	13/01/2020 9:07	dB(L)		115	120	100.2	108.3	104.8	94.6
P207FCL02B	13/01/2020 13:13	dB(L)		115	120	93.2	107.0	106.0	107.1
P124BF401A	14/01/2020 13:10	dB(L)		115	120	104.6	112.4	96.9	100.6
P208WK603A	15/01/2020 13:50	dB(L)		115	120	95.1	95.7	93.8	94.7
P207WK901C	15/01/2020 13:55	dB(L)		115	120	89.7	95.1	89.6	92.6
P122R0302A	16/01/2020 10:25	dB(L)		115	120	83.3	96.0	86.3	87.6
WN45UAP01A_ WN45HOZ201B	17/01/2020 13:58	dB(L)		115	120	100.0	99.4	111.6	103.8
P207FCL03A	20/01/2020 13:13	dB(L)		115	120	101.8	94.6	99.0	101.6
RW31WHP01A	23/01/2020 8:54	dB(L)		115	120	100.7	89.0	115.4	99.7

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
RW29BFA01A	23/01/2020 8:54	dB(L)		115	120	98.8	92.8	106.7	97.9
P206P0602A	28/01/2020 13:14	dB(L)		115	120	106.4	98.6	107.9	108.1
P208WK604A	28/01/2020 13:15	dB(L)		115	120	105.8	110.5	107.4	108.8
WS47HZ102A	30/01/2020 14:00	dB(L)		115	120	101.3	98.8	105.0	105.1
WS43UAP05A	30/01/2020 14:01	dB(L)		115	120	95.9	97.2	101.1	101.0
WS45MPG05A	31/01/2020 13:23	dB(L)		115	120	102.8	100.7	113.2	98.7
Monthly Meaningful Data									
	January	dB(L)	Minimum	115	120	83.3	86.0	86.3	87.6
		dB(L)	Mean	115	120	99.0	100.6	103.5	99.5
		dB(L)	Maximum	115	120	112.0	112.4	115.4	108.8
		dB(L)	Median	115	120	100.2	98.8	106.0	99.7
* Result is under investigation.									

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
P204R0802A	6/01/2020 13:53	mm/s	All Blasts 100%	5	10	0.16	0.09	0.58	0.53
WN45UPC02A	6/01/2020 16:15	mm/s		5	10	0.08	0.03	0.06	0.07
WS47HZP01A	6/01/2020 16:16	mm/s		5	10	0.17	0.16	0.12	0.10
P206P0601A	10/01/2020 12:24	mm/s		5	10	0.11	0.04	0.19	0.16
P207FCL01A	10/01/2020 12:45	mm/s		5	10	0.09	0.03	0.09	0.12
P205R0102B	11/01/2020 13:21	mm/s		5	10	0.12	0.02	0.25	0.27
WS47HZ101A	13/01/2020 9:07	mm/s		5	10	0.18	0.09	0.13	0.05
P207FCL02B	13/01/2020 13:13	mm/s		5	10	0.09	0.03	0.08	0.33
P124BF401A	14/01/2020 13:10	mm/s		5	10	0.21	0.07	0.16	0.23
P208WK603A	15/01/2020 13:50	mm/s		5	10	0.13	0.04	0.22	0.24
P207WK901C	15/01/2020 13:55	mm/s		5	10	0.12	0.03	0.20	0.13
P122R0302A	16/01/2020 10:25	mm/s		5	10	0.14	0.04	0.15	0.29
WN45UAP01A_W N45HOZ201B	17/01/2020 13:58	mm/s		5	10	0.17	0.14	0.14	0.09
P207FCL03A	20/01/2020 13:13	mm/s		5	10	0.10	0.03	0.08	0.10
RW31WHP01A	23/01/2020 8:54	mm/s		5	10	0.29	0.08	0.21	0.69
RW29BFA01A	23/01/2020 8:54	mm/s		5	10	0.23	0.05	0.10	0.10

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
P206P0602A	28/01/2020 13:14	mm/s		5	10	0.14	0.03	0.35	1.23
P208WK604A	28/01/2020 13:15	mm/s		5	10	0.14	0.04	0.35	1.23
WS47HZ102A	30/01/2020 14:00	mm/s		5	10	0.13	0.07	0.09	0.09
WS43UAP05A	30/01/2020 14:01	mm/s		5	10	0.18	0.20	0.09	0.35
WS45MPG05A	31/01/2020 13:23	mm/s		5	10	0.13	0.08	0.08	0.33
Monthly Meaningful Data									
	January	mm/s	Minimum	5	10	0.08	0.02	0.06	0.05
		mm/s	Mean	5	10	0.15	0.07	0.18	0.32
		mm/s	Maximum	5	10	0.29	0.20	0.58	1.23
		mm/s	Median	5	10	0.14	0.04	0.14	0.23

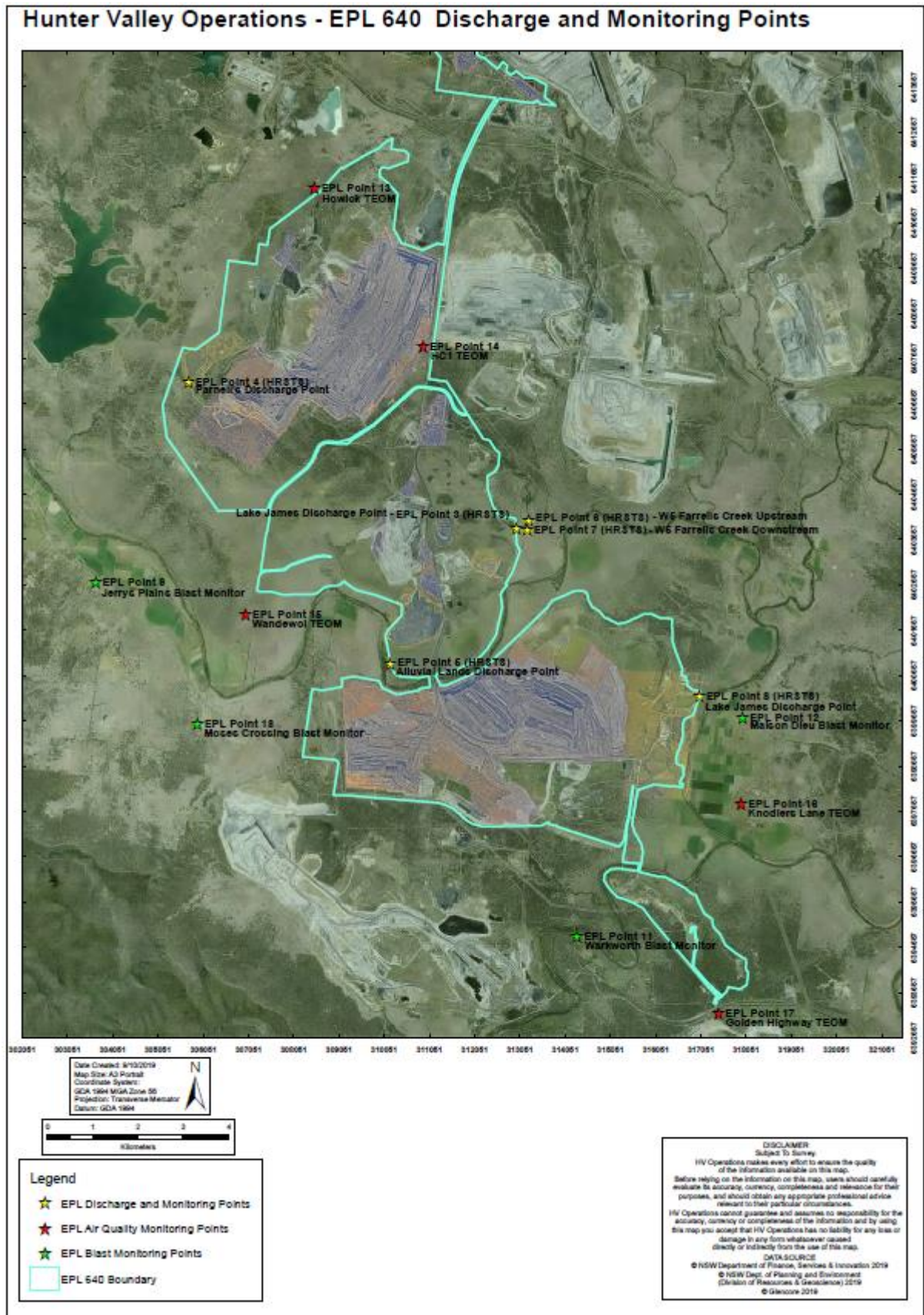


Figure 1 : Hunter Valley Operations Environmental Monitoring Locations