



Hunter Valley Operations

Monthly Obtained Data Summary

Environment Protection Licence 640

August 2017

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EPA public register: <http://www.epa.nsw.gov.au/publicregister/>

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1.0 INTRODUCTION

This report has been compiled to provide a summary of environmental monitoring results for Hunter Valley Operations (HVO) in accordance with Environment Protection Licence (EPL) 640. This report includes all monitoring data collected in accordance with EPL 640 for the period 1st August – 31st August 2017. The Environmental Protection Licence 640 can be viewed in full at the following address:

<http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=121534&SYSUID=1&LICID=640>

Monitoring in this report includes:

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

2.0 AIR QUALITY

To monitor regional air quality, HVO operates and maintains a network of 5 Particulate Matter <10µm(PM₁₀) Monitors (TEOM's) surrounding the mining operations. The location of these monitors can be found in Appendix A – HVO Monitoring Locations Plan.

2.1 Particulate Matter <10µm (PM10) Monitoring

2.1.1 PM₁₀ Results

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 31st August 2017; the data was obtained on the 2nd September 2017.

Table 1: Particulate Matter <10µm Monitoring

Date	Unit of Measure	Monitoring Frequency	Monitoring Point				
			Howick	HC1	Wandewoi	Knodlers	Golden Highway
		Continuous					
1/08/2017	µg/m ³		16.5	22.0	15.8	12.1	25.0
2/08/2017	µg/m ³		35.8	59.1	28.9	23.4	42.9
3/08/2017	µg/m ³		26.5	66.8	#	22.8	33.8

4/08/2017	µg/m ³	6.0	16.4	13.2	13.3	4.3
5/08/2017	µg/m ³	12.1	64.8	3.0	49.6	7.8
6/08/2017	µg/m ³	10.3	73.2	6.9	33.3	18.6
7/08/2017	µg/m ³	11.9	125.9	7.5	#	14.1
8/08/2017	µg/m ³	11.3	45.1	3.6	29.8	#
9/08/2017	µg/m ³	12.5	40.5	4.3	20.7	19.1
10/08/2017	µg/m ³	14.9	127.7	6.1	33.1	16.3
11/08/2017	µg/m ³	30.6	#	9.4	62.9	14.5
12/08/2017	µg/m ³	21.1	92.2	6.6	29.5	10.4
13/08/2017	µg/m ³	27.8	68.5	14.1	26.4	20.4
14/08/2017	µg/m ³	27.4	81.6	8.3	41.2	24.7
15/08/2017	µg/m ³	32.8	145.6	14.3	52.2	30.1
16/08/2017	µg/m ³	31.9	#	16.8	52.4	#
17/08/2017	µg/m ³	24.1	163.8	7.7	57.3	10.5
18/08/2017	µg/m ³	14.7	#	7.8	43.8	14.3
19/08/2017	µg/m ³	13.6	21.7	2.0	15.8	18.7
20/08/2017	µg/m ³	18.3	99.3	17.0	17.6	21.1
21/08/2017	µg/m ³	27.8	112.3	18.4	29.6	28.0
22/08/2017	µg/m ³	62.0	87.9	48.4	28.1	41.3
23/08/2017	µg/m ³	32.2	#	19.1	29.2	49.0
24/08/2017	µg/m ³	37.4	56.3	17.4	28.7	31.3
25/08/2017	µg/m ³	25.8	32.2	16.1	21.0	29.9
26/08/2017	µg/m ³	17.9	66.2	8.5	18.7	32.7
27/08/2017	µg/m ³	12.8	237.3	6.0	28.9	17.6
28/08/2017	µg/m ³	24.7	31.1	11.5	16.7	#
29/08/2017	µg/m ³	33.3	90.3	19.2	20.7	#
30/08/2017	µg/m ³	27.1	61.0	17.1	16.7	33.4
31/08/2017	µg/m ³	34.3	30.3	20.1	27.5	41.1

Data unavailable due to equipment or communications issue

3.0 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: 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

4.0 BLAST MONITORING

4.1 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 August 2017. The data was obtained on the 7th September.

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	EPL Limits		Monitoring Point			
			Only 5% of blasts can exceed 115db(L) during the reporting period	Blasts cannot exceed 120dB(L)	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
WN39BAR01B	1/08/2017 10:10	dB(L)	115	120	88.4	98.9	99.5	93.5
P203P0602A	3/08/2017 14:25	dB(L)	115	120	98.6	105.3	108.6	105.9
P20607001A	3/08/2017 14:25	dB(L)	115	120	96.3	104.4	103.1	103.5
WS43BAY11A WS43BAY12A	5/08/2017 7:31	dB(L)	115	120	89.9	95.5	101.6	88.8
WS45BAY01A WS45BAP01A	7/08/2017 10:30	dB(L)	115	120	92.9	102.7	114.7	88.0
P119R0108A	8/08/2017 10:06	dB(L)	115	120	95.3	92.9	105.2	92.5
P121P6P01A	8/08/2017 10:07	dB(L)	115	120	79.7	90.6	111.3	82.3
WN39BAR01C	8/08/2017 15:07	dB(L)	115	120	96.4	108.1	114.8	113.9
WN43LEP01A	9/08/2017 13:03	dB(L)	115	120	97.7	93.8	100.1	90.6
P203P0602B P203P0604A	10/08/2017 15:04	dB(L)	115	120	96.8	112.3	109.0	103.3
P20607002A	12/08/2017 11:06	dB(L)	115	120	90.2	94.9	109.4	102.8
P123HOZ08A	12/08/2017 15:36	dB(L)	115	120	90.6	105.1	110.7	100.7
WS45BAY02A	14/08/2017 11:11	dB(L)	115	120	99.2	101.5	101.3	100.5
WW25BAR03A	14/08/2017 11:12	dB(L)	115	120	94.8	94.3	99.0	95.5
P118R8P02A	15/08/2017 11:12	dB(L)	115	120	85.1	90.7	89.0	102.3
P121M0803A	18/08/2017 7:34	dB(L)	115	120	92.8	114.2	107.0	91.8
WN43LECO2A WN43LEB01A WN43LEP02A	19/08/2017 12:12	dB(L)	115	120	97.0	104.0	99.3	87.7
P118R0802A	21/08/2017 13:04	dB(L)	115	120	97.1	86.4	102.3	104.2

RW30WHP01A	22/08/2017 10:08	dB(L)	115	120	98.6	96.4	92.7	87.9
P203P0605A	22/08/2017 15:08	dB(L)	115	120	89.4	102.6	98.1	102.7
P20607003A	22/08/2017 15:08	dB(L)	115	120	101.7	94.9	98.1	102.7
RW30PRE03A	25/08/2017 13:03	dB(L)	115	120	114.4	107.3	103.7	95.1
WN43LEB02A WN43LEP02B	26/08/2017 11:13	dB(L)	115	120	93.2	105.7	95.5	94.2
WS44LEP01A	28/08/2017 11:15	dB(L)	115	120	106.9	97.2	101.8	86.2
WW27ULD01AWW 27ULP01A	28/08/2017 11:16	dB(L)	115	120	102.7	91.4	96.7	84.8
P203P0701A	29/08/2017 12:13	dB(L)	115	120	89.3	83.8	101.0	101.8
P206HOP01A	29/08/2017 12:14	dB(L)	115	120	88.8	93.4	101.0	101.8
WS39UL201AWS39 LLD01AWS39BAPO 1A	30/08/2017 13:05	dB(L)	115	120	104.5	96.2	106.9	97.1

Table 4: Blast Monitoring – Ground Vibration

Blast ID	Date and Time	Unit of Measure	EPL Limits		Monitoring Point			
			Only 5% of blasts may exceed 5 mm/s during the reporting period	Blastscan not exceed 10 mm/s	Moses Crossing	Jerrys Plains	Maison Dieu	Warkworth
WN39BAR01B	1/08/2017 10:10	mm/s	5	10	0.08	0.09	0.14	0.09
P203P0602A	3/08/2017 14:25	mm/s	5	10	0.11	0.05	0.69	0.78
P20607001A	3/08/2017 14:25	mm/s	5	10	0.12	0.06	0.69	0.78
WS43BAY11A WS43BAY12A	5/08/2017 7:31	mm/s	5	10	0.03	0.02	0.03	0.05
WS45BAY01A WS45BAP01A	7/08/2017 10:30	mm/s	5	10	0.19	0.11	0.11	0.08
P119R0108A	8/08/2017 10:06	mm/s	5	10	0.08	0.05	0.37	0.31
P121P6P01A	8/08/2017 10:07	mm/s	5	10	0.07	0.05	0.27	0.31
WN39BAR01C	8/08/2017 15:07	mm/s	5	10	0.09	0.10	0.11	0.14
WN43LEP01A	9/08/2017 13:03	mm/s	5	10	0.08	0.08	0.08	0.36

P203P0602B P203P0604A	10/08/2017 15:04	mm/s	5	10	0.05	0.03	0.05	0.10
P20607002A	12/08/2017 11:06	mm/s	5	10	0.15	0.06	0.49	0.98
P123HOZ08A	12/08/2017 15:36	mm/s	5	10	0.07	0.05	0.06	0.09
WS45BAY02A	14/08/2017 11:11	mm/s	5	10	0.22	0.20	0.09	0.10
WW25BAR03A	14/08/2017 11:12	mm/s	5	10	0.06	0.07	0.03	0.12
P118R8P02A	15/08/2017 11:12	mm/s	5	10	0.21	0.16	0.29	0.32
P121M0803A	18/08/2017 7:34	mm/s	5	10	0.09	0.04	0.09	0.23
WN43LECO2A WN43LEB01A WN43LEP02A	19/08/2017 12:12	mm/s	5	10	0.21	0.17	0.16	0.20
P118R0802A	21/08/2017 13:04	mm/s	5	10	0.20	0.12	0.50	0.58
RW30WHP01A	22/08/2017 10:08	mm/s	5	10	0.05	0.03	0.02	0.33
P203P0605A	22/08/2017 15:08	mm/s	5	10	0.14	0.08	0.92	1.14
P20607003A	22/08/2017 15:08	mm/s	5	10	0.14	0.08	0.92	1.14
RW30PRE03A	25/08/2017 13:03	mm/s	5	10	0.33	0.09	0.09	0.18
WN43LEB02AWN4 3LEP02B	26/08/2017 11:13	mm/s	5	10	0.20	0.14	0.09	0.10
WS44LEP01A	28/08/2017 11:15	mm/s	5	10	0.17	0.15	0.05	0.06
WW27ULD01A WW27ULP01A	28/08/2017 11:16	mm/s	5	10	0.15	0.10	0.12	0.08
P203P0701A	29/08/2017 12:13	mm/s	5	10	0.12	0.07	0.54	0.65
P206HOP01A	29/08/2017 12:14	mm/s	5	10	0.12	0.07	0.54	0.65
WS39UL201AWS39 LLD01AWS39BAPO 1A	30/08/2017 13:05	mm/s	5	10	0.16	0.09	0.06	0.20

Appendix A: Hunter Valley Operations Monitoring Locations Plan

Hunter Valley Operations Environmental Monitoring Locations

Date: 170915
 Plan By: DF
 Version: 2.2

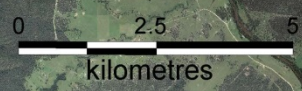
Legend

- ★ Blast Monitoring Point
- Discharge Release / Sampling Point
- ▲ Tapered Element Oscillating Microbalance - PM10
- EPL Boundary



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&
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Figure 1 Hunter Valley Operations Environmental Monitoring Locations