

**HUNTER VALLEY
OPERATIONS**

**ENVIRONMENT
PROTECTION LICENCE 640
MONITORING DATA -
JANUARY 2023**

DOCUMENT NUMBER
HVOOC-1797567310-4603

STATUS
Approved

VERSION
1.0

EFFECTIVE
15/08/2023

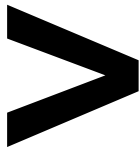
REVIEW
[Planned Review Date]

OWNER
Environment and Community Officer



MONITORING DATA - JANUARY 2023

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1 | OVERVIEW

Environmental Protection Licence Number: 640
Licence Holder: HV Operations Pty Ltd (HVO)
Address of Premises: Hunter Valley Operations, Lemington Road, Singleton, NSW, 2330
Licence Holder Postal Address: PO Box 315, Singleton, NSW, 2330
EPA Public Register Link: <https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=640&id=640&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued>

The locations of each sampling or monitoring point number identified in EPL 640 are displayed in **Figure 1**.

2 | DEFINITIONS

Abbreviation	Explanation
DNR	Data Not Received
mm/s	Millimetres per Second
dB	Decibels
g/m ² /month	Grams per Metre Square per Month
µg/m ³	Micrograms per Cubic Meter of Air
µS/cm	Microsiemens per Centimetre
pH	A measure of the acidity or alkalinity of a solution
mg/L	Milligrams per Litre
NTU	Nephelometric Turbidity Units
ML/day	Megalitres per Day (1ML = 1,000,000L)
KL/day	Kilolitres per Day
PM10	Particulate Matter of 10 Microns in diameter or smaller
HVAS	High Volume Air Sampler
TEOM	Tapered Element Oscillating Microbalance
TSP	Total Suspended Particles
TSS	Total Suspended Solids
t	tonnes
YTD	Year To Date - rolling 12 month average

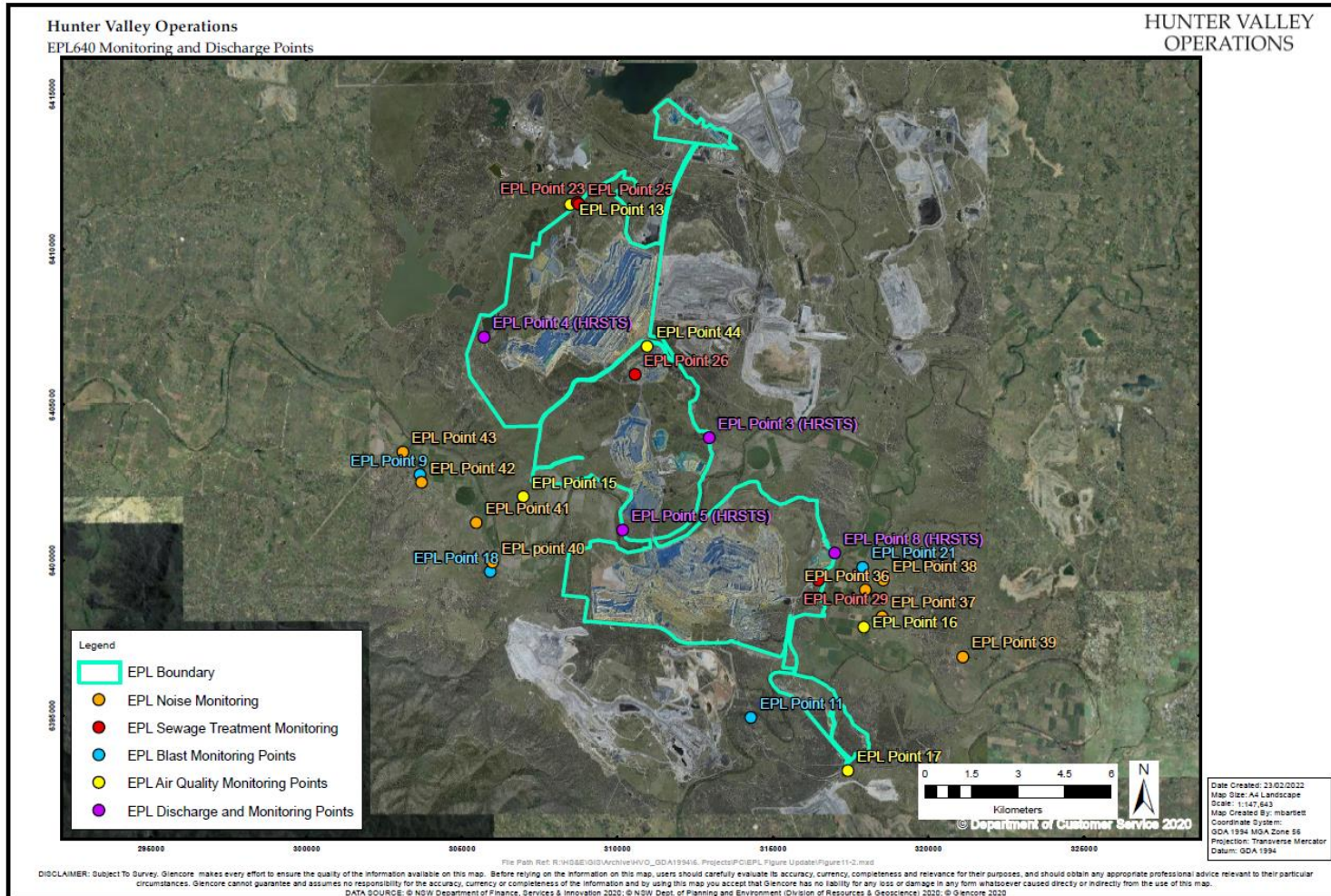


Figure 1 – EPL 640 Monitoring Location

3 | AIR QUALITY

Date Last Sampled: 31/01/2023

Date Obtained: 1/02/2023

Table 1 - Particulate Matter Monitoring (<10µm)

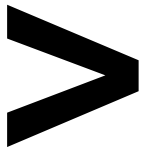
Date	Unit of Measure	Monitoring Frequency & Capture	EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (West Pit)
1/01/2023	µg/m ³	Continuous	26.2	*	15.1	13.8	13.6
2/01/2023	µg/m ³		29.2	*	14.5	15.3	17.0
3/01/2023	µg/m ³		44.1	*	26.3	30.1	42.2
4/01/2023	µg/m ³		39.3	23.3	18.6	23.5	26.0
5/01/2023	µg/m ³		15.5	10.0	10.2	20.2	18.4
6/01/2023	µg/m ³		13.1	7.6	15.0	18.6	15.9
7/01/2023	µg/m ³		14.5	11.5	14.3	24.0	18.8
8/01/2023	µg/m ³		26.0	18.3	16.4	24.1	21.9
9/01/2023	µg/m ³		41.3	26.9	26.0	35.7	46.1
10/01/2023	µg/m ³		31.8	24.0	15.5	26.8	28.5
11/01/2023	µg/m ³		34.2	25.3	20.8	25.7	21.4
12/01/2023	µg/m ³		39.1	32.7	22.6	25.1	23.5
13/01/2023	µg/m ³		33.4	22.3	18.1	22.3	20.6
14/01/2023	µg/m ³		22.7	19.2	12.8	11.9	17.3
15/01/2023	µg/m ³		29.5	28.2	22.1	25.0	50.6
16/01/2023	µg/m ³		36.5	21.0	18.2	17.7	16.6
17/01/2023	µg/m ³		27.1	17.6	13.5	12.8	15.5
18/01/2023	µg/m ³		38.1	29.6	30.3	38.1	60.4



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Date	Unit of Measure	Monitoring Frequency & Capture	EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (West Pit)
19/01/2023	µg/m ³		12.6	9.5	9.4	11.0	19.5
20/01/2023	µg/m ³		21.1	13.5	12.3	16.3	15.1
21/01/2023	µg/m ³		25.1	19.3	13.4	19.3	17.2
22/01/2023	µg/m ³		14.7	12.5	10.2	14.9	16.6
23/01/2023	µg/m ³		23.2	19.5	14.8	21.0	19.9
24/01/2023	µg/m ³		31.9	25.5	18.3	26.7	30.3
25/01/2023	µg/m ³		36.3	28.3	22.0	26.7	44.1
26/01/2023	µg/m ³		29.7	20.7	23.3	36.4	50.2
27/01/2023	µg/m ³		38.3	30.3	29.6	26.3	31.6
28/01/2023	µg/m ³		31.5	29.0	21.5	31.6	34.8
29/01/2023	µg/m ³		32.5	22.9	18.1	29.4	42.2
30/01/2023	µg/m ³		15.2	12.8	13.0	15.0	20.1
31/01/2023	µg/m ³		*	13.6	15.2	17.3	14.0
Monthly Meaningful Data							
January	µg/m ³	Minimum	12.6	7.6	9.4	11.0	13.6
	µg/m ³	Mean	28.5	20.5	17.8	22.7	26.8
	µg/m ³	Maximum	44.1	32.7	30.3	38.1	60.4
	µg/m ³	Median	29.6	20.9	16.4	23.5	20.6

* Less than 75% data capture



4 | SURFACE WATER MONITORING DATA

No discharges under the HRSTS occurred during January.

Table 2 - HRSTS Discharge Monitoring

Discharge Point	Pollutant	Unit of Measure	Licence Limits	No. Samples Required by Licence	No. Samples Collected and Analysed
EPL ID 3 (Dam 11N)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0
EPL ID 4 (Dam 9W)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0
EPL ID 8 (Dam 15S)	pH	pH	6.5-9.5	0	0
	Total Suspended Solids	Milligrams per Litre	120	0	0

5 | BLAST MONITORING DATA

Date Last Sampled: 30/01/2023

Date Obtained: 20/02/2023

Table 3 – Blast Monitoring (Air Blast Overpressure and Ground Vibration)

Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
M1T313601B	3/01/2023 12:55	dB(L)	All blasts 100%	115	120	101.49	96.02	85.78	90.59
P210WK303A	5/01/2023 13:08	dB(L)		115	120	108.85	102.63	105.9	88.00
RW36WHG01A_RW37WHP01A	6/01/2023 13:21	dB(L)		115	120	104.98	100.77	100.45	95.87
WS49LEA01A	7/01/2023 13:02	dB(L)		115	120	101.67	95.22	106.07	93.52
WS49ARC05A	7/01/2023 13:04	dB(L)		115	120	106.19	99.45	100.4	93.82
P208BAC01A	16/01/2023 13:07	dB(L)		115	120	106.92	104.38	97.32	99.25
WS47LEC01A	17/01/2023 12:57	dB(L)		115	120	92.75	100.02	90.65	91.11



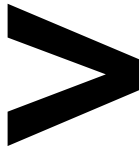
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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
WS49BAY17A	17/01/2023 12:59	dB(L)	All blasts 100%	115	120	95.32	97.93	85.45	83.46
P210WK303B	18/01/2023 12:59	dB(L)		115	120	95.63	94.18	91.81	98.67
RW36WHG02A_WHG03A_07601A_RW37WHP01B	19/01/2023 11:11	dB(L)		115	120	97.39	93.02	102.16	102.54
WN49LECO1A	21/01/2023 14:26	dB(L)		115	120	95.57	99.47	102.52	81.95
WS49BAY18A	21/01/2023 14:28	dB(L)		115	120	104.81	92.11	100.58	91.07
M1T111501A	21/01/2023 15:54	dB(L)		115	120	92.68	106.52	105.19	88.97
P208BR503/04A	23/01/2023 13:03	dB(L)		115	120	92.82	90.31	91.45	95.35
P20900105A	23/01/2023 13:04	dB(L)		115	120	90.24	88.37	89.41	92.10
P210WK203A	25/01/2023 12:54	dB(L)		115	120	92.86	89.85	100.96	99.59
WN49LECO1B	27/01/2023 14:03	dB(L)		115	120	96.49	104.26	92.03	87.62



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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits		Monitoring Point			
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
WS49LEA02A_LEP02A	28/01/2023 13:11	dB(L)		115	120	88.48	104.12	88.23	88.79
P208BR503/4B	28/01/2023 15:09	dB(L)		115	120	89.04	82.8	89.61	86.88
P209W9P03A	30/01/2023 15:15	dB(L)		115	120	95.7	97.78	86.86	85.45
P21006501A	30/01/2023 15:15	dB(L)		115	120	96.91	94.36	93.69	95.41
<i>Monthly Meaningful Data</i>									
January	dB(L)	Minimum		115	120	88.48	82.8	85.45	81.95
	dB(L)	Mean		115	120	97.46	96.84	95.55	91.91
	dB(L)	Maximum		115	120	108.85	106.52	106.07	102.54
	dB(L)	Median		115	120	95.7	97.78	93.69	91.11



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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits			Monitoring Point		
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
P210WK303A	3/01/2023 12:55	mm/s	All Blasts 100%	5	10	0.13	0.10	0.03	0.13
RW36WHG01A_RW37WHP01A	5/01/2023 13:08	mm/s		5	10	0.10	0.03	0.04	0.13
WS49LEA01A	6/01/2023 13:21	mm/s		5	10	0.59	0.21	0.23	0.77
WS49ARC05A	7/01/2023 13:02	mm/s		5	10	0.11	0.06	0.04	0.12
P208BAC01A	7/01/2023 13:04	mm/s		5	10	0.11	0.04	0.03	0.14
WS47LEC01A	16/01/2023 13:07	mm/s		5	10	0.14	0.05	0.30	0.34
WS49BAY17A	17/01/2023 12:57	mm/s		5	10	0.16	0.06	0.08	0.14
P210WK303B	17/01/2023 12:59	mm/s		5	10	0.11	0.04	0.03	0.30
RW36WHG02A_WHG03A_07601A_RW37WHP01B	18/01/2023 12:59	mm/s		5	10	0.09	0.04	0.02	1.28
WN49LEC01A	19/01/2023 11:11	mm/s		5	10	0.61	0.16	0.19	0.89
WS49BAY18A	21/01/2023 14:26	mm/s		5	10	0.23	0.14	0.14	0.17
M1T111501A	21/01/2023 14:28	mm/s		5	10	0.13	0.06	0.03	0.35
P208BR503/04A	21/01/2023 15:54	mm/s		5	10	0.20	0.29	0.04	0.14
P20900105A	23/01/2023 13:03	mm/s		5	10	0.13	0.03	0.11	0.70

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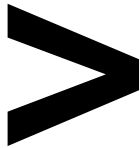
Owner: Environment and Community Officer

Status: Approved

Version: 1.0

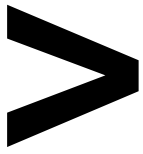
Effective: 15/08/2023

Review: [Planned Review Date]



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Blast ID	Date & Time	Unit of Measure	Monitoring Frequency & Capture	EPL Limits			Monitoring Point		
				95% of Blasts	100% of Blasts	Moses Crossing EPL ID 18	Jerrys Plains EPL ID 9	Maison Dieu EPL ID 21	Warkworth EPL ID 11
P210WK203A	23/01/2023 13:04	mm/s		5	10	0.15	0.04	0.29	0.83
WN49LEC01B	25/01/2023 12:54	mm/s		5	10	0.11	0.04	0.11	0.44
WS49LEA02A_LEP02A	27/01/2023 14:03	mm/s		5	10	0.16	0.08	0.07	0.13
P208BR503/4B	28/01/2023 13:11	mm/s		5	10	0.15	0.11	0.07	0.12
P209W9P03A	28/01/2023 15:09	mm/s		5	10	0.20	0.03	0.06	0.15
P209W9P03A	30/01/2023 15:15	mm/s		5	10	0.17	0.05	0.24	0.67
P21006501A	30/01/2023 15:15	mm/s		5	10	0.16	0.06	0.22	0.67
Monthly Meaningful Data									
January	mm/s	Minimum	5	10	0.09	0.03	0.02	0.12	
	mm/s	Mean	5	10	0.19	0.08	0.11	0.41	
	mm/s	Maximum	5	10	0.61	0.29	0.30	1.28	
	mm/s	Median	5	10	0.15	0.06	0.07	0.30	



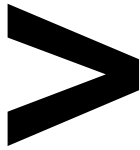
6 | SEWAGE TREATMENT PLANT MONITORING DATA

Date Sampled: 10th January 2023

Date Obtained: 13th February 2023

Table 4 Sewage Treatment Plant Monitoring

Monitoring Site	Date & Time	Pollutant	Unit of Measure	Monitoring Result
EPA ID 23	10/01/2023 08:20:00	Faecal Coliforms	Colony forming units/100ml	960,000
		pH	pH	6.96
EPA ID 25	10/01/2023 08:30:00	Faecal Coliforms	Colony forming units/100ml	4,500
		pH	pH	6.78
EPA ID 26	10/01/2023 09:50:00	Faecal Coliforms	Colony forming units/100ml	1,900,000
		pH	pH	7.28
EPA ID 29	10/01/2023 11:20:00	Faecal Coliforms	Colony forming units/100ml	< 9
		pH	pH	10.40



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7 | NOISE MONITORING DATA

Date Sampled: 11/01/2023 & 25/01/2023

Date Obtained: 02/03/2023

Table 5 Night $L_{Aeq,15minute}$ and $L_{A1,1minute}$ Generated by HVO Against EPL Criteria

Location	Start date and time	Wind		Stability class	Very enhancing? ¹	EPL limits, dB ¹		HVO levels, dB		Exceedances, dB	
		Speed m/s	Direction ³			$L_{Aeq,15minute}$	$L_{A1,1min}$	$L_{Aeq,15minute}$ ²	$L_{A1,1min}$	$L_{Aeq,15minute}$	$L_{A1,1min}$
Shearers Lane	25/01/2023 21:00	4.4	149	D	Yes	46	51	IA	IA	Nil	Nil
Knodlers Lane	25/01/2023 21:45	4.3	153	D	Yes	45	51	IA	IA	Nil	Nil
Maison Dieu	25/01/2023 21:22	4.0	152	E	Yes	44	51	IA	IA	Nil	Nil
Long Point (Dights Crossing)	25/01/2023 22:40	4.3	150	D	Yes	42	51	IA	IA	Nil	Nil
Kilburnie South	25/01/2023 23:29	4.2	147	E	Yes	44	51	33	35	Nil	Nil
Jerrys Plains East	25/01/2023 23:02	4.3	149	D	Yes	44	51	36	46	Nil	Nil
Jerrys Plains Village	25/01/2023 21:26	4.0	152	E	Yes	45	51	36	42	Nil	Nil
Jerrys Plains West	25/01/2023 21:00	4.4	149	D	Yes	45	51	33	40	Nil	Nil

Notes: 1. Noise limits are adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the NPfl.

2. Site-only $L_{Aeq,15minute}$, includes modifying factor penalties if applicable.

3. Degrees magnetic north, "-" indicates calm conditions.