

HUNTER VALLEY
OPERATIONS

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

DOCUMENT NUMBER
HVOOC-1797567310-4892

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EFFECTIVE
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REVIEW
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OWNER
Superintendent - Environment and Community



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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

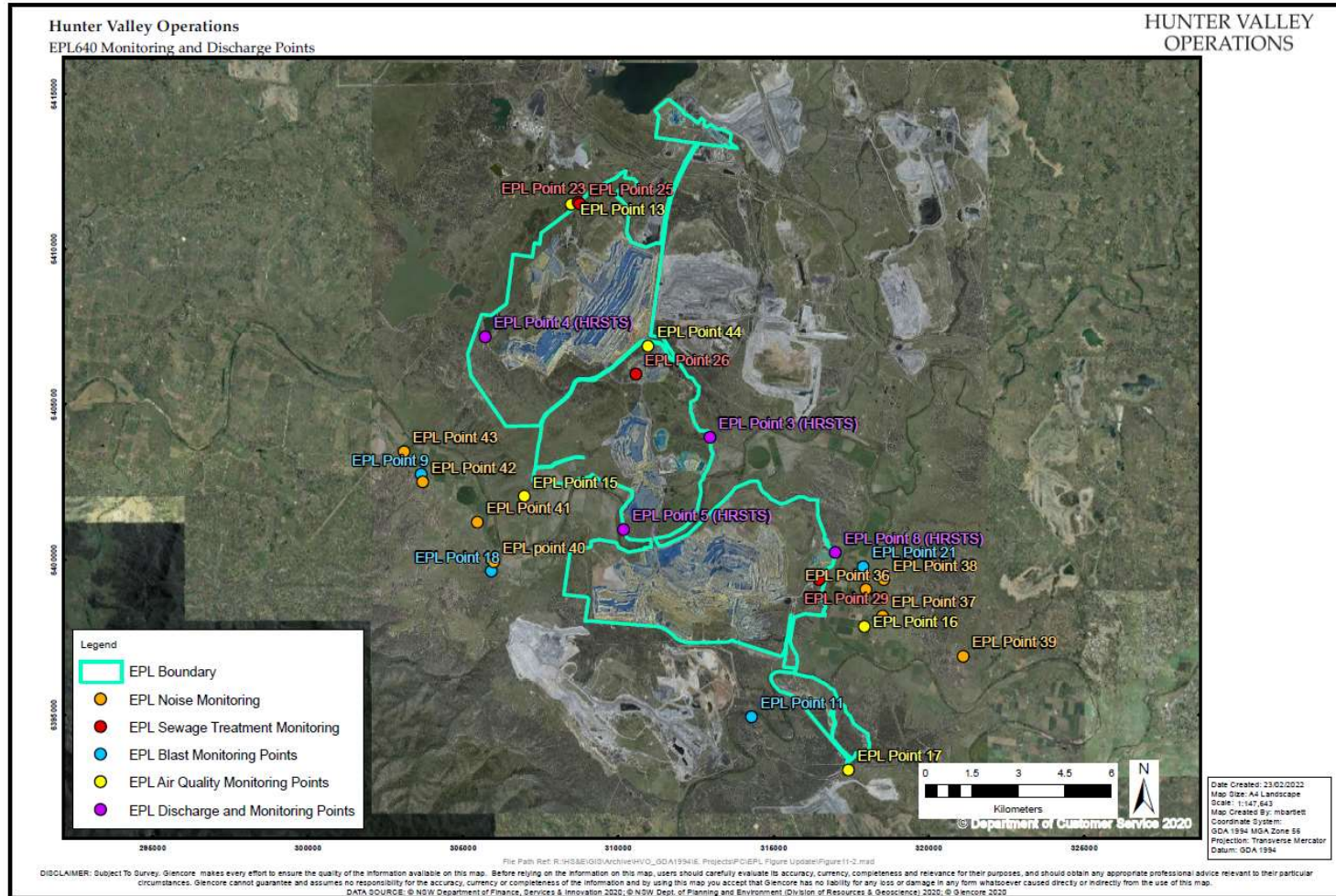


Figure 1: EPL 640 Monitoring Location

3 | AIR QUALITY

Date Last Sampled: 31/12/2023

Date Obtained: 16/01/2024

Table 1 - Particulate Matter Monitoring (<10µm)

Date	Unit of Measure	Monitoring Frequency & Capture	Monitoring Point				
			EPL ID 13 (Howick)	EPL ID 15 (Wandewoi)	EPL ID 16 (Knodlers Lane)	EPL ID 17 (Golden Highway)	EPL ID 44 (West Pit)
1/12/2023	µg/m ³	Continuous	17.1	14.6	20.2	18.5	57.9
2/12/2023	µg/m ³		11.8	13.3	14.7	18.4	29.1
3/12/2023	µg/m ³		22.7	15.6	20.3	28.4	32.6
4/12/2023	µg/m ³		26.3	21.0	17.3	18.9	21.3
5/12/2023	µg/m ³		27.3	27.1	27.2	31.7	67.4
6/12/2023	µg/m ³		56.3	45.7	51.2	45.8	94.0
7/12/2023	µg/m ³		56.0	44.7	39.8	32.3	74.1
8/12/2023	µg/m ³		26.2	27.8	42.1	34.7	72.5
9/12/2023	µg/m ³		51.9	27.6	43.4	33.8	86.9
10/12/2023	µg/m ³		37.8	23.6	32.3	26.0	42.1
11/12/2023	µg/m ³		57.2	41.3	50.8	35.5	48.2
12/12/2023	µg/m ³		35.1	24.8	29.5	20.3	28.6
13/12/2023	µg/m ³		46.8	33.8	46.2	38.4	54.8
14/12/2023	µg/m ³		35.4	19.5	51.0	44.8	101.5
15/12/2023	µg/m ³		52.4	54.4	57.4	31.6	52.3

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16/12/2023	µg/m ³		42.9	34.5	56.6	30.4	133.7
17/12/2023	µg/m ³		54.5	36.5	61.9	25.2	42.3
18/12/2023	µg/m ³		61.3	43.3	52.6	33.8	63.2
19/12/2023	µg/m ³		47.8	51.4	56.7	54.5	102.5
20/12/2023	µg/m ³		14.4	10.3	12.0	19.6	32.5
21/12/2023	µg/m ³		14.9	10.1	10.4	17.6	13.2
22/12/2023	µg/m ³		32.6	23.8	29.4	23.8	24.0
23/12/2023	µg/m ³		24.7	21.7	16.4	28.0	34.8
24/12/2023	µg/m ³		10.2	10.3	12.2	14.1	20.9
25/12/2023	µg/m ³		15.2	12.9	17.2	13.2	21.4
26/12/2023	µg/m ³		16.4	18.4	20.9	18.0	*
27/12/2023	µg/m ³		20.6	13.7	24.6	20.2	60.6
28/12/2023	µg/m ³		20.0	13.3	21.8	17.0	41.2
29/12/2023	µg/m ³		22.6	13.3	28.9	24.5	53.8
30/12/2023	µg/m ³		34.7	19.1	27.5	21.6	32.9
31/12/2023	µg/m ³		31.0	19.4	38.7	16.0	19.4
Monthly Meaningful Data							
December	µg/m ³	Minimum	10.2	10.1	10.4	13.2	13.2
	µg/m ³	Mean	33.0	25.4	33.3	27.0	52.0
	µg/m ³	Maximum	61.3	54.4	61.9	54.5	133.7
	µg/m ³	Median	31.0	21.7	29.4	25.2	45.3

* Less than 75% 24-hour data capture

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4 | SURFACE WATER MONITORING DATA

No discharges under the HRSTS occurred during December.

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: 30/12/2023

Date Obtained: 11/01/2024

Table 3 – Blast Monitoring (Air Blast Overpressure)

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
WN49MPG02A	2/12/2023 13:01	dB(L)	All blasts 100%	115	120	96.42	80.01	87.48	89.51
M1T311001A	4/12/2023 13:06	dB(L)		115	120	89.63	105.74	100.71	88.26
P209VA1A03A_P209PF402B	5/12/2023 13:08	dB(L)		115	120	102.72	102.35	100.96	93.87
P210N3P01A_P210WK606A	5/12/2023 13:10	dB(L)		115	120	96.16	98.17	94.89	98.10
WN49MPG02B	6/12/2023 13:07	dB(L)		115	120	112.67	106.05	111.07	96.69
P209WK309A	15/12/2023 13:06	dB(L)		115	120	98.13	85.92	96.49	89.47

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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
P209VA104A	18/12/2023 13:12	dB(L)	All Blasts 100%	115	120	90.80	87.22	91.52	92.12
WN49LPG02A	19/12/2023 13:16	dB(L)		115	120	95.32	92.14	108.57	86.38
WS49LEB06A	19/12/2023 13:17	dB(L)		115	120	91.00	94.28	106.44	101.20
M1T 311002A	20/12/2023 11:51	dB(L)		115	120	98.59	106.18	93.58	91.35
P209VA104B	21/12/2023 13:15	dB(L)		115	120	103.44	100.26	107.29	98.49
P210N3P01B	21/12/2023 13:18	dB(L)		115	120	103.71	92.26	103.23	88.27
P125WK1001A	21/12/2023 15:43	dB(L)		115	120	103.07	101.29	110.72	95.57
P125WK1001B	23/12/2023 12:51	dB(L)		115	120	90.88	87.96	91.42	89.64
WN49LPG03A	29/12/2023 13:54	dB(L)		115	120	95.90	83.31	98.90	90.80

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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
WS49LAL03A	29/12/2023 13:55	dB(L)		115	120	91.58	76.88	94.39	80.01
P125W10P01A	30/12/2023 9:52	dB(L)		115	120	94.35	81.10	81.86	80.98
WS49LAL02A	30/12/2023 13:10	dB(L)		115	120	96.74	97.53	86.26	78.39
<i>Monthly Meaningful Data</i>									
December		dB(L)	Minimum	115	120	89.63	76.88	81.86	78.39
		dB(L)	Mean	115	120	97.28	93.26	98.10	90.51
		dB(L)	Maximum	115	120	112.67	106.18	111.07	101.20
		dB(L)	Median	115	120	96.29	93.27	97.70	90.22

Table 4 – Blast Monitoring (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
WN49MPG02A	2/12/2023 13:01	mm/s	All Blasts 100%	5	10	0.10	0.04	0.05	0.21
M1T311001A	4/12/2023 13:06	mm/s		5	10	0.16	0.29	0.08	0.08
P209VA1A03A_P209PF402B	5/12/2023 13:08	mm/s		5	10	0.06	0.04	0.12	0.18
P210N3P01A_P210WK606A	5/12/2023 13:10	mm/s		5	10	0.08	0.05	0.20	0.24
WN49MPG02B	6/12/2023 13:07	mm/s		5	10	0.08	0.05	0.06	0.10
P209WK309A	15/12/2023 13:06	mm/s		5	10	0.08	0.03	0.06	0.07
P209VA104A	18/12/2023 13:12	mm/s		5	10	0.08	0.03	0.09	0.10
WN49LPG02A	19/12/2023 13:16	mm/s		5	10	0.09	0.07	0.06	0.06
WS49LEB06A	19/12/2023 13:17	mm/s		5	10	0.08	0.03	0.06	0.54
M1T 311002A	20/12/2023 11:51	mm/s		5	10	0.13	0.15	0.06	0.05
P209VA104B	21/12/2023 13:15	mm/s		5	10	0.10	0.02	0.07	0.10
P210N3P01B	21/12/2023 13:18	mm/s		5	10	0.10	0.02	0.08	0.25
P125WK1001A	21/12/2023 15:43	mm/s		5	10	0.17	0.06	0.11	0.39

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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
P125WK1001B	23/12/2023 12:51	mm/s		5	10	0.13	0.04	0.10	0.18
WN49LPG03A	29/12/2023 13:54	mm/s		5	10	0.10	0.04	0.10	0.19
WS49LAL03A	29/12/2023 13:55	mm/s		5	10	0.08	0.02	0.06	0.08
P125W10P01A	30/12/2023 9:52	mm/s		5	10	0.09	0.03	0.05	0.11
WS49LAL02A	30/12/2023 13:10	mm/s		5	10	0.09	0.04	0.07	0.08
Monthly Meaningful Data									
December	mm/s	Minimum	5	10	0.06	0.02	0.05	0.05	
	mm/s	Mean	5	10	0.10	0.06	0.08	0.17	
	mm/s	Maximum	5	10	0.17	0.29	0.20	0.54	
	mm/s	Median	5	10	0.08	0.03	0.06	0.10	

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6 | SEWAGE TREATMENT PLANT MONITORING DATA

Date Sampled: 13/12/2023 and 17/01/2024

Date Obtained: 19/01/2024

Table 5 – Sewage Treatment Plant Monitoring

Monitoring Site	Date & Time	Pollutant	Unit of Measure	Monitoring Result
EPA ID 23	17/01/2024 9:10am	Faecal Coliforms	Colony forming units/100ml	3,930,000
		pH	pH	7.3
EPA ID 25	13/12/2023 10:10am	Faecal Coliforms	Colony forming units/100ml	No sample collected. Water level too low
		pH	pH	
EPA ID 26	13/12/2023 10:40am	Faecal Coliforms	Colony forming units/100ml	1,060,000
		pH	pH	7.3
EPA ID 29	13/12/2023 12:10pm	Faecal Coliforms	Colony forming units/100ml	>300,000
		pH	pH	7.5

7 | NOISE MONITORING DATA

Date Sampled: 18/12/2023

Date Obtained: 5/01/2024

Table 6 – 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	18/12/2023 21:24	4.1	153	D	Yes	46	51	IA	IA	Nil	Nil
Knodlers Lane	18/12/2023 22:05	3.6	157	D	Yes	45	51	IA	IA	Nil	Nil
Maison Dieu	18/12/2023 21:45	3.9	162	D	Yes	44	51	IA	IA	Nil	Nil
Long Point (Dights Crossing)	18/12/2023 22:33	3.9	152	D	Yes	42	51	IA	IA	Nil	Nil
Kilburnie South	18/12/2023 23:22	3.9	159	D	Yes	44	51	26	28	Nil	Nil
Jerrys Plains East	18/12/2023 22:58	3.9	151	D	Yes	44	51	26	28	Nil	Nil
Jerrys Plains Village	18/12/2023 21:25	4.1	153	D	Yes	45	51	35	38	Nil	Nil
Jerrys Plains West	18/12/2023 21:02	4.4	151	D	Yes	45	51	<30	32	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.

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