

HUNTER VALLEY
OPERATIONS

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

DOCUMENT NUMBER

HVOOC-1797567310-4834

STATUS

Approved

VERSION

1.0

EFFECTIVE

07/12/2023

REVIEW

[Planned Review Date]

OWNER

Environment and Community Officer



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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

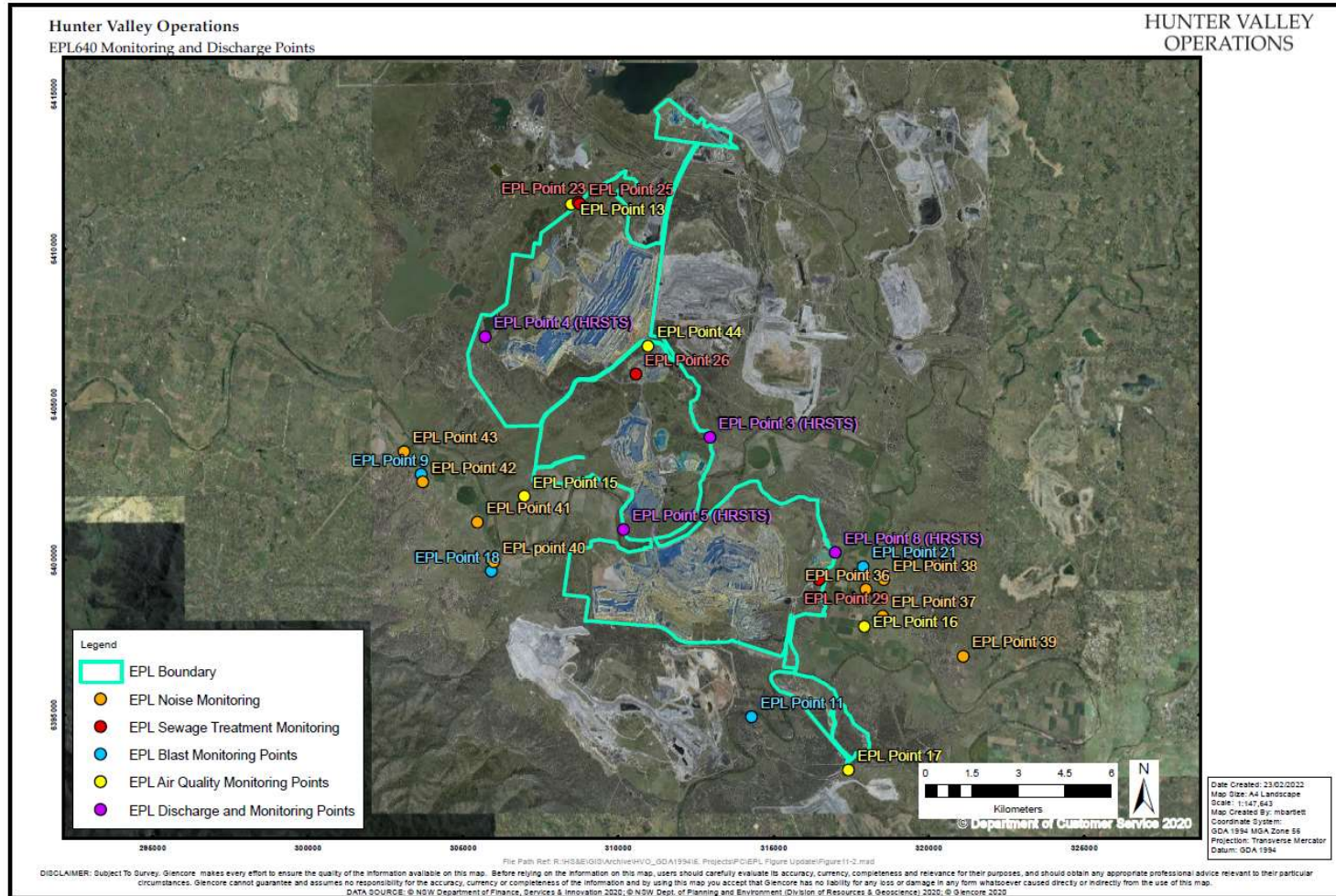


Figure 1: EPL 640 Monitoring Location

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3 | AIR QUALITY

Date Last Sampled: 30/09/2023

Date Obtained: 7/11/2023

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)
1/09/2023	µg/m ³	Continuous	23.1	17.9	14.8	14.7	23.2
2/09/2023	µg/m ³		37.5	22.9	16.8	29.5	48.2
3/09/2023	µg/m ³		33.1	20.3	13.3	28.6	40.2
4/09/2023	µg/m ³		36.2	32.9	18.9	26.6	45.1
5/09/2023	µg/m ³		22.7	8.9	34.8	26.4	67.9
6/09/2023	µg/m ³		41.4	27.1	32.4	35.3	76.5
7/09/2023	µg/m ³		36.3	29.6	41.3	42.6	131.0
8/09/2023	µg/m ³		9.5	5.7	15.8	12.7	*
9/09/2023	µg/m ³		17.8	9.1	15.2	15.9	31.2
10/09/2023	µg/m ³		36.1	16.8	30.0	25.2	59.3
11/09/2023	µg/m ³		32.7	31.4	29.5	36.1	71.4
12/09/2023	µg/m ³		37.8	27.3	36.2	35.4	70.2
13/09/2023	µg/m ³		40.4	32.4	37.5	40.2	65.9
14/09/2023	µg/m ³		42.4	38.8	30.0	45.4	72.7
15/09/2023	µg/m ³		43.5	21.2	36.0	77.1	146.2

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16/09/2023	µg/m ³		36.1	21.2	49.3	49.1	114.1
17/09/2023	µg/m ³		43.4	27.4	53.0	59.5	89.9
18/09/2023	µg/m ³		46.1	33.3	52.5	108.9	*
19/09/2023	µg/m ³		56.2	28.3	53.9	71.1	*
20/09/2023	µg/m ³		41.5	32.0	73.9	49.2	186.0
21/09/2023	µg/m ³		37.6	30.4	52.6	59.0	50.1
22/09/2023	µg/m ³		36.9	20.4	28.3	30.1	33.1
23/09/2023	µg/m ³		33.5	30.1	24.9	35.1	53.2
24/09/2023	µg/m ³		33.1	29.3	33.5	23.6	78.1
25/09/2023	µg/m ³		29.5	22.3	33.9	54.4	57.4
26/09/2023	µg/m ³		44.6	28.6	50.7	54.5	74.7
27/09/2023	µg/m ³		31.6	27.4	36.7	28.2	40.8
28/09/2023	µg/m ³		25.2	15.1	16.5	19.4	23.6
29/09/2023	µg/m ³		31.6	17.0	22.3	29.5	50.3
30/09/2023	µg/m ³		27.9	34.1	29.3	56.0	61.8
Monthly Meaningful Data							
September	µg/m ³	Minimum	10.8	9.8	14.6	13.7	23.2
	µg/m ³	Mean	34.1	25.1	34.2	40.8	69.0
	µg/m ³	Maximum	56.9	37.6	74.2	101.5	186.0
	µg/m ³	Median	35.7	26.4	33.1	37.2	61.8

* Less than 75% 24-hour data capture

4 | SURFACE WATER MONITORING DATA

No discharges under the HRSTS occurred during September.

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: 29/09/2023

Date Obtained: 12/10/2023

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
WS49LEA15A	2/09/2023 13:03	dB(L)	All blasts 100%	115	120	92.67	96.88	92.81	87.90
P209PF102A_P209MA302C	4/09/2023 13:43	dB(L)		115	120	88.67	93.32	92.13	98.28
WN49UPG01A	6/09/2023 13:13	dB(L)		115	120	85.97	93.86	86.82	93.23
P208BAY03A	6/09/2023 15:01	dB(L)		115	120	86.59	80.44	93.84	92.72
RW37BFA02B_RW37BFA03B	7/09/2023 12:00	dB(L)		115	120	93.52	87.71	88.17	86.68
P21001501A	7/09/2023 13:36	dB(L)		115	120	105.72	102.29	106.88	104.05
P210W6P01A	7/09/2023 13:38	dB(L)		115	120	101.86	102.52	111.90	96.24

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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
M1T511001A	9/09/2023 15:57	dB(L)	All Blasts 100%	115	120	108.13	104.30	97.48	92.31
P210MA302D_P210FCL02E	11/09/2023 13:05	dB(L)		115	120	105.07	102.42	100.96	99.10
WS49LEA14A	12/09/2023 16:02	dB(L)		115	120	89.49	88.71	89.71	86.30
P210WK208A	13/09/2023 14:12	dB(L)		115	120	88.98	87.98	90.10	90.86
P21003201A_P210W6P01B	13/09/2023 14:13	dB(L)		115	120	89.85	84.81	94.32	96.72
WN49UPG02A	14/09/2023 13:11	dB(L)		115	120	99.07	101.47	92.87	89.21
WS46BAF01A	18/09/2023 13:20	dB(L)		115	120	97.61	98.53	105.96	97.03
WS49LEA14B	18/09/2023 13:22	dB(L)		115	120	99.81	100.62	109.43	105.81
P209PF103A	19/09/2023 15:43	dB(L)		115	120	97.01	105.94	109.07	98.48

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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
P21003201B	22/09/2023 13:02	dB(L)	All Blasts 100%	115	120	112.59	103.35	104.11	93.60
P209PF302A	23/09/2023 13:09	dB(L)		115	120	97.55	102.14	99.47	92.59
P209PF103B_P209MA302E	25/09/2023 13:05	dB(L)		115	120	104.23	97.61	96.68	97.05
WS49LEA14C_WS49ARC09A	26/09/2023 13:04	dB(L)		115	120	93.97	96.15	88.31	87.31
P21003202A	28/09/2023 13:23	dB(L)		115	120	105.27	102.21	102.68	102.08
P210BF408A	29/09/2023 13:01	dB(L)		115	120	98.60	105.91	99.51	99.50
Monthly Meaningful Data									
September		dB(L)	Minimum	115	120	85.97	80.44	86.82	86.30
		dB(L)	Mean	115	120	97.37	97.24	97.87	94.52
		dB(L)	Maximum	115	120	112.59	105.94	111.90	105.81
		dB(L)	Median	115	120	97.58	99.58	97.08	93.60

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
WS49LEA15A	2/09/2023 13:03	mm/s	All Blasts 100%	5	10	0.11	0.06	0.05	0.13
P209PF102A_P209MA302C	4/09/2023 13:43	mm/s		5	10	0.08	0.04	0.08	0.10
WN49UPG01A	6/09/2023 13:13	mm/s		5	10	0.09	0.06	0.06	0.09
P208BAY03A	6/09/2023 15:01	mm/s		5	10	0.09	0.04	0.08	0.09
RW37BFA02B_RW37BFA03B	7/09/2023 12:00	mm/s		5	10	0.12	0.06	0.07	0.12
P21001501A	7/09/2023 13:36	mm/s		5	10	0.11	0.06	0.40	0.58
P210W6P01A	7/09/2023 13:38	mm/s		5	10	0.14	0.07	0.22	0.59
M1T511001A	9/09/2023 15:57	mm/s		5	10	0.14	0.23	0.07	0.10
P210MA302D_P210FCL02E	11/09/2023 13:05	mm/s		5	10	0.09	0.04	0.07	0.82
WS49LEA14A	12/09/2023 16:02	mm/s		5	10	0.15	0.12	0.16	0.35
P210WK208A	13/09/2023 14:12	mm/s		5	10	0.09	0.05	0.06	0.25
P21003201A_P210W6P01B	13/09/2023 14:13	mm/s		5	10	0.18	0.10	0.42	0.94
WN49UPG02A	14/09/2023 13:11	mm/s		5	10	0.10	0.04	0.06	0.04

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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
WS46BAF01A	18/09/2023 13:20	mm/s	All Blasts 100%	5	10	0.09	0.05	0.07	0.13
WS49LEA14B	18/09/2023 13:22	mm/s		5	10	0.13	0.09	0.14	0.38
P209PF103A	19/09/2023 15:43	mm/s		5	10	0.08	0.04	0.07	0.08
P21003201B	22/09/2023 13:02	mm/s		5	10	0.14	0.08	0.35	0.87
P209PF302A	23/09/2023 13:09	mm/s		5	10	0.10	0.03	0.06	0.27
P209PF103B_P209MA302E	25/09/2023 13:05	mm/s		5	10	0.09	0.05	0.09	0.34
WS49LEA14C_WS49ARC09A	26/09/2023 13:04	mm/s		5	10	0.11	0.09	0.08	0.08
P21003202A	28/09/2023 13:23	mm/s		5	10	0.12	0.06	0.17	0.58
P210BF408A	29/09/2023 13:01	mm/s		5	10	0.10	0.06	0.19	0.36
Monthly Meaningful Data									
September		mm/s	Minimum	5	10	0.08	0.03	0.05	0.04
		mm/s	Mean	5	10	0.11	0.07	0.14	0.32
		mm/s	Maximum	5	10	0.18	0.23	0.42	0.94
		mm/s	Median	5	10	0.11	0.06	0.08	0.25

6 | SEWAGE TREATMENT PLANT MONITORING DATA

Date Sampled: 20 September 2023

Date Obtained: 24 October 2023

Table 5 – Sewage Treatment Plant Monitoring

Monitoring Site	Date & Time	Pollutant	Unit of Measure	Monitoring Result
EPA ID 23	20/09/2023 8:30am	Faecal Coliforms	Colony forming units/100ml	495,000
		pH	pH	7.20
EPA ID 25	20/09/2023 8:40am	Faecal Coliforms	Colony forming units/100ml	1,350
		pH	pH	8.10
EPA ID 26	20/09/2023 8:55am	Faecal Coliforms	Colony forming units/100ml	338,000
		pH	pH	7.50
EPA ID 29	20/09/2023 10:05am	Faecal Coliforms	Colony forming units/100ml	529,000
		pH	pH	7.60

7 | NOISE MONITORING DATA

Date Sampled: 21/09/2023

Date Obtained: 28/09/2023

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	21/09/2023 21:08	5.8	130	D	Yes	46	51	IA	IA	Nil	Nil
Knodlers Lane	21/09/2023 21:47	5.4	134	D	Yes	45	51	IA	IA	Nil	Nil
Maison Dieu	21/09/2023 21:28	5.5	131	D	Yes	44	51	IA	IA	Nil	Nil
Long Point (Dights Crossing)	21/09/2023 22:33	4.6	137	E	Yes	42	51	IA	IA	Nil	Nil
Kilburnie South	21/09/2023 23:10	4.2	136	E	Yes	44	51	IA	IA	Nil	Nil
Jerrys Plains East	21/09/2023 22:50	4.3	135	E	Yes	44	51	IA	IA	Nil	Nil
Jerrys Plains Village	21/09/2023 21:24	5.5	131	D	Yes	45	51	IA	IA	Nil	Nil
Jerrys Plains West	21/09/2023 21:05	6.0	130	D	Yes	45	51	IA	IA	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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