

HUNTER VALLEY
OPERATIONS

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

DOCUMENT NUMBER
HVOOC-1797567310-4782

STATUS
Approved

VERSION
1.0

EFFECTIVE
16/10/2023

REVIEW
[Planned Review Date]

OWNER
Superintendent - Environment and Community



MONITORING DATA - AUGUST 2023

1	Overview	3
2	Definitions.....	3
3	Air Quality.....	5
4	Surface Water Monitoring Data	7
5	Blast Monitoring Data	8
6	Sewage Treatment Plant Monitoring Data.....	13
7	Noise Monitoring Data	14

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

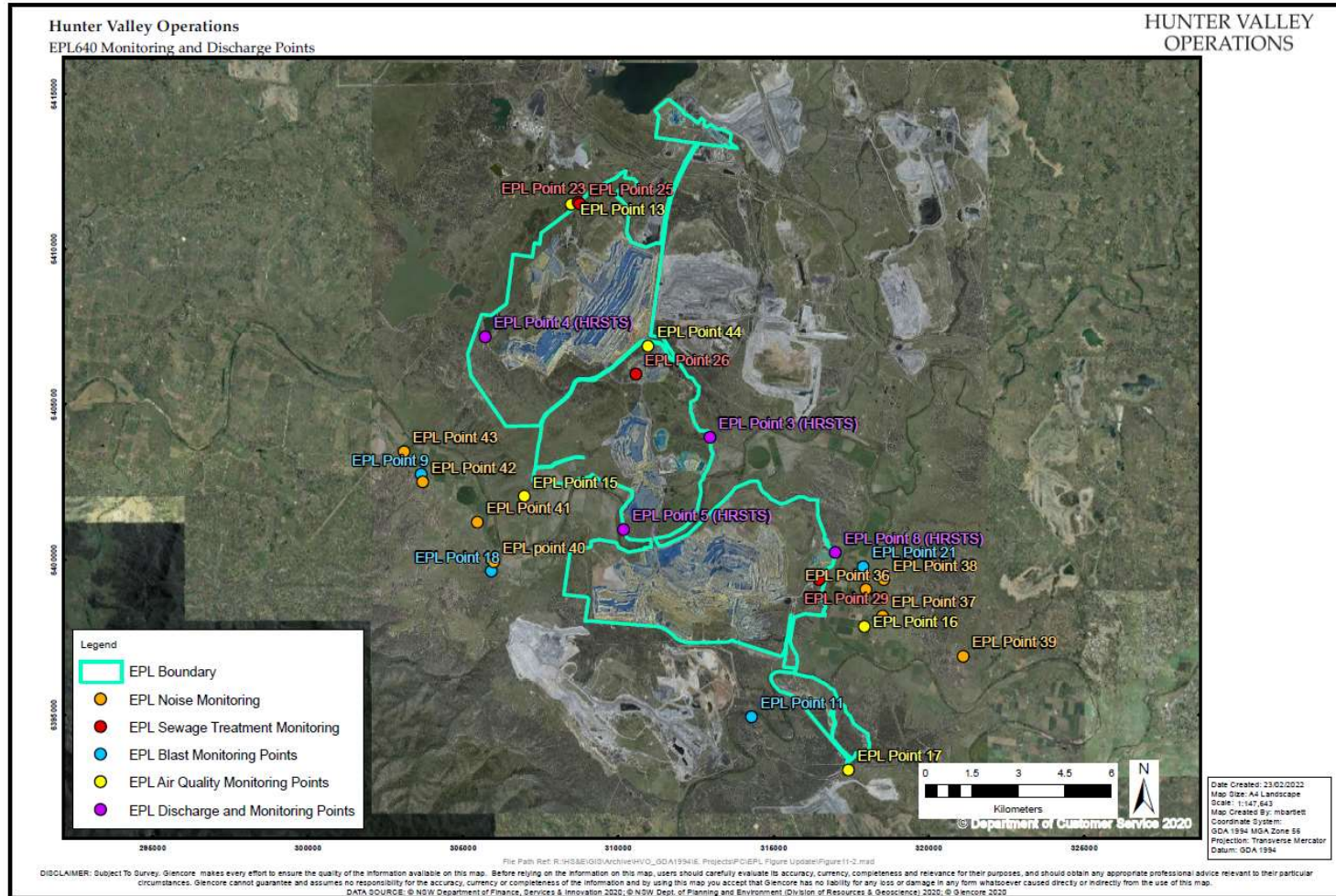


Figure 1: EPL 640 Monitoring Location

3 | AIR QUALITY

Date Last Sampled: 31/08/2023

Date Obtained: 19/09/2023

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)
1/08/2023	µg/m ³	Continuous	39.4	18.3	23.4	19.1	57.2
2/08/2023	µg/m ³		39.2	30.7	24.1	19.4	30.9
3/08/2023	µg/m ³		35.5	15.7	12.8	31.6	68.4
4/08/2023	µg/m ³		37.4	20.5	28.9	56.7	97.4
5/08/2023	µg/m ³		37.0	17.9	45.1	58.9	71.8
6/08/2023	µg/m ³		37.6	18.1	15.3	22.5	26.6
7/08/2023	µg/m ³		37.2	23.9	14.3	20.5	29.5
8/08/2023	µg/m ³		29.0	25.5	12.8	21.3	37.4
9/08/2023	µg/m ³		24.4	19.0	23.4	47.8	109.1
10/08/2023	µg/m ³		30.7	14.1	49.7	59.6	141.5
11/08/2023	µg/m ³		26.2	12.4	29.0	52.4	77.2
12/08/2023	µg/m ³		28.9	16.8	38.6	27.2	78.5
13/08/2023	µg/m ³		31.5	19.2	23.6	33.8	48.2
14/08/2023	µg/m ³		14.4	11.9	12.0	12.1	*
15/08/2023	µg/m ³		16.6	7.9	8.8	11.6	13.5

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Page 5 of 14

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

Uncontrolled when printed

REPORT | ENVIRONMENT PROTECTION LICENCE 640

MONITORING DATA - AUGUST 2023

16/08/2023	µg/m ³		21.7	14.9	9.3	16.4	31.1
17/08/2023	µg/m ³		17.3	8.4	22.1	26.1	67.3
18/08/2023	µg/m ³		7.9	5.6	10.4	9.5	15.1
19/08/2023	µg/m ³		11.8	6.2	13.6	12.5	42.5
20/08/2023	µg/m ³		15.8	9.9	16.8	20.9	43.4
21/08/2023	µg/m ³		23.2	5.4	16.8	28.4	64.5
22/08/2023	µg/m ³		26.6	15.3	30.6	*	97.6
23/08/2023	µg/m ³		21.3	13.4	22.2	*	34.6
24/08/2023	µg/m ³		36.6	30.1	19.6	26.3	22.9
25/08/2023	µg/m ³		32.4	20.6	29.3	*	75.6
26/08/2023	µg/m ³		34.0	29.8	19.4	18.8	56.8
27/08/2023	µg/m ³		35.7	21.8	17.7	14.8	70.1
28/08/2023	µg/m ³		32.9	24.7	21.6	*	65.6
29/08/2023	µg/m ³		35.8	31.4	29.9	*	89.5
30/08/2023	µg/m ³		33.5	18.6	40.8	*	115.7
31/08/2023	µg/m ³		18.4	12.0	13.5	12.9	28.2
Monthly Meaningful Data							
August	µg/m ³	Minimum	7.9	5.4	8.8	9.5	13.5
	µg/m ³	Mean	28.1	17.4	22.4	27.2	60.3
	µg/m ³	Maximum	39.4	31.4	49.7	59.6	141.5
	µg/m ³	Median	30.7	17.9	21.6	21.3	60.9

* Less than 75% 24-hour data capture

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Page 6 of 14

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

Uncontrolled when printed

4 | SURFACE WATER MONITORING DATA

No discharges under the HRSTS occurred during August.

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: 31/08/2023

Date Obtained: 13/08/2023

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
P21018P01A_P21004503B	1/08/2023 13:21	dB(L)	All blasts 100%	115	120	106.31	92.62	99.36	103.86
P208BR607A	1/08/2023 15:08	dB(L)		115	120	94.03	86.76	97.34	95.68
P209MA302A	3/08/2023 13:23	dB(L)		115	120	97.65	99.34	91.89	94.42
WN47BAR02A	5/08/2023 16:04	dB(L)		115	120	82.42	81.62	87.11	87.29
P210WK601A	8/08/2023 13:39	dB(L)		115	120	90.47	89.66	96.20	94.88
P21004503C	8/08/2023 13:40	dB(L)		115	120	94.20	89.94	97.79	99.78

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

REPORT | ENVIRONMENT PROTECTION LICENCE 640 MONITORING DATA - AUGUST 2023

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
P125N10P01A	9/08/2023 13:03	dB(L)	All Blasts 100%	115	120	83.39	80.57	85.07	98.79
WN47BAR03A	14/08/2023 14:20	dB(L)		115	120	80.19	77.24	91.07	86.88
WS49LED02A_WS49LEC03A	14/08/2023 14:20	dB(L)		115	120	85.40	83.66	99.87	93.85
P12500501A	15/08/2023 13:02	dB(L)		115	120	94.66	92.81	95.52	104.42
P209FCL02D	16/08/2023 16:12	dB(L)		115	120	88.86	80.24	92.51	88.49
RW37BFA03A_RW37AFA06A	17/08/2023 14:11	dB(L)		115	120	93.16	91.45	103.38	100.75
P209MA302B	21/08/2023 9:16	dB(L)		115	120	98.09	97.81	97.17	98.14
WN46BAR02A	23/08/2023 13:24	dB(L)		115	120	89.75	93.41	82.31	91.32
RW37BFA02A	25/08/2023 13:09	dB(L)		115	120	98.20	90.95	86.67	91.28

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Page 9 of 14
Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

Uncontrolled when printed

REPORT | ENVIRONMENT PROTECTION LICENCE 640 MONITORING DATA - AUGUST 2023

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
M1T211003A_M1T211004A	29/08/2023 12:58	dB(L)	All Blasts 100%	115	120	99.40	104.10	92.52	94.59
P209VA101A	30/08/2023 13:16	dB(L)		115	120	101.15	111.24	96.65	100.81
P12500502A	30/08/2023 13:19	dB(L)		115	120	97.56	105.04	99.63	100.04
WS49LEP05A	31/08/2023 13:07	dB(L)		115	120	82.56	85.68	87.25	91.34
WS49LEC04A	31/08/2023 13:09	dB(L)		115	120	89.00	87.23	86.48	85.30
<i>Monthly Meaningful Data</i>									
August	dB(L)	Minimum	115	120	80.19	77.24	82.31	82.01	
	dB(L)	Mean	115	120	92.62	89.02	93.13	94.77	
	dB(L)	Maximum	115	120	106.31	104.10	103.38	104.42	
	dB(L)	Median	115	120	93.16	89.94	92.52	94.88	

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Page 10 of 14

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

Uncontrolled when printed



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
P21018P01A_P21004503B	1/08/2023 13:21	mm/s	All Blasts 100%	5	10	0.18	0.09	0.38	1.15
P208BR607A	1/08/2023 15:08	mm/s		5	10	0.13	0.06	0.22	0.43
P209MA302A	3/08/2023 13:23	mm/s		5	10	0.09	0.03	0.08	0.27
WN47BAR02A	5/08/2023 16:04	mm/s		5	10	0.14	0.23	0.08	0.13
P210WK601A	8/08/2023 13:39	mm/s		5	10	0.14	0.05	0.24	0.60
P21004503C	8/08/2023 13:40	mm/s		5	10	0.11	0.07	0.34	0.52
P125N10P01A	9/08/2023 13:03	mm/s		5	10	0.18	0.11	0.12	0.86
WN47BAR03A	14/08/2023 14:20	mm/s		5	10	0.21	0.18	0.21	0.22
WS49LED02A_WS49LEC03A	14/08/2023 14:20	mm/s		5	10	0.21	0.14	0.21	0.22
P12500501A	15/08/2023 13:02	mm/s		5	10	0.16	0.05	0.12	0.66
P209FCL02D	16/08/2023 16:12	mm/s		5	10	0.08	0.03	0.05	0.40
RW37BFA03A_RW37AFA06A	17/08/2023 14:11	mm/s		5	10	0.16	0.06	0.07	0.14

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

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
P209MA302B	21/08/2023 9:16	mm/s	All Blasts 100%	5	10	0.09	0.03	0.06	0.27
WN46BAR02A	23/08/2023 13:24	mm/s		5	10	0.15	0.26	0.12	0.11
RW37BFA02A	25/08/2023 13:09	mm/s		5	10	0.20	0.10	0.12	0.25
M1T211003A_M1T211004A	29/08/2023 12:58	mm/s		5	10	0.14	0.18	0.07	0.73
P209VA101A	30/08/2023 13:16	mm/s		5	10	0.09	0.05	0.10	0.29
P12500502A	30/08/2023 13:19	mm/s		5	10	0.15	0.07	0.14	0.76
WS49LEP05A	31/08/2023 13:07	mm/s		5	10	0.11	0.06	0.07	0.16
WS49LEC04A	31/08/2023 13:09	mm/s		5	10	0.14	0.11	0.13	0.23
Monthly Meaningful Data									
August	mm/s	Minimum	5	10	0.00	0.00	0.00	0.00	
	mm/s	Mean	5	10	0.13	0.09	0.13	0.36	
	mm/s	Maximum	5	10	0.21	0.26	0.34	0.86	
	mm/s	Median	5	10	0.14	0.07	0.12	0.27	

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Page 12 of 14

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

Uncontrolled when printed



6 | SEWAGE TREATMENT PLANT MONITORING DATA

Sewage treatment plant monitoring results are provided on a quarterly basis. Results will be provided in the September 2023 report.

7 | NOISE MONITORING DATA

Date Sampled: 21/08/2023

Date Obtained: 08/09/2023

Table 4 – 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	21/08/2023 21:00	0.3	76	F	No	41	46	41	43	Nil	Nil
Knodlers Lane	21/08/2023 21:53	1.4	203	E	No	40	46	32	35	Nil	Nil
Maison Dieu	21/08/2023 21:27	0.3	313	F	No	39	46	33	37	Nil	Nil
Long Point (Dights Crossing)	21/08/2023 22:51	0.6	218	E	No	37	46	NM	NM	Nil	Nil
Kilburnie South	21/08/2023 23:20	0.1	183	E	No	39	46	<25	<25	Nil	Nil
Jerrys Plains East	21/08/2023 22:57	0.2	212	D	No	39	46	IA	IA	Nil	Nil
Jerrys Plains Village	21/08/2023 21:22	0.3	313	F	No	40	46	IA	IA	Nil	Nil
Jerrys Plains West	21/08/2023 21:00	0.3	76	F	No	40	46	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.

Number: HVOOC-1797567310-4782

Status: Approved

Effective: 16/10/2023

Page 14 of 14

Owner: Superintendent - Environment and Community

Version: 1.0

Review: [Planned Review Date]

Uncontrolled when printed