

Architectural & Environmental Acousticians
Noise & Vibration Engineers

# Holloway Park, London

# **Construction Monitoring Report**

Client: London Square

Ref: CM73-22405-R0

Date: 26 February 2024

Note by: Anthony Coraci, MSc DiplOA MIOA, Senior Acoustics Consultant

# 1. INTRODUCTION

1.1 This Technical Note sets out results of the construction monitoring being carried out at the above site between Monday 19<sup>th</sup> & Saturday 24<sup>th</sup> February 2024. The monitoring is being carried out in accordance with the methodology set out in the Cass Allen response (reference LR03-22405-R0 dated 27 October 2023) to a S60 warning letter issued to Downwell Demolition Ltd.

# 2. WEEKLY ACTIVITIES

2.1 The following activities have been carried out onsite this week, in addition to the usual use of the Haul Road with site vehicles:

#### Horizon

- Crushing crush to Type 1 (Phase 1 & Phase 2)
- · Removing car park slab
- Loading tipper lorries and moving crush from Phase 1 to Phase 2

#### Kesel

Refurbishment of site welfare cabins

#### **Trident**

Installing services to the welfare cabins

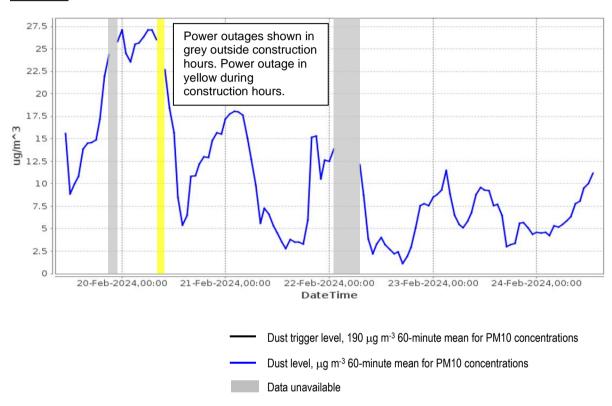


# 3. MONITORING DATA

3.1 This section sets out a summary of the monitoring data that has been recorded onsite and provides a discussion of any exceedances and best practicable means incorporated by the site team if exceedances were believed to be construction related.

#### **Dust Monitoring Results**

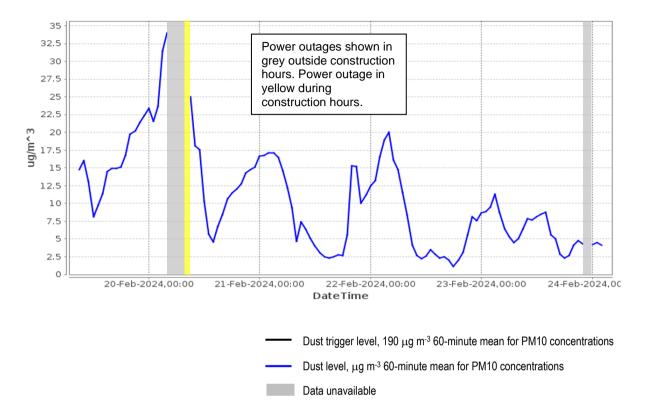
#### Location 1



3.2 There was 98% data coverage at Location 1 for the monitoring period covered by this report. The monitor was offline between 09:00 & 10:00 on Tuesday 20<sup>th</sup> February, due to drained battery. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.



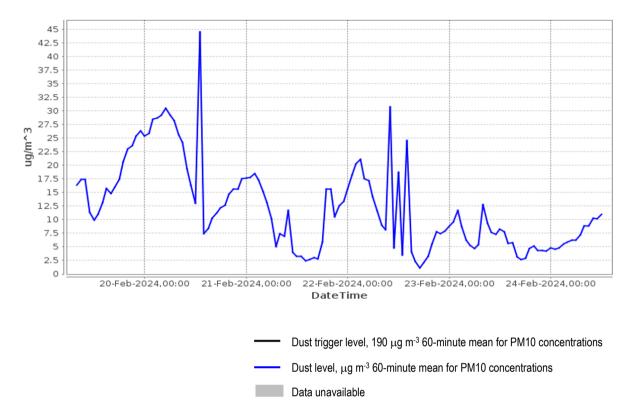
#### Location 2



3.3 There was 98% data coverage at Location 2 during construction hours for the monitoring period covered by this report. The monitor was offline between 08:00 and 09:00 on Tuesday 20<sup>th</sup> February, before the battery change was completed. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.



# Location 3



3.4 There was 100% data coverage at Location 3 for the monitoring period covered by this report. No exceedances of the project dust criteria of 190 micrograms per cubic meter were recorded during the monitoring period covered by this report.



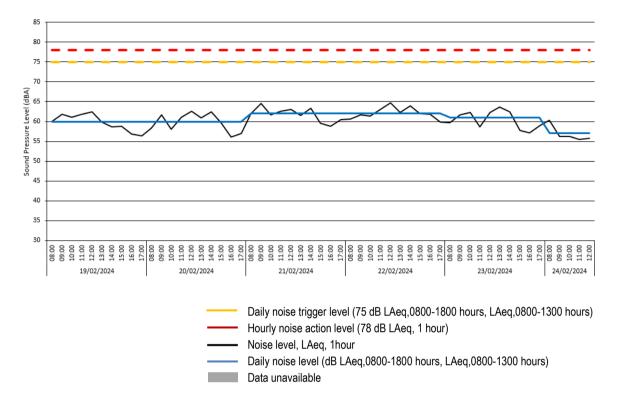
# **Noise Monitoring Results**

# Location 1 - Raw Data

" B " I B 3:					
# Broadband Results Date	Time.	LAca(COmin)	1 Aca/7hm)	Aca(10hm)	LAca/Ebm)
	Time	LAeq(60min)	LAeq(7hr)	LAeq(10hr)	LAeq(5hr)
[YYYY-MM-DD] 2024-02-19	[hh:mm:ss] 09:00:00	[dB] 60.0	[dB]	[dB]	[dB]
2024-02-19	10:00:00	61.8			
2024-02-19		61.0			
2024-02-19	11:00:00	61.8			
	12:00:00				
2024-02-19	13:00:00	62.4			
2024-02-19	14:00:00	59.9			
2024-02-19	15:00:00	58.7			
2024-02-19	16:00:00	58.8			
2024-02-19	17:00:00	56.8			
2024-02-19	18:00:00	56.4		60.2	
2024-02-20	09:00:00	58.4			
2024-02-20	10:00:00	61.6			
2024-02-20	11:00:00	58.0			
2024-02-20	12:00:00	61.0			
2024-02-20	13:00:00	62.6			
2024-02-20	14:00:00	60.9			
2024-02-20	15:00:00	62.4			
2024-02-20	16:00:00	59.7			
2024-02-20	17:00:00	56.1			
2024-02-20	18:00:00	56.9		60.3	
2024-02-21	09:00:00	62.0			
2024-02-21	10:00:00	64.5			
2024-02-21	11:00:00	61.6			
2024-02-21	12:00:00	62.6			
2024-02-21	13:00:00	63.0			
2024-02-21	14:00:00	61.5			
2024-02-21	15:00:00	63.3			
2024-02-21	16:00:00	59.6			
2024-02-21	17:00:00	58.8			
2024-02-21	18:00:00	60.4		62.0	
2024-02-22	09:00:00	60.6			
2024-02-22	10:00:00	61.7			
2024-02-22	11:00:00	61.3			
2024-02-22	12:00:00	63.1			
2024-02-22	13:00:00	64.7			
2024-02-22	14:00:00	62.2			
2024-02-22	15:00:00	63.9			
2024-02-22	16:00:00	61.9			
2024-02-22	17:00:00	61.8			
2024-02-22	18:00:00	59.9		62.3	
2024-02-23	09:00:00	59.7			
2024-02-23	10:00:00	61.6			
2024-02-23	11:00:00	62.3			
2024-02-23	12:00:00	58.6			
2024-02-23	13:00:00	62.3			
2024-02-23	14:00:00	63.6			
2024-02-23		62.4			
2024-02-23	15:00:00				
	16:00:00	57.8 57.1			
2024-02-23	17:00:00				
2024-02-23	18:00:00	58.9		60.9	
2024-02-24	09:00:00	60.3			
2024-02-24	10:00:00	56.2			
2024-02-24	11:00:00	56.2			
2024-02-24	12:00:00	55.5			
2024-02-24	13:00:00	55.7			57.2



# Location 1 - Time History Data



3.5 There was 100% data coverage at Location 1 for the monitoring period covered by this report. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise limit of 75 dB LAeq (0800-1800 hours) were recorded during the monitoring period covered by this report.

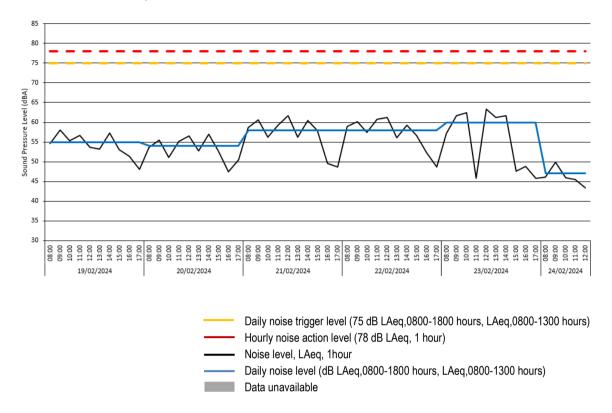


# Location 2 - Raw Data

# Broadband Results				
Date	Time	LAeq(60min)	LAeq(10hr)	LAeq(5hr)
[YYYY-MM-DD]	[hh:mm:ss]	[dB]	[dB]	[dB]
2024-02-19	09:00:00	54.5	-,-	
2024-02-19	10:00:00	58.1		
2024-02-19	11:00:00	55.3		
2024-02-19	12:00:00	56.7		
2024-02-19	13:00:00	53.7		
2024-02-19	14:00:00	53.2		
2024-02-19	15:00:00	57.3		
2024-02-19	16:00:00	53.0		
2024-02-19	17:00:00	51.4		
2024-02-19	18:00:00	48.1	54.9	
2024-02-20	09:00:00	53.7		
2024-02-20	10:00:00	55.4		
2024-02-20	11:00:00	51.1		
2024-02-20	12:00:00	55.2		
2024-02-20	13:00:00	56.5		
2024-02-20	14:00:00	52.7		
2024-02-20	15:00:00	57.0		
2024-02-20	16:00:00	52.7		
2024-02-20	17:00:00	47.5		
2024-02-20	18:00:00	50.5	54.0	
2024-02-21	09:00:00	58.7		
2024-02-21	10:00:00	60.6		
2024-02-21	11:00:00	56.2		
2024-02-21	12:00:00	59.3		
2024-02-21	13:00:00	61.6		
2024-02-21	14:00:00	56.2		
2024-02-21	15:00:00	60.5		
2024-02-21	16:00:00	57.9		
2024-02-21	17:00:00	49.5		
2024-02-21	18:00:00	48.6	58.4	
2024-02-22	09:00:00	58.9		
2024-02-22	10:00:00	60.1		
2024-02-22	11:00:00	57.4		
2024-02-22	12:00:00	60.7		
2024-02-22	13:00:00	61.2		
2024-02-22	14:00:00	56.1		
2024-02-22	15:00:00	59.2		
2024-02-22	16:00:00	56.7		
2024-02-22	17:00:00	52.2		
2024-02-22	18:00:00	48.7	58.3	
2024-02-23	09:00:00	57.1		
2024-02-23	10:00:00	61.6		
2024-02-23	11:00:00	62.5		
2024-02-23	12:00:00	45.8		
2024-02-23	13:00:00	63.3		
2024-02-23	14:00:00	61.2		
2024-02-23	15:00:00	61.6		
2024-02-23	16:00:00	47.6		
2024-02-23	17:00:00	48.8		•
2024-02-23	18:00:00	45.8	59.5	
2024-02-23	09:00:00	46.1		
2024-02-24	10:00:00	49.9		
2024-02-24	11:00:00	45.9		
2024-02-24	12:00:00	45.4		
2024-02-24	13:00:00	43.4		46.7
·		•	-	



# Location 2 - Time History Data



3.6 There was 100% data coverage at Location 2 for the monitoring period covered by this report. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise limit of 75 dB LAeq (0800-1800 hours) were recorded during the monitoring period covered by this report.

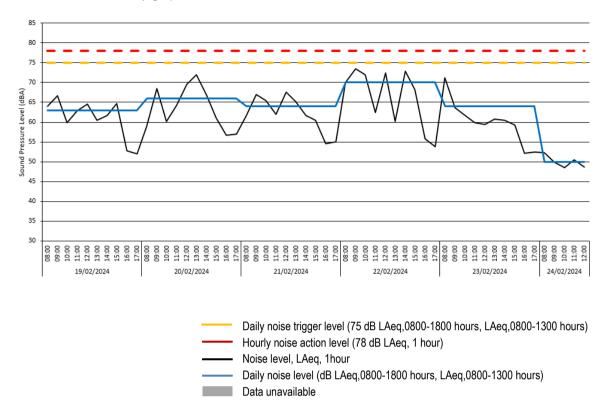


# Location 3 - Raw Data

# Danadhand Danulka				
# Broadband Results	T4	A==(CO=+=)	I A = - (10h = )	LA/[b)
Date	Time	LAeq(60min)	LAeq(10hr)	LAeq(5hr)
[YYYY-MM-DD]	[hh:mm:ss]	[dB]	[dB]	[dB]
2024-02-19 2024-02-19	09:00:00	64.0		
2024-02-19	10:00:00	66.6		
	11:00:00	59.9		
2024-02-19	12:00:00	62.9		
2024-02-19	13:00:00	64.6		
2024-02-19	14:00:00	60.4		
2024-02-19	15:00:00	61.6		
2024-02-19	16:00:00	64.7		
2024-02-19	17:00:00	52.7		
2024-02-19	18:00:00	52.0	62.7	
2024-02-20	09:00:00	58.9		
2024-02-20	10:00:00	68.5		
2024-02-20	11:00:00	60.1		
2024-02-20	12:00:00	64.2		
2024-02-20	13:00:00	69.6		
2024-02-20	14:00:00	72.0		
2024-02-20	15:00:00	66.8		
2024-02-20	16:00:00	61.1		
2024-02-20	17:00:00	56.7		
2024-02-20	18:00:00	56.9	66.4	
2024-02-21	09:00:00	61.5		
2024-02-21	10:00:00	67.0		
2024-02-21	11:00:00	65.4		
2024-02-21	12:00:00	61.9		
2024-02-21	13:00:00	67.5		
2024-02-21	14:00:00	65.2		
2024-02-21	15:00:00	61.7		
2024-02-21	16:00:00	60.4		
2024-02-21	17:00:00	54.6		
2024-02-21	18:00:00	55.0	63.7	
2024-02-22	09:00:00	70.0		
2024-02-22	10:00:00	73.5		
2024-02-22	11:00:00	72.0		
2024-02-22	12:00:00	62.4		
2024-02-22	13:00:00	72.4		
2024-02-22	14:00:00	60.1		
2024-02-22	15:00:00	72.9		
2024-02-22	16:00:00	68.2		
2024-02-22	17:00:00	55.7		
2024-02-22	18:00:00	53.8	69.8	
2024-02-23	09:00:00	71.2		
2024-02-23	10:00:00	63.7		
2024-02-23	11:00:00	61.7		
2024-02-23	12:00:00	59.8		
2024-02-23	13:00:00	59.4		
2024-02-23	14:00:00	60.8		
2024-02-23	15:00:00	60.4		
2024-02-23	16:00:00	59.3		
2024-02-23	17:00:00	52.1		
2024-02-23	18:00:00	52.5	63.5	
2024-02-24 2024-02-24	09:00:00	52.2 49.9		
2024-02-24	10:00:00 11:00:00	48.5		
2024-02-24	12:00:00	48.5 50.5		
2024-02-24	13:00:00	48.6		 50.2
2024-02-24	10.00.00	40.0		30.2



# Location 3 - Time-history graph



3.7 There was 100% data coverage at Location 3 for the monitoring period covered by this report. No exceedances of the project hourly noise criteria of 78 dB LAeq nor the daily project noise limit of 75 dB LAeq (0800-1800 hours) were recorded during the monitoring period covered by this report.

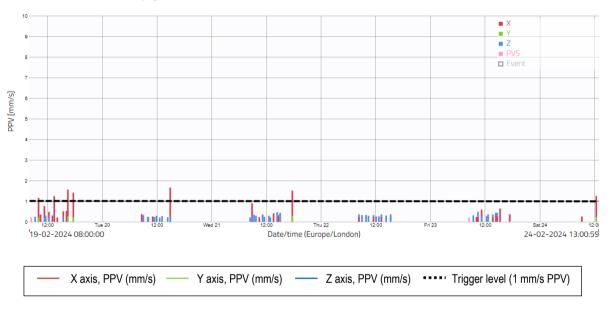


#### **Vibration Monitoring Results**

#### Location 1 - Raw data

Measuring point:		Period:		Order	Value	Date	Time
Holloway - L1		19/02/202	1	1.67	20/02/2024	14:57	
				2	1.57	19/02/2024	16:31
Criteria mm/s PVS		Exceedance	3	1.53	21/02/2024	17:44	
1.0		8		4	1.42	19/02/2024	17:43
				5	1.27	19/02/2024	16:34
				6	1.26	24/02/2024	12:24
				7	1.25	19/02/2024	13:31
				8	1.17	19/02/2024	10:05
				9	0.90	21/02/2024	08:54
				10	0.77	19/02/2024	11:21

# Location 1 - Time-history graph



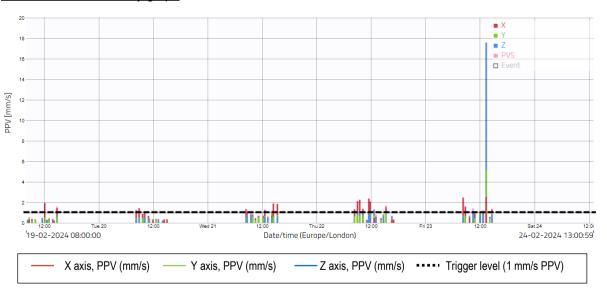
3.8 There was 100% data coverage at Location 1 for the monitoring period covered by this report. There were eight exceedances of the project vibration trigger level of 1 mm/s PPV as shown in the raw data and graph above. The highest recorded vibration level was 1.7 mm/s, which occurred at 14:57 on Tuesday 20<sup>th</sup> February. It is worth noting from the raw data above that the exceedances are sporadic and are likely to have been caused by individual, short-lived events, rather than continuous activity at this location. This will continue to be monitored. The exceedances are believed to be due to non-construction related activities. In this location, it is likely that the residents opened and closing the main door to the residential building will cause occasional vibration spikes, given that the monitor is located on the same facade as the doors.



#### Location 2 - Raw data

Measuring	g point:	Period:		Order	Value	Date	Time	Order	Value	Date	Time	Order	Value	Date	Time
Holloway -	- L2	19/02/20	24 to 24/02/2024	1	17.60	23/02/2024	13:22	31	1.30	22/02/20		61	1.04	23/02/20	
				2	8.48	23/02/2024	13:21	32	1.28	21/02/20	12:36	62	1.04	23/02/20	13:12
Criteria mm/s PVS		Exceedance	es	3	2.47	23/02/2024	08:17	33	1.26	20/02/20	08:17	63	1.03	21/02/20	14:10
1.0		65		4	2.40	22/02/2024	11:31	34	1.24	21/02/20	15:22	64	1.01	23/02/20	14:46
			5	2.30	23/02/2024	13:28	35	1.23	23/02/20	12:42	65	1.01	23/02/20	14:34	
				6	2.26	22/02/2024	09:30	36	1.22	21/02/20	15:10	66	1.00	23/02/20	13:26
				7	2.14	22/02/2024	09:01	37	1.21	19/02/20	15:01	67	0.99	23/02/20	12:19
				8	2.12	22/02/2024	11:48	38	1.21	23/02/20	14:50	68	0.99	19/02/20	14:50
				9	1.95	19/02/2024	12:00	39	1.19	21/02/20	08:38	69	0.98	21/02/20	12:46
				10	1.94	22/02/2024	09:00	40	1.19	22/02/20	15:19	70	0.97	21/02/20	09:22
				11	1.91	22/02/2024	11:08	41	1.19	22/02/20	10:11				
				12	1.90	21/02/2024	14:30	42	1.19	22/02/20	08:20				
				13	1.86	21/02/2024	15:22	43	1.18	23/02/20	08:30				
				14	1.85	22/02/2024	09:32	44	1.17	21/02/20	15:04				
				15	1.82	23/02/2024	08:18	45	1.14	21/02/20	15:12				
				16	1.68	22/02/2024	15:19	46	1.13	22/02/20	15:10				
				17	1.63	23/02/2024	08:47	47	1.13	23/02/20	12:03				
				18	1.59	19/02/2024	14:38	48	1.12	23/02/20	12:14				
				19	1.58	21/02/2024	14:33	49	1.12	23/02/20	12:48				
				20	1.43	20/02/2024	08:54	50	1.10	23/02/20	08:48				
				21	1.43	23/02/2024	10:19	51	1.08	21/02/20	14:28				
				22	1.42	22/02/2024	15:17	52	1.08	22/02/20	15:20				
				23	1.40	22/02/2024	11:46	53	1.07	22/02/20	11:30				
				24	1.39	23/02/2024	14:38	54	1.07	20/02/20	10:08				
				25	1.36	22/02/2024	11:47	55	1.07	23/02/20	13:24				
				26	1.36	22/02/2024	10:12	56	1.06	22/02/20	08:59				
				27	1.36	21/02/2024	08:30	57	1.06	22/02/20	09:55				
				28	1.32	22/02/2024	08:10	58	1.05	23/02/20	12:17				
				29	1.31	22/02/2024	08:21	59	1.04	21/02/20	14:24				
					1.31	23/02/2024			1.04	19/02/20					

# Location 2 - Time-history graph



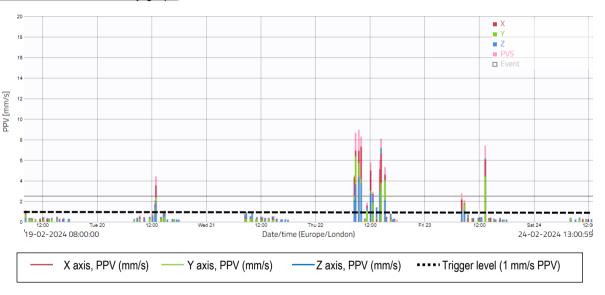
3.9 There was 100% data coverage at Location 2 for the monitoring period covered by this report. There were 65 exceedances of the project vibration trigger level of 1.0 mm/s PPV, which are shown in the raw data and graph above. The highest recorded vibration level was 17.6 mm/s, which occurred at 13:22 on Friday 23<sup>rd</sup> February. It is understood that the majority of exceedances were likely to have been caused by loading from the crush heaps onto dumpers, within the proximity of the monitor. Furthermore, it is our understanding that one of the residents behind the monitoring location has some form of workshop with power tools at the rear of their garden. Any operation of these tools could also generate vibration alerts.



Location 3 - Raw data

Measuring	g point:	Period:	Order	Value	Date	Time	Order	Value	Date	Time	Order	Value	Date	Time
Holloway	- L3	19/02/2024 to 24/02/2024	1	8.93	22/02/2024	09:33	31	5.19	22/02/2024	14:17	61	3.18	22/02/2024	10:28
			2	8.66	22/02/2024	08:50	32	5.14	22/02/2024	09:22	62	3.18	22/02/2024	09:40
Criteria m	m/s PVS	Exceedances	3	8.30	22/02/2024	10:03	33	5.10	22/02/2024	14:14	63	3.14	22/02/2024	09:42
1		178	4	8.29	22/02/2024	08:53	34	5.01	22/02/2024	09:29	64	3.07	20/02/2024	13:02
			5	8.11	22/02/2024	14:27	35	5.00	22/02/2024	15:17	65	3.07	22/02/2024	10:21
			6	7.79	22/02/2024			4.99	22/02/2024			3.06	22/02/2024	09:42
			7	7.41	23/02/2024	13:21		4.92	22/02/2024	14:24	67	2.92	22/02/2024	14:20
			8	7.21	22/02/2024			4.78	22/02/2024			2.91	22/02/2024	12:39
			9	7.02	22/02/2024			4.57	22/02/2024		69	2.86	22/02/2024	09:32
			10	7.01	22/02/2024			4.57	22/02/2024			2.82	22/02/2024	
				7.00	22/02/2024			4.52	22/02/2024			2.78	22/02/2024	
			_	6.89	22/02/2024			4.42	20/02/2024			2.75	23/02/2024	
			13	6.52	22/02/2024			4.36	22/02/2024	12:14	73	2.73	22/02/2024	
				6.32	22/02/2024			4.26	22/02/2024			2.73	22/02/2024	
			15	6.31	22/02/2024			4.16	22/02/2024			2.73	22/02/2024	08:56
			16	6.19	23/02/2024			4.11	22/02/2024		76	2.58	22/02/2024	
			_	6.13	22/02/2024			4.02	22/02/2024			2.56	22/02/2024	
			18	6.00	22/02/2024			3.99	22/02/2024			2.53	22/02/2024	08:38
			19	5.96	22/02/2024			3.97	22/02/2024	12:20	79	2.53	22/02/2024	
				5.87	22/02/2024			3.93	22/02/2024			2.52	22/02/2024	
			_	5.78	22/02/2024			3.91	22/02/2024			2.49	22/02/2024	
				5.71	22/02/2024			3.85	22/02/2024		82	2.49	22/02/2024	
			_	5.68	22/02/2024			3.70	22/02/2024			2.48	22/02/2024	
			24	5.50	22/02/2024			3.69	22/02/2024		84	2.44	22/02/2024	
			_	5.49	22/02/2024			3.69	22/02/2024			2.43	20/02/2024	
			26	5.47	22/02/2024			3.67	22/02/2024	09:26	86	2.41	23/02/2024	
				5.35	22/02/2024			3.61	22/02/2024		87	2.38	22/02/2024	
			28	5.32	22/02/2024	15:19	58	3.53	22/02/2024	12:10	88	2.35	22/02/2024	14:47
				5.32	22/02/2024			3.43	22/02/2024			2.34	22/02/2024	
			30	5.24	22/02/2024	09:50	60	3.20	22/02/2024	10:26	90	2.33	22/02/2024	09:23

#### Location 3 - Time-history graph



3.10 There was 100% data coverage at Location 3 for the monitoring period covered by this report. There were 178 exceedances of the project vibration trigger level of 1.0 mm/s PPV as shown in the raw data and graph above. The vast majority of the exceedances at this location are generally being caused by plant vehicles travelling along the haulage road which is directly in front of where the vibration monitor is currently located. These movements are unavoidable and there are no reasonably practicable measures that the site team can implement to reduce these emissions at this time.



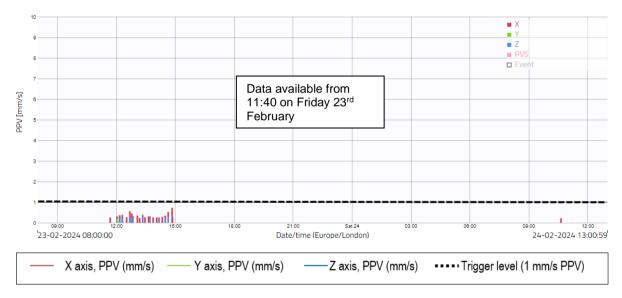
- 3.11 In addition, the site team confirmed that the removal of a ground floor slab was taking place during the week covered by this report, which was located in close proximity to the vibration monitor. As stated in the most recent BPM document issued by Downwell, the following measures are being taken to minimise noise & vibration emissions from this activity:
  - All plant used during the procedure to be suitable for the works.
  - All operatives to be suitably trained and competent.
  - Machine to be sat at the furthest point from the boundary whilst loading.
  - No unnecessary use of the horn.
  - Suppression to be used when required.
  - No loud music in the plant cab.
- 3.12 However, due to the proximity between the vibration sensor and the nearest sensitive receptor, it follows that the vibration levels at this position would have been lower than shown at the sensor location, but still likely above the 1.0 mm/s PPV action level at the NSR, at times.
- 3.13 Cass Allen will continue to review noise and vibration emissions and advise on any further practicable measures to minimise vibration.



#### Location 4 - Raw data

Measuring point:		Period:		Order	Value	Date	Time
Holloway - L4 Temp		19/02/202	1	0.73	23/02/2024	14:50	
				2	0.57	23/02/2024	12:42
Criteria mm/s PVS		Exceedanc	3	0.53	23/02/2024	14:38	
1.0		0		4	0.45	23/02/2024	12:48
				5	0.43	23/02/2024	14:43
				6	0.42	23/02/2024	14:37
				7	0.41	23/02/2024	14:41
				8	0.41	23/02/2024	13:21
				9	0.39	23/02/2024	12:19
				10	0.38	23/02/2024	14:46

#### Location 4 - Time-history graph



3.14 There was 22% data coverage at Location 4 for the monitoring period covered by this report. The monitor went offline Thursday 15<sup>th</sup> February due to a technical fault. The manufacturer of the monitor requested it to be removed from site for a fault investigation; however, a temporary replacement was installed at the same location at 11:40 on Friday 23<sup>rd</sup> February. The graph above shows the available data for the week covered by this report. From the available data, there were no exceedances of the project vibration trigger level of 1.0 mm/s PPV, as shown in the raw data and graph above.