


Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	14-Aug-09
Time	9:45 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels	8.85 / 10.17
Measured Level	3.7 (higher than 130% of control station's SS)
Possible reason for Action or Limit Level Non-compliance	A low SS level of 2.6 is recorded at Control Station (I-1-C)
Actions taken / to be taken	The measured SS level was below baseline Action / Limit Level and was within the range of baseline SS concentration (1-10.5mg/L). Site tidiness & cleanliness, excavation and breaking up or rock strata, and disposal of C&D materials were undertaken during the measurement and no direct disturbance was observed from the site. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
Remarks	Following mitigation measures were provided: (1) sandbags were used at the gap of the bridge to avoid wastewater from site activities directly running down to the channel of I-1. (2) The working site was segregated with a wall and no wastewater was observed down to the channel-I1. (3) Sand/silts removal facilities was installed at the location of I-1.

Prepared by: Terence Kong
 Designation: Environmental Team Leader

Signature:



Date: 25-Aug-09

Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 14-Aug-09



Site photo



Photo taken at I-1



Photo taken at I-1-C

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	14-Aug-09
Time	11:25 AM
Monitoring Location	Hong Hoi Chee Hong Temple (I-2)
Parameter	Suspended Solid
Action & Limit Levels	7.68 / 8.34
Measured Level	3.3 (higher than 130% of control station's SS)
Possible reason for Action or Limit Level Non-compliance	A low SS level of 2.3 is recorded at Control Station (I-2-C)
Actions taken / to be taken	The measured SS level was below baseline Action / Limit Level and was within the range of baseline SS concentration (1-8.5mg/L). Site tidiness & cleanliness, erection of working platform and trimming off cement grout of H-pile, and grout hole drilling were undertaken during the measurement and no direct disturbance was observed from the site. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
Remarks	Following mitigation measures were provided: (1) exposed surfaces were covered by tarpaulin. (2) sandbags were used to avoid wastewater from site activities directly running down to the river of I-2. (3) sand/silts removal facilities was installed at the location of I-2.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 25-Aug-09

Photographic record for exceedance of Suspended Solid recorded at Hong Hoi Chee Hong Temple (I-2) on 14-Aug-09



Site photo



Photo taken at I-2



Photo taken at I-2-C

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	29 July 2009 (ET received the complaint on 10 August 2009)
Time	N/A
Monitoring Location	Roof top of Greenview Terrace facing to the construction site (NSR 9)
Parameter	Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	N/A
Possible reason for Action or Limit Level Non-compliance	Daytime Construction works (Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials)
Actions taken / to be taken	The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on site noise mitigation measures continuously. Noise monitoring frequency would be proposed to increase twice per week by ET.
Remarks	Please refer to the Complaint Investigation Report (CIR-005) attached for details.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 31-Aug-09

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	11 August 2009 (ET received the complaint on 12 August 2009)
Time	N/A
Monitoring Location	Roof top of Greenview Terrace facing to the construction site (NSR 9)
Parameter	Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	N/A
Possible reason for Action or Limit Level Non-compliance	Daytime Construction works (Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials)
Actions taken / to be taken	The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on site noise mitigation measures continuously. Noise monitoring frequency would be proposed to increase twice per week by ET.
Remarks	Please refer to the Complaint Investigation Report (CIR-005) attached for details.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 31-Aug-09

Complaint Investigation Report

Contractor: Maeda – CREC – SELI Joint Venture		ET Received Date: 10 & 12 August 2009	Ref: CIR – 005
Project: Design and Construction of Tsuen Wan Drainage Tunnel			
COMPLAINANT			
Name: Unknown (refer from Mott MacDonald)		Address: Unknown	
Tel: Unknown			
Fax: Unknown			
COMPLAINT INVESTIGATION			
	Description (cause of impact, type of impact and location, etc.)		
	<u>Details of the Complaint</u> SOR has received two complaints (SOR ref: (DC/2007/12)/M45/500/02480, 02500) from Greenview Terrace regarding to daytime construction noise exceedance recorded at NSR9 on 8, 22, 23, 27 and 29 July 2009 and a large amount dust generated at the outfall construction site. The complaint dates were corresponded to 29 July and 11 August 2009. The two complaints are similar and would be responded as a single complaint.		
	<u>Findings/ Observations</u> Regular 1-hour TSP and daytime construction noise monitoring, in accordance with EM&A Manual are performed by Environmental Team. The monitoring station concerned is NSR9 (i.e. at the roof top of Greenview Terrace facing to the construction site) and ASR9 (i.e. at the podium level of Greenview Terrace facing to the construction site) . Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and August 2009. The monitoring results from 6 July 2009 to 25 August 2009 at NSR 9 under EM&A requirements were summarised in the attached table. In accordance with EIAO-TM, the daytime construction noise limit is 75 dB(A) for NSR9. The measured noise levels complied with the limit level in accordance with the EIAO-TM. These cases would also be treated as an action level exceedance on noise and would be reported in next EM&A report. For 1-hour TSP monitoring, the monitoring results from 6 July 2009 to 25 August 2009 are also summarised in the attached table. In accordance with the EM&A Manual and the Baseline Monitoring Report, all 1-hour TSP concentrations at ASR9 were below the established Action and Limit Levels. No 1-hour TSP exceedance was recorded at ASR 9 during this period. The contractor and the environmental team were also undertaken site investigation on the subject area and also joint meeting on 18 August 2009 in response to Greenview Terrace's complaint. Air quality mitigation measures as recommended in EIA have been implemented by the Contractor. However, noise mitigation measures should be enhanced continuously due to these complaints. The mitigation measures during the site investigation were observed as follows: <u>Air Quality</u> <ul style="list-style-type: none">• Water spraying was provided to the exposed surface.• Several automatic sprinklers were provided at the outfall construction site for water spraying of the haul road.• Water spraying was provided during rock breaking and soil nailing works. <u>Noise</u> <ul style="list-style-type: none">• Three layers of sound insulation sheets were installed at three locations of the site area.• Movable noise barriers were used to surround the breaking activities.• Noise insulation materials were used to enclose the breaking tip tightly.		

Conclusion/Proposed Action

We aware that the photos from the complainant were taken on 22 July 2009. It was due to the soiling nailing works. The Contractor has provided cover and water spraying during such works and no action & limit level exceedance was recorded during the monitoring day on 22 July 2009. The Contractor was reminded enhance the dust mitigation measures after receiving the complaint. A designated staff was provided to spray water continuously during soil nailing. A nylon bag was placed on the drilling hole and keeping wet to suppress dust. A sprinkler was added at the hillside of the site and water spraying was provided continuously during operation of drilling to suppress dust.

On the other hand, the documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are proposed as follows:

1. A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.
2. The designated staff was reminded to record all the weather condition including raining and wind speed.
3. Tools box talk for the Contractor's Team would be carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.
4. Three movable noise barriers had been placed on site and the movable noise barriers would be modified.
5. Existing 25 ton rock breaker had been replaced by the another breaker.
6. The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.
7. A joint filler wall would be installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.
8. Noise monitoring frequency would be proposed to increase twice per week.

Further to the SSEMC meeting on 6 August 2009, noise monitoring has been increased. The measurement was taken on 10, 12, 15, 17 and 28 August 2009. The noise levels ($L_{eq, 30 \text{ min}}$) were shown in the following table. The measured noise levels were complied with the limit level in accordance with the EIAO-TM.

Date	Start Time	End Time	L_{eq} , dB(A)	Limit dB(A)	Noise Sources
10-Aug-09	10:27	10:57	73	75	Breaker x 2, Backhoe x 1, Traffic Noise
12-Aug-09	09:57	10:27	74.1	75	Breaker x 2, Backhoe x 2, Traffic Noise
15-Aug-09	09:48	10:18	71.5	75	Breaker x 2 & Backhoe x 2, Traffic Noise
17-Aug-09	15:41	16:11	70.9	75	Breaker x 2, Backhoe x 2, Traffic and Aircraft Noise
28-Aug-09	14:34	15:04	73.5	75	Breaker x 2, Excavator x 1, Traffic and Aircraft Noise

Remark:

The location of PME will be changed on and off and the utilization time for each PME may not be in constant.

From the data above and under EM&A requirements, noise level ($L_{eq, 30 \text{ min}}$) was in the range of 71 to 74 dB(A) to the nearest integer. As the proposed mitigation measures have not been fully implemented yet, the noise monitoring frequency would be maintained in twice per week until all the above mitigation measures have been implemented on site and then to check whether the mitigation measures are effective.

FOLLOW UP ACTION (S)

For dust & noise complaint, ET will continuously review the condition of the site during the routine site inspections and provide reminder to the Contractor. This case has already been reported an action level exceedance on noise and also in complaint log in the monthly EM&A report (August 2009). The updated information will be reported in the coming EM&A report.

Noise monitoring measurement would be carried out twice per week when all the above mitigation measures have been implemented on site in order to check the effectiveness of the mitigation measures. Follow up action for this complaint would be required.

Prepared & Confirmed by:

Name: Terence Kong (ET Leader)

Signature:



Date: 31 August 2009

ATTACHMENTS: Noise Monitoring Data from 6 July to 25 August 2009 and 1-hr TSP Monitoring Data from 6 July to 25 August 2009.

Noise Monitoring Data from 6 July 2009 to 25 August 2009

Monitoring Locations	Date	Weather Conditions	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Start Time	End Time	Limit Level dB(A)	L _{eq(30min)} dB(A)	Observation / Site Condition	Remark
NSR 9 Greenview Terrace	06-Jul-09	Sunny	31	0.5	S	15:05	15:35	75	72.4	Soil Nailing,Excavation by backhoe	Traffic noise
	16-Jul-09	Sunny	32	0.3	E	10:05	10:35	75	71.4	Soil Nailing,Excavation by backhoe	Traffic noise
	22-Jul-09	Sunny	31	0.6	E	14:05	14:35	75	72.7	Soil Nailing,Excavation & Breaking by backhoe	Traffic noise
	28-Jul-09	Fine	30	0.5	E	15:18	15:48	75	71.4	Soil Nailing,Breaking by backhoe	Traffic noise, aircraft noise
	03-Aug-09	Sunny	27	0.9	E	15:13	15:43	75	72.3	Breaking by backhoe,excavation work	Traffic noise
	14-Aug-09	Cloudy	28	0.2	E	14:35	15:05	75	72.6	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	19-Aug-09	Cloudy	31	1.3	E	13:15	13:45	75	72.1	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	25-Aug-09	Sunny	32	0.8	E	10:25	10:55	75	73.0	Breaking by backhoe,excavation work	Traffic noise

1 hour TSP Monitoring Data from 6 July 2009 to 25 August 2009

Location	Monitoring Date	Weather s	Wind Speed Direction (m/s)	Temp (°C)	Time (mins)	Flow-avg (m ³ /min)	Volume (m ³)	Weight-l (g)	Weight-f (g)	Weight-diff. (g)	1-hr TSP (µg/m ³)	Average 1-Hr TSP (µg/m ³)	Action/Limit Levels (µg/m ³)	Observation / Site Condition	Remark
ASR 9 Greenview Terrace	06-Jul-09	Sunny	0.4S	31	60.0	1.50	89.94	2.8483	2.8563	0.0080	89.0	60.8	329.2/500	Soil Nailing,Excavation by backhoe	Traffic
		Sunny	0.4S	31	60.0	1.50	89.94	2.8782	2.8824	0.0042	46.7				
		Sunny	0.4S	31	60.0	1.50	89.94	2.8378	2.8420	0.0042	46.7				
	10-Jul-09	Sunny	0.2S	32	60.0	1.50	89.94	2.8389	2.8449	0.0060	66.7	101.6		Breaking by backhoe,excavation work	Traffic
		Sunny	0.2S	32	60.0	1.50	89.94	2.8032	2.8103	0.0071	78.9				
		Sunny	0.2S	32	60.0	1.50	89.94	2.8802	2.8945	0.0143	159.0				
	16-Jul-09	Sunny	0.3E	32	60.0	1.50	89.94	2.8168	2.8269	0.0101	112.3	66.3		Soil Nailing,Excavation by backhoe	Traffic
		Sunny	0.3E	32	60.0	1.50	89.94	2.8038	2.8075	0.0037	41.1				
		Sunny	0.3E	32	60.0	1.50	89.94	2.8122	2.8163	0.0041	45.6				
	22-Jul-09	Sunny	0.6E	32	60.0	1.50	89.94	2.8678	2.8854	0.0176	195.7	146.0		Soil Nailing,Breaking by backhoe	Traffic
		Sunny	0.6E	32	60.0	1.50	89.94	2.8846	2.8982	0.0136	151.2				
		Sunny	0.6E	32	60.0	1.50	89.94	2.8840	2.8922	0.0082	91.2				
	28-Jul-09	Fine	0.5E	30	60.0	1.50	89.94	2.8586	2.8752	0.0166	184.6	120.5		Soil Nailing, Breaking by backhoe	Traffic
		Fine	0.5E	30	60.0	1.50	89.94	2.8343	2.8428	0.0085	94.5				
		Fine	0.5E	30	60.0	1.50	89.94	2.821	2.8284	0.0074	82.3				
	03-Aug-09	Sunny	0.9E	27	60.0	1.50	89.94	2.8424	2.8580	0.0156	173.5	127.9		Breaking by backhoe,excavation work	Traffic
		Sunny	0.9E	27	60.0	1.50	89.94	2.8441	2.8535	0.0094	104.5				
		Sunny	0.9E	27	60.0	1.50	89.94	2.8300	2.8395	0.0095	105.6				
	07-Aug-09	Fine	0.4E	29	60.0	1.44	86.44	2.8552	2.8653	0.0101	116.8	125.3		Breaking by backhoe,excavation work	Traffic
		Fine	0.4E	29	60.0	1.44	86.44	2.8547	2.8625	0.0078	90.2				
		Fine	0.4E	29	60.0	1.44	86.44	2.8620	2.8766	0.0146	168.9				
13-Aug-09	Cloudy	0.5E	27	60.0	1.44	86.44	2.8058	2.8265	0.0207	239.5	137.7	Breaking by backhoe,excavation work	Traffic		
	Cloudy	0.5E	27	60.0	1.44	86.44	2.8257	2.8344	0.0087	100.6					
	Cloudy	0.5E	27	60.0	1.44	86.44	2.8475	2.8538	0.0063	72.9					
19-Aug-09	Cloudy	0.5E	31	60.0	1.44	86.44	2.8455	2.8557	0.0102	118.0	98.3	Drilling work,Breaking by backhoe	Traffic		
	Cloudy	0.5E	31	60.0	1.44	86.44	2.8690	2.8757	0.0067	77.5					
	Cloudy	0.5E	31	60.0	1.44	86.44	2.8889	2.8975	0.0086	99.5					
25-Aug-09	Sunny	0.8E	32	60.0	1.44	86.44	2.8364	2.8469	0.0105	121.5	78.7	Breaking by backhoe,excavation work	Traffic		
	Sunny	0.8E	32	60.0	1.44	86.44	2.8450	2.8493	0.0043	49.7					
	Sunny	0.8E	32	60.0	1.44	86.44	2.8127	2.8183	0.0056	64.8					

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	12/08/2009 (ET received the complaint on 14 August 2009)
Time	N/A
Monitoring Location	Roof top of Greenview Terrace facing to the construction site (NSR 9)
Parameter	Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	N/A
Possible reason for Action or Limit Level Non-compliance	Daytime Construction activities (Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials)
Actions taken / to be taken	The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on site noise mitigation measures continuously. Noise monitoring frequency would be proposed to increase twice per week by ET.
Remarks	Please refer to the Complaint Investigation Report (CIR-006) attached for details.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 31-Aug-09

Complaint Investigation Report

Contractor: Maeda – CREC – SELI Joint Venture	ET Received Date: 14 August 2009	Ref: CIR – 006
Project: Design and Construction of Tsuen Wan Drainage Tunnel		
COMPLAINANT		
Name: Unknown (refer from Mott MacDonald) Tel: Unknown Fax: Unknown	Address: Unknown	
COMPLAINT INVESTIGATION		
	Description (cause of impact, type of impact and location, etc.)	
	<p><u>Details of the Complaint</u></p> <p>SOR has received a complaint (SOR ref: (DC/2007/12)/M45/500/02527) from Greenview Terrace, via Apple Daily regarding to daytime construction noise level ($L_{eq(30min)}$) was sometimes more than 80 dB(A) and a large amount dust generated at the outfall construction site. The complaint date was corresponded to 12 August 2009.</p> <p><u>Findings/ Observations</u></p> <p>Regular 1-hour TSP and daytime construction noise monitoring, in accordance with EM&A Manual are performed by Environmental Team. The monitoring station concerned is NSR9 (i.e. at the roof top of Greenview Terrace facing to the construction site) and ASR9 (i.e. at the podium level of Greenview Terrace facing to the construction site).</p> <p>Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in July and August 2009. The monitoring results from 6 July 2009 to 25 August 2009 at NSR 9 under EM&A requirements were summarised in the attached table. In accordance with EIAO-TM, the daytime construction noise limit is 75 dB(A) for NSR9. The measured noise levels complied with the limit level in accordance with the EIAO-TM. These cases would also be treated as an action level exceedance on noise and would be reported in next EM&A report.</p> <p>For 1-hour TSP monitoring, the monitoring results from 6 July 2009 to 25 August 2009 are also summarised in the attached table. In accordance with the EM&A Manual and the Baseline Monitoring Report, all 1-hour TSP concentrations at ASR9 were below the established Action and Limit Levels. No 1-hour TSP exceedance was recorded at ASR 9 during this period.</p> <p>The contractor and the environmental team were also undertaken site investigation on the subject area and also joint meeting on 18 August 2009 in response to Greenview Terrace's complaint. Air quality mitigation measures as recommended in EIA have been implemented by the Contractor. However, noise mitigation measures should be enhanced continuously due to these complaints. The mitigation measures during the site investigation were observed as follows:</p> <p><u>Air Quality</u></p> <ul style="list-style-type: none"> • Water spraying was provided to the exposed surface. • Several automatic sprinklers were provided at the outfall construction site for water spraying of the haul road. • Water spraying was provided during rock breaking and soil nailing works. <p><u>Noise</u></p> <ul style="list-style-type: none"> • Three layers of sound insulation sheets were installed at three locations of the site area. • Movable noise barriers were used to surround the breaking activities. • Noise insulation materials were used to enclose the breaking tip tightly. 	

Conclusion/Proposed Action

Based on our site inspection and monitoring results, the complaint for dust is considered not justifiable since no action & limit level exceedance on construction dust is identified. However, it was a recurrent case from Greenview Terrace. The Contractor was recommended to enhance water spraying continuously especially in rock breaking activities.

On the other hand, there was no noise levels ($L_{eq(30min)}$) from the measurement taken from ET was more than 80 dB(A). However, it was a recurrent case from Greenview Terrace. The Contractor was reminded to enhance the on-site noise mitigation measures. The enhanced mitigation measures are proposed as follows:

1. A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.
2. The designated staff was reminded to record all the weather condition including raining and wind speed.
3. Tools box talk for Contractor's Team would be carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.
4. Three movable noise barriers had been placed on site and the movable noise barriers would be modified.
5. Existing 25 ton rock breaker had been replaced by the another breaker.
6. The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.
7. A joint filler wall would be installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.
8. Noise monitoring frequency would be proposed to increase twice per week.

Further to the SSEMC meeting on 6 August 2009, noise monitoring has been increased. The measurement was taken on 10, 12, 15, 17 and 28 August 2009. The noise levels ($L_{eq, 30 min}$) were shown in the following table. The measured noise levels were complied with the limit level in accordance with the EIAO-TM.

Date	Start Time	End Time	L_{eq} , dB(A)	Limit Level, dB(A)	Noise Sources
10-Aug-09	10:27	10:57	73	75	Breaker x 2, Backhoe x 1, Traffic Noise
12-Aug-09	09:57	10:27	74.1	75	Breaker x 2, Backhoe x 2, Traffic Noise
15-Aug-09	09:48	10:18	71.5	75	Breaker x 2 & Backhoe x 2, Traffic Noise
17-Aug-09	15:41	16:11	70.9	75	Breaker x 2, Backhoe x 2, Traffic and Aircraft Noise
28-Aug-09	14:34	15:04	73.5	75	Breaker x 2, Excavator x 1, Traffic and Aircraft Noise

Remark:

The location of PME will be changed on and off and the utilization time for each PME may not be in constant.

From the data above and under EM&A requirements, noise level ($L_{eq, 30 min}$) was in the range of 71 to 74 dB(A) to the nearest integer. As the proposed mitigation measures have not been fully implemented yet, the noise monitoring frequency would be maintained in twice per week until all the above mitigation measures have been implemented on site and then to check whether the mitigation measures are effective.

FOLLOW UP ACTION (S)

For dust & noise complaint, ET will continuously review the condition of the site during the routine site inspections and provide reminder to the Contractor. This case has already been reported an action level exceedance on noise and also in complaint log in the monthly EM&A report (August 2009). The updated information will be reported in the coming EM&A report.

Noise monitoring measurement would be carried out twice per week when all the above mitigation measures have been implemented on site in order to check the effectiveness of the mitigation measures. Follow up action for this complaint would be required.

Prepared & Confirmed by:

Name: Terence Kong (ET Leader)

Signature:



Date: 31 August 2009

ATTACHMENTS: Noise Monitoring Data from 6 July to 25 August 2009 and 1-hr TSP Monitoring Data from 6 July to 25 August 2009.

Noise Monitoring Data from 6 July 2009 to 25 August 2009

Monitoring Locations	Date	Weather Conditions	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Start Time	End Time	Limit Level dB(A)	L _{eq(30min)} dB(A)	Observation / Site Condition	Remark
NSR 9 Greenview Terrace	06-Jul-09	Sunny	31	0.5	S	15:05	15:35	75	72.4	Soil Nailing,Excavation by backhoe	Traffic noise
	16-Jul-09	Sunny	32	0.3	E	10:05	10:35	75	71.4	Soil Nailing,Excavation by backhoe	Traffic noise
	22-Jul-09	Sunny	31	0.6	E	14:05	14:35	75	72.7	Soil Nailing,Excavation & Breaking by backhoe	Traffic noise
	28-Jul-09	Fine	30	0.5	E	15:18	15:48	75	71.4	Soil Nailing,Breaking by backhoe	Traffic noise, aircraft noise
	03-Aug-09	Sunny	27	0.9	E	15:13	15:43	75	72.3	Breaking by backhoe,excavation work	Traffic noise
	14-Aug-09	Cloudy	28	0.2	E	14:35	15:05	75	72.6	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	19-Aug-09	Cloudy	31	1.3	E	13:15	13:45	75	72.1	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	25-Aug-09	Sunny	32	0.8	E	10:25	10:55	75	73.0	Breaking by backhoe,excavation work	Traffic noise

1 hour TSP Monitoring Data from 6 July 2009 to 25 August 2009

Location	Monitoring Date	Weather s	Wind Speed Direction (m/s)	Temp (°C)	Time (mins)	Flow-avg (m ³ /min)	Volume (m ³)	Weight-l (g)	Weight-f (g)	Weight-diff. (g)	1-hr TSP (µg/m ³)	Average 1-Hr TSP (µg/m ³)	Action/Limit Levels (µg/m ³)	Observation / Site Condition	Remark
ASR 9 Greenview Terrace	06-Jul-09	Sunny	0.4S	31	60.0	1.50	89.94	2.8483	2.8563	0.0080	89.0	60.8	329.2/500	Soil Nailing,Excavation by backhoe	Traffic
		Sunny	0.4S	31	60.0	1.50	89.94	2.8782	2.8824	0.0042	46.7				
		Sunny	0.4S	31	60.0	1.50	89.94	2.8378	2.8420	0.0042	46.7				
	10-Jul-09	Sunny	0.2S	32	60.0	1.50	89.94	2.8389	2.8449	0.0060	66.7	101.6		Breaking by backhoe,excavation work	Traffic
		Sunny	0.2S	32	60.0	1.50	89.94	2.8032	2.8103	0.0071	78.9				
		Sunny	0.2S	32	60.0	1.50	89.94	2.8802	2.8945	0.0143	159.0				
	16-Jul-09	Sunny	0.3E	32	60.0	1.50	89.94	2.8168	2.8269	0.0101	112.3	66.3		Soil Nailing,Excavation by backhoe	Traffic
		Sunny	0.3E	32	60.0	1.50	89.94	2.8038	2.8075	0.0037	41.1				
		Sunny	0.3E	32	60.0	1.50	89.94	2.8122	2.8163	0.0041	45.6				
	22-Jul-09	Sunny	0.6E	32	60.0	1.50	89.94	2.8678	2.8854	0.0176	195.7	146.0		Soil Nailing,Breaking by backhoe	Traffic
		Sunny	0.6E	32	60.0	1.50	89.94	2.8846	2.8982	0.0136	151.2				
		Sunny	0.6E	32	60.0	1.50	89.94	2.8840	2.8922	0.0082	91.2				
	28-Jul-09	Fine	0.5E	30	60.0	1.50	89.94	2.8586	2.8752	0.0166	184.6	120.5		Soil Nailing, Breaking by backhoe	Traffic
		Fine	0.5E	30	60.0	1.50	89.94	2.8343	2.8428	0.0085	94.5				
		Fine	0.5E	30	60.0	1.50	89.94	2.821	2.8284	0.0074	82.3				
	03-Aug-09	Sunny	0.9E	27	60.0	1.50	89.94	2.8424	2.8580	0.0156	173.5	127.9		Breaking by backhoe,excavation work	Traffic
		Sunny	0.9E	27	60.0	1.50	89.94	2.8441	2.8535	0.0094	104.5				
		Sunny	0.9E	27	60.0	1.50	89.94	2.8300	2.8395	0.0095	105.6				
	07-Aug-09	Fine	0.4E	29	60.0	1.44	86.44	2.8552	2.8653	0.0101	116.8	125.3		Breaking by backhoe,excavation work	Traffic
		Fine	0.4E	29	60.0	1.44	86.44	2.8547	2.8625	0.0078	90.2				
		Fine	0.4E	29	60.0	1.44	86.44	2.8620	2.8766	0.0146	168.9				
13-Aug-09	Cloudy	0.5E	27	60.0	1.44	86.44	2.8058	2.8265	0.0207	239.5	137.7	Breaking by backhoe,excavation work	Traffic		
	Cloudy	0.5E	27	60.0	1.44	86.44	2.8257	2.8344	0.0087	100.6					
	Cloudy	0.5E	27	60.0	1.44	86.44	2.8475	2.8538	0.0063	72.9					
19-Aug-09	Cloudy	0.5E	31	60.0	1.44	86.44	2.8455	2.8557	0.0102	118.0	98.3	Drilling work,Breaking by backhoe	Traffic		
	Cloudy	0.5E	31	60.0	1.44	86.44	2.8690	2.8757	0.0067	77.5					
	Cloudy	0.5E	31	60.0	1.44	86.44	2.8889	2.8975	0.0086	99.5					
25-Aug-09	Sunny	0.8E	32	60.0	1.44	86.44	2.8364	2.8469	0.0105	121.5	78.7	Breaking by backhoe,excavation work	Traffic		
	Sunny	0.8E	32	60.0	1.44	86.44	2.8450	2.8493	0.0043	49.7					
	Sunny	0.8E	32	60.0	1.44	86.44	2.8127	2.8183	0.0056	64.8					

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	14/08/2009 (ET received the complaint on 18 August 2009)
Time	N/A
Monitoring Location	Roof top of Greenview Terrace facing to the construction site (NSR 9)
Parameter	Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	N/A
Possible reason for Action or Limit Level Non-compliance	Daytime Construction activities (Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials)
Actions taken / to be taken	The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on site noise mitigation measures continuously. Noise monitoring frequency would be proposed to increase twice per week by ET.
Remarks	Please refer to the Complaint Investigation Report (CIR-007) attached for details.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 31-Aug-09

Complaint Investigation Report

Contractor: Maeda – CREC – SELI Joint Venture	ET Received Date: 18 August 2009	Ref: CIR – 007
Project: Design and Construction of Tsuen Wan Drainage Tunnel		
COMPLAINANT		
Name: Mrs Cheung (Refer from EPD) Tel: 9844 7887 Fax: Unknown	Address: Unknown	
COMPLAINT INVESTIGATION		
	Description (cause of impact, type of impact and location, etc.)	
	<p><u>Details of the Complaint</u></p> <p>EPD has received a complaint (EPD ref: EP3/N22/RW/17978-09) from Greenview Terrace regarding to daytime construction noise from the outfall construction site. The complaint date was corresponded to 14 August 2009.</p> <p><u>Findings/ Observations</u></p> <p>Daytime construction noise monitoring, in accordance with EM&A Manual is performed by Environmental Team. The monitoring station concerned is NSR9 (i.e. at the roof top of Greenview Terrace facing to the construction site).</p> <p>Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in August 2009. The monitoring results from 6 July 2009 to 25 August 2009 at NSR 9 under EM&A requirements were summarised in the attached table. In accordance with EIAO-TM, the daytime construction noise limit is 75 dB(A) for NSR9. The measured noise levels complied with the limit level in accordance with the EIAO-TM. These cases would also be treated as an action level exceedance on noise and would be reported in next EM&A report.</p> <p>The contractor and the environmental team were also undertaken site investigation on the subject area and also joint meeting on 18 August 2009 in response to the complaint. Noise mitigation measures should be enhanced continuously. The existing mitigation measures during the site investigation were observed as follows:</p> <p><u>Noise</u></p> <ul style="list-style-type: none">• Three layers of sound insulation sheets were installed at three locations of the site area.• Movable noise barriers were used to surround the breaking activities.• Noise insulation materials were used to enclose the breaking tip tightly.	
	<p><u>Conclusion/Proposed Action</u></p> <p>This was a recurrent case from Greenview Terrace. The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are proposed as follows:</p> <ol style="list-style-type: none">1. A staff from the Contractor was designated to take the reading of Leq (5mins) at the roof of Greenview Terrace. In case of the Leq (5min) exceed 73 dB(A), the Contractor would re-schedule the noisy plants to mitigate the escalation of noise level.2. The designated staff was reminded to record all the weather condition including raining and wind speed.3. Tools box talk for the Contractor's Team would be carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.4. Three movable noise barriers had been placed on site and the movable noise barriers would be modified.5. Existing 25 ton rock breaker had been replaced by the another breaker.6. The breaking tap of the 25 ton rock breaker had been replaced by another breaking tap.7. A joint filler wall would be installed at the vertical face of westbound to mitigate the noise rebound from the vertical face to high level of Greenview Terrace.8. Noise monitoring frequency would be proposed to increase twice per week.	

Further to the SSEMC meeting on 6 August 2009, noise monitoring has been increased. The measurement was taken on 10, 12, 15, 17 and 28 August 2009. The noise levels ($L_{eq, 30 \text{ min}}$) were shown in the following table. The measured noise levels were complied with the limit level in accordance with the EIAO-TM.

Date	Start Time	End Time	L_{eq} , dB(A)	Limit Level, dB(A)	Noise Sources
10-Aug-09	10:27	10:57	73	75	Breaker x 2, Backhoe x 1, Traffic Noise
12-Aug-09	09:57	10:27	74.1	75	Breaker x 2, Backhoe x 2, Traffic Noise
15-Aug-09	09:48	10:18	71.5	75	Breaker x 2 & Backhoe x 2, Traffic Noise
17-Aug-09	15:41	16:11	70.9	75	Breaker x 2, Backhoe x 2, Traffic and Aircraft Noise
28-Aug-09	14:34	15:04	73.5	75	Breaker x 2, Excavator x 1, Traffic and Aircraft Noise

Remark:

The location of PME will be changed on and off and the utilization time for each PME may not be in constant.

From the data above and under EM&A requirements, noise level ($L_{eq, 30 \text{ min}}$) was generally in the range of 71 to 74 dB(A) to the nearest integer. As the proposed mitigation measures have not been fully implemented yet, the noise monitoring frequency would be maintained in twice per week until all the above mitigation measures have been implemented on site and then to check whether the mitigation measures are effective.

FOLLOW UP ACTION (S)

For this complaint, ET will continuously review the condition of the site during the routine site inspections and provide reminder to the Contractor. This case has already been reported an action level exceedance on noise and also in complaint log in the monthly EM&A report (August 2009). The updated information will be reported in the coming EM&A report.

Noise monitoring measurement would be carried out twice per week when all the above mitigation measures have been implemented on site in order to check the effectiveness of the mitigation measures. Follow up action for this complaint would be required.

Prepared & Confirmed by:

Name: Terence Kong (ET Leader)

Signature:



Date: 31 August 2009

ATTACHMENTS: Noise Monitoring Data from 6 July 2009 to 25 August 2009.

Noise Monitoring Data from 6 July 2009 to 25 August 2009

Monitoring Locations	Date	Weather Conditions	Temperature (°C)	Wind Speed (m/s)	Wind Direction	Start Time	End Time	Limit Level dB(A)	L _{eq(30min)} dB(A)	Observation / Site Condition	Remark
NSR 9 Greenview Terrace	06-Jul-09	Sunny	31	0.5	S	15:05	15:35	75	72.4	Soil Nailing,Excavation by backhoe	Traffic noise
	16-Jul-09	Sunny	32	0.3	E	10:05	10:35	75	71.4	Soil Nailing,Excavation by backhoe	Traffic noise
	22-Jul-09	Sunny	31	0.6	E	14:05	14:35	75	72.7	Soil Nailing,Excavation & Breaking by backhoe	Traffic noise
	28-Jul-09	Fine	30	0.5	E	15:18	15:48	75	71.4	Soil Nailing,Breaking by backhoe	Traffic noise, aircraft noise
	03-Aug-09	Sunny	27	0.9	E	15:13	15:43	75	72.3	Breaking by backhoe,excavation work	Traffic noise
	14-Aug-09	Cloudy	28	0.2	E	14:35	15:05	75	72.6	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	19-Aug-09	Cloudy	31	1.3	E	13:15	13:45	75	72.1	Drilling,Breaking by backhoe	Traffic noise, aircraft noise
	25-Aug-09	Sunny	32	0.8	E	10:25	10:55	75	73.0	Breaking by backhoe,excavation work	Traffic noise

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	17/08/2009 (ET received the complaint on 21 August 2009)
Time	N/A
Monitoring Location	Podium of Long Beach Garden facing to the construction site (NSR 8)
Parameter	Noise
Action & Limit Levels	When one documented complaint is received / 75 dB(A)
Measured Level	N/A
Possible reason for Action or Limit Level Non-compliance	Daytime Construction activities (Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials)
Actions taken / to be taken	The documented complaint for noise is considered to trigger the action level and the Contractor was also reminded to enhance the on site noise mitigation measures continuously. Noise monitoring frequency would be proposed to increase twice per week by ET.
Remarks	Please refer to the Complaint Investigation Report (CIR-008) attached for details.

Prepared by: Terence Kong

Designation: Environmental Team Leader

Signature:



Date: 31-Aug-09

Complaint Investigation Report

Contractor: Maeda – CREC – SELI Joint Venture		ET Received Date: 21 August 2009		Ref: CIR – 008																															
Project: Design and Construction of Tsuen Wan Drainage Tunnel																																			
COMPLAINANT																																			
Name: Unknown (refer from Mott MacDonald)			Address: Unknown																																
Tel: Unknown																																			
Fax: Unknown																																			
COMPLAINT INVESTIGATION																																			
Description (cause of impact, type of impact and location, etc.)																																			
<p><u>Details of the Complaint</u></p> <p>SOR has received a complaint (SOR ref:(DC/2007/12)/M45/500/02546) from Long Bench Garden regarding to noise nuisance generated from the daytime construction work (rock-breaking) in Portion D of the Site. The complaint date was corresponded to 17 August 2009.</p> <p><u>Findings/ Observations</u></p> <p>Daytime construction noise monitoring, in accordance with EM&A Manual is performed by Environmental Team. The monitoring station concerned is NSR8 (i.e. at the Podium of Long Beach Garden facing to the construction site).</p> <p>Soil nailing, excavation, rock breaking and drilling, loading and unloading the materials were generally observed during monitoring period in August 2009. The monitoring results from 3 August 2009 to 25 August 2009 at NSR 8 were summarised as below:</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Start Time</th> <th>End Time</th> <th>L_{eq}, dB(A)</th> <th>Limit Level, dB(A)</th> <th>Noise Sources</th> </tr> </thead> <tbody> <tr> <td>3-Aug-09</td> <td>14:25</td> <td>14:55</td> <td>68.0</td> <td>75</td> <td>Breaking by backhoe, excavation work</td> </tr> <tr> <td>14-Aug-09</td> <td>15:15</td> <td>15:45</td> <td>65.0</td> <td>75</td> <td>Drilling work, breaking by backhoe</td> </tr> <tr> <td>19-Aug-09</td> <td>14:00</td> <td>14:30</td> <td>68.9</td> <td>75</td> <td>Drilling work, breaking by backhoe</td> </tr> <tr> <td>25-Aug-09</td> <td>11:15</td> <td>11:45</td> <td>66.3</td> <td>75</td> <td>Breaking by backhoe, excavation work</td> </tr> </tbody> </table> <p>In accordance with EIAO-TM, the daytime construction noise limit is 75 dB(A) for NSR8. The measured noise levels complied with the limit level in accordance with the EIAO-TM. These cases would also be treated as an action level exceedance on noise and would be reported in next EM&A report.</p> <p>The contractor and the environmental team were also undertaken site investigation on the subject area in response to the complaint. Noise mitigation measures should be enhanced continuously due to this complaint. The mitigation measures during the site investigation were observed as follows:</p> <ul style="list-style-type: none"> • Three layers of sound insulation sheets were installed at three locations of the site area. • Movable noise barriers were used to surround the breaking activities. • Noise insulation materials were used to enclose the breaking tip tightly. 						Date	Start Time	End Time	L _{eq} , dB(A)	Limit Level, dB(A)	Noise Sources	3-Aug-09	14:25	14:55	68.0	75	Breaking by backhoe, excavation work	14-Aug-09	15:15	15:45	65.0	75	Drilling work, breaking by backhoe	19-Aug-09	14:00	14:30	68.9	75	Drilling work, breaking by backhoe	25-Aug-09	11:15	11:45	66.3	75	Breaking by backhoe, excavation work
Date	Start Time	End Time	L _{eq} , dB(A)	Limit Level, dB(A)	Noise Sources																														
3-Aug-09	14:25	14:55	68.0	75	Breaking by backhoe, excavation work																														
14-Aug-09	15:15	15:45	65.0	75	Drilling work, breaking by backhoe																														
19-Aug-09	14:00	14:30	68.9	75	Drilling work, breaking by backhoe																														
25-Aug-09	11:15	11:45	66.3	75	Breaking by backhoe, excavation work																														

Conclusion/Proposed Action

The documented complaint for noise is considered to trigger the action level and the Contractor was reminded to enhance the on-site noise mitigation measures continuously. The enhanced mitigation measures are recommended as follows:

1. Tools box talk for construction team should be carried out for reminding that the movable barrier should be placed to the breaking activities as much as possible.
2. The movable noise barriers had been placed on site and should also be placed facing to the Long Bench Garden.
3. A joint filler wall would be installed at the vertical face of slope to mitigate the noise rebound.
4. Noise monitoring frequency would be increased to twice per week starting from the week of 24 August 2009.

Noise monitoring frequency was increased by ET due to this complaint. The measurement was taken on 28 August 2009. The noise levels ($L_{eq, 30 \text{ min}}$) were shown in the following table. The measured noise levels were complied with the limit level in accordance with the EIAO-TM.

Date	Start Time	End Time	L_{eq} , dB(A)	Limit Level, dB(A)	Noise Sources
28-Aug-09	16:15	16:45	66.4	75	Breaker x 1, Excavator x 2, Traffic Noise & Aircraft Noise

FOLLOW UP ACTION (S)

For this complaint, ET will continuously review the condition of the site during the routine site inspections and provide reminder to the Contractor. This case has already been reported an action level exceedance on noise and also in complaint log in the monthly EM&A report (August 2009). The updated information will be reported in the coming EM&A report.

Noise monitoring measurement would be carried out twice per week when all the above mitigation measures have been implemented on site in order to check the effectiveness of the mitigation measures. Follow up action for this complaint would be required.

Prepared & Confirmed by:

Name: Terence Kong (ET Leader)

Signature:



Date: 31 August 2009

ATTACHMENTS: Nil

Interim Notifications of Environmental Quality Limits Exceedances

Incident Report on Action Level or Limit Level Non-compliance

Project	Tsuen Wan Drainage Tunnel
Date	28-Aug-09
Time	10:55 AM
Monitoring Location	Sik Sik Yuen Ho Fung College (I-1)
Parameter	Suspended Solid
Action & Limit Levels	8.85 / 10.17
Measured Level	3.35 (higher than 120% of control station's SS)
Possible reason for Action or Limit Level Non-compliance	A low SS level of 2.6 is recorded at Control Station (I-1-C)
Actions taken / to be taken	The measured SS level was below baseline Action / Limit Level and was within the range of baseline SS concentration (1-10.5mg/L). Site cleaning & tidying, shortcreting to the shaft wall were undertaken during the measurement and no direct disturbance was observed from the site. Thus, the exceedance is considered to be contributed by natural variation and no action should be required.
Remarks	Following mitigation measures were provided: (1) sandbags were used at the gap of the bridge to avoid wastewater from site activities directly running down to the channel of I-1. (2) The working site was segregated with a wall and no wastewater was observed down to the channel-I1. (3) Sand/silts removal facilities was installed at the location of I-1.

Prepared by: Terence Kong
 Designation: Environmental Team Leader

Signature:



Date: 04-Sep-09

Photographic record for exceedance of Suspended Solid recorded at Sik Sik Yuen Ho Fung College (I-1) on 28-Aug-09



Site photo



Photo taken at I-1



Photo taken at I-1-C