Stanger Asia

ENVIRONMENTAL MONITORING AND AUDIT REPORT

FOR

CONTRACT No. CV/2002/13

FILL BANK AT TUEN MUN AREA 38

JANUARY 2004

(Revision No. 0)

Report No.: ET12008

Certified by: ____________ Date: 6/02/2004

Mr. Chris Shenfield
Environmental Team Leader
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Verified by: ____________ Date: 10/2/2004

Independent Environmental Checker
for MateriaLab Consultants Ltd.

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EXECUTIVE SUMMARY.

This is the 7th monthly Environmental Monitoring and Audit (EM&A) report for Contract No. CV/2002/13 – Fill Bank at Tuen Mun Area 38. The site has been in operation as a public filling area as part of the reclamation. The site is 24 hours operated except during the Chinese New Year holidays to provide a stable outlet for public fill to serve the construction industry. This report covers the monitoring works conducted during the month of January 2004.

Construction Activities for the Reported Period.

- Public fill operation.
- Construction of Engineer's Principal Site Office and queuing area.

Air Quality Monitoring.

Two stations (A1 and A2) have been identified as the locations for the monitoring of 24-hour and 1-hour Total Suspended Particulates (TSP). The Monitoring of 24-hour TSP was carried out on five occasions at A1 and A2. Monitoring of 1-hour TSP was carried out on fifteen occasions at A1 and A2. There was no exceedance to the set Action and Limit levels for both parameters at both stations during the reporting period.

Water Quality Monitoring.

Water quality in terms of turbidity, dissolved oxygen, suspended solids, temperature, and salinity, was carried out on twelve occasions at FM1, FM2, FC1 and FC2. There were two limit level exceedances to the depth-averaged turbidity and two limit level exceedances to the depth-averaged suspended solids during the reporting period. Fill materials were being transferred from barges when exceedances were detected. However, no discharge from the Fill Bank was observed. Therefore, these exceedances may possibly due to materials lost into the sea during transferral or discharge from nearby shoreline and outfall. The Contractor was recommended to implement all necessary measures to avoid threaten the water quality.

Landscape Audit

In this reporting period, there was no specific site observation regarding the landscape aspect.

Waste Management.

149,000m^3 public fill was collected to stockpiling area. 19.83t C&D waste and general refuse were disposed of at WENT Landfill. Chemical waste generated was stored in temporary storage area.

Complaints and Notifications of Summonses and Successful Prosecutions.

No complaints or notification of summonses received this reported period.

Site Inspections.

Five weekly site inspections were conducted on 2nd, 8th, 14th, 20th and 30th January 2004. Major observations are summarised in the following table.

Observations	Actions by Contractor	Outcome
Lubricant container was found on bare ground. (20th January 2004)	Placed the lubricant containers in drip trays.	Lubricant containers were placed in drip trays. (30th January 2004)
Debris was found in the sedimentation tanks. (20th January 2004)	Clear the debris in the sedimentation tanks	To be observed in the next reporting period.
C&D waste was observed along haul road near the reception office. (2nd January 2004)	Stored the waste in skips and cleared it regularly.	The waste was stored in skips. (14th January 2004)

An Independent Environmental Checker (IEC) audit was conducted on 20th January 2004 with the Environmental Team. Major observations are summarized in the following table.

Observations	Actions by Contractor	Outcome
Debris was observed in the desilting chamber at the seafront, u-channel and the sand traps.	Cleared the debris regularly.	The debris is being removed regularly.
The automatic wheel washing facility was filled with deposits.	Cleaned up the deposits.	The situation was rectified. (30th January 2004)
Slope surfaces have not been hydroseeded.	To hydroseed the slope surfaces once they are suitable for hydroseeding.	Hydroseeding is planned to be carried out in the next reporting period.

Future Key Issues.

The tentative works activities, predicted impacts and areas of environmental concern for the following month are summarised in the following table.

Works Activities	Predicted Impacts	Proposed Mitigation Measures
Public filling operation.	Dust Water	- Dampening of fill materials. - Avoid stockpiling fill materials near seafront.
Construction of Engineer's Principal Site Office.	Dust Waste	- Dusty generating activities shall be conducted with water spray. - C&D waste shall be removed as far as practicable.

1. INTRODUCTION.

1.1 Background.

Stanger Asia Ltd. has been commissioned by the Penta-Ocean Construction Co. Ltd. to provide an Environmental Team (ET) to monitor air and water quality and audit landscape works for Contract No.CV/2002/13. The team is to take a pro-active role in all issues, which may be of environmental concern during the establishment, operation and decommissioning phases of the Fill Bank at Tuen Mun Area 38..

The Independent Environmental Checker (IEC) appointed for this project is Materialab Consultants Ltd.

In this report, the air and water quality monitoring works and landscape audit conducted for the January 2004 will be detailed and reviewed. All monitoring works were carried in accordance to "*Agreement No, PW 01/2002 Project Profile for Fill Bank at Tuen Mun Area 38, Environmental Monitoring and Audit Manual"*.

1.2 Report Structure.

The purpose of this report is to detail and review the air and water quality monitoring works and landscape audit undertaken during January 2004. The impact forecast for the next reporting month and the schedules of monitoring works for the following month is also given.

The report follows the format given below:

Section 1	Introduction and background information to the content of this report.
Section 2	This section gives the information of the project.
Section 3	This section summarises all the environmental permits and licenses.
Section 4	Summary of the EM&A requirements is presented.
Section 5	This section details the implemented mitigation measures.
Section 6	Details monitoring results.
Section 7	Audit the monitoring results.
Section 8	The status for solid and liquid waste management for the site is overviewed.
Section 9	Complaints, notifications of summons and successful prosecutions are summarized.
Section 10	This section gives the predicted impacts of the construction activities.
Section 11	This section gives a conclusion in relation to all monitoring activities.

2. PROJECT INFORMATION.

2.1 Site Description.

The works mainly comprise the construction of temporary storm water system, setting up of C&D material loading/unloading facilities, setting up/ refurnishing site facilities, stockpiling of 4.9 million m^3 of public fill, and decommissioning of the temporary fill bank.

The site layout plan is shown in Figure 2.1.

2.2 Project Organization.

Mr. L.M. Chan is the Engineer's Representative for the Civil Engineering Department, Government of the HKSAR. (Tel: 2762 5602, Fax: 2714 0113).

The Independent Environmental Checker (IEC) for this project is headed by Mr. Joseph Poon - Manager of Materialab Consultants Ltd. (Tel: 2450 8238, Fax: 2450 6138).

Mr. Lok Wah Fung is the Site Agent for Penta-Ocean Construction Co., Ltd. (Tel: 2491 1584, Fax: 2496 0433).

The Environmental Team (ET) for the project is Stanger Asia Ltd. The team is headed by Mr Chris Shenfield – Senior Environmental Scientist. (Tel: 2682 1203, Fax: 2682 0046).

The Organization Chart with the key personnel contacts names and telephone numbers is given in Appendix I.

2.3 Construction Programme.

The overall construction programme is given in Appendix IX. Details of the construction activities are listed below.

- Site clearance;
- Construction of storm water drainage system;
- Stockpiling of 4.9 million m^3 of public fill;
- Construction of landscape works; and
- Removal of stockpiled public fill.

3. ENVIRONMENTAL PERMITS AND LICENSES.

The summary of the status of all environmental permits, licenses and notification for this project as at January 2004 is summarized in the following table.

Table 3.1 Summary of the Environmental Permits and Licenses

Description	Licence/Permit No.	Date of Issue	Date of Expiry	Status
Environmental Permit	EP-153/2003	13-Feb-03	--	Superseded
Registration of Chemical Waste Producer	WPN5296-421-P2800-03	05-Aug-03	--	Issued
Amended Environmental Permit	EP-153/2003/A	30-Oct-03	--	Issued
Construction Noise Permit	GW-TW0385-03	10-Nov-03	14-May-04	Issued

4. SUMMARY OF EM&A REQUIREMENTS.

4.1 Air Quality.

Monitoring Location.

The project has two designated locations (A1 & A2) for the monitoring of air quality. A1 is a fixed location in the vicinity of the site office to monitoring the TSP levels at River Trade Terminal and A2 is a movable location to the western boundary of the site that is designed to move as works progress. The air monitoring locations are shown in Figure 4.1.

Table 4.1 Coordinates of Air Quality Monitoring Stations

Station	HK Metric Grid – Easting	HK Metric Grid - Northing
A1	811368	825593
A2	811126*	825132*

** - Coordinates of present location.*

Methodology

Measurement of 24-hour and 1-hour TSP levels were carried out in accordance to the high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50). When positioning the high volume samplers, the following requirements have been observed:

- a horizontal platform with appropriate support to secure the high volume sampler against gusty wind, should be provided;
- horizontal distance between the high volume samplers and an obstacle, such as buildings, must be at least twice the height of the obstacle protruding above the high volume samplers;
- a minimum separation of 2 m should be provided from walls, parapets, and penthouses for rooftop high volume samplers;
- a minimum separation of 2 m should be provided from any supporting structure measured horizontally;
- there should not be any furnace or incinerator flues nearby;

- there should be unrestricted airflow around the high volume samplers;
- a minimum separation of 20 m should be provided from the dripline;
- any wire fence and gate employed to protect the high volume samplers should not cause any obstruction during monitoring.

All relevant data including temperature, pressure, weather conditions, elapsed-timer meter reading for the start and finish of the sampling period, identification and weight of the filter paper, and other special phenomena were recorded.

Monitoring Equipment and Calibration Details.

Andersen GMW Model GS2310 high volume samplers were used to carry out the monitoring of 24-hour and 1-hour TSP. The high volume sampler is in compliance with the specifications as listed in the Environmental Schedule, given below:

- 0.6 – 1.7 m^3/min (20-60 SCFM) adjustable flow range;
- equipped with a timing / control device with 5 minutes accuracy over 24 hours operations;
- installed with elapsed-time meter with 2 minutes accuracy over 24 hours operations;
- capable of providing a minimum exposed area of 406 cm^2 (63 in^2);
- flow control accuracy: 2.5% deviation over 24-hr sampling period;
- equipped with shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with peaked roof inlet, incorporated with manometer;
- able to hold and seal the filter paper to the sampler housing at horizontal position;
- easy to change filter; and
- capable of operating continuously for 24-hr period.

The high volume sampler is calibrated at bi-monthly intervals. The calibration kit (Andersen Model G2535) comprising pressure plates and a transfer standard is traceable to the internationally recognized standard. Calibration records for the high volume sampler is given in Appendix II of this report.

Laboratory Measurement.

Laboratory measurements were carried out in Stanger Asia Ltd. own HOKLAS accredited laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments.

Clean filter papers of size 8”x10” with no pinholes were labelled before sampling. They were conditioned in a dessicator with less than 50% relative humidity for over 24 hours and pre-weighed before use for sampling.

After sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag. The filter papers were then returned to the laboratory for reconditioning in the dessicator with less than 50% relative humidity

followed by accurate weighing on an electronic balance regularly calibrated against a traceable standard and readable to 0.1 mg.

Stanger Asia Ltd. operates comprehensive quality assurance and quality control programmes. For QA/AC procedures, all filters were equilibrated and weighed repeatedly until the difference of two consecutive results was less than 0.5 mg.

Monitoring Parameters Frequency.

Table 4.2 Air Quality Monitoring Frequency

Monitoring Locations	Parameter	Frequency
A1 & A2	24-hr TSP	Once in every six days
	1-hr TSP	Three times in every six days

Action and Limit Levels.

The Action levels for air quality monitoring were established from the impact monitoring data of Contract No. CV/2000/01 prior to the commencement of the fill bank utilising the criteria laid out in *section 4.7* of the EM&A Manual for the project. The Limit levels for air quality monitoring has been set in line with statutory guidelines for air quality in Hong Kong. Action and Limit levels for both 24-hour and 1-hour TSP are given in the following table.

Table 4.3 Action and Limit Levels for the Project

Parameter Monitored	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
1-hour TSP	344	500
24-hour TSP	192	260

4.2 Water Quality.

Monitoring Locations.

The EM&A Manual produced for this project has proposed two monitoring stations (FM1 & FM2) and two control stations (FC1 & FC2) for the carrying out of water quality monitoring. Control Station FC1 will act as upstream control station for the mid-ebb tide with control station FC2 acting as upstream control stations for the mid-flood tide.

The designated monitoring stations are shown in Figure 4.2.

Methodology.

Measurements are taken at three water depths, namely 1m below water surface, mid-water and 1m above seabed at both mid-flood and mid-ebb tides, except where the water depth less than 6m, when the mid-depth station may be omitted. Should the water depth have been less than 3m, only the mid-depth was monitored.

Two measurements of turbidity, dissolved oxygen (mg/L), dissolved oxygen (% saturation) and temperature at each depth of each station is taken. The probes

are removed from the water after the first measurement and then redeployed for the second measurement. If the difference between in value between the first and second reading of each set is more than 25% of the value of the first reading, the readings are discarded and further readings taken. Replicate samples of suspended solids measurements are taken at each depth and at each water quality monitoring and control station. The samples are kept in a chilled condition during delivery to the laboratory ad before commencement of analysis. For the purpose of evaluating the water quality, all values for suspended solids and turbidity shall be depth-averaged.

During monitoring works the following shall also be recorded:

- monitoring location;
- depth of water;
- time;
- weather conditions including ambient temperature;
- water temperature;

Monitoring Equipment.

The following equipment was employed for routine water quality monitoring.

- Dissolved Oxygen meter: YSI model 58 with stirrer
- Turbidity meter: Hach 2100P
- Echo sounder: Hummingbird 100SX
- Water sampler: Kahlisco 135WB203
- GPS receiver: Trimble NT2002D
- Thermometer: YSI model 58

Monitoring Equipment Calibration Details.

All on-site monitoring equipment was calibrated three-monthly at Stanger Asia's HOKLAS accredited laboratory. An on-site calibration check was carried out prior to the taking of measurements in accordance with standard water quality monitoring procedures.

Equipment calibration details were given in Appendix II.

Laboratory Analysis.

The laboratory measurements of suspended solids were carried out at
Stanger Asia Limited, a HOKLAS accredited laboratory in accordance with Method No. 2540D 17th Edition of APHA.

Stanger Asia operates a comprehensive quality assurance and quality control programmes for QA/AC procedures in accordance with the requirements of HOKLAS accreditation, all filters were equilibrated and weighted repeatedly until the difference of two consecutive results is less than 0.5 mg.

Monitoring Parameters and Frequency.

Table 4.4 Water Quality Monitoring Frequency

Monitoring Locations	Monitoring Parameters	Frequency	Requirements
Designated Control Stations: FC1 & FC2. Designated Monitoring Stations: FM1 & FM2.	Temperature, Salinity, Dissolved Oxygen, Turbidity, Suspended Solids.	Three days per week.	At three depths during mid-ebb and mid-flood tides.

Action and Limit Levels.

The Action and Limit levels for water quality monitoring were established from the impact monitoring data of Contract No. CV/2000/01 prior to the commencement of the fill bank utilising the criteria laid out in *section 6.8* of the EM&A Manual for the project.

Table 4.5 Action and Limit Level for Water Quality

Parameter	Action level	Limit level
Dissolved Oxygen in mg/L. Surface & Middle Bottom.	 <4.78mg/L <4.16mg/L	 <4mg/L <2mg/L
Suspended Solids (SS) in mg/L (depth-averaged)	>120% of upstream control station's SS at the same time of the same day.	>130% of upstream control station's SS at the same tide of the same day .
Turbidity (Tby) in NTU	>120% of upstream control station's Tby at the same tide of the same day.	>130% of upstream control station's Tby at the same tide of the same day.

All the figures given in the table are used for reference only and the EPD may amend the figures whenever necessary.

4.3 Event and Action Plans.

The Event and Action Plans for air and water are attached in Appendix III of this report.

5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES.

The contractor implemented various environmental mitigation measures as recommended in the Project Profile and Environmental Permit. The implementation status is attached in Appendix IV and summarised as follows:

- Wheel washing facilities were provided at the exit point of the site and the wheel washing bay was cleared regularly.
- Slopes were compacted as far as practicable.
- Site accesses were covered with concrete.

- Waste collection points were maintained and cleaned on a regular basis.
- Hoarding was erected along Lung Mun Road and near River Trade Terminal.
- Some oil drums were put in drip trays.
- Water trucks were in operation.
- Buffer trees were planted.
- Speed limit warning signs were posted.

6. MONITORING RESULTS.

6.1 Completed Monitoring Works.

Table 6.1 gives the completed monitoring works for the reported period.

Table 6.1 Completed Monitoring Works for January 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				January 1	**2** Site Inspection WQM (Ebb: 08:46) (Flood: 15:06)	**3**
4	**5** 24 – hr TSP 1 – hr TSP WQM (Ebb: 11:13) (Flood: 16:31)	**6**	**7** WQM (Ebb: 12:45) (Flood: 08:02)	**8** Site Inspection	**9** WQM (Ebb: 13:58) (Flood: 09:07)	**10** 24 – hr TSP 1- hr TSP
11	**12** WQM (Ebb: 16:03) (Flood: 10:49)	**13**	**14** WQM (Ebb: 17:50) (Flood: 12:06) Site Inspection	**15**	**16** 24 – hr TSP 1 – hr TSP WQM (Ebb: 06:47) (Flood: 13:31)	**17**
18	**19** WQM (Ebb: 11:03) (Flood: 15:57)	**20** Site Inspection 24 – hr TSP 1 – hr TSP	**21** WQM (Ebb: 12:49) (Flood: 07:44)	**22**	**23**	**24**
25	**26** WQM (Ebb: 16:22) (Flood: 10:50)	**27** 24 – hr TSP 1 – hr TSP	**28** WQM (Ebb: 18:00) (Flood: 11:47)	**29**	**30** WQM (Ebb: 05:59) (Flood: 12:41) Site Inspection Landscape Audit	**31**

Notes: *1. 24 –hr TSP (monitored once every 6 days) at monitoring locations A1 and A2.*
2. 1 hour TSP (monitored three times every six days when highest level of dust generation expected) at monitoring locations A1 and A2.
3. WQM - water quality monitoring three times per week, on mid-flood and mid-ebb tides. Days of monitoring to be separated by at least 36 hours. Monitoring locations FC1, FM1, FM2 & FC2.
4. Site inspections to be carried out once per week.
5. Auditing of landscape works to be carried out once per month.

6.2 Air Quality Monitoring.

Impact monitoring of 24-Hour TSP was conducted on five occasions at A1 and on five occasions at A2, with the monitoring of 1-Hour TSP being conducted on fifteen occasions at A1 and on fifteen occasions at A2 this reported period. Monitoring of TSP on 21.01.2004 was conducted one day earlier as the power supply would be suspended during the Lunar Year Holiday.

The monitoring records for 24-hour and 1-hour TSP are given in the following table. Details of monitoring results are given in Appendix V**.** The results are presented graphically in Figures 6.1 and 6.2.

Table 6.2 Results of 24-hour TSP Monitoring

Date	A1, µg/m^3	Exceedance (Y/N)	A2, µg/m^3	Exceedance (Y/N)
05/01/2004	188	N	178	N
10/01/2004	113	N	166	N
16/01/2004	169	N	151	N
20/01/2004	56	N	166	N
27/01/2004	54	N	161	N
Action Level	192 µg/m3			
Limit Level	260 µg/m^3			

Table 6.3 Results of 1-hour TSP Monitoring

Date	A1, µg/m^3	Exceedance (Y/N)	A2, µg/m^3	Exceedance (Y/N)
05/01/2004	291	N	306	N
05/01/2004	321	N	309	N
05/01/2004	306	N	259	N
10/01/2004	263	N	326	N
10/01/2004	324	N	321	N
10/01/2004	290	N	289	N
16/01/2004	307	N	308	N
16/01/2004	225	N	297	N
16/01/2004	314	N	248	N
20/01/2004	148	N	241	N
20/01/2004	65	N	156	N
20/01/2004	72	N	130	N
27/01/2004	214	N	192	N
27/01/2004	208	N	274	N
27/01/2004	215	N	235	N
Action Level	344 µg/m^3			
Limit Level	500 µg/m^3			

The wind monitoring station has been installed. Wind speed and direction data from the station is given in Appendix XI.

6.3 Water Quality Monitoring.

Water monitoring was carried out on twelve occasions at FM1, FM2, FC1 and FC2.

Results for water quality monitoring are summarised in the following tables. Details of monitoring results are presented in Appendix VI. Graphical presentations of the results are shown in Figure 6.3 – Figure 6.10.

Table 6.4 Summary of Water Quality Monitoring Data

Sample Location	Surface & Middle Averaged Dissolved Oxygen (Range), mg/L	Bottom Averaged Dissolved Oxygen (Range), mg/L	Depth Averaged Turbidity (Range), NTU	Depth Averaged Suspended Solids (Range), mg/L
FM1	7.68 (5.72-9.16)	7.81 (5.57-9.21)	4.35 (2.32-9.92)	9.0 (5.0-17.5)
FM2	7.77 (5.77-9.17)	7.79 (5.40-9.39)	4.19 (2.32-10.87)	8.6 (5.3-18.7)
FC1	7.68 (5.55-9.23)	7.74 (4.40-9.42)	4.38 (2.18-8.01)	8.5 (5.0-15.7)
FC2	7.78 (5.31-9.22)	7.80 (5.43-9.48)	3.97 (2.13-7.12)	8.4 (5.3-13.2)

7. AUDIT REPORT.

7.1 Air Quality Monitoring.

No exceedance to set Action and Limit levels for either 24 or 1-Hour TSP monitoring was recorded at air monitoring station A1 and A2 in this reported period.

Elevated results below the Action limit were reported for this month's monitoring data. The Contractor is reminded to implement and maintain all necessary mitigation measures to suppress dust generation.

7.2 Water Quality Monitoring.

There were number of exceedances to Limit Level for turbidity and suspended solids in this reported period. Total number of exceedances in the reporting month is summarized in Table 7.1

Table 7.1 Number of Water Quality Exceedances in The Reporting Period

Parameter	Number of Occasions Monitored	Exceedance Level		Total
		Action	Limit	
Surface & Middle Dissolved Oxygen	48	0	0	0
Bottom Dissolved Oxygen	48	0	0	0
Turbidity	48	0	2	2
Suspended Solids	48	0	2	2
Total	192	0	4	4

There were 4 limit level exceedances during the reporting period. Details of exceedances are presented in the water quality monitoring data in Appendix VI.

Two exceedances of depth-averaged turbidity to the limit level and two exceedances of depth-averaged suspended solids to the limit level were reported on 28.01.2004 during flood tide. . Fill materials were being transferred from barges when exceedances were detected. However, no discharge from the Fill Bank was observed. Therefore, these exceedances may possibly due to materials lost into the sea during transferral or discharge from nearby shoreline and outfall. The Contractor was recommended to implement all necessary measures to avoid threaten the water quality.

7.3 Site Inspections.

Five weekly site inspections were conducted on 2nd, 8th, 14th, 20th and 30th January 2004. Observations by ET, action by the Contractor and outcome are summarised in the following table.

Table 7.1 Summary of Findings, Actions and Outcomes of Site Inspection by ET

Observations	Actions by Contractor	Outcome
Lubricant container was found on bare ground. (20th January 2004)	Placed the lubricant containers in drip trays.	Lubricant containers were placed in drip trays. (30th January 2004)
Debris was found in the sedimentation tanks. (20th January 2004)	Clear the debris in the sedimentation tanks	To be observed in the next reporting period.
C&D waste was observed along haul road near the reception office. (2nd January 2004)	Stored the waste in skips and cleared it regularly.	The waste was stored in skips. (14th January 2004)

The Independent Environmental Checker (IEC) conducted at audit on 20th January 2004. The major observations were summarized in the following table.

Table 7.2 Summary of Findings, Actions and Outcomes of Site Inspection by IEC

Observations	Actions by Contractor	Outcome
Debris was observed in the desilting chamber at the seafront, u-channel and the sand traps.	Cleared the debris regularly.	The debris is being removed regularly.
The automatic wheel washing facility was filled with deposits.	Cleaned up the deposits.	The situation was rectified. (30th January 2004)
Slope surfaces have not been hydroseeded.	To hydroseed the slope surfaces once they are suitable for hydroseeding.	Hydroseeding is planned to be carried out in the next reporting period.

7.4 Landscape and Visual.

A landscape audit was conducted on 30th January 2004. Hoarding has been erected along Lung Mun Road and the River Trade Terminal. Buffer trees were planted along the northern perimeter of the site. As indicated by the Contractor, slope surfaces of the fill bank will be hydroseeded in the next reporting period.

8. WASTE MANAGEMENT.

149,000m^3 public fill was collected to stockpiling area. 19.83t C&D waste and general refuse were disposed of at WENT Landfill. Chemical waste generated was stored in temporary storage area.

9. COMPLAINTS, NOTIFICATIONS OF SUMMONSES AND SUCCESSFUL PROSECUTIONS.

No complaints received this month. Complaint Log is attached in Appendix VII. Cumulative statistics on complaints, notifications of summonses and successful prosecutions are attached in Appendix VIII.

10. FUTURE KEY ISSUES.

The following are the scheduled construction activities for the next reported period. Scheduled monitoring activities for the following month are given in Appendix IX.

Table 10.1 Works Programme for February 2004

Works Activities	Predicted Impacts	Proposed Mitigation Measures
Public filling operation.	Dust Water	- Dampening of fill materials. - Avoid stockpiling fill materials near seafront.
Construction of Engineer's Principal Office.	Dust Waste	- Dusty generating activities shall be conducted with water spray. - C&D waste shall be removed as far as practicable.

11. CONCLUSION.

All results for the air quality monitoring conducted this month were acceptable with no exceedance to set Action or Limit levels for either 24 or 1-Hour TSP level being recorded at monitoring locations A1 (vicinity of Engineer's Office) and A2 (western site boundary). However some elevated results, when compared to baseline data, were noted in this reported period. The Contractor is reminded to implement and maintain all the required mitigation measures in relation to air quality.

In relation to the monitoring of water quality, there were four limit level exceedances during the reporting period. Since no discharge from the Fill Bank was observed, these exceedances may possibly due to materials lost into the sea during transferral or discharge from nearby shoreline and outfall. The Contractor is reminded to implement all necessary mitigation measures to avoid deteriorating the water quality.

No specific observation was reported from landscape audit.

Figures

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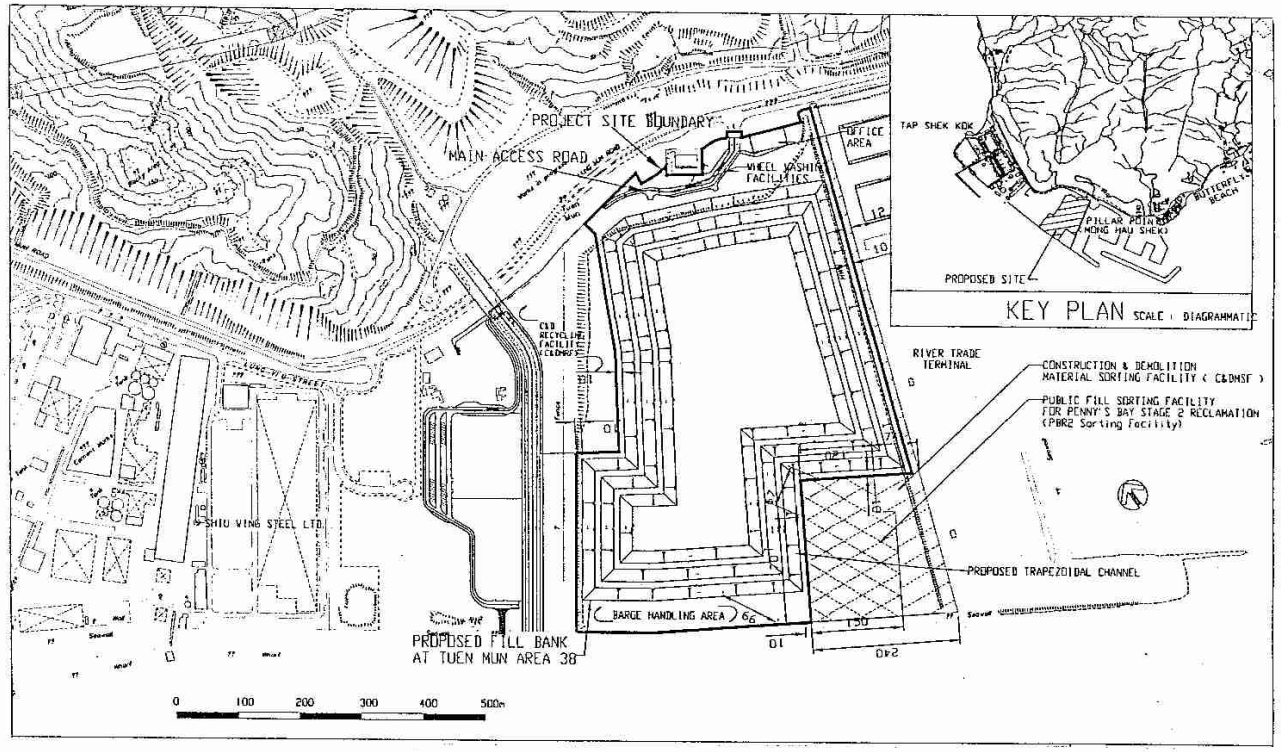

Figure 2.1 - The Site Layout Plan

G/F., 1/F., & 3/F., Din Wai Industrial Building, 13 On Chuen Street, Fanling, New Territories, HONG KONG. Tel: 852- 2682 1203 Fax: 852- 2682 0046 E-mail address: stanger@stanger.com.hk

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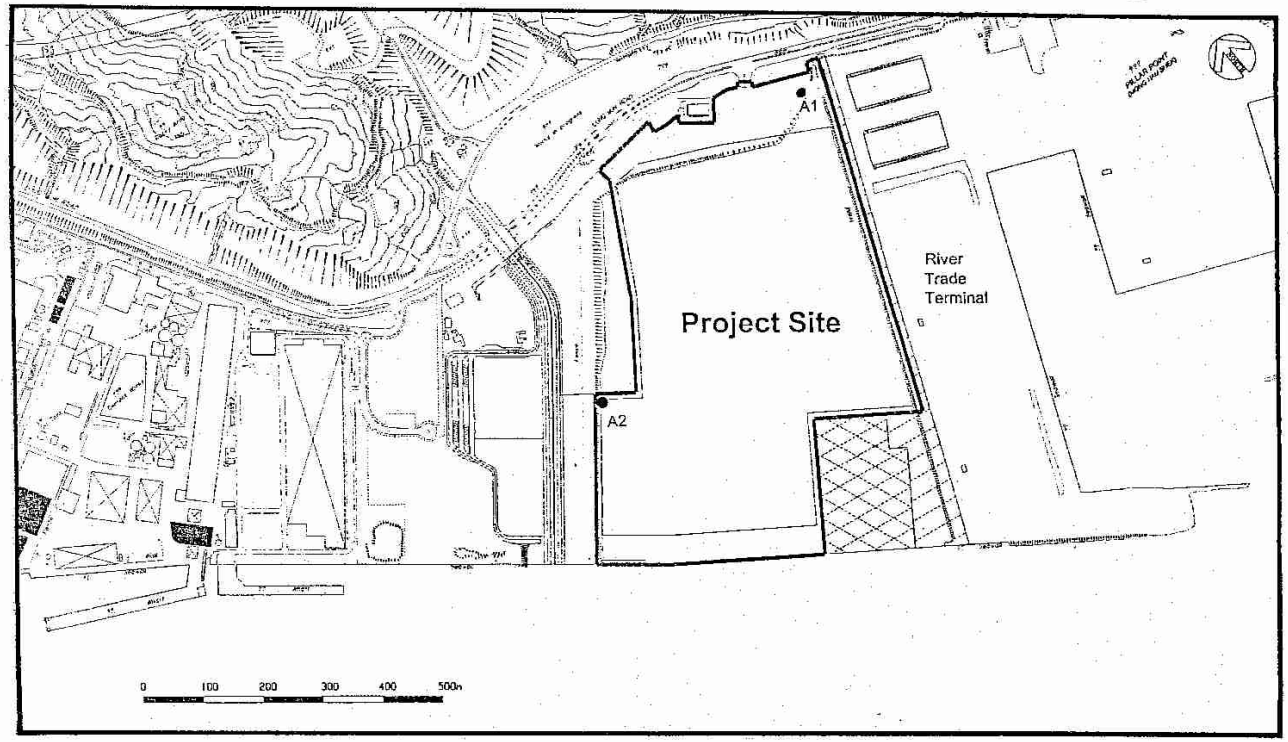

Figure 4.1 – Air Quality Monitoring Stations

G/F., 1/F., & 3/F., Din Wai Industrial Building, 13 On Chuen Street, Fanling, New Territories, HONG KONG. Tel: 852- 2682 1203 Fax: 852 2682 0046 E-mail address: stanger@stanger.com.hk

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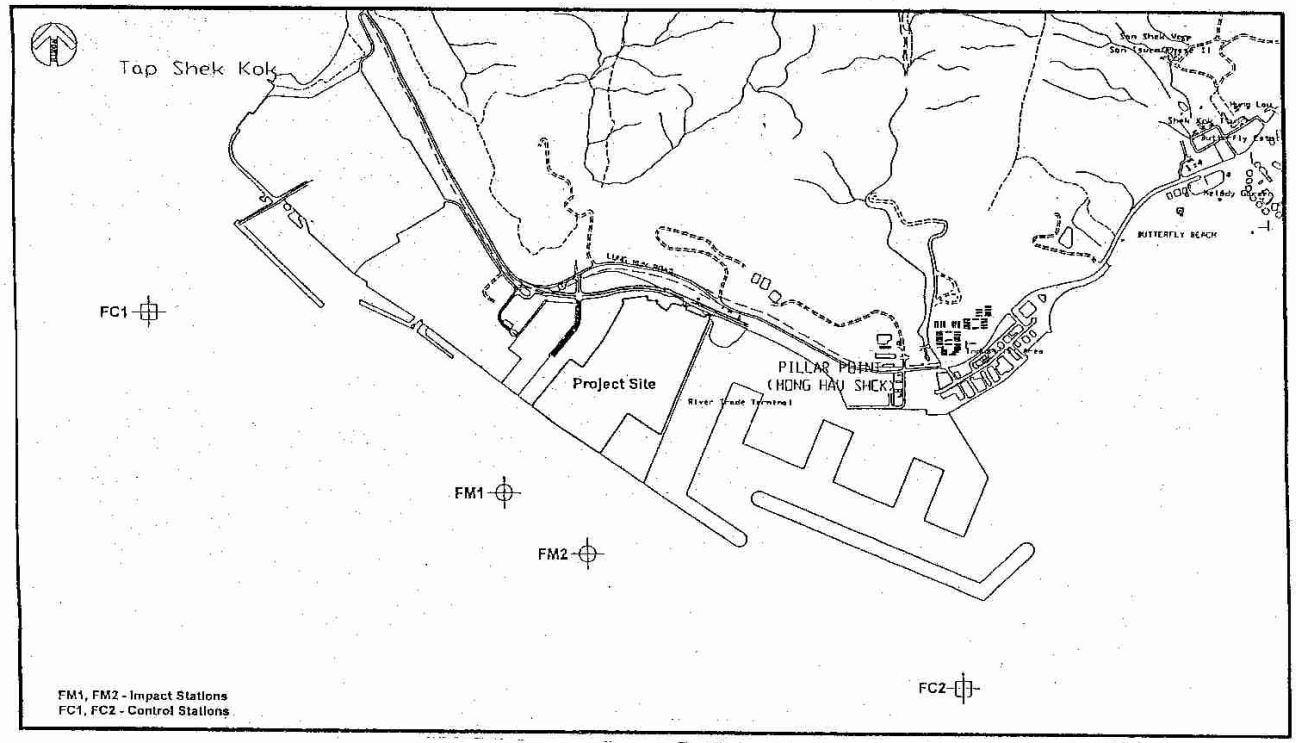

Figure 4.2 – Water Quality Monitoring Stations

G/F., 1/F., & 3/F., Din Wai Industrial Building, 13 On Chuen Street, Fanling, New Territories, HONG KONG. Tel: 852- 2682 1203 Fax: 852- 2682 0046 E-mail address: stanger@stanger.com.hk

Figure 6.1 - Graphical Plot for 24-hr TSP

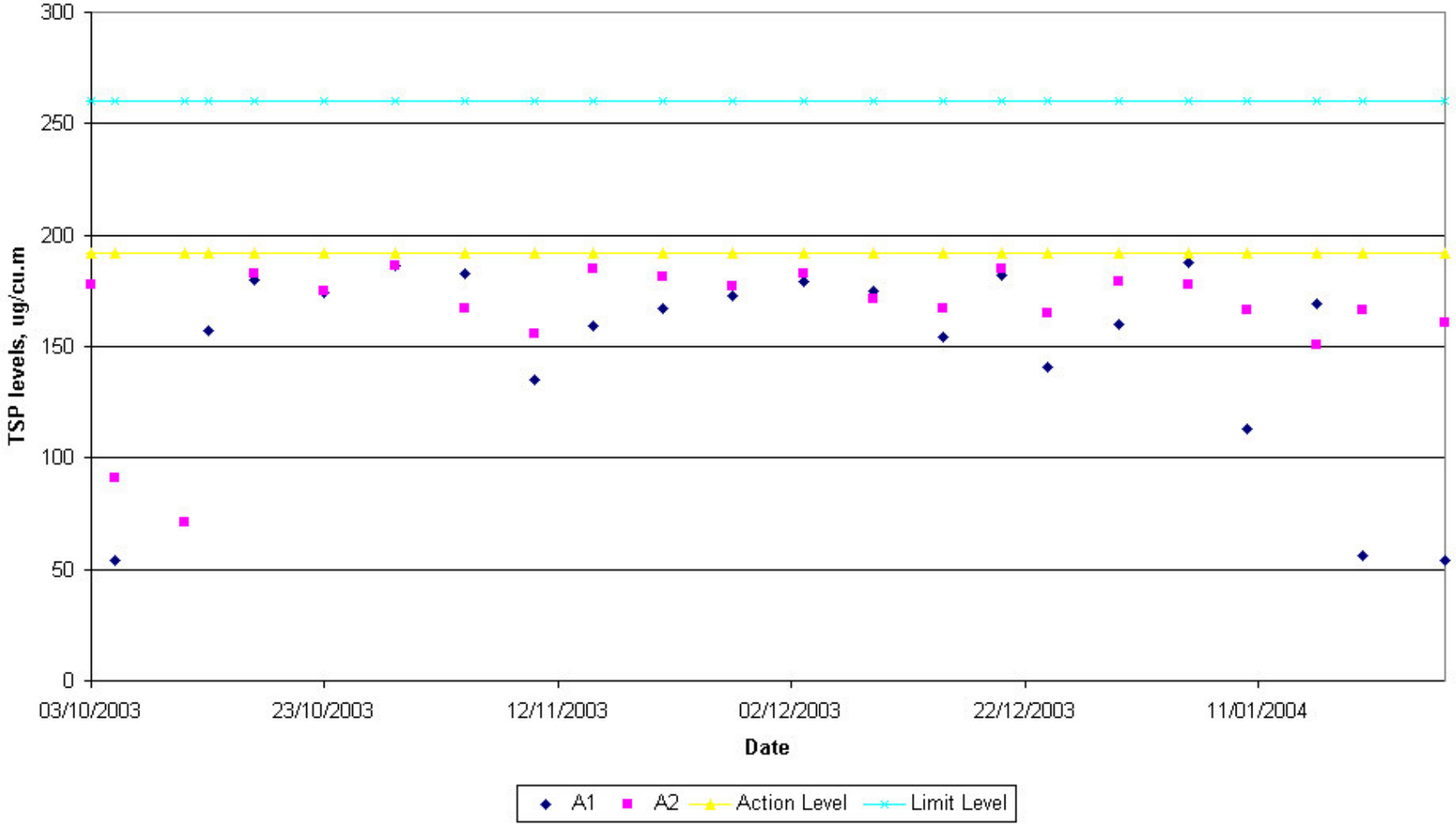

Figure 6.2 - Graphical Plot for 1-hr TSP

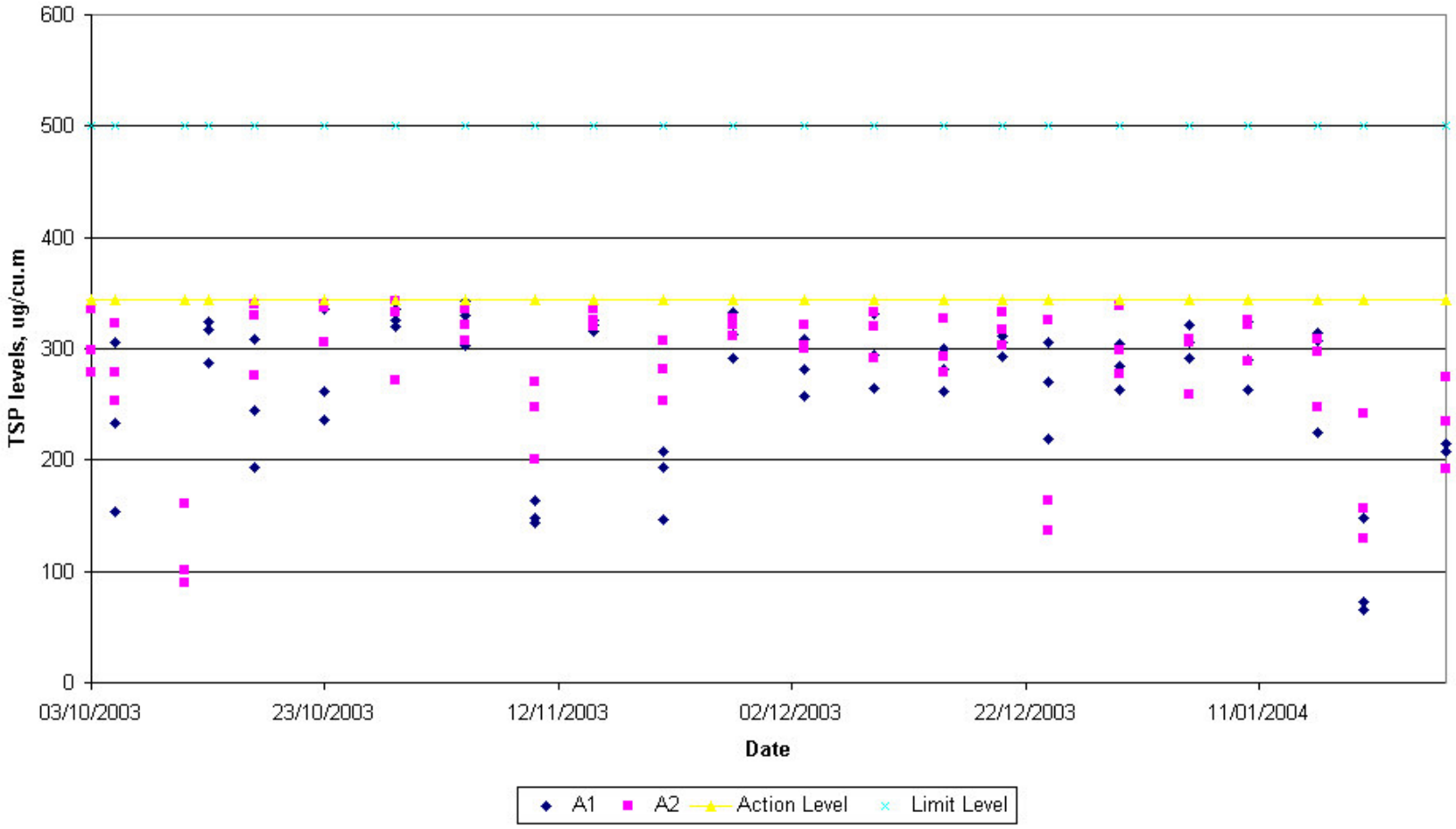

Figure 6.3 - Surface and Middle Averaged Dissolved Oxygen - Mid-Flood

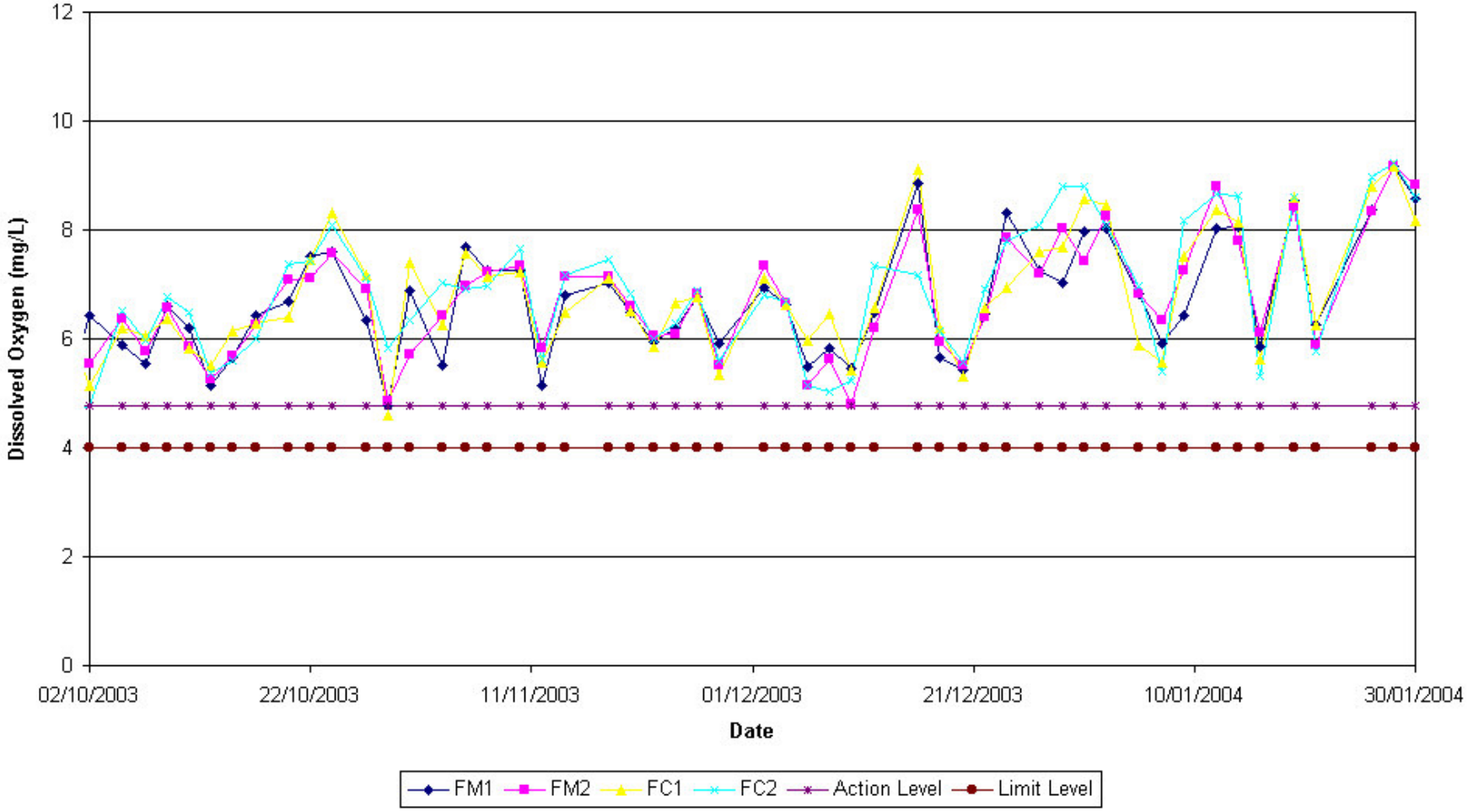

Figure 6.4 - Surface and Middle Averaged Dissolved Oxygen - Mid-Ebb

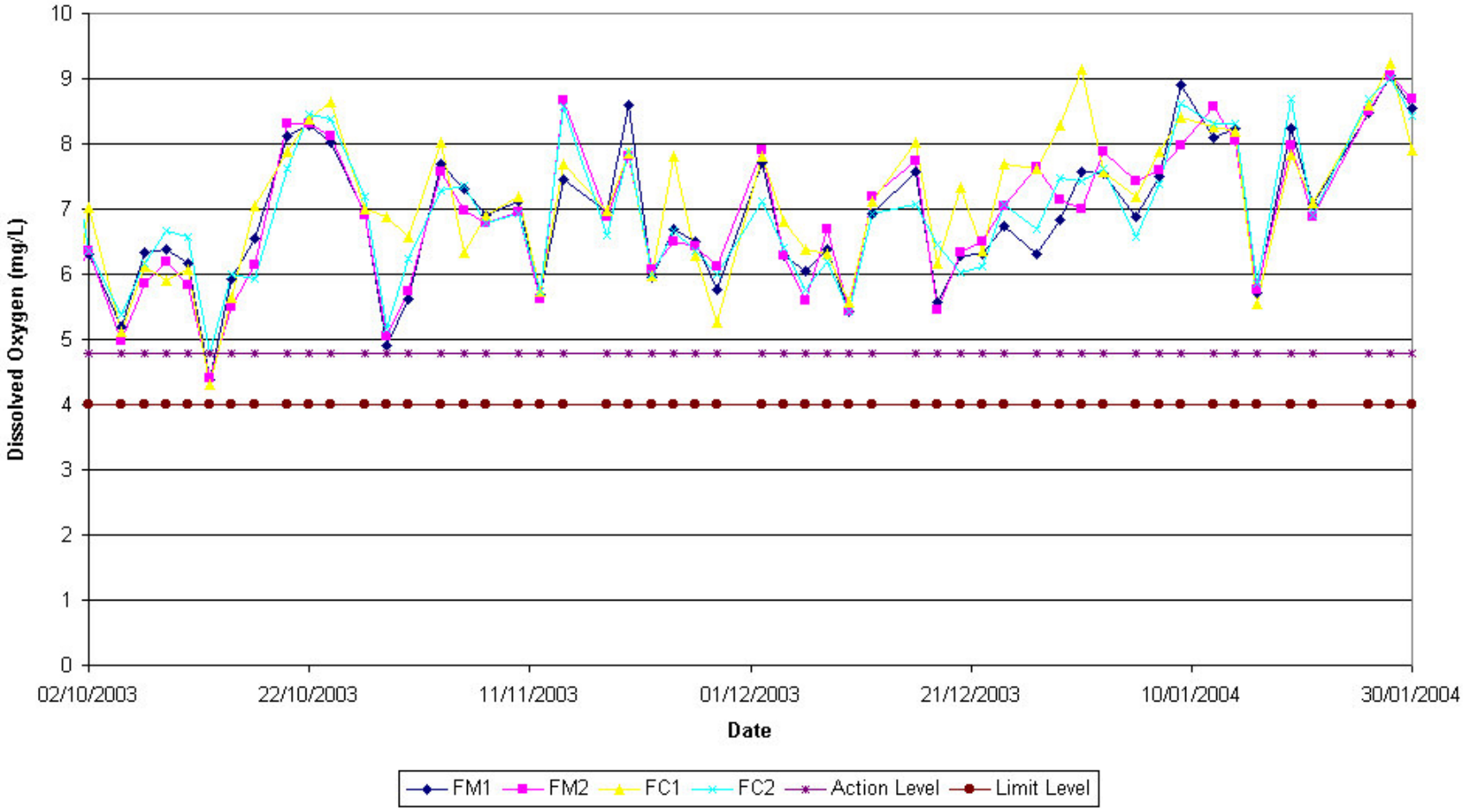

Figure 6.5 - Bottom Averaged Dissolved Oxygen - Mid-Flood

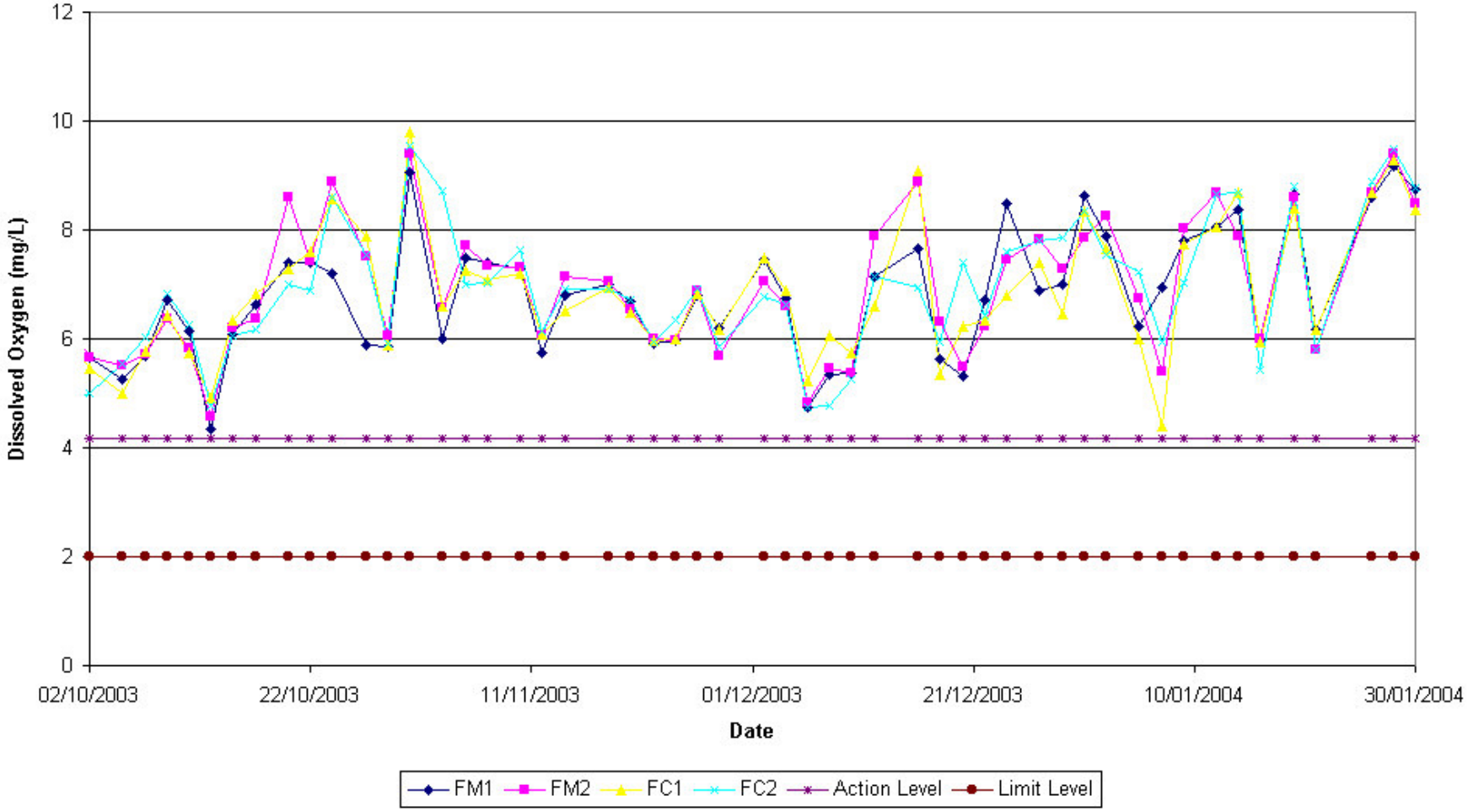

Figure 6.6 - Bottom Averaged Dissolved Oxygen - Mid-Ebb

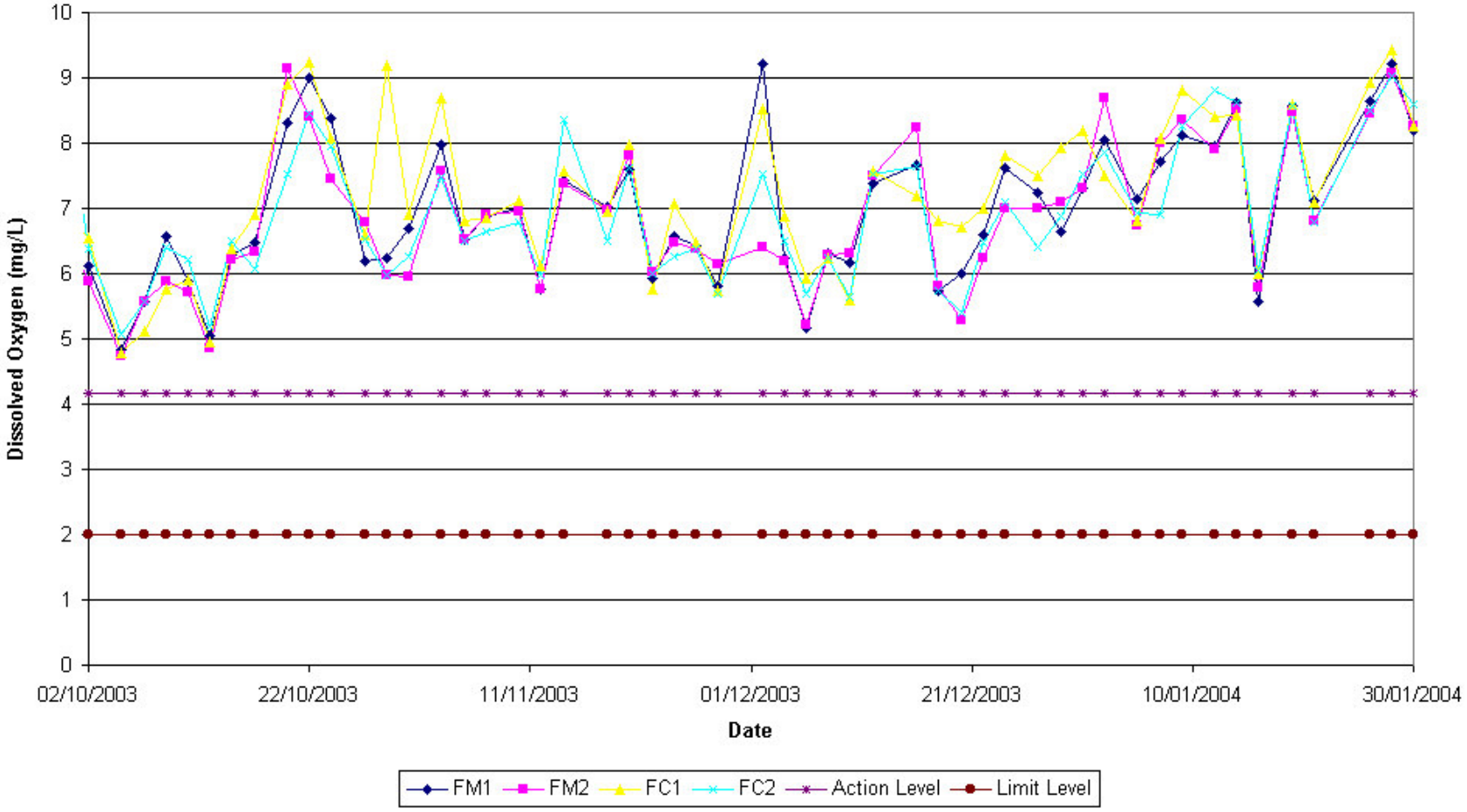

Figure 6.7 - Depth Averaged Turbidity - Mid-Flood

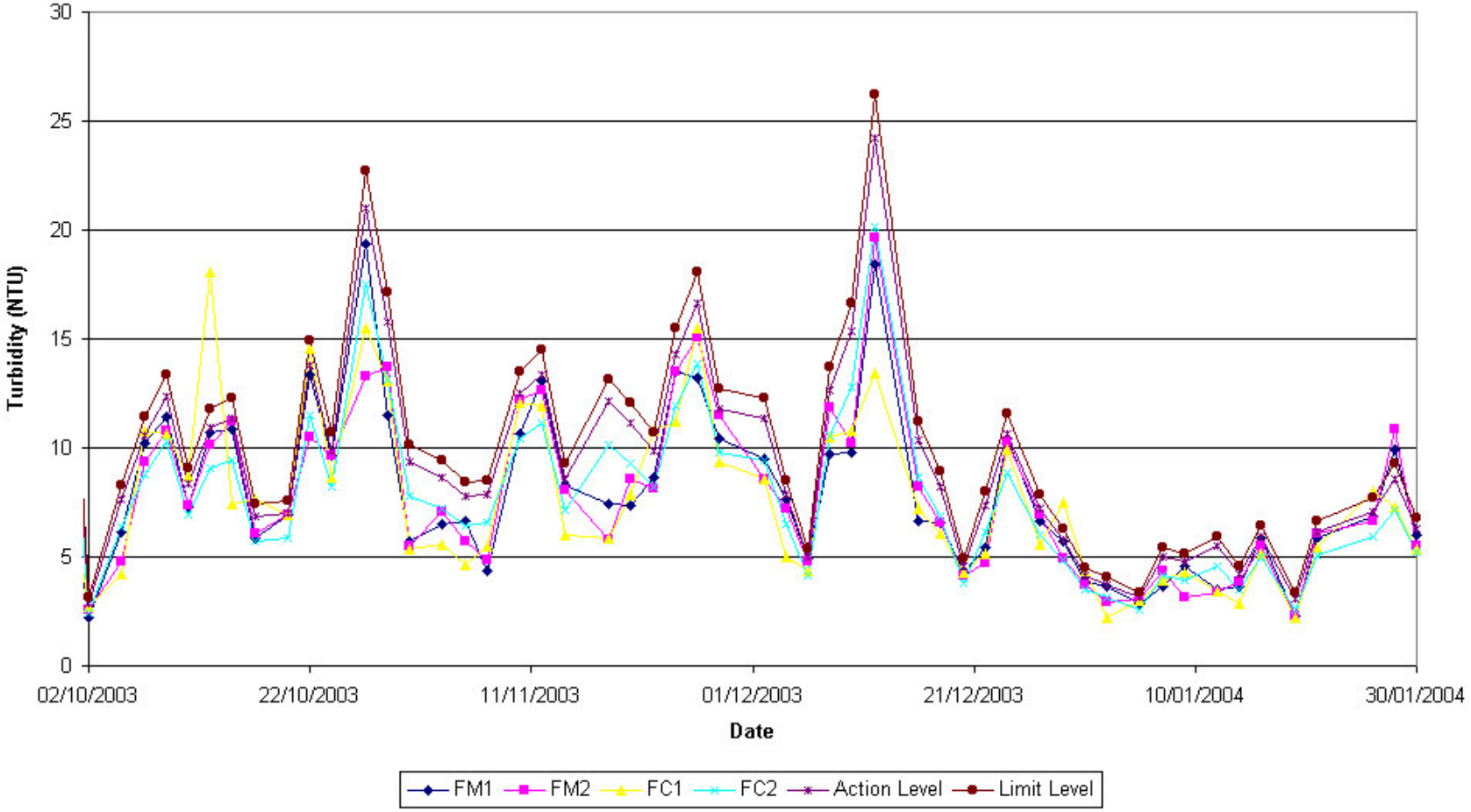

Figure 6.8 - Depth Averaged Turbidity - Mid-Ebb

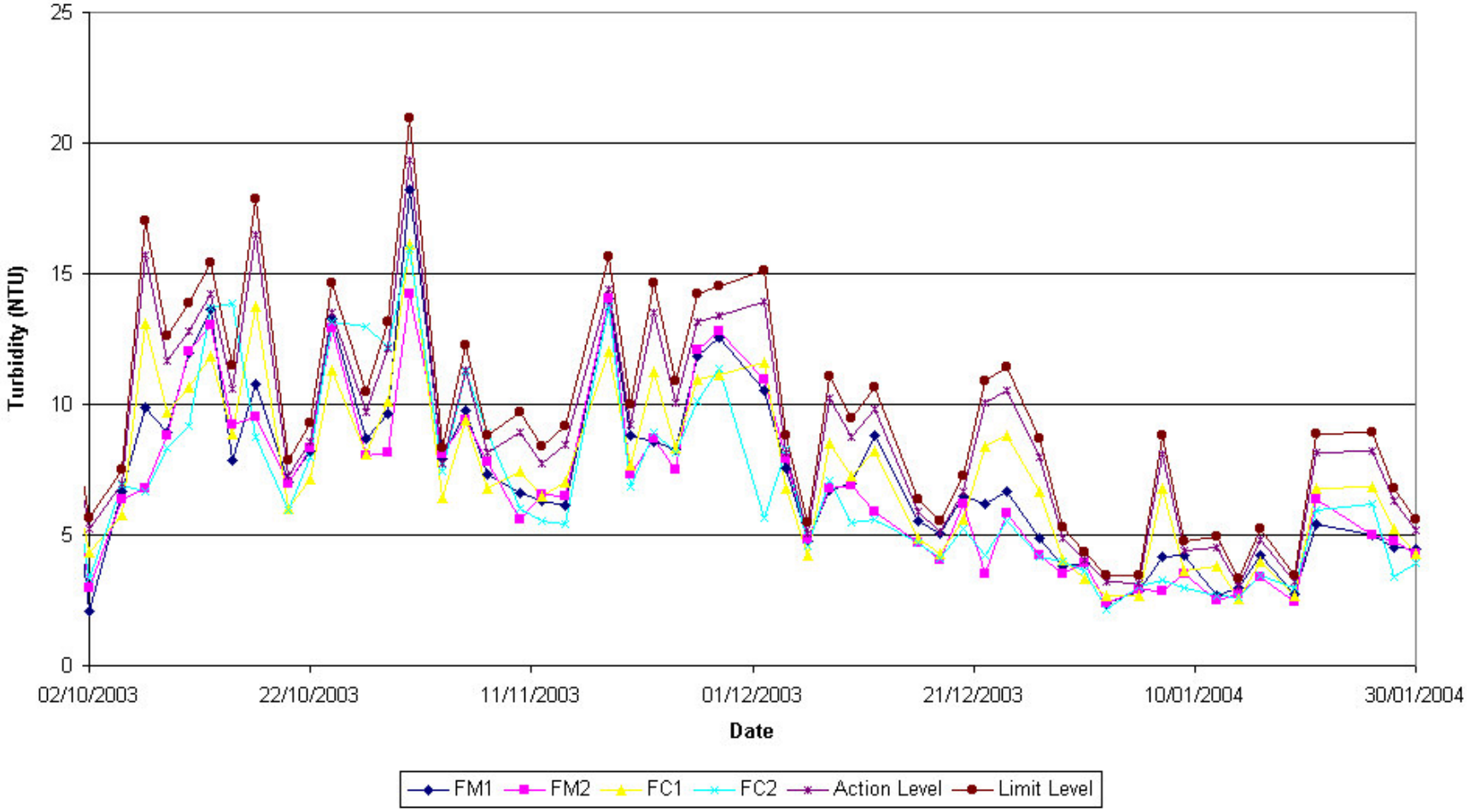

Figure 6.9 - Depth Averaged Suspended Solids - Mid-Flood

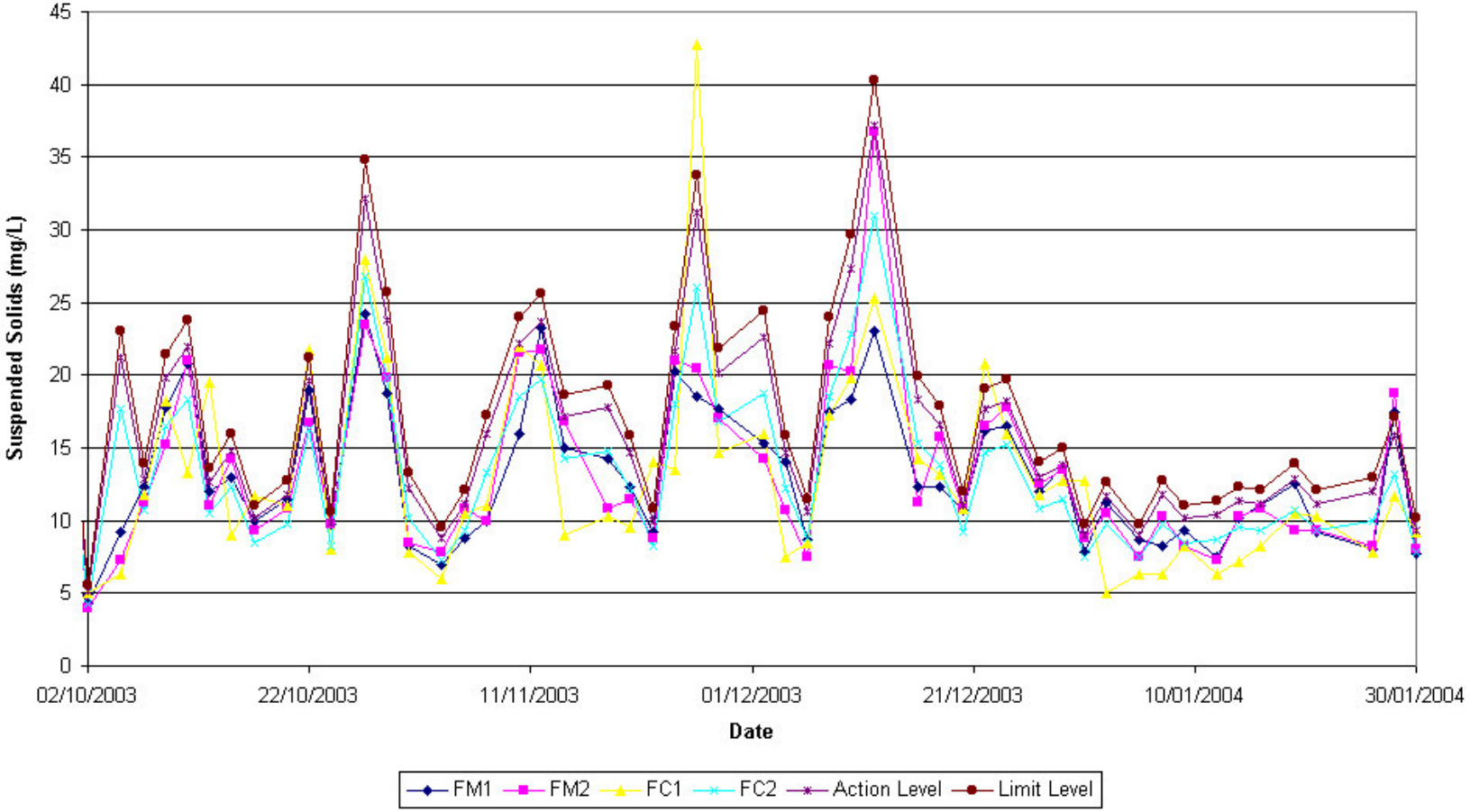

Figure 6.10 - Depth Averaged Suspended Solids - Mid-Ebb