

## 別 添 資 料

1. ミニッツ一式
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    - 1-2-1 調査の日程
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2. 第七局第一次官補令 (Decree of Adsep 1/VII) (2005年8月)
3. 北スマトラ州DSSプログラム概要
4. C/P (EMC/北スマトラ州BAPEDALDA) プロジェクト成果発表資料

MINUTES OF MEETINGS  
BETWEEN  
JAPANESE FINAL EVALUATION TEAM  
AND  
THE AUTHORITIES CONCERNED OF  
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA  
ON  
JAPANESE TECHNICAL COOPERATION  
FOR  
THE PROJECT FOR STRENGTHENING DECENTRALIZED  
ENVIRONMENTAL MANAGEMENT SYSTEM IN INDONESIA

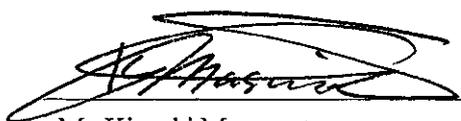
The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Final Evaluation Team (hereinafter referred to as "Japanese Team"), headed by Mr. Kiyoshi MASUMOTO, to the Republic of Indonesia from January 24 to February 9, 2006, for the purpose of conducting the joint evaluation for the Project for Strengthening Decentralized Environmental Management System in Indonesia (hereinafter referred to as "the Project").

The Joint Evaluation Team (hereinafter referred to as "the Team"), which consists of members from Japanese Team and members from the Ministry of Environment of Indonesia, was organized for the purpose of conducting this evaluation.

After intensive study and analysis of the activities and achievements of the Project, the Team prepared the Final Evaluation Report (hereinafter referred to as "the Report"), and presented it to the Joint Coordinating Committee.

The Joint Coordination Committee confirmed the Report and agreed to forward it to respective Governments.

Jakarta, February 7<sup>th</sup>, 2006



Mr. Kiyoshi Masumoto  
Leader, Japanese Evaluation Team,  
Japan International Cooperation Agency,

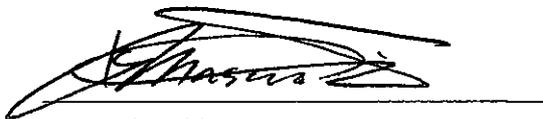


Mr. Ir. Arief Yuwono, MA  
Executive Secretary  
Ministry of State for the Environment  
The Republic of Indonesia

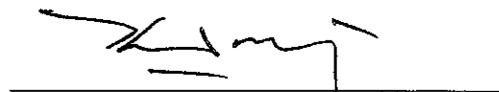
**ATTACHED DOCUMENT**

**FINAL EVALUATION REPORT  
ON  
JAPANESE TECHNICAL COOPERATION  
FOR  
THE PROJECT FOR STRENGTHENING DECENTRALIZED  
ENVIRONMENTAL MANAGEMENT SYSTEM IN INDONESIA**

**Jakarta, February 7th, 2006  
JOINT EVALUATION TEAM**



Mr. Kiyoshi Masumoto  
Leader, Japanese Evaluation Team,  
Japan International Cooperation  
Agency,



Mr. Imam Hendargo Abu Ismoyo  
Leader, Indonesian Evaluation Team  
Ministry of Environment  
The Republic of Indonesia

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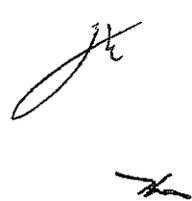
5.1 Ministry of Environment

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## 1. Introduction

### 1-1 Objective of the evaluation

The evaluation activities were performed with the following objectives;

- (1) to verify the achievements of the Project compared to those planned (achievements of inputs, outputs and the Project purpose);
- (2) to evaluate the Project based on the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability); and
- (3) To make recommendations and draw lessons learned for the actions to be taken in the future.

### 1-2 Members of the Joint Evaluation Team

#### (1)The Japanese Team

Field in Charge	Name	Position/Organization
Leader	Mr. Kiyoshi Masumoto	Group Director, Group II (Environment Management), Global Environment Department, JICA
Environmental Policy	Dr. Kuninori Otsubo	Vice Director, Water and Soil Environment Division, National Institute for Environmental Studies
Environmental Management	Mr. Masaoki Kobayashi	Planning and General Affairs Division/Chief Senior staff for Planning Environmental Pollution Control center (EPCC), Osaka Prefecture Government
Cooperation Planning	Ms. Miwa Hiasa	Environmental Management Team I, Group II, Global Environment Dept., JICA
Evaluation Analysis	Mr. Hideaki Higashino	Senior Consultant, RECS International Inc. Planning & Management.

#### (2)The Indonesian Team

Field in Charge	Name	Position/Organization
Leader	Mr.Drs. Imam Hendargo, MA	Head of Bureau Planning and International Cooperation, Ministry of Environment

Member	Mr.Ir. Hermin Roosita, MM	Deputy Assistance for Environmental Impact Assessment, Ministry of Environment
Member	Mr.Ir. Hari Wahyudi	Deputy Assistance for Manufacture Pollution Control, Ministry of Environment
Member	Mr.Ridwan D. Tamin, MS	Deputy Assistance for Mobile Emission Source Pollution Control, Ministry of Environment
Member	Mr.Ir. Antung Deddy Radiansyah	Deputy Assistance for River and Lake Pollution Control, Ministry of Environment

### 1-3 Schedule of the Study

From January 24 to February 9, 2006. Details are shown in Annex 1.

## 2. Outline of the Project

### 2-1 Background of the Project

For the establishment of a principal institution that possesses proper skills in environmental management, “the Environmental Management Center Project (hereinafter referred to as “EMC Project”) in Indonesia started in January 1993 in response to a request from the Government of Indonesia to the Government of Japan. Basic environmental monitoring techniques have been transferred by the EMC Project.

However, in the process of decentralization, the environmental management system in local governments had not been fully established and the knowledge of techniques for solution of environmental pollution was not sufficient. Therefore, the Government of Indonesia again requested technical cooperation to Japan. The Project for Strengthening Decentralized Environmental Management System in Indonesia (hereinafter referred to as “the Project”) started on July 1, 2002, based on the Record of Discussions (hereinafter referred to as “the R/D”), signed on March 22, 2002, between the Government of Japan and the Government of the Republic of Indonesia.

## **2-2 Summary of the Project**

The summary of the Project is as follows

### **(1) The Overall Goal**

The national and local levels' capabilities of environmental management are strengthened.

### **(2) The Project Objective**

A framework of environmental management in which PUSARPEDAL/EMC and BAPEDALDA work together is established by initiative of PUSARPEDAL/EMC

### **(3) Outputs of the Projects**

- 1) Options of countermeasures to specific environmental problems are developed in the model site (North Sumatra province) based on the reliable monitoring data and scientific knowledge.
- 2) Capabilities of PUSARPEDAL/EMC for providing KLH and BAPEDALDA with scientific knowledge and technical guidance on environmental management are reinforced.
- 3) Know-how of proper environmental monitoring and surveillance methods are transferred.

## **3. Methodology of Evaluation**

### **3-1 Methodology of Evaluation**

The evaluation study was conducted by the Joint Evaluation Team consisting of Japanese and Indonesian members. The Japanese members were nominated by JICA and Indonesian members were nominated by the Ministry of Environment. Accomplishment of the Project was measured in terms of inputs, activities, outputs and project purpose, all of which accord with the R/D, PDM and PO. The evaluation was conducted based on the "JICA Guideline for the Project Evaluation", revised version of March 2004". The evaluation activities include report analysis, field survey, questionnaire survey, interview to the persons concerned, and discussions with official staff concerned to the Project based on the five evaluation criteria listed below:

### **3-2 Criteria of Evaluation**

The Team reviewed all the activities and achievements and evaluated the Project based on the following five criteria:

#### **(1) Relevance**

Relevance refers to the validity of the Project Purpose and the Overall Goal in



connection with the development policy of Indonesian Government as well as the needs of beneficiaries.

(2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project (not as that of external factors).

(3) Efficiency

Efficiency refers to the productivity of the implementation process, and examines if the Inputs of the Project was efficiently converted into the Outputs.

(4) Impact

Impact refers to direct and indirect, positive and negative impact caused by implementing the Project, including the extent to which the Overall Goal has been attained.

(5) Sustainability

Sustainability refers to the extent to which the Indonesian side can further develop the Project, and the benefits generated by the Project can be sustained under Indonesia's policies, technologies, systems and financial state of the Indonesian side.

## 4. Performance of the Project

### 4-1. Inputs

(1) Japanese side

(a) Experts

i. Long-term experts

Eight (8) long-term experts in total have been dispatched, and the fields of experts dispatched are as follows:

- Chief Adviser and Environmental Management Technology
- Project Coordinator
- Technology on Environmental Analysis
- Laboratory Management
- Environmental Monitoring and Surveillance

ii. Short-term experts

Twenty-two (22)\* short-term experts in total have been dispatched, and the fields of experts dispatched are as follows:

- Selection and Maintenance of Machines for Environmental Analysis
- Air Pollution Monitoring\*
- Laboratory Waste Management\*



- Reference Material (CRM) Preparation
- Environmental Information System
- Environmental Management System\*
- Maintenance for Air quality Monitoring System
- Procurement for Environmental Analysis Equipment
- Wastewater Treatment Plant Operation
- Test Operation of Waste Water Treatment Plant
- Sea Water Monitoring\*
- Biological Analysis\*
- Noise and Vibration
- Equipment Maintenance Technology

\*Including two experts who were dispatched in the same fields.

(b) Provision of machinery and equipment

The machinery and equipment worth approximately 113.6 million Japanese yen (IDR 9.54 billion) in total have been provided to the Project by JICA at the time of evaluation.

(c) Training of Indonesian Counterpart personnel in Japan

Twelve (12) Indonesian counterparts' personnel were trained in Japan. The subjects of the training courses are as follows:

- Laboratory Management
- Environmental Monitoring
- Noise and Vibration
- Environmental Information System
- Toxic Substance
- Environmental Management System
- Environmental Management Administration
- Air Pollution Simulation Technology

(d) Others

For the smooth implementation of the Project, a total of 49.2 million Japanese yen (4.131 billion IDR) has been allocated to supplement a portion of local cost expenditures, including cost of public relation program, etc.

(2) Indonesian side

(a) Assignment of counterparts and other personnel

Eighty four (84) counterpart personnel(including the Project Director, Manager, PUSARPEDAL/EMC(63) and BAPEDALDA-NSP(19)) have been assigned for the

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Project in the (b) Budget allocation

IDR 55.6 billion IDR in total has been allocated as Local cost (including non-DEMS project activities, routine budget) provided by PUSARPEDAL/EMC and BAPEDALDA-NSP, Environmental Laboratory of BAPEDALDA-NSP from 2002.

(c) Provision of land, building and facilities.

The following facilities have been provided for the Project:

- Land for the experimental plantation
- Project office and related facilities
- staff salary

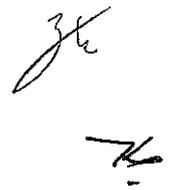
#### **4-2 Outputs of the Project**

Most of the Outputs (Output 1- Output 3) have been accomplished as scheduled. Overall Accomplishments of Outputs are shown in ANNEX 3.

##### **(1)Output 1**

Output 1 has been achieved quite successfully in terms of performance indicators in PDM. In North Sumatra Province (NSP), options of countermeasures to water quality management for the Deli River were developed and implemented. The main achievements in Output 1 are as follows;

- (a)The conditions of Environmental laboratory of BAPEDALDA-NSP have been improved through “Laboratory Management System” establishment, and were accredited by KAN in 2005.
- (b)Periodical water quality monitoring has been conducted since 2003(eight (8) key and 16 to 17 special parameters from 21 sampling points.
- (c)Bi-monthly basis in 2004 and monthly basis from June 2005 through the inventory survey and monitoring data of the water quality, the major pollution source of Deli River was found out to be domestic wastewater.
- (c)A pollutants load model was introduced in 2005 as a tool for water quality management and future political countermeasure development.
- (d)DSS program have been conducted since 2005, as one of the option for countermeasures against Deli River water pollution with initiative of BAPEDALDA-NSP and participation of local communities, NGOs, etc.
- (e)“The Water Quality Management Report for the Deli River” to be referred is under compilation and will be completed.



## **(2) Output 2**

Output 2 has been achieved satisfactorily in terms of performance indicators in PDM. The capability of environmental monitoring, analytical techniques and laboratory management in PUSARPEDAL/EMC has been improved. The study on Jakarta air pollution is useful for formulating political countermeasures. The main achievements in Output 2 are summarized as follows;

- (a) Totally 80 SOPs have been accredited by the end of January 2006 (18 previous to the Project (2001), 10 in 2003, and 52 in 2005).
- (b) In addition to the original 14 targeting parameters (10 parameters in river water and 4 parameters of sediment), 20 parameters were produced and used for the proficiency tests in 2002, 2003 and 2004. Consequently, 26 RM, in total, were produced.
- (c) Study of air quality modeling was conducted in addition to related activities such as data collection (NO<sub>x</sub>, SO<sub>2</sub> at 21 points in Jakarta, GPS data, etc.), health impact assessment, traffic volume survey etc, for preparation of political countermeasures.
- (d) Three (3) guidelines for laboratory management and three (3) guidelines for environmental monitoring are prepared and up-dated two(2) guidelines are under preparation). Two guidelines (Water quality, Environmental laboratory assessment) has been distributed to environmental laboratories and BAPEDALDAs in Provinces directory. Other guidelines are supposed to be distributed.

## **(3) Output 3**

Output 3 has been achieved quite successfully in terms of performance indicators in PDM. Capability of environmental monitoring and surveillance for local governments has been improved through trainings and workshops. The main achievements in Output 3 are summarized as follows;

- (a) 14 trainings/workshops were held since 2002 attended by 349 local governmental staff.
- (b) 199 modules were completed for trainings/workshops.
- (c) The proficiency tests were conducted once a year from 2002 in terms of 20 parameters (mainly heavy metal).

## **4-3 Achievement of Project Purpose**

Project purpose "A framework of environmental management in which



PUSARPEDAL/EMC and BAPEDALDA work together is established by initiative of PUSARPEDAL/EMC” was achieved mostly successfully in terms of performance indicators of PDM as follows.

**(1)Indicator 1 :“By 2006, BAPEDALDA NSP implements some options of countermeasures to water pollution of Deli River with assistance from PUSARPEDAL”**

- A framework of environmental management under collaboration of PUSARPEDAL /EMC and BAPEDALDA was established through capacity development of BAPEDALDA-NSP and PUSARPEDAL/EMC staff.
- The Deli River Clean Campaign was conducted in March 2004 as one of the options of countermeasures.
- As the next option, NSP DSS (Demonstration Site Station) Program to clean up the Deli River was launched by the initiative of BAPEDALDA-NSP, with participation of local communities, private sectors, NGO, etc in collaboration with PUSARPEDAL /EMC.

**(2)Indicator 2:“By 2006, the number of agreements on cooperation between PUSARPEDAL /EMC and local governments impact control authority increases.”**

- As of the end of January 2006, three local governments: NSP, Banten, DKI Jakarta made agreements with PUSARPEDAL /EMC.
- Meanwhile, in 2005, 30 provinces made 60 commitments with PUSARPEDAL /EMC, receiving stimulant fund that partially covers the cost of monitoring.

Year	2002	2003	2004	2005
No. of agreements/Commitments	2/10	3/40	3/40	3/60

**(3)Indicator 3:“Every year 30 provinces submit reports on water quality monitoring and 10 cities submit reports on air quality monitoring to PUSARPEDAL (EMC) and the collected data are processed for State of Environment reports (SoER).”**

- 30 provinces and 30 cities submitted monitoring reports to PUSARPEDAL /EMC in 2005.

Year	2002	2003	2004	2005
Air monitoring (cities)	10	10	10	30
Water monitoring (provinces)	-	30	30	30

- The data are compiled and used for SoER from 2002 to 2004.

## **5. Results of the Evaluation**

Summary of the evaluation results is as follows. Detailed evaluation results are shown in ANNEX 3.

### **5-1 Relevance**

Relevance is considered as “High”.

- The Project maintains high relevance with the needs of the Indonesian society at the time of final evaluation.
- The project has high relevance with the needs of the target groups that are staff of PUSARPEDAL and Local governments.
- The Project is in consistent with the Japan’s foreign aid policy.

### **5-2 Effectiveness**

Effectiveness is considered as “High-Moderate”.

- The Project Purpose is achieved mostly successfully.
- Outputs, especially in Output 1 and Output 3, are successfully achieved.
- There are some external factors that contributed to and hindered the Project progress. However the effects were not so significant.

### **5-3 Efficiency**

Efficiency is considered as “High-Moderate”

- Both the Japanese and Indonesian sides made inputs almost as scheduled.
- Outputs were successfully achieved, especially in Output 1 and Output 3.

## **5-4 Impact**

### **(1) Prospect of Overall Goal achievement**

Overall Goal is likely to be achieved.

- Environmental Management BAPEDALDA-NSP was relatively highly evaluated, in terms of equipment and human resources mainly due to technical transfer of the DEMS Project.
- If the Project activities are extended to the other provinces by the hand of the Indonesian side under collaborative framework established among KLH, PUSARPEDALDA/EMC, BAPEDALDAs and local laboratories, capabilities of environmental management of local governments as well as those of the national government will be strengthened.

### **(2) Other Impacts**

- Some positive impacts are observed, including policy, institutional and technology impacts.
- No negative impacts are found out at the time of the final evaluation.

## **5-5 Sustainability**

Sustainability is considered as “High-Moderate”.

### **(1) Support from the Indonesian Government**

- It is considered that the Indonesian Government has strong intention to support the environmental monitoring activities as described in the latest National Development Plan (RPJM).

### **(2) Institutional Sustainability**

- PUSARPEDAL /EMC, as a sole reference laboratory in the filed of environment under KLH, has sufficient capacity to carry out and extend the Project activities as regards the existing facilities as well as the capability and the number of staff.
- However, many of the equipments have expired the service periods. Maintenance will be more crucial form now on.
- It is a challenge for BAPEDALDA–NSP as well as for other provincial BAPEDALDAs to establish self-supporting systems to secure the financial sustainability of the laboratories, including personal expenses.
- In many cases, local laboratories are operated under limited budgets, and the issue of maintaining and operating lab equipment remains associated with high consumable and repair costs as well as necessary technical skills.

### **(3) Technology Sustainability**



- PUSARPEDAL /EMC has acquired sufficient skill and knowledge through DEMS and previously implemented cooperation projects.
- Environmental Laboratory of BAPEDALDA-NSP has acquired basic skill and knowledge for environmental monitoring.

## **6. Conclusion**

According to the evaluation results in terms of five evaluation criteria, the DEMS Project has been successfully progressing. The Project Purpose will be accomplished by the end of the cooperation period, namely, June 2006. Therefore, it is concluded that the Project will be terminated as scheduled in the R/D, at the end of June 2006.

One remarkable achievement made by the DEMS is as follows. Environmental Laboratory of BAPEDALDA-NSP has strengthened the capabilities to collect and analyze environmental data with accuracy through the technical transfer from PUSARPEDAL/EMC. Based on the monitoring results, pollution source of the Deli River was identified and countermeasures were planned and implemented involving various stakeholders, including NGOs and local communities under the initiative of BAPEDALDA-NSP together with PUSARPEDAL/EMC. These comprehensive approaches under strong initiative of BAPEDALDA-NSP in cooperation with PUSARPEDAL/EMC have been producing remarkable results.

Further continuous efforts of the Indonesian side are fully required for the achievement of Overall Goal.

## **7. Recommendations and Lessons Learned**

### **7-1 Recommendations**

#### **(1) Toward the achievement of the overall goal**

Technical supports to BAPEDALDAs and local environmental laboratories for monitoring and planning/implementing countermeasures are expected to be the important role of PUSALPEDAL/EMC as a national center laboratory. BAPEDALDAs have important roles in the local environmental management administration, such as correspondences to the environmental issues across the districts/cities, coordination among districts/cities, planning and management of environmental monitoring system in the province. Therefore, PUSARPEDAL/EMC should continue its efforts to develop the collaboration with BAPEDALDAs. For this



collaboration, PUSARPEDAL/EMC needs to make support responding to different levels of the capability of BAPEDALDAs.

KLH should make efforts to secure the necessary budget for PUSARPEDAL/EMC, recognizing its important role in the process of the strengthening local environmental management system in Indonesia.

**(2) Further utilization of results of DEMS project as good practice**

The information regarding the achievements of the Pilot project in NSP and improvements of the PUSARPEDAL/EMC capabilities for monitoring and analytical techniques through the DEMS Project should be widely disseminated to other sections of KLH, BAPEDALDAs, other ministries/departments and citizens, etc., informing the high capability of PUSARPEDAL/EMC and the framework of local environmental managements as a good practice.

The reports and guidelines prepared in the DEMS Project and PUSARPEDAL/EMC are expected to be informed widely and be fully utilized by authorities concerned.

**(3) Proper management of equipments**

The service period of most of the equipments which were provided since 1990's has been expired. In order to assume responsibility of PUSARPEDAL/EMC as a reference laboratory which requires high level techniques for analysis, proper management of equipments is indispensable. Therefore, KLH is requested to make efforts for the better management of equipments with a longer perspective, making a plan for the maintenance and renewal together with appropriate budgetary plan.

A few equipments which were provided in DEMS project but not properly used should be ensured appropriate measures.

**7-2 Lessons Learned**

**(1) Collaboration of the other schemes of Japan**

DEMS project has been implemented in cooperation with other Japanese cooperation schemes such as the Senior Volunteer who worked at Environmental Laboratory of BAPEDALDA-NSP , JICA expert for environmental policy at KLH, JBIC project(RMCD) for providing equipments to local laboratories, in addition to the Grant aid and Technical cooperation which started in 1993 for establishing

PUSARPEDAL/EMC. This collaboration contributed to good results of the Project, especially for the pilot project in NSP. This type of collaboration will be most effective if the framework is clearly defined in advance.

**(2) Collaboration of the Indonesian side**

Good collaboration of environmental authorities concerned, such as KLH, PUSARPEDAL/EMC, BAPEDALDAs, district/city, and NGOs as well as local residents, which made the proper implementation of the total river water management possible, was a crucial factor for successful results of the pilot project in NSP. For a proper environmental management system, collaboration among governments, laboratories, and citizens, etc. is a key. This experience can be applied to other areas.

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## Annex1: Schedule of the Evaluation

	Date		Time	schedule
1	Jan.24	Tue	11:15 17:05	Leave Tokyo(JL-725)(Higashino) Arrival in Jakarta
2	Jan.25	Wed	9:00 10:30 PM	Visit to JICA office Visit to DKI EMC(Discussion with Expert Team, including Mr.Fujitsuka if possible)
3	Jan.26	Thu		Visit to EMC(C/P Interview)
4	Jan.27	Fri	All Day	Ditto - Discussion with Expert Team
5	Jan.28	Sat		Preparation of Evaluation Grid, Preparation of Report
6	Jan.29	Sun	11:15	Ditto Leave Tokyo(JL-725) (Masumoto,Ohtsubo,Kobayashi,Hiasa) Arrival in Jakarta
7	Jan.30	Mon	AM   PM	Visit to JICA office(Explanation of purpose of the study) Courtesy call to Ministry of Home Affairs (Sub Directorate of Capacity Building of Natural Resources and Environment Management, Directorate of Environmental) Visit to EMC Interview with C/Ps
8	Jan.31	Tue	AM PM	Meeting with Mr.Fujitsuka Meeting with Expert Team (Islamic Holiday)
9	Feb.1	Wed	AM   PM	Courtesy call to KLH(including interview) Meeting with Mr.Isa Karmisa Ardiputra (Deputy for Infrastructure Development and CD,KLH),MR.Moh.Gempur Adhan (Deputy for Environmental Pollution Control), Mr.Drs.Imam Hendargo A.I MA (Bureau for Planning and International Cooperation) Meeting with Mr.Moh.Zoel Fachry (Deputy for Trainig and Education center) Visit to EMC Meeting with Ms. Halimah Syafrul,M.Si Head of EMC Interview with Heads of Divisions,EMC
10	Feb.2	Thu	AM PM	Move to North Sumatra Province Courtesy call to NSP-PUSARPEDALDA(including interview) Visit to Deli River
11	Feb.3	Fri	AM  PM	Courtesy call to NSP Governors office. Evaluation Meeting(1) Evaluation Meeting(2) (including interview)

12	Feb.4	Sat		Move to Jakarta Preparation of Minutes of Meeting
13	Feb.5	Sun		Preparation of Minutes of Meeting
14	Feb.6	Mon	All day	Discussion of Minutes and result of evaluation ( Dr,Ohtsubo Departure from Jakarta)
15	Feb.7	Tue	All day	Discussion of Minutes and Result of evaluation JCC Meeting(confirmation of the evaluation result and Minutes) Signing of Minutes in EMC, Reception
16	Feb.8	Wed		Report to JICA office Report to Japan Embassy Departure from Jakarta(JL-726)
17	Feb.9	Thu		Arrival in Tokyo(Masumoto,Hiasa,Higashino) Arrival in Osaka(Kobayashi)

## ANNEX 2 REVISED PROJECT DESIGN MATRIX

Project name: Project for Strengthening Decentralized Environmental Management System in Indonesia (PSDEMS) Duration : July 1, 2002 to June 30, 2006  
 Project areas: JABOTABEK, North Sumatra Province Target groups : Staffs of PUSARPEDAL/EMC and Local Governments Date: May 26, 2004

Narrative Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>[Overall Goal]</b></p> <ul style="list-style-type: none"> <li>The national and local levels' capabilities of environmental management are strengthened.</li> </ul>	<ol style="list-style-type: none"> <li>The implemented environmental monitoring and surveillance by the local governments (provincial BAPEDALDAs) with well managed laboratory</li> <li>The countermeasures are implemented based on the reliable monitoring and surveillance data</li> </ol>	<ul style="list-style-type: none"> <li>Environmental Statistics</li> <li>KLH annual reports</li> <li>Reports from BAPEDALDA</li> </ul>	<ul style="list-style-type: none"> <li>The policy of the Indonesian Government remains unchanged regarding the roles of KLH and BAPEDALDAs on environmental management</li> </ul>
<p><b>[Project Purpose]</b></p> <ul style="list-style-type: none"> <li>A framework of environmental management in which PUSARPEDAL/EMC and BAPEDALDA work together is established by initiative of PUSARPEDAL/EMC</li> </ul>	<ol style="list-style-type: none"> <li>By the year 2006, BAPEDALDA NSP implements some options of countermeasures to water pollution of Deli River with assistance from PUSARPEDAL/EMC</li> <li>By the year 2006, the number of agreements on cooperation between PUSARPEDAL/EMC and local governmental impact control authority increases.</li> <li>Every year 30 provinces submit reports on water quality monitoring and 10 cities submit reports on air quality monitoring to PUSARPEDAL/EMC and the collected data are processed for State of Environment reports (SoER)</li> </ol>	<ol style="list-style-type: none"> <li>1-1 Project reports</li> <li>1-2 Reports from BAPEDALDA NSP</li> <li>1-3 KLH annual reports</li> <li>2-1 Project reports</li> <li>2-2 KLH annual reports</li> <li>3-1 Project reports</li> <li>3-2 KLH annual reports</li> <li>3-3 The State of Environment Report</li> </ol>	<ul style="list-style-type: none"> <li>The positive effects of the options implemented in the model site are recognized</li> <li>The cases and procedures of the pilot project are opened to the other local governments</li> <li>Stakeholders such as factories dose not oppose the project</li> </ul>
<p><b>[Outputs]</b></p> <ol style="list-style-type: none"> <li>Options of countermeasures to specific environmental problems are developed in the model site (North Sumatra province) based on the reliable monitoring data and scientific knowledge.</li> <li>Capabilities of SARPEDAL for providing KLH and BAPEDALDA with scientific knowledge and technical guidance on environmental management are reinforced.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 Three monitoring and surveillance reports are prepared every year by BAPEDALDA NSP and PUSARPEDAL/EMC together.</li> <li>2-1 Three times of meetings for development of options are organized every year by BAPEDALDA NSP and PUSARPEDAL/EMC together.</li> <li>2-1 Three reports regarding scientific knowledge are submitted to the other sections of KLH from PUSARPEDAL/EMC every year.</li> <li>2-2 Five SOPs are prepared every year by PUSARPEDAL/EMC.</li> </ol>	<ol style="list-style-type: none"> <li>1-1 Project reports</li> <li>1-2 Reports from BAPEDALDA NSP</li> <li>1-3 KLH annual reports</li> <li>2-1 Project reports and SoER</li> <li>2-2 Reports from BAPEDALDA NSP</li> <li>2-3 KLH annual reports</li> </ol>	

<p>3. Know-how of proper environmental monitoring and surveillance methods are transferred.</p>	<p>2-3 By the year 2006, sixty analytical parameters are accredited by KAN on ISO17025 in PUSARPEDAL/EMC</p> <p>2-4 By the year 2006, twenty parameters of reference materials are produced and proposed for certification to KAN by PUSARPEDAL/EMC</p> <p>2-5 By the year 2006, five guidelines are prepared and up-dated by PUSARPEDAL/EMC to the local governments</p> <p>3-1 Three training modules are prepared every year by PUSARPEDAL/EMC.</p> <p>3-2 By the year 2006, the proficiency tests to the environmental laboratories on eighteen parameters are conducted by PUSARPEDAL/EMC.</p> <p>3-3 The two times of workshops for the staff of the local governments are organized by PUSARPEDAL/EMC every year.</p> <p>3-4 By the year 2006, 360 staffs of the local governments (including local environmental laboratories) are trained by PUSARPEDAL/EMC</p>	<p>3-1 Project reports</p> <p>3-2 Reports from BAPEDALDA NSP</p> <p>3-3 KLH annual reports</p>	<ul style="list-style-type: none"> <li>• KAN is ready to certify SRM</li> </ul>
<p><b>【Activities】</b> (see attached paper)</p>	<p><b>【Inputs】</b> Japan (1) Personnel 1) Long-term experts - Chief Advisor/Environmental management 48M/M - Project coordinator/Training program 48M/M - Environmental monitoring 48M/M - Laboratory management 24M/M</p>	<p>Indonesia (1) Personnel 1) Project director 2) Project manager 3) Counterparts in the following fields: - Environmental quality test - Environmental monitoring and surveillance (air quality) - Environmental monitoring and</p>	<ul style="list-style-type: none"> <li>• Trained technical staff continue working for SARPEDAL</li> <li>• Trained staff of local governments continue working for each local government (or relevant organization)</li> </ul>

	<p>- Applied environmental analysis 24M/M</p> <p>2) Short-term experts</p> <p>(2) Equipment</p> <p>(3) Training in Japan 3 persons/year</p> <p>- Counterparts</p> <p>- Staffs of NS BAPEDALDA</p>	<p>surveillance (water quality)</p> <p>- Laboratory management</p> <p>- Calibration and maintenance</p> <p>- Environmental information system</p> <p>- Air pollution</p> <p>- Water pollution</p> <p>- Toxic and hazardous substance</p> <p>(2) Facilities</p> <p>Land, buildings, analysis laboratory and equipment, training facilities</p>	<p><b>[Preconditions]</b></p> <ul style="list-style-type: none"> <li>The policy of the Indonesian Government remains unchanged regarding the decentralization</li> </ul>
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<p><b>[Activities]</b></p> <p><b>1 Pilot Project in the Model Site (Activities for Outputs 1)</b></p> <p><b>1-1 Improving Laboratory Management of PUSARPEDALDA</b></p> <p>1-1-1 Implement maintenance and calibration of laboratory equipment</p> <p>1-1-2 Develop laboratory management system</p> <p>1-1-3 Establish QA/QC in the laboratory</p> <p><b>1-2 Conducting Monitoring and Assessment of Specific Issues</b></p> <p>1-2-1 Conduct monitoring and surveillance</p> <p>1-2-2 Conduct study on pollution level and pollution sources</p> <p><b>1-3 Developing Options of Countermeasures of Specific Issues</b></p> <p>1-3-1 Assess causes of pollution</p> <p>1-3-2 Preparation of strategic program of environmental quality improvement</p> <p><b>2 Capacity Development of PUSARPEDAL/EMC on Development of Policies (Activities for Outputs 2)</b></p> <p><b>2-1 Improving Laboratory Management of PUSARPEDAL/EMC</b></p> <p>2-1-1 Produce standard methods/procedures of sampling and analysis</p> <p>2-1-2 Produce Reference Materials (RM)</p>
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2-1-3 Develop laboratory management system

**2-2 Conducting Studies on Environmental Monitoring and Management**

- 2-2-1 Conduct studies on evaluation of existing pollution control facilities
- 2-2-2 Evaluate the existing environmental standards based on monitoring data focused on water and air
- 2-2-3 Conduct study on air quality modeling (Jakarta)

**3 Capacity Development of Local Governments on Environmental Monitoring and Surveillance (Activities for Outputs 3)**

**3-1 Improving Management Capabilities of Local Laboratories**

- 3-1-1 Training staff of local laboratories on advanced analytical methods
- 3-1-2 Conduct proficiency tests
- 3-1-3 Training staff of local laboratories on laboratory quality management system (LQMS)
- 3-1-4 Hold workshops among local laboratories for exchanging information

**3-2 Training for Environmental Monitoring and Surveillance Methods**

- 3-2-1 Provide technical assistance to local laboratories for implementation methods and surveillance
- 3-2-2 Implement technical guidance to local governments on monitoring program and surveillance

**3-3 Training for Impact Assessment**

- 3-3-1 Produce training modules of environmental management for local governments
- 3-3-2 Train staff of local governments on environmental management
- 3-3-3 Hold workshops among local governments on environmental management



## Annex 3.1 Performance Grid (1) : INPUT from the Japanese Side

Input (1)	Categories	Base for Judgment	Data Source	Summary for Inputs Accomplishments as of January 2006						Assessment	
				Input from Japanese Side	Verification of Inputs from Japanese side both on timing and quality.	- Progress Reports - C/P and J/E - Questionnaire	2002	2003	2004		2005
1. Experts	Input from Japanese Side	-Ditto-	-Ditto-	<ul style="list-style-type: none"> <li>As of the end of January 2006, on the basis of dispatch times, eight (8) Long-term Experts (169.1 M/M in total) in the fields of Chief Advisor/Environmental Management (44.8M/M), Project Coordinator /Training Program (43.7M/M), Environmental Monitoring (24.4M/M), Applied Environmental Analysis (24.4M/M), Laboratory Management (19.5M/M), and Environmental Monitoring and Surveillance (12.5 M/M) have been assigned to the Project.</li> <li>The assignment period of the Environmental Monitoring Expert was delayed five (5) months and also curtailed from original 48 M/M to 24 M/M. To compensate the reduction, one (1) Environmental Monitoring and Surveillance Expert was assigned.</li> <li>In addition to the Long-term Experts, on the basis of dispatch times, 22 Short-term Experts (36.8M/M in total as of the end of January 2006) were dispatched for the Project activities.</li> <li>As of the end of January 2006, 12 C/Ps have been dispatched to Japan for training under DEMS.               <ul style="list-style-type: none"> <li>2002: Two (2) C/Ps (Laboratory Management (1) and Environmental Analysis (1))</li> <li>2003: Three (3) C/Ps (Environmental Monitoring (2) and Laboratory Management (1))</li> <li>2004: Four (4) C/Ps (Environmental Information System (1), Environmental Management System (1), Noise and Vibrations (1) and Toxic Substances (1))</li> <li>2005: Three (3) C/Ps (Environmental Monitoring Technology (1), Environmental Management Administration (1) and Air Pollution Simulation Technology (1))</li> </ul> </li> <li>According to questionnaire and questionnaire surveys to C/Ps, training in Japan was effective in general. However, in some cases, the topics of trainings did not coincide the current duties of the trainees.</li> <li>Up to January 2006, the Japanese Government has donated equipment worth 113.6 million yen in total value (approximately equivalent to IDR. 9.54 billion (exchange rate as of December 2005: JPY 1.0 = IDR 84)).</li> <li>The major items are; Maintenance and Calibration Instruments and Materials (Bench Top PH meter, Bench Top conductivity meter, portable DAT recorder, multi channel data station etc.), Laboratory Testing Devices of Hazardous Wastes for Characterization (Millipore ZHE Hazardous Waste System, etc.), Production of SRM (SRM natural water etc.), Study of Air Pollution in Jakarta (Ion Chromatograph, High Volume Air sampler, etc.), and Strengthening of Environmental Laboratory in North Sumatra Province (reagents, consumables, Jar tester, etc.).</li> <li>Most of the equipment have been effectively used for the Project activities.</li> </ul>							Good
					2. Training in Japan	-Ditto-	-Ditto-				
3. Equipment	Input from Japanese Side	-Ditto-	-Ditto-	<ul style="list-style-type: none"> <li>Up to January 2006, the Japanese Government has donated equipment worth 113.6 million yen in total value (approximately equivalent to IDR. 9.54 billion (exchange rate as of December 2005: JPY 1.0 = IDR 84)).</li> <li>The major items are; Maintenance and Calibration Instruments and Materials (Bench Top PH meter, Bench Top conductivity meter, portable DAT recorder, multi channel data station etc.), Laboratory Testing Devices of Hazardous Wastes for Characterization (Millipore ZHE Hazardous Waste System, etc.), Production of SRM (SRM natural water etc.), Study of Air Pollution in Jakarta (Ion Chromatograph, High Volume Air sampler, etc.), and Strengthening of Environmental Laboratory in North Sumatra Province (reagents, consumables, Jar tester, etc.).</li> <li>Most of the equipment have been effectively used for the Project activities.</li> </ul>							Good-Moderate
					4. Operational Cost	-Ditto-	-Ditto-	Japanese Fiscal Year	2002	2003	2004
				Equipment (JPY 1,000)	28,595	46,561	31,257	7,142	113,555		
				The Japanese side repaired nine (9) dry-type automated air pollution monitoring devices in (2003), a fluorescent X-ray analysis device for heavy metal analysis was repaired in 2004 and in 2005, five (5) dry type air pollution automatic analyzers, a Hi-volume sampler, meteorological measurement apparatus and the others.							
				Local Cost Support for training and workshops amounted to IDR 4.13 billion (approximately equivalent to JPY 49.2 million (exchange rate: JPY 1.0 = IDR 84)) and contributed to implementation of workshops and seminars.							
				Japanese Fiscal Year	2002	2003	2004	2005	Total		

				Local Cost Support (Million IDR.)	822	907	1,402	1,000	4,131
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Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEPAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEPALDA= Environmental Laboratory of BAPEDALDA

### Annex 3.1 Performance Grid (2) : INPUT from the Indonesian Side

Categories	Base for Judgment	Data Source	Summary for Inputs Accomplishments until February 2006	Assessment -Good -Moderate -Poor																																				
<b>Input from the Indonesian Side</b>																																								
T1. Allocation of C/P staff	Verification of Inputs from Indonesia side both on timing and quality.	- Progress Reports - C/P and J/E - Questionnaire	<ul style="list-style-type: none"> <li>As of the end of January 2006, 84C/Ps are allocated to the Project (not on the full-time assignment basis); one (1) Project Director: Deputy VII, Ministry of Environment, one (1) Project Manager: Head of PUSARPEPAL, 63 staff of PUSARPEPAL (EMC) staff and 19 staff of North Sumatra Provincial BAPEDALDA (including 2 PUSARPEPALDA staff)</li> <li>In addition to the C/Ps four (4) Indonesian Committee members from KLH were assigned to organize the JCC (Joint Coordinating Committee) together with J/E and the Resident Representative of JICA Jakarta Office.</li> <li>Allocation of C/P was not made smoothly to some Short-term Experts.</li> <li>Existing facilities, equipment and office space for J/Es were offered in PUSARPEPAL (EMC) for the Project activities.</li> <li>Existing facilities and equipment were also offered by PUSARPEPALDA/BAPEDALDA for the Project activities.</li> <li>Additional equipment input by year by SAPRDAL is as follows:               <ul style="list-style-type: none"> <li>(FY2003) IDR. 252.0 million for lab equipment</li> <li>(FY2004) IDR. 218.0 million for LIMS hardware</li> <li>(FY2005) IDR. 591.0million for lab equipment</li> </ul> </li> <li>Maintenance of equipment needed improvement and the Japanese side repaired major equipment.</li> <li>For 2006, in order to mitigate the status, the Indonesian Side (PUSARPEPAL) secured the budget for equipment maintenance (IDR. 1.8 billion for maintenance of equipment and 1.3billion for AQMS equipment).</li> <li>Local cost (including the non-DEMS Project activities) provided by PUSARPEPAL (EMC), BAPEDALDA-NSP and PUSARPEPALDA are shown as follows for reference:               <table border="1"> <tr> <td>PUSARPEPAL (EMC)</td> <td>2002</td> <td>2003</td> <td>2004</td> <td>2005</td> <td>Total</td> </tr> <tr> <td>Local Cost (Million IDR.)</td> <td>4,279</td> <td>5,941</td> <td>7,189</td> <td>8,944</td> <td>26,353</td> </tr> <tr> <td>BAPEDALDA-NSP</td> <td>2002</td> <td>2003</td> <td>2004</td> <td>2005</td> <td>Total</td> </tr> <tr> <td>Local Cost (Million IDR.)</td> <td>---</td> <td>7,538</td> <td>8,337</td> <td>12,607</td> <td>28,482</td> </tr> <tr> <td>PUSARPEPALDA</td> <td>2002</td> <td>2003</td> <td>2004</td> <td>2005</td> <td>Total</td> </tr> <tr> <td>Local Cost (Million IDR.)</td> <td>---</td> <td>---</td> <td>400</td> <td>390</td> <td>790</td> </tr> </table> </li> </ul>	PUSARPEPAL (EMC)	2002	2003	2004	2005	Total	Local Cost (Million IDR.)	4,279	5,941	7,189	8,944	26,353	BAPEDALDA-NSP	2002	2003	2004	2005	Total	Local Cost (Million IDR.)	---	7,538	8,337	12,607	28,482	PUSARPEPALDA	2002	2003	2004	2005	Total	Local Cost (Million IDR.)	---	---	400	390	790	Good-Moderate
PUSARPEPAL (EMC)	2002	2003	2004	2005	Total																																			
Local Cost (Million IDR.)	4,279	5,941	7,189	8,944	26,353																																			
BAPEDALDA-NSP	2002	2003	2004	2005	Total																																			
Local Cost (Million IDR.)	---	7,538	8,337	12,607	28,482																																			
PUSARPEPALDA	2002	2003	2004	2005	Total																																			
Local Cost (Million IDR.)	---	---	400	390	790																																			
T2. Facility and Equipment	-Ditto	-Ditto		Moderate																																				
T3. Local Cost	-Ditto	-Ditto		Good																																				

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEPAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEPALDA= Environmental Laboratory of BAPEDALDA, (7) IFY: Indonesian Fiscal Year, (8) AQMS=Air Quality Monitoring System

## Annex 3.1 Performance Grid (3): Activities (1)

Activities	Base fro Judgment	Data Source	Summary for Activity Accomplishments as of January 2006	Assessment -Good -Moderate -Poor
<b>1. Pilot Project in the Model Site</b>				
<b>1-1 Improving Laboratory Management of PUSARPEDALDA</b>				
1-1-1. Implement maintenance and calibration of laboratory equipment	Whether activities are implemented appropriately both in timing and quality as expected in POs	- Progress Reports (Monitoring Results) - C/P and J/E - Questionnaire Results	<ul style="list-style-type: none"> <li>By August 2003, interior work and replenishment of equipment and reagents were almost completed.</li> <li>Through the instructions conducted by the J/Es and a senior volunteer, PUSARPEDALDA-NSP has acquired sufficient skill of the maintenance and calibration of laboratory equipment including major ones such as AAS (Atomic Absorption Spectrophotometer)</li> <li>Currently, PUSARPEDALDA-NSP analyzes 21 parameters on the routine basis.</li> <li>11 NSP Management Meetings were held to transfer monitoring techniques.</li> <li>By August 2003, the instructions on SOPs and the subsequent training on analytical techniques were almost completed (19 parameters out of 21 parameters).</li> <li>In 2004, analytical skills necessary for E-coli and Chloride have been transferred, and finally 21 parameters are analyzed in the Model Site.</li> <li>Through the above activities, capability of PUSARPEDALDA-NSP improved.</li> <li>Training on analytical techniques of the accredited parameters and others was conducted by PUSARPEDAL (EMC) to PUSARPEDALDA-NSP.</li> <li>KAN accredited laboratory management system of BAPEDALDA NSP laboratory in July 2005(Certificate No. LP-281-IDN).</li> </ul>	Good
1-1-2. Develop laboratory management system				
1-1-3. Establish QA/QC in the laboratory				
<b>1-2 Conducting Monitoring and Assessment of Specific Issues</b>				
1-2-1. Conduct monitoring and surveillance	Whether activities are implemented appropriately both in timing and quality as expected in POs	- Progress Reports (Monitoring Results) - C/P and J/E - Questionnaire Results	<ul style="list-style-type: none"> <li>Until the end of January 2006, the Deli River water quality monitoring was conducted 21 times, in total, since April 2003 (nine (9) times in 2003, four (4) times in 2004 and seven (7) times in 2005 and one (1) time in 2006, respectively). Since June 2005, the monitoring has been conducted monthly basis.</li> <li>Eight (8) key parameters and either 16 or 17 special parameters were analyzed at 21 in 2003, 18 in 2004 and 11 sampling points in 2005, respectively. Water volume was measured at the sampling points to calculate pollution load.</li> <li>Survey on domestic wastewater at the demonstration site station (DSS) was conducted 4 times since May 2005.</li> <li>Annual pollution source inventory study, on the budget of BAPEDALDA-NSP, was conducted for 54 polluters including factories, offices, hospitals, hotels, etc. (February to March 2003, July to August 2004 and September to October 2005).</li> <li>Through the survey and inspection, information was compiled for 37 factories.</li> <li>Operation of the instrument for automatic sampling and water quality check were instructed in August 2005 in the Deli River basin.</li> <li>A database for the Deli River Water Quality Management was created in September 2005.</li> </ul>	Good
1-2-2. Conduct study on pollution level and pollution sources				

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLF= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Environmental Laboratory of BAPEDALDA

## Annex 3.1 Performance Grid (4): Activities (2)

Activities	Base for Judgment	Data Source	Summary for Activity Accomplishments as of January 2006	Assessment -Good -Moderate -Poor
1-3 Developing Options of Countermeasures of Specific Issues				
1-3-1. Assess causes of pollution	Whether activities are implemented appropriately both in timing and quality as expected in POs	<ul style="list-style-type: none"> <li>- Progress Reports (Monitoring Results)</li> <li>- C/P and J/E</li> <li>- Questionnaire Results</li> </ul>	<ul style="list-style-type: none"> <li>• BOD and COD of the Deli River were estimated based on the monitoring results, and data (water volume, inventory and domestic wastewater) were presented in NSP environmental report. (Three times: from March to May and July 2004, and from September to November 2005)</li> <li>• Relationship between point sources, effluent load and the measured pollution load of the Deli River were examined. (Three times: from March to May 2003, July 2004, and from April to June 2005)</li> <li>• In November 2005, relationship between the quantity of the pollutant load and the regular monitoring data were examined.</li> <li>• According to the data, domestic wastewater was supposed to account 70% of pollution.</li> <li>• Unit pollution loads generated from household was estimated based on observed data in 2005 (from April to June and from August to November).</li> <li>• The Deli River pollution loads runoff model for ordinary discharge stage was presented in the technical meeting in July 2004 and data for calibration have been collected since August 2004.</li> <li>• A pollution loading reduction plan for the Deli River using pollution loads runoff model was proposed in the Joint Technical Management Meeting in Medan in February 2005 as a component of DSS program.</li> <li>• Guidance of the model to C/Ps (April 2005) as well as simulation (September 2005) was conducted and the results were compiled into a report (Formulation of Pollutants Runoff Model Targeting the Deli River Basin (December 2005)).</li> <li>• The Campaign for community awareness was conducted five (5) times in 2005.</li> <li>• Evaluation of campaign was conducted two (2) times in 2005.</li> <li>• The Strategic Plan of DSS Program for the Deli River to be referred for river water quality management in Indonesia was prepared at the end of January 2005.</li> </ul>	Good
1-3-2. Preparation of strategic program of environmental quality improvement	Whether activities are implemented appropriately both in timing and quality as expected in POs	<ul style="list-style-type: none"> <li>- Progress Reports (Monitoring Results)</li> <li>- C/P and J/E</li> <li>- Questionnaire Results</li> </ul>		

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Environmental Laboratory of BAPEDALDA

## Annex 3.1 Performance Grid (5): Activities (3)

Activities	Base fro Judgment	Data Source	Summary for Activity Accomplishments as of January 2006	Assessment -Good -Moderate -Poor
<b>2. Capacity Development of PUSARPEDAL (EMC) an Development of Policies</b>				
<b>2-1 Improving Laboratory Management of PUSARPEDAL (EMC)</b>				
2-1-1. Produce standard methods/procedures of sampling and analysis	Whether activities are implemented appropriately both in timing and quality as expected in POs	- Progress Reports (Monitoring Results) - C/P and J/E - Questionnaire Results	<ul style="list-style-type: none"> <li>• Totally 80 SOPs have been accredited by the end of October 2005 (18 before the Project (2001), 10 in 2003 and 52 in 2005).</li> <li>• By June 2003 stability test was conducted for 10 parameters of river water reference materials (RM) and four (4) parameters of a sediment reference material.</li> <li>• In addition to these 14 parameters, 12 parameters were produced and used for the proficiency tests of heavy metals in 2002, 2003 and 2004. Consequently, 26 RM, in total, were produced.</li> </ul>	
2-1-2. Produce Reference Materials (RM)			<ul style="list-style-type: none"> <li>• Environmental information system was partly developed and instructed to C/P by a short-term expert from April to July 2003. (A short-term expert on Environmental Information System is scheduled in February 2006 for completion of the system)</li> <li>• Laboratory wastewater treatment apparatus was produced in 2004 and a Short-term Expert (Laboratory Waste Treatment) transferred know-how of design and production. In addition, test operation of the treatment apparatus was conducted and examined the treatment efficiency.</li> <li>• Waste treatment apparatuses were produced and operated by Short-term Experts in 2004.</li> <li>• Training on the operation of the apparatus was conducted from August to November 2004.</li> <li>• Guideline for "Laboratory Wastewater Management" is under process of preparation and will be finalized by March 2006.</li> </ul>	Good
2-1-3. Develop laboratory management system				

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAFEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Environmental Laboratory of BAFEDALDA

## Annex 3.1 Performance Grid (6): Activities (4)

Activities	Base fro Judgment	Data Source	Summary for Activity Accomplishments as of January 2006	Assessment -Good -Moderate -Poor
<p><b>2-2 Conducting Studies on Environmental Monitoring and Management</b></p> <p>2-2-1. Conduct Studies on evaluation of existing pollution control facilities</p>	<p>Whether activities are implemented appropriately both in timing and quality as expected in POs</p>	<p>- Progress Reports (Monitoring Results) - C/P and J/E - Questionnaire Results</p>	<p>• Five (5) lectures were provided by the expert on wastewater treatment facilities of industrial pollution sources.</p> <p>• Laboratory wastewater treatment apparatuses were produced and operated by a short-term expert for performance study in 2004.</p> <p>• Industries requested the KLH to evaluate the existing pollution control facilities (trial, burning test, emission, hazardous wastes, etc.).</p> <p>• Application of environmental standards is examined according to the conditions of river catchments based on monitoring data focused on water and air.</p> <p>• Water samples were collected at upper stream of the Deli River (background sample) and analyzed periodically from August 2005.</p> <p>• Based on Jakarta air pollution monitoring data from 2002 to 2005, air pollution simulation was conducted in terms of vehicle emission in order to obtain basic information. In addition, since October 2005, for improvement of simulation accuracy, investigations on pollution source as well as traffic volume survey have been implemented.</p> <p>• Monitoring of pollution in 10 major cities by AQMS (Air Quality Monitoring System) has been conducted since April 2003 by the cities with PUSARPEDAL (EMC) as the main center of calibration.</p>	<p>Good-Moderate</p>
<p>2-2-2. Evaluate the existing environmental standards based on monitoring data focused on water and air</p>			<p>• Data for the air diffusion model have been collected at 21 points in Jakarta metropolitan area for SO<sub>2</sub>, NO<sub>2</sub> and NOx using passive samplers and 11 points for SPM using filter paper since April 2003.</p> <p>• Computer hardware and software for air diffusion model and sampling devices (passive sampler and pump for SPM) were provided by JICA in January 2003.</p> <p>• Sampling and modeling were jointly conducted with BPLHD DKI JAKARTA staffs.</p> <p>• Since January 2004, health impact assessment of air pollution conducted in commission to the University of Indonesia, aiming at examining relationship between air pollution by vehicle emission and the number of respiratory disease cases (postponed a half year due to organizational reform of JICA).</p> <p>• 24 hours traffic volume was measured in Jakarta at five(5) points to verify the inventory data on vehicle emission in 2003 and 2005</p> <p>• Prediction on air pollution diffusion was conducted three times (January, and August 2003 and October 2005) using the diffusion model software, climatic and pollution sources inventory data.</p> <p>• In 2002, 2003 and 2005, Short-term Experts instructed C/P on how to operate and use the air diffusion model for applying policy countermeasures.</p>	<p>Good-Moderate</p>
<p>2-2-3. Conduct study on air quality modeling (Jakarta)</p>				

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPPELALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Environmental Laboratory of BAPPELALDA

## Annex 3.1 Performance Grid (7): Activities (5)

Activities	Base for Judgment	Data Source	Summary for Activity Accomplishments as of January 2006	Assessment -Good -Moderate -Poor
<b>3. Capacity Development of Local Governments on Environmental Monitoring and Surveillance</b>				
<b>3-1 Improving Management Capabilities of Local Laboratory</b>				
3-1-1. Train staff of local laboratories on advanced analytical methods.	Whether activities are implemented appropriately both in timing and quality as expected in POs	- Progress Reports (Monitoring Results) - C/P and J/E - Questionnaire Results	<ul style="list-style-type: none"> <li>• Training materials (modules) were produced (see details in Annex 6)</li> <li>• Environmental Analysis Course for regional environmental laboratory staff was conducted from 24 to 28 March 2003 with participation of 29 trainees from 27 provinces.</li> <li>• Lectures and exercises were conducted on environmental monitoring plan, PROKASIII and sampling/analysis techniques.</li> <li>• From February 16 to 20, 2004, Total Mercury Analysis Course was conducted with participation of 16 trainees from 15 provinces and one (1) city.</li> <li>• Proficiency tests were conducted in terms of the following parameters:               <ul style="list-style-type: none"> <li>• 2002: Pb, Cd, Cr, Zn, Cu</li> <li>• 2003: NO<sub>3</sub>, Hg<sup>2+</sup>, SO<sub>4</sub><sup>2-</sup>, Cl<sup>-</sup></li> <li>• 2004: Fe, Cu, Mn, Cr, Ni,</li> <li>• 2005: COD, T-P, Hg<sup>2+</sup>, Pb, Cu, Fe</li> </ul> </li> <li>• Laboratory Quality Management System course for BAPEDALDA/BPLHD staff was conducted from 10 to 21 March 2003, attended by 24 trainees from 23 provinces.</li> <li>• The course was organized by SARPEDAL(EMC).</li> <li>• Environmental quality monitoring workshop was conducted in December 2002.</li> <li>• Water quality monitoring workshop was conducted from 2 to 3 March 2004, with 29 participants from 28 provinces and one (1) city attended the course.</li> <li>• Workshop on environment management was held from 9 to 10 March 2004.</li> </ul>	Good
3-1-2. Conduct proficiency tests.	- Ditto -	- Ditto -		
3-1-3. Train staff of local laboratories on laboratory quality management system (LQMS)	- Ditto -	- Ditto -		
3-1-4. Hold workshops among local laboratories for exchanging information.	- Ditto -	- Ditto -		
<b>3-2 Training for Environmental Monitoring and Surveillance Methods</b>				
3-2-1. Provide local laboratories with technical assistance for implementation method and surveillance.	Whether activities are implemented appropriately both in timing and quality as expected in POs	- Questionnaire - Progress Reports (Monitoring Results) - C/P and J/E - Results	<ul style="list-style-type: none"> <li>• Environmental monitoring course for local governments was conducted from 28 July to 1 August 2003, attended by 30 trainees from 30 provinces.</li> <li>• River and lake water quality monitoring method was presented.</li> <li>• JICA Experts presented monitoring methods currently applied in Japan.</li> <li>• Technical guidance for Total Mercury Analysis in river water segment was held (16-20 February 2004)</li> </ul>	Good
3-2-2. Implement technical guidance to local governments on monitoring program and surveillance	- Ditto -	- Ditto -		
<b>3-3 Training for Impact Assessment</b>				
3-3-1. Produce training modules of environmental management for local governments	Whether activities are implemented appropriately both in timing and quality as expected	- Questionnaire - Progress Reports (Monitoring Results) - C/P and J/E	<ul style="list-style-type: none"> <li>• By the end of December 2005, 199 training modules were completed. (See details in Annex 6)</li> </ul>	Good

	in POs	Results	
3-3-2. Train staff of local governments on environmental management	- Ditto -	- Ditto -	<ul style="list-style-type: none"> <li>• By the end of December 2005, 349 staff of local government were trained on environmental management.</li> </ul>
3-3-3. Hold workshops among local governments on environmental management	- Ditto -	- Ditto -	<ul style="list-style-type: none"> <li>• Special memorial seminar upon establishment of Banten Province (September 2002)</li> <li>• Seminar on environment for provincial and municipal heads,</li> <li>• In the Joint program with KLH, a need to construct national and local frameworks of environmental management system was addressed.</li> <li>• Environmental management seminar for local governments' managerial officials in charge of environment (December 19 and 20, 2003) aiming at raising awareness of executive staff on environmental management and thus enhancing PUSARPEDAL (EMC) training and technical transfer to local lab staff.</li> <li>• The third workshop for networking among local governments will be held on March, 2006.</li> </ul>

Note: (1) JE = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Environmental Laboratory of BAPEDALDA

## Annex 3.1 Performance Grid (8): Overall Goal, Project Purposes and Outputs

Narrative Summary	Verifiable Indicators	Achievement as of January 2006																																			
<p><b>(Overall Goal)</b> The national and local level's capabilities of environmental management are strengthened.</p>	<p>1. The implemented local environmental monitoring and surveillance by the local governments (provincial BAPEDALDA) with well managed laboratory. 2. The countermeasures are implemented based on the reliable monitoring and surveillance data.</p>	<ul style="list-style-type: none"> <li>Responding to KLH requests to establish environmental laboratories at provincial level, seven (7) BAPEDALDA laboratories were established.</li> <li>In North Sumatra Province, PUSARPEDALDA-NSP has implemented periodical monitoring and BAPEDALDA has used the data for countermeasures against water pollution such as DSS (Demonstration Site Station) program for the Deli river</li> </ul>																																			
<p><b>(Project Purpose)</b> A framework of environmental management in which PUSARPEDAL (EMC) and BAPEDALDA work together is established by initiative of PUSARPEDAL (EMC).</p>	<p>1. By 2006, BAPEDALDA, NSP implements some options of countermeasures to water pollution of the Deli River with assistance from PUSARPEDAL (EMC). 2. By 2006, the number of agreements on cooperation between PUSARPEDAL (EMC) and local governments impact control authority increases.</p>	<ul style="list-style-type: none"> <li>A framework of environmental management under collaboration of PUSARPEDAL (EMC) and BAPEDALDA is established through capacity development of BAPEDALDA-NSP and PUSARPEDAL (EMC) staff.</li> <li>The Deli River Clean Campaign was conducted in March 2004 as one of the options of countermeasures.</li> <li>As the next option, NSP DSS (Demonstration Site Station) Program to clean up the Deli River was launched by the initiative of BAPEDALDA-NSP, with participation of local communities, private sectors, NGO, etc in collaboration with PUSARPEDAL (EMC).</li> <li>As of the end of January 2006, three local governments: NSP, Banten, DKI Jakarta made agreements with PUSARPEDAL (EMC).</li> <li>Meanwhile, in 2006, 30 provinces/cities made 60 commitments with PUSARPEDAL (EMC) receiving stimulant fund that partially covers the cost of monitoring.</li> </ul>																																			
<p><b>(Outputs)</b> 1. Options of countermeasures to specific environmental problems are developed in the model site (North Sumatra province) based on the reliable monitoring data and scientific knowledge.</p>	<p>3. Every year 30 provinces submit reports on water quality monitoring and 10 cities submit reports on air quality monitoring to PUSARPEDAL (EMC) and the collected data are processed for State of Environment reports (SoER)</p>	<table border="1"> <thead> <tr> <th>Year</th> <th>2002</th> <th>2003</th> <th>2004</th> <th>2005</th> </tr> </thead> <tbody> <tr> <td>No. of Agreements/Commitments</td> <td>2/10</td> <td>3/40</td> <td>3/40</td> <td>3/60</td> </tr> </tbody> </table> <p>• 30 provinces/cities submitted monitoring reports to PUSARPEDAL (EMC) in 2005. • The data are compiled and used for SoER from 2002.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>2002</th> <th>2003</th> <th>2004</th> <th>2005</th> </tr> </thead> <tbody> <tr> <td>Air monitoring (cities)</td> <td>10</td> <td>10</td> <td>10</td> <td>30</td> </tr> <tr> <td>Water monitoring (provinces)</td> <td>---</td> <td>30</td> <td>30</td> <td>30</td> </tr> </tbody> </table> <p>• The number of reports prepared are as follows:</p> <table border="1"> <thead> <tr> <th>Year</th> <th>2002</th> <th>2003</th> <th>2004</th> <th>2005</th> </tr> </thead> <tbody> <tr> <td>No. of reports</td> <td>1</td> <td>1</td> <td>3</td> <td>1(*)</td> </tr> </tbody> </table> <p>(* Annual Reports for 2005, compiling data of three time monitoring data, are being prepared and will be published in April 2006.</p>	Year	2002	2003	2004	2005	No. of Agreements/Commitments	2/10	3/40	3/40	3/60	Year	2002	2003	2004	2005	Air monitoring (cities)	10	10	10	30	Water monitoring (provinces)	---	30	30	30	Year	2002	2003	2004	2005	No. of reports	1	1	3	1(*)
Year	2002	2003	2004	2005																																	
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Water monitoring (provinces)	---	30	30	30																																	
Year	2002	2003	2004	2005																																	
No. of reports	1	1	3	1(*)																																	
<p>2. Capabilities of PUSARPEDAL (EMC) for providing KLH and BAPEDALDA with scientific knowledge and technical</p>	<p>1-1. Three monitoring and surveillance reports are prepared every year by BAPEDALDA NSP and PUSARPEDAL (EMC) together. 1-2. Three times of meetings for development of options are organized every year by BAPEDALDA NSP and PUSARPEDAL (EMC) together. 2-1. Three reports regarding scientific knowledge are submitted to the other sections of KLH from PUSARPEDAL (EMC) every year. 2-2. Five SOP's are prepared every year by PUSARPEDAL (EMC).</p>	<ul style="list-style-type: none"> <li>Except for 2002, every year, three meetings for development of the options were organized by BAPEDALDA and PUSARPEDAL (EMC).</li> <li>Six (6) technical reports were prepared in 2002, 2003 and 2005, respectively.</li> <li>In addition, technical reports, related to air pollution survey, health impact assessment, etc. were prepared and submitted by PUSARPEDAL (EMC).</li> <li>Number of SOP's accredited.</li> </ul> <table border="1"> <thead> <tr> <th>Year</th> <th>(2001)</th> <th>2002</th> <th>2003</th> <th>2004</th> <th>2005</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>No. of meetings</td> <td></td> <td>1</td> <td>3</td> <td>3</td> <td>4</td> <td>11</td> </tr> </tbody> </table>	Year	(2001)	2002	2003	2004	2005	Total	No. of meetings		1	3	3	4	11																					
Year	(2001)	2002	2003	2004	2005	Total																															
No. of meetings		1	3	3	4	11																															

No. of SOPs	(18)	0	10	0	52	80	
<p>guidance on environmental management are reinforced.</p> <p>2-3. By 2006, sixty analytical parameters are accredited by KAN on ISO17025 in PUSARPEDAL (EMC).</p> <p>2-4. By 2006, twenty parameters of reference materials are produced and proposed for certification to KAN by PUSARPEDAL (EMC).</p> <p>2-5. By 2006, five guidelines are prepared and up-dated by PUSARPEDAL (EMC) to the local governments.</p> <p>3-1. Three training modules are prepared every year by SARPEAL.</p> <p>3-2. By 2006, the proficiency tests to the environmental laboratories on eighteen parameters are conducted by PUSARPEDAL (EMC).</p> <p>3-3. The two times of workshops for the staff of the local governments are organized by PUSARPEDAL (EMC) every year.</p> <p>3-4. By 2006, 360 staffs of the local governments (including local environmental laboratories) are trained by PUSARPEDAL (EMC).</p>	<p>• Number of parameters accredited (accreditation is conducted every other year).</p> <p>Year</p> <p>(2001)</p> <p>2002</p> <p>2003</p> <p>2004</p> <p>2005</p> <p>Total</p>	0	10	0	52	80	
	<p>No. of parameters</p> <p>(18)</p> <p>0</p> <p>10</p> <p>0</p> <p>52</p> <p>80</p>	<p>(*) There is no ISO accreditation institution in Indonesia and KAN is provisionally covering the duties.</p> <p>• Technology transfer was implemented on standard material preparation. Stability tests were already executed in terms of the quality assurance of 10 parameters of river water and four (4) parameters of sediment reference materials.</p> <p>• In addition to the above 14 reference materials, 12 reference materials of heavy metals were produced and are used for the proficiency test.</p> <p>• Water Quality Monitoring was prepared in 2003 and delivered to provinces.</p> <p>• Environmental Laboratory Assessment: was prepared in 2004 delivered and to provinces.</p> <p>• Field Survey and Sampling of Sea Water was prepared in 2005.</p> <p>• Biological Monitoring: was prepared in 2005.</p> <p>• Laboratory Waste Management: will be finalized by March 2006.</p> <p>• Verification and Validation of Environmental Data Quality: will be finalized by March 2006.</p>					
<p>3. Know-how of proper environmental monitoring and surveillance methods are transferred.</p>	<p>• Number of training modules produced are as follows:</p> <p>Japanese Fiscal Year</p> <p>2002</p> <p>2003</p> <p>2004</p> <p>2005</p> <p>Total</p>	3	3	4	2	12	
	<p>Nos. of Modules (*)</p> <p>58</p> <p>38</p> <p>65</p> <p>38</p> <p>199</p>	<p>(*) Modules are instruction materials that used for trainings.</p> <p>• Proficiency tests were conducted once a year from 2002 mainly in terms of heavy metals.</p> <p>• 2002: Pb, Cd, Cr, Zn, Cu</p> <p>• 2003: NO<sub>3</sub>, Hg<sup>2+</sup>, SO<sub>4</sub><sup>2-</sup>, Cl<sup>-</sup></p> <p>• 2004: Fe, Cu, Mn, Cr, Ni,</p> <p>• 2005: COD, T-P, Hg<sup>2+</sup>, Pb, Cu, Fe</p>					
<p>3-3. The two times of workshops for the staff of the local governments are organized by PUSARPEDAL (EMC) every year.</p> <p>3-4. By 2006, 360 staffs of the local governments (including local environmental laboratories) are trained by PUSARPEDAL (EMC).</p>	<p>• PUSARPEDAL (EMC) conducted workshops 14 times in total since 2002.</p> <p>• No. of training/workshop held each year are as follows:</p> <p>Japanese Fiscal Year</p> <p>2002</p> <p>2003</p> <p>2004</p> <p>2005</p> <p>Total</p>	3	3	4	4	14	
	<p>No. of workshops</p> <p>3</p> <p>3</p> <p>4</p> <p>4</p> <p>14</p>	<p>• Until the end of January 2006, 349 local governments staffs, in total, were trained by PUSARPEDAL (EMC).</p> <p>• No. of attendants to training/workshop each year are as follows:</p> <p>Japanese Fiscal Year</p> <p>2002</p> <p>2003</p> <p>2004</p> <p>2005</p> <p>Total</p>					
	<p>No. of attendants / Training</p> <p>53</p> <p>47</p> <p>99</p> <p>56</p> <p>255</p>	31	29	34	0	94	
	<p>No. of attendants/ Workshop</p> <p>31</p> <p>29</p> <p>34</p> <p>0</p> <p>94</p>	<p>Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLIH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDAL/DA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Environmental Laboratory of BAPEDALDA</p>					

ANNEX 3.2 Evaluation Grid for The Project for Strengthening Decentralized Environmental Management System in Indonesia (DEMS) (1)- Performance of the Project (Inputs/Activities/Outputs)

Performance of the Project	Evaluation Question		Criteria and Method for Judgment	Summary for Evaluation	Assessment High/Moderate/Poor
	Major Item	Minor Item			
Performance of the Project	Have the Project Inputs from the Japanese and the Indonesian sides been implemented as planned?		"Performance Grid"	<p><u>Japanese Side:</u> Most of the Inputs were carried out as planned.</p> <ul style="list-style-type: none"> <li>In addition to eight (8) Long-term Experts (169.1 M/M in total as of the end of January 2006), 22 Short-term Experts (36.8 M/M) were assigned.</li> <li>12 Indonesian C/Ps were dispatched to Japan for training.</li> <li>Up to January 2006, the Japanese Government has donated equipment to the value of about 113.6 million yen in total (approx. equivalent to IDR 9.5 billion (exchange rate as of December 2005: JPY 1.0 = IDR 84)).</li> <li>Local Cost Support (workshops, seminars, etc.) amounted to IDR 4.1 billion (JPY 49.2 million)</li> </ul> <p><u>Indonesian Side:</u> Overall, the Inputs were carried out as planned.</p> <ul style="list-style-type: none"> <li>As of the end of January 2006, 84C/Ps are allocated to the Project, comprising of one (1) Project Director, One (1) Project Manager, 63staff of SAPREDAL, and 19 staff BAPEDALDA-NSP (including 12 PUSARPEALDA staff).</li> <li>Existing facilities, equipment and office space for J/Es were provided in PUSARPEAL (EMC).</li> <li>Existing facilities and equipment were also provided by PUSARPEALDA/BAPEDALDA for the Project activities.</li> <li>Maintenance of equipment needs improvement.</li> <li>Additional laboratory equipment (IDR.1,061 million (JPY 12.6 million), was provided by PUSARPEAL (EMC).</li> <li>As local cost, IDR.26.4 billion (JPY. 314 million yen) by PUSARPEAL (EMC).</li> <li>BAPEDALDA-NSP and PUSARPEALDA-NSP provided IDR. 28.5 billion (JPY 339 million) and IDR. 790 million (JPY 9.4 million) were allocated by BAPEDALDA-NSP and PUSARPEALDA-NSP respectively.</li> <li>Most of the Activities were carried out as planned (See details in the Performance Grid).</li> </ul>	High-Moderate
	Have the Project Activities been carried out as planned?		"Performance Grid"	<p><u>Output 1:</u> Options of countermeasures to specific environmental problems are developed in the model site (North Sumatra province) based on the reliable monitoring data and scientific knowledge.</p> <ul style="list-style-type: none"> <li>Output 1 was achieved quite successfully in terms of the performance indicators in the PDM.</li> <li>The conditions of PUSARPEALDA-NSP laboratory have been improved through "Laboratory Management System" establishment, and were accredited by KAN in 2005.</li> <li>Periodical water quality monitoring has been conducted since 2003(eight (8) key and 16 to 17 special parameters from 21 sampling points. Bi-monthly basis in 2004 and monthly basis from June 2005)</li> <li>Through the inventory survey, the major pollution source of the Deli River was found out domestic wastewater.</li> <li>A pollutant load model was introduced in 2005 as a tool for water quality management and future policy level countermeasure development.</li> <li>DSS program have been conducted since 2005, as one of the options for countermeasures against the Deli River water pollution with the initiative of BAPEDALDA-NSP in cooperation with PUSARPEAL (EMC) and participation of local communities, NGOs, etc.</li> </ul>	High
	Have the Project Outputs been produced as planned?		"Performance Grid"		High

<p><u>Output 2: Capabilities of PUSARPEDAL (EMC) for providing KLH and BAPEDALDA with scientific knowledge and technical guidance on environmental management are reinforced</u></p> <ul style="list-style-type: none"> <li>• Output 2 was achieved satisfactorily in terms of the performance indicators in the PDM.</li> <li>• Totally 80 SOPs have been accredited by the end of January 2006 (18 previous to the Project (2001), 10 in 2003, and 52 in 2005).</li> <li>• By June 2003, a stability test was conducted for 10 parameters of river water reference materials (RM) and four (4) parameters of a sediment reference material. In addition to these 14 parameters, 12 parameters were produced and used for the proficiency tests of heavy metals in 2002, 2003 and 2004. Consequently, 26 RM, in total, were produced.</li> <li>• Study on air quality modeling was conducted in addition to related activities such as data collection (NOx, SO<sub>2</sub> at 21 points in Jakarta, GPS data, etc.), health impact assessment, etc. for preparation of policy countermeasures.</li> </ul>	<p><u>Output 3: Know-how of proper environmental monitoring and surveillance methods are transferred.</u></p> <ul style="list-style-type: none"> <li>• Output 3 was achieved quite successfully in terms of performance indicators in the PDM.</li> <li>• Capability of local laboratory management was improved through trainings (advanced analytical methods, proficiency test, LQMS (Laboratory Quality Management System), as well as workshops for exchange information).</li> <li>• Training for environmental monitoring course for local government staffs was conducted with participation of 35 trainees from 28 provinces.</li> <li>• By the end of December 2005, 199 training modules were completed for training of environmental management with participation of 349 local government staff.</li> <li>• Seminars (Special memorial seminar on Banten Province (September 2002), environmental management seminar (December 2003) as well as three workshops were held.</li> </ul>	<p>High-Moderate</p>
<p>Output 2 was achieved satisfactorily in terms of the performance indicators in the PDM.</p>	<p>High</p>	<p>High</p>

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Laboratory of Provincial Environmental Impact Management Agency

## ANNEX 3.2 Evaluation Grid for The Project for Strengthening Decentralized Environmental Management System in Indonesia (DEMS) (2)- Relevance

Five Criteria	Evaluation Questions		Criteria and Method for Judgment	Summary for Evaluation	Assessment High/Moderate/Poor
	Major Item	Minor Item			
<b>Relevance</b> -To examine the justifiability or necessity for project implementation	Necessity	Does DEMS match the needs of a target area or society?	Consistencies of the Project Purposes and Overall Goal with the needs of the target area and the society?	<ul style="list-style-type: none"> <li>The Project maintains high relevance with the needs of the Indonesian society at the time of the final evaluation.</li> <li>Indonesia has been facing enormous environmental pollution problems regarding air and water pollution and solid waste management.</li> <li>In the National Development Plan (RPJM) for the next five years (2005-2009), deterioration of environment, indicated by water and air pollution, deforestation, etc, is regarded as one of the critical problems against sustainable development.</li> <li>Directions of environmental management are shown in the Plan (Ch.32) including principle of sustainable development with due consideration of the balance between environmental conservation and utilization of natural resources, coordination among the national and local level environmental management, awareness of the people on environmental issues, etc.</li> <li>The Project has high relevance with the needs of the target groups (staffs of PUSARPEDAL (EMC) and local governments)</li> <li>The target groups have the major task to carry out the environmental pollution control in the field of environmental monitoring and surveillance, laboratory work, and environmental management.</li> <li>Under decentralization policy that has been in progress since 2001, local governments have authority and mandate to implement environmental monitoring and surveillance, which increase the needs of securing laboratory management system, training analysts, acquiring certification of laboratory, etc.</li> <li>Capacity development of regional laboratories, with initiatives of PUSARPEDAL (EMC), is in line with the trend of decentralization policy of Indonesia and the needs of the target groups.</li> </ul>	High
	Priority	Does DEMS match the needs of target groups?		<ul style="list-style-type: none"> <li>The Project is consistent with the Japan's foreign aid policy.</li> <li>In the ODA implementation plan of Japan by country (2004), preservation of environment is one of the priority fields of assistance as a long-term countermeasure to establish democratic and fair society.</li> <li>More specifically, assistance by the Government of Japan will be concentrated on 1) strengthening of environmental administrative capability and human resource of the central and local governments as well as enlightenment of the citizens, and 2) preservation of urban environment through establishment of air and water pollution monitoring along with mitigation of living conditions of urban population.</li> <li>Both of the above mentioned concentrated items coincide with the aim of the Project.</li> <li>The environmental monitoring and surveillance and laboratory management technologies have been developed well in Japan.</li> <li>Experiences and data accumulated can be used for planning and implementation of various environmental measures.</li> </ul>	High
Relevance of the Project as a Means	Does Japan have technical advantage compared to other countries?	Is DEMS consistent with the Japan's foreign assistance policy?		<ul style="list-style-type: none"> <li>The Project is consistent with the needs of the Indonesian society at the time of the final evaluation.</li> <li>The Project maintains high relevance with the needs of the target group (Staff of PUSARPEDAL (EMC) and Local Governments)</li> <li>The Project is consistent with the Japan's foreign aid policy.</li> </ul>	High
Evaluation for Relevance: Relevance of the Project is High. <ul style="list-style-type: none"> <li>The Project maintains high relevance with the needs of the Indonesian society at the time of the final evaluation.</li> <li>The Project has high relevance with the needs of the target group (Staff of PUSARPEDAL (EMC) and Local Governments)</li> <li>The Project is consistent with the Japan's foreign aid policy.</li> </ul>					

Note: (1) J/E = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Laboratory of Provincial Environmental Impact Management Agency

**ANNEX 3.2 Evaluation Grid for The Project for Strengthening Decentralized Environmental Management System in Indonesia (DEMS) (3)- Effectiveness**

Five Criteria	Evaluation Questions		Criteria and Method for Judgment	Summary for Evaluation	Assessment (High /Moderate/Poor)
	Major Item	Minor Item			
Effectiveness	-To examine the Project effects	Is the framework of environmental management established by initiative of PUSARPEDAL (EMC) in which PUSARPEDAL (EMC) and BAPEDALDA work together?	Degree of the framework establishment is verified based on the indicators of PDM	<ul style="list-style-type: none"> <li>A framework of environmental management under collaboration of PUSARPEDAL (EMC) and BAPEDALDA is basically established through capacity development of BAPEDALDA and PUSARPEDAL (EMC) staff.</li> <li>The Deli River Cleanup Campaign was conducted in March 2004 as one of the options.</li> <li>As the next option, NSP DSS (Demonstration Site Station) Program to clean up the Deli River was launched in 2005 by the initiative of BAPEDALDA-NSP, under the collaboration with PUSARPEDAL (EMC), local communities, private sectors, NGO, etc.</li> <li>By the end of 2005, three (3) agreements and 60 commitments were made between PUSARPEDAL (EMC) and the local governments.</li> <li>By the end of 2005, 30 cities submitted air monitoring reports (samples) and 30 provinces submitted water monitoring reports (samples) to PUSARPEDAL (EMC) and BAPEDALDA.</li> <li>Most of the Outputs have been achieved successfully.</li> </ul>	High-Moderate
		Were the Outputs achieved successfully and contributed to the achievement of the Project Purpose?	Comparison of the actual progress with the plan (Details are in (5)-Efficiency)		High
		Were there any external factors that contributed to the progress or delay of the achievement?	Confirmation of the present status. (Is KAN ready to certify SRM7) based on the indicators of PDM	<ul style="list-style-type: none"> <li>Through the instructions conducted by the senior volunteer (S/V), PUSARPEDALDA-NSP has acquired sufficient skills of the maintenance and calibration of the major laboratory equipment such as AAS (Atomic Absorption Spectrophotometer).</li> <li>The following incidents directly or indirectly affected the progress of the Project, however, the delay or effect was not so significant.               <ul style="list-style-type: none"> <li>KAN was not ready to certify RM over the Project period and the RM, instead of SRM, was produced.</li> <li>As decentralization policy was enforced in 2001 in Indonesia and has been under progress since, at the early stage of the Project, there still remained confusion, such as scatter of previous documents, unclear demarcation of duties between the central and the local governments.</li> <li>In December 2003, monitoring of water quality could not be conducted because of a flood in North Sumatra Province.</li> <li>In December 2004, there was a huge earthquake in Aceh Province, and it hindered the progress of the Project due to emergency works assigned to some staff of BAPEDALDA and PUSARPEDALDA-NSP.</li> </ul> </li> </ul>	

**Evaluation for Effectiveness: Effectiveness of the Project is High**

- A framework of environmental management under collaboration of PUSARPEDAL (EMC) and BAPEDALDA is basically established through capacity development of BAPEDALDA and PUSARPEDAL (EMC) staff.
- Through the involvement of the DEMS Project, NSP DSS (Demonstration Site Station) Program to clean up the Deli River was launched in 2005 by the initiative of BAPEDALDA-NSP together with PUSARPEDAL (EMC) with participation of local communities, private sectors, NGOs, etc.
- In 2005, three (3) agreements and 60 commitments were made between PUSARPEDAL (EMC) and the local governments.
- In 2005, 30 cities submitted air monitoring reports and 30 provinces submitted water monitoring reports to PUSARPEDAL (EMC).
- The monitoring data were referred in SoFER from 2002 to 2004.

Note: (1) JE = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLIH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Laboratory of Provincial Environmental Impact Management Agency

## ANNEX 3.2 Evaluation Grid for The Project for Strengthening Decentralized Environmental Management System in Indonesia (DEMS) (4)- Efficiency

Five Criteria	Evaluation Questions		Criteria and Method for Judgment	Summary for Evaluation	Assessment High/Moderate/Poor
	Major Item	Minor Item			
Efficiency -To examine the Project efficiency	To which extent have Outputs been achieved?	Verification of the degree of accomplishment of Output 1.	Performance Indicators of PDM (Performance Grid)	<ul style="list-style-type: none"> <li>• BAPEDALDA-NSP is considered to have acquired a basic capability to develop strategy for countermeasures against the Deli River water pollution based on reliable monitoring data collected since April 2003, and the "Pollution Load Runoff Model" introduced by DEMS.</li> <li>• Meetings (Joint Management Meeting) to develop countermeasures were held three times each year (nine times in total so far) with participation of BAPEDALDA-NSP, PUSARPEDAL (EMC) and JICA Experts.</li> <li>• Countermeasures such as DSS were formulated based on the monitoring data in the Meeting.</li> <li>• It is considered, in general, that PUSARPEDAL (EMC) has improved capabilities to provide KLH and BAPEDALDA-NSP with scientific knowledge and technical guidance on environmental management participating the DEMS project activities with initiatives.</li> <li>• However, in some cases, there was a difference of expectancy in terms of transfer of knowledge between the Japanese Experts and PUSARPEDAL (EMC) staffs.</li> <li>• Until the end of January 2006, six trainings and workshops were held and PUSARPEDAL (EMC) staff prepared 199 training modules.</li> <li>• Therefore, in terms of nos. of the modules, achievement is quite satisfactory.</li> </ul>	High
		Verification of the degree of accomplishment of Output 2.	Performance Indicators of PDM (Performance Grid)		High-Moderate
		Verification of the degree of accomplishment of Output 3.	Performance Indicators of PDM (Performance Grid)		High
	Appropriateness of the Inputs	Have both the Indonesian and Japanese sides made inputs appropriately?	Confirmation of the achievement of Inputs (Performance Grid)	<ul style="list-style-type: none"> <li>• The Japanese side made sufficient allocation of Experts, four long-term Experts as well as 22 Short-term Experts for the last three and half years.</li> <li>• Provided equipment, 113.6 million yen in total (approx. equivalent to IDR 9.5 billion (exchange rate: JPY 1.0 = IDR 84)).</li> <li>• Local Cost Support (workshops, seminars, etc.) amounted to IDR. 4.13 billion (JPY 49.2 million)</li> <li>• The Indonesian side offered offices for the Japanese Experts, laboratories, laboratory equipment, and utilities (electricity, water, telephone, etc.), which contributed to the progress of the Project.</li> <li>• However, maintenance of the equipment was not satisfactory. (pure water producing equipment, fluorescent X-ray analysis device, etc.)</li> </ul>	High-Moderate
External Factors	What are the factors that inhibit or contribute to the efficiency of the project implementation process?	Confirm whether any factors that inhibit or contribute to the efficiency of the Project from various points of view.	<p><b>Accelerating factors</b></p> <ul style="list-style-type: none"> <li>• Previous to the Project, relevant projects in environmental field have been conducted by international donor agencies such as JICA (The Environment Management Center Project), JBIC (The Regional Monitoring Capacity Development Project), ADB, etc. Under these projects, provision of equipment, technology transfer were conducted and the basic enforcement of capability of PUSARPEDAL (EMC) staff was completed.</li> <li>• A senior volunteer (SV) was assigned two years from December 2002 and conducted transfer of technology in terms of laboratory management for PUSARPEDALDA-NSP. Along with the guidance and instructions by PUSARPEDAL and J/E, the technical transfer of the Senior Volunteer contributed greatly to the achievement of the Project.</li> </ul> <p><b>Inhibiting factors</b></p> <ul style="list-style-type: none"> <li>• Maintenance of laboratory equipment was not properly conducted neither in PUSARPEDAL (EMC) and PUSARPEDALDA, which hindered the smooth operation of the Project.</li> </ul>		
Evaluation for Efficiency: Efficiency of the Project is evaluated between High and Moderate.					
<ul style="list-style-type: none"> <li>• Both the Japanese and Indonesian sides made inputs almost as scheduled.</li> <li>• Achievements were significant in Output 1 and Output 3 (technology transfer to North Sumatra and local governments staff)</li> <li>• However, improvement of capability of PUSARPEDAL (EMC) (Output2) was not clearly verified as for PUSARPEDAL (EMC) staff.</li> </ul>					

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**ANNEX 3.2 Evaluation Grid for The Project for Strengthening Decentralized Environmental Management System in Indonesia (DEMS) (5)- Impacts Summary for Evaluation**

Five Criteria	Evaluation Questions		Criteria and Method for Judgment	Assessment High/Moderate/Poor
	Major Item	Minor Item		
<b>Impact</b> -To examine the Projects effects including the ripple effects in the long terms	Is the Overall Goal going to be achieved?	<b>Overall Goal</b> Are the national and local level's capabilities of environmental management strengthened?	-Confirmation of the status of the environment monitoring by the local governments based on the indicators of PDM.	• According to the results of the survey conducted by JICA in 2005 (The Study on the Current Status of Public/Private Environmental Laboratories), current status of each local environmental laboratory differs considerably. However, in general, laboratories are faced with the needs of human resources development, lack of equipment and budget for laboratory activities. • In the report, PUSARPEDALDA-NSP was relatively highly evaluated, in terms of equipment and human resources mainly due to technical transfer of the DEMS Project. As long as North Sumatra Province is concerned, it is appropriate to conclude that the foundation of scientific environmental monitoring has been established. • Consequently, if the Project activities are extended to the other provinces by the hand of the Indonesian side under collaborative framework established among KLH, PUSARPEDAL (EMC), BAPEDALDA and local laboratories, capabilities of environmental management of local governments as well as those of the National Government will be strengthened. • Therefore, Overall Goal is likely to be achieved.
	Is there any unexpected positive or negative influence including ripple effects?	Impacts on policies	-Confirmation of the present status	
	Impacts on organization and institution,		- Ditto-	Institutional Impact • PUSARPEDALDA-NSP, provisionally positioned under the head of BAPEDALDA-NSP, was authorized as an official organization of BAPEDALDA to implement environmental laboratory analysis in 2004, which is considered to be a positive impact of the achievement of the Project. • PUSARPEDALDA-NSP has been accredited ISO17025 under the support from the Project. Prior to this accreditation, there were virtually no requests for analysis from the private sector business. By this accreditation, requests for analysis from private-sector businesses have increased. • PUSARPEDAL (EMC), as a core institution of environmental management, was widely recognized by local governments and local governments and laboratories through technical trainings and seminars. • The pollutant load model is being applied to Cisdane River in Java by PUSARPEDAL for environmental management.
	Impacts on Technology		- Ditto-	Technology Impact • Simple devices for water level and flow velocity measurements that are readily applicable in local areas were developed under the DEMS Project. • A water sampling devices were ameliorated. • SOPs for local laboratories were developed, with reference to existing SOPs, to obtain

				<p>accreditation by KAN.</p> <ul style="list-style-type: none"> <li>The pollutant load model is being applied to Cisadane River in Java by PUSARPEDAL for environmental management.</li> </ul>	<p>06.2.7</p>
	<p>Impacts on society and culture</p>	<p>- Ditto-</p>	<p>Social Impact</p> <ul style="list-style-type: none"> <li>Local residents in the eight (8) demonstration sites has paid more attention to water quality of the Deli River through DSS program conducted in NSP since 2005, with emphasis of participation of local residents.</li> </ul>		
	<p>Evaluation for Impacts:</p> <ul style="list-style-type: none"> <li>Overall Goal is likely to be achieved if the Project activities are extended to the other provinces by the hand of the Indonesian side under collaborative framework established among KLH, PUSARPEDALDA (EMC), BAPEDALDA and local laboratories, capabilities of environmental management of local governments as well as those of the national government will be strengthened.</li> <li>Some positive impacts are observed. Negative Impacts are not observed.</li> </ul>				

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ANNEX 3.2 Evaluation Grid for The Project for Strengthening Decentralized Environmental Management System in Indonesia (DEMS) (6)- Sustainability  
Summary for Evaluation

Five Criteria	Evaluation Questions		Criteria and Method for Judgment	Assessment High/Moderate /Poor
	Major Item	Minor Item		
Sustainability	-To examine the sustainability after the termination of the JICA cooperation	Policy Does the Indonesian government sustain political support to DEMS activities?	- Verification of the present status, whether the DEMS has support in terms of policy.	High- Moderate
		<u>Institutional Aspect</u> The capacity of the organization to carry out activities. -Allocation of personnel - Budget arrangement, including ordinary expenses, secured? - Decision-making process	-Confirmation of the present status	
		<u>Technology transfer</u> Technology transfer to the C/P's. <u>Ownership</u> The ownership of implementing agencies and related ministries	-Confirmation of the present status  -Confirmation of the present status	
Evaluation for Sustainability: Sustainability of the Project is High-Moderate <ul style="list-style-type: none"> <li>It is considered that the Indonesian government has strong intention to support the environmental monitoring activities as described in the latest National Development Plan.</li> <li>PUSARPEDAL (EMC), as a sole reference laboratory in the filed of environment under KLH, has sufficient capacity to carry out and extend the Project activities as regards the existing facilities as well as the capability and the number of staff.</li> <li>Although capacity development was achieved to great extent under the Project, continuous development of human resources is necessary.</li> <li>It is a challenge for BAPEDALDA -NSP as well as for other provincial BAPEDALDA to establish self-supporting systems to secure the financial sustainability of the laboratories, including personal expenses.</li> <li>In many cases, local laboratories are operated under limited budgets, and the issue of maintaining and operating lab equipment remains associated with high consumable and repair costs as well as necessary technical skills.</li> <li>PUSARPEDAL (EMC) has acquired sufficient skill and knowledge for environmental monitoring. previously implemented cooperation projects.</li> <li>PUSARPEDALDA-NSP has acquired basic skill and knowledge for environmental monitoring.</li> <li>According to the interviews and questionnaire survey, in general, ownerships of PUSARPEDAL (EMC) is high and a part of the Project activities such as, seminars, work-shops, etc. were conducted by the hand of PUSARPEDAL (EMC) staff.</li> </ul>				Moderate
Evaluation for Sustainability: Sustainability of the Project is High-Moderate <ul style="list-style-type: none"> <li>It is considered that the Indonesian government has strong intention to support the environmental monitoring activities as described in the latest National Development Plan.</li> <li>PUSARPEDAL (EMC), as a sole reference laboratory in the filed of environment under KLH, has sufficient capacity to carry out and extend the Project activities as regards the existing facilities as well as the capability and the number of staff.</li> <li>Although capacity development was achieved to great extent under the Project, continuous development of human resources is necessary.</li> <li>Many of the equipments have expired the service periods. Maintenance will be more well as necessary technical skills.</li> </ul>				High- Moderate
Evaluation for Sustainability: Sustainability of the Project is High-Moderate <ul style="list-style-type: none"> <li>It is considered that the Indonesian government has strong intention to support the environmental monitoring activities as described in the latest National Development Plan.</li> <li>PUSARPEDAL (EMC), as a sole reference laboratory in the filed of environment under KLH, has sufficient capacity to carry out and extend the Project activities as regards the existing facilities as well as the capability and the number of staff.</li> <li>Although capacity development was achieved to great extent under the Project, continuous development of human resources is necessary.</li> <li>Many of the equipments have expired the service periods. Maintenance will be more well as necessary technical skills.</li> </ul>				High-Moderate

Note: (1) JE = Japanese Experts, (2) C/P=Indonesian Counterpart Staff, (3) KLH= Ministry of Environment, (4) PUSARPEDAL (EMC)=Environmental Management Center, (5) BAPEDALDA=Regional Environmental Impact Management Agency, (6) PUSARPEDALDA= Laboratory of Provincial Environmental Impact Management Agency



## Annex 4.2: Counterpart training in Japan

	Course of Training	Trainee's Name/Position	Duration	Training Institutions
<b>JFY 2002</b>				
1	Laboratory Management	Ms. Sufenal Healthy	2003/3/3-2003/6/1	Environmental Dept. Aichi Prefecture
2	Environmental Analysis	Ms. Hidayati	2003/3/3-2003/6/1	Environmental Dept. Aichi Prefecture
<b>JFY 2003</b>				
1	Environmental Monitoring	Ms. Simanjuntak Rismawati	2003/8/18-2003/10/25	Environmental Information Center, Osaka
2	Environmental Monitoring	Ms. Dewi Ratnaningsih	2003/8/18-2003/10/25	Environmental Information Center, Osaka
3	Laboratory Management	Ms. Kresnawati	2004/8/3-2004/10/30	Environmental Information Center, Osaka
<b>JFY 2004</b>				
1	Environmental Information System	Ahmad Mudjahidin	2004/7/19-2004/10/31	Aichi Environmental Research Center
2	Environmental Management System	Rosdiana Suarmata	2004/7/19-2004/8/29	Aichi Environmental Research Center
3	Noise and Vibrations	Mohamad Taufik	2005/1/24-2005/2/18	Hyogo, Kanagawa Prefectures, etc.
4	Toxic Substances	Asiah	2005/2/24-2005/3/19	Chemicals Evaluations and Research Inst., Japan National Institute for Environmental Studies
<b>JFY 2005</b>				
1	Environmental Monitoring Technology	Sri Unon Purwadi	2005/8/17-2005/10/28	Aichi Environmental Research Center
2	Environmental Management Administration	Setyo Purwadi	2005/8/17-2005/10/1	Aichi Environmental Research Center
3	Air Pollution Simulation Technology	Tamrin	2005/11/14-2006/2/16	Osaka University

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**Annex-4-3 Master Sheet Equipment Provision Project Type Technical Cooperation**

FY	Item No.	Name of Equipment	Specification	Quantity	Unit in US\$	Unit in US\$	Received fr Agent	Delivery to the User	Inspection	Installation / Remarks	Delivery		Contact Person
											Institution	Laboratory	
2002/2003	1	Bench Top pH meter	HORIBA F-24 II High-precision type pH resolution 0.001/0.01/0.1 pH Repeatability +/- 0.001/0.01 pH measures range pH 4.000...14.000	1	\$ 2,630.00	\$ 2,630.00	22-Apr-03	24-Apr-03	24-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	2	Bench Top Conductivity meter	HORIBA DS-14 4 bottles Range 0 - 1999, 19.99, 199.9 uS/cm Resolution 0.05% FS Repeatability +/- 5% FS	1	\$ 2,289.00	\$ 2,289.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	3	Vibration Level Meter + 1/3 octave real time filter + 10 meter sensor cable + RS-232 cable to PC	Onosoki VR-6100, Meas. freq. range 0.7 - 355 Hz Onosoki VR-0654, Vib Acc. level 35 to 120 dB Onosoki AG-6010, X, Y, Z indicated simultaneously Onosoki VR-0654 Sony PC-208 AX, 8 channel input	2	\$ 8,004.00	\$ 8,004.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	4	Portable DAI Recorder	Sony PC-208 AX, 8 channel input Accessories include: - Battery charger BC-1WD/ICE - Battery pack NP-1B - RS-232 cable PCX-24 - Control & data acquisition system PCIF 260	1	\$ 2,843.00	\$ 2,843.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	5	Laboratory Turbidimeter	Resolution: 0.001 on the lowest range Light source: tungsten lamp sample cells: seven, 95 x 25 mm (sample volume minimized - 20 ml)	1	\$ 4,141.00	\$ 4,141.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	6	Dissolved Oxygen meter	Range: 0 - 19.99 mg/L Resolution: 0.01 mg/L Repeatability: +/- 0.5% FS Bandwidth: 100 MHz scope, 5 MHz meter Max. repetitive sample rate: 5.65K	1	\$ 1,467.00	\$ 1,467.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Water Lab	Mr. Wisnu
2002/2003	7	Oscilloscope	Fluke / ScopeMeter 160C	1	\$ 2,855.00	\$ 2,855.00	22-Apr-03	24-Apr-03	24-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	8	VPS 200-R, 10:1 Voltage Probe Set Red, 200 MHz		1	\$ 161.00	\$ 161.00	3-Apr-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Water Lab	Mr. Wisnu
2002/2003	9	Grav. 200 Mhz		1	\$ 1,467.00	\$ 1,467.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Water Lab	Mr. Wisnu
2002/2003	10	Battery Charge BC-190/608		2	\$ 573.00	\$ 1,146.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	11	Regulated DC Power Supply	30 volt., 3 Amp.	2	\$ 662.00	\$ 1,324.00	20-Jun-03	21-Jun-03	22-Jun-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	12	Temperature Control Soldering and desoldering unit		2	\$ 134.00	\$ 268.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	13	Anti Static Mat 1m x 1m		1	\$ 1,526.00	\$ 1,526.00	3-Apr-03	03-Apr-03	03-Apr-03	ok (SN: 129950)	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	14	Frequency Calibrator	Range: 0Hz - 1KHz, 300Hz - 10KHz 3KHz - 100KHz Volt: 0-5 Vp-p AC for sine and triangle wave 0-5 Vp-p DC for square wave	1	\$ 18,479.00	\$ 18,479.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	15	Multi Channel Data Station	Accessories include: - Realtime 1M & 1/3 Octave Analysis Software DS-022/01 - Tough PurDisk Function Software DS-025/0W	1	\$ 4,120.00	\$ 4,120.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	16	Laboratory Testing Devices of B3 (Hazardous Waste) for Characterization (2-1-4) (Responsible Person: Mrs. Neti)		1	\$ 2,354.00	\$ 2,354.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	17	Toxic Laboratory Use		2	\$ 4,059.30	\$ 8,118.60	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Toxic Training	Ms. Chivethy W.

\* January Fiscal Year start in 1 April and ends in 31 March

Contract No.: 217/CON/0103  
Supplier: PT. Kawasindo Indonesia: Summitmas I Blok, 8th Floor, Jl. Jend. Sudirman Kav. 61-62 Jakarta Tel: 252-2743 CP. Mr. Krista Wijaya

Maintenance and calibration instruments and material: (Responsible Person: Mr. Wisnu)

Millipore, Cat. No. Y170 090 HW

DEMS Project

\*Japanese Fiscal Year start in 1 April and ends in 31 March

FY*	Item No.	Name of equipment	Specification	Manufactured Type	Qty	Unit in US\$	Unit in US\$	Received Fr Agent	Delivery to the User	Inspection	Installation / Remarks	Institution	End User	
													Laboratory	Contact Person
2002/2003	13	Millipore ZHE Hazardous Waste System	Glass, 12 pcs/pack	Millipore; Cat. No. Y130 090 HW	1	\$ 4,059.30	\$ 4,059.30	20-Mar-03	03-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Abner Tarigan
2002/2003	14	Rotary Agitator Bottle, 2.5 litre	Glass, 12 pcs/pack	Millipore; Cat. No. Y130 096 BT	2	\$ 358.00	\$ 716.00	9-Jun-03						
2002/2003	15	Glass Fiber Filter without Binder Resin	50 pcs/pack	Millipore; Cat. No. AP.40.142.50	2	\$ 161.50	\$ 323.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Toxic Training Bidang I/IV	Ms. CH Nety W.
2002/2003	16	Digital Microscope System	50 pcs/pack	U-48705-00	1	\$ 4,150.00	\$ 4,150.00	3-Apr-03	04-Apr-03	03-Apr-03	ok (DG-1 DG-00701) + Adaptor, Card Memory Cass. 2 battery and Charger.	EMCSARPEDAL	Microbiology Lab	Ms. Unon
2002/2003	17	Mercury analyzer		Hiranuma	1	\$ 22,907.00	\$ 22,907.00	20-Jun-03			Install on 23 June 03 for Hitech.	EMCSARPEDAL		Ms. Nely
2002/2003	18	SRM Natural Water 1640		NIST	2	\$ 269.40	\$ 538.80	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	19	Wide mouth bottle 125 ml		Nalene	50	\$ 2.81	\$ 140.50	22-Apr-03	24-Apr-03	24-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	20	Wide mouth bottle 250 ml		Nalene	50	\$ 3.48	\$ 174.00	22-Apr-03	24-Apr-03	24-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	21	Bottle Carboy 50 Lt Polyethylene		Nalene	2	\$ 210.00	\$ 420.00	22-Apr-03	24-Apr-03	24-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	22	Magnesium Standard SRM	1 x 50 ml	NIST	1	\$ 664.00	\$ 664.00	16-Jul-03	03-Apr-03	17-Jul-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	23	Arsenic Standard SRM	1 x 50 ml	NIST	1	\$ 664.00	\$ 664.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	24	Copper Standard SRM	1 x 50 ml	NIST	1	\$ 378.00	\$ 378.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	25	Lead Standard SRM	1 x 50 ml	NIST	1	\$ 378.00	\$ 378.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	26	Iron Standard SRM	1 x 50 ml	NIST	1	\$ 378.00	\$ 378.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	27	Nickel Standard SRM	1 x 50 ml	NIST	1	\$ 378.00	\$ 378.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	28	Selenium Standard SRM	1 x 50 ml	NIST	1	\$ 378.00	\$ 378.00	19-Mar-03	03-Apr-03	03-Apr-03	ok	EMCSARPEDAL	Store House	Ms. Asiah
2002/2003	29	Ion Chromatograph (IC) DIONEX	Dual Channel	Dionex DX120	1	\$ 66,264.00	\$ 66,264.00	3-Apr-03	07-Apr-03	07-Apr-03	ok	EMCSARPEDAL	Air Training Lab	Mr. Wisnu, Mr. Djurt
2002/2003	30	Service man in Jakarta area									Instal. 30-Jun-03 Training: 1-2 July 03 by PT Omega			
2002/2003	31	Auto Sampler, Data System included		(DX600) (~1000000)	1	\$ 32,410.00	\$ 32,410.00	20-May-03	07-Apr-03	07-Apr-03	ok	EMCSARPEDAL	Air Training Lab	Mr. Wisnu, Mr. Djurt
2002/2003	32	Passive sampler for NO2 and SO2		Shibata ES-540	10	\$ 86.10	\$ 861.00	9-Jun-03	22-May-03	22-May-03	ok	EMCSARPEDAL	Air Training Lab	Mr. Wisnu
2002/2003	33	High Volume Air Sampler		Shibata SIP-32L	2	\$ 2,165.00	\$ 4,332.00	20-May-03	22-May-03	22-May-03	ok	EMCSARPEDAL	Noise Lab	Mr. Wisnu
2002/2003	34	Reagent set for Chromium		Shibata SIP-32L	1	\$ 2,165.00	\$ 2,165.00	20-May-03	20-May-03	23-May-03	ok	BAPEDALDA NSP	Env. Laboratory	Mr. Abner Tarigan
2002/2003	35	Reagent set for Manganese		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	36	Reagent set for Lead		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	37	Reagent set for Cadmium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	38	Reagent set for Copper		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	39	Reagent set for Iron		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	40	Reagent set for Nickel		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	41	Reagent set for Selenium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	42	Reagent set for Vanadium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	43	Reagent set for Zinc		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	44	Reagent set for Manganese		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	45	Reagent set for Lead		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	46	Reagent set for Cadmium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	47	Reagent set for Copper		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	48	Reagent set for Iron		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	49	Reagent set for Nickel		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	50	Reagent set for Selenium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	51	Reagent set for Vanadium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	52	Reagent set for Zinc		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	53	Reagent set for Manganese		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	54	Reagent set for Lead		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	55	Reagent set for Cadmium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	56	Reagent set for Copper		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	57	Reagent set for Iron		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	58	Reagent set for Nickel		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	59	Reagent set for Selenium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	60	Reagent set for Vanadium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	61	Reagent set for Zinc		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	62	Reagent set for Manganese		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	63	Reagent set for Lead		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	64	Reagent set for Cadmium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	65	Reagent set for Copper		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	66	Reagent set for Iron		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	67	Reagent set for Nickel		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	68	Reagent set for Selenium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	69	Reagent set for Vanadium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	70	Reagent set for Zinc		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	71	Reagent set for Manganese		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	72	Reagent set for Lead		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	73	Reagent set for Cadmium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	74	Reagent set for Copper		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	75	Reagent set for Iron		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	76	Reagent set for Nickel		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	77	Reagent set for Selenium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	78	Reagent set for Vanadium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	79	Reagent set for Zinc		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	80	Reagent set for Manganese		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	81	Reagent set for Lead		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	82	Reagent set for Cadmium		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)		EMCSARPEDAL	Air Training Lab	Mr. Djurt
2002/2003	83	Reagent set for Copper		Shibata HV-1000F	1	\$ 13,032.50	\$ 13,032.50	20-May-03	22-May-03	Trouble (trouble)				

DEMS Project

\*Invoices Fiscal Year start in 1 April and ends in 31 March

Item No.	Specification	Manufacturer/Type	Qty	Unit in US\$	Unit in US\$	Received fr Agent	Delivery to the user	Inspection	Installation / Remarks	Institution	End User	Contact Person
2002/2003	Nitrawer 2, Nitrite RGT PK100	HACH-USA Cat. No. 21075-89	4	\$ 34.75	\$ 139.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	COD Digestion Vial, LR HW PK25	HACH-USA Cat. No. 21298-23	15	\$ 62.00	\$ 930.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	COD Digestion Vial, HR HW PK25	HACH-USA Cat. No. 21299-25	15	\$ 62.00	\$ 930.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Mineral Stabilizer 50ml SCOB	HACH-USA Cat. No. 23766-26	4	\$ 13.40	\$ 53.60	3 Apr. 2 pcs 4 Apr. 2 pcs	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Nessler RGT Ex. ALK 500ml	HACH-USA Cat. No. 21194-49	2	\$ 45.00	\$ 90.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, Nitrogen Ammonia	HACH-USA Cat. No. 20890-09	4	\$ 80.50	\$ 322.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Banher 4 Powder Pillows PK100	HACH-USA Cat. No. 12064-99	5	\$ 33.30	\$ 166.50	3 Apr. 3 pcs 4 Apr. 1 pc	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Cadmium RGT Set	HACH-USA Cat. No. 22422-01	3	\$ 648.00	\$ 1,944.00	3 Apr. 2 pcs 8 Apr. 1 set	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Metal Reagent Powder, Power	# 12616-68	4			08-Apr-03	08-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Potassium Oxidize AR	# 787-14	1			08-Apr-03	08-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Sodium Hydroxide Soln 50%	# 2180-49	4			08-Apr-03	08-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Synrise Reagent	No. 30892 10C	1			08-Apr-03	08-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Cadmium Standard Solution	# 14281-02	1			08-Apr-03	08-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Chloroform ACS Grade 100 ml	# 14458-53	4	\$ 181.00	\$ 724.00	08-Apr-03	08-Apr-03	08-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, Cobalt/Nickel 10ml	HACH-USA Cat. No. 28516-00	2	\$ 38.00	\$ 76.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Cover 1, Copper Reagent PK100	HACH-USA Cat. No. 21058-69	2	\$ 114.00	\$ 228.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent Sbl. Molybdenum	HACH-USA Cat. No. 24484-00	5	\$ 28.30	\$ 141.50	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Ozone Acovac, 0-0.25mg/l PK25	HACH-USA Cat. No. 25160-25	5	\$ 28.30	\$ 141.50	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Ozone Acovac, 0-0.75mg/l PK25	HACH-USA Cat. No. 25170-25	5	\$ 28.30	\$ 141.50	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Ozone Acovac, 0-1.5mg/l PK25	HACH-USA Cat. No. 25180-25	5	\$ 28.30	\$ 141.50	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, Phenols 0-2mg/l	HACH-USA Cat. No. 22439-01	2	\$ 718.00	\$ 1,436.00	7 May. 3 pcs	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	TNT, Phosphate, Total & Acid Hydrolyz	HACH-USA Cat. No. 22427-45	4	\$ 62.75	\$ 251.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	TNT, Total Phosphorus 50 Tests	HACH-USA Cat. No. 22426-45	4	\$ 58.70	\$ 234.80	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	TNT, Reactive Phosphate 50 Tests	HACH-USA Cat. No. 22425-45	4	\$ 42.90	\$ 171.60	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, Silica LR	HACH-USA Cat. No. 22493-30	2	\$ 49.50	\$ 99.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, Silica HR	HACH-USA Cat. No. 22495-00	2	\$ 71.00	\$ 142.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, Silver CLR Method	HACH-USA Cat. No. 22966-00	4	\$ 95.00	\$ 380.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Sullover 4 Powder Pillows PK100	HACH-USA Cat. No. 12065-99	4	\$ 30.30	\$ 121.20	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, for Sulfide	HACH-USA Cat. No. 22445-00	4	\$ 61.00	\$ 244.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Reagent set, ZINC	HACH-USA Cat. No. 21429-00	2	\$ 57.00	\$ 114.00	03-Apr-03	03-Apr-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	35 Standard Solution for AA5 analysis & pH measurement											
2002/2003	Lead	Merk 1, 19776.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Chromium	Merk 1, 19779.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Mercury	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Cadmium	Merk 1, 19777.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Sodium	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Iron	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Zinc	Merk 1, 19770.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Aluminum	Merk 1, 19776.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Copper	Merk 1, 19776.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Arsenic	Merk 1, 19773.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Magnesium	Merk 1, 19788.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Calcium	Merk 1, 19789.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Manganese	Merk 1, 19774.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Borane	Merk 1, 19774.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Tin	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Molybdenum	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Silver	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Barium	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Standard solution PH4	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Standard solution PH7	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Standard solution PH10	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	Standard solution PH110	Merk 1, 19728.0500	2	\$ 25.70	\$ 51.40	20-Mar-03	20-Mar-03	09-Apr-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	35 Hollow Carbide Phlogon Lengas											
2002/2003	HC Lamp, SH	For Shimadzu AA-6200	1	\$ 525.00	\$ 525.00	19-Jun-03	19-Jun-03	20-Jun-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan
2002/2003	HC Lamp, NI	For Shimadzu AA-6200	1	\$ 416.00	\$ 416.00	19-Jun-03	19-Jun-03	20-Jun-03	ok	BAPEDALDA NSP	Env. Lab.	Mr. Abner Targan



DEMS Project

\*Japanese Fiscal Year start in 1 April and ends in 31 March

FY	Item No.	Name of equipment	Specification	Manufacturer/Type	Qty	Unit in US\$	Unit in US\$	Received fr Agent	Delivery to the User	Inspection	Installation / Remarks	Delivery		
												Institution	End User	Contact Person
2003/2004	2003/2004	Silicone tubing 4 meters		Shimadzu-Seia	2	180.00	90.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	Shimadzu 2ml		Shimadzu-Seia	2	68.00	68.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	Flesh detector assembly		Shimadzu-Seia	1	451.00	451.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	Sample well O-ring (5/pcs)		Shimadzu-Seia	4	148.00	37.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	Syringe, 4ml		Shimadzu-Seia	1	390.00	390.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	Statistical certified flesh point material for Calibration		Shimadzu-Seia	1	203.00	203.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	General purpose soil awei, carbon steel, 3 diameter		Cole-Parmer / 99028-00	1	400.00	400.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	AHP-650, 650x500, AC200V		Go Environmental	1	3,213.00	4,611.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	10L Hot Plate		Environment Equipment	1	4,651.00	4,611.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	5 Go Flow water sampler		Environment Equipment	1	3,957.00	3,957.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	6 Posar dioxide specimen sampler		Shibeta, not wear	4	975.00	975.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Stock House of	Mr. Pramana	
2003/2004	2003/2004	7 Separatory funnel 200ml		Edward (No.A552-01-903)	1	1,793.00	1,793.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	8 Vacuum Pump		Edward (No.A552-01-903)	1	1,793.00	1,793.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Toxic Lab	Mr. Pramana	
2003/2004	2003/2004	Environmental Biology Laboratory Use												
2003/2004	2003/2004	9 Spare Part	for Microscope Model BHT (Olympus), included: CCTV, Smm, SSCDC, CCTV, 1/2 inch C-Mount Adapter, DPM/TV, TV Monitor, SONY HW-21M50	Sony	1	1,617.00	1,617.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	10 Replacement Component Adapter		Sony	1	414.00	414.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	11 Optional Lenses		Cole-Parmer / 48705-60	1	81.00	81.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	12 Optional Lenses		Cole-Parmer / 48705-64	1	842.00	842.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	13 3M Petrifilm		Cole-Parmer / 48705-36	1	1,129.00	1,129.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	14 Evaporate Repltes		3M	1	1,329.00	1,329.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	15 Stage Microscopes		Fischer Cat. No. 12-551-RL-2	1	87.00	87.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	16 Hanging Drop Slide		Fischer Cat. No. 12-551-SM1	1	105.00	105.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	17 Membrane Filters		Advantec No. A0452047-1	1	86.00	86.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	18 Hemocytometer		Advantec No. A0452047-1	1	139.00	139.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	19 Benda sieve		Cole-Parmer / A-362-09-05	3	265.00	179.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	4. Production of SRM (2-2-1)		Cole-Parmer / 59994-14	3	179.00	179.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	1 SRM Industrial Sludge		Cole-Parmer / 59994-10	3	537.00	537.00	9-Sep-04	9-Sep-04	ok	SARPEDAL/EMC	Microbiology	Mr. Pramana	
2003/2004	2003/2004	2 SRM Montana II Soil			1	414.00	414.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	3 SRM Natural Water			1	317.00	317.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	4 SRM Mercury in water			2	255.00	510.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	5 SRM Estuarine Sediment			2	239.00	478.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	6 SRM PCBs in River Sediment A			2	431.00	862.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	7 SRM Urban Particulate Matter			1	314.00	314.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	8 SRM Air Particulate on Filter Media			1	284.00	284.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	9 APG Wastewater (WP) Proficiency			2	645.00	645.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	10 APG Wastewater (WP) Quality Control			2	175.00	350.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	11 Microbalance		Shimadzu / AUX-120	2	3,384.00	3,384.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	12 Burette		602-21-46-03	10	395.00	3,950.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	13 Micro syringe for gas		062-14-66-83	5	124.00	620.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	14 Micro pipet + Pipette		Finpipet / DIS2600-110	3	293.00	879.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	15 Micro pipet + Pipettes		Finpipet	3	101.00	303.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	16 Micro pipet + Pipettes		Finpipet	3	113.00	339.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Store Room	Mr. Pramana	
2003/2004	2003/2004	17 Hollow Cathode Lamp		Hitachi	1	541.00	541.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	
2003/2004	2003/2004			As001-5103	1	778.00	778.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	
2003/2004	2003/2004			BR207-2004	1	655.00	655.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	
2003/2004	2003/2004			CR208-2008	1	631.00	631.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	
2003/2004	2003/2004			CR208-2010	1	631.00	631.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	
2003/2004	2003/2004			CR138-5572	1	541.00	541.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	
2003/2004	2003/2004			CR208-2011	1	541.00	541.00	2-Jun-04	2-Jun-04	ok	SARPEDAL/EMC	Water Lab	Mr. Pramana	

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DEMS Project

\*Januarys Fiscal Year start in 1 April and ends in 31 March

FY	Item No.	Name of equipment	Specification	Manufacturer/Type	Qty	Unit in US\$	Unit in US\$	Received fr Agent	Delivery to the User	Inspection	Installation / Remarks	Delivery				
												Institution	End User Laboratory	Contact Person		
2003/2004	1	Single chip microprocessor	- Smart, RS-232 communication interface													
2003/2004	2	Built-in communication protocol and port	- Single chip microprocessor													
2003/2004	3	Isolated GBT inverter	- Double conversion on-line architecture													
2003/2004	4	Multiple high-rate charger for quantum extension	- Multiple UPS software selection													
2003/2004	5	19" Case Rack 42U Depth 850mm, complete with top and bottom side, tempered/ Acrylic glass front door and back metal door + swing handle + key + accessories (Germany)	- Processor Intel Pentium M-2.66 GHz	Compaq	1	1,069.00	1,069.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	6	Desktop Computer	- Processor Intel Pentium M-2.66 GHz - Chipset 865G - 512Kb L2 cache - Memory: 256Mb DDR - HDD: 40Gb 7200 rpm - Integrated Intel Extreme Graphics 2 - CD-ROM 48x - Integrated Digital Audio - 5 shelves, 4 slots: 3 PCI & 1 AGP 8x, USB, 2 - OS: Windows XP Pro, Keyboard + Mouse - S5500, 15" Color Monitor - Think Centre A30	IBM	15	950.00	14,250.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	7	Switching Hub	- Processor Intel PIV-2.4GHz - Memory: 128Mb RAM - Hard Disk: 40Gb - CD-ROM 48x - Integrated 32Mb VRAM, NIC, Sound Card - Monitor 15" CRT - OS: Windows XP Pro, Keyboard + Mouse - AT-AR410S	Allied	1	982.00	982.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	8	Switching Hub	- Security appliance provides stateful inspection firewall - Secure VPN (Virtual Private Network) IP Sec based web - AT-FS7241	Telesyn												
2003/2004	9	Expanded Hard Disk Drive	- 24 port 10/100 TX (RJ45) Unmanaged Fast Ethernet Switch - AT-GS908	Allied	2	275.00	550.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	10	Laser Printer	- 8 ext. 10/100/1000TX - 36GB Ultra 320 Hotswap 10,000rpm	Telesyn	1	200.00	200.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	11	Software	- Canon LBP-1210 - Print speed: 14ppm(A4), 15ppm(letter), Res.: 600x600dpi	Canon	4	282.00	1,128.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	12	Software	- Microsoft Windows XP Professional	MS	1	200.00	200.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	13	SPSS Statistical Analysis	- MS Office 2003 Professional - Management of Laboratory's Data	MS	1	394.00	394.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004	14	Sample Tracking and Inventory System	- 6224, Laboratory Information Management System (5-Cole-Parmer User, QD)	SPSS	1	2,222.00	2,222.00	14-Apr-04	14-Apr-04	ok	by EMC self	SARPEDAU/EMC	Information System	Ms. Nasitih Sh Lestari		
2003/2004					FY2003 Sub Total 3	\$	37,652.00									
2004/2005		Contract No. 27/CON/0184			FY 2003 - TOTAL	\$	195,934.06	US\$ 1 = Rp. 8,915								

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												Institution	Ent User Laboratory	Contact Person
2004/2005	1	Digital Stopwatch	SPER SCIENTIFIC, Stopwatch with front panel Timing cap. 24hr, Accuracy: +/- 1.5 sec/day. Display LCD, 308TH, Battery: 1.5V AA (Unit include: Neck cont. carabiner case and AA Batteries)	Cole-Parmer / 94460-08	2	97.00	184.00	15-Apr-05	15-Apr-05	ok		PUSARPEDAL/EMC	Calibration Lab	Mr. Pramana
2004/2005	2	Total Organic Carbon	TOX 100 Standard Set Method: Oxidative bromine/coulometric titration Electrode: Platinum electrode Range: 0.05 - 50 mg Detection limit: 0.2 ppm (use constant rate) Measuring time: within 10 min/measurement when measuring 2 mg Detection method: Oxidation-reduction potential Personal Computer, Compaq EVO Processor Intel PIV-3.06GHz, Memory: 128MB RAM, HDD: 40Gb, Monitor 15", CD-ROM 52x, FDD 1.44Mb, Keyboard & Mouse Printer HP Deskjet 3550	Mitsubishi Chemical / TX100E	1	31,470.00	31,470.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	Spectro-2 Room	Mr. Pramana
2004/2005	3	Optional Accessories	Chlorine Titrator Cell Unit Sulfur Titrator Cell Unit Adsorption Module 3 channel Waste for Characterization (2-1-4)	HF Mitsubishi Chemical TX30CL Mitsubishi Chemical TX30CES Mitsubishi Chemical TXA03C	1 1 1	2,760.00 3,150.00 11,118.00	2,760.00 3,150.00 11,118.00	15-Apr-05 15-Apr-05 15-Apr-05	15-Apr-05 15-Apr-05 15-Apr-05	ok ok ok	Install Install Install	PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC	Spectro-2 Room Spectro-2 Room Spectro-2 Room	Mr. Pramana Mr. Pramana Mr. Pramana
2004/2005	4	Toxic Laboratory Use	1 Door, 3 shelves, 220V/240V, Temp. range 1-100C, size: (W66xH198xD81cm), Cap: 681.3 liters, interior and exterior walls of aluminum, stainless steel door R-200A-5, 220V Water bath B-490, 220V Dishwasher Vacuum Pump M-1000P, 220V Shelva cooler V-LDK AC220V SETA, 11400-5 220VAC/50Hz, Bath Capacity, 35L Size: H1xW4x503cm Heater power: 1500W Temperature range: 40° to 150° ± 0.5°C Meas. 10hr	Cole-Parmer / 44201-55 Shibata / SE-100 Buchi / B-490 Buchi / V-1000P Shibata / PAL-C-305 Shibata Stabhope-Seta	2 1 1 1 1 1	7,134.00 9,696.00 1,256.00 7,177.00 3,150.00 6,485.00 6,650.00	14,268.00 9,696.00 1,256.00 7,177.00 3,150.00 6,485.00 6,650.00	15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05	15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05	ok ok ok ok ok ok ok	Install Install Install Install Install Install Install	PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC	B3 Lab B3 Lab B3 Lab B3 Lab B3 Lab B3 Lab B3 Lab	Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana
2004/2005	13	Consist of:	Silicon carbide paper, 105um (150cm) FEPA Support for copper test except on natural gasoline and aviation fuels. Holds test tubes in half, mark Water pump, to minimize scale production Shoone fluid, 20litre, for use at temperature up to 150°C Copper corrosion test vessel, for copper test on natural gasoline and aviation fuels. Stainless steel with "O" ring seals screw-top cover. Max. working pressure: 2bar, 47psi, 3.45kg/cm <sup>2</sup> Silver corrosion convention kit Seta multi stop vice Copper test strips, 75x12.5x2.4mm, minimal material Test tubes, 25x150mm, pack of 10 Flat glass test tube, to protect strip during inspection, pack of 20 Silver corrosion glassware Silver test strip ASTM Color Standard Silicone carbide cloth, 65 mm (2 1/2") x 28x23cm, pack of 25 Silicone carbide paper, 100um, 28x23cm, pack of 50 Silicone carbide grains, 105um (150mesh), 150um/100um, 3,000g	Stabhope-Seta / 11241-0 Stabhope-Seta / 11420-0 Stabhope-Seta / 15650-0 Stabhope-Seta / 11650-0 Stabhope-Seta / 11590-0 Stabhope-Seta / 11570-0 Stabhope-Seta / 11510-0 Stabhope-Seta / 11650-0 Stabhope-Seta / 11650-0 Stabhope-Seta / 11440-0 ASTM Color Standard Stabhope-Seta / 11460-0 Stabhope-Seta / 11460-0 Stabhope-Seta / 11470-0 Stabhope-Seta / 11460-0	1 5 1 1 1 5	241.00 594.00 832.00 1,120.00 678.00	241.00 2,970.00 832.00 1,120.00 3,395.00	15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05	15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05 15-Apr-05	ok ok ok ok ok ok	Install Install Install Install Install Install	PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC PUSARPEDAL/EMC	B3 Lab B3 Lab B3 Lab B3 Lab B3 Lab B3 Lab	Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana Mr. Pramana
2004/2005	18			Stabhope-Seta / 11510-0	1	860.00	860.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	19			Stabhope-Seta / 11650-0	1	618.00	618.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	20			Stabhope-Seta / 11650-0	1	449.00	449.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	21			Stabhope-Seta / 11590-0	1	65.00	65.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	22			Stabhope-Seta / 11570-0	1	256.00	256.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	23			Stabhope-Seta / 11430-0	1	287.00	287.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	24			Stabhope-Seta / 11440-0	1	365.00	365.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	25			Stabhope-Seta / 11450-0	1	1,005.00	1,005.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	26			Stabhope-Seta / 11460-0	1	82.00	82.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	27			Stabhope-Seta / 11470-0	1	260.00	260.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana
2004/2005	28			Stabhope-Seta / 11480-0	1	214.00	214.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAL/EMC	B3 Lab	Mr. Pramana

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29	2004/2005	ASTM-IP copper strip corrosion standard, a set of 13 plaques, printed on aluminum and encapsulated in plastic for protection.	ASTM-IP copper strip corrosion standard, a set of 13 plaques, printed on aluminum and encapsulated in plastic for protection.	Stubbops-Seta / 11860-0	1	782.00	782.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAUEMC	B3 Lab	Mr. Pramana
30	2004/2005	Thermometer ASTM 12C/IP BAC	Thermometer ASTM 12C/IP BAC		1	120.00	120.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAUEMC	B3 Lab	Mr. Pramana
31	2004/2005	Thermometer ASTM 12C/IP BAF	Thermometer ASTM 12C/IP BAF		1	120.00	120.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAUEMC	B3 Lab	Mr. Pramana
32	2004/2005	Production of SRM (2-2-1) Cooler Box	35L Dim: L500 x W318 x H390 mm Foam insulated heavy quality material, high-density polyethylene. HYG-1 Part no. 206-1743-92 for AA6601 Complete with: Argon Regulator & Cylinder Power requirement: 220V, 50/60Hz, 30VA Dimensions: D220 x W340 x H200 mm.	Shimadzu	10	300.00	300.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAUEMC	Ware House	Mr. Pramana
33	2004/2005	Hydric Vapour Generator (HVG)	HVG-1 Part no. 206-1743-92 for AA6601 Complete with: Argon Regulator & Cylinder Power requirement: 220V, 50/60Hz, 30VA Dimensions: D220 x W340 x H200 mm.	Shimadzu	1	11,007.00	11,007.00	15-Apr-05	15-Apr-05	ok	Install	PUSARPEDAUEMC	B3 Lab	Mr. Pramana
Contract II No.: 43/COM/III/05														
Supplier: PT. Antusia Cipta Prima, MidPlaza Building II, 8th Floor, Jl. Jendral Sudirman Kav. 10-11, Jakarta Tel.: 5740624 CP: Mr. Asari														
2004/2005	1	Maintenance and calibration instruments and material				2,033.00	2,033.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	MCC	Mr. Pramana
2004/2005	2	NIST-Calibrated thermometer	range: -20 to 110 (°C)	Cole-Parmer / U-08124-22	1	685.00	685.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	MCC	Mr. Pramana
2004/2005	3	NIST-Traceable thermometer	range: -1 to 51 °C	Cole-Parmer / U-08119-53	1	997.00	997.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	MCC	Mr. Pramana
2004/2005	4	NIST-Traceable thermometer	range: -1 to 101 °C	Cole-Parmer / U-08119-55	1	997.00	997.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	MCC	Mr. Pramana
2004/2005	5	High Accuracy Dry Block Calibrator	range: -1 to 201 °C Min. Temp.: 25 to 650 °C. Display res.: 0.1°C Accessories include: Software / U-08511-90 with RS-232 interface, 4 pins. With PCI Bus - 4 pin cable for Chosokki DS-2000series	Technie / Tecal 650 SFDB 650SD	2	6,660.00	13,320.00	28-Jun-05	28-Jun-05	ok	Install	PUSARPEDAUEMC	MCC	Mr. Pramana
2004/2005	6	Interface for PC	ONO SOKKI IONOLINK II Interface DS-0296	ONO SOKKI IONOLINK II Interface DS-0296	1	2,639.00	2,639.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Noise Lab	Mr. Pramana
2004/2005	7	Data processing Software	File Export Function Software for use together with ONOSOKKI DS-2000 Series.	ONO SOKKI / DS-0251	1	1,570.00	1,570.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Noise Lab	Mr. Pramana
2004/2005	8	Benchtop Dissolved Oxygen meter	inlab pH/O2 Level 1 Complete with, serial 41, Colox	WTW inlab 1D10-111210	1	2,190.00	2,190.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Water Lab	Mr. Pramana
2004/2005	9	Fixed-volume reference pipettor (Multiple-Plus w/Combitip-Plus)	325, Oxygen saturation 0.0 to 100.0%, 0.1 to 600.0%, Tip Volume 0.5ml, Dispensing Range 5 to 100µl, Accuracy 0.8% (1 pack=100pcs), Multipipette-plus (4x3.1 (0.01 to 0.1) µl), Combitip plus (0.03 to 0.5) µl, 0.7%	Eppendorf	1	591.00	591.00	28-Jun-05	28-Jun-05	ok	accessories 14-Jul	PUSARPEDAUEMC	Water Lab	Mr. Pramana
2004/2005	10	Adjustable-volume pipettor	Range 0 to 50 mL, Division 0.01 mL, better than ±0.2% better than ±0.2% Repeatability: ±0.01%	Cole-Parmer/A-21600-12	1	196.00	196.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Water Lab	Mr. Pramana
2004/2005	11	Digital electronic burettes	Beiler than ±0.2% Repeatability: ±0.01%	Cole-Parmer/A-3201-15	3	922.00	2,766.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Water Lab	Mr. Pramana
2004/2005	12	Integrated Sound Level meter	Type 2, IIS C 1502, with memory 36 to 14000/flat	ONO SOKKI / LA-1250	1	2,670.00	2,670.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Noise Lab	Mr. Pramana
2004/2005	2	Otor Analysis Equipment				34.00	34.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	13	Tedlar bag for sampling	5L Sampling for Otor analysis analysis for 5L Tedlar bag	GI. Sca/3008-51915	20	706.00	706.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	14	Sample collecting cage	108 with double needles	GI. Sca/3008-36005	1	157.00	157.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	15	Teflon tube	Hewlett Packard GC with heater packed ODPN6080	GI. Sca/2702-17314	2	1,196.00	2,392.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	16	Sample condensing tube	Packed, burned	GI. Sca/2702-17421	2	381.00	762.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	17	Dewar flask 0.5L with lid	SUS, with lid	GI. Sca/3008-72705	1	56.00	56.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	18	Tube connector	Cat.No.3008-35500	GI. Sca/3008-35500	1	513.00	513.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	19	Dewar flask (1.0L) with lid	SUS, with lid	GI. Sca/3008-72711	1	11.00	11.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	20	Teflon tube	1/8" with single needle	GI. Sca/2702-17313	1	34.00	34.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	21	Comprising	Tubing with HITACHI	GI. Sca/3008-51106	2	34.00	68.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	22	Cab	for Tedlar bag Cat.No.3008-61915	GI. Sca/3008-35106	2	34.00	68.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	23	Spare needle for collection tube, condensing tube	replacement needs for sampling/concentration tube	GI. Sca/3008-67500	2	45.00	90.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	Air Lab	Mr. Pramana
2004/2005	24	U-tube	23Gx50mm, stainless	GI. Sca/3007-23005	2	34.00	68.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	25	U-tube	OD 3mm, ID 2mm, length 1m	GI. Sca/3007-23005	2	90.00	180.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	26	Pump PS-7	OD 15mm, ID 9mm, length 1m	GI. Sca/3008-75110	2	448.00	896.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	27	Cartridge	Sample collecting pump for PS-7	GI. Sca/3008-75910	2	90.00	180.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	28	1L Vacuum jar	For sampling	GI. Sca/3008-38110	8	302.00	2,416.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	29	Protection case	for vacuum jar (Cat.No.3008-38110)	GI. Sca/3008-88913	8	213.00	1,704.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	30	Tube connector	Cat.No.3008-35500	GI. Sca/3008-35500	5	96.00	480.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	31	Heating furnace	Connector for styrene collecting tube heating oven	GI. Sca/2702-17481	1	96.00	96.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana
2004/2005	32	Stand of heating furnace	Oven stand	GI. Sca/3008-67710	1	123.00	123.00	28-Jun-05	28-Jun-05	ok		PUSARPEDAUEMC	B3 Lab	Mr. Pramana

DEMS Project

\* Japanese Fiscal Year start in 1 April and ends in 31 March

FY	Item No.	Name of equipment	Specification	Manufacturer/Type	Qty	Unit in US\$	Unit in US\$	Received fr Agent	Delivery to the User	Inspection	Installation / Remarks	Delivery	
												Institution	Contact Person
2004/2005	33	Collection tube (non-packed)	Non-packed styrene collector, OD 8.2mm, 2365mm length, 200mm for expansion tube, condensing tube, 23G x 5 cm, 5	GL Sci./3008-67123	10	90.00	900.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	
2004/2005	34	Spare media	Double beam method wave length 190-900nm, spectra bandpass: 0.1nm, including 4 pass quartz cell, 10mm, w/Paracal Computer	Hitachi U3010	1	26,503.00	26,503.00	28-Jun-05	18-Jul-05	ok	Initiation & Training	PUSARPEDA/JEMC	Mr. Asui
2004/2005	35	UV-VIS Spectrophotometer	Adobe Illustrator CS, Media CD-ROM, Windows XP, Adobe Photoshop CS 8, CD-ROM, Windows XP	Adobe/Adobe Illustrator CS, Adobe/Photoshop8(Windows)	1	585.00	585.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	
2004/2005	36	Crass media, publishing software	For gas chromatograph GC-148PE, include ECD cell, GC Key Controller ASSY, CE PIN22.3-172861	Shimadzu/ECO for GC-148PE	1	9,486.00	9,486.00	28-Jun-05	28-Jun-05	ok	Install	PUSARPEDA/JEMC	Mr. Pramana
2004/2005	37	Image-scaning software	10ul for GC	GI Science/701N/4015-11001	3	45.00	135.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	38	UV-VIS Spectrophotometer	50ul for GC Gas Sample	GI Science/ Gaslight/17501N/4015-41050	2	73.87	147.74	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	39	Micro Syringe	100% Dimethylsiloxane, Capillary Column	Beckel/DB-624/No.123-1364	2	856.00	1,712.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	40	Gas Tight Syringe	For VOC analysis, Capillary Column	Shimadzu/ChromatorPac Ch8A	2	1,593.00	3,186.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	41	GC Column	For GC, Digital 2ch Analog (ch), include data processing software		1	5,914.00	5,914.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	42	GC Column											
2004/2005	43	Data Processor											
2004/2005	44	Water Lab Equipment	Measurement range: Normal 25-500 or Deep 200-1500; Power: 8 AA dry cell batteries, Weight: 3.1/2 lbs, Length: 7" Height: 4" Width: 5"	Global Water/WL600	1	1,540.00	1,540.00	18-Jul-05	18-Jul-05	ok	Install	PUSARPEDA/JEMC	Ms. Hidayati
2004/2005	45	GPS	portable GPS, 12 parallel channel receiver with built-in patch antenna, runs 18 hours on just two AA batteries	Garmin/GPS4110-G10	1	392.00	392.00	28-Jun-05	28-Jun-05	ok	Install	PUSARPEDA/JEMC	
2004/2005	46	Van Dorn Water Sampler	Include(E-Trex Carry Case, E-Trex Lighter Adaptor, E-Trex Interferon Cable)	Garmin/GPS4110-G11(Case)	1	392.00	392.00	28-Jun-05	28-Jun-05	ok		BAPEDALDA/NSP	Ms. Hidayati
2004/2005	47	General Purpose Winch	portable GPS, 12 parallel channel receiver with built-in patch antenna, runs 18 hours on just two AA batteries	Garmin/GPS4110-G10	1	392.00	392.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	48	High Volume Air Sampler	Vertical PVC Kit includes carry case, opaque cable, 18in. 100ft. Stainless Steel Aircraft Cable, 18in. 100m. General Purpose Winch Mount	Wipac/WP-C10	1	209.00	209.00	28-Jun-05	28-Jun-05	ok	will discuss with ID 14-math / Shinto	PUSARPEDA/JEMC	Mr. Pramana
2004/2005	49	Dater Logger	Galvanized steel, include Stainless Steel Aircraft Cable, 18in. 100m. General Purpose Winch Mount	Wipac/WP-C10	1	209.00	209.00	28-Jun-05	28-Jun-05	ok		BAPEDALDA/NSP	Ms. Hidayati
2004/2005	50	Ion Chromatograph Anion Column	Sample flow, controllable for 700-1500L/min flow rate long-term measurement, Super low power consumption, Measurement interval - beyond 8 channels analog input and 1 channel pulse input include: DataMark Assist, English SR3050E, Cable	KIMOTO/121HL	1	7,022.00	7,022.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	51	Ion Chromatograph Guard Column	Ion pac AS4ASC Analytical column (4x250mm)	DIODEX/AS4A-SC/PN43174	1	2,156.00	2,156.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	52	Ion Chromatograph Cation Column	Ion pac AG12A Guard Column (4x50mm)	DIODEX/AG12A-4mm/PN46035	1	578.00	578.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	53	Ion Chromatograph Guard Column	Ion pac CS23 Analytical Column (5x250mm)	DIODEX/CS23/PN 37024	1	2,710.00	2,710.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	54	Carbon Bosh	Ion pac LC3 Guard Column (4x50mm)	DIODEX/CG3/PN37025	20	11.00	220.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	55	Thermometer	Carbon for HVAS 121HL	KIMOTO/for HVAS	20	11.00	220.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	56	Database Management software	Beermo-HygroMeter-15.40°C, 5-100%	SATON/SILQ	3	728.00	2,184.00	6/28/2005(1)	2-Aug-05	ok		PUSARPEDA/JEMC	Mr. Pramana
2004/2005	57	Automatic Water Sampler	MicroSoft Access 2003, Media CD-ROM/Windows XP	MicroSoft/Access2003	1	218.00	218.00	28-Jun-05	28-Jun-05	ok		BAPEDALDA/NSP	Ms. Hidayati
2004/2005	58	Compass alt Meter	MicroSoft Access 2003, Media CD-ROM/Windows XP	MicroSoft/Access2003	1	218.00	218.00	28-Jun-05	28-Jun-05	ok		BAPEDALDA/NSP	Ms. Hidayati
2004/2005	59	Ecological Monitoring Equipment	Portable sampler, consist of 3700 base w/24 wedge shaped 1L polypropylene bottle and caps, suction line (3/8" ID), 25ft. with strainer, Ni-Cd Battery, rechargeable, 12v, 4 amp-hours, power supply adaptor	ISCO/Model-3700	1	4,928.00	4,928.00	28-Jun-05	28-Jun-05	ok		BAPEDALDA/NSP	Ms. Hidayati
2004/2005	60	Ecological Monitoring Equipment	Glass Electrode, 3112-diat, LCD, 0.1 pH, 0.2 - pH 12	Horiba/win pH-B-2112/1213	1	164.00	164.00	28-Jun-05	28-Jun-05	ok		PUSARPEDA/JEMC	Mr. Pramana



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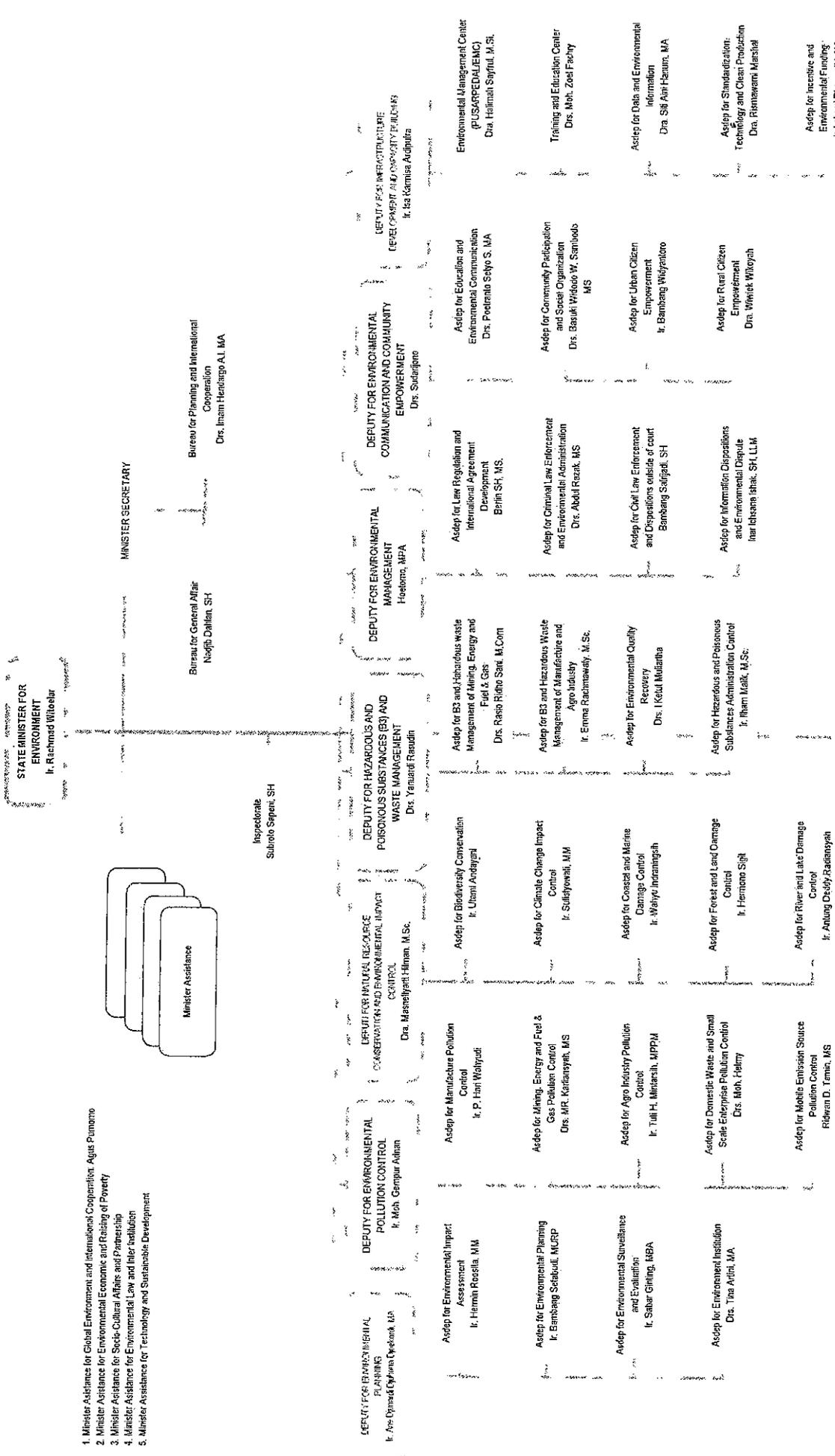
\*Japanese Fiscal Year: start in 1 April and ends in 31 March

FY	Item No.	Name of equipment	Specification	Manufacturer/Type	Qty	Unit in US\$	Unit in US\$ included	Delivery						
								Received fr Agent	Delivery to the User	Inspection	Installation / Remarks	Institution	End User	Contact Person
2005/2006	10-2	45KX-4 Adaptor for camera Digital Camera C-7070WZ	Daylight (Erg. 45mm dia) Consist of: Lens IX Camera adapter Mount 45mm dia Number of input channel: 2ch Input voltage: 5mV to 1v Fluoy disk drive: 3.5" FDDx1 Power AC: 50V/240V	Olympus Model CX-41-32000-2	1	1,054.17	1,054.17	12-Oct-05	12-Oct-05		Install & Training	PUSARPEDAUEMC	Biology Lab	Ueno/Ade
2005/2006	10-3	Digital Camera	Mount 45mm dia	Camera C7070WZ	1	815.49	815.49	12-Oct-05	12-Oct-05		Install & Training	PUSARPEDAUEMC	Biology Lab	Ueno/Ade
2005/2006	11	Data Processor	Input voltage: 5mV to 1v	Shimadzu-C-88A	1	5,469.72	5,469.72	12-Oct-05	12-Oct-05		Install	PUSARPEDAUEMC	GC Training	Henry
2005/2006	12	Drying Ovens	Fluoy disk drive: 3.5" FDDx1 Power AC: 50V/240V	Memmert UFE700	1	3,846.60	3,846.60	25-Nov-05	25-Nov-05			PUSARPEDAUEMC	Toxic Lab	Fernandoflines
2005/2006	2	Rank Order Analysis Equipment	Multiscan HR 1											
2005/2006	1	Serological Pump PS-208AC	OPN 6080 Packed, buried	GL Sci/1024-7064	1	2,575.58	2,575.58	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	2	Flow Volumeter WNK-9.5A	Gasmeter	GL Sci/2015-78202	1	3,131.68	3,131.68	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	3	Heater Unit TD-1-02	Heat controller	GL Sci/2702-7592	1	3,229.24	3,229.24	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	4	Removal tube for incubators	Cat. No. 1003-6111	GL Sci/1003-6111	1	214.63	214.63	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	5	Jack Stand	for incubates 18	GL Sci/2702-7302	1	1,092.68	1,092.68	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	6	Analysis column	25% ODPN on Uniport HP 6080 glass column for HP3804	GL Sci/1003-0515	2	770.72	1,541.44	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	7	Dimethyl Sulfoxide (standard)	Purity 99% 5ml*1	GL Sci/1024-31103	1	165.95	165.95	6-Dec-05	6-Dec-05			PUSARPEDAUEMC	JICA Room	
2005/2006	8	Dimethyl Disulphide	Purity 99% 5ml*1	GL Sci/1024-31104	1	165.95	165.95	6-Dec-05	6-Dec-05			PUSARPEDAUEMC	JICA Room	
2005/2006	9	Collection tube (packed)	Tenax-GC(6080 mesh) Packed	GL Sci/1003-61021	1	282.91	282.91	29-Nov-05	29-Nov-05			PUSARPEDAUEMC	GC Room	Henry
2005/2006	10	Collector	Tenax-TA(6080 mesh) 15cr	GL Sci/1002-31205	2	526.82	1,053.64	29-Nov-05	29-Nov-05			PUSARPEDAUEMC	GC Room	Henry
2005/2006	11	Analysis column	SP-1200 5% + Bentone 34 1.75% on Uniport HP 6080 glass, 3mm, 1.7'x3in	GL Sci/1003-0515	2	896.53	1,717.06	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006	12	Silicone monomer (standard)	(liquid in Pentane) 2 ml x 5 UNH#285	GL Sci/1024-31009	1	253.76	253.76	6-Dec-05	6-Dec-05			PUSARPEDAUEMC	JICA Room	
2005/2006	13	Toluene (standard) 99% 5 ml UNH#1294	Purity 99% 5 ml UNH#1294	GL Sci/1024-415202	1	165.95	165.95	6-Dec-05	6-Dec-05			PUSARPEDAUEMC	JICA Room	
2005/2006	14	Sampling Pump PS-205AC	3l/min Battery equipped	GL Sci/2702-7594	1	2,575.22	2,575.22	29-Nov-05	29-Nov-05		Install	PUSARPEDAUEMC	GC Room	Henry
2005/2006				FY 2005 - TOTAL			\$8,197.00	US \$ 1 = JPY 112 US \$ 1 = JPY 112.40 = IDR 10,200 (Rp. 1 = JPY 0.01724)						
						<b>GRAND TOTAL \$</b>	<b>741,121.16</b>							

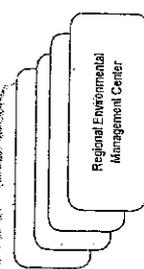
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# Annex 5.1: MINISTRY OF ENVIRONMENT

1. Minister Assistance for Global Environment and International Cooperation, Agus Purnomo
2. Minister Assistance for Environmental Economic and Raising of Poverty
3. Minister Assistance for Socio-Cultural Affairs and Demership
4. Minister Assistance for Environmental Law and Inter Institution
5. Minister Assistance for Technology and Sustainable Development



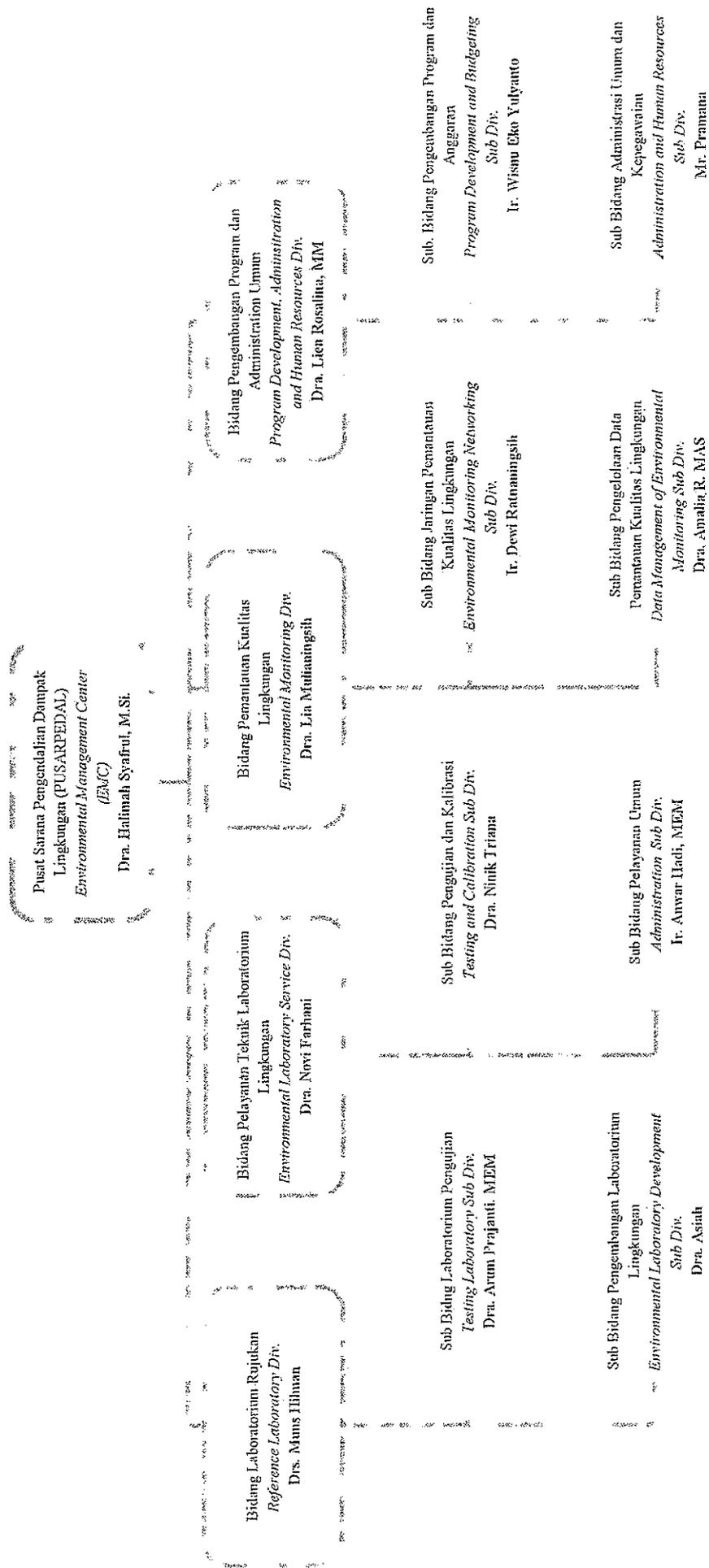
1. Regional Environmental Management Center for Sumatera Area, Drs. Nuryawan, M.Si
2. Regional Environmental Management Center for Bali dan Nusa Tenggara Area, Ir. Suliman, MM
3. Regional Environmental Management Center for Sulawesi, Maluku dan Papua Area, Ir. Iqbal Asyraf
4. Regional Environmental Management Center for Jawa Area, Subagator, SH
5. Regional Environmental Management Center for Kalimantan Area, Drs. Hoho Walyo, M.Com



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**ORGANIZATION STRUCTURE OF PUSARPEDAL/EMC**

As of August 2005



## ORGANIZATION STRUCTURE BAPEDALDA NORTH SUMATERA PROVINCE

Head of BAPEDALDA North Sumatra  
 Prof. H. Syamsul Arifin, SH, MHI.  
 PEMBINA UTAMA  
 NIP: 130809585

Deputy Head of BAPEDALDA North Sumatra  
 Ir. Sinta Meutia Marpaung

**FUNCTIONAL GROUP**

**SECRETARY**  
H. Guraha Tambunan, SH

Deputy for Human Resource & General Affair  
Marganti Hastiawan

Deputy for Finance  
Effency Sahaan, SE

Deputy for Documentation and Statistik  
Drs. Syamsul Rafti, Srg.

Deputy for Law and Organization

Div. for Environmental Impact Pollution  
Ir. Perliana Ginting, M.Sc.

Div. for Environmental Management  
Ir. Drs. Indra Utama, M.Si

Sub. Div. for Technology Development  
Ir. Seramin Saragih

Sub. Div. for Water Pollution  
Syaiful Johan, SKM

Sub. Div. for Water System  
Ir. Indra Bongsawan

Sub. Div. for Human Resources Affairs  
Ir. Nuraldi

Sub. Div. for Environmental Impact Analysis  
Ir. Eddy Utama, SstHK

Sub. Div. for Air Pollution  
Ir. Bustam Amri

Sub. Div. for Mineral Soil System  
Ir. Baginda M. Pohan

Sub. Div. for Program and Evaluation  
Drs. Yustin Asmul

Sub. Div. for Laboratory and Quality Standard  
Salmon Sius Ginting, ST

Sub. Div. for Domestic and Solid Pollution  
Ir. Dewi Purliani Pany, MM

Sub. Div. for Biological Variety  
Ir. Rosdiana Pulungan

Sub. Div. Society and Public Participation  
Drs. H. Lubidin Brubara

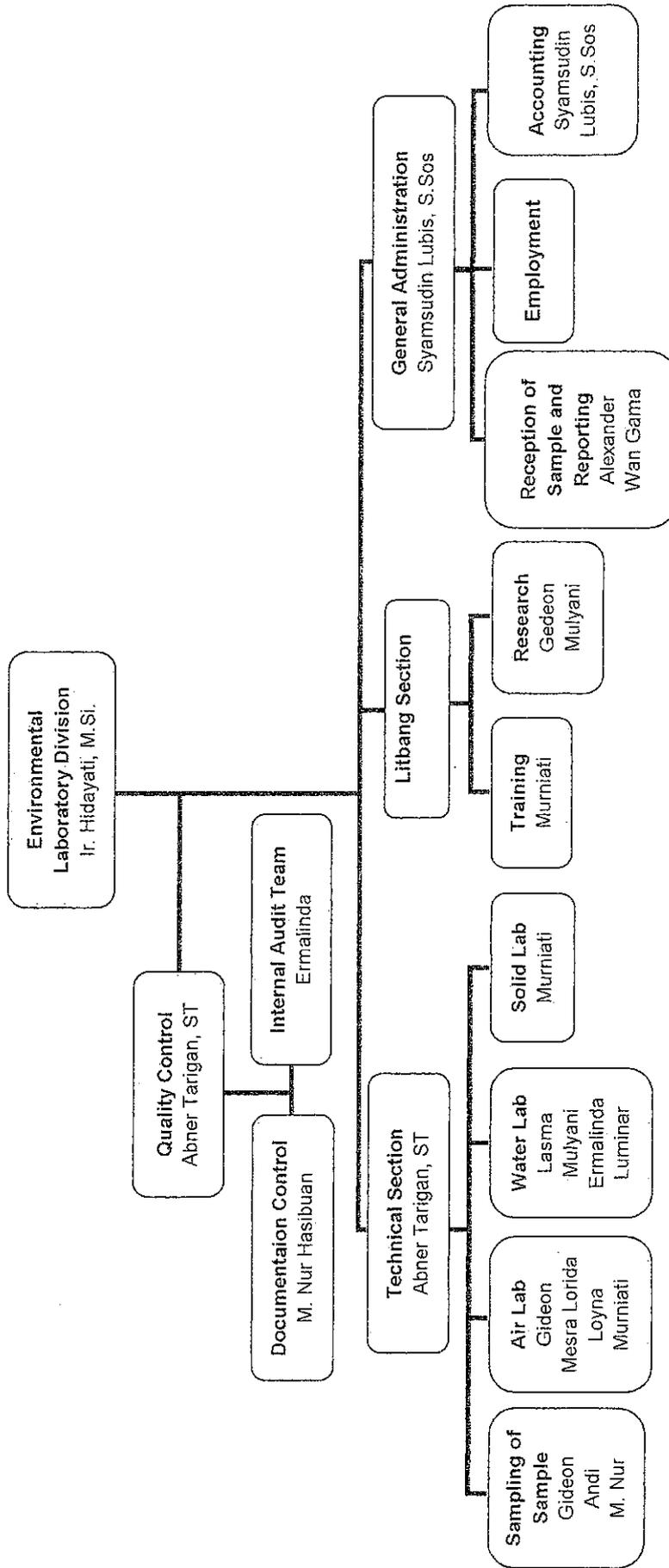
Sub. Div. for Environmental Auditing  
Drs. Nasri Yelis

Sub. Div. for Hazardous Pollution  
Ir. Wasliat Rangkut

Sub. Div. for Habitat and Space Control  
Ir. Baginda M. Polan

Sub. Div. for Environmental Data  
Sahmudin Pulungan, SE

Organization Structure of Environmental Laboratory Bapedalda NSP



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**Annex 6: Master Sheet Capacity Development for Local Government: National Training & Workshop  
DEMS Project**

No	FY	Title of Training	Duration		No. of Participant		No. of Modul
			Start	Finish	Training	Workshop	
1	2002/2003	Workshop (Rakernis) on Environmental Quality Monitoring and Optimization of Environmental Laboratory	18-Dec-02	19-Dec-02		31	13
2	2002/2003	Training on "Laboratory Quality Management System"	10-Mar-03	21-Mar-03	24		23
3	2002/2003	Training on "Sampling and Analysis for Water Quality"	24-Mar-03	28-Mar-03	29		22
			<b>TOTAL FY2002</b>		<b>53</b>	<b>31</b>	<b>84</b>
4	2003/2004	Training on Monitoring of Water Quality	28-Jul-03	1-Aug-03	30		14
5	2003/2004	Training on Monitoring Mercury in Water and Sediment	16-Feb-04	20-Feb-04	17		11
6	2003/2004	Workshop on Monitoring of River Water Quality	2-Mar-04	3-Mar-04		29	13
			<b>TOTAL FY2003</b>		<b>47</b>	<b>29</b>	<b>76</b>
7	2004/2005	Training on Monitoring Lead (Pb) in Ambient Air	7-Jun-04	11-Jun-04	30		20
8	2004/2005	Training on Analysis Coliform Bacteria	14-Feb-05	18-Feb-05	34		12
9	2004/2005	Training on Optimal Utilization of AAS and Spectrophotometer UV-Vis	21-Feb-05	25-Feb-05	35		17
10	2004/2005	Workshop on Monitoring of Environmental Quality	9-Mar-05	10-Mar-05		34	16
			<b>TOTAL FY2004</b>		<b>99</b>	<b>34</b>	<b>133</b>
11	2005/2006	Training on Air Quality Management at Regional Area	22-Aug-05	26-Aug-05	27		17
12	2005/2006	Training on River Water Quality Management	28-Nov-05	2-Dec-05	29		21
13	2005/2006						
14	2005/2006						
			<b>TOTAL FY2005</b>		<b>56</b>	<b>0</b>	<b>56</b>
			<b>TOTAL</b>		<b>255</b>	<b>94</b>	<b>349</b>
							<b>199</b>



FY	No	Title of Training Course	Duration of Training		Title of Modules	Author	Year of Production
			Start	Finish			
2002/2003	3	Training on "Sampling and Analysis"	24-Mar-03	28-Mar-03	8 Services and Information;	Sarpedal/EMC	2003
					9 Control of unsatisfied analysis result and revision	Sarpedal/EMC	2003
					10 Revision and Record Control;	Sarpedal/EMC	2003
					11 Audit Internal and Management Review;	Sarpedal/EMC	2003
					12 Personnel, Accommodation Condition and its Environment;	Sarpedal/EMC	2003
					13 Analysis method and validation of the method;	Sarpedal/EMC	2003
					14 Analysis Instrument/Equipment and traceable testing;	Sarpedal/EMC	2003
					15 Sampling and sample treatment;	Sarpedal/EMC	2003
					16 Quality Assurance of analysis result and result reporting;	Sarpedal/EMC	2003
					17 Proficiency Test;	Sarpedal/EMC	2003
					18 Management of Quality System Documentation;	Sarpedal/EMC	2003
					19 Laboratory Internal Audit (Audit Approach);	Sarpedal/EMC	2003
					20 Laboratory Internal Audit (Auditing process);	Sarpedal/EMC	2003
					21 Laboratory Internal Audit (Auditing Report);	Sarpedal/EMC	2003
					22 SNI 19-17025: 2000 in Fish Bone Diagram;	Sarpedal/EMC	2003
					23 Water Quality Monitoring Program.	Sarpedal/EMC	2003
					1 Sampling Technique for Water Quality	Sarpedal/EMC	2003
					2 Preparation for Sampling	Sarpedal/EMC	2003
					3 Determination of Oil and Grease in Water	Sarpedal/EMC	2003
					4 Work Instruction Determination of Oil and Grease in Water	Sarpedal/EMC	2003
					5 Determination of Phenol in Water	Sarpedal/EMC	2003
					6 Work Instruction Determination of Phenol in Water	Sarpedal/EMC	2003
					7 Determination of Detergent in Water	Sarpedal/EMC	2003
8 Work Instruction Determination of Detergent in Water	Sarpedal/EMC	2003					
9 Determination E.Coli in Water	Sarpedal/EMC	2003					
10 Work Instruction Determination of E.Coli in Water	Sarpedal/EMC	2003					
11 Determination Ammonia in Water	Sarpedal/EMC	2003					
12 Work Instruction Determination of Ammonia in Water	Sarpedal/EMC	2003					
13 Determination Manganese in Water	Sarpedal/EMC	2003					
14 Work Instruction Determination Manganese in Water	Sarpedal/EMC	2003					
15 Determination of Phosphate in Water	Sarpedal/EMC	2003					
16 Work Instruction determination of Phosphate in Water	Sarpedal/EMC	2003					
17 General Guidelines of Water Quality Monitoring	Sarpedal/EMC	2003					
18 Measuring Physic Parameter in Water	Sarpedal/EMC	2003					
19 Quality Control of Analysis in Laboratory	Sarpedal/EMC	2003					
20 Quality Control of Water Sampling	Sarpedal/EMC	2003					
21 Sampling Procedure	Sarpedal/EMC	2003					
22 Performance Test of Spektrofotometri UV-Vis and Spectrophotometer Atomic Absorption	Sarpedal/EMC	2003					

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FY	No	Title of Training Course	Duration of Training		Title of Modules	Author	Year of Production	
			Start	Finish				
2003/2004	4	Training on Water Quality Monitoring	28-Jul-03	1-Aug-03	1 Development of Environmental Monitoring Program	Sarpedal/EMC	2003	
					2 Water Quality Monitoring System in Japan	Sarpedal/EMC	2003	
					3 Using of Biological Materials for river water quality monitoring	Sarpedal/EMC	2003	
					4 Principle of Water Quality Monitoring	Sarpedal/EMC	2003	
					5 Profile and characteristic of river	Sarpedal/EMC	2003	
					6 Design Program of Water Quality Monitoring	Sarpedal/EMC	2003	
					7 Determination location and sampling point for water quality monitoring	Sarpedal/EMC	2003	
					8 Determination of water quality parameter	Sarpedal/EMC	2003	
					9 Technique of sampling and analysis of water quality parameter	Sarpedal/EMC	2003	
					10 Quality Assurance and quality control of sampling and analysis of water quality parameter	Sarpedal/EMC	2003	
	2003/2004	5	Training on Monitoring Mercury in	16-Feb-04	20-Feb-04	11 Verification and validation data of water quality monitoring	Sarpedal/EMC	2003
						12 Reporting of water quality monitoring	Sarpedal/EMC	2003
						13 Take a sample at the site (practice ; Cisdane River)	Sarpedal/EMC	2003
						14 Exercise - determination of sampling point of water quality	Sarpedal/EMC	2003
2003/2004	6	Workshop on Monitoring of River	2-Mar-04	3-Mar-04	1 Pollution of Mercury and handling effort of illegal gold mining (PETI)	Sarpedal/EMC	2004	
					2 Existence of Mercury and the impact to the human health and environment.	Sarpedal/EMC	2004	
					3 Quality Control of Analysis in the Laboratory	Sarpedal/EMC	2004	
					4 Take a sample of Mercury	Sarpedal/EMC	2004	
					5 Analysis preparation of water, sediment, fish and hair	Sarpedal/EMC	2004	
					6 Atomic Absorption Spectrophotometer (AAS)	Sarpedal/EMC	2004	
					7 Practicum on Introduction of Atomic Absorption Spectrophotometer (AAS)	Sarpedal/EMC	2004	
					8 Theory concerning analysis mercury in water	Sarpedal/EMC	2004	
					9 Practicum determination of component of Total Mercury (Hg) in water by using Atomic Absorption Spectrophotometer (AAS)	Sarpedal/EMC	2004	
					10 Determination of Total Mercury (Hg) in sediment, fish and hair	Sarpedal/EMC	2004	
					11 Practicum concerning the technique of mercury testing in sediment, fish and hairs by Cold Vapor using Mercury Analyzer	Sarpedal/EMC	2004	
2003/2004	6	Workshop on Monitoring of River	2-Mar-04	3-Mar-04	1 Report on Water Quality Monitoring in 30 Provinces	Sarpedal/EMC	2004	
					2 Environmental Monitoring Result in Japan	Sarpedal/EMC	2004	
					3 River water quality monitoring of Mahakam and Karang Mumus in East Kalimantan	Bapedalda East Kalimantan	2004	
					4 River water quality monitoring of Krueng Tamiang in NAD Province	Bapedalda NAD	2004	
					5 River water quality monitoring in the East Java Province	Bapedalda East Java	2004	
					6 Evaluation the Implementation of Water Quality Monitoring in 2003	Sarpedal/EMC	2004	
					7 Development of River Water Quality Monitoring Network	Sarpedal/EMC	2004	
					8 Socialization of General Guidelines of Water Quality Monitoring	Sarpedal/EMC	2004	
					9 Introduction on River Water Quality Monitoring Database	Sarpedal/EMC	2004	

FY	No	Title of Training Course	Duration of Training		Title of Modules	Author	Year of Production	
			Start	Finish				
2004/2005	7	Training on Monitoring Lead (Pb) in Ambient Air	7-Jun-04	11-Jun-04	10	Technique display/presentation of monitoring result data	Sarpedal/EMC	2004
					11	Implementation of Water Quality Monitoring in 2004	Sarpedal/EMC	2004
					12	Optimization of Air Quality Monitoring	Sarpedal/EMC	2004
					13	Commitment to implement Quality Management System of Environmental Laboratory	Sarpedal/EMC	2004
					1	State Policy on nullification of lead gasoline	Asdep Motor Vehicle Emission	2004
					2	Quality of fuel and monitoring of fuel in the framework for air pollution control in Indonesia;	Ir. Edy Purwanto, M.Sc.	2004
					3	Lead (Pb) pollution and its effluent to human health;	Sarpedal/EMC	2004
					4	Distribution of Lead (Pb) pollution materials in ambient air;	Sarpedal/EMC	2004
					5	Atmospheric Particulates and Lead (Pb) in Japanese Cities;	Kazuhiro KUWATA, P.HD.	2004
					6	Lead (Pb) in environment and its concentration after Phase Out Leaded Program;	Sarpedal/EMC	2004
					7	Lead (Pb) Monitoring in blood;	UI, Budi Haryanto, MPH, M.Sc.	2004
					8	Study on Pb accumulation level in the solid and leaf in some city in Indonesia;	Sarpedal/EMC	2004
					9	Lead (Pb) monitoring program in Ambient Air by Asdep Sarpedal;	Sarpedal/EMC	2004
					10	Determining sampling point of Ambient Air Quality Monitoring;	Sarpedal/EMC	2004
					11	Simulation and Lead (Pb) Monitoring in Ambient Air;	Sarpedal/EMC	2004
					12	TSP measuring technique in the Ambient Air by using High Volume Air Sampler (HVAS);	Sarpedal/EMC	2004
					13	Instrument preparation for Sampling and calibration of High Volume Sampler (HVAS);	Sarpedal/EMC	2004
					14	Sample Analysis of Lead (Pb) and Total Suspended Particulate (TSP) in Ambient Air;	Sarpedal/EMC	2004
					15	Determination of Total Suspended Particulate (TSP) in Ambient Air by using High Volume Air Sampler (HVAS) by Gravimetric;	Sarpedal/EMC	2004
					16	Taking Sample of Pb in Ambient Air Station of Sarpedal-KLH;	Sarpedal/EMC	2004
17	Instrument preparation, preparation in the Ambient Air and Sample Destruction;	Sarpedal/EMC	2004					
18	AAS preparation: maintenance, trouble shooting and its solving;	Sarpedal/EMC	2004					
19	Sample Analysis of Lead (Pb) by Atomic Absorption Spectrophotometer (AAS);	Sarpedal/EMC	2004					
20	Data Processing and Quality Control	Sarpedal/EMC	2004					





FY	No	Title of Training Course	Duration of Training		Title of Monographs	Author	Year of Production
			Start	Finish			
					8 Implementation of Ambient Air Quality at 20 Cities in Indonesia by Passive Sampler	Pusarpedal/EMC	2005
					9 Monitoring of Air Quality at Jakarta Metropolitan Area by Passive Sampler	Pusarpedal/EMC	2005
					10 Pollutant Dispersion at Atmosphere	Pusarpedal/EMC	2005
					11 Emission Source Inventory	Pusarpedal/EMC	2005
					12 Air Pollutant Loading	Pusarpedal/EMC	2005
					13 Emission Inventory and Emission Factor of Air Pollution	Pusarpedal/EMC	2005
					14 Using of Emission Factor for Emission Load Source Calculation	Pusarpedal/EMC	2005
					15 Meteorology and Air Pollution (Definition, Wind Direction, Relative Humidity, Solar Radiation)	Pusarpedal/EMC	2005
					16 Data Verification of Simulation Model Result	Pusarpedal/EMC	2005
					17 Utilization of Simulation Model for Air Pollution Control	Pusarpedal/EMC	2005
	13	Training on River Water Quality Management	28-Nov-05	2-Dec-05	1 Water Quality Management Policy	Pusarpedal/EMC	2005
					2 Water Quality Management Framework	Pusarpedal/EMC	2005
					3 Living Environmental Education	Pusarpedal/EMC	2005
					4 Monitoring and Water Quality Evaluation	Pusarpedal/EMC	2005
					5 Profile and characteristic of river	Pusarpedal/EMC	2005
					6 Procedure of Water Quality Level	Pusarpedal/EMC	2005
					7 Determination of Water Quality Status (Minister Decree No. 115/2003)	Pusarpedal/EMC	2005
					8 Water Pollution Load capacity determination (Minister Decree No. 110/2003)	Pusarpedal/EMC	2005
					9 GIS participant for water quality management	KLH	2005
					10 Database System for Data Collection	Pusarpedal/EMC	2005
					11 Basin Runoff Model (Model Framework)	Pusarpedal/EMC	2005
					12 Basin Runoff Model	Pusarpedal/EMC	2005
					13 Manual for Development of Basin Runoff Model for River Water Quality Management	Mr. Ishikawa, DEMS Expert	2005
					14 Existing Pollution Load Runoff	Mr. Ishikawa,	2005
					15 Estimation of rainfall-runoff from River Basin Tank Model	Mr. Furuta, DEMS	2005
					16 Database System of Water Quality Monitoring	Pusarpedal/EMC	2005
					17 Evaluation of Water Quality Monitoring Database System	Pusarpedal/EMC	2005
					18 Role of Environmental Laboratory BAPEDALDA NSP in the DEMS Project for Deli Environment Management	Bapedalda NSP	2005
					19 DSS Program for Deli River Environment Management in NSP	Bapedalda NSP	2005
					20 Deli River Water Quality Management (DEMS Pilot Project)	Bapedalda NSP	2005
					21 Superkasih Program	KLH	2005