WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1018	53	L 2970 BZ	H	12	KUTISARI	15	Wonocolo
1019	54	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1020	55	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1021	56	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1022	57	L 9677 CF	B	10	MANYAR KERTOARJO	1	Sukolilo
1023	58	L 9675 CG	C	6	MOJO	5	Gubeng
1024	59	L 2182 CS	G	5	MULYO REJO	5	Gubeng
1025	60	L 9373 CF	B	10	NYAMPLUNGAN	8	Pabean Cantikan
1026	61	L 9673 CF	B	10	NYAMPLUNGAN	8	Pabean Cantikan
1027	62	L 2467 C	G	11	PABEAN	8	Pabean Cantikan
1028	63	L 2467 C	G	16	PABEAN	8	Pabean Cantikan
1029	64	L 2467 C	G	13	PABEAN	8	Pabean Cantikan
1030	65	L 9610 CB	I	5	PACAR KELING	3	Tambaksari
1031	66	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1032	67	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1033	68	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1034	69	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1035	70	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1036	71	L 2322 CA	G	23	PASAR KEMBANG	18	Tegalsari
1037	72	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1038	73	L 9605 CF	F	5	PASAR KEPUTRAN	18	Tegalsari
1039	74	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1040	75	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1041	76	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1042	77	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1043	78	L 9611 CB	F	6	PASAR KEPUTRAN	18	Tegalsari
1044	79	L 9611 CB	F	6	PASAR KEPUTRAN	18	Tegalsari
1045	80	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1046	81	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1047	82	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1048	83	L 9654 CG	C	6	PASAR KUPANG	17	Sawahan
1049	84	L 9695 CG	B	10	PASAR PEGIRIAN	7	Semampir
1050	85	L 2167 KR	G	17	PASAR PUCANG	5	Gubeng
1051	86	L 2690 BF	G	11	PASAR PUCANG	5	Gubeng
1052	87	L 1641 PP	G	21	PASAR RUNGKUT	6	Rungkut
1053	88	L 9676 CF	B	10	PASAR TEMBOK	9	Bubutan
1054	89	L 2190 CJ	G	15	PASAR WONOKROMO	16	Wonokromo
1055	90	L 2190 CJ	G	18	PASAR WONOKROMO	16	Wonokromo
1056	91	L 9695 CG	B	10	PEGIRIAN	7	Semampir
1057	92	L 9695 CG	B	10	PEGIRIAN	7	Semampir
1058	93	L 9676 CG	C	6	PENGAMPON	8	Pabean Cantikan
1059	94	L 9676 CG	C	6	PENGAMPON	8	Pabean Cantikan
1060	95	L 9682 CF	B	10	PENGHELA	9	Bubutan

jica/amount/kjrsort1.wk1

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1061	96	L 9682 CF	B	10	PENGHELA	9	Bubutan
1062	97	L 9682 CF	B	10	PENGHELA	9	Bubutan
1063	98	L 9667 CG	G	31	PERAK	8	Pabean Cantikan
1064	99	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1065	100	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1066	101	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1067	102	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1068	103	L 2001 CZ	H	6	RUNGKUT INDUSTRI	6	Rungkut
1069	104	L 9663 CE	I	3	RUNGKUT KIDUL	6	Rungkut
1070	105	L 9679 CA	I	19	SACK FACTORY	16	Wonokromo
1071	106	L 9670 CG	C	6	SIDODADI	7	Semampir
1072	107	L 9670 CG	C	6	SIDODADI	7	Semampir
1073	108	L 9670 CG	C	6	SIDODADI	7	Semampir
1074	109	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1075	110	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1076	111	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1077	112	L 2332 AC	G	21	SIMO	11	Tandes
1078	113	L 2347 CE	G	6	SIMO LAWANG	4	Simokerto
1079	114	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1080	115	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1081	116	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1082	117	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1083	118	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1084	119	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1085	120	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1086	121	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1087	122	L 9660 CE	A	12	SRIKANA	5	Gubeng
1088	123	L 9660 CE	A	12	SRIKANA	5	Gubeng
1089	124	L 9660 CE	A	12	SRIKANA	5	Gubeng
1090	125	L 9676 CF	B	10	SULUNG	9	Bubutan
1091	126	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1092	127	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1093	128	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1094	129	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1095	130	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1096	131	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1097	132	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1098	133	L 9670 CG	C	6	TAMBANG BOYO	3	Tambaksari
1099	134	L 9670 CG	C	6	TAMBANG BOYO	3	Tambaksari
1100	135	L 2690 BF	G	19	TANJUNG SADARI	10	Krembangan
1101	136	L 3142 AK	H	1	UNDAAN KULON	10	Krembangan
1102	137	L 3142 AK	H	1	UNDAAN KULON	10	Krembangan
1103	138	L 9686 CG	C	6	WISMA PERMAI	1	Sukolilo

jica/amount/kjrsort1.wk1

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1104	139	L 4884 PK	G	22	WONOCOLO	15	Wonocolo
1105	140	L 2516 CD	G	16	WONOSARI TEGAL	7	Semampir
1106	141	L 2516 CD	G	13	WONOSARI TEGAL	7	Semampir
1107	142	L 2516 CD	G	16	WONOSARI TEGAL	7	Semampir
	21 May 1992						
1108	1	L 2597 CK	G	16	BENDUL MERISI	16	Wonokromo
1109	2	L 2597 CK	G	17	BENDUL MERISI	16	Wonokromo
1110	3	L 2597 CK	G	11	BENDUL MERISI	16	Wonokromo
1111	4	L 2190 CE	H	4	BIER FACTORY	5	Gubeng
1112	5	L 9688 CH	C	6	BOGANGIN	14	Karang Pilang
1113	6	L 9654 CG	C	6	BRATANG	5	Gubeng
1114	7	L 9654 CG	C	6	BRATANG	5	Gubeng
1115	8	B 9037 HT	G	15	BUKIT BARISAN	17	Sawahan
1116	9	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1117	10	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1118	11	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1119	12	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1120	13	L 2881 AS	H	1	DARMO	19	Genteng
1121	14	L 2322 CA	G	19	DINOYO	16	Wonokromo
1122	15	L 9952 AG	I	2	GARDEN DEPARTMENT	19	Genteng
1123	16	L 9676 CG	C	6	GEMBONG GAS	4	Simokerto
1124	17	L 9676 CG	C	6	GEMBONG GAS	4	Simokerto
1125	18	L 9673 CF	B	10	GILI	8	Pabean Cantikan
1126	19	L 9673 CF	B	10	GILI	8	Pabean Cantikan
1127	20	L 9603 CF	C	6	GUBENG	5	Gubeng
1128	21	L 9603 CF	C	6	GUBENG	5	Gubeng
1129	22	L 2887 CZ	H	1	GUBENG	5	Gubeng
1130	23	L 9682 CF	B	10	INDRAKILA	3	Tambaksari
1131	24	L 9682 CF	B	10	INDRAKILA	3	Tambaksari
1132	25	L 2233 AP	H	5	JEL FACTORY KENJERAN	2	Kenjeran
1133	26	L 2467 C	G	19	JL. KUNTI	4	Simokerto
1134	27	L 2901 PK	G	22	JL. KUNTI	4	Simokerto
1135	28	L 2881 AS	H	1	JOYO BOYO	16	Wonokromo
1136	29	L 9675 CG	C	6	KADIKAL	10	Krembangan
1137	30	L 9673 CF	B	10	KALI MAS	7	Semampir
1138	31	L 9657 BE	A	12	KALI SARI	3	Tambaksari
1139	32	L 9603 CF	C	6	KALI WARON	3	Tambaksari
1140	33	L 9603 CF	C	6	KALI WARON	3	Tambaksari
1141	34	L 2347 CE	G	6	KAPASAN	4	Simokerto
1142	35	L 9630 CF	C	6	KARANG GAYAM	3	Tambaksari
1143	36	L 9630 CF	C	6	KARANG GAYAM	3	Tambaksari
1144	37	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari

jica/amount/kjrsort1.wk1

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1145	38	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari
1146	39	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari
1147	40	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari
1148	41	L 9688 CH	C	6	KARANG REJO	16	Wonokromo
1149	42	L 9688 CH	C	6	KARANG REJO	16	Wonokromo
1150	43	L 9688 CH	C	6	KARANG REJO	16	Wonokromo
1151	44	L 9659 CE	A	12	KAYUN	19	Genteng
1152	45	L 9659 CE	A	12	KAYUN	19	Genteng
1153	46	L 9659 CE	A	12	KAYUN	19	Genteng
1154	47	L 9659 CE	A	12	KAYUN	19	Genteng
1155	48	L 2332 AC	G	20	KEDUNG ANYAR	18	Tegalsari
1156	49	L 9682 CF	B	10	KREMBANGAN BARAT	10	Krembangan
1157	50	L 9682 CF	B	10	KREMBANGAN BARAT	10	Krembangan
1158	51	L 9682 CF	B	10	KREMBANGAN BARAT	10	Krembangan
1159	52	L 2090 AM	H	6	LAMP FACTORY	6	Rungkut
1160	53	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1161	54	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1162	55	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1163	56	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1164	57	L 9675 CG	C	6	MOJO	5	Gubeng
1165	58	L 9683 CG	B	10	MOJO ARUM	5	Gubeng
1166	59	L 4884 PK	G	22	NGAGEL	16	Wonokromo
1167	60	L 9673 CF	B	10	NYAMPLUNGAN	8	Pabean Cantikan
1168	61	L 9673 CF	B	10	NYAMPLUNGAN	8	Pabean Cantikan
1169	62	L 2467 C	G	22	PABEAN	8	Pabean Cantikan
1170	63	L 2467 C	G	14	PABEAN	8	Pabean Cantikan
1171	64	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1172	65	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1173	66	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1174	67	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1175	68	L 9614 CH	E	6	PACAR KELING,INDRAKILA	3	Tambaksari
1176	69	L 9690 CG	C	6	PANTAI KENJERAN LAMA	2	Kenjeran
1177	70	L 2690 BF	G	21	PASAR KEMBANG	18	Tegalsari
1178	71	L 9605 CF	F	5	PASAR KEPUTRAN	18	Tegalsari
1179	72	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1180	73	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1181	74	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1182	75	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1183	76	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1184	77	L 9611 CB	F	6	PASAR KEPUTRAN	18	Tegalsari
1185	78	L 9611 CB	F	5	PASAR KEPUTRAN	18	Tegalsari
1186	79	L 9611 CB	F	6	PASAR KEPUTRAN	18	Tegalsari
1187	80	L 9611 CB	F	6	PASAR KEPUTRAN	18	Tegalsari

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1188	81	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1189	82	L 9665 CL	F	3	PASAR KEPUTRAN	18	Tegalsari
1190	83	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1191	84	L 9695 CG	B	10	PASAR PEGIRIAN	7	Semampir
1192	85	L 1641 PP	G	20	PASAR RUNGKUT	6	Rungkut
1193	86	L 9190 CJ	G	16	PASAR WONOKROMO	16	Wonokromo
1194	87	L 9695 CG	B	10	PEGIRIAN	7	Semampir
1195	88	L 9695 CG	B	10	PEGIRIAN	7	Semampir
1196	89	L 9676 CG	C	6	PENGAMPON	8	Pabean Cantikan
1197	90	L 9676 CG	C	6	PENGAMPON	8	Pabean Cantikan
1198	91	L 9682 CF	B	10	PENGHELA	9	Bubutan
1199	92	L 9682 CF	B	10	PENGHELA	9	Bubutan
1200	93	L 9682 CF	B	10	PENGHELA	9	Bubutan
1201	94	L 9667 CG	G	28	PERAK	8	Pabean Cantikan
1202	95	L 9667 CG	G	27	PERAK	8	Pabean Cantikan
1203	96	L 9670 CG	C	6	PETOJO	3	Tambaksari
1204	97	L 9692 CG	B	10	PRINGADI	9	Bubutan
1205	98	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1206	99	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1207	100	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1208	101	L 2006 CA	H	5	RUNGKUT INDUSTRI	6	Rungkut
1209	102	L 9679 CA	I	13	SACK FACTORY	16	Wonokromo
1210	103	L 9679 CA	I	7	SACK FACTORY	16	Wonokromo
1211	104	L 9670 CG	C	6	SIDODADI	7	Semampir
1212	105	L 9670 CG	C	6	SIDODADI	7	Semampir
1213	106	L 9670 CG	C	6	SIDODADI	7	Semampir
1214	107	L 9670 CG	C	6	SIDODADI	7	Semampir
1215	108	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1216	109	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1217	110	L 2347 CE	G	6	SIMO LAWANG	4	Simokerto
1218	111	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1219	112	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1220	113	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1221	114	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1222	115	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1223	116	L 9660 CE	A	12	SRIKANA	5	Gubeng
1224	117	L 9660 CE	A	12	SRIKANA	5	Gubeng
1225	118	L 9676 CF	B	10	SULUNG	9	Bubutan
1226	119	L 9649 CB	C	6	TAMBAK DERES	2	Kenjeran
1227	120	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1228	121	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1229	122	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1230	123	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto

jica/amount/kjrsort1.wk1

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1231	124	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1232	125	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1233	126	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1234	127	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1235	128	L 9670 CG	C	6	TAMBANG BOYO	3	Tambaksari
1236	129	L 9670 CG	C	6	TAMBANG BOYO	3	Tambaksari
1237	130	L 9676 CF	B	10	TEMBOK	9	Bubutan
1238	131	L 1641 PP	G	18	TENGGILIS	6	Rungkut
1239	132	L 2786 D	H	1	TUNJUNGAN PLAZA	18	Tegalsari
1240	133	L 9686 CG	C	6	WISMA PERMAI	1	Sukolilo
1241	134	L 4884 PK	G	22	WONOCOLO	15	Wonocolo
1242	135	L 2190 CJ	G	19	WONOKROMO	16	Wonokromo
1243	136	L 2516 CD	G	16	WONOSARI TEGAL	7	Semampir
1244	137	L 2516 CD	G	15	WONOSARI TEGAL	7	Semampir
1245	138	L 2516 CO	G	11	WONOSARI TEGAL	7	Semampir
	22 May 1992						
1246	1	L 9691 CG	B	10	ASRAMA UJUNG	7	Semampir
1247	2	L 2901 PK	G	22	BABAAN	8	Pabean Cantikan
1248	3	L 2597 CK	G	18	BENDUL MERISI	16	Wonokromo
1249	4	L 2597 CK	G	21	BENDUL MERISI	16	Wonokromo
1250	5	L 9678 CF	B	10	BENDUL MERISI	16	Wonokromo
1251	6	L 9654 CG	C	6	BRATANG	5	Gubeng
1252	7	B 9037 HT	G	12	BUKIT BARISAN	17	Sawahan
1253	8	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1254	9	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1255	10	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1256	11	L 9675 CG	C	6	BUNGURAN	4	Simokerto
1257	12	L 2096 AW	H	5	DARMO	19	Genteng
1258	13	L 9683 CF	D	10	DEMAK,RAJAWALI,BUBUTAN	9	Bubutan
1259	14	L 2322 CA	G	22	DINOYO	16	Wonokromo
1260	15	L 9612 CH	E	6	DK.PAKIS,MAYJEN SUNGKONO,DIPONGGO	17	Sawahan
1261	16	L 9676 CG	C	6	GEMBONG GAS	4	Simokerto
1262	17	L 9676 CG	C	6	GEMBONG GAS	4	Simokerto
1263	18	L 9673 CF	B	10	GILI	8	Pabean Cantikan
1264	19	L 9603 CF	C	6	GUBENG	5	Gubeng
1265	20	L 9603 CF	C	6	GUBENG	5	Gubeng
1266	21	L 2516 CD	G	16	JEMUR WONOSARI TEGAL	15	Wonocolo
1267	22	L 9649 CB	C	6	KALI KEDINDING	2	Kenjeran
1268	23	L 9673 CF	B	10	KALI MAS	7	Semampir
1269	24	L 9610 CB	I	6	KALI TUWOWO	3	Tambaksari
1270	25	L 9603 CF	C	6	KALI WARON	3	Tambaksari
1271	26	L 2190 CJ	G	17	KAPAS KRAMPUNG	3	Tambaksari

jica/amount/kjrsort1.wk1

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1272	27	L 2347 CE	G	6	KAPASAN	4	Simokerto
1273	28	L 9630 CF	C	6	KARANG GAYAM	3	Tambaksari
1274	29	L 9630 CF	C	6	KARANG GAYAM	3	Tambaksari
1275	30	L 9630 CF	C	6	KARANG GAYAM	3	Tambaksari
1276	31	L 9630 CF	C	6	KARANG GAYAM	3	Tambaksari
1277	32	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari
1278	33	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari
1279	34	L 9690 CG	C	6	KARANG GAYAM	3	Tambaksari
1280	35	L 9659 CE	A	12	KAYUN	19	Genteng
1281	36	L 9659 CE	A	12	KAYUN	19	Genteng
1282	37	L 9659 CE	A	12	KAYUN	19	Genteng
1283	38	L 9682 CF	B	10	KREMBANGAN	10	Krembangan
1284	39	L 9682 CF	B	10	KREMBANGAN BARAT	10	Krembangan
1285	40	L 9682 CF	B	10	KREMBANGAN BARAT	10	Krembangan
1286	41	L 9682 CF	B	10	KREMBANGAN BARAT	10	Krembangan
1287	42	L 9682 CF	B	10	MAKAM PENELEH	9	Bubutan
1288	43	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1289	44	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1290	45	L 9686 CG	C	6	MAKAM PENELEH	9	Bubutan
1291	46	L 9675 CG	C	6	MOJO	5	Gubeng
1292	47	L 9675 CG	C	6	MOJO	5	Gubeng
1293	48	L 9683 CG	B	10	MOJO ARUM	5	Gubeng
1294	49	L 9673 CF	B	10	NYAMPLUNGAN	8	Pabean Cantikan
1295	50	L 2467 C	G	15	PABEAN	8	Pabean Cantikan
1296	51	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1297	52	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1298	53	L 9670 CG	C	6	PACAR KELING	3	Tambaksari
1299	54	L 2332 AC	G	20	PANJANG JIWO	6	Rungkut
1300	55	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1301	56	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1302	57	L 9605 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1303	58	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1304	59	L 9606 CF	F	5	PASAR KEPUTRAN	18	Tegalsari
1305	60	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1306	61	L 9606 CF	F	6	PASAR KEPUTRAN	18	Tegalsari
1307	62	L 9611 CB	F	5	PASAR KEPUTRAN	18	Tegalsari
1308	63	L 9611 CB	F	5	PASAR KEPUTRAN	18	Tegalsari
1309	64	L 9611 CB	F	6	PASAR KEPUTRAN	18	Tegalsari
1310	65	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1311	66	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1312	67	L 9665 CL	F	6	PASAR KEPUTRAN	18	Tegalsari
1313	68	L 2467 C	G	16	PASAR PABEAN	8	Pabean Cantikan
1314	69	L 9695 CG	B	10	PASAR PEGIRIAN	7	Semampir

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1315	70	L 9695 CG	B	10	PASAR PEGIRIAN	7	Semampir
1316	71	L 1641 PP	G	21	PASAR RUNGKUT	6	Rungkut
1317	72	L 9676 CF	B	10	PASAR TEMBOK	9	Bubutan
1318	73	L 2190 CJ	G	16	PASAR WONOKROMO	16	Wonokromo
1319	74	L 2190 CJ	G	19	PASAR WONOKROMO	16	Wonokromo
1320	75	L 9695 CG	A	12	PEGIRIAN	7	Semampir
1321	76	L 9695 CG	B	10	PEGIRIAN	7	Semampir
1322	77	L 9695 CG	A	12	PEGIRIAN	7	Semampir
1323	78	L 9696 CG	A	12	PEGIRIAN	7	Semampir
1324	79	L 9676 CG	C	6	PENGAMPON	8	Pabean Cantikan
1325	80	L 9676 CG	C	6	PENGAMPON	8	Pabean Cantikan
1326	81	L 9682 CF	B	10	PENGHELA	9	Bubutan
1327	82	L 9667 CG	G	22	PERAK	8	Pabean Cantikan
1328	83	L 9667 CG	G	31	PERAK	8	Pabean Cantikan
1329	84	L 3045 AT	H	6	PERUMAHAN BASKARA	1	Sukolilo
1330	85	L 2467 C	G	12	PESAPEN	8	Pabean Cantikan
1331	86	L 9670 CG	C	6	PETOJO	3	Tambaksari
1332	87	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1333	88	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1334	89	L 9676 CF	B	10	PUTRO AGUNG	3	Tambaksari
1335	90	L 9610 CB	I	6	RAHKMAN HAKIM	1	Sukolilo
1336	91	L 1641 PP	G	22	RUNGKUT	6	Rungkut
1337	92	L 9697 CG	C	6	RUNGKUT TELKOM	6	Rungkut
1338	93	L 9679 CA	I	12	SACK FACTORY	16	Wonokromo
1339	94	L 2332 CA	G	8	SAMPOERNA	6	Rungkut
1340	95	L 9670 CG	C	6	SIDODADI	7	Semampir
1341	96	L 9670 CG	C	6	SIDODADI	7	Semampir
1342	97	L 9670 CG	C	6	SIDODADI	7	Semampir
1343	98	L 9670 CG	C	6	SIDODADI	7	Semampir
1344	99	L 9670 CG	C	6	SIDODADI	7	Semampir
1345	100	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1346	101	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1347	102	L 9649 CB	C	6	SIDOTOPO	7	Semampir
1348	103	L 2347 CE	G	6	SIMO LAWANG	4	Simokerto
1349	104	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1350	105	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1351	106	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1352	107	L 9626 CE	C	6	SIMPANG DUKUH	19	Genteng
1353	108	L 9660 CE	A	12	SRIKANA	5	Gubeng
1354	109	L 9660 CE	A	12	SRIKANA	5	Gubeng
1355	110	L 9660 CE	A	12	SRIKANA	5	Gubeng
1356	111	L 2932 CJ	H	2	STTS	5	Gubeng
1357	112	L 9676 CF	B	10	SULUNG	9	Bubutan

jica/amount/kjrsort1.wk1

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Kenjeran

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1358	113	L 9649 CB	C	6	TAMBAK DERES	2	Kenjeran
1359	114	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1360	115	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1361	116	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1362	117	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1363	118	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1364	119	L 9696 CG	B	10	TAMBAK REJO	4	Simokerto
1365	120	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1366	121	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1367	122	L 9690 CG	C	6	TAMBAK SARI	3	Tambaksari
1368	123	L 9670 CG	C	6	TAMBANG BOYO	3	Tambaksari
1369	124	L 9670 CG	C	6	TAMBANG BOYO	3	Tambaksari
1370	125	L 2167 CN	G	17	TANJUNG SADARI	10	Krembangan
1371	126	L 9697 CG	C	6	TENGGILIS PETOJO	6	Rungkut
1372	127	L 9686 CG	C	6	WISMA PERMAI	1	Sukolilo
1373	128	L 4884 PK	G	22	WONOCOLO	15	Wonocolo
1374	129	L 2516 CD	G	13	WONOSARI TEGAL	7	Semampir
1375	130	L 2516 CD	G	14	WONOSARI TEGAL	7	Semampir
1376	131	L 2516 CD	G	11	WONOSARI TEGAL	7	Semampir

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
	15 May 1992						
1377	1	B 9481 CN	G	18	BRATANG	5	Gubeng
1378	2	L 9653 CG	C	6	BRATANG	5	Gubeng
1379	3	L 9653 CG	C	6	BRATANG	5	Gubeng
1380	4	L 9653 CG	C	6	BRATANG	5	Gubeng
1381	5	L 9654 CG	C	6	BRATANG	5	Gubeng
1382	6	L 9663 CE	I	3	BRATANG	5	Gubeng
1383	7	L 9677 CF	B	10	BRATANG	5	Gubeng
1384	8	L 9694 CG	B	10	BRATANG	5	Gubeng
1385	9	L 9694 CG	B	10	BRATANG	5	Gubeng
1386	10	L 9657 CG	C	6	DARMO	16	Wonokromo
1387	11	L 9677 CF	B	10	DARMOKALI PUMP STATION	16	Wonokromo
1388	12	L 9679 CG	B	10	DUKUH KUPANG	11	Tandes
1389	13	L 3083 MB	H	1	DUKUH KUPANG TIMUR	11	Tandes
1390	14	L 2001 CZ	H	6	INDRAKILA	3	Tambaksari
1391	15	L 2275 B	E	6	JEMUR SARI	15	Wonocolo
1392	16	L 2052 CQ	H	5	KALI BOKOR	5	Gubeng
1393	17	L 2156 CS	C	6	KALI BOKOR	5	Gubeng
1394	18	L 9657 CG	C	6	KEDUNG SARI	18	Tegalsari
1395	19	L 9694 CG	B	10	MANAYAR KERTOARJO	1	Sukolilo
1396	20	L 9671 CG	C	6	MANYAR	1	Sukolilo
1397	21	L 9694 CG	B	10	MANYAR	1	Sukolilo
1398	22	L 9694 CG	B	10	MANYAR KERTOADI	1	Sukolilo
1399	23	L 3000 BF	H	2	MANYAR KERTOARJO	1	Sukolilo
1400	24	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1401	25	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1402	26	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1403	27	L 9653 CG	C	6	NGINDEN	16	Wonokromo
1404	28	L 9677 CF	B	10	PANJANG JIWO	6	Rungkut
1405	29	L 9694 CG	B	10	PANJANG JIWO	6	Rungkut
1406	30	L 9677 CF	B	10	PT SIER	6	Rungkut
1407	31	L 9677 CF	B	10	RUNGKUT INDUSTRI	6	Rungkut
1408	32	L 9663 CE	I	3	RUNGKUT KIDUL	6	Rungkut
1409	33	L 9696 CG	B	10	RUNGKUT KIDUL	6	Rungkut
1410	34	L 2089 EM	H	4	RUNGKUT MENANGGAL	6	Rungkut
1411	35	L 9677 CF	B	10	SEMOLO WARU	1	Sukolilo
	17 May 1992						
1412	1	L 9671 CG	C	6	BENDUL MERISI	16	Wonokromo
1413	2	L 9677 CF	B	10	BENDUL MERISI	16	Wonokromo
1414	3	L 9687 CH	C	6	BENDUL MERISI	16	Wonokromo
1415	4	L 2705 AA	H	2	BRATANG	5	Gubeng
1416	5	L 9654 CG	C	6	BRATANG	5	Gubeng
1417	6	L 9657 CG	C	6	BRATANG	5	Gubeng
1418	7	L 9654 CG	C	6	BRATANG LAPANGAN	5	Gubeng
1419	8	L 9660 CE	A	12	BRATANG LAPANGAN	5	Gubeng
1420	9	L 9677 CF	B	10	BRATANG LAPANGAN	5	Gubeng

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1421	10	L 9677 CF	B	10	BRATANG LAPANGAN	5	Gubeng
1422	11	L 9694 CG	B	10	BRATANG LAPANGAN	5	Gubeng
1423	12	L 9657 CG	C	6	BREBEK II	6	Rungkut
1424	13	L 9671 CG	C	6	BREBEK II	6	Rungkut
1425	14	L 9671 CG	C	6	BREBEK II	6	Rungkut
1426	15	L 9671 CG	C	6	BUNGGUR ASIH	15	Wonocolo
1427	16	L 9654 CG	C	6	DELES	1	Sukolilo
1428	17	L 3083 MB	H	2	DUKUH KUPANG TIMUR	11	Tandes
1429	18	L 9694 CG	B	10	GAYUNGAN	15	Wonocolo
1430	19	L 2137 AL	H	11	JEMUR SARI	15	Wonocolo
1431	20	L 2137 AL	H	11	JEMUR SARI	15	Wonocolo
1432	21	L 2275 B	E	6	JEMUR SARI	15	Wonocolo
1433	22	L 9687 CH	C	6	JEMUR SARI	15	Wonocolo
1434	23	L 9654 CG	C	6	JOYO BOYO	16	Wonokromo
1435	24	L 9631 CF	C	6	KALI BOKOR	5	Gubeng
1436	25	L 9671 CG	C	6	KALI BOKOR	5	Gubeng
1437	26	L 9671 CG	C	6	KARANG POH	11	Tandes
1438	27	L 9657 CG	C	6	KEDUNG SARI	18	Tegalsari
1439	28	L 9669 CG	C	6	KEDUNG SARI	18	Tegalsari
1440	29	L 9669 CG	C	6	KEDUNG SARI	18	Tegalsari
1441	30	L 9694 CG	B	10	KEDUNG SARI	18	Tegalsari
1442	31	L 9671 CG	C	6	KUTISARI INDAH	15	Wonocolo
1443	32	L 9654 CG	C	6	MANYAR	1	Sukolilo
1444	33	L 2137 AL	H	6	MANYAR KERTOARJO	1	Sukolilo
1445	34	L 2137 AL	H	11	MANYAR KERTOARJO	1	Sukolilo
1446	35	L 9631 CF	C	6	MANYAR KERTOARJO	1	Sukolilo
1447	36	L 9631 CF	C	6	MANYAR KERTOARJO	1	Sukolilo
1448	37	L 9654 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1449	38	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1450	39	L 9678 CF	B	10	MENUR	1	Sukolilo
1451	40	L 2993 BR	H	1	MERAPI	17	Sawahan
1452	41	L 9660 CE	A	12	MERAPI	17	Sawahan
1453	42	L 9654 CG	C	6	NGAGEL DADI	16	Wonokromo
1454	43	L 9654 CG	C	6	NGAGEL DADI	16	Wonokromo
1455	44	L 9687 CH	C	6	NGINDEN	16	Wonokromo
1456	45	L 9687 CH	C	6	NGINDEN	16	Wonokromo
1457	46	L 9631 CF	C	6	PANDEGILING	18	Tegalsari
1458	47	L 9657 CG	C	6	PANDEGILING	18	Tegalsari
1459	48	L 9669 CG	C	6	PANDEGILING	18	Tegalsari
1460	49	L 9686 CF	D	10	PANDEGILING	18	Tegalsari
1461	50	L 9678 CF	B	10	PANJANG JIWO	6	Rungkut
1462	51	L 9694 CG	B	10	PANJANG JIWO	6	Rungkut
1463	52	L 9677 CF	B	10	PASAR KEPUTRAN	18	Tegalsari
1464	53	L 9654 CG	C	6	PASAR KRUKAH	16	Wonokromo
1465	54	L 9677 CF	B	10	PENJARINGAN SARI	6	Rungkut
1466	55	L 9631 CF	C	6	PRAPEN	6	Rungkut
1467	56	L 9678 CF	B	10	PRAPEN	6	Rungkut

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1468	57	L 9687 CH	C	6	PT SIER	6	Rungkut
1469	58	L 9694 CG	B	10	RUNGKUT HARAPAN	6	Rungkut
1470	59	L 9677 CF	B	10	RUNGKUT KIDUL	6	Rungkut
1471	60	L 9678 CF	B	10	RUNGKUT MENANGGAL	6	Rungkut
1472	61	L 9687 CH	C	6	RUNGKUT MENANGGAL	6	Rungkut
1473	62	L 9605 CF	F	6	RUNGKUT TELKOM	6	Rungkut
1474	63	L 9669 CG	C	6	RUNGKUT TELKOM	6	Rungkut
1475	64	L 9694 CG	B	10	SRIKANA	5	Gubeng
1476	65	L 9657 CG	C	6	STIPAK	1	Sukolilo
1477	66	L 9687 CH	C	6	THR.GUBENG,KR.MENJANGAN,NGAGEL	3	Tambaksari
1478	67	L 9656 CG	C	6	WIDODAREN	17	Sawahan
1479	68	L 9671 CG	C	6	WIDODAREN	17	Sawahan
	18 May 1992						
1480	1	L 2272 CI	H	3	BRATANG	5	Gubeng
1481	2	L 9663 CE	I	5	BRATANG	5	Gubeng
1482	3	L 9669 CG	C	6	BRATANG	5	Gubeng
1483	4	L 9694 CG	B	10	BRATANG	5	Gubeng
1484	5	L 9694 CG	B	10	BRATANG	5	Gubeng
1485	6	L 9671 CG	C	6	BRATANG LAPANGAN	5	Gubeng
1486	7	L 9694 CG	B	10	BRATANG LAPANGAN	5	Gubeng
1487	8	L 9694 CG	B	10	BREBEK II	6	Rungkut
1488	9	L 9631 CF	C	6	DINOYO PUMP STATION	16	Wonokromo
1489	10	L 2275 B	E	6	JEMUR SARI	15	Wonocolo
1490	11	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1491	12	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1492	13	L 9665 CL	F	6	JEMUR SARI	15	Wonocolo
1493	14	L 9654 CG	C	6	KALI BOKOR	5	Gubeng
1494	15	L 9631 CF	C	6	KEBON SARI	15	Wonocolo
1495	16	L 9669 CG	C	6	KETABANG KALI	19	Genteng
1496	17	L 2090 AM	H	6	LAMP FACTORY	6	Rungkut
1497	18	L 2156 CS	E	6	LAMP FACTORY	6	Rungkut
1498	19	L 9657 CG	C	6	MANAYAR KERTOARJO	1	Sukolilo
1499	20	L 9657 CG	C	6	MANYAR	1	Sukolilo
1500	21	L 2070 AN	H	6	MANYAR KERTOARJO	1	Sukolilo
1501	22	L 2156 CS	H	6	NGAGEL DADI	16	Wonokromo
1502	23	L 9669 CG	C	6	NGINDEN	16	Wonokromo
1503	24	L 2166 AK	H	1	PT SIER	6	Rungkut
1504	25	L 9694 CG	B	10	RUNGKUT	6	Rungkut
1505	26	L 9694 CG	B	10	RUNGKUT INDUSTRI	6	Rungkut
1506	27	L 9694 CG	B	10	RUNGKUT INDUSTRI	6	Rungkut
1507	28	L 2070 AN	H	6	RUNGKUT MENANGGAL	6	Rungkut
1508	29	L 2092 CB	H	7	RUNGKUT MENANGGAL	6	Rungkut
1509	30	L 9669 CG	C	6	SAMPOERNA	6	Rungkut
1510	31	L 9669 CG	C	6	SAMPOERNA	6	Rungkut
1511	32	L 9671 CG	C	6	SAMPOERNA	6	Rungkut
1512	33	L 2070 AN	H	6	STIPAK	1	Sukolilo

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1513	34	L 9606 CF	F	6	STIPAK	1	Sukolilo
1514	35	L 3000 BF	H	4	WIDODAREN	17	Sawahan
	19 May 1992						
1515	1	L 2070 AN	H	6	BRATANG	5	Gubeng
1516	2	L 9653 CG	C	6	BRATANG	5	Gubeng
1517	3	L 9653 CG	C	6	BRATANG	5	Gubeng
1518	4	L 9660 CE	A	12	BRATANG	5	Gubeng
1519	5	L 9671 CG	C	6	BRATANG	5	Gubeng
1520	6	L 9677 CF	B	10	BRATANG	5	Gubeng
1521	7	L 9694 CG	B	10	BRATANG	5	Gubeng
1522	8	L 9694 CG	B	10	BRATANG	5	Gubeng
1523	9	L 2214 AE	H	1	BUNGGUR ASIH	15	Wonocolo
1524	10	L 2275 B	E	6	CANDY FACTORY	16	Wonokromo
1525	11	L 2001 CZ	H	6	JEMUR SARI	15	Wonocolo
1526	12	L 2275 B	E	6	JEMUR SARI	15	Wonocolo
1527	13	L 9677 CF	B	10	JEMUR SARI	15	Wonocolo
1528	14	L 2886 BG	H	5	JEMUR SARI	15	Wonocolo
1529	15	L 2052 CQ	H	7	KALI BOKOR	5	Gubeng
1530	16	L 2053 CG	H	2	KALI BOKOR	5	Gubeng
1531	17	L 9677 CF	B	10	KEDUNG SARI	18	Tegalsari
1532	18	L 9694 CG	B	10	KUTISARI INDAH	15	Wonocolo
1533	19	L 9660 CE	A	12	MANYAR KERTOADI	1	Sukolilo
1534	20	L 2149 CG	I	2	MANYAR KERTOARJO	1	Sukolilo
1535	21	L 2156 CS	E	6	MANYAR KERTOARJO	1	Sukolilo
1536	22	L 2828 CT	H	1	MANYAR KERTOARJO	1	Sukolilo
1537	23	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1538	24	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1539	25	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1540	26	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1541	27	L 9663 CE	I	6	NGAGEL DADI	16	Wonokromo
1542	28	L 9677 CF	B	10	NGEMPLAK	19	Genteng
1543	29	L 9677 CF	B	10	NGINDEN	16	Wonokromo
1544	30	L 9677 CF	B	10	NGINDEN	16	Wonokromo
1545	31	L 9654 CG	C	6	PANDEGILING	18	Tegalsari
1546	32	L 9694 CG	B	10	PANDEGILING	18	Tegalsari
1547	33	L 9697 CG	C	6	PANJANG JIWO	6	Rungkut
1548	34	L 9653 CG	C	6	PASAR KEPUTRAN	18	Tegalsari
1549	35	L 2166 AK	H	5	PT SIER	6	Rungkut
1550	36	L 9671 CG	C	6	PT SIER	6	Rungkut
1551	37	L 9678 CF	B	10	PT SIER	6	Rungkut
1552	38	L 2993 BR	H	1	RUNGKUT	6	Rungkut
1553	39	L 9657 CG	C	6	RUNGKUT	6	Rungkut
1554	40	L 9677 CF	B	10	RUNGKUT	6	Rungkut
1555	41	L 9653 CG	C	6	RUNGKUT KIDUL	6	Rungkut
1556	42	L 9678 CF	B	10	RUNGKUT KIDUL	6	Rungkut
1557	43	L 9653 CG	C	6	RUNGKUT TELKOM	6	Rungkut

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1558	44	L 9669 CG	C	6	SAMPOERNA	6	Rungkut
1559	45	L 9606 CF	F	3	SEMOLOWARU	1	Sukolilo
1560	46	L 9669 CG	C	6	SEMOLOWARU	1	Sukolilo
1561	47	L 9694 CG	B	10	SEMOLOWARU	1	Sukolilo
1562	48	L 9694 CG	B	10	SEMOLOWARU	1	Sukolilo
1563	49	L 9657 CG	C	6	SRIKANA	5	Gubeng
1564	50	L 9669 CG	C	6	STIPAK	1	Sukolilo
1565	51	L 9669 CG	C	6	TAMAN APSARI	19	Genteng
	20 May 1992						
1566	1	L 9657 CG	C	6	BANGUN REJO	10	Krembangan
1567	2	L 9677 CF	B	10	BENDUL MERISI	16	Wonokromo
1568	3	L 2190 CE	H	4	BIER FACTORY	5	Gubeng
1569	4	L 2051 CA	H	9	BRATANG	5	Gubeng
1570	5	L 2070 AN	H	6	BRATANG	5	Gubeng
1571	6	B 9481 CN	G	18	BRATANG	5	Gubeng
1572	7	L 9654 CG	C	6	BRATANG	5	Gubeng
1573	8	L 9657 CG	C	6	BRATANG	5	Gubeng
1574	9	L 9669 CG	C	6	BRATANG	5	Gubeng
1575	10	L 9697 CG	C	6	BRATANG	5	Gubeng
1576	11	L 9683 CG	B	10	BUKIT BARISAN	17	Sawahan
1577	12	L 9683 CG	B	10	BUKIT BARISAN	17	Sawahan
1578	13	L 2275 B	E	6	JEMUR SARI	15	Wonocolo
1579	14	L 2070 AN	H	6	JEMUR SARI	15	Wonocolo
1580	15	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1581	16	L 2156 CS	E	6	KALI BOKOR	5	Gubeng
1582	17	B 9481 CN	G	5	KALI BOKOR	5	Gubeng
1583	18	L 9654 CG	C	6	KALI BOKOR	5	Gubeng
1584	19	L 9694 CG	B	10	KALI BOKOR	5	Gubeng
1585	20	L 9671 CG	C	6	KANGEAN	5	Gubeng
1586	21	L 9671 CG	C	6	KANGEAN	5	Gubeng
1587	22	L 9657 CG	C	6	KEDUNG SARI	18	Tegalsari
1588	23	L 9694 CG	B	10	MANYAR	1	Sukolilo
1589	24	L 9687 CH	C	6	MANYAR KERTOADI	1	Sukolilo
1590	25	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1591	26	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1592	27	L 9657 CG	C	6	MERAPI	17	Sawahan
1593	28	L 9677 CF	B	10	NGAGEL DADI	16	Wonokromo
1594	29	L 9694 CG	B	10	NGINDEN	16	Wonokromo
1595	30	L 9657 CG	C	6	PANDEGILING	18	Tegalsari
1596	31	L 2156 CS	H	6	PANJANG JIWO	6	Rungkut
1597	32	L 9660 CE	A	12	PRAPEN	6	Rungkut
1598	33	L 2690 BF	G	18	PT SIER	6	Rungkut
1599	34	L 9654 CG	C	6	PT SIER	6	Rungkut
1600	35	L 9657 CG	C	6	PT SIER	6	Rungkut
1601	36	L 9669 CG	C	6	RUNGKUT	6	Rungkut
1602	37	L 9677 CF	B	10	RUNGKUT	6	Rungkut

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1603	38	L 2889 AH	H	6	RUNGKUT INDUSTRI	6	Rungkut
1604	39	L 9694 CG	B	10	RUNGKUT TELKOM	6	Rungkut
1605	40	L 9653 CG	C	6	SAMPOERNA	6	Rungkut
1606	41	L 2166 AK	H	4	SEMOLOWARU	1	Sukolilo
1607	42	L 9653 CG	C	6	SEMOLOWARU	1	Sukolilo
1608	43	L 9677 CF	B	10	SEMOLOWARU	1	Sukolilo
1609	44	L 9694 CG	B	10	SEMOLOWARU	1	Sukolilo
1610	45	L 9694 CG	B	10	SEMOLOWARU	1	Sukolilo
1611	46	L 9678 CF	B	10	SRIKANA	5	Gubeng
1612	47	L 2166 AK	H	4	STIPAK	1	Sukolilo
1613	48	L 9653 CG	C	6	SURABAYA PLAZA	19	Genteng
1614	49	L 9669 CG	C	6	WIDODAREN	17	Sawahan
	21 May 1992						
1615	1	L 9669 CG	C	6	BANGUN REJO	10	Krembangan
1616	2	L 9671 CG	C	6	BENDUL MERISI	16	Wonokromo
1617	3	L 2190 CE	H	11	BIER FACTORY	5	Gubeng
1618	4	L 2070 AN	H	6	BRATANG	5	Gubeng
1619	5	L 2156 CS	E	6	BRATANG	5	Gubeng
1620	6	L 2332 AC	G	24	BRATANG	5	Gubeng
1621	7	L 9671 CG	C	6	BRATANG	5	Gubeng
1622	8	L 9677 CF	B	10	BRATANG	5	Gubeng
1623	9	L 9677 CF	B	10	BRATANG	5	Gubeng
1624	10	L 9677 CF	B	10	BUKIT BARISAN	17	Sawahan
1625	11	L 9653 CG	C	6	JEMUR SARI	15	Wonocolo
1626	12	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1627	13	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1628	14	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1629	15	L 9694 CG	B	10	KALI BOKOR	5	Gubeng
1630	16	L 9677 CF	B	10	KANGEAN	5	Gubeng
1631	17	L 3031 CG	H	6	KEDUNG ANYAR	18	Tegalsari
1632	18	L 9683 CG	B	10	KEDUNG SARI	18	Tegalsari
1633	19	L 9677 CF	B	10	KUTISARI INDAH	15	Wonocolo
1634	20	L 2156 CS	H	6	MANYAR	1	Sukolilo
1635	21	L 2690 BF	G	16	MANYAR	1	Sukolilo
1636	22	L 9669 CG	C	6	MANYAR	1	Sukolilo
1637	23	L 9653 CG	C	6	MANYAR KERTOADI	1	Sukolilo
1638	24	L 2051 CA	H	2	MANYAR KERTOARJO	1	Sukolilo
1639	25	L 3031 CG	H	5	MANYAR KERTOARJO	1	Sukolilo
1640	26	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1641	27	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1642	28	L 9669 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1643	29	L 9669 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1644	30	L 9697 CG	C	6	NGINDEN	16	Wonokromo
1645	31	L 2275 B	E	6	PANDEGILING	18	Tegalsari
1646	32	L 9669 CG	C	6	PANDEGILING	18	Tegalsari
1647	33	L 2690 BF	G	21	PASAR KEMBANG	18	Tegalsari

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1648	34	L 2092 CB	H	7	PASAR PUCANG	5	Gubeng
1649	35	L 9677 CF	B	10	PASAR SIMO	11	Tandes
1650	36	L 9653 CG	C	6	PASAR TURI	9	Bubutan
1651	37	L 2690 BF	G	18	PT SIER	6	Rungkut
1652	38	B 9481 CN	G	23	PT SIER	6	Rungkut
1653	39	L 9687 CH	C	6	PT SIER	6	Rungkut
1654	40	L 9694 CG	B	10	PT SIER	6	Rungkut
1655	41	L 9677 CF	B	10	RUNGKUT	6	Rungkut
1656	42	L 2889 AH	H	6	RUNGKUT INDUSTRI	6	Rungkut
1657	43	L 9654 CG	C	6	RUNGKUT INDUSTRI II	6	Rungkut
1658	44	L 9663 CE	I	3	RUNGKUT INDUSTRI IV	6	Rungkut
1659	45	L 9677 CF	B	10	RUNGKUT INDUSTRI IV	6	Rungkut
1660	46	L 9694 CG	B	10	RUNGKUT MENANGGAL	6	Rungkut
1661	47	L 2030 NA	H	19	RUNGKUT TELKOM	6	Rungkut
1662	48	L 9654 CG	C	6	RUNGKUT TELKOM	6	Rungkut
1663	49	L 2322 CA	G	14	SAMPOERNA	6	Rungkut
1664	50	L 9697 CG	C	6	SAMPOERNA	6	Rungkut
1665	51	L 2070 AN	H	6	SEMOLOWARU	1	Sukolilo
1666	52	L 2092 CB	H	14	SEMOLOWARU	1	Sukolilo
1667	53	L 2332 AC	G	21	SEMOLOWARU	1	Sukolilo
1668	54	L 3000 BF	H	4	SEMOLOWARU	1	Sukolilo
1669	55	L 9677 CF	B	10	SEMOLOWARU	1	Sukolilo
1670	56	L 9678 CF	B	10	SEMOLOWARU	1	Sukolilo
1671	57	L 9677 CF	B	10	STIPAK	1	Sukolilo
1672	58	L 9653 CG	C	6	SURABAYA PLAZA	19	Genteng
	22 May 1992						
1673	1	L 2092 CB	H	6	BANGUN REJO	10	Krembangan
1674	2	L 9657 CG	C	6	BIER FACTORY	5	Gubeng
1675	3	L 2190 CE	H	5	BRATANG	5	Gubeng
1676	4	B 9481 CN	G	25	BRATANG	5	Gubeng
1677	5	L 9653 CG	C	6	BRATANG	5	Gubeng
1678	6	L 9657 CG	C	6	BRATANG	5	Gubeng
1679	7	L 9669 CG	C	6	BRATANG	5	Gubeng
1680	8	L 9694 CG	B	10	BRATANG	5	Gubeng
1681	9	L 9677 CF	B	10	BUKIT BARISAN	17	Sawahan
1682	10	L 2275 B	E	6	JEMUR SARI	15	Wonocolo
1683	11	L 9671 CG	C	6	JEMUR SARI	15	Wonocolo
1684	12	L 9677 CF	B	10	JEMUR SARI	15	Wonocolo
1685	13	L 9694 CG	B	10	JEMUR SARI	15	Wonocolo
1686	14	L 2053 CG	H	2	KALI BOKOR	5	Gubeng
1687	15	L 2620 BF	G	8	KALI BOKOR	5	Gubeng
1688	16	L 2769 BV	H	4	KALI BOKOR	5	Gubeng
1689	17	L 9654 CG	C	6	KALI BOKOR	5	Gubeng
1690	18	L 9654 CG	C	6	KALI BOKOR	5	Gubeng
1691	19	L 9669 CG	C	6	KALI BUTUH	9	Bubutan
1692	20	L 2149 CG	I	2	KEDUNG SARI	18	Tegalsari

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Keputih

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1693	21	L 9671 CG	C	6	KEDUNG SARI	18	Tegalsari
1694	22	L 2690 BF	G	16	MANYAR KERTOARJO	1	Sukolilo
1695	23	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1696	24	L 9653 CG	C	6	MANYAR KERTOARJO	1	Sukolilo
1697	25	L 9694 CG	B	10	MANYAR KERTOARJO	1	Sukolilo
1698	26	L 2166 AK	H	5	MERAPI	17	Sawahan
1699	27	L 9657 CG	C	6	NGAGEL	16	Wonokromo
1700	28	L 9677 CF	B	10	NGAGEL TAMA	16	Wonokromo
1701	29	L 3000 BF	H	4	NGINDEN	16	Wonokromo
1702	30	L 2332 AC	G	20	PANJANG JIWO	6	Rungkut
1703	31	L 2166 AK	H	5	PASAR SIMO	11	Tandes
1704	32	L 3029 CJ	H	6	PASAR SIMO	11	Tandes
1705	33	L 2092 CB	H	7	PASAR TURI	9	Bubutan
1706	34	L 9677 CF	B	10	PENJARINGAN SARI	6	Rungkut
1707	35	L 2275 B	E	6	PT SIER	6	Rungkut
1708	36	L 9694 CG	B	10	PT SIER	6	Rungkut
1709	37	L 2993 BR	H	1	RUNGKUT	6	Rungkut
1710	38	L 9657 CG	C	6	RUNGKUT	6	Rungkut
1711	39	L 9677 CF	B	10	RUNGKUT	6	Rungkut
1712	40	L 9694 CG	B	10	RUNGKUT	6	Rungkut
1713	41	L 9653 CG	C	6	RUNGKUT	6	Rungkut
1714	42	L 9657 BE	A	12	RUNGKUT	6	Rungkut
1715	43	L 9694 CG	B	10	RUNGKUT INDUSTRI II	6	Rungkut
1716	44	L 9694 CG	B	10	RUNGKUT INDUSTRI II	6	Rungkut
1717	45	L 2156 CS	E	6	RUNGKUT INDUSTRI IV	6	Rungkut
1718	46	L 9653 CG	C	6	RUNGKUT INDUSTRI IV	6	Rungkut
1719	47	L 9669 CG	C	6	RUNGKUT INDUSTRI IV	6	Rungkut
1720	48	L 2166 AK	H	4	RUNGKUT MENANGGAL	6	Rungkut
1721	49	L 2051 CA	H	10	SAMPOERNA	6	Rungkut
1722	50	L 9653 CG	C	6	SAMPOERNA	6	Rungkut
1723	51	L 2070 AN	H	6	SEMOLOWARU	1	Sukolilo
1724	52	L 2092 CB	H	7	SEMOLOWARU	1	Sukolilo
1725	53	L 2332 AC	G	16	SEMOLOWARU	1	Sukolilo
1726	54	L 9069 A	H	5	SEMOLOWARU	1	Sukolilo
1727	55	L 9694 CG	B	10	SEMOLOWARU	1	Sukolilo
1728	56	L 9694 CG	B	10	SEMOLOWARU	1	Sukolilo
1729	57	L 5007 CQ	H	1	STIPAK	1	Sukolilo
1730	58	L 9654 CG	C	6	STIPAK	1	Sukolilo
1731	59	L 9669 CG	C	6	STIPAK	1	Sukolilo
1732	60	L 3031 CG	H	5	SURABAYA PLAZA	19	Genteng
1733	61	L 3031 CG	H	5	WARU (A. YANI)	14	Karang Pilang

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
	15 May 1992						
1734	1	L 9680 CG	C	6	ASRAMA BRIMOB	14	Karang Pilang
1735	2	L 2264 BB	H	8	BALONGSARI	11	Tandes
1736	3	L 2201 CQ	G	17	BANJAR SUGIHAN	11	Tandes
1737	4	L 9656 CG	C	6	BOGANGIN	14	Karang Pilang
1738	5	L 9687 CH	C	6	BOGANGIN	14	Karang Pilang
1739	6	L 9661 CE	A	12	DARMO GRAND	11	Tandes
1740	7	L 9687 CH	C	6	DARMO GRAND	11	Tandes
1741	8	L 9680 CG	C	6	DUKUH KUPANG	14	Karang Pilang
1742	9	L 9668 CG	C	6	DUKUH KUPANG BARAT	14	Karang Pilang
1743	10	B 9147 KG	H	7	DUKUH KUPANG TIMUR	14	Karang Pilang
1744	11	L 9668 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1745	12	L 9687 CH	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1746	13	L 9656 CG	C	6	DUPAK BANDAR REJO	10	Krembangan
1747	14	L 9687 CH	C	6	DUPAK BANDAR REJO	10	Krembangan
1748	15	L 9688 CH	C	6	GENTENG	19	Genteng
1749	16	L 9611 CB	F	7	GUNUNGSARI	14	Karang Pilang
1750	17	L 9679 CG	B	10	GUNUNGSARI	14	Karang Pilang
1751	18	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang
1752	19	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang
1753	20	L 2047 AT	H	8	GUNUNGSARI INDAH	14	Karang Pilang
1754	21	L 9616 CH	E	6	JETIS KULON	13	Lakarsantri
1755	22	L 9656 CG	C	6	JETIS KULON	13	Lakarsantri
1756	23	L 9612 CH	E	6	JL. DIPONEGORO,BONBIN,BRAWIJAYA	16	Wonokromo
1757	24	L 2199 CQ	G	15	JL. DODIK	14	Karang Pilang
1758	25	L 9656 CG	C	6	JL. GRESIK	12	Benowo
1759	26	L 9680 CG	C	6	JL. GRESIK	12	Benowo
1760	27	L 9617 CB	I	3	JL. GRESIK	12	Benowo
1761	28	L 9687 CH	C	6	JL. GRESIK	12	Benowo
1762	29	L 9616 CH	E	6	JL. SIMO MARGO	11	Tandes
1763	30	L 9656 CG	C	6	KARANG PILANG	14	Karang Pilang
1764	31	L 9692 CG	B	10	KARANG POH	11	Tandes
1765	32	L 9693 CG	C	6	KARANG POH	11	Tandes
1766	33	L 2199 CQ	G	15	KARANG REJO	16	Wonokromo
1767	34	L 9656 CG	C	6	KARANG REJO	16	Wonokromo
1768	35	L 9680 CG	C	6	KARANG REJO	16	Wonokromo
1769	36	L 9687 CH	C	6	KARANG REJO	16	Wonokromo
1770	37	L 9679 CG	B	10	KEBRAON	14	Karang Pilang
1771	38	L 2201 CQ	G	16	KEMBANG KUNING	17	Sawahan
1772	39	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan
1773	40	L 9688 CH	C	6	KEMBANG KUNING	17	Sawahan
1774	41	L 9693 CG	C	6	KEMBANG KUNING	17	Sawahan
1775	42	L 9693 CG	C	6	KEMBANG KUNING	17	Sawahan
1776	43	L 9656 CG	C	6	KEMLATEN	14	Karang Pilang
1777	44	L 9668 CG	C	6	KEMLATEN	14	Karang Pilang
1778	45	L 9680 CG	C	6	KETAMPON	18	Tegalsari
1779	46	L 9668 CG	C	6	KUPANG GUNUNG	17	Sawahan

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1780	47	L 9672 CF	D	10	KUPANG INDAH	11	Tandes
1781	48	L 9687 CH	C	6	KUPANG INDAH	11	Tandes
1782	49	L 2202 CQ	G	15	MANUKAN KULON	11	Tandes
1783	50	L 9668 CG	C	6	MANUKAN KULON	11	Tandes
1784	51	L 9668 CG	C	6	MANUKAN KULON	11	Tandes
1785	52	L 9680 CG	C	6	MANUKAN KULON	11	Tandes
1786	53	L 9680 CG	C	6	MANUKAN TELAGA	11	Tandes
1787	54	L 9688 CH	C	6	MANUKAN TELAGA	11	Tandes
1788	55	L 9688 CH	C	6	MANUKAN WETAN	11	Tandes
1789	56	L 9688 CH	C	6	MANUKAN WETAN	11	Tandes
1790	57	L 9656 CG	C	6	MAYJEN SUNGKONO	14	Karang Pilang
1791	58	L 9679 CG	B	10	NODDLE FACTORY SEPANJANG	14	Karang Pilang
1792	59	L 9679 CG	B	10	OPAK	18	Tegalsari
1793	60	L 9688 CH	C	6	PANTAI KENJERAN LAMA	2	Kenjeran
1794	61	L 9687 CH	C	6	PRINGADI	9	Bubutan
1795	62	L 2199 CQ	G	15	SIMO KATRUNGAN	11	Tandes
1796	63	L 9688 CH	C	6	SONO KAWIJENAN	11	Tandes
1797	64	L 9722 GH	H	10	SUKO MANUNGGAL	11	Tandes
1798	65	L 9887 CH	C	6	SUKO MANUNGGAL	11	Tandes
1799	66	L 9687 CH	C	6	TAMAN KETAMPON	18	Tegalsari
1800	67	L 9693 CG	C	6	TUBANAN DARMO	11	Tandes
1801	68	L 9679 CG	B	10	WARU GUNUNG	14	Karang Pilang
1802	69	L 9661 CE	A	12	WIYUNG	14	Karang Pilang
1803	70	L 9668 CG	C	6	WONOSARI	7	Semampir
1804	71	L 2201 CQ	G	15	YANI GOLF	14	Karang Pilang
	17 May 1992						
1805	1	L 9656 CG	C	6	BALONGSARI	11	Tandes
1806	2	L 9661 CE	A	12	BANDAREJO	10	Krembangan
1807	3	L 9688 CH	C	6	BANJAR SUGIHAN	11	Tandes
1808	4	L 9687 CH	C	6	BOGANGIN	14	Karang Pilang
1809	5	L 9696 CG	B	10	BOGANGIN	14	Karang Pilang
1810	6	L 2202 CQ	G	14	CANDI LONTAR	13	Lakarsantri
1811	7	L 9680 CG	C	6	DUKUH KUPANG BARAT	14	Karang Pilang
1812	8	L 2199 CQ	G	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1813	9	L 9688 CH	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1814	10	L 2264 BB	H	7	GUNUNGSARI	14	Karang Pilang
1815	11	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
1816	12	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
1817	13	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
1818	14	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
1819	15	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
1820	16	L 2201 CQ	G	16	GUNUNGSARI INDAH	14	Karang Pilang
1821	17	L 9692 CG	B	10	JETIS KULON	13	Lakarsantri
1822	18	L 9656 CG	C	6	JL. DIPONEGORO,BONBIN,BRAWIJAYA	16	Wonokromo
1823	19	L 9668 CG	C	6	JL. DR.SUTOMO,MAYJEN SUNGKUNO	18	Tegalsari
1824	20	L 9687 CH	C	6	JL. GRESIK	12	Benowo

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1825	21	L 9688 CH	C	6	JL. GRESIK	12	Benowo
1826	22	L 9688 CH	C	6	JL. GRESIK	12	Benowo
1827	23	L 9668 CG	C	6	JOYO BOYO	16	Wonokromo
1828	24	L 9687 CH	C	6	KALI BUTUH	9	Bubutan
1829	25	L 9668 CG	C	6	KANGEAN	5	Gubeng
1830	26	L 9616 CH	E	6	KARANG POH	11	Tandes
1831	27	L 2201 CQ	G	6	KARANG REJO	16	Wonokromo
1832	28	L 9657 BE	A	12	KARANG REJO	16	Wonokromo
1833	29	L 9672 CF	D	10	KARANG REJO	16	Wonokromo
1834	30	L 9687 CH	C	6	KARANG REJO	16	Wonokromo
1835	31	L 9687 CH	C	6	KEBRAON	14	Karang Pilang
1836	32	L 9688 CH	C	6	KEBRAON	14	Karang Pilang
1837	33	L 2199 CQ	G	15	KEMBANG KUNING	17	Sawahan
1838	34	L 2201 CQ	G	16	KEMBANG KUNING	17	Sawahan
1839	35	L 2202 CQ	G	15	KEMBANG KUNING	17	Sawahan
1840	36	L 2202 CQ	G	15	KEMBANG KUNING	17	Sawahan
1841	37	L 9676 CF	B	10	KEMBANG KUNING	17	Sawahan
1842	38	L 9679 CG	B	10	KEMBANG KUNING	17	Sawahan
1843	39	L 9680 CG	C	6	KEMBANG KUNING	17	Sawahan
1844	40	L 9687 CH	C	6	KEMLATEN	14	Karang Pilang
1845	41	L 2202 CQ	G	15	KETINTANG	15	Wonocolo
1846	42	L 9687 CH	C	6	KLEMATEN	14	Karang Pilang
1847	43	L 9679 CG	B	10	KUPANG INDAH	11	Tandes
1848	44	L 9688 CH	C	6	KUPANG INDAH	11	Tandes
1849	45	L 2278 L	H	7	MANUKAN KULON	11	Tandes
1850	46	L 9668 CG	C	6	MANUKAN KULON	11	Tandes
1851	47	L 9668 CG	C	6	MANUKAN KULON	11	Tandes
1852	48	L 9680 CG	C	6	MANUKAN KULON	11	Tandes
1853	49	L 9683 CG	B	10	MANUKAN KULON	11	Tandes
1854	50	L 9688 CH	C	6	MANUKAN TELAGA	11	Tandes
1855	51	L 9687 CH	C	6	PANDEGILING	18	Tegalsari
1856	52	L 2199 CQ	G	14	PASAR SIMO	11	Tandes
1857	53	L 9688 CH	C	6	PASAR SIMO	11	Tandes
1858	54	L 9668 CG	C	6	PASAR TEMBOK	9	Bubutan
1859	55	L 9693 CG	C	6	PENGHELA	9	Bubutan
1860	56	L 9612 CH	E	6	PRINGADI	9	Bubutan
1861	57	L 9680 CG	C	6	SKIN FACTORY	14	Karang Pilang
1862	58	L 9668 CG	C	6	SONO KAWIJENAN	11	Tandes
1863	59	L 9668 CG	C	6	SUKO MANUNGGAL	11	Tandes
1864	60	L 9687 CH	C	6	SUKO MANUNGGAL	11	Tandes
1865	61	L 9668 CG	C	6	TAMAN KETAMPON	18	Tegalsari
1866	62	L 9668 CG	C	6	TAMAN KETAMPON	18	Tegalsari
1867	63	L 9668 CG	C	6	WARU GUNUNG	14	Karang Pilang
1868	64	L 9661 CE	A	12	WIYUNG	14	Karang Pilang
1869	65	L 9680 CG	C	6	WONOSARI	7	Semampir
1870	66	L 9676 CF	B	10	YANI GOLF	14	Karang Pilang

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
	18 May 1992						
1871	1	L 9680 CG	C	6	ASRAMA BRIMOB	14	Karang Pilang
1872	2	L 2186 CA	H	10	BANDA REJO	10	Krembangan
1873	3	L 9680 CG	C	6	BANJAR SUGIHAN	11	Tandes
1874	4	L 9679 CG	B	10	BATTERY FACTORY SEPANJANG	14	Karang Pilang
1875	5	B 9722 GH	H	16	BATTERY FACTORY SEPANJANG	14	Karang Pilang
1876	6	B 9147 KG	H	7	BOGANGIN	14	Karang Pilang
1877	7	L 9656 CG	C	6	BOGANGIN	14	Karang Pilang
1878	8	L 9656 CG	C	6	CANDI LONTAR	13	Lakarsantri
1879	9	L 9656 CG	C	6	DARMO GRAND	11	Tandes
1880	10	L 9661 CE	A	12	DARMO GRAND	11	Tandes
1881	11	L 9679 CG	B	10	DARMO GRAND	11	Tandes
1882	12	L 9688 CH	C	6	DARMO PERMAI	11	Tandes
1883	13	L 9656 CG	C	6	DIPONGGO	14	Karang Pilang
1884	14	L 9688 CH	C	6	DUKUH KUPANG	14	Karang Pilang
1885	15	L 9612 CH	E	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1886	16	L 9668 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1887	17	L 9668 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1888	18	L 9672 CF	D	10	DUKUH KUPANG TIMUR	14	Karang Pilang
1889	19	L 9680 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1890	20	L 9688 CH	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1891	21	L 9680 CG	C	6	DUPAK BANDAR REJO	10	Krembangan
1892	22	L 9680 CG	C	6	GENTENG	19	Genteng
1893	23	L 9615 CH	E	6	GUNUNGSARI	14	Karang Pilang
1894	24	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
1895	25	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
1896	26	L 9679 CG	B	10	GUNUNGSARI	14	Karang Pilang
1897	27	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang
1898	28	L 9693 CG	C	6	JETIS KULON	13	Lakarsantri
1899	29	L 9680 CG	C	6	JL. BENOWO,SEMEMI,BERINGIN	12	Benowo
1900	30	B 9722 GH	H	8	JL. DIPONEGORO,BONBIN,BRAWIJAYA	16	Wonokromo
1901	31	L 2264 BB	H	8	JL. DODIK	14	Karang Pilang
1902	32	L 9656 CG	C	6	JL. DR.SUTOMO,MAYJEN SUNGKONO	18	Tegalsari
1903	33	L 9668 CG	C	6	JL. GRESIK	12	Benowo
1904	34	L 9688 CH	C	6	JL. GRESIK	12	Benowo
1905	35	L 2186 CA	H	10	KARANG PILANG	14	Karang Pilang
1906	36	L 9613 CH	E	6	KARANG REJO	16	Wonokromo
1907	37	L 9656 CG	C	6	KARANG REJO	16	Wonokromo
1908	38	L 9656 CG	C	6	KARANG REJO	16	Wonokromo
1909	39	L 9680 CG	C	6	KARANG REJO	16	Wonokromo
1910	40	L 9687 CH	C	6	KARANG REJO	16	Wonokromo
1911	41	L 9693 CG	C	6	KARANG REJO	16	Wonokromo
1912	42	L 2202 CQ	G	14	KEBRAON	14	Karang Pilang
1913	43	L 9693 CG	C	6	KEBRAON	14	Karang Pilang
1914	44	L 2199 CQ	G	15	KEMBANG KUNING	17	Sawahan
1915	45	L 2199 CQ	G	15	KEMBANG KUNING	17	Sawahan
1916	46	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1917	47	L 9672 CF	D	10	KEMBANG KUNING	17	Sawahan
1918	48	L 9688 CH	C	6	KEMBANG KUNING	17	Sawahan
1919	49	L 9693 CG	C	6	KEMLATEN	14	Karang Pilang
1920	50	L 9616 CH	E	6	KUPANG INDAH	11	Tandes
1921	51	L 9668 CG	C	6	KUPANG INDAH	11	Tandes
1922	52	L 9680 CG	C	6	LIDAH KULON	13	Lakarsantri
1923	53	L 2199 CQ	G	14	MAKAM SUKO MANUNGGAL	11	Tandes
1924	54	L 9679 CG	B	10	MANUKAN WETAN	11	Tandes
1925	55	L 9679 CG	B	10	MANUKAN WETAN	11	Tandes
1926	56	L 9693 CG	C	6	MANUKAN WETAN	11	Tandes
1927	57	L 9688 CH	C	6	PASAR ASEMROWO	11	Tandes
1928	58	L 9688 CH	C	6	PASAR KUPANG GUNUNG	17	Sawahan
1929	59	L 9679 CG	B	10	SIMO KATRUNGAN	11	Tandes
1930	60	L 1001 MA	H	1	SONO KAWIJENAN	11	Tandes
1931	61	L 9668 CG	C	6	SUKO MANUNGGAL	11	Tandes
1932	62	L 9693 CG	C	6	SUKO MANUNGGAL	11	Tandes
1933	63	L 9668 CG	C	6	TAMAN KETAMPON	18	Tegalsari
1934	64	L 9688 CH	C	6	TAMAN KETAMPON	18	Tegalsari
1935	65	L 3577 V	H	1	TANJUNGSARI,DIPONEGORO,BONBIN	10	Krembangan
1936	66	L 2202 CQ	G	15	TUBANAN DARMO	11	Tandes
1937	67	L 2202 CQ	G	14	WONOSARI	7	Semampir
1938	68	L 9656 CG	C	6	YONIF 616	14	Karang Pilang
19 May 1992							
1939	1	L 2201 CQ	G	16	BATTERY FACTORY SEPANJANG	14	Karang Pilang
1940	2	L 2201 CQ	G	15	BOGANGIN	14	Karang Pilang
1941	3	L 9693 CG	C	6	BOGANGIN	14	Karang Pilang
1942	4	L 9679 CG	B	10	CANDI LONTAR	13	Lakarsantri
1943	5	L 9668 CG	C	6	DARMO GRAND	11	Tandes
1944	6	L 9680 CG	C	6	DARMO GRAND	11	Tandes
1945	7	L 9688 CH	C	6	DARMO GRAND	11	Tandes
1946	8	L 9665 CL	F	5	DIPONGGO	14	Karang Pilang
1947	9	B 9722 GH	H	9	DIPONGGO	14	Karang Pilang
1948	10	L 9672 CF	D	10	DUKUH KUPANG	14	Karang Pilang
1949	11	L 9680 CG	C	6	DUKUH KUPANG	14	Karang Pilang
1950	12	B 9722 GH	H	9	DUKUH KUPANG	14	Karang Pilang
1951	13	L 9668 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1952	14	L 9668 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1953	15	L 9680 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
1954	16	L 2194 CF	H	7	DUPAK BANDAR REJO	10	Krembangan
1955	17	L 9687 CH	C	6	DUPAK BANDAR REJO	10	Krembangan
1956	18	L 9661 CE	A	12	GENTENG	19	Genteng
1957	19	L 2202 CQ	G	12	GUNUNGSARI	14	Karang Pilang
1958	20	L 9616 CH	E	6	GUNUNGSARI	14	Karang Pilang
1959	21	L 9679 CG	B	10	GUNUNGSARI	14	Karang Pilang
1960	22	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang
1961	23	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
1962	24	L 9668 CG	C	6	GUNUNGSARI INDAH	14	Karang Pilang
1963	25	L 2199 CQ	G	14	JETIS KULON	13	Lakarsantri
1964	26	L 9612 CH	E	6	JL. BENOWO,SEMEMI,BERINGIN	12	Benowo
1965	27	L 9612 CH	E	6	JL. DIPONEGORO,BONBIN,BRAWIJAYA	16	Wonokromo
1966	28	L 9656 CG	C	6	JL. DR SUTOMO,MAYJEN SUNGKONO	18	Tegalsari
1967	29	B 9147 KG	H	7	JL. GRESIK	12	Benowo
1968	30	L 9656 CG	C	6	JL. GRESIK	12	Benowo
1969	31	L 9656 CG	C	6	JL. GRESIK	12	Benowo
1970	32	L 9668 CG	C	6	JL. JIMERTO	19	Genteng
1971	33	L 9679 CG	B	10	JL. SIMO PAMOAN,DIPONEGORO	11	Tandes
1972	34	L 2819 CF	H	1	KARANG REJO	16	Wonokromo
1973	35	L 9656 CG	C	6	KARANG REJO	16	Wonokromo
1974	36	L 9680 CG	C	6	KARANG REJO	16	Wonokromo
1975	37	L 9693 CG	C	6	KARANG REJO	16	Wonokromo
1976	38	L 9680 CG	C	6	KEBRAON	14	Karang Pilang
1977	39	L 9688 CH	C	6	KEBRAON	14	Karang Pilang
1978	40	L 9693 CG	C	6	KEBRAON	14	Karang Pilang
1979	41	L 2201 CQ	G	16	KEMBANG KUNING	17	Sawahan
1980	42	L 2202 CQ	G	15	KEMBANG KUNING	17	Sawahan
1981	43	L 2202 CQ	G	15	KEMBANG KUNING	17	Sawahan
1982	44	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan
1983	45	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan
1984	46	L 9680 CG	C	6	KEMBANG KUNING	17	Sawahan
1985	47	L 9687 CH	C	6	KEMBANG KUNING	17	Sawahan
1986	48	L 9688 CH	C	6	KETAMPON	18	Tegalsari
1987	49	L 9688 CH	C	6	KETAMPON	18	Tegalsari
1988	50	L 9672 CF	D	10	KLEMATEN	14	Karang Pilang
1989	51	L 9656 CG	C	6	KUPANG,BONBIN,JOYO BOYO	16	Wonokromo
1990	52	L 9668 CG	C	6	KUPANG GUNUNG	17	Sawahan
1991	53	L 9615 CH	E	6	KUPANG INDAH	11	Tandes
1992	54	L 9679 CG	B	10	KUPANG INDAH	11	Tandes
1993	55	L 9687 CH	C	6	KUPANG INDAH	11	Tandes
1994	56	L 9693 CG	C	6	KUPANG INDAH	11	Tandes
1995	57	L 9668 CG	C	6	MANUKAN KULON	11	Tandes
1996	58	L 9679 CG	B	10	MAYJEN SUNGKONO,DUKUH PAKIS	14	Karang Pilang
1997	59	L 9680 CG	C	6	PASAR KUPANG GUNUNG	17	Sawahan
1998	60	L 9656 CG	C	6	SIMO KATRUNGAN	11	Tandes
1999	61	L 2199 CQ	G	14	SUKO MANUNGGAL	11	Tandes
2000	62	L 9656 CG	C	6	SUKO MANUNGGAL	11	Tandes
2001	63	L 9668 CG	C	6	SUKO MANUNGGAL	11	Tandes
2002	64	L 9688 CH	C	6	TAMAN KETAMPON	18	Tegalsari
2003	65	L 3185 AW	H	1	TUBANAN DARMO	11	Tandes
2004	66	L 9693 CG	C	6	UNDAAN WETAN	4	Simokerto
2005	67	L 9688 CH	C	6	WIYUNG	14	Karang Pilang
2006	68	L 9615 CH	E	6	WONOSARI	7	Semampir
20 May 1992							

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
2007	1	L 2201 CQ	G	16	BANDAREJO	10	Krembangan
2008	2	L 9668 CG	C	6	BATTERY FACTORY SEPANJANG	14	Karang Pilang
2009	3	L 9668 CG	C	6	BOGANGIN	14	Karang Pilang
2010	4	L 9680 CG	C	6	BOGANGIN	14	Karang Pilang
2011	5	L 9672 CF	D	10	DARMO GRAND	11	Tandes
2012	6	L 9680 CG	C	6	DARMO GRAND	11	Tandes
2013	7	L 9687 CH	C	6	DIPONGGO	14	Karang Pilang
2014	8	L 5498 V	H	3	DUKUH KUPANG BARAT	14	Karang Pilang
2015	9	L 9616 CH	E	6	DUKUH KUPANG TIMUR	14	Karang Pilang
2016	10	L 9656 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
2017	11	L 9687 CH	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
2018	12	L 5495 V	H	3	DUPAK	10	Krembangan
2019	13	L 9656 CG	C	6	DUPAK BANDAR REJO	10	Krembangan
2020	14	L 9687 CH	C	6	GENTENG	19	Genteng
2021	15	L 9612 CH	E	6	GUNUNGSARI	14	Karang Pilang
2022	16	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
2023	17	L 9661 CE	A	12	GUNUNGSARI	14	Karang Pilang
2024	18	L 9679 CF	B	10	GUNUNGSARI	14	Karang Pilang
2025	19	L 9679 CG	B	10	GUNUNGSARI	14	Karang Pilang
2026	20	L 9693 CG	C	6	GUNUNGSARI	14	Karang Pilang
2027	21	L 9616 CH	E	6	JETIS KULON	13	Lakarsantri
2028	22	L 9656 CG	C	6	JL. BENOWO,SEMEMI,BERINGIN	12	Benowo
2029	23	L 9680 CG	C	6	JL. DIPONEGORO,BONBIN,BRAWIJAYA	16	Wonokromo
2030	24	L 9679 CG	B	10	JL. DODIK	14	Karang Pilang
2031	25	L 9615 CH	E	6	JL. DR SUTOMO-MAYJEN SUNGKONO	18	Tegalsari
2032	26	L 2201 CQ	G	16	JL. GRESIK	12	Benowo
2033	27	L 9679 CG	B	10	JL. GRESIK	12	Benowo
2034	28	L 9688 CH	C	6	JL. GRESIK	12	Benowo
2035	29	L 9688 CH	C	6	JL. GRESIK	12	Benowo
2036	30	L 9612 CH	E	6	JL. GRESIK	12	Benowo
2037	31	L 9687 CH	C	6	JL. GRESIK	12	Benowo
2038	32	L 9688 CH	C	6	JL. TUGUH PAHLAWAN,BUBUTAN,SEMARANG	9	Bubutan
2039	33	L 9687 CH	C	6	KARANG PILANG	14	Karang Pilang
2040	34	L 2202 CQ	G	15	KARANG POH	11	Tandes
2041	35	L 9656 CG	C	6	KARANG POH	11	Tandes
2042	36	L 2202 CQ	G	15	KARANG REJO	16	Wonokromo
2043	37	L 9668 CG	C	6	KARANG REJO	16	Wonokromo
2044	38	L 9668 CG	C	6	KARANG REJO	16	Wonokromo
2045	39	L 9679 CG	B	10	KARANG REJO	16	Wonokromo
2046	40	L 9687 CH	C	6	KARANG REJO	16	Wonokromo
2047	41	L 9680 CG	C	6	KEBRAON	14	Karang Pilang
2048	42	L 9687 CH	C	6	KEBRAON	14	Karang Pilang
2049	43	L 2199 CQ	G	14	KEMBANG KUNING	17	Sawahan
2050	44	L 2199 CQ	G	15	KEMBANG KUNING	17	Sawahan
2051	45	L 2201 CQ	G	17	KEMBANG KUNING	17	Sawahan
2052	46	L 2202 CQ	G	14	KEMBANG KUNING	17	Sawahan
2053	47	L 9676 CF	B	10	KEMBANG KUNING	17	Sawahan

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
2054	48	L 9680 CG	C	6	KEMBANG KUNING	17	Sawahan
2055	49	L 9680 CG	C	6	KEMBANG KUNING	17	Sawahan
2056	50	L 9688 CH	C	6	KEMBANG KUNING	17	Sawahan
2057	51	L 9693 CG	C	6	KEMBANG KUNING	17	Sawahan
2058	52	B 9147 KG	H	7	KEMLATEN	14	Karang Pilang
2059	53	L 9668 CG	C	6	KETAMPON	18	Tegalsari
2060	54	L 9656 CG	C	6	KUPANG INDAH	11	Tandes
2061	55	L 9668 CG	C	6	KUPANG INDAH	11	Tandes
2062	56	L 9680 CG	C	6	LIDAH KULON	13	Lakarsantri
2063	57	L 9617 CB	I	3	MAKAM DOROWATI	11	Tandes
2064	58	L 9661 CE	A	12	MANUKAN KULON	11	Tandes
2065	59	L 9685 CF	D	10	MANUKAN KULON	11	Tandes
2066	60	L 9688 CH	C	6	MANUKAN KULON	11	Tandes
2067	61	B 9722 GH	H	10	MANUKAN KULON	11	Tandes
2068	62	L 2194 CF	H	7	MANUKAN TELAGA	11	Tandes
2069	63	L 9668 CG	C	6	MANUKAN TELAGA	11	Tandes
2070	64	L 9688 CH	C	6	MANUKAN WETAN	11	Tandes
2071	65	L 9693 CG	C	6	MAYJEN SUNGKONO,DUKUH PAKIS	14	Karang Pilang
2072	66	L 9679 CG	B	10	OPAK	18	Tegalsari
2073	67	L 9661 CE	A	12	PASAR SIMO	11	Tandes
2074	68	L 2199 CQ	G	15	SIMO HILIR	11	Tandes
2075	69	L 9687 CH	C	6	SIMO KATRUNGAN	11	Tandes
2076	70	L 5498 V	H	3	SUKO MANUNGGAL	11	Tandes
2077	71	L 9687 CH	C	6	SUKO MANUNGGAL	11	Tandes
2078	72	L 9687 CH	C	6	TAMAN KETAMPON	18	Tegalsari
2079	73	L 9656 CG	C	6	TENGGILIS	6	Rungkut
2080	74	L 9656 CG	C	6	TUBANAN DARMO	11	Tandes
2081	75	L 9692 CG	B	10	WONOSARI	7	Semampir
2082	76	L 3580 V	H	3	YONIF 616	14	Karang Pilang
2083	77	L 3580 V	H	3	YONIF 616	14	Karang Pilang
2084	78	L 5495 V	H	3	YONIF 616	14	Karang Pilang
2085	79	L 9668 CG	C	6	YONIF 616	14	Karang Pilang
2086	80	L 9688 CH	C	6	YONIF 616	14	Karang Pilang
2087	81	L 9693 CG	C	6	YONIF 616	14	Karang Pilang
	21 May 1992						
2088	1	L 9668 CG	C	6	ASRAMA BRIMOB	14	Karang Pilang
2089	2	L 9668 CG	C	6	BALONGSARI	11	Tandes
2090	3	L 9680 CG	C	6	BANDAREJO	10	Krembangan
2091	4	L 9680 CG	C	6	BATTERY FACTORY SEPANJANG	14	Karang Pilang
2092	5	L 9616 CH	E	6	BOGANGIN	14	Karang Pilang
2093	6	L 9680 CG	C	6	BOGANGIN	14	Karang Pilang
2094	7	L 9685 CF	D	10	CANDI LONTAR	13	Lakarsantri
2095	8	B 9147 KG	H	7	DARMO GRAND	11	Tandes
2096	9	L 9661 CE	A	12	DARMO GRAND	11	Tandes
2097	10	L 9668 CG	C	6	DARMO GRAND	11	Tandes
2098	11	L 9656 CG	C	6	DIPONEGORO,BONBIN,JOYO BOYO	16	Wonokromo

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
2099	12	L 2194 CF	H	7	DIPONGGO	14	Karang Pilang
2100	13	L 9656 CG	C	6	DK.PAKIS,MAYJEN SUNGKONO,DIPONGGO	14	Karang Pilang
2101	14	L 9688 CH	C	6	DR. SUTOMO,MAYJEN SUNGKONO	14	Karang Pilang
2102	15	L 9668 CG	C	6	DUKUH KUPANG	14	Karang Pilang
2103	16	L 9680 CG	C	6	DUKUH KUPANG TIMUR	14	Karang Pilang
2104	17	B 9722 GH	H	6	DUKUH KUPANG TIMUR	14	Karang Pilang
2105	18	L 9668 CG	C	6	GENTENG	19	Genteng
2106	19	L 2202 CQ	G	15	GUNUNGSARI	14	Karang Pilang
2107	20	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
2108	21	L 9668 CG	C	6	GUNUNGSARI	14	Karang Pilang
2109	22	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
2110	23	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
2111	24	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang
2112	25	L 2199 CQ	G	6	JETIS KULON	13	Lakarsantri
2113	26	L 9688 CH	C	6	JL. BENOWO,SEMEMI,BERINGIN	12	Benowo
2114	27	L 9656 CG	C	6	JL. EMBONG MALANG,ARJUNA,BUBUTAN	9	Bubutan
2115	28	L 9688 CH	C	6	JL. EMBONG MALANG,ARJUNA,BUBUTAN	9	Bubutan
2116	29	L 2201 CQ	G	17	JL. GRESIK	12	Benowo
2117	30	L 9693 CG	C	6	JL. GRESIK	12	Benowo
2118	31	L 2199 CQ	G	15	JL. GRESIK	12	Benowo
2119	32	L 9687 CH	C	6	KARANG PILANG	14	Karang Pilang
2120	33	L 2201 CQ	G	12	KARANG REJO	16	Wonokromo
2121	34	L 9687 CH	C	6	KARANG REJO	16	Wonokromo
2122	35	L 9693 CG	C	6	KARANG REJO	16	Wonokromo
2123	36	L 9679 CG	B	10	KEBRAON	14	Karang Pilang
2124	37	L 9680 CG	C	6	KEBRAON	14	Karang Pilang
2125	38	L 2199 CQ	G	13	KEMBANG KUNING	17	Sawahan
2126	39	L 2201 CQ	G	15	KEMBANG KUNING	17	Sawahan
2127	40	L 2202 CQ	G	13	KEMBANG KUNING	17	Sawahan
2128	41	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan
2129	42	L 9688 CH	C	6	KEMBANG KUNING	17	Sawahan
2130	43	L 9693 CG	C	6	KEMBANG KUNING	17	Sawahan
2131	44	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan
2132	45	L 9679 CG	B	10	KETAMPON	18	Tegalsari
2133	46	L 9679 CG	B	10	KETAMPON	18	Tegalsari
2134	47	L 2202 CQ	G	15	KUPANG INDAH	11	Tandes
2135	48	L 9615 CH	E	6	KUPANG INDAH	11	Tandes
2136	49	L 9668 CG	C	6	KUPANG INDAH	11	Tandes
2137	50	L 2201 CQ	G	16	LIDAH KULON	13	Lakarsantri
2138	51	L 9672 CF	D	10	MAKAM DOROWATI	11	Tandes
2139	52	L 9661 CE	A	12	MANUKAN WETAN	11	Tandes
2140	53	L 9688 CH	C	6	PASAR ASEMROWO	11	Tandes
2141	54	L 9656 CG	C	6	PASAR KUPANG	17	Sawahan
2142	55	L 9685 CF	D	10	PASAR TEMBOK	9	Bubutan
2143	56	L 9687 CH	C	6	PASAR WONOKITRI	16	Wonokromo
2144	57	L 9680 CG	C	6	SIMO HILIR	11	Tandes
2145	58	L 9680 CG	C	6	SIMO HILIR	11	Tandes

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
2146	59	B 9722 GH	H	7	SIMO KATRUNGAN	11	Tandes
2147	60	L 2202 CQ	G	15	SONO KAWIJENAN	11	Tandes
2148	61	L 9612 CH	E	6	SUKO MANUNGGAL	11	Tandes
2149	62	L 9668 CG	C	6	SUKO MANUNGGAL	11	Tandes
2150	63	L 9679 CG	B	10	WARU GUNUNG	14	Karang Pilang
2151	64	L 9612 CH	E	6	WIYUNG	14	Karang Pilang
	22 May 1992						
2152	1	L 9668 CG	C	6	BALONGSARI	11	Tandes
2153	2	L 9685 CF	D	10	BALONGSARI	11	Tandes
2154	3	L 9687 CH	C	6	BANDA REJO	10	Krembangan
2155	4	L 9687 CH	C	6	BANDAREJO	10	Krembangan
2156	5	L 9616 CH	E	6	BATTERY FACTORY SEPANJANG	14	Karang Pilang
2157	6	L 9693 CG	C	6	BATTERY FACTORY SEPANJANG	14	Karang Pilang
2158	7	L 2186 CA	H	9	BOGANGIN	14	Karang Pilang
2159	8	L 9656 CG	C	6	DARMO GRAND	11	Tandes
2160	9	L 9688 CH	C	6	DARMO GRAND	11	Tandes
2161	10	L 2202 CQ	G	15	DIPONGGO	14	Karang Pilang
2162	11	L 9616 CH	E	6	DUKUH KUPANG TIMUR	14	Karang Pilang
2163	12	L 9661 CE	A	12	DUKUH KUPANG TIMUR	14	Karang Pilang
2164	13	L 9656 CG	C	6	EMBONG MALANG,KEDUNG DORO,TIDAR	18	Tegalsari
2165	14	L 2199 CQ	G	13	GUNUNGSARI	14	Karang Pilang
2166	15	L 9656 CG	C	6	GUNUNGSARI	14	Karang Pilang
2167	16	L 9676 CF	B	10	GUNUNGSARI	14	Karang Pilang
2168	17	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
2169	18	L 9687 CH	C	6	GUNUNGSARI	14	Karang Pilang
2170	19	L 9688 CH	C	6	GUNUNGSARI	14	Karang Pilang
2171	20	L 9656 CG	C	6	JETIS KULON	13	Lakarsantri
2172	21	L 2202 CQ	G	14	JL. BENOWO,SEMEMI,BERINGIN	12	Benowo
2173	22	L 9680 CG	C	6	JL. BENOWO,SEMEMI,BERINGIN	12	Benowo
2174	23	L 9615 CH	E	6	JL. DIPONEGORO,BONBIN,BRAWIJAYA	16	Wonokromo
2175	24	L 9688 CH	C	6	JL. DODIK	14	Karang Pilang
2176	25	B 9147 KG	H	7	JL. GRESIK	12	Benowo
2177	26	L 9687 CH	C	6	JL. GRESIK	12	Benowo
2178	27	L 9668 CG	C	6	JL. GRESIK	12	Benowo
2179	28	L 9680 CG	C	6	JL. GRESIK	12	Benowo
2180	29	L 9688 CH	C	6	JL. TUGUH PAHLAWAN,BUBUTAN,SEMARANG	9	Bubutan
2181	30	L 9687 CH	C	6	KARANG PILANG	14	Karang Pilang
2182	31	L 2201 CQ	G	15	KARANG POH	11	Tandes
2183	32	L 9656 CG	C	6	KARANG REJO	16	Wonokromo
2184	33	L 2186 CA	H	9	KEBRAON	14	Karang Pilang
2185	34	L 9693 CG	C	6	KEBRAON	14	Karang Pilang
2186	35	L 2199 CQ	G	14	KEMBANG KUNING	17	Sawahan
2187	36	L 2201 CQ	G	16	KEMBANG KUNING	17	Sawahan
2188	37	L 2877 AK	H	6	KEMBANG KUNING	17	Sawahan
2189	38	L 9615 CH	E	6	KEMBANG KUNING	17	Sawahan
2190	39	L 9668 CG	C	6	KEMBANG KUNING	17	Sawahan

WASTE AMOUNT SORTING BY SOURCE OF WASTE (Day by Day)

Survey Type : Vehicle Count

Season : Dry Season

Location : Lakarsantri

No. Cum.	No.	Truck Number	Truck Type	Vol. (m3)	Source of Waste	Kec. Code	Kecamatan
2191	40	L 9676 CF	B	10	KEMBANG KUNING	17	Sawahan
2192	41	L 9687 CH	C	6	KEMBANG KUNING	17	Sawahan
2193	42	L 9668 CG	C	6	KEMLATEN	14	Karang Pilang
2194	43	L 9680 CG	C	6	KETAMPON	18	Tegalsari
2195	44	L 9668 CG	C	6	KETCHUP FACTORY	14	Karang Pilang
2196	45	L 2186 CA	C	9	KUPANG INDAH	11	Tandes
2197	46	L 9668 CG	C	6	KUPANG INDAH	11	Tandes
2198	47	L 9693 CG	C	6	LIDAH KULON	13	Lakarsantri
2199	48	L 2199 CQ	G	15	MANUKAN KULON	11	Tandes
2200	49	L 9668 CG	C	6	MANUKAN KULON	11	Tandes
2201	50	L 9672 CF	D	10	MANUKAN KULON	11	Tandes
2202	51	L 9676 CF	B	10	MANUKAN KULON	11	Tandes
2203	52	L 9680 CG	C	6	MANUKAN KULON	11	Tandes
2204	53	B 9722 GH	H	9	MANUKAN KULON	11	Tandes
2205	54	L 9680 CG	C	6	MANUKAN TELAGA	11	Tandes
2206	55	L 9656 CG	C	6	RADEN SALEH	9	Bubutan
2207	56	L 9676 CF	B	10	SEPANJANG	14	Karang Pilang
2208	57	L 9687 CH	C	6	SIMO KATRUNGAN	11	Tandes
2209	58	L 9685 CF	D	10	SONO KAWIJENAN	11	Tandes
2210	59	L 2060 MA	H	6	SUKO MANUNGGAL	11	Tandes
2211	60	L 9668 CG	C	6	SUKO MANUNGGAL	11	Tandes
2212	61	L 9687 CH	C	6	TAMAN KETAMPON	18	Tegalsari
2213	62	L 9688 CH	C	6	TUBANAN DARMO	11	Tandes
2214	63	L 9688 CH	C	6	WONOSARI	7	Semampir

5.

RESULTS OF WASTE QUALITY SURVEY

5 Results of Waste Quality Survey

PART 1. Rainy Season

I Physical Composition

(1) Survey Area

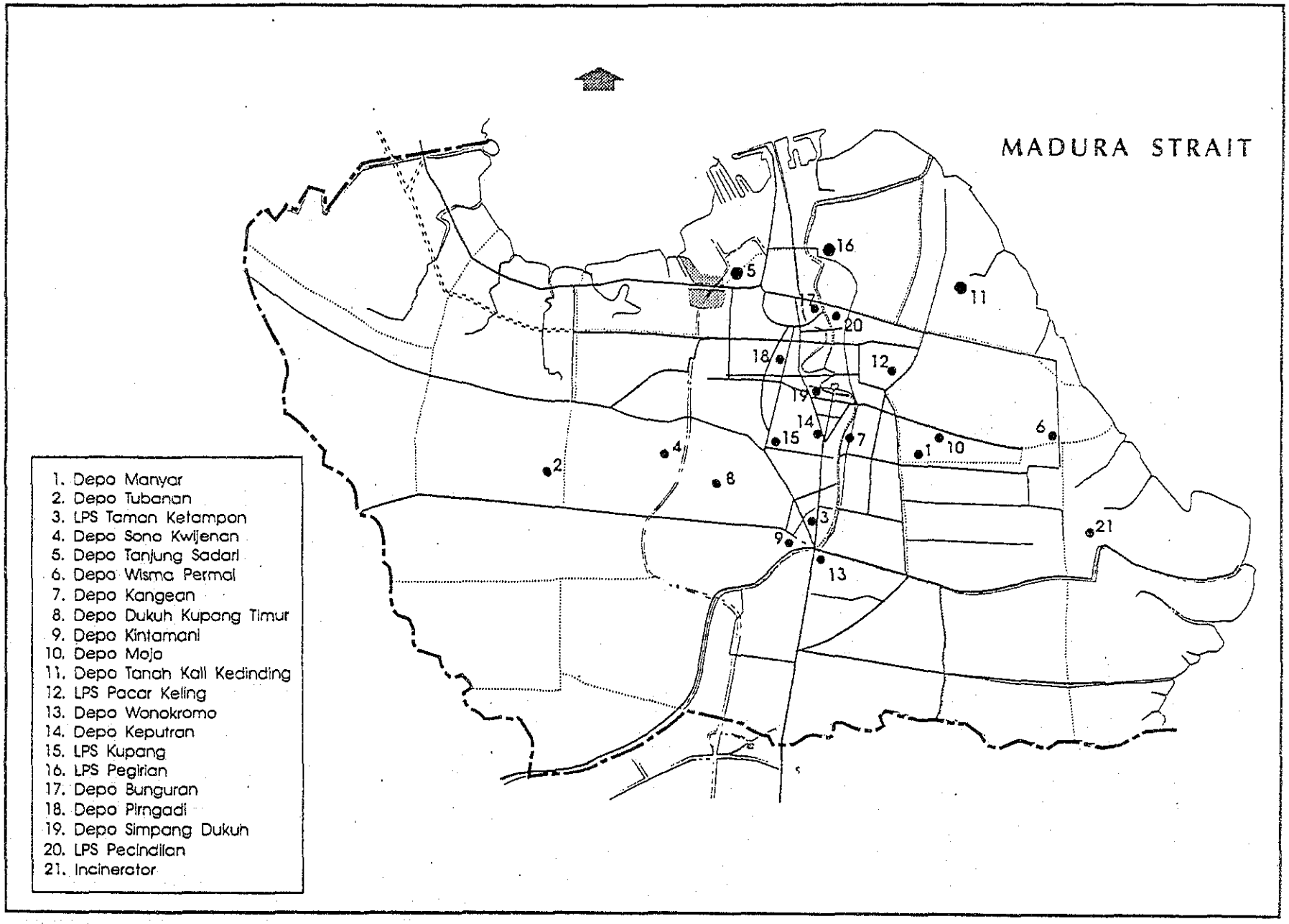
Samples are collected at those Depo/LPS which are located in the typical areas classified in the following areas:

- High income residential area (4 location)
- Middle income residential area (4 locations)
- Low income residential area (4 locations)
- Market (4 locations)
- Commercial district (4 locations)
- Incinerator

Total of the samples are 21 locations.

Survey Area of Waste Quality

Sampling No	District	Depo/LPS Name	Area
1.	Manyar Kertoarjo	Depo Sukadami	Residential (High Income)
2.	Darmo Permai	Depo Tubanan	Residential (High Income)
3.	Kawasan Darmo	LPS Taman Ketampon	Residential (High Income)
4.	Darmo Satelit	Depo Sonokwijenan	Residential (High Income)
5.	Krembangan	Depo Tanjung Sadari	Residential (Middle Income)
6.	Sukolilo	Depo Wisma Permai	Residential (Middle Income)
7.	Gubeng	Depo Kangean	Residential (Middle Income)
8.	Sawahan	Depo Dukuh Kupang Timur	Residential (Middle Income)
9.	Wonokromo	Depo Kintamani	Residential (Low Income)
10.	Darmahusada	Depo Mojo	Residential (Low Income)
11.	Kenjeran	Depo Tanah Kali Kedinding	Residential (Low Income)
12.	Tambaksari	LPS Pacar Keling	Residential (Low Income)
13.	Wonokromo	Depo Wonokromo	Market
14.	Keputran	Depo Keputran	Market
15.	Kupang	LPS Kupang	Market
16.	Pegirian	LPS Pegirian	Market
17.	Kembang Jepun	Depo Bunguran	Commercial
18.	Bubutan	Depo Pirngadi	Commercial
19.	Genteng	Depo Simpang Dukuh	Commercial
20.	Undaan	LPS Pecindilan	Commercial
21.	Incinerator		



MAP OF WASTE QUALITY SURVEY

5 - 2

(2) Survey Method

① Sampling

- Waste sample weighing about 20 kg is taken out from respective carts at random.
- The whole waste sample is approximate 200 kg.
- The sample (200 kg) should be adequately mixed at the place.
- An actual sample for analysis (10 - 20 kg) should be taken out from the mixed waste sample of 200 kg.

② Analysis for Bulk Density

- Bucket marked volume of 40 l.
- The waste is put into the bucket, do not press the waste.
- Drop the bucket 3 times from 30 cm heigh above ground.
- If volume is reducing, add the waste up to 40 l.
- Measure the weight.

③ Analysis for waste components

- The sample is sorted according to the components as shown below:

Combustible
* Garbage
* Paper
* Textile
* Wood & grass
* Plastic
* Leather & rubber
* Others

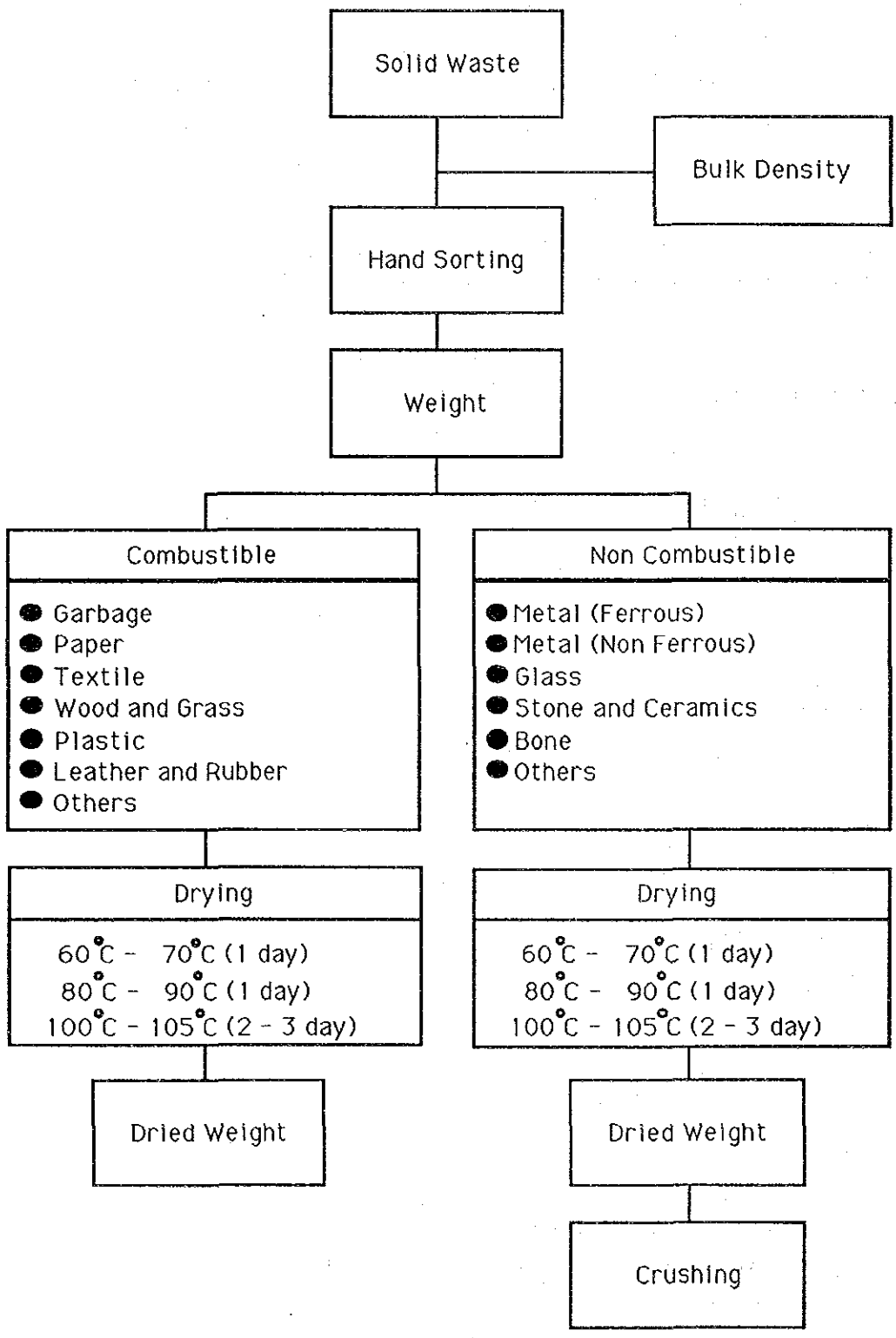
Non combustible
* Metal (ferrous & non Ferrous)
* Glass
* Stone & ceramics
* Bone
* Others

If there are miscellaneous matters, they are seived by 5 mm mesh screen.
The matters below 5 mm mesh is classified as combustible others, and above 5 mm mesh is classified as incombustible others.

- Measure weight each components

- Drying each components
- After drying and measure weight each components
- Crushing each components of combustible sample

(3) Data



FLOW CHART OF PHYSICAL COMPOSITION

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication High Income

Sampling Point No.1 Manyar Kertoarjo

Sampling Date 3, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1370	9.34	400	14.25	70.80
Textile	50	0.34	20	0.71	60.00
Garbage	8190	55.83	925	32.94	88.71
Wood・Grass	3610	24.61	800	28.49	77.84
※Plastics	940	6.41	310	11.04	67.02
※Leaser・Rubber	5	0.03	3	0.11	40.00
Others	0	0.00	0	0.00	—
Sub-Total	14165	96.56	2458	87.54	82.65
(Non Combustible)					
Metal(Ferrous)	240	1.64	150	0.89	37.50
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	25	0.17	25	0.89	0.00
Stone ・Ceramics	150	1.02	130	4.63	13.33
Bones	90	0.61	45	1.60	50.00
Others	0	0.00	0	0.00	—
Sub-Total	505	3.44	350	12.46	30.69
Total	14670	100	2808	100	80.85

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.267

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication High Income

Sampling Point No2 Darmo Permai

Sampling Date 6, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1590	17.21	640	22.77	58.97
Textile	200	2.16	100	3.56	50.00
Garbage	4400	47.62	1000	35.59	77.27
Wood・Grass	1825	19.75	420	14.94	76.99
※Plastics	790	8.55	300	10.68	62.03
※Leaser・Rubber	115	1.24	75	2.67	34.78
Others	10	0.11	5	0.18	50.00
Sub-Total	8930	96.64	2540	90.39	71.56
(Non Combustible)					
Metal(Ferrous)	35	0.38	25	0.89	28.57
Metal(Non-Ferrous)	35	0.38	20	0.71	42.86
Glass	205	2.22	190	6.76	7.32
Stone ・Ceramics	15	0.16	15	0.54	0.00
Bones	20	0.22	20	0.71	0.00
Others	0	0.00	0	0.00	—
Sub-Total	310	3.36	270	9.61	10.81
Total	9240	100	2810	100	69.59

※ Unsuitable Waste for Incineration

Bulk Density (kg/ℓ)	0.258

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication High Income

Sampling Point No3 Kawasan Darmo

Sampling Date 10, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1150	10.21	610	12.25	46.96
Textile	750	0.67	25	0.50	66.67
Garbage	5570	49.43	1725	34.64	69.03
Wood・Grass	2510	22.28	1160	23.29	53.78
※Plastics	550	4.88	310	6.23	43.64
※Leaser・Rubber	405	3.59	270	5.42	33.33
Others	15	0.13	10	0.20	33.33
Sub-Total	10275	91.19	4110	82.53	60.00
(Non Combustible)					
Metal(Ferrous)	93	0.83	80	1.61	13.98
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	405	3.59	380	7.63	6.17
Stone ・Ceramics	285	2.53	250	5.02	12.28
Bones	210	1.86	160	3.21	23.81
Others	0	0.00	0	0.00	—
Sub-Total	993	8.81	870	17.47	12.39
Total	11268	100	4980	100	55.80

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.225

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication High Income

Sampling Point No4 Darmo Satelit

Sampling Date 6, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	2396	20.21	800	20.97	66.61
Textile	220	1.86	82	2.15	61.73
Garbage	5050	42.61	1360	35.65	73.07
Wood・Grass	2650	22.36	700	18.35	73.58
※Plastics	1080	9.11	450	11.80	58.33
※Leaser・Rubber	65	0.55	65	1.70	0.00
Others	0	0.00	0	0.00	—
Sub-Total	11461	96.70	3457	90.62	69.84
(Non Combustible)					
Metal(Ferrous)	140	1.18	135	3.54	0.04
Metal(Non-Ferrous)	17	0.14	13	0.34	23.53
Glass	95	0.80	90	2.36	0.06
Stone ・Ceramics	115	0.97	110	2.88	0.04
Bones	25	0.21	10	0.26	60.00
Others	0	0.00	0	0.00	—
Sub-Total	392	3.30	358	9.38	8.67
Total	11853	100	3815	100	67.81

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.271

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Middle Income

Sampling Point No5 Krenbangan

Sampling Date 11, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	1250	12.51	640	18.11	48.80
Textile	155	1.55	100	2.83	35.48
Garbage	5100	51.05	1280	36.21	74.90
Wood・Grass	2250	22.52	650	18.39	71.11
※Plastics	700	7.01	385	10.89	45.00
※Leaser・Rubber	5	0.05	5	0.14	0.00
Others	10	0.10	10	0.28	0.00
Sub-Total	9470	94.79	3070	86.85	67.58
(Non Combustible)					
Metal(Ferrous)	10	0.10	10	0.28	0.00
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	485	4.86	440	12.45	9.28
Bones	25	0.25	15	0.42	40.00
Others	0	0.00	0	0.00	—
Sub-Total	520	5.21	465	13.15	10.58
Total	9990	100	3535	100	64.61

※ Unsuitable Waste for Incineration

Bulk Density (kg/ℓ)	0.292

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Middle Income

Sampling Point No.6 Sukolilo

Sampling Date 4, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	990	10.16	475	16.73	52.02
Textile	165	1.69	50	1.76	69.70
Garbage	5727	58.78	1170	41.20	79.56
Wood・Grass	1650	16.96	510	17.96	69.09
※Plastics	890	9.14	350	12.32	60.67
※Leaser・Rubber	15	0.15	10	0.35	33.33
Others	20	0.21	10	0.35	50.00
Sub-Total	9455	97.07	2575	90.67	72.77
(Non Combustible)					
Metal(Ferrous)	20	0.21	20	0.70	0.00
Metal(Non-Ferrous)	5	0.05	5	0.18	0.00
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	235	2.41	220	7.75	6.38
Bones	25	0.26	20	0.70	20.00
Others	0	0.00	0	0.00	—
Sub-Total	285	2.93	265	9.33	7.02
Total	9470	100	2840	100	70.84

※ Unsuitable Waste for Incineration

Bulk Density (kg/ℓ)	0.367

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Middle Income

Sampling Point No.7 Gubeng

Sampling Date 3, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1140	10.36	360	9.05	68.42
Textile	310	2.82	145	3.64	53.23
Garbage	5420	49.27	1815	45.60	66.51
Wood・Grass	2140	19.46	625	15.70	70.79
※Plastics	1120	10.18	350	8.80	68.75
※Leaser・Rubber	100	0.91	90	2.26	10.00
Others	40	0.36	20	0.50	50.00
Sub-Total	10270	93.36	3405	85.55	66.85
(Non Combustible)					
Metal(Ferrous)	60	0.55	50	1.25	16.67
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	30	0.27	25	0.63	16.67
Stone ・Ceramics	240	2.18	200	5.03	16.67
Bones	400	3.64	300	7.54	25.00
Others	0	0.00	0	0.00	—
Sub-Total	730	6.64	575	14.45	21.23
Total	11000	100	3980	100	63.82

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.350

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Middle Income

Sampling Point No8 Sawahan

Sampling Date 7, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1550	13.00	500	12.75	67.74
Textile	5	0.04	1	0.03	80.00
Garbage	5725	48.03	1660	42.33	71.00
Wood・Grass	2950	24.75	800	20.40	72.88
※Plastics	1125	9.44	450	11.48	60.00
※Leaser・Rubber	5	0.04	5	0.13	0.00
Others	10	0.08	5	0.13	50.00
Sub-Total	11370	95.38	3421	87.25	69.91
(Non Combustible)					
Metal(Ferrous)	120	1.01	110	2.81	8.33
Metal(Non-Ferrous)	25	0.21	20	0.51	20.00
Glass	75	0.63	75	1.91	0.00
Stone ・Ceramics	290	2.43	270	6.88	6.90
Bones	40	0.34	25	0.64	37.50
Others	0	0.00	0	0.00	—
Sub-Total	550	4.62	500	12.75	9.09
Total	11920	100	3921	100	67.11

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.317

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Low Income

Sampling Point No.9 Wonokromo

Sampling Date 9, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1490	11.96	525	12.93	64.77
Textile	315	2.53	155	3.82	50.79
Garbage	6400	51.38	1750	43.10	72.66
Wood・Grass	2625	21.08	600	14.78	77.14
※Plastics	950	7.63	450	11.08	52.63
※Leaser・Rubber	10	0.08	5	0.12	50.00
Others	15	0.12	10	0.25	33.33
Sub-Total	11805	94.78	3495	86.08	70.39
(Non Combustible)					
Metal(Ferrous)	115	0.92	100	2.47	13.04
Metal(Non-Ferrous)	5	0.04	5	0.12	0.00
Glass	175	1.41	175	4.31	0.00
Stone ・Ceramics	320	2.57	270	6.65	15.63
Bones	35	0.28	15	0.37	57.14
Others	0	0.00	0	0.00	—
Sub-Total	650	5.22	565	13.92	13.08
Total	12455	100	4060	100	67.40

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.375

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Low Income

Sampling Point No.10 Gubeng

Sampling Date 4, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	940	8.89	380	11.02	59.57
Textile	130	1.23	85	2.46	34.62
Garbage	6300	59.60	1225	35.51	80.56
Wood・Grass	1600	15.14	550	15.94	65.63
※Plastics	775	7.33	450	13.04	41.94
※Leaser・Rubber	35	0.33	30	0.87	14.29
Others	0	0.00	0	0.00	—
Sub-Total	9780	92.52	2720	78.84	72.19
(Non Combustible)					
Metal(Ferrous)	15	0.14	15	0.44	0.00
Metal(Non-Ferrous)	5	0.05	5	0.14	0.00
Glass	25	0.24	25	0.73	0.00
Stone ・Ceramics	630	5.96	600	17.39	4.76
Bones	115	1.09	85	2.46	26.09
Others	0	0.00	0	0.00	—
Sub-Total	790	7.48	730	21.16	7.59
Total	10570	100	3450	100	67.36

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.272

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Low Income

Sampling Point No.11 Kenjeran

Sampling Date 13, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1775	15.27	775	14.89	56.34
Textile	390	3.36	170	3.27	56.41
Garbage	6750	50.08	2500	38.03	62.94
Wood・Grass	875	7.53	400	7.68	54.29
※Plastics	1050	9.03	650	12.49	38.10
※Leaser・Rubber	30	0.26	25	0.48	16.67
Others	52	0.45	35	0.67	32.69
Sub-Total	10922	93.98	4555	87.51	58.29
(Non Combustible)					
Metal(Ferrous)	315	2.71	315	6.05	0.00
Metal(Non-Ferrous)	5	0.04	5	0.10	0.00
Glass	20	0.17	20	0.38	0.00
Stone ・Ceramics	340	2.93	295	5.67	13.24
Bones	20	0.17	15	0.29	25.00
Others	0	0.00	0	0.00	—
Sub-Total	700	6.02	650	12.49	7.14
Total	11622	100	5205	100	55.21

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.417

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Low Income

Sampling Point No.12 Tambaksari

Sampling Date 12, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1600	12.36	700	14.43	56.25
Textile	430	3.32	260	5.36	39.53
Garbage	7185	55.51	2200	45.36	69.38
Wood・Grass	2350	18.15	700	14.43	70.21
※Plastics	850	6.57	500	10.31	41.18
※Leaser・Rubber	70	0.54	70	1.45	0.00
Others	0	0.00	0	0.00	—
Sub-Total	12485	96.45	4430	91.34	64.52
(Non Combustible)					
Metal(Ferrous)	75	0.58	70	1.45	6.67
Metal(Non-Ferrous)	20	0.15	20	0.41	0.00
Glass	155	1.20	130	2.68	16.13
Stone ・Ceramics	175	1.35	170	3.50	2.86
Bones	35	0.27	30	0.62	14.29
Others	0	0.00	0	0.00	—
Sub-Total	460	3.55	420	8.66	8.70
Total	12945	100	4850	100	62.53

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.384

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Market

Sampling Point No.13 Pasar Wonokromo

Sampling Date 10, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	570	4.89	250	9.98	56.14
Textile	65	0.56	40	1.60	38.46
Garbage	6750	57.86	1300	51.88	80.74
Wood・Grass	3990	34.20	690	27.53	82.71
※Plastics	220	1.89	160	6.38	27.27
※Leaser・Rubber	10	0.08	10	0.40	0.00
Others	1	0.01	1	0.04	0.00
Sub-Total	11606	99.49	2451	97.81	78.88
(Non Combustible)					
Metal(Ferrous)	40	0.34	35	1.39	12.50
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	20	0.17	20	0.80	0.00
Bones	0	0.07	0	0.00	—
Others	0	0.00	0	0.00	—
Sub-Total	60	0.51	55	2.19	8.33
Total	11666	100	2506	100	78.52

※ Unsuitable Waste for Incineration

Bulk Density (kg/ℓ)	0.263

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Market

Sampling Point No.14 Pasar Keputran

Sampling Date 9, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	100	0.97	25	0.97	75.00
Textile	0	0.00	0	0.00	—
Garbage	8300	80.88	1700	65.71	79.52
Wood・Grass	1625	15.86	725	28.02	55.38
※Plastics	200	1.95	100	3.87	50.00
※Leaser・Rubber	1	0.01	1	0.04	0.00
Others	1	0.01	1	0.04	0.00
Sub-Total	10227	99.66	2552	98.65	75.05
(Non Combustible)					
Metal(Ferrous)	5	0.05	5	0.19	0.00
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	25	0.24	25	0.97	0.00
Bones	5	0.05	5	0.19	0.00
Others	0	0.00	0	0.00	—
Sub-Total	35	0.34	35	1.35	8.33
Total	10267	100	2587	100	74.80

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.413

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Market

Sampling Point No.15 Pasar Kupang

Sampling Date 7, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1930	12.79	600	16.15	68.91
Textile	65	0.43	35	0.94	46.15
Garbage	10025	66.41	1925	51.82	80.80
Wood・Grass	1825	12.09	450	12.11	75.34
※Plastics	875	5.80	400	10.77	54.29
※Leaser・Rubber	15	0.10	15	0.40	0.00
Others	110	0.73	60	1.62	45.45
Sub-Total	10227	98.34	3485	93.81	76.52
(Non Combustible)					
Metal(Ferrous)	105	0.70	100	2.69	4.76
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	105	0.70	100	2.69	4.75
Stone ・Ceramics	5	0.03	5	0.14	0.00
Bones	35	0.23	25	0.67	28.57
Others	0	0.00	0	0.00	—
Sub-Total	250	1.66	230	6.19	8.00
Total	15095	100	3715	100	75.39

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.400

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Market

Sampling Point No.16 Pasar Pegirian

Sampling Date 11, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	215	1.93	110	4.95	48.84
Textile	10	0.09	6	0.27	40.00
Garbage	4750	42.60	1250	56.28	73.68
Wood・Grass	5890	52.80	625	28.15	89.39
※Plastics	150	1.35	110	4.95	26.67
※Leaser・Rubber	55	0.49	50	2.25	9.09
Others	0	0.00	0	0.00	—
Sub-Total	11070	99.28	2151	96.85	80.57
(Non Combustible)					
Metal(Ferrous)	0	0.00	0	0.00	—
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	10	0.09	10	0.45	0.00
Stone ・Ceramics	70	0.63	60	2.70	14.29
Bones	0	0.00	0	0.00	—
Others	0	0.00	0	0.00	—
Sub-Total	80	0.72	70	3.15	12.50
Total	11150	100	2221	100	80.08

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.213

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Commercial

Sampling Point No.17 Bungran

Sampling Date 13, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	3500	27.83	1325	28.55	62.15
Textile	190	1.51	55	1.19	71.05
Garbage	5775	45.93	1650	35.56	71.43
Wood・Grass	850	6.76	360	7.76	57.65
※Plastics	1500	11.93	600	12.93	60.00
※Leaser・Rubber	15	0.12	15	0.32	0.00
Others	0	0.00	0	0.00	—
Sub-Total	11830	94.08	4005	86.31	66.15
(Non Combustible)					
Metal(Ferrous)	315	2.50	245	5.28	22.22
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	285	2.27	260	5.60	8.77
Stone ・Ceramics	120	0.95	120	2.59	0.00
Bones	25	0.20	10	0.22	60.00
Others	0	0.00	0	0.00	—
Sub-Total	745	5.92	635	13.69	14.77
Total	12575	100	4640	100	63.10

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.442

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Commercial

Sampling Point No.18 Pirngadi

Sampling Date 14, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	2350	17.26	1400	26.82	40.43
Textile	460	3.38	200	3.83	56.52
Garbage	7475	54.90	1910	36.58	74.45
Wood・Grass	1250	9.18	360	6.90	71.20
※Plastics	1300	9.55	700	13.41	46.15
※Leaser・Rubber	35	0.26	20	0.38	42.86
Others	46	0.34	20	0.38	56.52
Sub-Total	12916	94.87	4610	88.30	64.31
(Non Combustible)					
Metal(Ferrous)	225	1.65	200	3.83	11.11
Metal(Non-Ferrous)	1	0.01	1	0.02	0.00
Glass	380	2.79	350	6.70	7.89
Stone ・Ceramics	60	0.44	50	0.96	16.67
Bones	32	0.24	10	0.19	68.75
Others	0	0.00	0	0.00	—
Sub-Total	698	5.13	611	11.70	12.46
Total	13614	100	5221	100	61.65

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.350

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Commercial

Sampling Point No.19 Simpang Dukuh

Sampling Date 14, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	3800	30.34	900	19.12	76.32
Textile	1125	8.98	550	11.68	51.11
Garbage	4775	35.72	860	18.27	81.99
Wood・Grass	1050	8.38	640	13.59	39.05
※Plastics	1050	8.38	850	18.05	19.05
※Leaser・Rubber	8	0.07	5	0.11	37.50
Others	3	0.02	2	0.04	33.33
Sub-Total	11511	91.89	3807	80.86	66.88
(Non Combustible)					
Metal(Ferrous)	100	0.80	90	1.91	10.00
Metal(Non-Ferrous)	1	0.01	1	0.02	0.00
Glass	565	4.51	560	11.90	0.88
Stone ・Ceramics	50	0.40	50	1.06	0.00
Bones	300	2.39	200	4.25	33.33
Others	0	0.00	0	0.00	—
Sub-Total	1016	8.11	901	19.14	11.32
Total	12527	100	4708	100	62.42

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.431

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication Commercial

Sampling Point No20 Pecindilan

Sampling Date 12, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	2150	19.53	885	21.22	58.88
Textile	75	0.68	60	1.44	20.00
Garbage	5850	53.13	1540	36.93	73.68
Wood・Grass	1350	12.26	625	14.99	53.70
※Plastics	1000	9.08	550	13.19	45.00
※Leaser・Rubber	45	0.41	40	0.96	11.11
Others	10	0.09	10	0.24	0.00
Sub-Total	10480	95.18	3710	88.97	64.60
(Non Combustible)					
Metal(Ferrous)	95	0.86	95	2.28	0.00
Metal(Non-Ferrous)	45	0.41	45	1.08	0.00
Glass	255	2.32	200	4.79	21.57
Stone ・Ceramics	90	0.82	90	2.16	0.00
Bones	45	0.41	30	0.72	33.33
Others	0	0.00	0	0.00	—
Sub-Total	530	4.82	460	11.03	13.21
Total	11010	100	4170	100	62.13

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.430

PHYSICAL COMPOSITION OF WASTE

(Rainy Season)

Classfication

Sampling Point No21 Incinerator

Sampling Date 14, Mar, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	1950	17.29	1050	26.45	46.15
Textile	200	1.77	115	2.90	42.50
Garbage	5290	46.91	1250	31.49	76.37
Wood・Grass	1800	15.96	575	14.49	68.06
※Plastics	1850	16.41	810	20.41	56.22
※Leaser・Rubber	22	0.19	10	0.25	54.55
Others	0	0.00	0	0.00	—
Sub-Total	11112	98.53	3810	95.99	65.71
(Non Combustible)					
Metal(Ferrous)	10	0.09	10	0.25	0.00
Metal(Non-Ferrous)	12	0.11	12	0.30	0.00
Glass	12	0.11	12	0.30	0.00
Stone ・Ceramics	86	0.76	80	2.02	6.98
Bones	45	0.40	45	1.14	0.00
Others	0	0.00	0	0.00	—
Sub-Total	165	1.47	159	4.01	3.64
Total	11277	100	3969	100	64.80

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.421

II Chemical Characteristics

(1) Survey Area

Survey area is assigned just same as that of physical composition survey. Number of sampling points is totally 6.

(2) Survey Method

① Preparatory Work

Samples are prepared through the physical composition survey so as to reproduce the original physical composition by mixing the crushed waste in accordance with the original share of combustibles in weight under dry condition.

② Three Major Components

By using a muffle furnace, samples are burnt at the temperature 800 °C for 3 hours. After cooling off for about 20 minutes, the remnant is measured and the content of ash and combustibles are calculated from the original weight and ash weight. Four major components are defined by dividing the combustible content into plastics and others according to the share identified in physical composition survey.

③ Calorific Value

By using a bomb type calorimeter, the calorific value is measured by burning one gram of sample under the existence of enclosed oxygen with a pressure of 30 kg/cm^2. Measuring the heat amount generated and calculate the calorific value as a quotient of heat amount and sample weight.

④ Elemental Composition

By using an electric furnace, the contents of carbon (C) and hydrogen (H) are measured by burning one gram of sample. Measuring the weight of absorbed carbon dioxide and water out of exhaust gas, calculate the content of (C) and (H).
By using Kejerdar flask, the content of nitrogen (N) is measured by decomposing the sample by concentrated sulfuric acid and quantified by titration.
By using electric furnace, the contents of chlorine (Cl) and sulfur (S) measured by burning the sample. Exhaust gas is caught by an absorbent liquid and quantified by titration.

The content of oxygen is defined as the remaining part of combustibles after reducing (C), (H), (N), (Cl) and (S) contents.

(3) Summary of Results

Three Major components

(Rainy Season)

Source / Classification	Residential				Market	Commercial	Incinerator	Average
	High	Middle	Low	Weighted Mean				
Moisture (%)	68.52	66.60	63.13	64.41	77.20	62.32	64.80	67.42
Ash (%)	10.14	10.92	12.07	11.64	5.72	11.84	8.59	10.07
Combustible (%)	21.34	22.48	24.80	23.95	17.08	25.84	26.61	22.51

Elemental Composition and Lower Calorific Value by Bomb Calorimeter

(Rainy Season)

Classification		Residential				Market	Commercial	Incinerator	Average
		High Darmo Permai	Middle Sawahan	Low Tambaksari	Weighted Mean	Wonokromo	Bungran		
Elemental Composition of Wet Solid Waste (Wt% on Wet Basis)	C	12.65	13.34	15.88	14.98	7.44	14.91	15.46	12.97
	H	1.64	1.64	2.03	1.90	0.82	1.98	2.10	1.64
	N	0.25	0.26	0.32	0.30	0.26	0.39	0.41	0.30
	S	0.014	0.024	0.018	0.019	0.015	0.010	0.024	0.017
	Cl	0.024	0.040	0.080	0.066	0.049	0.035	0.057	0.046
	O	6.892	7.696	9.562	8.885	7.166	6.855	8.559	7.687
	Total	21.47	23.00	27.89	21.65	15.75	24.18	26.61	22.66
Lower Calorific Value (Kcal/kg)		880	970	1050	1020	300	1150	1250	890

Lower Calorific Value Calculated by 3/4 Major Component

(Rainy Season)

Source / Classification	Residential				Market	Commercial	Incinerator	Average
	High	Middle	Low	Weighted Mean				
Moisture (%)	68.52	66.60	63.13	64.41	77.20	62.32	64.80	67.42
Ash (%)	10.14	10.92	12.07	11.64	5.72	11.84	8.59	10.07
Combustible (%)	21.34	22.48	24.80	23.95	17.08	25.84	26.61	22.51
Combustible (%) (Plastics)	16.47	14.66	16.73	16.03	8.72	18.84	23.17	15.47
Lower Calorific Value $*_1$ (Kcal/kg)	650	710	860	810	340	940	1000	710
Lower Calorific Value $*_2$ (Kcal/kg)	550	610	740	690	310	790	810	610

$*_1$ $He = (B/100) * [4400 * (1 - \alpha) + 8000 * \alpha] - 6 * W$

$*_2$ $He = 45 * B - 6 * W$

He : Lower Calorific Value

B : Combustible

α : Combustible (Plastics)

W : Moisture

(4) Data

FORECAST OF CHEMICAL PROPERTIES

(Rainy Season) High Income

Classfication		No. 1 Manyar Kertoarjo	No. 2 Darmo Permai	No. 3 Kawasan Darmo	No. 4 Darmo Satelit	Average
Three Major Components (Wt%)						
Moisture Contents		80.86	69.59	55.80	67.81	68.52
Ash Contents		6.88	8.94	15.73	9.03	10.14
Combustible Contents		12.26	21.47	28.47	23.16	21.34
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	—	12.65	—	—	—
	H	—	1.64	—	—	—
	N	—	0.25	—	—	—
	S	—	0.014	—	—	—
	Cl	—	0.024	—	—	—
	O	—	6.892	—	—	—
	Total	—	21.47	—	—	—
Lower Calorific Value (Kcal /kg)		—	880	—	—	—

(Rainy Season) Middle Income

Classfication		No. 5 Krenbangan	No. 6 Sukolilo	No. 7 Gubeng	No. 8 Sawahan	Average
Three Major Components (Wt%)						
Moisture Contents		64.61	70.84	63.82	67.11	66.60
Ash Contents		12.32	8.49	12.99	9.89	10.92
Combustible Contents		23.07	20.67	23.19	23.00	22.48
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	—	—	—	13.34	—
	H	—	—	—	1.64	—
	N	—	—	—	0.26	—
	S	—	—	—	0.024	—
	Cl	—	—	—	0.040	—
	O	—	—	—	7.696	—
	Total	—	—	—	23.00	—
Lower Calorific Value (Kcal /kg)		—	—	—	970	—

FORECAST OF CHEMICAL PROPERTIES

(Rainy Season) Low Income

Classfication		No. 9 Wonokromo	No.10 Gubeng	No.11 Kenjeran	No.12 Tambaksari	Average
Three Major Components (Wt%)						
Moisture Contents		67.40	67.36	55.21	62.53	63.13
Ash Contents		11.37	12.16	15.16	9.58	12.07
Combustible Contents		21.23	20.48	29.63	27.89	24.80
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	—	—	—	15.88	—
	H	—	—	—	2.03	—
	N	—	—	—	0.32	—
	S	—	—	—	0.018	—
	Cl	—	—	—	0.080	—
	O	—	—	—	9.562	—
	Total	—	—	—	27.89	—
Lower Calorific Value (Kcal /kg)		—	—	—	1050	—

(Rainy Season) Market

Classfication		No.13 Pasar Wonokromo	No.14 Pasar Keputran	No.15 Pasar Kupang	No.16 Pasar Pegirian	Average
Three Major Components (Wt%)						
Moisture Contents		78.52	74.80	75.39	80.08	77.20
Ash Contents		5.73	6.39	6.97	3.79	5.72
Combustible Contents		15.75	18.81	17.64	16.13	17.08
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	7.44	—	—	—	—
	H	0.82	—	—	—	—
	N	0.26	—	—	—	—
	S	0.015	—	—	—	—
	Cl	0.049	—	—	—	—
	O	7.166	—	—	—	—
	Total	15.75	—	—	—	—
Lower Calorific Value (Kcal /kg)		300	—	—	—	—

FORECAST OF CHEMICAL PROPERTIES

(Rainy Season) Commercial

Classfication		No.17 Bungran	No.18 Pirngadi	No.19 Simpang Dukuh	No.20 Pecindilan	Average
Three Major Components (Wt%)						
Moisture Contents		63.10	61.65	62.38	62.13	62.32
Ash Contents		12.72	11.64	10.74	12.27	11.84
Combustible Contents		24.18	26.71	62.88	25.60	25.84
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	14.91	—	—	—	—
	H	1.98	—	—	—	—
	N	0.39	—	—	—	—
	S	0.010	—	—	—	—
	Cl	0.035	—	—	—	—
	O	6.855	—	—	—	—
	Total	24.18	—	—	—	—
Lower Calorific Value (Kcal /kg)		1150	—	—	—	—

(Rainy Season) Incinerator

Classfication		No.21 Incinerator
Three Major Components (Wt%)		
Moisture Contents		64.80
Ash Contents		8.59
Combustible Contents		26.61
Total		100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	15.46
	H	2.10
	N	0.41
	S	0.024
	Cl	0.057
	O	8.559
	Total	26.61
Lower Calorific Value (Kcal /kg)		1250

PART 2. Dry Season

I. Physical Composition

(1) Survey Area

Survey area was expanded by adding a sample from road sweeping waste to that of rainy season. Sample number is also added two from incinerator and road sweeping waste to that of rainy season, consequently it has become 23.

(2) Survey Method

The method is just same as rainy season.

(3) Data

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication High Income

Sampling Point No.1 Manyar Kertoarjo

Sampling Date 15, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1300	9.32	700	13.52	46.15
Textile	95	0.68	65	1.26	31.57
Garbage	7100	50.92	2250	43.47	68.31
Wood・Grass	3550	25.46	1025	19.80	71.13
※Plastics	1485	10.65	800	15.46	46.13
※Leaser・Rubber	5	0.04	4	0.08	20.00
Others	5	0.04	5	0.10	—
Sub-Total	13540	97.11	4849	93.69	64.19
(Non Combustible)					
Metal(Ferrous)	155	1.12	105	2.03	32.26
Metal(Non-Ferrous)	10	0.07	9	0.17	10.00
Glass	8	0.06	8	0.15	0.00
Stone ・Ceramics	90	0.64	90	1.74	0.00
Bones	140	1.00	115	2.22	17.86
Others	0	0.00	0	0.00	—
Sub-Total	403	2.89	327	6.31	18.86
Total	13943	100	5176	100	62.88

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.261

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication High Income

Sampling Point No2 Darmo Permai

Sampling Date 18, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	2650	21.99	1750	34.38	33.96
Textile	120	1.00	100	1.96	16.67
Garbage	6663	55.29	1863	36.60	72.04
Wood・Grass	1350	11.20	600	11.79	55.56
※Plastics	970	8.05	550	10.81	43.30
※Leaser・Rubber	12	0.10	11	0.22	8.33
Others	30	0.25	18	0.35	40.00
Sub-Total	11795	97.88	4892	96.11	58.52
(Non Combustible)					
Metal(Ferrous)	110	0.91	60	1.18	45.45
Metal(Non-Ferrous)	3	0.02	2	0.04	33.33
Glass	38	0.32	37	0.73	2.63
Stone ・Ceramics	87	0.72	83	1.63	4.60
Bones	18	0.15	16	0.31	11.11
Others	0	0.00	0	0.00	—
Sub-Total	256	2.12	198	3.89	22.66
Total	12051	100	5090	100	57.64

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.256

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication High Income

Sampling Point No3 Kawasan Darmo

Sampling Date 21, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1200	11.95	650	13.24	45.83
Textile	150	1.49	70	1.43	53.33
Garbage	4320	43.03	1520	30.96	64.81
Wood・Grass	2725	27.15	1275	25.97	53.21
※Plastics	450	4.48	325	6.62	27.78
※Leaser・Rubber	45	0.45	45	0.92	0.00
Others	0	0.00	0	0.00	—
Sub-Total	8890	88.55	3885	79.14	56.30
(Non Combustible)					
Metal(Ferrous)	55	0.55	50	1.02	9.09
Metal(Non-Ferrous)	22	0.22	22	0.45	0.00
Glass	2	0.02	2	0.04	0.00
Stone ・Ceramics	725	7.22	705	14.36	2.76
Bones	345	3.44	245	4.99	28.99
Others	0	0.00	0	0.00	—
Sub-Total	1149	11.45	1024	20.86	10.88
Total	10039	100	4909	100	51.10

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.224

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication High Income

Sampling Point No4 Darmo Satelit

Sampling Date 18, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1400	13.60	800	17.22	42.86
Textile	150	1.46	115	2.48	23.33
Garbage	5387	52.33	1862	40.08	65.44
Wood・Grass	1770	17.19	770	16.57	56.50
※Plastics	950	9.23	600	12.91	36.84
※Leaser・Rubber	265	2.57	150	3.23	43.40
Others	3	0.03	2	0.04	33.30
Sub-Total	9925	96.41	4299	92.53	56.69
(Non Combustible)					
Metal(Ferrous)	20	0.19	18	0.39	10.00
Metal(Non-Ferrous)	15	0.15	13	0.28	13.33
Glass	3	0.03	3	0.06	0.00
Stone ・Ceramics	323	3.13	308	6.63	4.64
Bones	9	0.09	5	0.11	44.44
Others	0	0.00	0	0.00	—
Sub-Total	370	3.59	347	7.47	6.22
Total	10295	100	4646	100	54.87

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.265

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Middle Income

Sampling Point No5 Krembangan

Sampling Date 22, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1550	14.92	750	15.65	51.61
Textile	350	3.37	185	3.86	47.14
Garbage	4806	46.26	1656	34.57	65.54
Wood・Grass	1800	17.32	700	14.61	61.11
※Plastics	900	8.66	550	11.48	38.89
※Leaser・Rubber	25	0.24	25	0.52	0.00
Others	0	0.00	0	0.00	—
Sub-Total	9431	90.77	3866	80.69	59.01
(Non Combustible)					
Metal(Ferrous)	35	0.34	35	0.73	0.00
Metal(Non-Ferrous)	25	0.24	21	0.44	16.00
Glass	245	2.36	245	5.12	0.00
Stone ・Ceramics	609	5.86	589	12.29	3.28
Bones	45	0.43	35	0.73	22.22
Others	0	0.00	0	0.00	—
Sub-Total	959	9.23	925	19.31	3.55
Total	10390	100	4791	100	53.89

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.288

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Middle Income

Sampling Point No6 Sukolilo

Sampling Date 17, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1275	10.03	500	8.25	60.78
Textile	80	0.63	60	0.99	25.00
Garbage	6973	54.85	2723	44.91	60.95
Wood・Grass	2550	20.06	1025	16.90	59.80
※Plastics	450	6.54	400	6.60	11.11
※Leaser・Rubber	5	0.04	4	0.07	20.00
Others	17	0.13	9	0.15	47.06
Sub-Total	11350	82.29	4721	77.87	58.41
(Non Combustible)					
Metal(Ferrous)	130	1.03	130	2.14	0.00
Metal(Non-Ferrous)	20	0.16	20	0.33	0.00
Glass	15	0.12	10	0.17	33.33
Stone ・Ceramics	1157	9.10	1157	19.08	0.00
Bones	40	0.32	25	0.41	37.50
Others	0	0.00	0	0.00	—
Sub-Total	1362	10.72	1342	22.13	1.47
Total	12712	100	6063	100	52.30

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.347

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Middle Income

Sampling Point No.7 Gubeng

Sampling Date 15, May, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	1190	10.51	540	10.85	54.62
Textile	90	0.80	50	1.01	44.44
Garbage	6850	60.51	2500	50.25	63.50
Wood・Grass	1875	16.56	875	17.59	53.33
※Plastics	650	5.74	400	8.04	38.46
※Leaser・Rubber	20	0.18	20	0.40	0.00
Others	15	0.13	10	0.20	33.33
Sub-Total	10690	94.43	4395	88.34	58.89
(Non Combustible)					
Metal(Ferrous)	95	0.84	65	1.31	31.58
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	335	2.96	335	6.73	0.00
Stone ・Ceramics	175	1.55	165	3.32	5.71
Bones	25	0.22	15	0.30	40.00
Others	0	0.00	0	0.00	—
Sub-Total	630	5.57	580	11.66	7.94
Total	11320	100	4975	100	56.05

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.348

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Middle Income

Sampling Point No8 Sawahan

Sampling Date 19, May, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	1350	11.68	800	16.10	40.74
Textile	770	6.66	425	8.55	44.81
Garbage	6298	54.50	1998	40.21	68.28
Wood・Grass	1675	14.50	750	15.09	55.22
※Plastics	850	7.36	450	9.06	47.06
※Leaser・Rubber	15	0.13	14	0.28	6.67
Others	6	0.05	4	0.08	33.33
Sub-Total	10964	94.88	4441	89.37	59.49
(Non Combustible)					
Metal(Ferrous)	65	0.56	65	1.31	0.00
Metal(Non-Ferrous)	17	0.15	16	0.32	5.88
Glass	1	0.01	1	0.02	0.00
Stone ・Ceramics	497	4.30	437	8.80	12.07
Bones	11	0.10	9	0.18	18.18
Others	0	0.00	0	0.00	—
Sub-Total	591	5.12	528	10.63	10.66
Total	11555	100	4969	100	57.00

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.310

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Low Income

Sampling Point No9 Wonokromo

Sampling Date 19, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	950	8.96	550	11.66	42.11
Textile	170	1.60	100	2.12	41.18
Garbage	5850	55.15	1900	40.27	67.52
Wood・Grass	1950	18.38	900	19.07	53.85
※Plastics	700	6.60	400	8.48	42.86
※Leaser・Rubber	8	0.08	8	0.17	0.00
Others	9	0.08	7	0.15	22.22
Sub-Total	9637	90.85	3865	81.92	59.89
(Non Combustible)					
Metal(Ferrous)	80	0.75	71	1.50	11.25
Metal(Non-Ferrous)	110	1.04	98	2.08	10.91
Glass	6	0.06	6	0.13	0.00
Stone ・Ceramics	695	6.55	615	13.03	11.51
Bones	50	0.47	33	0.70	34.00
Others	30	0.28	30	0.64	0.00
Sub-Total	971	9.15	853	18.08	12.15
Total	10608	100	4718	100	55.52

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.374

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Low Income

Sampling Point No.10 Gubeng

Sampling Date 17, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1270	12.18	700	14.36	44.88
Textile	120	1.15	75	1.54	37.50
Garbage	5140	49.30	1830	37.55	64.40
Wood・Grass	2150	20.62	850	17.44	60.47
※Plastics	850	8.15	550	11.28	35.29
※Leaser・Rubber	40	0.38	39	0.80	2.50
Others	13	0.13	10	0.21	23.08
Sub-Total	9583	91.91	4054	83.18	57.70
(Non Combustible)					
Metal(Ferrous)	60	0.58	60	1.23	0.00
Metal(Non-Ferrous)	13	0.13	10	0.21	23.08
Glass	165	1.58	165	3.38	0.00
Stone ・Ceramics	585	5.61	570	11.69	2.56
Bones	20	0.19	15	0.31	25.00
Others	0	0.00	0	0.00	--
Sub-Total	843	8.09	820	16.82	2.73
Total	10426	100	4874	100	53.25

※ *Unsuitable Waste for Incineration*

Bulk Density (kg/ℓ)	0.263

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Low Income

Sampling Point No.11 Kenjeran

Sampling Date 24, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1150	11.11	600	10.92	47.83
Textile	160	1.55	135	2.46	15.63
Garbage	5286	51.05	2176	39.60	58.83
Wood・Grass	1350	13.04	650	11.83	51.85
※Plastics	1050	10.14	650	11.83	38.10
※Leaser・Rubber	100	0.97	97	1.77	3.00
Others	4	0.04	4	0.07	0.00
Sub-Total	9100	87.90	4312	78.47	52.62
(Non Combustible)					
Metal(Ferrous)	110	1.06	110	2.00	0.00
Metal(Non-Ferrous)	13	0.13	13	0.24	0.00
Glass	340	3.28	340	6.19	0.00
Stone ・Ceramics	670	6.47	625	11.37	6.72
Bones	120	1.16	95	1.73	20.83
Others	0	0.00	0	0.00	—
Sub-Total	1253	12.10	1183	21.53	5.59
Total	10353	100	5495	100	46.92

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.366

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Low Income

Sampling Point No.12 Tambaksari

Sampling Date 23, May, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	1750	13.90	900	16.09	48.57
Textile	425	3.38	300	5.36	29.41
Garbage	6382	50.69	1832	32.75	71.29
Wood・Grass	1750	13.90	700	12.51	60.00
※Plastics	1250	9.93	900	16.09	28.00
※Leaser・Rubber	125	0.99	120	2.15	4.00
Others	1	0.01	1	0.02	0.00
Sub-Total	11683	92.80	4753	84.97	59.32
(Non Combustible)					
Metal(Ferrous)	85	0.67	80	1.43	5.88
Metal(Non-Ferrous)	12	0.10	11	0.20	8.33
Glass	225	1.79	220	3.93	2.22
Stone ・Ceramics	548	4.35	508	9.08	7.30
Bones	37	0.29	22	0.39	40.54
Others	0	0.00	0	0.00	—
Sub-Total	907	7.20	841	15.03	7.28
Total	12590	100	5594	100	55.57

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.322

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Market

Sampling Point No.13 Pasar Wonokromo

Sampling Date 21, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	200	1.77	150	4.90	25000
Textile	0	0.00	0	0.00	—
Garbage	9500	84.11	2100	68.60	77.89
Wood・Grass	900	7.97	250	8.17	72.22
※Plastics	250	2.21	150	4.90	40.00
※Leaser・Rubber	4	0.04	4	0.13	0.00
Others	0	0.00	0	0.00	—
Sub-Total	10854	96.10	2654	86.70	75.55
(Non Combustible)					
Metal(Ferrous)	2	0.02	2	0.07	0.00
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	425	3.76	395	12.90	7.06
Bones	13	0.12	10	0.33	23.08
Others	0	0.00	0	0.00	—
Sub-Total	440	3.90	407	13.30	7.50
Total	11294	100	3061	100	72.90

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.264

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Market

Sampling Point No.14 Pasar Keputran

Sampling Date 20, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	150	1.25	100	3.89	33.33
Textile	0	0.00	0	0.00	—
Garbage	11500	95.69	2250	87.62	80.43
Wood・Grass	250	2.08	150	5.84	40.00
※Plastics	100	0.83	50	1.95	50.00
※Leaser・Rubber	1	0.01	1	0.04	0.00
Others	0	0.00	0	0.00	—
Sub-Total	12001	99.86	2551	99.34	78.74
(Non Combustible)					
Metal(Ferrous)	1	0.01	1	0.04	0.00
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	16	0.13	16	0.62	0.00
Bones	0	0.00	0	0.00	—
Others	0	0.00	0	0.00	—
Sub-Total	17	0.14	17	0.66	0.00
Total	12018	100	2568	100	78.63

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.383

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Market

Sampling Point No.15 Pasar Kupang

Sampling Date 19, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	500	4.86	300	7.53	40.00
Textile	130	1.26	60	1.51	53.85
Garbage	6785	65.95	2085	52.37	69.27
Wood・Grass	1750	17.01	750	18.84	57.14
※Plastics	500	4.86	200	5.02	60.00
※Leaser・Rubber	4	0.04	3	0.08	25.00
Others	1	0.01	1	0.03	0.00
Sub-Total	9670	93.99	3399	85.38	64.77
(Non Combustible)					
Metal(Ferrous)	8	0.08	7	0.18	12.50
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	0	0.00	0	0.00	—
Stone ・Ceramics	525	5.10	500	12.56	5.00
Bones	85	0.83	75	1.88	11.76
Others	0	0.00	0	0.00	—
Sub-Total	618	6.01	582	14.62	5.83
Total	10288	100	3981	100	61.30

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.363

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Market

Sampling Point No.16 Pasar Pegirian

Sampling Date 22, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	375	3.55	300	7.28	20.00
Textile	22	0.21	17	0.41	22.73
Garbage	7225	68.30	2225	53.95	69.20
Wood・Grass	1840	17.39	640	15.52	65.22
※Plastics	275	2.60	150	3.64	45.45
※Leaser・Rubber	17	0.16	16	0.39	5.88
Others	2	0.02	1	0.02	50.00
Sub-Total	9756	92.23	3349	81.21	65.67
(Non Combustible)					
Metal(Ferrous)	32	0.30	30	0.73	6.25
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	10	0.10	10	0.24	0.00
Stone ・Ceramics	750	7.09	715	17.34	4.67
Bones	30	0.28	20	0.48	33.33
Others	0	0.00	0	0.00	—
Sub-Total	822	7.77	775	18.79	5.72
Total	10578	100	4124	100	61.01

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.218

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Commercial

Sampling Point No.17 Bungran

Sampling Date 24, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	2290	24.75	1490	27.38	34.93
Textile	750	8.11	625	11.48	16.67
Garbage	3120	33.73	1170	21.50	62.50
Wood・Grass	1300	14.05	600	11.02	53.85
※Plastics	1200	12.97	975	17.91	18.75
※Leaser・Rubber	25	0.27	25	0.46	0.00
Others	0	0.00	0	0.00	—
Sub-Total	8685	93.88	4885	89.75	43.75
(Non Combustible)					
Metal(Ferrous)	210	2.27	210	3.86	0.00
Metal(Non-Ferrous)	5	0.05	5	0.09	0.00
Glass	13	0.14	12	0.22	7.69
Stone ・Ceramics	316	3.42	315	5.79	0.32
Bones	22	0.24	16	0.29	27.27
Others	0	0.00	0	0.00	—
Sub-Total	566	6.12	558	10.25	1.41
Total	9251	100	5443	100	41.16

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.227

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Commercial

Sampling Point No.18 Pirngadi

Sampling Date 25, May, 1992

	Wet Basis		Dry Basis		Moisture Contents (%)
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	
(Combustible)					
Paper	2050	18.71	1400	24.11	31.71
Textile	145	1.32	85	1.46	41.38
Garbage	4816	43.95	1616	27.82	66.45
Wood・Grass	1750	15.97	900	15.50	48.57
※Plastics	1090	9.95	740	12.74	32.11
※Leaser・Rubber	280	2.56	250	4.30	10.71
Others	1	0.01	1	0.02	0.00
Sub-Total	10132	92.47	4992	85.95	50.73
(Non Combustible)					
Metal(Ferrous)	140	1.28	140	2.41	0.00
Metal(Non-Ferrous)	29	0.27	27	0.46	6.90
Glass	100	0.91	100	1.72	0.00
Stone ・Ceramics	524	4.78	519	8.94	0.95
Bones	32	0.29	30	0.52	6.25
Others	0	0.00	0	0.00	—
Sub-Total	825	7.53	816	14.05	1.09
Total	10957	100	5808	100	46.99

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.321

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Commercial

Sampling Point No.19 Simpang Dukuh

Sampling Date 25, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1500	12.58	650	14.87	56.67
Textile	85	0.71	55	1.26	35.29
Garbage	7701	64.58	1751	40.06	77.26
Wood・Grass	950	7.97	800	18.30	15.79
※Plastics	1000	8.38	550	12.58	45.00
※Leaser・Rubber	170	1.43	165	3.78	2.94
Others	0	0.00	0	0.00	—
Sub-Total	11406	95.65	3971	90.85	65.18
(Non Combustible)					
Metal(Ferrous)	30	0.25	26	0.60	13.33
Metal(Non-Ferrous)	0	0.00	0	0.00	—
Glass	60	0.50	60	1.37	0.00
Stone ・Ceramics	154	1.29	154	3.52	0.00
Bones	275	2.31	160	3.66	41.82
Others	0	0.00	0	0.00	—
Sub-Total	519	4.35	400	9.15	22.93
Total	11925	100	4731	100	63.35

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.424

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication Commercial

Sampling Point No20 Pecindilan

Sampling Date 23, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	2000	14.81	1050	19.26	47.50
Textile	125	0.93	80	1.47	36.00
Garbage	6922	51.25	2272	41.68	67.18
Wood・Grass	1050	7.77	300	5.50	71.43
※Plastics	2200	16.29	750	13.76	65.91
※Leaser・Rubber	155	1.15	140	2.57	9.68
Others	10	0.07	9	0.17	10.00
Sub-Total	12462	92.27	4601	84.41	63.08
(Non Combustible)					
Metal(Ferrous)	190	1.41	190	3.49	0.00
Metal(Non-Ferrous)	80	0.59	71	1.30	11.25
Glass	16	0.12	16	0.29	0.00
Stone ・Ceramics	308	2.28	293	5.37	4.87
Bones	450	3.33	280	5.14	37.78
Others	0	0.00	0	0.00	—
Sub-Total	1044	7.73	850	15.59	18.58
Total	13506	100	5451	100	59.64

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.392

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication

Sampling Point No21 Incinerator

Sampling Date 18, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1000	8.61	440	8.34	56.00
Textile	435	3.74	280	5.31	35.63
Garbage	6765	58.22	2245	42.54	66.81
Wood・Grass	1950	16.78	1250	23.69	35.90
※Plastics	900	7.75	550	10.42	38.89
※Leaser・Rubber	20	0.17	20	0.38	0.00
Others	37	0.32	20	0.38	45.95
Sub-Total	11107	95.59	4805	91.06	56.33
(Non Combustible)					
Metal(Ferrous)	10	0.08	10	0.19	0.00
Metal(Non-Ferrous)	8	0.07	7	0.13	12.50
Glass	80	0.69	80	1.51	0.00
Stone ・Ceramics	365	3.14	345	6.54	5.48
Bones	50	0.43	30	0.57	40.00
Others	0	0.00	0	0.00	—
Sub-Total	513	4.41	472	8.94	7.99
Total	11620	100	5277	100	54.59

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.425

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication

Sampling Point　　No22 Incinerator (After 3 Days)

Sampling Date　　21, May, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1250	11.45	550	10.07	56.00
Textile	700	6.41	500	9.16	28.57
Garbage	4669	42.78	1744	31.94	62.65
Wood・Grass	1975	18.10	850	15.57	56.96
※Plastics	1100	10.08	650	11.90	40.91
※Leaser・Rubber	185	1.69	165	3.02	10.81
Others	0	0.00	0	0.00	—
Sub-Total	9879	90.51	4459	81.66	54.86
(Non Combustible)					
Metal(Ferrous)	170	1.56	170	3.11	0.00
Metal(Non-Ferrous)	3	0.03	3	0.06	0.00
Glass	32	0.29	32	0.59	9.38
Stone ・Ceramics	736	6.74	711	13.02	3.40
Bones	95	0.87	85	1.56	10.53
Others	0	0.00	0	0.00	—
Sub-Total	1036	9.49	1001	18.34	3.38
Total	10915	100	5460	100	49.98

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.410

PHYSICAL COMPOSITION OF WASTE

(Dry Season)

Classfication

Sampling Point　　No23 Road Sweeping Waste

Sampling Date　　1, Jun, 1992

	Wet Basis		Dry Basis		Moisture Contents
	Weight (g)	Wt Rate (%)	Weight (g)	Wt Rate (%)	(%)
(Combustible)					
Paper	1000	9.11	450	8.50	55.00
Textile	10	0.09	7	0.13	30.00
Garbage	5832	53.14	2182	41.21	62.59
Wood・Grass	2310	21.05	1070	20.21	53.68
※Plastics	475	4.33	300	5.66	36.84
※Leaser・Rubber	80	0.73	75	1.42	6.25
Others	1	0.01	1	0.02	0.00
Sub-Total	9708	88.46	4085	77.15	57.92
(Non Combustible)					
Metal(Ferrous)	135	1.23	135	2.55	0.00
Metal(Non-Ferrous)	18	0.16	17	0.32	5.56
Glass	40	0.37	40	0.75	0.00
Stone ・Ceramics	1028	9.37	988	18.66	3.89
Bones	45	0.41	30	0.57	33.33
Others	0	0.00	0	0.00	—
Sub-Total	1266	11.54	1210	22.85	4.42
Total	10974	100	5295	100	51.75

※ Unsuitable Waste for Incineration

Bulk Density (kg／ℓ)	0.402

II Chemical Characteristics

II Chemical Characteristics

(1) Summary of Results

Three Major Components

(Dry Season)

Source / Classification	Residential				Market	Commercial	Incinerator	Road Sweeping	Average
	High	Middle	Low	Weighted Mean					
Moisture (%)	56.65	54.81	52.82	53.59	68.46	52.79	52.29	51.75	56.45
Ash (%)	13.48	16.14	17.82	17.12	9.81	13.82	14.21	20.11	14.47
Combustible (%)	29.87	29.05	29.36	29.29	21.73	33.39	33.50	28.14	29.08

Elemental Composition and Lower Calorific Value by Bomb Calorimeter

(Dry Season)

Classification		Residential				Market	Commercial	Incinerator	Road Sweeping	Average
		High Darmo Permai	Middle Sawahan	Low Tambaksari	Weighted Mean	Wonokromo	Bungran			
Elemental Composition of Wet Solid Waste (Wt% on Wet Basis)	C	19.18	17.98	17.66	17.83	8.48	24.42	19.47	13.18	17.52
	H	2.73	2.54	2.35	2.42	1.08	3.48	2.77	1.59	2.43
	N	0.45	0.39	0.38	0.39	0.31	0.65	0.50	0.42	0.44
	S	0.027	0.028	0.011	0.017	0.003	0.037	0.038	0.028	0.023
	Cl	0.055	0.067	0.083	0.077	0.047	0.064	0.062	0.038	0.062
	O	9.528	9.635	10.526	10.216	9.726	15.119	11.06	12.884	11.005
	Total	31.97	30.64	31.01	39.95	19.640	43.77	33.90	28.14	31.48
Lower Calorific Value (Kcal/kg)		1480	1450	1210	1290	450	2120	1390	1180	1340

Lower Calorific Value Calculated 3/4 Major Component

(Dry Season)

Source / Classification	Residential				Market	Commercial	Incinerator	Road Sweeping	Average
	High Darmo Permai	Middle Sawahan	Low Tambaksari	Weighted Mean	Wonokromo	Bungran			
Moisture (%)	56.65	54.81	52.82	53.59	68.46	52.79	52.29	51.75	56.45
Ash (%)	13.48	16.14	17.82	17.12	9.81	13.82	14.21	20.11	14.47
Combustible (%)	29.87	29.05	29.36	29.29	21.73	33.39	33.50	28.14	29.08
Combustible (%) (Plastics)	15.95	12.53	17.95	16.28	4.93	20.46	15.20	10.23	14.16
Lower Calorific Value *1 (Kcal/kg)	1150	1080	1160	1140	580	1400	1340	1030	1100
Lower Calorific Value *2 (Kcal/kg)	1000	980	1000	990	570	1190	1190	960	970

*1 $He = (B/100) * [4400 * (1 - \alpha) + 8000 * \alpha] - 6 * W$

*2 $He = 45 * B - 6 * W$

He : Lower Calorific Value

B : Combustible

α : Combustible (Plastics)

W : Moisture

(2) Data

FORECAST OF CHEMICAL PROPERTIES

(Dry Season) High Income

Classfication		No. 1 Manyar Kertoarjo	No. 2 Darmo Permai	No. 3 Kawasan Darmo	No. 4 Darmo Satelit	Average
Three Major Components (Wt%)						
Moisture Contents		62.88	57.76	51.10	54.87	56.65
Ash Contents		10.82	10.27	20.54	12.28	13.48
Combustible Contents		26.30	31.97	28.36	32.85	29.87
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	—	19.18	—	—	—
	H	—	2.73	—	—	—
	N	—	0.45	—	—	—
	S	—	0.027	—	—	—
	Cl	—	0.055	—	—	—
	O	—	9.528	—	—	—
	Total	—	31.97	—	—	—
Lower Calorific Value (Kcal /kg)		—	1480	—	—	—

(Dry Season) Middle Income

Classfication		No. 5 Krenbangan	No. 6 Sukolilo	No. 7 Gubeng	No. 8 Sawahan	Average
Three Major Components (Wt%)						
Moisture Contents		53.89	52.30	56.05	57.00	54.81
Ash Contents		19.32	19.49	13.40	12.36	16.14
Combustible Contents		26.79	28.21	30.55	30.64	29.05
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	—	—	—	17.98	—
	H	—	—	—	2.54	—
	N	—	—	—	0.39	—
	S	—	—	—	0.028	—
	Cl	—	—	—	0.067	—
	O	—	—	—	9.635	—
	Total	—	—	—	30.64	—
Lower Calorific Value (Kcal /kg)		—	—	—	1450	—

FORECAST OF CHEMICAL PROPERTIES

(Dry Season) Low Income

Classfication		No. 9 Wonokromo	No.10 Gubeng	No.11 Kenjeran	No.12 Tambaksari	Average
Three Major Components (Wt%)						
Moisture Contents		55.52	53.25	46.92	55.57	52.82
Ash Contents		16.35	19.56	21.94	13.42	17.82
Combustible Contents		28.13	27.19	31.14	31.01	29.36
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	—	—	—	17.66	—
	H	—	—	—	2.35	—
	N	—	—	—	0.38	—
	S	—	—	—	0.011	—
	Cl	—	—	—	0.083	—
	O	—	—	—	10.526	—
	Total	—	—	—	31.01	—
Lower Calorific Value (Kcal /kg)		—	—	—	1210	—

(Dry Season) Market

Classfication		No.13 Pasar Wonokromo	No.14 Pasar Keputran	No.15 Pasar Kupang	No.16 Pasar Pegirian	Average
Three Major Components (Wt%)						
Moisture Contents		72.90	78.63	61.30	61.01	68.46
Ash Contents		7.46	6.21	14.20	11.36	9.81
Combustible Contents		19.64	15.16	24.50	27.63	21.73
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	8.48	—	—	—	—
	H	1.08	—	—	—	—
	N	0.31	—	—	—	—
	S	0.003	—	—	—	—
	Cl	0.047	—	—	—	—
	O	9.72	—	—	—	—
	Total	19.64	—	—	—	—
Lower Calorific Value (Kcal /kg)		450	—	—	—	—

FORECAST OF CHEMICAL PROPERTIES

(Dry Season) Commercial

Classfication		No.17 Bungran	No.18 Pirngadi	No.19 Simpang Dukuh	No.20 Pecindilan	Average
Three Major Components (Wt%)						
Moisture Contents		41.16	46.99	63.35	59.64	52.79
Ash Contents		15.07	17.51	10.10	12.61	13.82
Combustible Contents		43.77	35.50	26.55	27.75	33.39
Total		100	100	100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	24.42	—	—	—	—
	H	3.48	—	—	—	—
	N	0.65	—	—	—	—
	S	0.037	—	—	—	—
	Cl	0.064	—	—	—	—
	O	15.119	—	—	—	—
	Total	43.77	—	—	—	—
Lower Calorific Value (Kcal /kg)		2120	—	—	—	—

(Dry Season) Incinerator

Classfication		No.21 Incinerator	No.22 Incinerator after3D	Average
Three Major Components (Wt%)				
Moisture Contents		54.59	49.98	52.29
Ash Contents		11.51	16.91	14.21
Combustible Contents		33.90	33.11	33.50
Total		100	100	100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	19.47	—	—
	H	2.77	—	—
	N	0.50	—	—
	S	0.038	—	—
	Cl	0.062	—	—
	O	11.069	—	—
	Total	33.90	—	—
Lower Calorific Value (Kcal /kg)		1390	—	—

FORECAST OF CHEMICAL PROPERTIES

(Dry Season) Road sweeping waste

Classfication		No.23 Road sweeping
Three Major Components (Wt%)		
Moisture Contents		51.75
Ash Contents		20.11
Combustible Contents		28.14
Total		100
Elemental Composition Of Wet Solid Waste (Wt% on Wet Waste Basis)	C	13.18
	H	1.59
	N	0.42
	S	0.028
	Cl	0.038
	O	12.884
	Total	28.14
Lower Calorific Value (Kcal /kg)		1180

6.

ENVIRONMENTAL IMPACT ASSESSMENT SYSTEM IN INDONESIA

6 Environmental Impact Assessment System in Indonesia

I Regulations for Environmental Impact Assessment System

Indonesian Government has the Environmental Impact Assessment System. In 1982, the principles of Environmental Management, which is prescribed in Act No. 4 "Basic Provisions for the Management of the Living Environment", was established.

Then, Environmental Impact Assessment which is prescribed in Regulation of "The Analysis of Environmental Impact" No. 29, 1986, was established. In this regulation, following activities and projects are required Environmental Impact Assessment:

- change in the land structure and landscape,
- exploitation of renewable and non-renewable resources,
- processes and activities which can potentially create the depletion, degradation, and deterioration of natural resources,
- processes and activities which may affect the social and cultural environment,
- processes and activities which can interfere with the protection of natural resources or the conservation of natural heritage,
- the introduction of plants, animals, and micro-organisms,
- the production and use of biotic and non-biotic materials, and
- the application of technology which is predicted to have great potential to affect the environment.

And, the important impacts of activities and projects on living environment is determined in this regulation as follows:

- the number of people affected by the project,
- the size of the impact area,
- the duration of the impact,
- the intensity of the impact,
- the number of components affected by the project,
- the cumulative effects of the impacts,
- the reversibility or irreversibility of the impact.

The proponent must prepare some necessary documents as PIL, KA-ANDAL, ANDAL, PEL, KA-SEL, SEL, RKL and RPL. These documents are submitted to review Commission which in charge of AMDAL in the project. The AMDAL Commission is two kinds of level as Central Commission and Provincial Commission. Above abbreviated words means as follows:

- PIL : Preliminary Environmental Information Report
- KA-ANDAL : Terms of Reference of ANDAL
- ANDAL : Environmental Impact Analysis
- PEL : Preliminary Environmental Evaluation Report
- KA-SEL : Terms of Reference of SEL
- SEL : Environmental Evaluation Study
- RKL : Environmental Management Plan
- RPL : Environmental Monitoring Plan

According to Decree of the Minister of Public Works No. 14, 1987, there are two kinds of project founders. One is the Central Government whose project needs approve by the Central Commission. The second one is Local Government founder like MKS. In this case, Provincial Commission is responsibility. Approvable commission does not depend on types and size of the project.

II Procedure of AMDAL

Procedure of AMDAL is shown in Fig. 6.1. Projects can divided into two types of project, new projects and on-going projects. New projects are required PIL and ANDAL, and on-going projects are required PEL and SEL.

In case responsibility is Central Commission, new project are required screening stage as Fig. 6.2. First, project proponent evaluates which is required PIL, ANDAL directly or no need AMDAL in the project by proponent. This evaluation is needed approval by Commission. On-going projects are required PEL, SEL as same above flow. Decree of the Minister of Public Works No. 531, 1989, describe guidelines of screening.

In case responsibility is Jawa Timur Provincial Commission in this project, however, it will be not needed Screening Process. We can study PIL or to prepare KA-ANDAL.

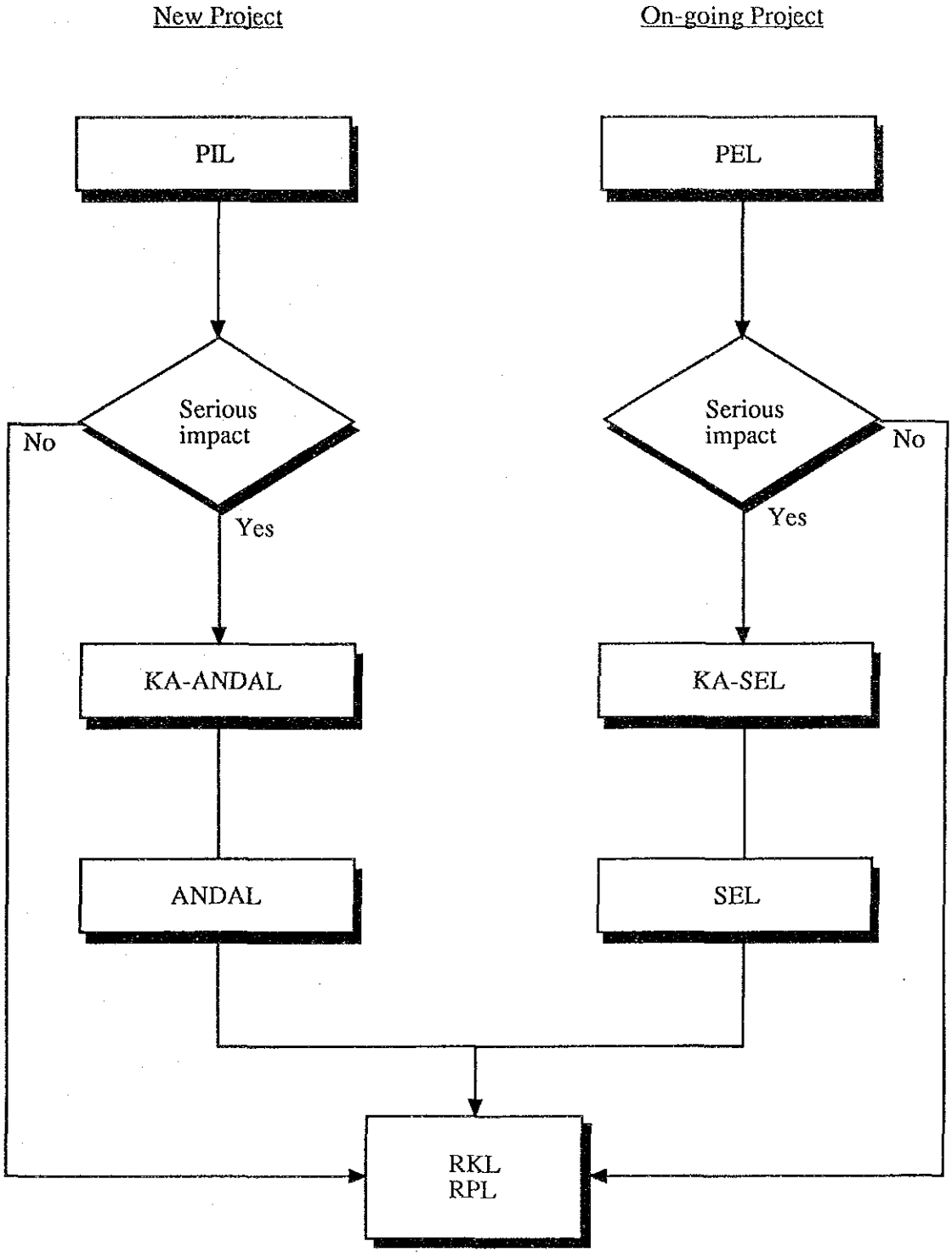


FIG. 6-1 PROCEDURE OF ENVIRONMENTAL IMPACT ASSESSMENT FOR TWO TYPES PROJECT

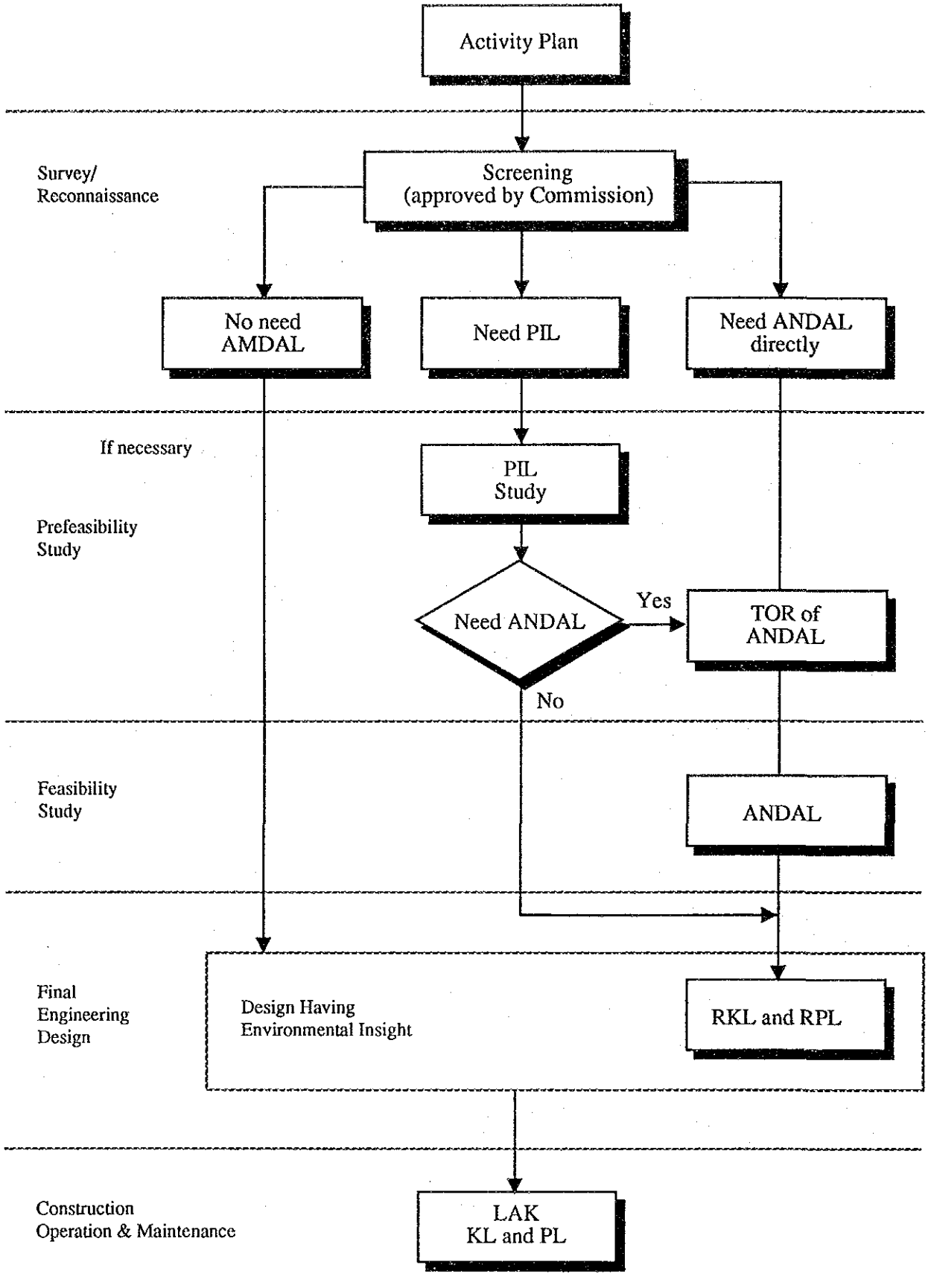


FIG. 6-2 PROCEDURE OF ENVIRONMENTAL ASSESSMENT SYSTEM IN INDONESIA

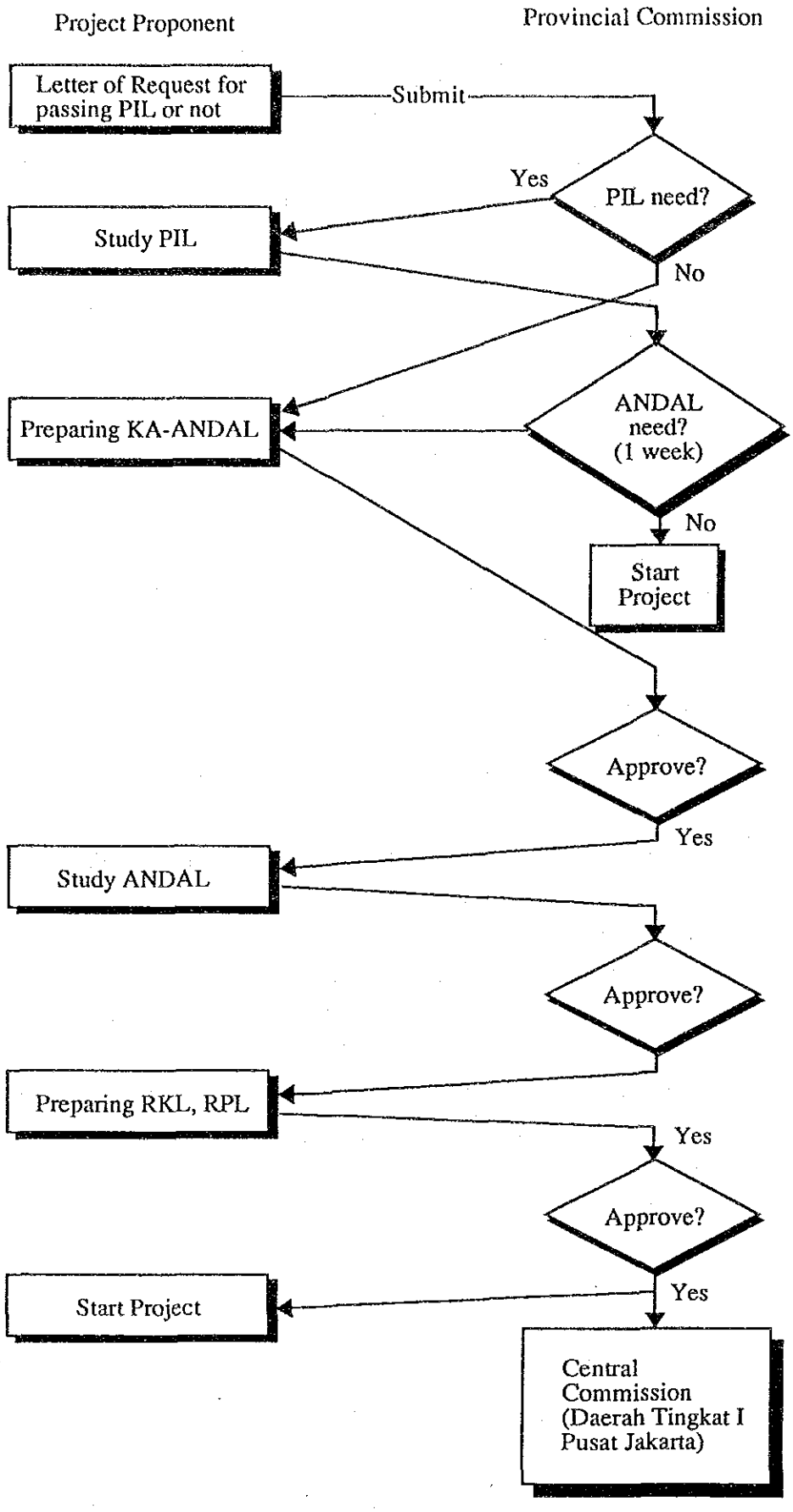


FIG. 6-3 PROCEDURE OF FLOW FOR THE PROJECT

III Required Projects for ANDAL

According to Decree by Minister of Public Works of No. 531, 1989, basically, some new projects are divided into four types of requirement as follows:

- need ANDAL
- need ANDAL or PIL
- need PIL or pass AMDAL
- pass AMDAL

Kinds of project of above types are shown in Table 6.1.

IV AMDAL Commission

As we have mentioned before, Indonesian has two types of AMDAL Commissions, Central and Provincial levels.

4.1 Central AMDAL Commission

The Central Commission has following tasks:

- to devise the technical guidelines for establishing the environmental impact analysis,
- to evaluate the environmental information report,
- to establish the terms of reference for the environmental impact analysis,
- to evaluate the environmental impact analysis,
- to evaluate the environmental management plan for the activities concerned,
- to evaluate the environmental monitoring plan for the activity concerned,
- to expedite the issue of the decision concerning the environmental information report, environmental impact analysis, environmental management plan and environmental monitoring plan,
- to carry out any other tasks given by the Minister or Head of the non-departmental government institution in charge of the field of the activity concerned.

Table 6.1 The Required AMDAL Projects

Category	Necessary Study	Kinds of Project
Category 1	ANDAL	- Reservoir with a big scale (a) - Improvement of coastal Reservoir - Improvement of coastal area - Tides Irigation (opening) of new area >10,000 ha/scheme - Forest swamp Reclamation >5,000 ha - Toll street - Development of temporary disposal site in Metropolitant and big cities - Development of local drainage network in Metropolitant and big cities (b) - Installation development of effluent processing in Metropolitant - Installation of primary and secondary effluent gutter - Development of clean water processing in Metropolitant and big cities (c) - Installation of primary distribution pipe in Metropolitant and big cities
Category 2	ANDAL/PIL	- Medium/small (d) scale Reservoir - Medium Irigation (2,000 - 5,000 ha) - Tides Irigation (5,000 - 10,000) per scheme - Swamp Reclamation (2,000 - 5,000 ha/scheme) - Improvement of lod tides area (10,000 - 60,000/scheme) - Improvement of Swamp area with a depth of (5,000 - 30,000 ha/scheme) - Improvement of ground water - Rehabilitation of irigation system with big scales - Flood Controlling * controlling of sedimentation erosion - New street, except toll street. - Street improvement with expanding - Development of brigde >20 m - Medium temporary disposal site development - Development of main drainage network in medium cities - Development of local drainage network in big cities (e)
Category 3	PIL/PASS AMDAL	- Irigation with small scale >2,000 ha - Irigation of tides <5,000 ha per scheme - Reclamation of forest swamp of 2,000 ha per scheme - Improvement of swamp tides reclamation area <5,000 ha per area - Improvement and River maintenance - O and P irigation system - Street improvement without expanding it - A Routine street observation - Bridge <20 m - Temporary disposal site development in small cities - Development of main drainage network in small cities - Development of effluent process gutter installation - Installment of primair and secondary effluent gutter - Development of clean water process Installation in small cities - Installment of primary distribution in small cities
Category 4	PASS AMDAL	- Education and Training - Observation - Information - Street and Bridge manintenance - Materials and list supply - RUTRK and RDTRK preparation - Maintenance of Irigation network

Note

A. A Reservoir which can irigate rice fields with the width more than 5,000 ha

B. The development of main canal

C. - A package development with a complete system is a part of the development of water quality standard sources and intake, transmission or distribution pipe

- The development of system parts, like: in the management Installation or intake or transmission or distribution pipe belong to category 2

D. A Reservoir which can irigate rice fields with the width less than 5,000 ha

E. Consists of secondary, tersier and rehabilitation gutter by adding the supplement building

4.2 Provincial AMDAL Commission

Under Regulation No. 29, 1986, the provincial governor has established Provincial Commission comprising permanent and temporary members. The member of Jawa Timur Provincial AMDAL Commission is shown in Table 6.2.

The permanent members comprising the BAPPEDA (Badan Perencanaan Pembangunan Daerah), BKLH (Biro Kependudukan dan Lingkungan Hidup: Bureau for the Management of Population and Environment), PSL (Pusat Studi Lingungan) of the University in province concerned.

The temporary members are appointees from the government agencies as deemed necessary, the BKPMD (Provincial Agency to Coordinate Capital Investment), representation of NGO, and others.

The Provincial Commission has following tasks:

- to evaluate the PIL,
- to established the KA-AMDAL,
- to evaluate ANDAL,
- to evaluate RKL and RPL for the activity concerning PIL, ANDAL, RKL and RPL,
- to carry out any other tasks given by the governor.

Table 6.2 Members of Jawa Timur AMDAL Commission

Position in the Commission	Note of Occupation/Instantion
1. The Responsibility	The Vice Governor of Jawa Timur Province
2. a. Chairman	BAPPEDA Chairman of Jawa Timur Province
b. First Vice Chairman	Third Assistant of District Secretary of Jawa Timur
c. Second Vice Chairman	The Chairman of Investment Coordination Department of Jawa Timur
3. a. Secretary	The Head of Living Environment and Demography Construction, the District Secretary of Jawa Timur
b. First Vice Secretary	The Head of Physics and Means Section, BAPPEDA of Jawa Timur Province
c. Second Vice Secretary	The Secretary of Investment Coordination Department of Jawa Timur Province
4. a. The permanent members	1) The BAPPEDA Representative of Jawa Timur Province 2) The Living Environment and Demography Construction Representative, District Secretariat of Jawa Timur Province 3) The Representative of Law Bureau, District Secretary of Jawa Timur Province 4) The Representative of Area Development Construction Bureau of Jawa Timur Province 5) The Center Representative of State University Study Environment (PSL)
b. The temporary members	1) The indicated District Secretary of Level II Area (Regency) 2) BAPPEDA Chairman who are related 3) The Head of Department Area Office in the indicated area 4) The Representative from the indicated Province Department 5) The Community Representative which get impacts/LKMD 6) Experts who know about the activity impact 7) The other members according to the needs if it is considered necessary by the Government of Jawa Timur Province

Source : The Decision Appendix of Jawa Timur Province Governor, No.411,1989

7.

ENVIRONMENTAL STANDARD IN INDONESIA

7 Environmental Standards

Jawa Timur Province has some environmental standards for air quality and water quality as Table 7.1 to Table 7.5.

Table 7.1 Ambient Air quality

established by : Jawa Timur Province No. 188, 1988

No	Parameter	Time of Measure-ment	Ambient	Analysis Method	Equipment
1.	Sulfur dioxide (SO_2)	24 hours	0.01 ppm	Pararosanilin	Spectrophotometer
2.	Carbon monoxide (CO)	8 hours	20.00 ppm	NDIR	NDIR Analyzer
3.	Nitrogen oxide (NOx)	24 hours	0.05 ppm	Saltzman	Spectrophotometer
4.	Oxydants (O_3)	1 hour	0.10 ppm	Neutral Buffer Potassium Iodide	Spectrophotometer
5.	Dust	24 hours	0.26 mg/m^3	Gravimetric	Hi-Volume sampler
6.	Lead (Pb)	24 hours	0.06 mg/m^3		AAS
7.	Hydrogen sulfide (H_2S)	30 minutes	0.03 ppm (42 kg/m^3)	Methylen Blue	Spectrophotometer
8.	Ammonia (NH_3)	24 hours	2.00 ppm (1360 kg/m^3)	Nessler	Spectrophotometer
9.	Hydrocarbon (HC)	3 hours	0.24 ppm (160 kg/m^3)	Flame ionization	GC

Note :
- Time of measurement is measured every hour from the representative hours (if the wind direction changes, the equipment is transfered, etc.)
- H2S standard does not work for areas which contain H2S naturally
- *) : suggested
- NDIR : non-dispersive infrared
- AAS : Atomic Absorption Spectrophotometer
- GC : Gas chromatography

Table 7.2 Emission Gas Quality Standards by Stationary Sources
established by Jawa Timur Province No. 188, 1989

No.	Parameter	Emission Quality Ambient			Note
		A	B	C	
1.	Sulfur trioxide (SO_3)	0.20	0.25	0.30	1. g SO_3/Nm^3 from gas 2. gas from persistent
2.	Nitrogen Oxide (NOx)	1.70	4.60	4.60	no colour gas g/Nm^3
3.	Carbon monoxide (CO)	1.00	1.00	1.00	g/Nm^3
4.	Suspended Particulate Matter	0.40	0.50	0.60	g/Nm^3
5.	Hydrogen Sulfide (H_2S)	5.00	5.00	6.25	ppm (v/v)
6.	Methyl mercaptan (CH_3SH)	0.002	-	0.01	ppm
7.	Ammonia (NH_3)	100	250	500	ppm
8.	Gas cloride	0.20	0.25	0.30	$g/HCl/Nm^3$
9.	Hydrogen Chloride	0.40	0.50	0.60	$g/HCl/Nm^3$
10.	Hydro Fluoride (H_2F)	0.015	0.025	0.044	$g/H_2F/Nm^3$
11.	Lead (Pb)	0.025	0.03	0.04	g/Nm^3
12.	Sulfur dioxide (SO_2)	3.50	6.00	7.50	$g/SO_3/Nm^3$ from gas
13.	Zinc (Zn)	0.10	0.10	0.15	g/Nm^3
14.	Mercury (Hg)	0.01	0.01	0.02	g/Nm^3
15.	Cadmium (Cd)	0.015	0.015	0.025	g/Nm^3
16.	Arsenic (As)	0.025	0.025	0.04	g/Nm^3
17.	Antimony (Sb)	0.025	0.025	0.04	g/Nm^3
18.	Radio nuclear	null	null	null	

Note A : A firm quality ambient for residential area
B : A medium quality ambient for offices/public utility area
C : A light quality ambient for industries area

Table 7.3 Emission Gas Quality Standards by Mobile Sources
established by Jawa Timur Province No. 188,1989

No.	Vehicle Categories	Fuel	Test level Operation	Emission Quality Ambient					
				CO gr / km		HC gr / km		NO gr / km	
				Max.	Ave.	Max.	Ave.	Max.	Ave.
1.	Cars with 5 seats including the driver	Gasoline	10	28.2	24.6	4.2	3.6	3.7	3.1
2.	Loaded car with GVW less than 2.5 Ton	Gasoline	10	31.4	26.8	4.8	4.3	3.7	3.3
3.	Diesel vehicle : *)								
	- direct injection	Diesel fuel	6	1,050	920	-	-	1,010	920
	- indirect injection	Diesel fuel	6	1,050	920	680	590	1,010	920
4.	Motor bike : *)								
	- for 4 stroke engine	Gasoline	idling	4.5%		3,300			
	- for 2 stroke engine	Gasoline	idling						

Note : *) in ppm

Table 7.4 Water Quality Standards (1)

established by Jawa Timur Province No. 414, 1987

Group A (The Water Health to Drink)

Parameters	Unit	Maximum Suggested Standards	Maximum Allowed Standards
(1) Physics			
1. Temperature	°C	normal	normal
2. Colour	PtCo	5	50
3. Smell	-	No Smell	No Smell
4. Taste	-	No Taste	No Taste
5. Turbidity	mg/l SiO_2	5	25
6. Total Solid	mg/l	500	1500
(2) Chemistry			
1. pH		6.5-8.5	6.5-8.5
2. Calcium (Ca)	mg/l	75	200
3. Magnesium (Mg)	mg/l	30	150
4. Barium (Ba)	mg/l	0	0.05
5. Iron (Fe)	mg/l	0.1	1
6. Manganese (Mn)	mg/l	0.05	0.5
7. Copper (Cu)	mg/l	0	1
8. Zinc (Zn)	mg/l	0	5
9. Chromium (Cr)	mg/l	0	0.05
10. Cadmium (Cd)	mg/l	0	0.01
11. Mercury (Hg)	mg/l	0.0005	0.001
12. Lead (Pb)	mg/l	0	0.1
13. Arsenic (As)	mg/l	0	0.05
14. Selenium (Se)	mg/l	0	0.01
15. Cyanide (CN)	mg/l	0	0.05
16. Sulfur (S)	mg/l	null	null
17. Fluorine (F)	mg/l	-	1.5
18. Chlorine (Cl)	mg/l	200	600
19. *Sulphate (SO_4)*	*mg/l*	200	400
20. Ammonia (NH_3)	mg/l	null	null
21. Nitrate (NO_3)	mg/l	5	10
22. Nitrite (NO_2)	mg/l	null	null
23. COD	mg/l $KMnO_4$	0	10
24. Detergent	mg/l	0	0.5
25. Phenol	mg/l	0.001	0.002
26. Oil and Fat	mg/l	null	null
27. Carbon Chloroform extract	mg/l	0.04	0.5
28. PCB	mg/l	null	null
(3) Microbiologies			
1. Caliform group	MPN/100ml	null	null
2. Parasite		null	null
3. Pathoge		null	null

Table 7.4 Water Quality Standards (2)

established by Jawa Timur Province No. 414, 1987

Group B (The Water Can Be Used as Standard Water to Process for Drinking and Daily Needs)

Parameters	Unit	Maximum Suggested Standards	Maximum Allowed Standards
(1) Physics			
1. Temperature	°C	normal	normal
2. Total Solid	mg/l	500	1500
(2) Chemistry			
1. pH		6.5-8.5	6-8.5
2 Barium (Ba)	mg/l	0	1
3. Iron (Fe)	mg/l	1	5
4. Manganese (Mn)	mg/l	0.05	0.5
5. Copper (Cu)	mg/l	0	1
6. Zinc (Zn)	mg/l	0	55
7. Chromium (Cr)	mg/l	0	0.05
8. Cadmium (Cd)	mg/l	0	0.01
9. Mercury (Hg)	mg/l	0.0005	0.001
10. Lead (Pb)	mg/l	0.05	0.1
11. Arsenic (As)	mg/l	0	0.05
12. Selenium (Se)	mg/l	0	0.01
13. Cyanide (CN)	mg/l	0	0.05
14. Sulfur (S)	mg/l	null	null
15. Fluorine (F)	mg/l	-	1.5
16. Chlorine (Cl)	mg/l	200	600
17. Sulphate (SO_4)	mg/l	200	400
18. Ammonia (NH_3)	mg/l	0.01	0.5
19. Nitrate (NO_3)	mg/l	5	10
20. Nitrite (NO_2)	mg/l	null	null
21. COD	mg/l	0	10
22. DO	mg/l	-	-
23. BOD	mg/l	0	6
24. COD	mg/l	0	10
25. Detergent	mg/l	0	0.5
26. Phenol	mg/l	0.001	0.002
27. Oil and Fat	mg/l	null	null
28. Carbon Chloroform extract	mg/l	0.04	0.5
29. PCB	mg/l	null	null
(3) Microbiologies			
1. Caliform	MPN/100ml	-	1X10^4
2. Collibacillus	MPN/100ml	-	2X10^3
(4) Radioactivity			
1. Beta Active Substance Total	pCi/l	-	100
2. Strontium-90	pCi/l	-	2
3. Radium-226	pCi/l		1
(5) Pesticide	mg/l	null	null

Table 7.4 Water Quality Standards (3)

established by Jawa Timur Province No. 414, 1987

Group C (The Water Used for Fishery and Husbandary)

Parameters	Unit	Maximum weight
(1) Physics		
1. Temperature	°C	normal ± 2 °C
2. Total Solid	mg/l	2000
3. Electric Conductivity	µmho/cm	150-400
(2) Chemistry		
1. pH		6-9
2 Copper (Cu)	mg/l	0.02
3. Zinc (Zn)	mg/l	0.02
4. Chromium (Cr)	mg/l	0.05
5. Silver (Ag)	mg/l	0.03
6. Cadmium (Cd)	mg/l	0.01
7. Mercury (Hg)	mg/l	0.02
8. Lead (Pb)	mg/l	0.03
9. Arsenic (As)	mg/l	1
10. Selenium (Se)	mg/l	0.05
11. Cyanide (CN)	mg/l	0.02
12. Sulfur (S)	mg/l	0.002
13. Nitrate (NO_3)	mg/l	10
14. Phosphate (PO_4)	mg/l	0.5
15. Carbon dioxide (CO_2)	mg/l	12
16. Fluorine (F)	mg/l	1.5
17. Ammonia (NH_3)	mg/l	0.02
18. Nitrite (NO_2)	mg/l	0.06
19. Chloride (Cl_2)	mg/l	0.003
20. DO	mg/l	-
21. Detergent	mg/l	0.2
22. Phenol	mg/l	0.001
23. Oil and Fat	mg/l	1
24. PCB	mg/l	null
(3) Microbiologies		
1. Caliform group	MPN/100ml	2x10^4
2. Collibacillus	MPN/100ml	4x10^3
(4) Radioactivity		
1. Beta Active Substance Total	pCi/l	1000
2. Strontium-90	pCi/l	10
3. Radium-226	pCi/l	3
(5) Pesticide		
1. Pesticide	mg/l	null

Table 7.4 Water Quality Standards (4)

established by Jawa Timur Province No. 414, 1987

Group D (The Water Used for Agriculture, Urban Business, Industry and Water Power)

Parameter	Unit	Maximum weight
(1) Physics		
1. Temperature	°C	normal
2. Total Solid	mg/l	1000-2500
3. Electric Conductivity	mhos/cm	1750-2250
(2) Chemistry		
1. pH		6-9
2 Manganese (Mn)	mg/l	2
3. Copper (Cu)	mg/l	0.2
4. Zinc (Zn)	mg/l	5
5. Chromium (Cr)	mg/l	0.5
6. Cadmium (Cd)	mg/l	0.01
7. Mercury (Hg)	mg/l	0.005
8. Lead (Pb)	mg/l	1
9. Arsenic (As)	mg/l	1
10. Selenium (Se)	mg/l	0.05
11. Nickel (Ni)	mg/l	0.5
12. Cobalt (Co)	mg/l	0.2
13. Boron (B)	mg/l	10-18
14. Sodium (Na)	mg/l	60
15. SAR	mg/l	10-18
16. RSC	mg/l	1.25-2.5
(3) Radioactivity		
1. Beta active Substance Total	pCi/l	1000
2. Strontium-90	pCi/l	10
3. Radium-226	pCi/l	3

Table 7.4 Water Quality Standards (5)

established by Jawa Timur Province No. 414, 1987

Group E (Water which cannot be used for the needs of Group A, B, C and D)

Parameter	Unit	Maximum weight
(1) Physics		
1. Temperature	°C	normal ± 5
2. Total Solid	mg/l	5000
(2) Chemistry		
1. pH		6-9
2 Manganese (Mn)	mg/l	5
3. Copper (Cu)	mg/l	5
4. Zinc (Zn)	mg/l	15
5. Chromium (Cr)	mg/l	2
6. Cadmium (Cd)	mg/l	0.1
7. Mercury (Hg)	mg/l	0.005
8. Lead (Pb)	mg/l	5
9. Arsenic (As)	mg/l	1
10. Selenium (Se)	mg/l	0.5
11. Nickel (Ni)	mg/l	5
12. Iron (Fe)	mg/l	10
13. Cyanide (CN)	mg/l	1
14. DO	mg/l	>2
15. Fluorine (F)	mg/l	15
16. Sulfur (S)	mg/l	1
17. Chlorine (Cl)	mg/l	2000
18. Sulphate (SO_4)	mg/l	1000
19. Oil and Fat	mg/l	10

Table 7.5 Effluent Water Quality Standards

established by Jawa Timur Province No. 414,1987

No.	Parameter	Unit	Types				Remarks
			I	II	III	IV	
I	PHYSICS						
	1. Temperature	℃	35	38	40	45	
	2. Total Solid	mg/l	1500	2000	4000	5000	
	3. Suspensed solid	mg/l	100	200	400	500	
II	CHEMISTRY						
	1. pH	mg/l	6-9	6-9	6-9	6-9	
	2. Iron (Fe)	mg/l	5	10	15	20	
	3. Manganese (Mn)	mg/l	0.5	2	5	10	
	4. Barium (Ba)	mg/l	1	2	3	5	
	5. Copper (Cu)	mg/l	1	2	3	5	
	6. Zinc (Zn)	mg/l	5	10	15	20	
	7. Chromium (Cr)	mg/l	0.05	0.1	0.5	2	
	8. Total Chromium	mg/l	0.1	0.5	1	2	
	9. Cadmium (Cd)	mg/l	0.01	0.05	0.1	1	
	10. Mercury (Hg)	mg/l	0.001	0.002	0.005	0.01	
	11. Lead (Pb)	mg/l	0.1	0.5	1	3	
	12. Tin (Sn)	mg/l	0.01	0.05	0.5	1	
	13. Arsenic (As)	mg/l	0.05	0.1	0.5	1	
	14. Selenium (Se)	mg/l	0.01	0.05	0.5	1	
	15. Nickel (Ni)	mg/l	0.1	0.2	0.5	1	
	16. Cobalt (Co)	mg/l	0.2	0.4	0.6	1	
	17. Cyanide (CN)	mg/l	0.05	0.1	0.5	1	
	18. Sulfur (S)	mg/l	0.01	0.05	0.1	1	
	19. Fluorine (F)	mg/l	1.5	15	20	30	
	20. Chlorine (Cl_2)	mg/l	0.02	0.03	0.04	0.05	
	21. NH_3	mg/l	0.5	1	5	20	As N
	22. NO_3	mg/l	10	20	30	50	
	23. NO_2	mg/l	0.06	1	3	5	
	24. BOD	mg/l	30	50	150	300	
	25. COD	mg/l	80	100	300	600	26
	26. Anion of Detergent	mg/l	0.5	1	10	15	
	27. Fenol	mg/l	0.01	0.05	1	1	
	28. Oil and Fat	mg/l	1	5	15	20	
	29. PCB	mg/l	nothing	nothing	nothing	nothing	

NOTE : Classification of Effluent Water
- Group I : effluent which is discharged in water of Class B
- Group II : effluent which is discharged in water of Class C
- Group III : effluent which is discharged in water of Class D
- Group IV : effluent which is discharged in water of Class E

8.

GEOLOGICAL SURVEY

I. Introduction

This report presents the results of Geologycal Survey carried out for the JICA Study Team on The Solid Waste Management Improvement for Surabaya City especially on the Proposed of Final Disposal Site located at BENOWO. The works was assigned by PT INDULEXCO and joint operate with CV Data Persada, as a associate member of the Study Team.

The work comprised of three drilling of deep boreholes 30 m for one point and for 2 other points the depth of bore depend on the depth of consolidated stiff clay. Standard Penatration Testings (SPT) were carried out at each 1 m intervals. SPT and undisturb sampling taken for further determination of physical and mechanical properties of the soil.

The purpose of the investigation is to obtain technical soil data needed for the planning and design in the Study work.

The field work has been done on October 22 to October 30, 1992.

II. Field Work

The investigated area was sited at BENOWO, at the North-west part of Surabaya, where the soil is mostly soft alluvial. This area proposed to be used as final disposal site. Position of the boreholes were determined by the JICA team's engineer and could be followed in *Figures 1.1.*

Elevation of the boreholes were not measured, but it is possible to look at the Topographical survey report, which are consistant with the Surabaya Bench Mark record. The zero level in this investigation report is the existing ground surface level.

All the boreholes were drilled by a Yoshida YSO-1 type drilling machine by straight flushed rotary drilling method. A displacement pump was used for this purpose, employing drilling mud for the retaining of borehole's wall.

The SPT was carried out by an automated tripped hammer which ensures free fall of the hammer. The SPT sampler measured AWX- 18". The SPT was recorded each 1m intervals.

The purpose of the SPT is to indicate the subsoil's strength and to provide disturbed samples for the soil's stratification.

Undisturbed samples were taken by fixed piston sampling and open drive sampling methods. The latter method was used when stiff soil was encountered. The sampling tubes measured dia.73 mm - 100 cm with area ratios less than 10%. All the tubes were made of stainless steel.

The result were drawn as boring profiles shown in Appendix A. The profile also show the SPT recordings and summary of the laboratory tests.

The ground water level was mesured in the boreholes one day after the drilling was accomplished.

III. Laboratory Work

The work consists of the discription and classification of the samples and determining its strength and consolidation characteristics.

The description work involved the determination of Atterberg Limits and grain size analysis on the obtain undisturb samples only. The disturbed samples were described visually. result of the grain size analysis could be found in *Appendix B.*

The strength characteristics of soil samples were studied in the Triaxial-UU (Unconsolidated Undrain) and UC (Unconfined Compression) test. The test were carried out on dia.38 mm - 76 mm speciments. The loading was strain-controlled with a rate of 0.76 mm/minute. All the test were on assampled speciments.

The results were presented in the "stress-strain" relationship with its corresponding Mohr circles to determine strength parameters c (cohesion) and Ø (apparent angle of internal friction. The result could be followed in *Appendix C.*

Prior to the Tiaxial tests, hand-vane testings were applied to the samples. This provide the so-called undrained shear strength su-vane, and is a good indicator of the soil's strength.

Consolidation tests were done on dia.69-19 mm speciments, which were sandwiched by porous stones as top and bottom drains. Loadings were applied in steps : 0.25, 0.50, 1.0, 2.0, 4.0, 8.0 kg/cm^2, and rebound. The purpose of the test is to study the compressibility characteristic of the soil, and to obtain the coeficient of consolidation, c_v.

The time settlement relation under each loading were recorded, and presented along with the e-log p and c_v-log p curves.(see *Appendix D*)

Lab permeability testing were performed on the undisturb samples by falling head method. The method was applied directly on the samples within the sampling tubes after the wax seal removed. Two test had been performed on samples from B2: 3-3.5 m and 9-9.5 m, and the results after three days immersion was :

B2 : 3-3.5 m : soft clay ..... k = 5.3×10^{-6} cm/sec

B2 : 9-9.5 m : soft clay ..... k = 6.4×10^{-6} cm/sec

The coeficient of permeability could also be asessed from the c_v-values obtained from the consolidation tests.

IV. Test Result and Discussion

a. Basically the subsoil in Benowo area consisted of a very soft CLAY deposit, approximately 10 m thick, and an underlying stiffer deposit comprising alternating layersof SILT, Silty CLAYs, and Clayed SILTs.

b. The idealized subsoil layers, as presumed from SPT, could be drawn as in Figure 2. The upper soft layers have highly plastic clay materials, classified as CH, whereas the underlying stiff layers are mostly Silts of high plasticity (MH). The plasticity of the soils could be followed in the Plasticity Chart in *Figure 3.*

c. The upper clay deposits were found to be very soft and compressible. The triaxial UU testings result in value of cohesion c, in order of 0.5-0.6 ton/m^2, with the apparent angle of internal friction = 0^0.The ultimate bearing-capacity of the upper soil is only 2.5 ton/m^2, or about 2.5 m thick waste material.

d. The compressibility of the subsoil could be studied in *Figure 5*. It could be seen that the compression index of the soft deposit is in the range of Cc = 1.6 - 1.9, whereas that of the stiffer underlayers is in the range of Cc = 0.12-0.16.

e. The coeficient of consolidation, c_v, is needed for the assesment of time of primary consolidation. The plot in Figure 6 show that the soft deposit has c_v values around 1.5×10^{-4} cm^2/sec, and that of the stiff underlayers varies in the range of 5 to 40×10^{-4} cm^2/sec. using the obtain c_v values, the coficient of permeability k could be estimated between 0.8 - 5×10^{-5} cm/sec in the soft layers, and that of the stiff underlayers around k = 2×10^{-5} cm/sec. The value seemed to be greater than that obtained from falling head tests. All the values reveals a low permeability or poor drainage condition.