

Kind Attn. Ms Seemita Narayan

TABLE 1

GROUNDED WATER SAMPLING LOCATIONS AROUND UCIL, BHOPAL

S.No.	Sample Location	Address	Type/ Depth (ft.)	Distance & Direction w.r.t. MIC Plant *
01	Green Park Colony	H.No. 181	TW/ 55	0.75 Km 260°
02	Karod Colony	H.No. A-789	TW/150	0.26 Km 335°
03	Panchwati Colony	H.No.19, Phase III	HP/240	2.45 Km 352°
04	Indira Nagar	Near Electric Tower	TW/250	2.42 Km 50°
05	Nishatpura	P.No.4, Gupta Nagar	HP/100	1.73 Km 60°
06	Sundar Nagar	Near Lal Tank	TW/300	1.32 Km 45°
07	Gareeb Nagar (Chandwari)	Near Archana Gas Godown	TW/180	0.8 Km 38°
08	Gareeb Nagar (Old)	Gali No. 6	HP/275	0.65 Km 37°
09	Nawabi Colony	H.No.1586 W. No. 66	HP/125	0.8 Km 345°
10	Chhola Naka	Sri Khedapati Hanuman Mandir	HP/350	0.9 Km 90°
11	Kainchi Chhola	Near Capital Convent Hr. Sec. School	TW/350	0.75 Km 107°
12	Risaldar Colony	H.No. 22-A	TW/180	0.65 Km 135°
13	JP Nagar	Gali No.7, Opp. UCIL - - Rajiv Gandhi Park	HP/180	0.3 Km 175°
14	Atal Ayub Nagar	Near Railway Cabin	HP/200	0.4 Km 90°

NOTE: * Aerial distance from MIC Plant and direction with respect to North (0° or 360°) are provided

TABLE 2

DETAILS OF PETROLEUM PRODUCTS AT NISHATPURA, BHOPAL

HPCL (1964-65)		IOCL (1975)	
Capacity (KL)	No. of tanks	Capacity (KL)	No. of tanks
1188	U/G (1) A/G (1)	2630	A/G (3)
111	U/G (2)	90	U/G (2)
10061	U/G (1) A/G (3)	10579	A/G (7)
2236	U/G (1) A/G (1)	8734	A/G (8)
352	---	---	---
13948	10	22033	20
15,272		21,793	
Valid till 31/12/2009		Valid till 31/07/2009	

TABLE 3

PRSENCE OF HEAVY METALS IN SOIL/ SEDIMENT SAPMLES AT UCIL

PARAMETER	1 OLD DUMP SITE	2 NEAR POND	3 POND SEDIMENT	4 PLAY GROUND	5 SAVIDOL PLANT	6 PILOT PLANT	7 PROCESS SEWER	8 SEP
COPPER	44	63	48	20	64	57	262	47
ARSENIC	1.5	6.6	3.3	1.4	1.6	4.8	0.8	6.2
MANGANESE	387	235	534	125	845	839	910	780
ZINC	149	100	74	17	42	152	922	64
NICKLE	32	31	39	10	36	20	77	98
CHROMIUM	90	51	112	50	183	343	451	1110
CADMIUM	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MERCURY	557.53	3.11	0.43	1.03	2.87	48.48	7995.83	28.13
LEAD	22	19	BDL	BDL	42	92	95	BDL

All values are in mg/Kg

TABLE 4

PRSSENCE OF PESTICIDES IN SOIL/ SEDIMENT SAPMLES AT UCIL

PARAMETER	OLD DUMP SITE	NEAR POND	POND SEDIMENT	PLAY GROUND	SAVIDOL PLANT	PILOT PLANT	PROCESS SEWER	SEP
Alpha-HCH	173.452	14,679.769	32.962	1.155	5,970.680	9.346	8.492	1.149
Beta-HCH	52.762	543.041	21.855	0.433	207.240	2.648	1.370	0.081
Gamma-HCH	48.602	2,030.142	14.586	0.436	10.072	6.460	2.400	0.174
Delta-HCH	21.303	1,157.705	7.098	0.177	5.763	2.716	1.206	0.093
Total-HCH	269.119	18,410.657	76.501	2.201	6,193.755	21.170	13.468	1.497
Carbaryl	333.5	BDL	0.737	0.03	5.250	BDL	12.2	0.137
Aldicrab	BDL	BDL	BDL	BDL	BDL	0.03	BDL	BDL
Total DDT	BDL	BDL	BDL	0.041	0.338	0.589	1.483	BDL
TOTAL PESTICIDES	629.619	18,410.657	77.238	2.272	6,199.343	21.789	27.151	1.634

All values are in mg/Kg

TABLE 5

PRSSENCE OF **VOCs** IN SOIL/ SEDIMENT SAPMLES AT UCIL

4/5

PARAMETER	OLD DUMP SITE	NEAR POND	POND SEDIMENT	PLAY GROUND	SAVIDOL PLANT	PILOT PLANT	PROCESS SEWER	SEP
Carbon tetrachloride	177.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	3.15	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3-Dichloro benzene	6.34	4.18	2.35	1.23	BDL	BDL	BDL	BDL
p-Isopropyl toluene	80.42	78.53	BDL	BDL	BDL	BDL	BDL	BDL
Dichloro methane	12.20	10.99	9.68	BDL	BDL	BDL	BDL	BDL
Naphthalene	12.38	1.86	2.41	BDL	BDL	BDL	BDL	BDL
1,2,4-Trichloro benzene	10.23	8.76	BDL	BDL	2.79	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	1.23	BDL	BDL	BDL	BDL
Chloromethane	BDL	BDL	BDL	50.27	23.74	BDL	BDL	BDL

All values are in mg/Kg. Other 51 VOCs though analysed but found BDL.

TABLE 6

PRSSENCE OF HEAVY METALS/PESTICIDES IN GROUND WATER SAPMLES AT UCIL

PARAMETER	GREEN PARK COLONY	KAROD COLONY	PANCHAVATI	INDIRA NAGAR	NISHATPURA	SUNDAR NAGAR	GAREEB NAGAR (C)
COPPER	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ZINC	0.02	0.01	0.73	0.13	BDL	0.48	0.02
MANGANESE	0.19	0.02	0.02	2.77	0.06	0.02	0.02
Alpha-HCH	0.0448	0.0814	0.0711	0.0655	0.0613	0.0517	0.4398
Gamma-HCH	0.0253	0.0516	0.0420	0.0383	0.0329	0.0287	0.0354
Delta-HCH	BDL	0.0374	BDL	BDL	BDL	BDL	BDL
Total HCH	0.0701	0.1704	0.1131	0.1038	0.0942	0.0804	0.4752

NOTE: Heavy metals are in mg/l and pesticides in $\mu\text{g/l}$

TABLE 6 (Contd.)

PRSSENCE OF HEAVY METALS/PESTICIDES IN GROUND WATER SAPMLES AT UCIL

PARAMETER	GAREEB NAGAR (Old)	NAWAB COLONY	CHHOLA NAKA	KAINCHI CHHOLA	RAISALDAR COLONY	J.P.NAGAR	ATAL AYUB NAGAR
COPPER	BDL	0.05	BDL	BDL	BDL	BDL	BDL
ZINC	0.55	1.81	0.28	0.40	BDL	1.59	0.03
MANGANESE	0.04	0.35	0.02	0.02	BDL	0.10	0.04
Alpha-HCH	0.0748	0.03533	0.0666	0.5099	0.0497	0.0749	0.0719
Gamma-HCH	0.0140	0.03750	0.0374	0.0500	0.0268	0.0364	0.0460
Delta-HCH	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total HCH	0.0888	0.07283	0.1040	0.5599	0.0765	0.1113	0.1179

NOTE: Heavy metals are in mg/l and pesticides in µg/l

TABLE 7

PRSSENCE OF VOCs IN GROUND WATER SAPMLES AT UCIL

S. No.	PARAMETER	GREEN PARK COLONY	KAROD COLONY	PANCHAVATI	INDIRA NAGAR	NISHAT-PURA	SUNDAR NAGAR	GAREEB NAGAR (C)
1.	Ethylbenzene	BDL	BDL	BDL	4.69	BDL	BDL	BDL
2.	p-Isopropyltoluene	BDL	39.54	39.17	36.29	BDL	BDL	BDL
3.	Dichloromethane	BDL	BDL	BDL	3.13	BDL	BDL	BDL
4.	Napthalene	BDL	BDL	BDL	3.14	BDL	BDL	BDL
5.	Toluene	BDL	7.63	BDL	10.34	17.93	BDL	BDL
6.	1,2,4-Trimethylbenzene	BDL	BDL	BDL	16.92	2.23	BDL	BDL
7.	1,3,5-Trimethyl benzene	BDL	BDL	BDL	4.66	BDL	BDL	BDL
8.	o-Xylene	BDL	BDL	BDL	5.35	BDL	BDL	BDL
9.	m&p -Xylene	BDL	BDL	BDL	8.54	BDL	BDL	BDL
10.	Ethylchloride	BDL	BDL	BDL	17.61	BDL	BDL	BDL
11.	Chloromethane	BDL	BDL	BDL	7.01	BDL	BDL	BDL
12.	Carbontetrachloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.	Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.	Chloroform	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.	2-Chlorotoluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.	4-Chlorotoluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.	1,2- Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.	1,3-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.	1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.	Tetrachloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.	1,2,3-Trichloro benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL

All values are in $\mu\text{g/L}$. Other 38 VOCs though analysed but found BDL.

TABLE 7 (Contd.)

PRSENCE OF VOCs IN GROUND WATER SAPMLES AT UCIL

S. NO.	PARAMETER	BAKEEB NAGAR (Old)	NAWAB COLONY	CHHOLA NAKA	KAINCHI CHHOLA	RAISALDAR COLONY	J.P.NAGAR	ATAL AYUB NAGAR
1.	Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2.	p-Isopropyltoluene	BDL	37.48	39.96	BDL	BDL	38.21	40.17
3.	Dichloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4.	Napthalene	BDL	BDL	BDL	BDL	BDL	BDL	18.53
5.	Toluene	522.20	1.12	BDL	BDL	BDL	BDL	BDL
6.	1,2,4-Trimethylbenzene	BDL	1.22	BDL	BDL	BDL	BDL	23.21
7.	1,3,5-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8.	o-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9.	m&p-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.	Ethylchloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.	Chloromethane	BDL	BDL	BDL	BDL	BDL	BDL	26.87
12.	Carbontetrachloride	3.73	BDL	BDL	BDL	BDL	BDL	1920.96
13.	Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	8.27
14.	Chloroform	BDL	BDL	BDL	BDL	BDL	BDL	280.25
15.	2-Chlorotoluene	BDL	BDL	BDL	BDL	BDL	BDL	6.81
16.	4-Chlorotoluene	BDL	BDL	BDL	BDL	BDL	BDL	6.32
17.	1,2-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	453.03
18.	1,3-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	27.38
19.	1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	171.50
20.	Tetrachloroethene	BDL	BDL	BDL	BDL	BDL	BDL	3.46
21.	1,2,3-Trichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	5.65

All values are in $\mu\text{g/L}$. Other 38 VOCs though analysed but found BDL.