

## Analysis results of Surface water monitoring under NWMP for the month of November, 2018

### River Satluj

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	pH	DO mg/l	BOD mg/l	Cond $\mu$ s/Cm	T.Coli MPN/ 100ml	F. Coli MPN/ 100ml	Free Amm. mg/l	SAR	B mg/l	Quality of water as per DBU	Water Quality Index
1	River Satluj at U/S Nangal	1017	26/11/18	SW 229	ZO Lab Ldh	7.46	8.7	<1	222	200	40	0.012	0.80	0.14	B	S
2	River Satluj at D/S NFL	1380	26/11/18	SW 231	ZO Lab Ldh	7.49	8.2	<1	284	250	78	0.016	1.01	0.17	B	S
3	River Sutej at 100m D/s PACL Nangal	2915	26/11/18	SW 232	ZO Lab Ldh	7.41	8.2	<1	300	450	180	0.012	0.97	0.15	B	S
4	River Satluj at D/s Nangal	1018	27/11/18	SW 230	ZO Lab Ldh	7.32	8.5	<1	240	370	180	0.006	0.94	0.27	B	S
5	River Satluj at Kiratpur Sahib	1814	27/11/18	SW 238	ZO Lab Ldh	7.81	8.2	<1	342	1200	680	0.035	1.08	0.26	C	S
6	Ropar Head-Works	1019	27/11/18	SW 235	ZO Lab Ldh	7.29	7.2	<1	290	1700	780	0.008	0.94	0.19	C	S
7	River Satluj D/S of Rishab-Paper Mills	1293	27/11/18	SW 234	ZO Lab Ldh	7.11	7.0	<1	360	1500	680	BDL	1.17	0.33	C	S
8	River Satluj U/S Buddha Nallah	1690	28/11/18	SW 244	ZO Lab Ldh	7.08	7.1	1.2	468	3900	2100	0.00005	1.94	0.22	C	S
9	River Satluj at 100 mts D/s after Budha Nallah confluence, Ludhiana	1020	28/11/18	SW 246	ZO Lab Ldh	7.17	3.2	22	642	9,40,000	4,30,000	0.056	2.44	0.31	E	N
10	River Satluj at Boat Bridge, Dharamkot Nakodar Road	1021	30/11/18	SW 261	ZO Lab Ldh	7.34	5.8	8	502	1,10,000	7,9000	0.022	2.17	0.14	D	N
11	River Satluj at D/s East Bein	1381	25/11/18	SW 131	ZO Lab Jal.	7.3	4.2	8.0	530	17000	7900	0.078	1.75	0.10	D	N
12	River Satluj at Harike	1022	25/11/18	SW 132	ZO Lab Jal.	7.9	6.4	3.0	296	9400	4900	0.171	0.23	0.12	D	N
13	Harike Lake D/S from canal	1382	25/11/18	SW 133	ZO Lab Jal.	7.8	7.8	1.9	260	3300	1700	0.067	0.27	0.17	C	S
14	D/S Harike lake	1297	25/11/18	SW 134	ZO Lab Jal.	7.0	7.6	2.2	290	3300	1700	BDL	1.59	0.12	C	S
15	U/S Hussainiwala H/W Ferozepur	1691	30/11/18	SW 262	ZO Lab Ldh	7.81	4.9	1.9	262	2000	400	0.039	1.22	0.13	C	S
16	D/S Hussainiwala H/W Ferozepur	1692	30/11/18	SW 263	ZO Lab Ldh	7.85	4.7	2.0	270	1500	450	0.054	1.24	0.17	C	S

Note. 1. BDL means Below Method Detection Limit

2. DBU means Designated Best Use (Class-A,B,C,D & E)

3. Water Quality Index ( S means Satisfactory, N means Not Satisfactory)

4. U/s means Upstream , D/s means Downstream

## Analysis results of Surface water monitoring under NWMP for the month of November, 2018

### River Satluj

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	COD mg/l	Turb NTU	TSS mg/l	TDS mg/l	FDS mg/l	Cl mg/l	SO <sub>4</sub> mg/l	TH mg/l	Ca mg/l	Mg mg/l	T.Alkn mg/l	P.Alkn mg/l	AmnN mg/l	NO <sub>3</sub> -N mg/l	TKN mg/l	PO <sub>4</sub> as P mg/l	F mg/l	Na mg/l	K mg/l
1	River Satluj at U/S Nangal	1017	26/11/18	SW 229	ZO Lab Ldh	<5	3.6	9	130	116	18	14	60	15	5	74	BDL	0.6	0.4	1.0	0.21	0.22	14	4
2	River Satluj at D/S NFL	1380	26/11/18	SW 231	ZO Lab Ldh	<5	5.4	13	175	154	24	18	68	17	6	112	BDL	0.8	0.5	1.4	0.26	0.46	19	5
3	River Sutej at 100m D/s PACL Nangal	2915	26/11/18	SW 232	ZO Lab Ldh	<5	6.0	14	186	165	22	16	66	16	6	126	BDL	0.8	0.5	1.2	0.28	0.44	18	5
4	River Satluj at D/s Nangal	1018	27/11/18	SW 230	ZO Lab Ldh	<5	4.4	11	146	131	22	14	62	15	6	85	BDL	0.6	0.4	1.0	0.30	0.43	17	6
5	River Satluj at Kiratpur Sahib	1814	27/11/18	SW 238	ZO Lab Ldh	<5	8.0	15	209	184	30	20	80	20	7	132	BDL	1.0	0.6	2.0	0.33	0.50	22	7
6	Ropar Head-Works	1019	27/11/18	SW 235	ZO Lab Ldh	<5	9.6	13	181	169	24	18	72	18	6	124	BDL	0.8	0.7	1.8	0.30	0.61	18	5
7	River Satluj D/S of Rishab- Paper Mills	1293	27/11/18	SW 234	ZO Lab Ldh	<5	11	16	218	192	26	18	74	18	7	140	BDL	1.0	0.7	2.0	0.28	0.60	23	8
8	River Satluj U/S Buddha Nallah	1690	28/11/18	SW 244	ZO Lab Ldh	8	14	19	294	260	28	20	80	19	8	220	BDL	1.0	0.6	2.2	0.26	0.43	40	9
9	River Satluj at 100 mts D/s after Budha Nallah confluence, Ludhiana	1020	28/11/18	SW 246	ZO Lab Ldh	96	86	69	398	346	74	52	140	34	13	206	BDL	5.6	1.6	8.8	1.1	0.81	66	16
10	River Satluj at Boat Bridge, Dharamkot Nakodar Road	1021	30/11/18	SW 261	ZO Lab Ldh	28	23	25	316	278	36	26	121	22	10	214	BDL	2.2	0.9	3.0	0.41	0.46	49	10
11	River Satluj at D/s East Bein	1381	25/11/18	SW 131	ZO Lab Jal.	38	18	32	340	250	64	32	156	47	9	120	BDL	7.8	1.7	12.2	0.5	0.22	50	9.8
12	River Satluj at Harike	1022	25/11/18	SW 125	ZO Lab Jal.	20	14	28	186	145	24	26	131	44	5	102	BDL	3.8	1.5	5.2	0.28	0.17	6	4.8
13	Harike Lake D/S from canal	1382	25/11/18	SW 133	ZO Lab Jal.	16	12	20	169	131	22	20	126	43	5	94	BDL	1.9	1.2	2.4	0.17	0.14	7	4.4
14	D/S Harike lake	1297	25/11/18	SW 134	ZO Lab Jal.	19	10	18	204	157	24	20	118	38	6	92	BDL	2.3	1.5	3.4	0.16	0.13	40	8.9
15	U/S Hussainiwala H/W Ferozepur	1691	30/11/18	SW 262	ZO Lab Ldh	16	13	15	160	-	22	16	68	17	6	150	BDL	1.1	0.6	1.6	0.29	0.26	23	6
16	D/S Hussainiwala H/W Ferozepur	1692	30/11/18	SW 263	ZO Lab Ldh	18	14	18	165	-	22	18	70	17	7	155	BDL	1.2	0.6	1.8	0.30	0.27	24	6

Note. 1. BDL means Below Method Detection Limit

2. U/s means upstream, D/s downstream



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### River Beas

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	pH	DO mg/l	BOD mg/l	Cond $\mu$ s/Cm	T. Coli MPN/100ml	F. Coli MPN/100ml	Free Amm. mg/l	SAR	B mg/l	Quality of water as per DBU	Water Quality Index
17	River Beas at Talwara H/W	1693	20/11/18	SW 121	ZO Lab Jal.	7.8	7.6	1.1	189	84	33	BDL	0.36	0.09	B	S
18	River Beas at U/S Pathankot	1694	20/11/18	SW 123	ZO Lab Jal.	7.6	7.6	1.4	212	350	170	0.01	0.56	0.08	B	S
19	River Beas at D/S Pathankot	1695	20/11/18	SW 124	ZO Lab Jal.	7.8	7.4	1.7	218	540	280	0.028	0.39	0.14	C	S
20	River Beas at Mirthal Bridge Gurdaspur (Pb.)	1010	20/11/18	SW 122	ZO Lab Jal.	7.7	7.8	1.3	200	210	140	BDL	0.60	0.10	B	S
21	River Beas 1 Km D/S effluent discharge point at Mukerian	1294	20/11/18	SW 125	ZO Lab Jal.	8.0	7.1	1.9	298	1100	610	0.04	0.57	0.09	C	S
22	River Beas at Bridge, village Bheate Patan Tehsil Batala Distt. Gurdaspur	4164	27/11/18	SW 139	ZO Lab Jal.	7.9	7.2	1.7	310	540	350	0.032	0.68	0.10	C	S
23	River Beas at G.T. Road, under Bridge Near Kapurthalla (Pb)	1011	27/11/18	SW 140	ZO Lab Jal.	7.9	7.4	1.5	218	430	280	0.023	0.29	0.16	B	S
24	River Beas at U/s Goindwal	1696	27/11/18	SW 141	ZO Lab Jal.	8.0	7.6	1.3	222	430	210	0.035	0.28	0.09	B	S
25	River Beas at D/s Goindwal	1012	27/11/18	SW 142	ZO Lab Jal.	7.9	7.4	1.7	232	540	350	0.036	0.60	0.11	C	S
26	Beas at Harike	1697	25/11/18	SW 130	ZO Lab Jal.	7.8	7.8	1.5	240	490	330	0.028	0.28	0.06	B	S

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	COD mg/l	Turb NTU	TSS mg/l	TDS mg/l	FDS mg/l	Cl mg/l	SO <sub>4</sub> Mg/l	TH mg/l	Ca mg/l	Mg mg/l	T.Alkn mg/l	P.Alkn mg/l	AmnN mg/l	NO <sub>3</sub> -N mg/l	TKN mg/l	PO <sub>4</sub> as P mg/l	F mg/l	Na mg/l	K mg/l
17	River Beas at Talwara H/W	1693	20/11/18	SW 121	ZO Lab Jal.	08	08	14	129	110	14	12	69	25	2	62	BDL	BDL	0.7	BDL	BDL	BDL	7	4.7
18	River Beas at U/S Pathankot	1694	20/11/18	SW 123	ZO Lab Jal.	14	05	22	140	122	14	14	75	26	2	76	BDL	0.4	1.1	0.7	0.08	0.14	11	3.6
19	River Beas at D/S Pathankot	1695	20/11/18	SW 124	ZO Lab Jal.	18	08	28	140	118	18	12	76	28	2	78	BDL	0.8	1.5	1.2	0.12	0.15	8	4.5
20	River Beas at Mirthal Bridge Gurdaspur (Pb.)	1010	20/11/18	SW 122	ZO Lab Jal.	12	06	18	136	117	15	13	70	25	3	64	BDL	BDL	0.8	BDL	BDL	0.13	12	4.6
21	River Beas 1 Km D/S effluent discharge point at Mukerian	1294	20/11/18	SW 125	ZO Lab Jal.	18	12	30	181	152	22	26	84	29	3	80	BDL	0.8	1.3	1.4	0.14	0.13	12	5.6
22	River Beas at Bridge, village Bheate Patan Tehsil Batala Distt. Gurdaspur	4164	27/11/18	SW 139	ZO Lab Jal.	16	12	28	198	164	28	24	92	32	3	94	BDL	0.7	1.7	1.2	0.15	0.16	15	6.7
23	River Beas at G.T. Road, under Bridge Near Kapurthalla (Pb)	1011	27/11/18	SW 140	ZO Lab Jal.	16	07	22	144	120	20	18	107	34	6	85	BDL	0.5	1.2	1.1	0.13	0.15	7	4.3
24	River Beas at U/s Goindwal	1696	27/11/18	SW 141	ZO Lab Jal.	14	05	18	146	128	19	16	118	35	7	81	BDL	0.7	1.3	1.1	0.11	0.14	7	4.1
25	River Beas at D/s Goindwal	1012	27/11/18	SW 142	ZO Lab Jal.	16	06	22	158	130	20	18	122	41	4	84	BDL	0.8	1.4	1.3	0.12	0.18	15	6.3
26	Beas at Harike	1697	25/11/18	SW 130	ZO Lab Jal.	14	10	20	160	136	22	14	116	36	6	81	BDL	0.8	1.4	1.5	0.10	0.13	7	4.4

Note. 1. BDL means Below Method Detection Limit

2. DBU means Designated Best Use (Class-A,B,C,D & E)

3. Water Quality Index ( S means Satisfactory, N means Not Satisfactory)

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### River Ravi

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	pH	DO mg/l	BOD mg/l	Cond $\mu$ s/Cm	T.Coli MPN/100ml	F Coli MPN/100ml	Free Amm. mg/l	SAR	B mg/l	Quality of water as per DBU	Water Quality Index
27	Ravi at U/s of Madhopur H/W	1097	20/11/18	SW 120	ZO Lab Jal.	7.9	8.0	BDL	180	94	43	BDL	0.74	0.08	B	S

S.N.	Point of Sample Collection	Code	DOR in Lab	Lab Sample No.	Sample Collected & Analyzed by	COD mg/l	Turb NTU	TSS mg/l	TDS mg/l	FDS mg/l	Cl mg/l	SO <sub>4</sub> Mg/l	TH mg/l	Ca mg/l	Mg mg/l	T.Alkn mg/l	P.Alkn mg/l	AmnN mg/l	NO <sub>3</sub> -N mg/l	TKN mg/l	PO <sub>4</sub> as P mg/l	F mg/l	Na mg/l	K mg/l
27	Ravi at U/s of Madhopur H/W	1097	20/11/18	SW 120	ZO Lab Jal.	BDL	5	10	122	101	16	10	57	15	5	74	BDL	BDL	0.6	BDL	BDL	BDL	13	4.8

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## Analysis results of Surface water monitoring under NWMP for the month of November, 2018

### River Ghaggar

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	pH	DO mg/l	BOD mg/l	Cond $\mu$ /Cm	T.Coli MPN/ 100ml	F. Coli MPN/ 100ml	Free Amm mg/l	SAR	B mg/l	Quality of water as per DBU	Water Quality Index
1	Ghaggar at Mubarikpur Rest House	1023	13/11/18	SW 850	H/o Lab Patiala	7.5	5.3	6	530	22000	2700	0.042	0.97	0.14	D	N
2	Ghaggar at Bhankarpur	1295	13/11/18	SW 851	H/o Lab Patiala	7.4	4.1	22	708	28000	5800	0.120	1.28	0.15	D	N
3	Ghaggar at Chattbir	1698	13/11/18	SW 852	H/o Lab Patiala	7.5	5.2	8	733	24000	3300	0.082	1.51	0.15	D	N
4	Ghaggar at U/s Jharmal Nadi	1702	13/11/18	SW 853	H/o Lab Patiala	7.3	3.5	8	780	24000	4900	0.092	1.41	0.16	E	N
5	Ghaggar at D/s Jharmal Nadi	1701	13/11/18	SW 854	H/o Lab Patiala	7.1	3.0	12	884	28000	6300	0.005	2.06	0.16	E	N
6	Ghaggar at U/s Dhakanshu Nallah	1699	13/11/18	SW 856	H/o Lab Patiala	7.3	4.2	8	910	14000	1700	0.080	3.22	0.17	D	N
7	Ghaggar at D/s Dhakanshu Nallah	1700	13/11/18	SW 857	H/o Lab Patiala	7.8	3.9	11	926	22000	2600	0.315	3.42	0.20	E	N
8	Ghaggar at Rattanheri	1473	21/11/18	SW 886	H/o Lab Patiala	8.0	2.9	21	1074	28000	7000	0.275	2.43	0.20	E	N
9	Ghaggar before mixing with Sagar Para drain (U/s sagar para Drain)	4159	21/11/18	SW 889	H/o Lab Patiala	7.8	3.2	17	1057	22000	4300	0.186	2.33	0.16	E	N
10	Ghaggar after mixing with Sagar Para drain (D/s Sagar Para Drain)	4160	21/11/18	SW 891	H/o Lab Patiala	7.6	2.0	35	1225	24000	4900	0.090	2.33	0.18	E	N
11	Ghaggar at Khanauri	1024	21/11/18	SW 887	H/o Lab Patiala	7.6	1.2	98	1384	35000	9400	0.163	1.46	0.18	E	N
12	Ghaggar at Moonak	1703	21/11/18	SW 888	H/o Lab Patiala	7.6	1.4	64	1221	28000	8400	0.143	1.76	0.18	E	N
13	Ghaggar at U/s Sardulgarh	1705	22/11/18	SW 898	H/o Lab Patiala	7.9	2.9	40	1345	24000	4100	0.144	4.11	0.18	E	N
14	Ghaggar at D/s Sardulgarh	1704	22/11/18	SW 899	H/o Lab Patiala	8.0	2.7	44	1451	28000	5800	0.180	4.22s	0.29	E	N

S.N.	Point of Sample Collection	Code	Date of receipt in lab	Lab Sample No.	Sample Collected & Analyzed by	COD mg/l	Turb NTU	TSS mg/l	TDS mg/l	FDS mg/l	Cl mg/l	SO <sub>4</sub> Mg/l	TH mg/l	Ca mg/l	Mg mg/l	T.Alkn mg/l	P.Alkn mg/l	AmnN mg/l	NO <sub>3</sub> -N mg/l	TKN mg/l	PO <sub>4</sub> s P mg/l	F mg/l	Na mg/l	K mg/l
1	Ghaggar at Mubarikpur Rest House	1023	13/11/18	SW 850	H/o Lab Patiala	34	740	410	335	285	28	15	249	93	4	232	BDL	2.1	0.23	3.2	0.12	0.2	35	8
2	Ghaggar at Bhankarpur	1295	13/11/18	SW 851	H/o Lab Patiala	100	460	516	422	363	43	25	256	96	4	327	BDL	8.0	0.30	12	0.24	0.4	47	11
3	Ghaggar at Chattbir	1698	13/11/18	SW 852	H/o Lab Patiala	42	170	152	462	393	42	28	280	109	2	331	BDL	4.1	0.27	6.2	0.22	0.2	58	16
4	Ghaggar at U/s Jharmal Nadi	1702	13/11/18	SW 853	H/o Lab Patiala	40	140	103	490	416	54	31	286	110	3	348	BDL	9.2	0.35	13.8	0.20	0.2	55	21
5	Ghaggar at D/s Jharmal Nadi	1701	13/11/18	SW 854	H/o Lab Patiala	64	120	82	557	474	83	42	252	94	4	354	BDL	10.0	0.62	14.2	0.18	0.2	75	27
6	Ghaggar at U/s Dhakanshu Nallah	1699	13/11/18	SW 856	H/o Lab Patiala	39	130	143	573	487	81	28	219	85	2	358	BDL	8.0	0.45	11.8	0.17	0.2	110	53
7	Ghaggar at D/s Dhakanshu Nallah	1700	13/11/18	SW 857	H/o Lab Patiala	54	132	148	583	496	78	30	203	78	2	368	BDL	9.0	0.57	13.5	0.06	0.3	112	52
8	Ghaggar at Rattanheri	1473	21/11/18	SW 886	H/o Lab Patiala	95	100	163	676	576	104	48	306	118	3	406	BDL	5.5	0.59	8.3	0.08	0.3	98	45
9	Ghaggar before mixing with Sagar Para drain (U/s sagar para Drain)	4159	21/11/18	SW 889	H/o Lab Patiala	84	75	65	666	566	108	45	295	112	4	410	BDL	5.3	0.55	7.9	0.17	0.3	92	35
10	Ghaggar after mixing with Sagar Para drain (D/s Sagar Para Drain)	4160	21/11/18	SW 891	H/o Lab Patiala	192	50	76	782	665	158	54	333	126	5	547	BDL	3.6	0.61	5.4	0.16	0.3	98	39
11	Ghaggar at Khanauri	1024	21/11/18	SW 887	H/o Lab Patiala	503	60	94	915	778	168	58	544	206	7	571	BDL	6.5	0.73	9.7	0.32	0.4	78	41
12	Ghaggar at Moonak	1703	21/11/18	SW 888	H/o Lab Patiala	332	70	113	820	697	152	52	397	156	5	522	BDL	5.7	0.66	8.5	0.17	0.3	82	45
13	Ghaggar at U/s Sardulgarh	1705	22/11/18	SW 898	H/o Lab Patiala	214	65	50	847	720	144	42	364	142	2	538	BDL	3.2	0.64	4.8	0.53	0.3	180	55
14	Ghaggar at D/s Sardulgarh	1704	22/11/18	SW 899	H/o Lab Patiala	228	70	62	925	786	147	46	351	136	3	573	BDL	3.6	0.68	5.4	0.36	0.5	182	65

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