

3. TABLES

Table-1: Photo oxidation of 700ppm of sulfide at 4 watts and 4liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature(⁰ C)
1	7	603.79	55.16	11.27	6.73	24
2	14	541.33	152.10	11.07	7.44	24
3	21	455.56	260.11	10.97	7.17	24.5
4	28	360	325	10.73	7.03	24.5
5	35	195.632	480	10.01	7.28	25
6	42	94.168	580	9.00	7.20	25
7	49	11.11	649	8.01	8.12	26
8	56	0	682	7.71	8.68	26

Table-2: Photo oxidation of 500ppm of sulfide at 4 watts and 4liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature (⁰ C)
1	7	417	50	11.14	7.22	24.5
2	14	336.48	142	11.00	6.81	25.1
3	21	200	216	10.72	6.86	25.2
4	28	40.85	310	9.98	6.15	25.6
5	35	0.2760	449	8.47	7.05	25.4
6	40	0	475	7.70	8.45	26.2

Table-3: Photo oxidation of 1030ppm of sulfide at 4 watts and 4liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature (°C)
1	15	969	21	11.62	6.30	26.8
2	30	880	150	11.52	6.47	26.8
3	45	770	333	11.16	6.64	27.2
4	60	610	466.48	10.87	7.13	27.7
5	75	490.15	583.1	10.44	7.12	28
6	90	290.00	699.72	9.59	5.09	28.8
7	105	106.00	833	8.10	6.71	28.9
8	120	5.09	932.96	7.80	7.57	29
9	125	0	999.6	7.00	7.76	29

Table-4 Photo oxidation of 1300ppm of sulfide at 4 watts and 4 liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	PH	DO(mg/l)	Temperature(°C)
1	20	1218	31	11.49	6.98	24.2
2	40	1071	170	11.24	7.25	24.2
3	60	890	370	11.01	7.45	25
4	80	769	490	10.71	6.89	25.5
5	100	620	640	10.29	6.50	25.5
6	120	464	800	9.70	7.05	25.3
7	140	293	995	8.98	7.90	25.2
8	160	87	1180	8.01	8.10	25
9	170	0	1265	7.90	8.46	24.8

Table-5 Photo oxidation of 1700ppm of sulfide at 4 watts and 6 liter/min of air flow rate

S.NO	Time (min)	Sulfide(mg/l)	Sulfate (mg/l)	PH	DO(mg/l)	Tempearture (°C)
1	6	607.55	52	11.25	6.53	24.5
2	12	513	149	10.72	7.09	24.5
3	18	410	241	10.25	6.84	24.7
4	24	332	340	9.47	7.50	25
5	30	208.29	490	8.70	7.90	25
6	36	100	593	7.90	8.53	25.5
7	42	0	691	7.50	8.56	25.5

Table-6 Photo oxidation of 1700ppm of sulfide at 4 watts and 8 liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature (°C)
1	5	627.72	60	11.22	7.70	25
2	10	548.108	137	10.47	7.49	25
3	15	464.68	225	9.85	7.73	24.6
4	20	314.91	370	9.10	7.95	24.6
5	25	182.01	500	8.87	8.23	24
6	30	47.64	640	7.90	8.59	23.9
7	35	0.00	689	7.61	8.74	23.9

Table-7 Photo oxidation of 1700ppm of sulfide at 4 watts and 2 liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature (°C)
1	12	601	80	11.40	5.20	24.1
2	24	490	176	10.18	5.70	25
3	36	381	291	9.60	4.80	25.1
4	48	304	387	8.98	5.50	25.3
5	60	198	496	8.70	4.50	25.4
6	72	97.5	598	7.89	5.70	25
7	84	0	682	7.51	6.20	25

Table-8 Photo oxidation of 1700ppm of sulfide at 4 watts and 1 liter/min of air flow rate

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature(c°)
1	15	601	60	11.30	3.84	25
2	30	524	140	10.51	3.75	25.7
3	45	410	254	9.90	3.90	26
4	60	324	355	9.20	4.20	26.1
5	75	197	490	8.81	4.42	27
6	90	67	620	7.95	4.80	26
7	105	0	682	7.60	5.03	25.5

Table-9: Photo oxidation of 1700ppm of sulfide at 4 watts and 4liter/min of air flow rate having oxygen concentration of 30%

S.NO	Time(min)	Sulfide(mg/l)	Sulfate(mg/l)	pH	DO(mg/l)	Temperature(⁰ C)
1	5	625.50	61	11.32	12.53	24
2	10	510.42	173	11.01	11.69	24
3	15	381.51	307	10.91	11.51	24.2
4	20	204.21	489	10.05	11.39	24.6
5	25	101.32	593	9.32	11.60	25
6	30	44.09	647	8.50	12.03	25.4
7	35	1.39	692	7.90	12.81	25.7
8	37	0	696	7.64	13.01	25.0

Table-10 Photo oxidation of 1700ppm of sulfide at 4 watts and 4liter/min of air flow rate having 40% oxygen concentration

S.NO	Time(min)	Sulfide(mg/l)	Sulfate(mg/l)	pH	DO(mg/l)	Temperature(⁰ C)
1	5	611.61	69	11.33	13.19	24.2
2	10	487.14	204	10.97	12.89	24.6
3	15	304.03	390	10.61	11.80	24.7
4	20	181.41	507	9.78	11.61	24.7
5	25	70.51	621	8.61	11.39	24.9
6	30	0	687	7.71	12.20	25.1

Table-11 Photo oxidation of 1700ppm of sulfide at 4 watts and 4liter/min of air flow rate having oxygen concentration of 50%

S.NO	Time(min)	Sulfide(mg/l)	Sulfate(mg/l)	pH	DO(mg/l)	Temperature(0C)
1	3	602.41	71	11.34	14.89	24.3
2	6	413.51	278	10.70	14.81	24.7
3	9	274.61	412	10.39	14.69	25
4	12	96.71	597	8.90	14.49	25.3
5	15	3.61	690	8.10	114.19	25.8
6	17	0	695	7.67	13.70	26

Table-12 Photo oxidation of 1700ppm of sulfide at 4 watts and 4liter/min of air flow rate having oxygen concentration of 10%

S.NO	Time(min)	Sulfide(mg/l)	Sulfate(mg/l)	pH	DO(mg/l)	Temperature(c°)
1	20	611.57	62	10.95	3.12	24.5
2	40	409.71	282	9.91	3.70	24.9
3	60	213.81	479	9.418.	3.97	25.2
4	80	101.91	510	8.87	3.25	25.7
5	100	20.01	676	8.41	3.49	26.1
6	120	0	692	7.83	4.30	26.4

Table-13: Photo oxidation of 1700ppm of sulfide at 8 watts and 6liter/min of air flow rate having oxygen concentration of 21%

S.NO	Time(min)	Sulfide(mg/l)	Sulfate(mg/l)	pH	DO(mg/l)	Temperature(0C)
1	5	642.673	42	11.16	3.90	25.5
2	10	522.9010	135	11.00	4.20	25.5
3	15	419.1955	250.804	10.52	4.42	26.4
4	20	295.3490	380.00	10.00	4.80	26.9
5	25	175.338	490	9.80	5.03	26.9
6	30	70.6880	605.312	8.16	6.50	26.4
7	35	0	689.00	7.60	7.05	26

Table-14: Photo oxidation of 1700ppm of sulfide at 12watts and 6liter/min of air flow rate having oxygen concentration of 21%

S.NO	Time(min)	Sulfide(mg/l)	Sulfate (mg/l)	pH	DO(mg/l)	Temperature (°C)
1	5	575	112	11.09	3.90	25.5
2	10	390	290	10.35	4.20	25.5
3	15	215	467	9.60	4.42	26.4
4	20	100	592	8.28	4.80	26.9
5	25	0	690	7.47	5.03	26.9

Table-15: Catalytic oxidation at 400 ppm of sulfide by hydrogen peroxide at room temperature
(H₂O₂ =2.6 ml and Catalyst =1.00g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature (°C)	pH	DO (ppm)
1	0	400	0	0	0	25.2	11.12	4.49
2	4	282	48	1.0	2.6	25.0	8.79	9.21
3	8	152	84	1.0	2.6	25.1	8.59	9.81
4	12	37	159	1.0	2.6	25.1	8.02	10.11
5	16	0	240	1.0	2.6	25.3	7.09	10.81

Table-16: Catalytic oxidation at 600 ppm of sulfide by hydrogen peroxide at room temperature
(H₂O₂ =2.6 ml and Catalyst =1.00g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temp (°C)	pH	DO (ppm)
1	0	600	0	0	0	24.9	11.18	4.31
2	6	480	43	1.0	2.6	25.4	9.11	9.14
3	12	342	74	1.0	2.6	25.6	8.79	10.49
4	18	221	163	1.0	2.6	25.6	8.47	10.23
5	24	90	251	1.0	2.6	25.9	7.90	10.35
6	30	0	320	1.0	2.6	26	7.30	10.46

Table-17: Catalytic oxidation at 800 ppm of sulfide by hydrogen peroxide at room temperature ($H_2O_2=2.6$ ml and Catalyst =1.00g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	DO (ppm)
1	0	800	0	0	0	24.9	11.20	4.64
2	8	649	32	1.0	2.6	25.1	9.39	8.57
3	16	489	49	1.0	2.6	25.3	9.27	8.61
4	24	301	90	1.0	2.6	25.5	8.78	8.86
5	32	137	261	1.0	2.6	25.8	8.54	9.27
6	40	28	282	1.0	2.6	26.1	7.55	9.90
7	44	0	335	1.0	2.6	26.1	7.10	10.58

Table-18: Catalytic oxidation at 1000ppm of sulfide by hydrogen peroxide at room temperature ($H_2O_2=2.6$ ml and Catalyst =1.00g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	DO (ppm)
1	0	1000	0	0	0	24.7	11.3	3.85
2	10	881	21	1.0	2.6	24.9	9.96	10.28
3	20	691	47	1.0	2.6	25.2	9.64	9.87
4	30	429	62	1.0	2.6	25.3	9.15	9.61
5	40	192	164	1.0	2.6	25.5	8.81	9.32
6	50	41	267	1.0	2.6	25.7	7.70	9.07
7	55	0	380	1.0	2.6	25.9	7.41	8.80

Table-19: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at room temperature (H_2O_2 =2.6 ml and Catalyst =1.5g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	D0 (ppm)
1	0	600	0	0	0	24.8	11.15	4.21
2	3	497	54.85	1.5	2.6	25.4	9.12	9.21
3	6	390	104.82	1.5	2.6	25.8	8.93	8.90
4	9	270	184.05	1.5	2.6	25.9	8.83	8.45
5	12	150	221.83	1.5	2.6	26.1	8.30	7.90
6	15	35	287.66	1.5	2.6	26.1	7.71	7.68
7	18	0	346.2	1.5	2.6	26.0	7.35	7.41

Table-20: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at room temperature (H_2O_2 =2.6 ml and Catalyst =0.5g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature (C°)	pH	DO (ppm)
1	0	600	0	0	0	25.1	11.17	4.25
2	10	515	48.76	0.5	2.6	25.4	9.22	7.89
3	20	420	102.39	0.5	2.6	25.9	9.07	7.71
4	30	301	176.129	0.5	2.6	26.1	8.81	7.45
5	40	175	203.6	0.5	2.6	26.4	8.60	7.29
6	50	46	263.27	0.5	2.6	26.4	7.82	7.89
7	57	0	312.64	0.5	2.6	26.2	7.24	7.51

Table-21: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at room temperature (H_2O_2 =2.6 ml and Catalyst =0.25g)

S.No	Time (min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	DO(ppm)
1	0	600	0	0	0	25.0	11.22	4.21
2	10	578	6.094	0.25	2.6	25.5	9.29	8.79
3	20	527	14.627	0.25	2.6	25.7	9.11	8.39
4	30	467	24.37	0.25	2.6	25.9	8.91	8.19
5	40	412	43.27	0.25	2.6	26.2	8.79	7.89
6	50	351	82.27	0.25	2.6	26.4	8.63	7.67
7	60	260	120.67	0.25	2.6	26.6	8.50	7.51
8	70	161	165.76	0.25	2.6	26.6	8.43	7.39
9	80	59	220.62	0.25	2.6	26.3	7.96	7.27
10	90	0	272.421	0.25	2.6	26.1	7.21	7.18

Table-22: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at room temperature (H_2O_2 =3.2 ml and Catalyst =1.00g)

S.No	Time(min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	DO (ppm)
1	0	600	0	0	0	24.9	11.18	4.31
2	3	410	54.85	1.0	3.2	25.1	8.77	8.90
3	6	290	88.37	1.0	3.2	25.3	8.68	9.09
4	9	115	173.69	1.0	3.2	25.7	8.56	9.56
5	12	30	297.41	1.0	3.2	25.5	7.32	9.80
6	14	0	374.2	1.0	3.2	25.5	7.00	10.39

Table-23: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at room temperature (H_2O_2 =3.0 ml and Catalyst =1.00g)

S.No	Time(min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	DO (ppm)
1	0	500	0	0	0	25.3	11.09	4.14
2	5	441	43.27	1.0	3.0	25.5	8.93	10.83
3	10	320	79.23	1.0	3.0	25.6	8.80	10.39
4	15	172	151.8	1.0	3.0	25.8	8.54	0.82
5	20	25	237.7	1.0	3.0	26.0	7.40	9.41
6	23	0	343.72	1.0	3.0	26.1	7.04	9.23

Table-24: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at room temperature (H_2O_2 =1.8 ml and Catalyst =1.00g)

S.No	Time(min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature ($^{\circ}C$)	pH	DO (ppm)
1	0	600	0	0	0	24.6	11.14	4.21
2	10	570	10.36	1.0	1.8	24.8	9.31	10.18
3	20	520	19.50	1.0	1.8	24.9	9.26	9.90
4	30	457	56.06	1.0	1.8	25.1	9.07	9.62
5	40	350	95.07	1.0	1.8	25.4	8.87	9.41
6	50	230	114.58	1.0	1.8	25.6	8.73	9.22
7	60	101	153.58	1.0	1.8	25.7	8.62	9.11
8	70	17	196.24	1.0	1.8	25.7	7.39	9.08
9	74	0	213	1.0	1.8	25.7	7.06	8.80

Table-25: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at temperature=45⁰C (H₂O₂ =2.6 ml and Catalyst =1.00g)

S.No	Time(min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature (°C)	pH	DO (ppm)
1	0	600	0	0	0	45	11.16	4.30
2	2	401	257	1.0	2.6	45	8.81	14.30
3	4	190	439	1.0	2.6	45	8.55	6.20
4	6	19	589	1.0	2.6	45	7.29	17.53
5	8	0	797	1.0	2.6	45	7.00	18.56

Table-26: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at temperature=35⁰C (H₂O₂ =2.6 ml and Catalyst =1.00g)

S.No	Time(min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight(gm)	Hydrogen peroxide (ml)	Temperature (°C)	pH	DO (ppm)
1	0	600	0	0	0	35	11.16	4.33
2	3	441	129	1.0	2.6	35	8.90	13.80
3	6	283	239	1.0	2.6	35	8.65	14.32
4	9	190	435	1.0	2.6	35	8.52	14.92
5	12	29	593	1.0	2.6	35	7.28	15.24
6	15	0	679	1.0	2.6	35	7.07	15.73

Table-27: Catalytic oxidation at 600ppm of sulfide by hydrogen peroxide at temperature=30°C (H₂O₂ =2.6 ml and Catalyst =1.00g)

S.No	Time(min)	Sulfide (ppm)	Sodium sulfate (ppm)	Catalyst weight (gm)	Hydrogen peroxide (ml)	Temperature (c ⁰)	pH	DO (ppm)
1	0	600	0	0	0	30	11.16	4.23
2	4	459	90	1.0	2.6	30	8.93	12.90
3	8	320	175	1.0	2.6	30	8.64	13.27
4	12	183	390	1.0	2.6	30	8.55	13.78
5	16	44	509	1.0	2.6	30	7.31	14.09
6	19	0	619	1.0	2.6	30	7.11	14.49

Table-28: Precipitation of sulfide at 2400 ppm at Fe⁺²/Fe⁺³ ratio of 0.5 at room temperature (Industrial sample)

S.NO	Time (min)	Sulfide (ppm)	pH	T(°C)
1	25	1825	13.10	27
2	50	1447	12.60	27.9
3	75	1080	12.32	28
4	100	771	12.12	28.4
5	125	600	11.69	27.9

Table-29: Precipitation of sulfide at 2400 ppm at Fe^{+2}/Fe^{+3} ratio of 0.3 at room temperature (Industrial sample)

S.NO	Time(min)	Sulfide(ppm)	pH	T ($^{\circ}C$)
1	30	2210	13.90	27.1
2	60	1870	13.21	27.9
3	90	1490	12.43	28.2
4	120	981	12.29	28.4
5	150	750	11.78	27.9

Table-30: Precipitation of sulfide at 2400 ppm at Fe^{+2}/Fe^{+3} ratio of 0.8 at room temperature (Industrial sample)

S.NO	Time(min)	Sulfide(ppm)	pH	T ($^{\circ}C$)
1	20	1705	13.19	27
2	40	1557	12.97	26.8
3	60	1378	12.61	26.4
4	80	1061	12.30	25.9
5	100	697	12.01	25.4
6	120	520	11.23	25.4

Table-31: Precipitation of sulfide at 4800 ppm at Fe^{+2}/Fe^{+3} ratio of 0.8 at room temperature (Industrial sample)

S.NO	Time (min)	Sulfide (ppm)	pH	T ($^{\circ}C$)
1	35	4089	14.00	27.2
2	70	3217	13.92	28
3	105	2517	13.80	28.4
4	140	1967	13.57	27.9
5	175	1635	13.39	27.2
6	210	1328	12.88	26.8

Table-32: Aeration of sulfide at 600 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at room temperature at air flow rate of 4liter/min (Industrial sample)

S.NO	Time(min)	Sulfide (ppm)	Sulfate (ppm)	DO(ppm)	pH	T($^{\circ}$ C)
1	20	561	3625	7.98	11.50	26.9
2	40	492	3690	8.23	11.17	26.4
3	60	369	3701	8.20	10.73	25.8
4	80	258	3759	8.01	9.02	25.2
5	100	102	3850	8.71	8.35	25.0
6	120	0	3990	8.80	7.69	25.0

Table-33: Aeration of sulfide at 750 ppm at Fe^{+2}/Fe^{+3} ratio of 0.3 at room temperature at air flow rate of 4liter/min (Industrial sample)

S.NO	Time (min)	Sulfide(ppm)	Sulfate (ppm)	DO(ppm)	pH	T($^{\circ}$ C)
1	20	671	2753	7.71	11.75	25.4
2	40	522	2890	7.81	11.35	25
3	60	382	2950	8.20	10.23	24.7
4	80	180	3110	8.10	9.32	24.7
5	100	23	3220	7.90	7.97	24.5
6	120	0	3330	8.31	7.41	24.3

Table-34: Aeration of sulfide at 520 ppm at Fe^{+2}/Fe^{+3} ratio of 0.8 at room temperature at air flow rate of 4 liter/min (Industrial sample)

S.NO	Time(min)	Sulfide(ppm)	Sulfate(ppm)	pH	DO (ppm)	T ($^{\circ}C$)
1	18	452	4500	10.54	7.59	25.4
2	36	371	4890	10.21	7.85	24.9
3	54	262	5120	9.26	8.32	24.4
4	72	169	5490	9.36	8.10	24.1
5	90	37	5890	8.39	7.90	24
6	100	0	6010	7.46	8.23	24

Table-35: Aeration of sulfide at 600 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at room temperature at air flow rate of 2 liter/min (Industrial sample)

S.NO	Time(min)	Sulfide(ppm)	Sulfate(ppm)	DO (ppm)	pH	T($^{\circ}C$)
1	30	560	3605	5.80	11.07	26.8
2	60	491	3630	6.01	10.93	26.2
3	90	432	3675	6.15	10.69	25.7
4	120	370	3720	6.29	9.83	25.4
5	150	290	3785	5.91	9.89	25.4
6	180	201	3830	5.72	8.71	25.2
7	210	117	3892	5.98	8.24	25.1
8	240	27	3922	6.08	7.97	24.8
9	255	0	4080	6.23	7.41	24.6

Table-36: Aeration of sulfide at 600 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at room temperature at air flow rate of 8 liter/min (Industrial sample)

S.NO	Time(min)	Sulfide(ppm)	Sulfate(ppm)	DO(ppm)	pH	T($^{\circ}$ C)
1	15	520	3790	8.30	11.10	26.8
2	30	389	4233	8.41	10.94	26.2
3	45	241	4590	8.15	9.68	25.9
4	60	31	5198	7.90	8.26	25.7
5	75	0	5691	8.10	7.31	25.4

Table-37: Aeration of sulfide at 1328 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at room temperature at air flow rate of 4 liter/min (Industrial sample)

S.NO	Time(min)	Sulfide(ppm)	Sulfate(ppm)	DO(ppm)	pH	T($^{\circ}$ C)
1	30	1197	7467	12.70	4.25	25.4
2	60	971	9771	12.51	4.29	25.1
3	90	812	8548	11.92	4.36	24.9
4	120	603	9200	11.20	4.39	24.7
5	150	491	9711	10.91	4.41	24.4
6	180	356	10216	10.63	4.43	24.2
7	210	231	10971	9.57	4.47	24.1
8	240	120	11211	8.31	4.49	24.0
9	270	23	11830	7.75	4.51	24.0
10	290	0	12451	7.49	4.53	24.0

Table-38: Precipitation of sulfide at 2400 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at temperature of $50^{\circ}C$ (Industrial sample)

S.NO	Time(min)	Sulfide(mg/l)	PH	Temperature($^{\circ}C$)
1	0	2400	13.89	50
2	20	2080	13.71	50
3	40	1521	13.29	50
4	60	1112	13.12	50
5	80	606	11.37	50
6	100	182	8.82	50
7	120	27	7.73	50
8	130	0	7.32	50

Table-39: Precipitation of sulfide at 2400 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at temperature of $40^{\circ}C$ (Industrial sample)

S.NO	Time(min)	Sulfide(mg/l)	Ph	Temperature($^{\circ}C$)
1	0	2400	12.82	40
2	25	2175	13.63	40
3	50	1660	12.81	40
4	75	1132	12.43	40
5	100	570	11.21	40
6	125	331	10.98	40
7	150	101	8.71	40
8	175	0	7.23	40

Table-40: Precipitation of sulfide at 500 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at temperature of 40°C (Synthetic sample)

S.NO	Time(min)	Sulfide(mg/l)	pH	Temperature(°C)
1	0	500	11.20	50
2	6	420	10.75	50
3	12	401	10.39	50
4	18	297	9.87	50
5	24	187	9.32	50
6	30	76	8.07	50
7	36	0	7.30	50

Table-41: Precipitation of sulfide at 500 ppm at Fe^{+2}/Fe^{+3} ratio of 0.5 at temperature of 65°C (Synthetic sample)

S.NO	Time(min)	Sulfide(mg/l)	pH	Temperature(°C)
1	0	500	11.10	65
2	6	410	10.78	65
3	12	283	10.32	65
4	18	130	9.61	65
5	24	41	8.17	65
6	30	0	7.71	65

Table-42: Aeration of sulfide at 1000 ppm in the presence of ultrasonic vibration at 100% ultrasonic frequency and at 4 liter/min of air flow rate

Time(min)	Sulfide (ppm)				
	Ist	2nd	3 rd	4th	Average
0	1000	1000	1000	1000	1000
10	779	771	759	761	767.5
20	578	552	571	562	565.75
30	376	392	401	352	380.25
40	177	156.6	191	187	177.9
50	71	62	87	66	71.5
60	0	0	0	0	0

Table-43: Aeration of sulfide at 800 ppm in the presence of ultrasonic vibration at 100% ultrasonic frequency and at 4 liter/min of air flow rate

Time(min)	Sulfide (ppm)				
	Ist	2nd	3rd	4th	Average
0	800	800	800	800	800
9	671	662	654	685	668
18	511	527	492	488	504.5
27	302	298	287	267	288.5
36	199	181	189	171	185
45	51	42	62	70	56.25
50	0	0	0	0	0

Table-44: Aeration of sulfide at 600 ppm in the presence of ultrasonic vibration at 100% ultrasonic frequency and at 4 liter/min of air flow rate

Time(min)	Sulfide (ppm)			
	Ist	2nd	3rd	Average
0	600	600	600	600
10	490	501	471	487.333
20	371	354	369	364.667
30	141	131	151	141
40	21	31	41	31
0	0	0	0	0

Table.45 DO and temperature change for respective initial sulfide concentrations

initial 1000 ppm			initial 800 ppm			initial 600 ppm		
Time(min)	DO(ppm)	T(°C)	Time(min)	DO(ppm)	T(°C)	Time(min)	DO(ppm)	T(°C)
0	8.67	20	0	8.67	20	0	8.67	20
10	8.11	23.6	10	8.5	23.6	10	8.6	21.3
20	8.39	24.2	20	8.45	24.2	20	8.5	23.6
30	8.38	24	30	0.69	24	30	8.45	24.2
40	8.19	25.5	40	7.92	25.5	40	0.69	24
50	8.51	25.8	50	7.91	25.8	50	7.92	25.5
60	8.43	27.4	60	7.49	27.4	60	7.91	25.8

Table-46: Aeration of sulfide at 800 ppm in the presence of ultrasonic vibration at 60% ultrasonic frequency and at 4 liter/min of air flow rate

Time(min)	Sulfide (ppm)			
	Ist	2nd	3rd	Average
0	800	800	800	800
10	722	682	698	700.667
20	578	557	571	564
30	377	357	348	360.667
40	224	244	258	242
50	101	90	71	87.3333
60	0	0	0	0

Table-47: Aeration of sulfide at 800 ppm in the presence of ultrasonic vibration at 20% ultrasonic frequency and at 4 liter/min of air flow rate

Time(min)	Sulfide (ppm)			
	Ist	2nd	3rd	Average
0	800	800	800	800
10	767	756	771	764.667
20	622	647	619	629.333
30	411	434	424	423
40	290	302	321	304.333
50	131	143	122	132
60	60	71	54	61.6667
70	0	0	0	0

Table-48: DO and temperature change for respective different ultrasonic vibration frequencies

initial 1000 ppm			initial 800 ppm			initial 600 ppm		
Time(min)	DO(ppm)	T(^o C)	Time(min)	DO(ppm)	T(^o C)	Time(min)	DO(ppm)	T(^o C)
0	8.67	20	0	8.67	20	0	8.67	20
10	8.5	23.6	10	7.39	29	10	7.94	25.2
20	8.45	24.2	20	6.52	29.8	20	7.85	25.1
30	8.69	24	30	6.42	32	30	7.89	25.1
40	7.92	25.5	40	6.4	32.2	40	7.96	24.8
50	7.91	25.8	50	6.61	32	50	8.38	24.4
60	7.49	27.4	60	6.78	32	60	8.11	25

Table-49: Aeration of sulfide at 800 ppm in the presence of ultrasonic vibration at 100% ultrasonic frequency and at 6 liter/min of air flow rate

Time(min)	Sulfide (ppm)			
	Ist	2nd	3rd	Average
0	800	800	800	800
8	591	582	601	591.333
16	422	414	380	405.333
24	290	301	271	287.333
32	91	101	80	90.6667
40	0	0	0	0

Table-50: Aeration of sulfide at 800 ppm in the presence of ultrasonic vibration at 100% ultrasonic frequency and at 2 liter/min of air flow rate

Time(min)	Sulfide (ppm)			
	Ist	2nd	3rd	Average
0	800	800	800	800
10	730	690	711	710.333
20	671	701	689	687
30	540	571	591	567.333
40	431	470	501	467.333
50	279	311	389	326.333
60	103	121	111	111.667
70	0	0	0	0