



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

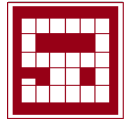
ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone-02 (BH-43 to 44)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
ASU Area (Zone-02)	4.00	6 x 6	22.76	41.51	66.42
		10 x 10	22.08	26.68	42.69
		15 x 15	21.95	18.43	29.49
		20 x 20	22.05	14.21	22.73
		25 x 25	22.25	11.57	18.51
		30 x 30	22.50	9.76	15.62
		12 x 6	21.10	38.84	62.15
		20 x 10	20.43	25.38	40.61
		30 x 15	20.24	17.98	28.76
		40 x 20	20.28	13.95	22.32
		50 x 25	20.41	11.40	18.24
		60 x 30	20.57	9.65	15.44

* Table No. 1.13


 BISHAL KUMAR DAS.
 MTECH (GEO TECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF SQUARE FOOTING FROM SHEAR PARAMETER

* Based on the design parameters tabulated in Table 1.3, the following are the analysis of safe bearing capacity in open foundation:

CSU AREA:

Zone 01 (BH-49 to 58, 67, 68, 70, 71, 74, 75 & 77)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-1)	1.50	Up to 3.0	60.87	48.71	77.93	146.12
		>3.0 to <6.0	72.91	49.40	79.05	148.21
	2.00	Up to 3.0	75.62	59.96	95.93	179.87
		>3.0 to <6.0	87.05	64.74	103.58	194.21
	3.00	Up to 3.0	36.22	101.83	162.93	305.50
		>3.0 to <6.0	36.72	127.88	204.61	383.64
	4.00	Up to 3.0	45.07	101.83	162.93	305.50
		>3.0 to <6.0	44.62	122.65	196.24	367.95
	5.00	Up to 3.0	54.34	101.83	162.93	305.50
		>3.0 to <6.0	52.77	111.93	179.09	335.80

* Table No. 1.14


 BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES


JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF STRIP FOOTING FROM SHEAR PARAMETER

Zone 01 (BH-49 to 58, 67, 68, 70, 71, 74, 75 & 77)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
3Coal Storage Unit (Zone-1)	1.50	5 x 1	46.35	52.18	83.49	156.54
		10 x 2	51.94	43.53	69.65	130.60
		15 x 3	59.13	43.91	70.25	131.73
		20 x 4	66.74	45.39	72.62	136.16
		25 x 5	74.50	46.87	74.99	140.61
		30 x 6	82.34	58.35	93.36	175.05
	2.00	5 x 1	61.28	50.42	80.67	151.25
		10 x 2	64.98	48.70	77.91	146.09
		15 x 3	71.56	52.32	83.72	156.97
		20 x 4	78.84	56.58	90.53	169.75
		25 x 5	86.42	59.57	95.31	178.71
		30 x 6	94.14	73.77	118.03	221.31
	3.00	5 x 1	33.92	46.08	73.73	138.25
		10 x 2	30.00	66.14	105.83	198.43
		15 x 3	29.59	87.03	139.25	261.10
		20 x 4	30.06	108.77	174.03	326.31
		25 x 5	30.89	114.19	182.70	342.57
		30 x 6	31.89	140.71	225.13	422.12
	4.00	5 x 1	44.51	46.08	73.73	138.25
		10 x 2	37.84	70.59	112.95	211.78
		15 x 3	36.51	90.71	145.13	272.13
		20 x 4	36.53	109.07	174.52	327.22
		25 x 5	37.08	105.30	168.48	315.89
		30 x 6	37.90	128.24	205.18	384.71
5.00	5 x 1	56.09	46.08	73.73	138.25	
	10 x 2	46.17	71.65	114.65	214.96	
	15 x 3	43.77	96.49	154.39	289.48	
	20 x 4	43.24	98.82	158.11	296.46	
	25 x 5	43.47	95.67	153.07	287.00	
	30 x 6	44.07	116.21	185.94	348.64	

* Table No. 1.15


 BISHWANATH KUMAR DAS.
 MTECH (GEO TECH)
 SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 01 (BH-49 to 58, 67, 68, 70, 71, 74, 75 & 77)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-1)	1.50	6 x 6	79.12	60.94	97.50
		10 x 10	104.35	59.04	94.47
		15 x 15	136.17	58.14	93.02
		20 x 20	168.10	57.84	92.55
		25 x 25	200.06	57.67	92.27
		30 x 30	232.04	57.55	92.08
		12 x 6	69.27	59.54	95.26
		20 x 10	88.10	58.25	93.20
		30 x 15	111.92	57.79	92.47
		40 x 20	135.84	57.59	92.14
		50 x 25	159.79	57.46	91.94
		60 x 30	183.77	57.38	91.81
	2.00	6 x 6	93.11	78.54	125.66
		10 x 10	118.04	74.96	119.93
		15 x 15	149.71	73.41	117.46
		20 x 20	181.56	72.66	116.26
		25 x 25	213.48	72.37	115.79
		30 x 30	245.43	72.17	115.48
		12 x 6	83.18	75.81	121.30
		20 x 10	101.71	73.60	117.75
		30 x 15	125.38	72.58	116.13
		40 x 20	149.22	72.23	115.57
		50 x 25	173.13	72.02	115.24
		60 x 30	197.08	71.89	115.02
	3.00	6 x 6	35.63	156.09	249.74
		10 x 10	39.07	144.21	230.74
		15 x 15	44.04	139.66	223.45
		20 x 20	49.23	137.49	219.98
		25 x 25	54.51	136.22	217.95
		30 x 30	59.83	135.38	216.61
		12 x 6	33.15	147.65	236.24
		20 x 10	35.55	140.20	224.31
		30 x 15	39.19	137.12	219.39
40 x 20		43.04	135.63	217.02	
50 x 25		46.97	134.97	215.95	
60 x 30		50.94	134.58	215.33	

* Table No. 1.16

(Signature)
 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)
 SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 01 (BH-49 to 58, 67, 68, 70, 71, 74, 75 & 77)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-1)	4.00	6 x 6	42.82	146.95	235.12
		10 x 10	45.81	134.15	214.64
		15 x 15	50.55	126.94	203.10
		20 x 20	55.63	124.26	198.82
		25 x 25	60.84	122.71	196.34
		30 x 30	66.11	121.70	194.72
		12 x 6	40.28	137.49	219.99
		20 x 10	42.24	127.60	204.16
		30 x 15	45.66	123.82	198.11
		40 x 20	49.39	122.01	195.21
		50 x 25	53.26	120.95	193.51
	60 x 30	57.19	120.32	192.51	
	5.00	6 x 6	50.21	135.64	217.02
		10 x 10	52.67	121.81	194.90
		15 x 15	57.14	114.20	182.72
		20 x 20	62.08	110.74	177.18
		25 x 25	67.21	108.99	174.38
		30 x 30	72.44	107.85	172.56
		12 x 6	47.61	124.42	199.08
		20 x 10	49.05	115.22	184.36
		30 x 15	52.21	110.23	176.37
		40 x 20	55.81	108.19	173.11
50 x 25		59.60	107.01	171.21	
60 x 30	63.48	106.23	169.97		

* Table No. 1.17


 BISHU KUMAR DAS.
 M.TECH (P&OT) (M.TECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF SQUARE FOOTING FROM SHEAR PARAMETER

* Based on the design parameters tabulated in Table 1.4, the following are the analysis of safe bearing capacity in open foundation:

CSU AREA:

Zone 02 (BH-63) (After Removing filled up ash from NGL to 2.50m depth)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-2)	1.50	Up to 3.0	21.26	54.91	87.85	164.72
		>3.0 to <6.0	22.33	50.73	81.17	152.19
	2.00	Up to 3.0	24.35	55.29	88.46	165.87
		>3.0 to <6.0	25.18	50.08	80.13	150.25
	3.00	Up to 3.0	30.79	53.95	86.32	161.84
		>3.0 to <6.0	31.02	47.00	75.20	141.01
	4.00	Up to 3.0	37.55	47.91	76.65	143.72
		>3.0 to <6.0	37.06	44.33	70.93	133.00
	5.00	Up to 3.0	44.63	41.92	67.06	125.75
		>3.0 to <6.0	43.29	39.81	63.69	119.42

* Table No. 1.18


 BISHWANATH KUMER DAS.
 M.TECH (GEO TECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF STRIP FOOTING FROM SHEAR PARAMETER

Zone 02 (BH-63)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-2)	1.50	5 x 1	18.20	58.22	93.15	174.65
		10 x 2	17.60	51.52	82.44	154.57
		15 x 3	18.07	49.50	79.20	148.49
		20 x 4	18.82	48.63	77.81	145.90
		25 x 5	19.67	48.13	77.00	144.38
		30 x 6	20.58	58.25	93.20	174.75
	2.00	5 x 1	21.76	59.13	94.62	177.40
		10 x 2	20.42	51.30	82.08	153.90
		15 x 3	20.65	48.25	77.20	144.75
		20 x 4	21.27	47.11	75.37	141.32
		25 x 5	22.05	46.09	73.74	138.26
		30 x 6	22.90	55.73	89.17	167.20
	3.00	5 x 1	29.49	53.95	86.32	161.84
		10 x 2	26.37	49.80	79.68	149.39
		15 x 3	26	46.11	73.77	138.32
		20 x 4	26.32	44.07	70.51	132.21
		25 x 5	26.92	41.97	67.15	125.91
		30 x 6	27.66	50.68	81.08	152.03
	4.00	5 x 1	38.03	47.91	76.65	143.72
		10 x 2	32.72	47.20	75.52	141.59
		15 x 3	31.62	42.67	68.28	128.02
		20 x 4	31.58	40.55	64.87	121.64
		25 x 5	31.96	38.06	60.90	114.18
		30 x 6	32.55	45.63	73.00	136.88
5.00	5 x 1	47.39	41.92	67.06	125.75	
	10 x 2	39.48	41.92	67.06	125.75	
	15 x 3	37.52	39.72	63.55	119.16	
	20 x 4	37.04	35.95	57.52	107.85	
	25 x 5	37.16	34.02	54.43	102.06	
	30 x 6	37.58	41.07	65.71	123.20	

* Table No. 1.19

(Signature)
 BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 SWAYIN & ASSOCIATES



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 02 (BH-63)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-2)	1.50	6 x 6	23.01	60.83	97.33
		10 x 10	25.98	57.67	92.27
		15 x 15	29.89	56.65	90.64
		20 x 20	33.88	56.23	89.97
		25 x 25	37.89	55.92	89.48
		30 x 30	41.92	55.68	89.09
		12 x 6	20.95	59.44	95.10
		20 x 10	23.13	56.89	91.03
		30 x 15	26.04	56.32	90.10
		40 x 20	29.01	55.98	89.57
		50 x 25	32.01	55.73	89.16
		60 x 30	35.03	55.51	88.82
	2.00	6 x 6	25.79	59.34	94.94
		10 x 10	28.64	55.67	89.08
		15 x 15	32.49	54.40	87.03
		20 x 20	36.45	53.71	85.94
		25 x 25	40.44	53.37	85.39
		30 x 30	44.46	53.10	84.96
		12 x 6	23.72	57.28	91.64
		20 x 10	25.77	54.66	87.46
		30 x 15	28.62	53.78	86.05
		40 x 20	31.57	53.40	85.43
		50 x 25	34.55	53.12	84.99
		60 x 30	37.55	52.89	84.63
	3.00	6 x 6	31.49	56.22	89.95
		10 x 10	34.04	51.51	82.41
		15 x 15	37.74	49.77	79.63
		20 x 20	41.62	48.88	78.21
		25 x 25	45.57	48.32	77.32
		30 x 30	49.56	47.92	76.67
		12 x 6	29.36	53.18	85.08
		20 x 10	31.13	50.07	80.12
		30 x 15	33.84	48.86	78.18
		40 x 20	36.72	48.22	77.16
		50 x 25	39.66	47.88	76.61
		60 x 30	42.63	47.63	76.21

* Table No. 1.20

11/2
 BISHWANT KUMAR DAS.
 M.TECH (P&OT) (I.I.T. KANPUR)
 SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 02 (BH-63)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-2)	4.00	6 x 6	37.34	52.28	83.65
		10 x 10	39.53	47.65	76.23
		15 x 15	43.06	44.99	71.98
		20 x 20	46.85	43.94	70.31
		25 x 25	50.74	43.30	69.29
		30 x 30	54.69	42.85	68.57
		12 x 6	35.17	48.92	78.27
		20 x 10	36.59	45.32	72.51
		30 x 15	39.13	43.88	70.21
		40 x 20	41.91	43.15	69.03
		50 x 25	44.80	42.68	68.29
		60 x 30	47.74	42.37	67.79
	5.00	6 x 6	43.36	47.93	76.69
		10 x 10	45.13	42.97	68.76
		15 x 15	48.44	40.21	64.33
		20 x 20	52.12	38.91	62.25
		25 x 25	55.95	38.22	61.15
		30 x 30	59.86	37.74	60.39
		12 x 6	41.15	43.97	70.35
		20 x 10	42.15	40.65	65.04
		30 x 15	44.48	38.81	62.10
		40 x 20	47.16	38.02	60.83
		50 x 25	49.98	37.52	60.04
		60 x 30	52.88	37.18	59.48

* Table No. 1.21

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF SQUARE FOOTING FROM SHEAR PARAMETER

* Based on the design parameters tabulated in Table 1.4, the following are the analysis of safe bearing capacity in open foundation:

CSU AREA:

Zone 03 (BH-78 to 79)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-3)	1.50	Up to 3.0	53.59	43.24	69.18	129.71
		>3.0 to <6.0	64.06	38.02	60.84	114.07
	2.00	Up to 3.0	66.64	45.89	73.43	137.68
		>3.0 to <6.0	76.57	38.47	61.55	115.41
	3.00	Up to 3.0	93.87	151.13	241.81	453.39
		>3.0 to <6.0	102.29	82.44	131.91	247.33
	4.00	Up to 3.0	43.02	104.67	167.47	314.01
		>3.0 to <6.0	42.51	61.30	98.09	183.91
	5.00	Up to 3.0	51.76	67.02	107.23	201.05
		>3.0 to <6.0	50.19	40.68	65.09	122.04

* Table No. 1.22

(Signature)
 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)
 T. SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF STRIP FOOTING FROM SHEAR PARAMETER

Zone 03 (BH-78 to 79)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-3)	1.50	5 x 1	40.89	42.69	68.31	128.08
		10 x 2	45.72	38.98	62.37	116.95
		15 x 3	51.98	38.98	62.36	116.93
		20 x 4	58.60	38.07	60.91	114.21
		25 x 5	65.35	36.07	57.72	108.22
		30 x 6	72.18	42.95	68.72	128.85
	2.00	5 x 1	54.10	43.38	69.40	130.13
		10 x 2	57.27	40.24	64.38	120.72
		15 x 3	62.97	40.05	64.08	120.15
		20 x 4	69.31	37.90	60.64	113.70
		25 x 5	75.90	35.40	56.64	106.20
		30 x 6	82.62	41.64	66.63	124.92
	3.00	5 x 1	80.17	79.29	126.86	237.87
		10 x 2	78.64	115.10	184.15	345.29
		15 x 3	82.59	129.16	206.66	387.49
		20 x 4	87.92	93.76	150.02	281.29
		25 x 5	93.80	73.62	117.79	220.86
		30 x 6	99.96	75.93	121.49	227.79
	4.00	5 x 1	44.61	79.29	126.86	237.87
		10 x 2	37.92	122.84	196.55	368.53
		15 x 3	36.60	93.24	149.18	279.71
		20 x 4	36.62	67.77	108.43	203.31
		25 x 5	37.17	52.63	84.21	157.89
		30 x 6	37.99	53.60	85.75	160.79
5.00	5 x 1	56.22	79.29	126.86	237.87	
	10 x 2	46.28	98.86	158.17	296.57	
	15 x 3	43.88	63.50	101.61	190.51	
	20 x 4	43.35	44.71	71.54	134.13	
	25 x 5	43.58	34.77	55.63	104.30	
	30 x 6	44.18	35.28	56.45	105.84	

* Table No. 1.23

(Signature)
 BISHWANATH KUMAR DAS.
 MTECH (PE/OT/TECH)
 S.WAYIN & ASSOCIATES
 T.L. SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 03 (BH-78 to 79)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-3)	1.50	6 x 6	69.47	44.85	71.77
		10 x 10	91.43	55.20	88.32
		15 x 15	119.15	54.36	86.97
		20 x 20	146.95	54.08	86.53
		25 x 25	174.79	53.92	86.27
		30 x 30	202.64	53.81	86.09
		12 x 6	60.89	43.82	70.12
		20 x 10	77.28	54.46	87.13
		30 x 15	98.03	54.03	86.45
		40 x 20	118.86	53.84	86.15
		50 x 25	139.72	53.73	85.96
	60 x 30	160.60	53.65	85.84	
	2.00	6 x 6	81.85	44.33	70.93
		10 x 10	103.55	56.33	90.13
		15 x 15	131.13	55.17	88.27
		20 x 20	158.87	54.61	87.37
		25 x 25	186.66	54.39	87.02
		30 x 30	214.49	54.24	86.78
		12 x 6	73.20	42.79	68.47
		20 x 10	89.33	55.31	88.49
		30 x 15	109.94	54.54	87.27
		40 x 20	130.70	54.28	86.85
		50 x 25	151.52	54.13	86.60
	60 x 30	172.38	54.02	86.44	
	3.00	6 x 6	103.06	84.23	134.77
		10 x 10	123.19	288.30	461.28
		15 x 15	149.35	279.19	446.71
		20 x 20	175.83	274.85	439.77
		25 x 25	202.45	272.31	435.70
		30 x 30	229.13	270.65	433.03
		12 x 6	94.61	79.68	127.48
		20 x 10	109.38	280.27	448.43
		30 x 15	128.83	274.12	438.60
40 x 20		148.61	271.15	433.84	
50 x 25		168.53	269.81	431.70	
60 x 30	188.51	269.04	430.46		

* Table No. 1.24


 BISHWANATH KUMAR DAS.
 M.TECH (P&OT) (IIT, SATYANAGAR)



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 03 (BH-78 to 79)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-3)	4.00	6 x 6	42.92	61.42	98.27
		10 x 10	45.93	161.53	258.45
		15 x 15	50.68	152.85	244.55
		20 x 20	55.78	149.63	239.41
		25 x 25	61.00	147.76	236.42
		30 x 30	66.30	146.54	234.47
		12 x 6	40.38	57.47	91.94
		20 x 10	42.35	153.65	245.84
		30 x 15	45.78	149.09	238.54
		40 x 20	49.53	146.91	235.06
		50 x 25	53.40	145.63	233.01
		60 x 30	57.35	144.88	231.81
	5.00	6 x 6	50.33	41.18	65.89
		10 x 10	52.80	86.95	139.12
		15 x 15	57.29	81.51	130.42
		20 x 20	62.25	79.04	126.47
		25 x 25	67.40	77.80	124.47
		30 x 30	72.64	76.98	123.18
		12 x 6	47.73	37.77	60.44
		20 x 10	49.18	82.25	131.60
		30 x 15	52.35	78.68	125.89
		40 x 20	55.96	77.23	123.57
		50 x 25	59.76	76.38	122.21
		60 x 30	63.65	75.83	121.33

* Table No. 1.25


 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF SQUARE FOOTING FROM SHEAR PARAMETER

* Based on the design parameters tabulated in Table 1.5, the following are the analysis of safe bearing capacity in open foundation:

CSU AREA:

Zone-04 (BH-59 to 62, 64 to 66, 69, 72, 73, 76, 80 to 89)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-4)	1.50	Up to 3.0	26.94	35.42	56.68	106.27
		>3.0 to <6.0	28.91	32.20	51.51	96.59
	2.00	Up to 3.0	31.35	35.58	56.93	106.74
		>3.0 to <6.0	33.02	31.95	51.12	95.85
	3.00	Up to 3.0	40.53	34.51	55.22	103.54
		>3.0 to <6.0	41.44	30.27	48.44	90.82
	4.00	Up to 3.0	50.19	30.43	48.69	91.29
		>3.0 to <6.0	50.15	28.78	46.04	86.33
	5.00	Up to 3.0	60.33	25.95	41.52	77.85
		>3.0 to <6.0	59.15	25.97	41.56	77.92

* Table No. 1.26

BISHW KUMAR DAS.
 MTECH (P&EOT&ECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF STRIP FOOTING FROM SHEAR PARAMETER

Zone-04 (BH-59 to 62, 64 to 66, 69, 72, 73, 76, 80 to 89)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)			
			Shear Consideration	Allowable Settlement		
				25mm	40mm	75mm
Coal Storage Unit (Zone-4)	1.50	5 x 1	22.67	37.56	60.09	112.67
		10 x 2	22.42	33.24	53.18	99.72
		15 x 3	23.42	31.93	51.09	95.80
		20 x 4	24.73	31.37	50.20	94.12
		25 x 5	26.17	30.54	48.87	91.63
		30 x 6	27.68	37.92	60.68	113.77
	2.00	5 x 1	27.59	38.05	60.89	114.16
		10 x 2	26.41	33.01	52.82	99.03
		15 x 3	27.10	31.05	49.68	93.15
		20 x 4	28.26	30.31	48.50	90.94
		25 x 5	29.61	29.40	47.04	88.20
		30 x 6	31.05	36.42	58.27	109.26
	3.00	5 x 1	38.31	34.51	55.22	103.54
		10 x 2	34.84	31.86	50.97	95.57
		15 x 3	34.76	29.50	47.20	88.49
		20 x 4	35.54	27.73	44.37	83.20
		25 x 5	36.66	27.03	43.25	81.10
		30 x 6	37.95	33.32	53.32	99.97
	4.00	5 x 1	50.23	30.43	48.69	91.29
		10 x 2	43.86	29.98	47.97	89.94
		15 x 3	42.82	27.11	43.37	81.32
		20 x 4	43.12	25.58	40.93	76.74
		25 x 5	43.94	24.70	39.53	74.11
		30 x 6	45.04	30.11	48.17	90.32
5.00	5 x 1	63.34	26.39	42.22	79.16	
	10 x 2	53.48	26.39	42.22	79.16	
	15 x 3	51.28	24.59	39.34	73.77	
	20 x 4	50.99	22.92	36.67	68.75	
	25 x 5	51.47	22.20	35.52	66.60	
	30 x 6	52.33	26.99	43.18	80.97	

* Table No. 1.27

(Signature)
 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)
 SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

Zone 04 (BH-59 to 62, 64 to 66, 69, 72, 73, 76, 80 to 89)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-4)	1.50	6 x 6	30.05	39.61	63.37
		10 x 10	34.95	38.29	61.26
		15 x 15	41.3	37.36	59.77
		20 x 20	47.73	36.83	58.93
		25 x 25	54.2	36.39	58.23
		30 x 30	60.68	36.00	57.59
		12 x 6	27.2	38.70	61.92
		20 x 10	30.81	37.77	60.43
		30 x 15	35.54	37.13	59.41
		40 x 20	40.35	36.67	58.67
		50 x 25	45.19	36.26	58.02
		60 x 30	50.05	35.89	57.42
	2.00	6 x 6	34.08	38.78	62.04
		10 x 10	38.82	36.91	59.05
		15 x 15	45.10	35.81	57.30
		20 x 20	51.50	35.12	56.19
		25 x 25	57.94	34.66	55.46
		30 x 30	64.40	34.25	54.81
		12 x 6	31.20	37.43	59.89
		20 x 10	34.66	36.24	57.98
		30 x 15	39.32	35.40	56.65
		40 x 20	44.09	34.91	55.86
		50 x 25	48.91	34.50	55.19
		60 x 30	53.75	34.12	54.59
	3.00	6 x 6	42.32	36.97	59.15
		10 x 10	46.68	34.03	54.45
		15 x 15	52.77	32.64	52.23
		20 x 20	59.07	31.83	50.93
		25 x 25	65.46	31.24	49.98
		30 x 30	71.88	30.76	49.21
		12 x 6	39.38	34.97	55.95
		20 x 10	42.47	33.08	52.93
		30 x 15	46.95	32.05	51.28
		40 x 20	51.63	31.40	50.24
		50 x 25	56.39	30.95	49.52
		60 x 30	61.19	30.58	48.92

* Table No. 1.28

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES


JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY OF MAT FOOTING FROM SHEAR PARAMETER

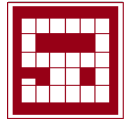
Zone 04 (BH-59 to 62, 64 to 66, 69, 72, 73, 76, 80 to 89)

Location	Depth in 'm'	Width of Footing in 'm'	Net Safe Bearing Capacity (t/m ²)		
			Shear Consideration	Allowable Settlement	
				25mm	40mm
Coal Storage Unit (Zone-4)	4.00	6 x 6	50.79	34.50	55.20
		10 x 10	54.68	31.35	50.15
		15 x 15	60.53	29.37	46.99
		20 x 20	66.72	28.47	45.55
		25 x 25	73.03	27.84	44.55
		30 x 30	79.41	27.35	43.75
		12 x 6	47.79	32.28	51.65
		20 x 10	50.42	29.82	47.71
		30 x 15	54.67	28.65	45.83
		40 x 20	59.23	27.95	44.72
		50 x 25	63.92	27.44	43.90
		60 x 30	68.68	27.04	43.26
	5.00	6 x 6	59.51	31.50	50.40
		10 x 10	62.83	28.12	45.00
		15 x 15	68.39	26.10	41.76
		20 x 20	74.43	25.05	40.08
		25 x 25	80.66	24.41	39.05
		30 x 30	86.99	23.92	38.26
		12 x 6	56.45	28.90	46.23
		20 x 10	58.52	26.60	42.57
		30 x 15	62.48	25.19	40.31
		40 x 20	66.91	24.48	39.16
		50 x 25	71.52	23.97	38.34
		60 x 30	76.22	23.56	37.69

* Table No. 1.29



 BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 P. SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY FROM PLATE LOAD TEST

Location:- ASU Area

Location	PLT No	Depth in (m)	Plate Size (m)	Footing size (m)	Allowable pressure from PLT graph(when st=25mm)	Allowable pressure from PLT graph(when st=40mm)
					For 25mm	For 40mm
ASU Area	01	1.80	0.50	1	36.80	89.19
				2	28.64	88.70
				3	26.12	88.42
				4	23.92	84.78
				5	22.12	80.64

* Table No. 1.30

- ❖ For ASU Area the Recommended value for the foundation at a depth 1.80 m depth footing size 3 x 3 is 26.12 T/m² for 25 mm settlement.
- 2.00 m depth footing size 3 x 3 is 29.02 T/m² for 25 mm settlement.
- 2.50 m depth footing size 3 x 3 is 36.28 T/m² for 25 mm settlement.


 BISHAL KUMAR DAS.
 M.TECH (P&TECH)
 SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ALLOWABLE BEARING CAPACITY FROM PLATE LOAD TEST

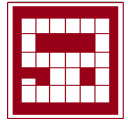
Location:- CSU Area

Location	PLT No	Depth in (m)	Plate Size (m)	Footing size (m)	Allowable pressure from PLT graph(when st=25mm)	Allowable pressure from PLT graph(when st=40mm)
					For 25mm	For 40mm
CSU Area	01	1.80	0.50	1	37.00	89.68
				2	28.58	88.52
				3	24.96	84.49
				4	22.20	78.69
				5	20.92	76.26

* Table No. 1.31

- ❖ For CSU Area the Recommended value for the foundation at a depth 1.80 m depth footing size 3 x 3 is 24.96 T/m² for 25 mm settlement.
- 2.00 m depth footing size 3 x 3 is 27.73 T/m² for 25 mm settlement.
- 2.50 m depth footing size 3 x 3 is 34.67 T/m² for 25 mm settlement.


 BISHWANATH KUMAR DAS.
 MTECH (PPEOTECH)
 SWAYIN & ASSOCIATES
 T.T. SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ANALYSIS OF LOAD CAPACITIES IN PILE FOUNDATION

BORED CAST IN-SITU PILE:

- The recommended Pile Capacity of bored cast-in-situ RCC Piles for different length and diameters shall be as follows:
- Pile cut-off level is considered as 2.00m below Natural Ground Level (NGL).
- Since the soil strata in this location (ASU Area) has been possess Zone-01 the top soil as Clayey Sand (Dense in Nature) followed by Compact Clay and Sedimentary Rock composition, the Safe load carrying capacity of pile foundation has been tabulated as below (Table No.1.26).
- Since the soil strata in this location (ASU Area) has been possess Zone-02 the top soil as Clayey Sand (Dense in Nature) followed by Compact Clay and Sedimentary Rock composition, the Safe load carrying capacity of pile foundation has been tabulated as below (Table No.1.27).
- Since the soil strata in this location (CSU Area) has been possess Zone-01 the top soil as Moorum (Dense in Nature) followed by Clayey sand and Sedimentary Rock composition, the Safe load carrying capacity of pile foundation has been tabulated as below (Table No.1.28).
- Since the soil strata in this location (CSU Area) has been possess Zone-02 the top soil as Filled up Ash (Medium in Nature) followed by Clayey sand & Sedimentary Rock composition, the Safe load carrying capacity of pile foundation has been tabulated as below (Table No.1.29).
- Since the soil strata in this location (CSU Area) has been possess Zone-03 the top soil as Clayey sand (Dense in Nature) followed by Moorum, clayey sand & Sedimentary Rock composition, the Safe load carrying capacity of pile foundation has been tabulated as below (Table No.1.30).
- Since the soil strata in this location (CSU Area) has been possess Zone-04 the top soil as Clayey sand (Dense in Nature) followed by Sedimentary Rock composition, the Safe load carrying capacity of pile foundation has been tabulated as below (Table No.1.31).


BISHWANATH KUMAR DAS.
M.TECH (GEOTECH)
TAL SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ASU AREA (Zone-01)

(BH-34 to 42 & 45 to 48)

Pile Diameter (m)	Length of Pile below Cut-Off Level (m)	Safe Load Carrying Capacity of Pile (MT)		
		Compression	Uplift / Tension	Lateral Capacity
0.45	8.0	374.92	122.01	8.80
0.50		424.75	137.92	9.78
0.60		529.30	171.16	11.74
0.75		698.38	224.55	14.67
0.80		758.01	243.29	15.65

* Table No. 1.32

(Zone-02)

BH-43 to BH-44)

Pile Diameter (m)	Length of Pile below Cut-Off Level (m)	Safe Load Carrying Capacity of Pile (MT)		
		Compression	Uplift / Tension	Lateral Capacity
0.45	8.0	376.56	122.55	8.80
0.50		426.57	138.52	9.78
0.60		531.48	171.88	11.74
0.75		701.11	225.46	14.67
0.80		760.92	244.26	15.65

* Table No. 1.33

CSU AREA (Zone-01)

(BH-49 to 58, 67, 68, 70, 71, 74, 75 & 77)

Pile Diameter (m)	Length of Pile below Cut-Off Level (m)	Safe Load Carrying Capacity of Pile (MT)		
		Compression	Uplift / Tension	Lateral Capacity
0.45	8.00	171.41	66.77	7.45
0.50		193.97	76.55	8.27
0.60		241.16	97.51	9.93
0.75		317.20	132.49	12.41
0.80		343.95	145.10	13.24

* Table No. 1.34


 BISHWANATH KUMAR DAS
 MTECH (P&OTECH)
 T.T. SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

CSU AREA (Zone-02)

(BH-63)

Pile Diameter (m)	Length of Pile below Cut-Off Level (m)	Safe Load Carrying Capacity of Pile (MT)		
		Compression	Uplift / Tension	Lateral Capacity
0.45	10.00	136.66	54.85	7.45
0.50		157.24	63.89	8.27
0.60		201.62	83.74	9.93
0.75		276.29	117.93	12.41
0.80		303.33	130.51	13.24

* Table No. 1.35

CSU AREA (Zone-03)

(BH-78-79)

Pile Diameter (m)	Length of Pile below Cut-Off Level (m)	Safe Load Carrying Capacity of Pile (MT)		
		Compression	Uplift / Tension	Lateral Capacity
0.45	8.00	170.78	64.98	7.45
0.50		193.84	74.56	8.27
0.60		242.41	95.13	9.93
0.75		321.38	129.51	12.41
0.80		349.34	141.92	13.24

* Table No. 1.36

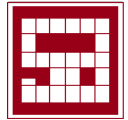
Zone-04

(BH-59 to 62, 64 to 66, 69, 72, 73, 76, 80 to 89)

Pile Diameter (m)	Length of Pile below Cut-Off Level (m)	Safe Load Carrying Capacity of Pile (MT)		
		Compression	Uplift / Tension	Lateral Capacity
0.45	8.00	173.73	67.54	8.13
0.50		196.54	77.40	9.04
0.60		244.24	98.54	10.84
0.75		321.06	133.78	13.56
0.80		348.06	146.47	14.46

* Table No. 1.37


 BISHWANATH KUMAR DAS.
 M.TECH (P&E) (IIT, SATYANAGAR)

CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

DISCUSSION AND CONCLUSION

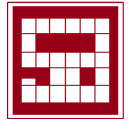
Based on the field and laboratory test results and the given recommendations the following are summarized:

- Since the project ASU site is having uniform Sub-Soil stratification, boreholes has been grouped in two zones viz., Zone-1 (BH-34 to 42 & 45 to 48) & Zone-2 (BH-43 to BH-44). Based on bore logs, Field & Laboratory Test results, the following Design Soil Profile has been used for the analysis of Open Foundation and Pile Foundations.
- Since the Coal storage unit site is having uniform Sub-Soil stratification, boreholes has been grouped to four zones viz., Zone-1 (BH-49 to BH-58,67, 68, 70, 71, 74, 75 & 77), Zone-2 (BH-63) Zone-03 (BH78 to 79) & Zone-4 (BH-59 to 62, 64 to 66, 69, 72, 73, 76, 80 to 89). Based on bore logs, Field & Laboratory Test results, the following Design Soil Profile has been used for the analysis of Open Foundation and Pile Foundations.

General Observation opinion:

- For ASU area in Zone-01 the top surface layer consists of clayey sand which is dense in condition up to an average depth of 1.72m.
- Undulation the top layer, there is a presence of compact clay with 'N' value is 73. The condition of soil strata is very hard up to an average depth of 3.56m followed by Sand stone, Weathered Rock & clay stone.
- For ASU area in Zone-02 the top surface layer consists of clayey sand which is dense in condition up to an average depth of 2.57m.
- Undulation the top layer, there is a presence of compact clay with 'N' value greater than 100. The condition of soil strata is very hard up to an average depth of 4.25m followed by Sand stone, Weathered Rock & clay stone.
- For CSU area in Zone-01 the top surface layer consists of Moorum which is very dense in condition up to an average depth of 2.48m.
- Undulation the top layer, there is a presence of clayey sand with 'N' value varies from 87 to greater than 100. The condition of soil strata is very dense up to an average depth of 11.65m followed by DI Rock.


 BISHAL KUMAR DAS.
 M.TECH (GEO TECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

- For CSU area in Zone-02 the top surface layer consists of filled up ash in condition up to an average depth of 2.50m.
- Undulation the top layer, there is a presence of Clayey sand with 'N' value varies from 95 to greater than up to an average depth of 14.00m. The condition of soil strata is very dense followed by DI Rock.
- For CSU area in Zone-03 the top surface layer consists of clayey sand in condition up to an average depth of 1.00m.
- Undulation the top layer, there is a presence of Moorum with 'N' value varies from 53 to 85 up to an average depth of 3.00m & clayey sand 'N' value varies from 85 to greater than 100 up to an average depth of 8.50m. The condition of soil strata is very dense followed by DI Rock.
- For CSU area in Zone-04 the top surface layer consists of clayey sand which is dense to very dense in condition up to an average depth of 10.99m & followed by DI Rock.
- Difference in soil strata w.r.to ground levels and water table has been represented in a profile manner (please refer sub-soil profile).
- At project site in ASU area, it is observed that Sedimentary Rocks composition of Sandstone at deeper depths is present.
- At project site in CSU area, it is observed that Sedimentary Rocks composition of Weathered Rock at deeper depths is present.
- From the analysis of rock tests, it is noted that moderate weathering is formed at entire area with sandstone (fine grained).
- Details of rock test details have been given in Annexure-B of the report.

Recommendations for Foundation consideration:

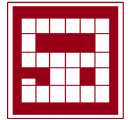
ASU area:

- For lightly loaded structures in Zone-01(i.e., for structure loading upto 25 t/m²) Shallow/Open foundation of footing size 3.0 x 3.0 m upto 3.00m depth may be considered, please refer TABLE:-1.7
- For lightly loaded structures in Zone-02(i.e., for structure loading upto 23 t/m²) Shallow/Open foundation of footing size 3.0 x 3.0 m upto 3.00m depth may be considered, please refer TABLE:-1.10
- For heavy loaded structures i.e. Pile foundation please refer TABLE:- 1.32 & 1.33
- From the test results being performed (in-situ and laboratory), it is clear that there is no requirement of soil improvement in the site location. Moreover, the project site is not prone to liquefaction zone.

CSU area:

- For lightly loaded structures in Zone-01(i.e., for structure loading upto 36 t/m²) Shallow/Open foundation of footing size 3.0 x 3.0 m upto 3.00m depth may be considered, please refer TABLE:-1.14
- For lightly loaded structures in Zone-02(i.e., for structure loading upto 30 t/m²) Shallow/Open foundation of footing size 3.0 x 3.0 m upto 3.00m depth may be considered, please refer TABLE:-1.18

11/02
 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

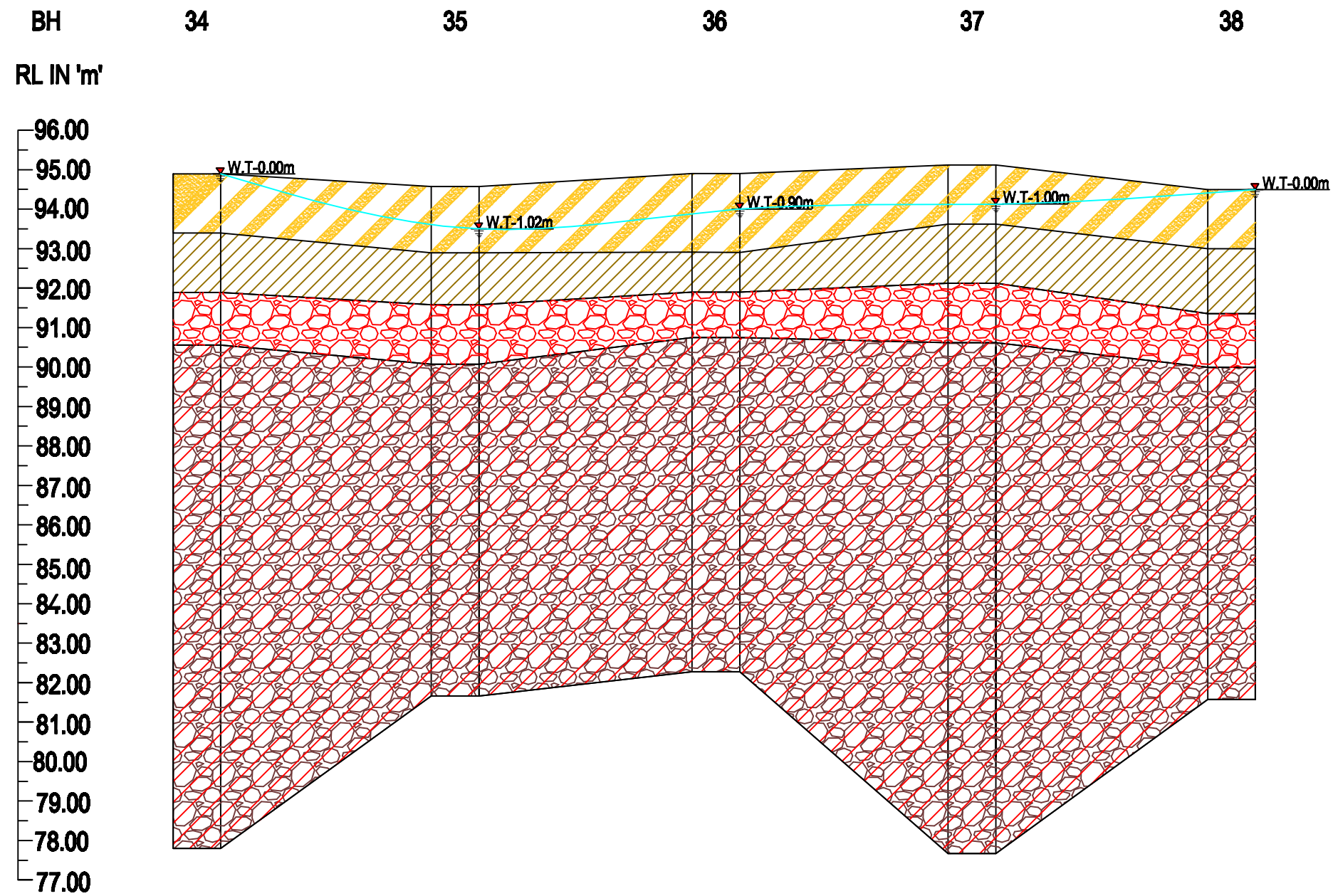
- For lightly loaded structures in Zone-03(i.e., for structure loading upto 93 t/m²) Shallow/Open foundation of footing size 3.0 x 3.0 m upto 3.00m depth may be considered, please refer TABLE:-1.22
- For lightly loaded structures in Zone-04(i.e., for structure loading upto 40 t/m²) Shallow/Open foundation of footing size 3.0 x 3.0 m upto 3.00m depth may be considered, please refer TABLE:-1.26
- For heavy loaded structures i.e. Pile foundation please refer TABLE:- 1.34 to 1.37.
- From the test results being performed (in-situ and laboratory), it is clear that there is no requirement of soil improvement in the site location. Moreover, the project site is not prone to liquefaction zone.

Suitability of the soils to be used as fill material:

- As per the laboratory test results the soil present at site location is clayey sand with slight plasticity. So it is recommended to use excavated soil as back filling material followed with layer to layer compaction upto maximum density.
- Since they will exhibit slight to no plasticity the soils can be compacted to fairly good compaction and provides good backfill and foundation support.
- For ASU Area in Zone-01 the natural ground water table is available at minimum depth of 0.60m to maximum 1.00m.
- For ASU Area in Zone-02 the submerged water level is 0.00m.
- For CSU Area in Zone-I the natural ground water table is available at minimum depth of 3.00m to maximum 4.00m.
- For CSU Area in Zone-II the natural ground water table is available at minimum depth of 0.00m to maximum 1.00m.
- For CSU Area in Zone-III the natural ground water table is available at minimum depth of 3.50m to maximum 4.50m.
- For CSU Area in Zone-IV the natural ground water table is available at minimum depth of 0.90m to maximum 1.50m.


BISHWANATH KUMAR DAS.
M.TECH (GEOTECH)


SUB-SOIL & CROSS PROFILE (BH-34 TO BH-38)



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

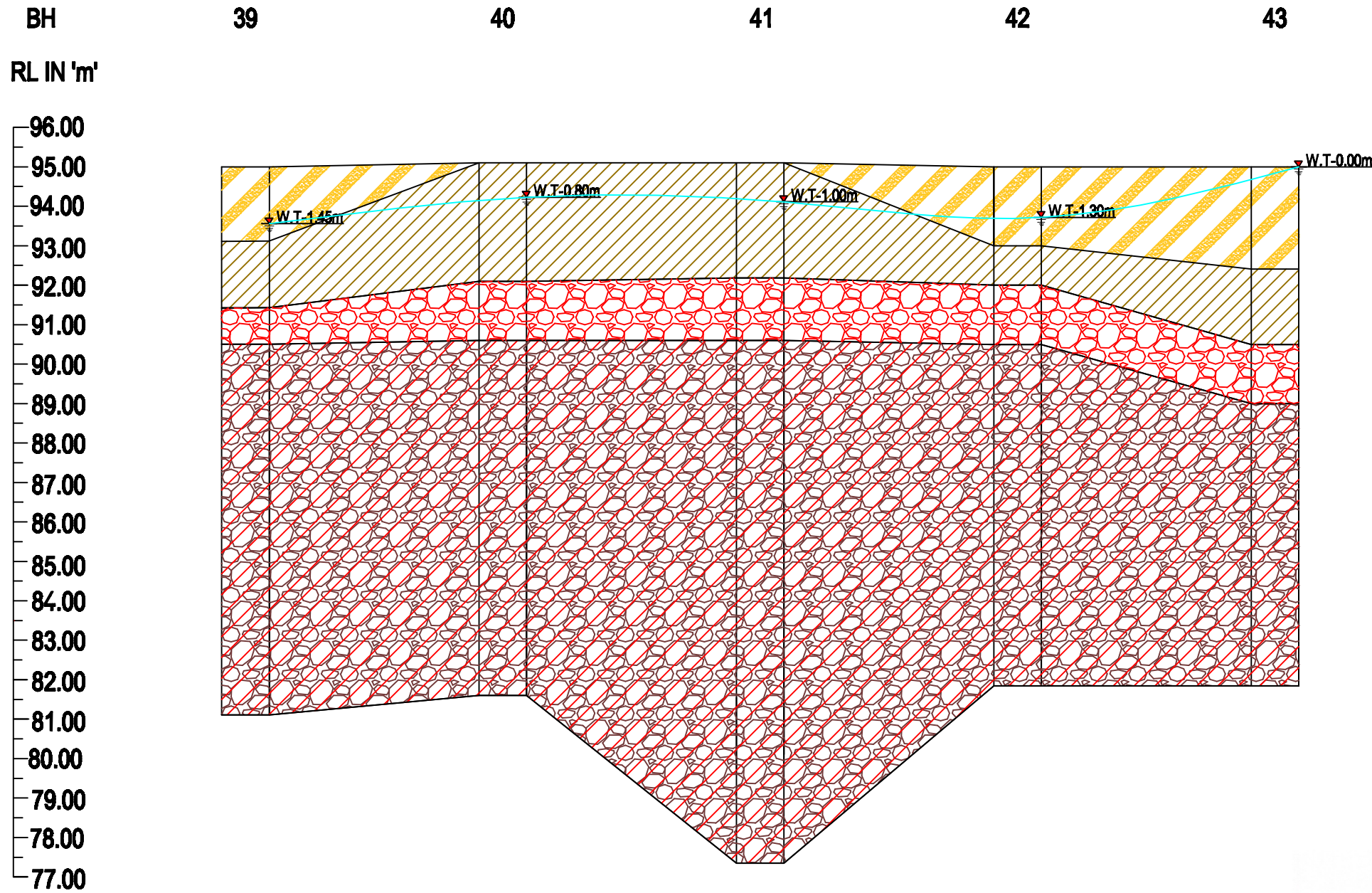
CONTRACTOR : WUHUAN ENGG. CO., LTD.

INVESTIGATED AND PREPARED BY :-
SWAYIN & ASSOCIATES .
 77, SATYA NAGAR, BHUBANESWAR
 PH-(0674) 2570016, 2572871

LOCATION ASU
TITLE SUB-SOIL & CROSS PROFILE

BISHWANATH KUMAR DAS
 M.TECH (GEO TECH)

SUB-SOIL & CROSS PROFILE (BH-39 TO BH-43)



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

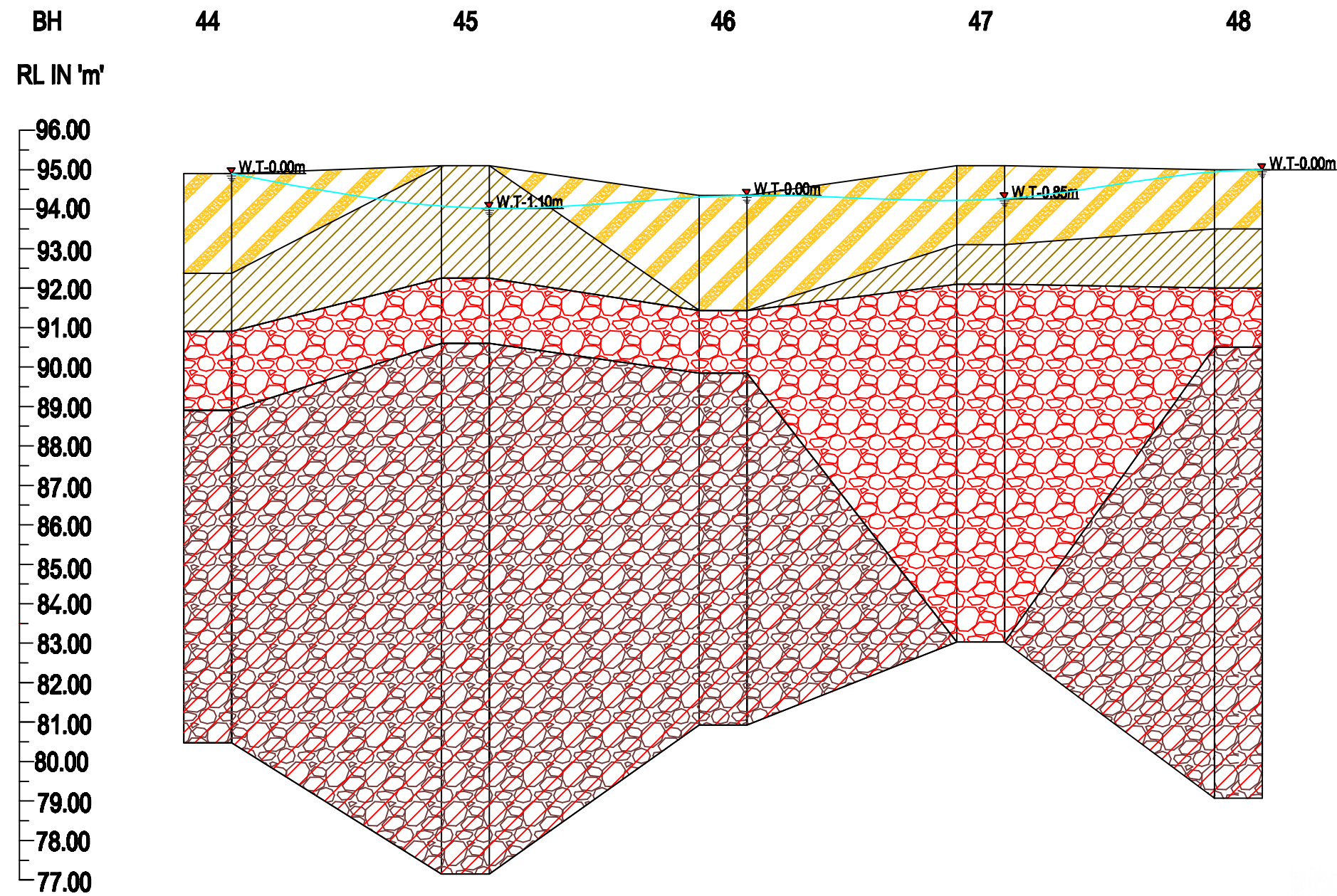
CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR : WUHUAN ENGG. CO., LTD.

INVESTIGATED AND PREPARED BY :-
SWAYIN & ASSOCIATES .
 77, SATYA NAGAR, BHUBANESWAR
 PH-(0674) 2570016, 2572871

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

SUB-SOIL & CROSS PROFILE (BH-44 TO BH-48)



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

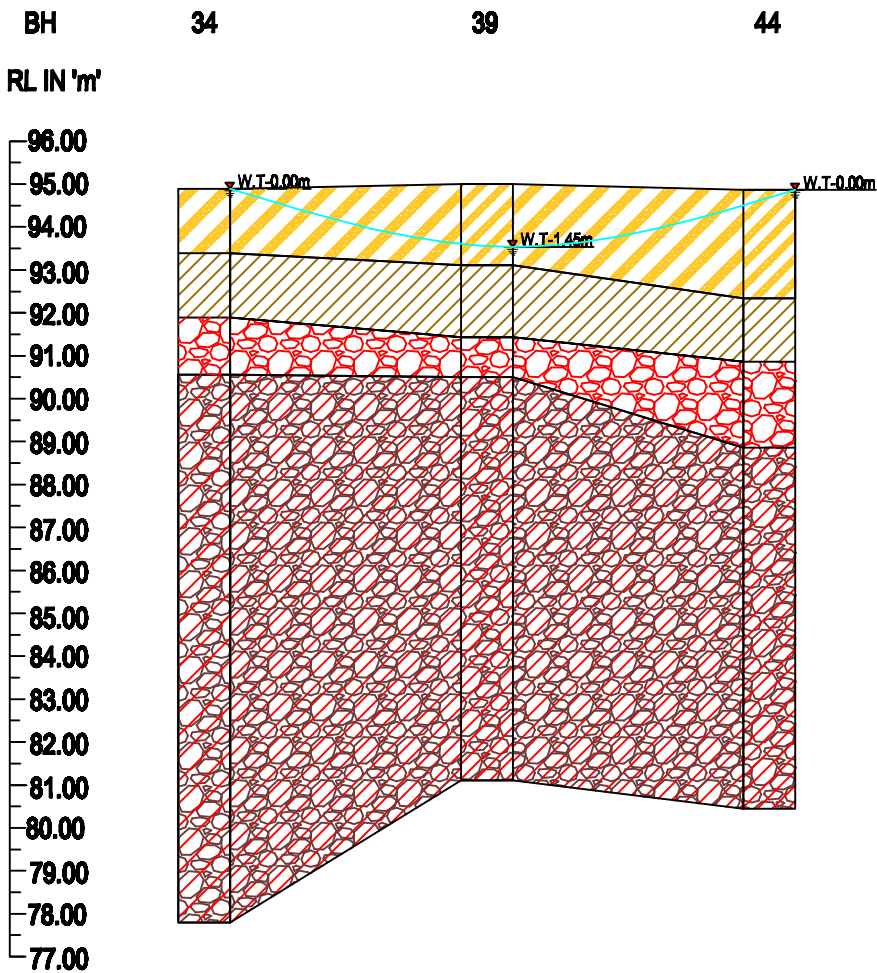
CONTRACTOR : WUHUAN ENGG. CO., LTD.

INVESTIGATED AND PREPARED BY :-
SWAYIN & ASSOCIATES .
 77, SATYA NAGAR, BHUBANESWAR
 PH-(0674) 2570016, 2572871

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

Biswajit Kumar Das
 M.TECH (GEO TECH)
 SATYANAGAR

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT: TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR: WUHUAN ENGG. CO., LTD.

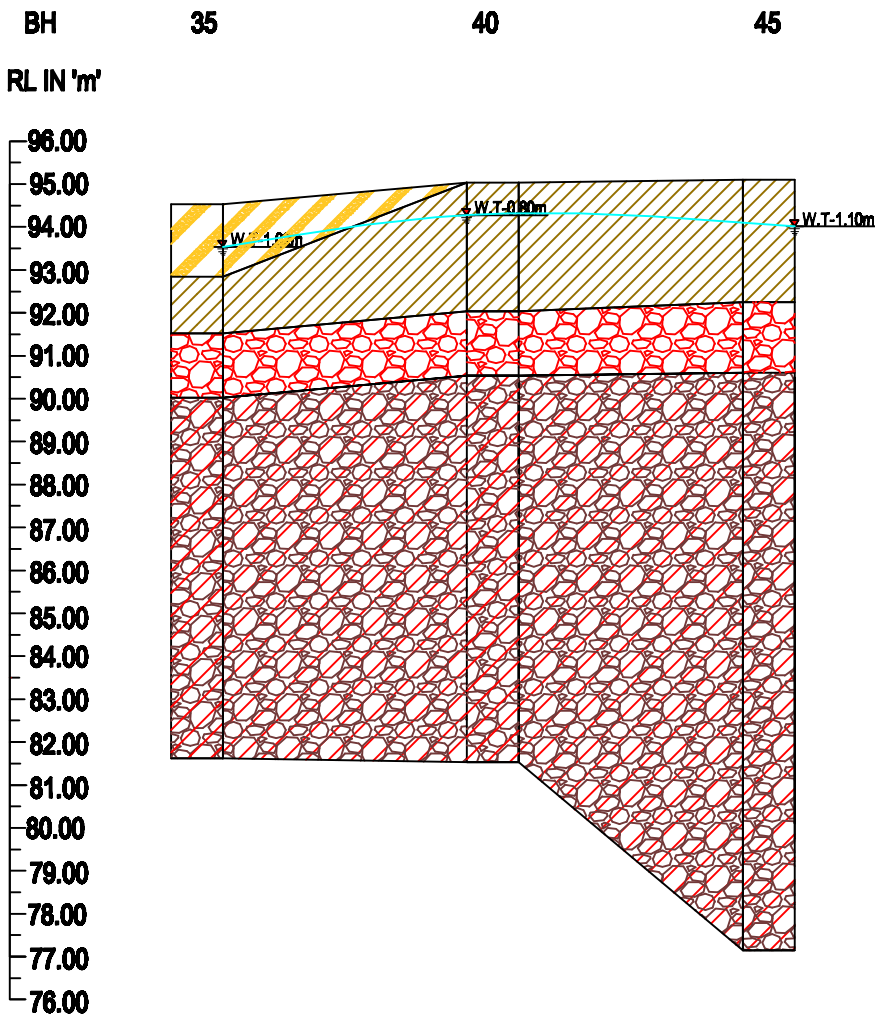
INVESTIGATED AND PREPARED BY :-

SWAYIN & ASSOCIATES,
77, SATYANAGAR, Bhubaneswar
PH: (0674) 227016, 227201

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

BISHU KUMAR DAS
 MTECH (PPEOT, IIT)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT: TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR: WUHUAN ENGG. CO., LTD.

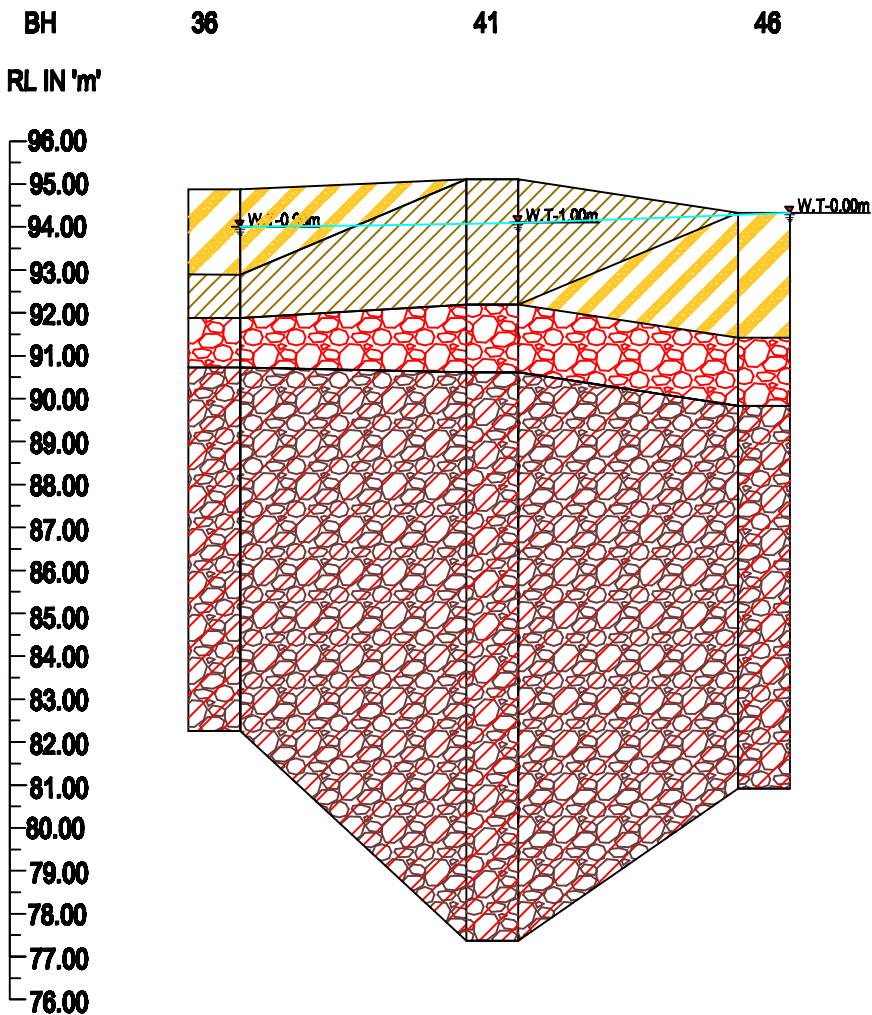
INVESTIGATED AND PREPARED BY :-

SWAYIN & ASSOCIATES,
77, SATYANAGAR, BILHASNAPUR,
PH: (0684) 287816, 287821

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

BISHWAJIT KUMAR DAS
 M.TECH (GEOTECH)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT: TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR: WUHUAN ENGG. CO., LTD.

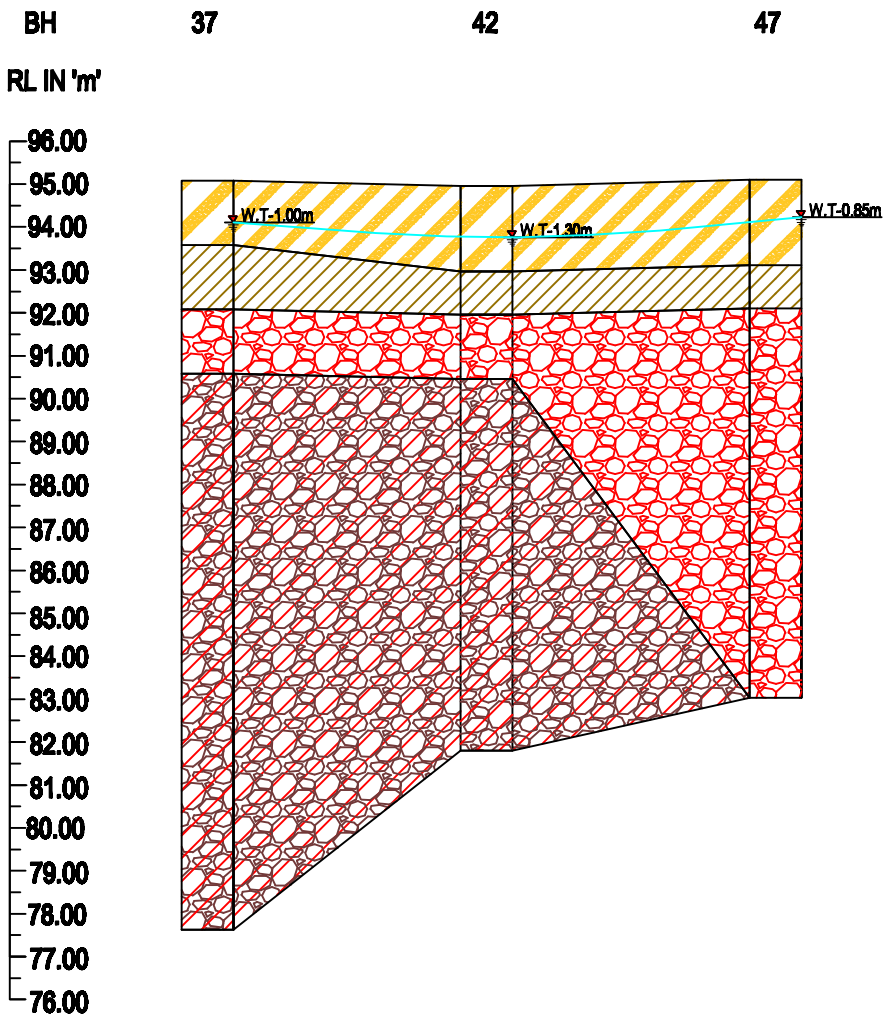
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77, SATYANAGAR, Bhubaneswar
PH: (0674) 227616, 227281

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

BISHWAJIT KUMAR DAS
 M.TECH (GEOTECH)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT: TALCHER FERTILIZERS LIMITED (TFL)

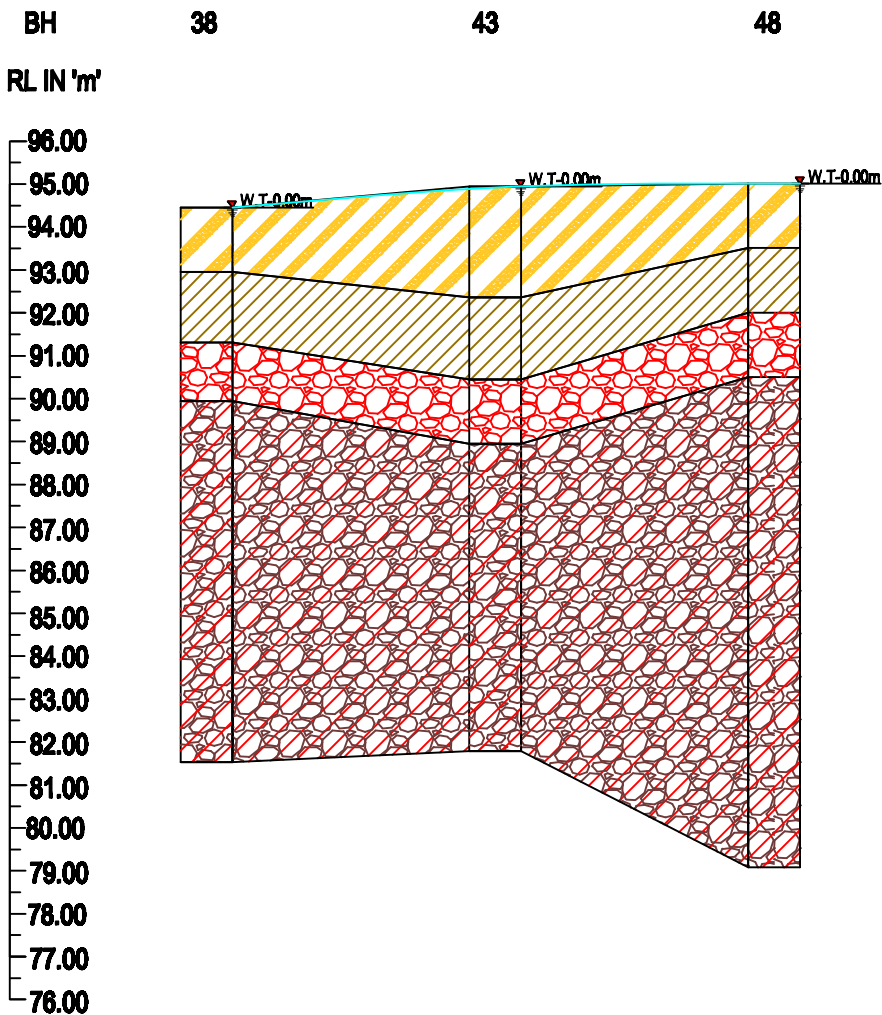
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 SWAYIN & ASSOCIATES,
 77, SATYANAGAR, BILHASNAPUR,
 PH-(0284) 287816, 287821

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

BISHWAJIT KUMAR DAS,
 M.TECH (P&OT, IIT)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND (DENSE)	
2	COMPACTED CLAY	
3	SAND STONE	
4	CLAY STONE	

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT: TALCHER FERTILIZERS LIMITED (TFL)

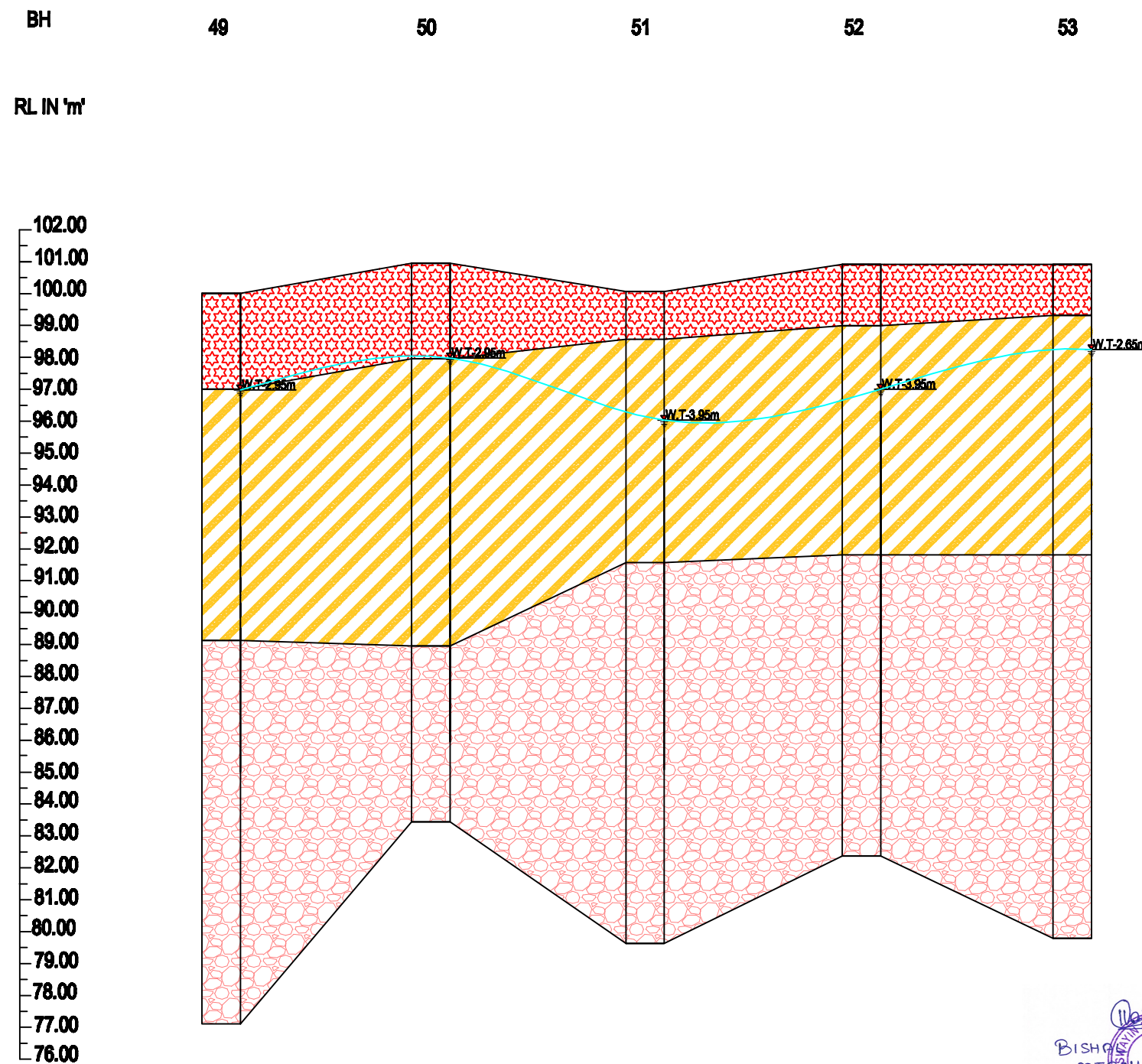
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 SWAYIN & ASSOCIATES,
 77, SATYANAGAR, BHUBANESHWAR
 PH: (0674) 227016, 227201

LOCATION	ASU
TITLE	SUB-SOIL & CROSS PROFILE

BISHWANATH KUMER DAS,
 M.TECH (GEOTECH)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	MORRUM	
2	CLAYEY SAND	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

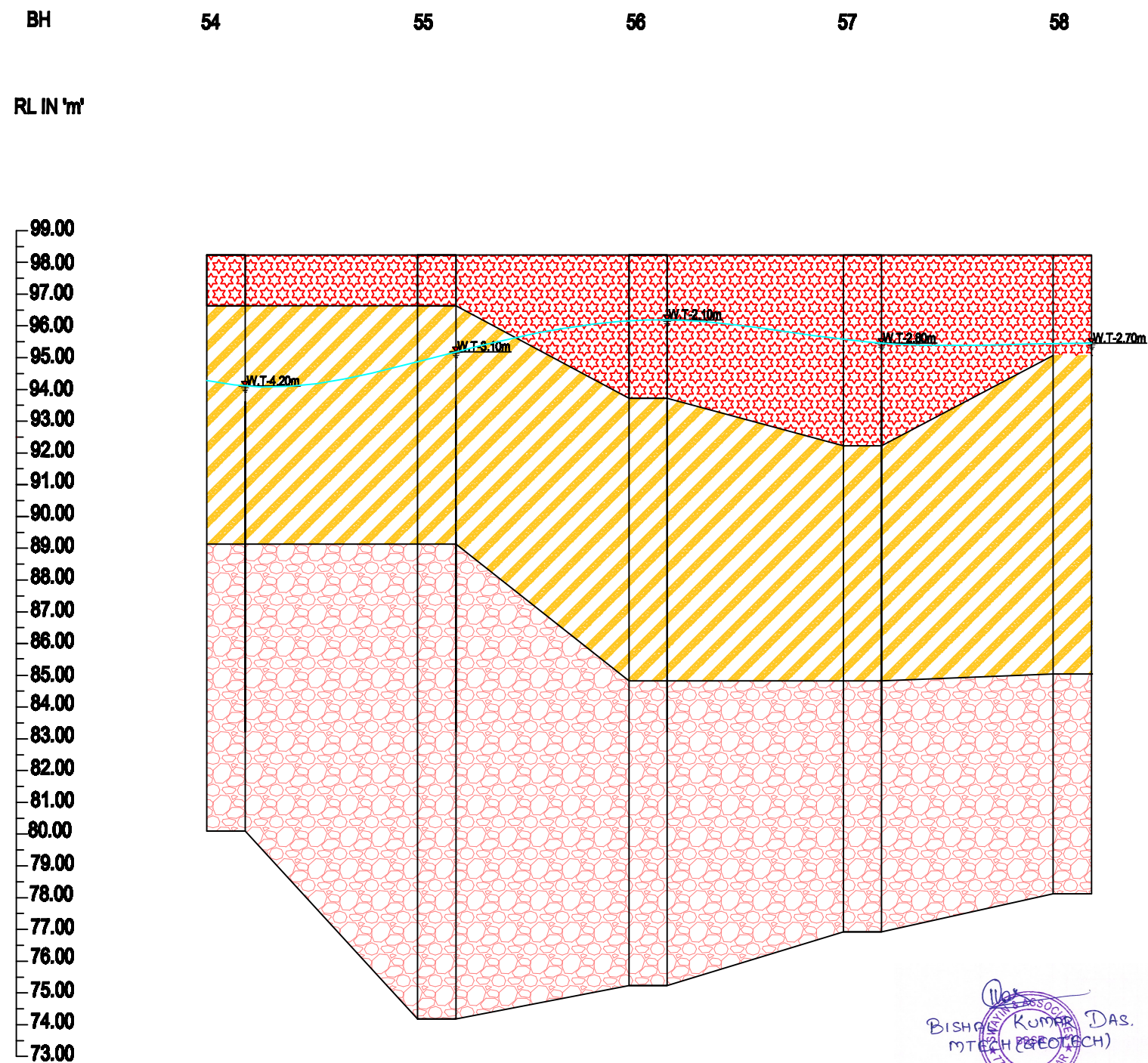
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 77, SATYANAGAR, BHUBANESWAR
 PH-(0674) 2570015, 2572371

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

BISHWANATH KUMAR DAS,
 M.TECH (P&EOT, IIT KGP)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	MORRUM	
2	CLAYEY SAND	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR : WUHUAN ENGG. CO., LTD.

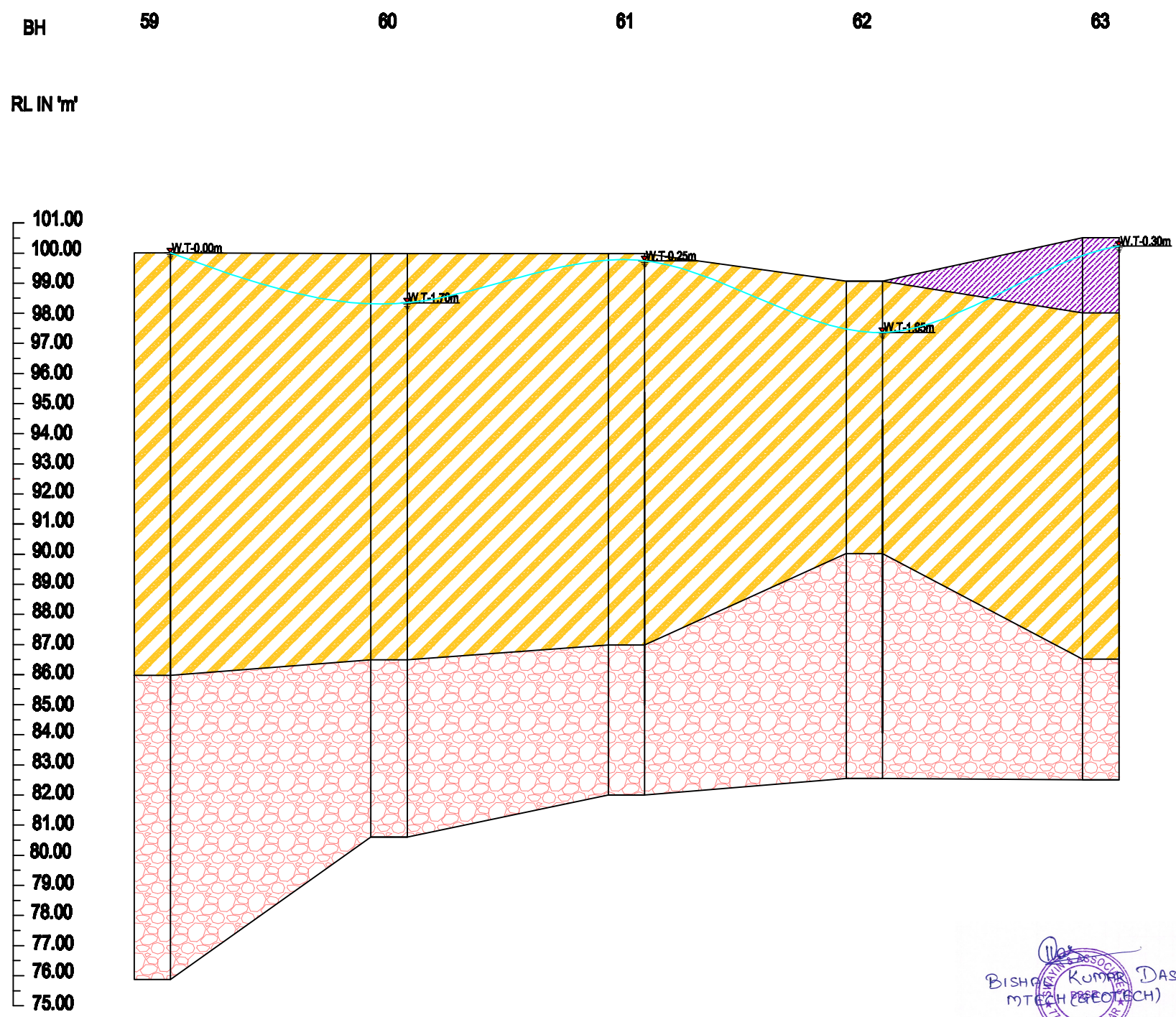
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77, SATYA NAGAR, BHUBANESWAR
PH-(0674) 2570015, 2572871

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

BISHWANATH KUMAR DAS.
 M.TECH (P&E) (I.C.H.)
 77, SATYA NAGAR

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND	
2	D.I ROCK	
3	FILLED UP ASH	

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT: TALCHER FERTILIZERS LIMITED (TFL)

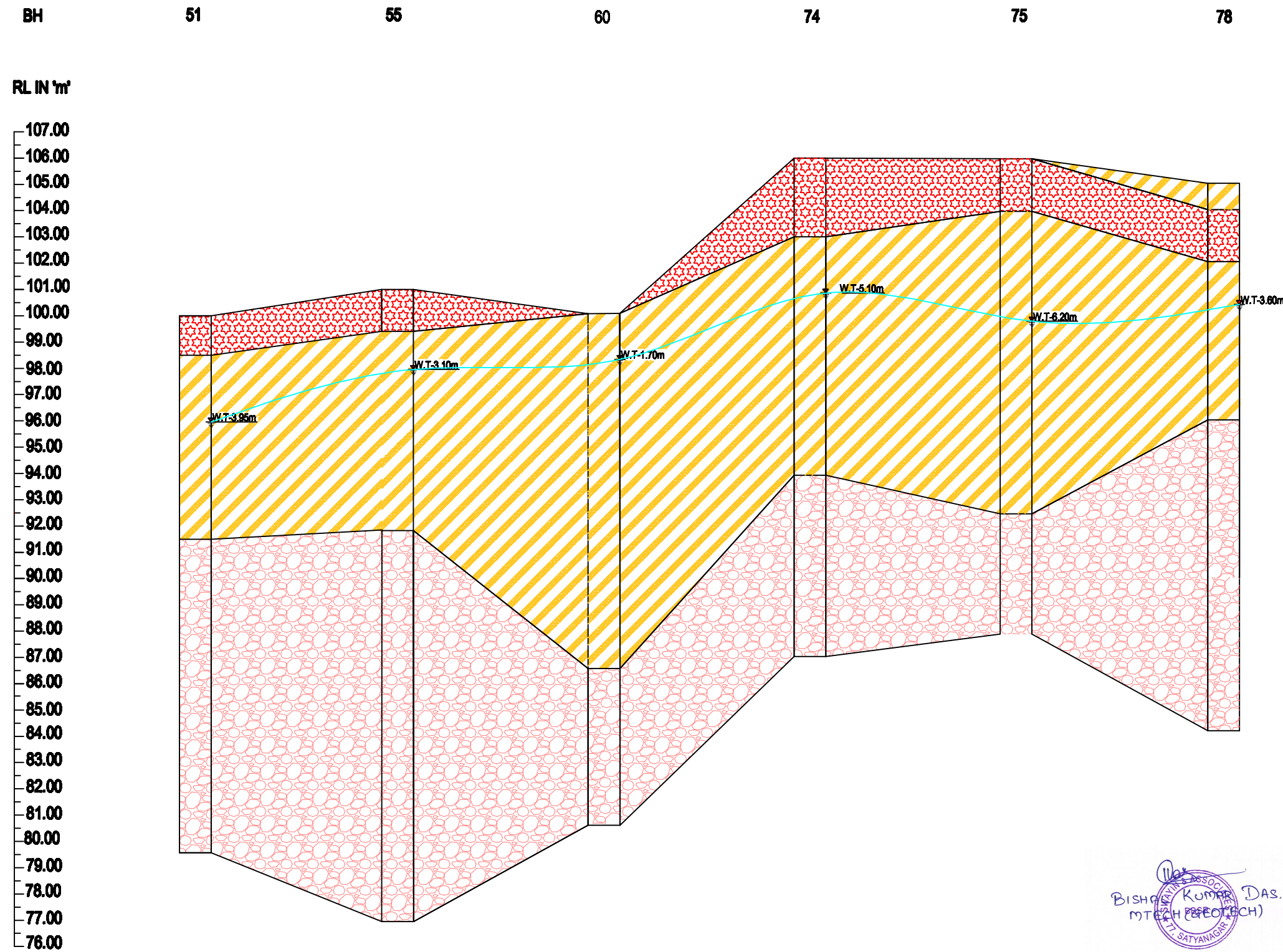
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INVESTIGATED AND PREPARED BY :-
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 77, SATYA NAGAR, BHUBANESWAR
 PH-(0674) 2570015, 2572971

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

Bishwanath Kumar Das,
 M.TECH (P&E) (I.TECH)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	MORRUM	
2	CLAYEY SAND	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR : WUHUAN ENGG. CO., LTD.

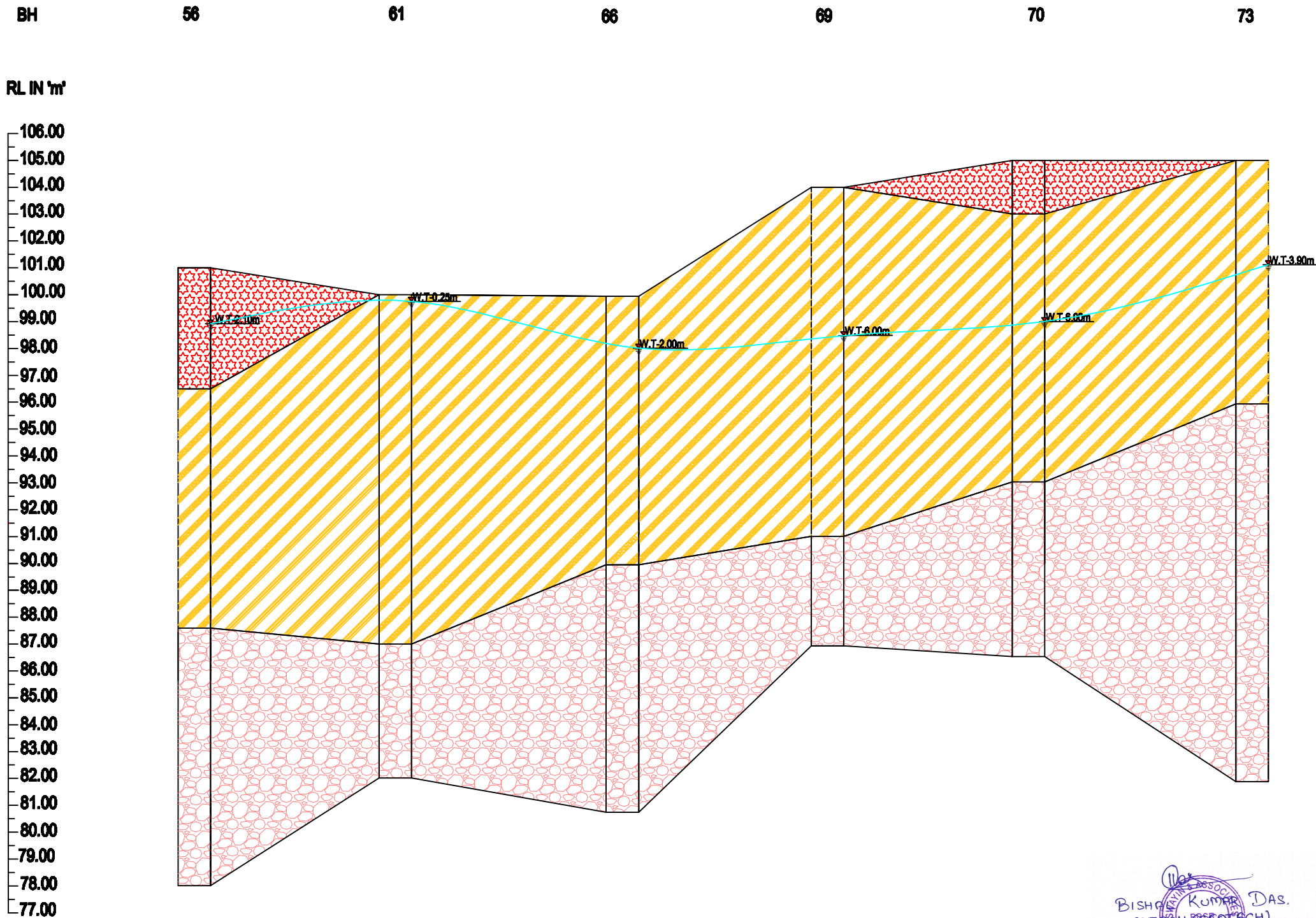
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 77, SATYA NAGAR, BHUBANESWAR
 PH-(0674) 2570015, 2572971

LOCATION COAL STORAGE AREA

TITLE SUB-SOIL & CROSS PROFILE

BISHWANATH KUMAR DAS
 M.TECH (GEO TECH)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	MORRUM	
2	CLAYEY SAND	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

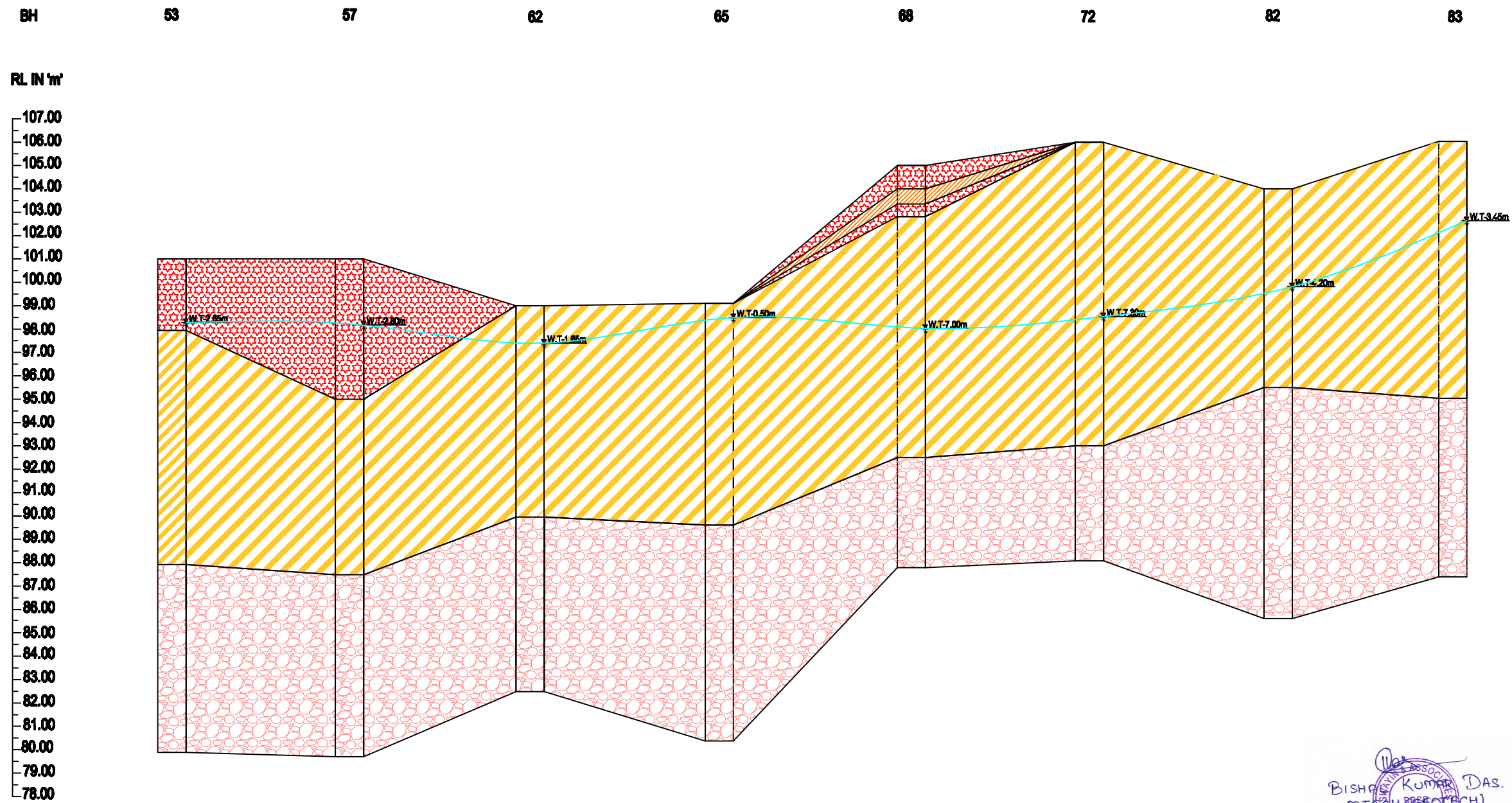
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 PH-(0674) 2570015,2572971

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)

SUB-SOIL & CROSS PROFILE



LEGEND:

1	MORRUM	
2	CLAYEY SAND	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

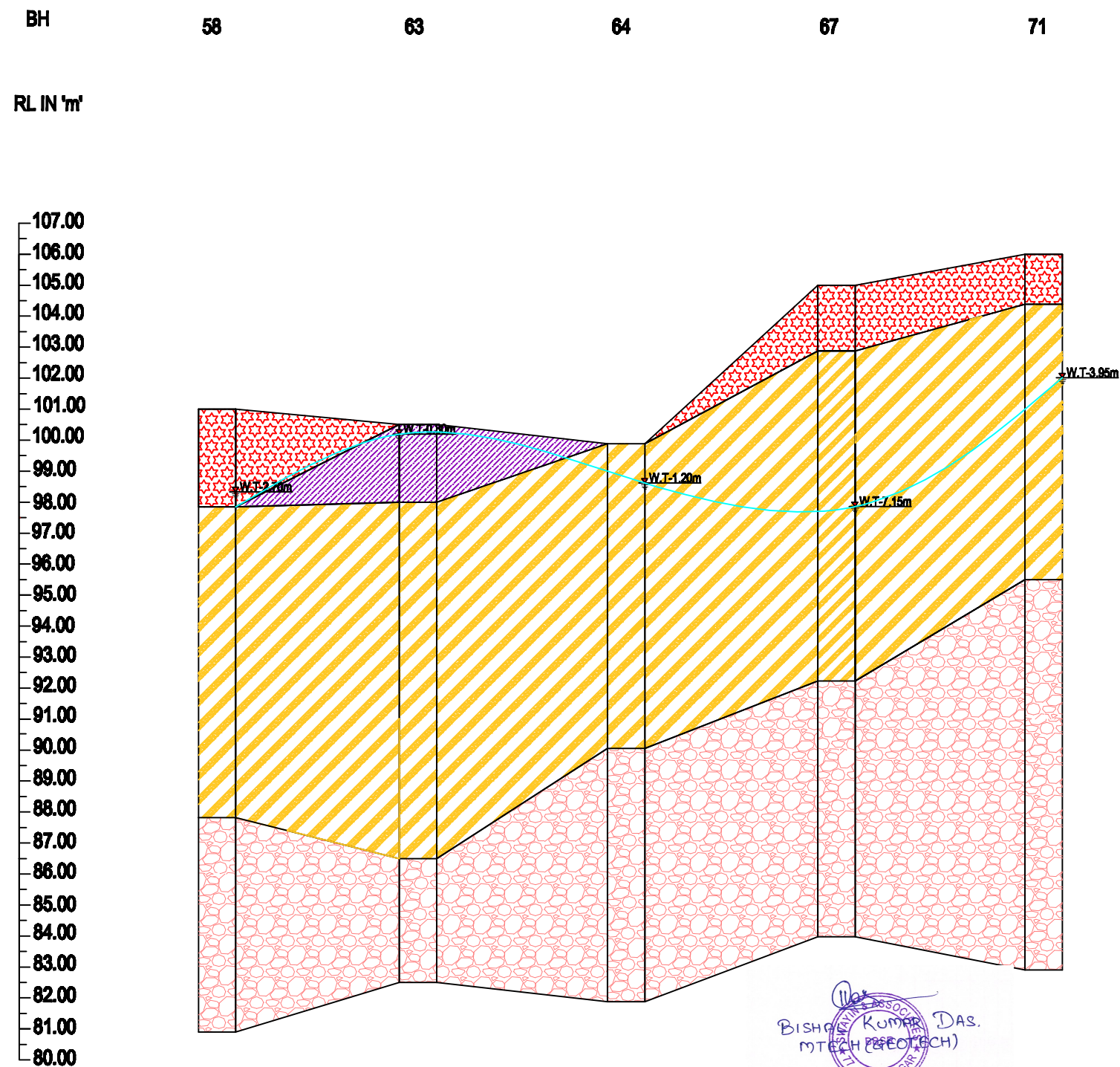
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 77, SATYA NAGAR, BHUBANESWAR
 PH: (0674) 2570016, 2572871

BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)





LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

SUB-SOIL & CROSS PROFILE




 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)
 T.L. SATYANAGAR

LEGEND:


1	MORRUM	
2	FILLED UP ASH	
3	CLAYEY SAND	
4	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

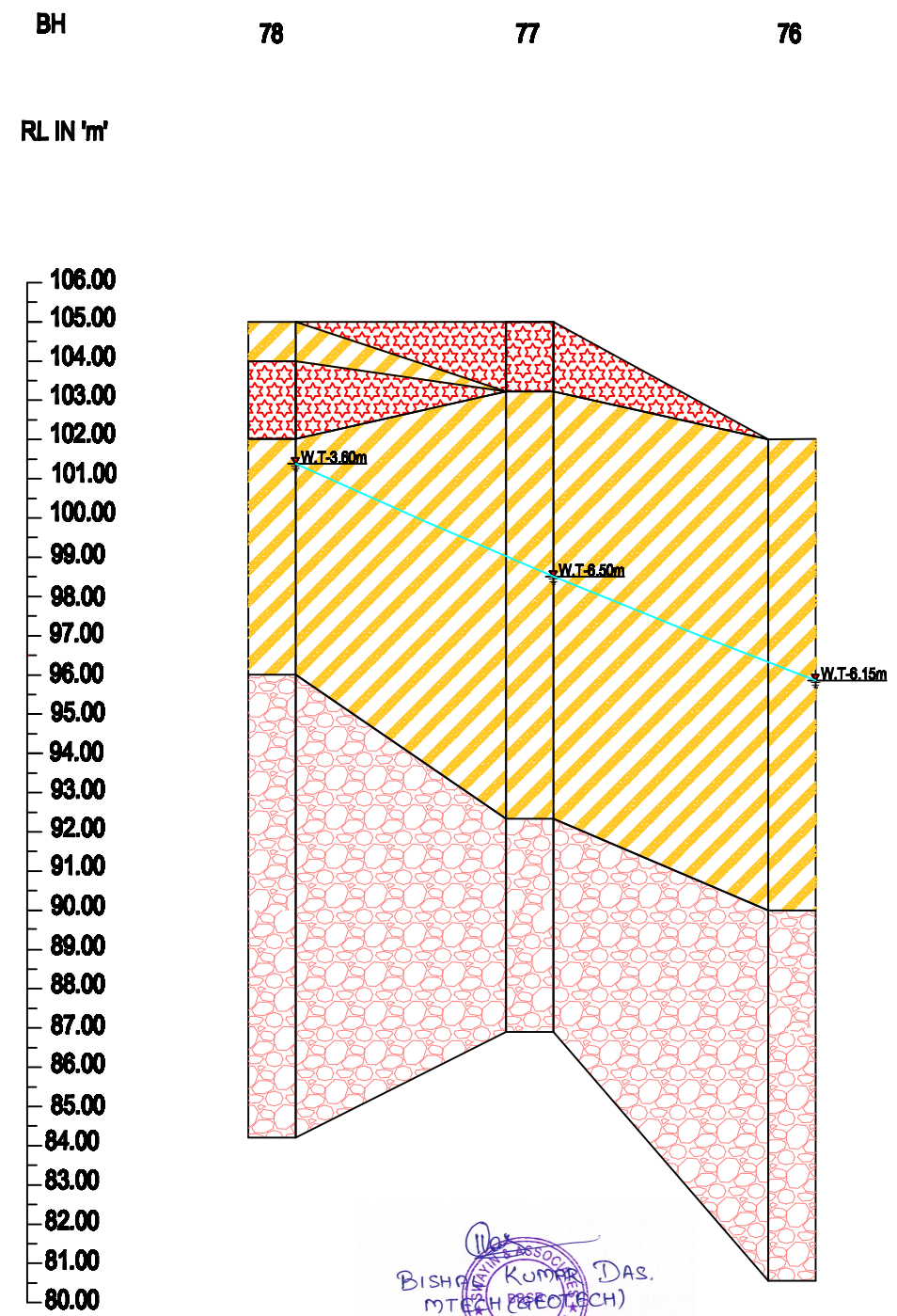
CLIENT :  TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR : WUHUAN ENGG. CO., LTD.

INVESTIGATED AND PREPARED BY :-
 **SWAYIN & ASSOCIATES .**
 77, SATYANAGAR, BHUBANESWAR
 PH-(0674) 2570015,2572971




LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

SUB-SOIL & CROSS PROFILE




BISHWANATH KUMAR DAS.
 M.TECH (P&E) (I.I.T. KANPUR)
 M.TECH (P&E) (I.I.T. KANPUR)

LEGEND:

1	CLAYEY SAND	
2	MORRUM	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

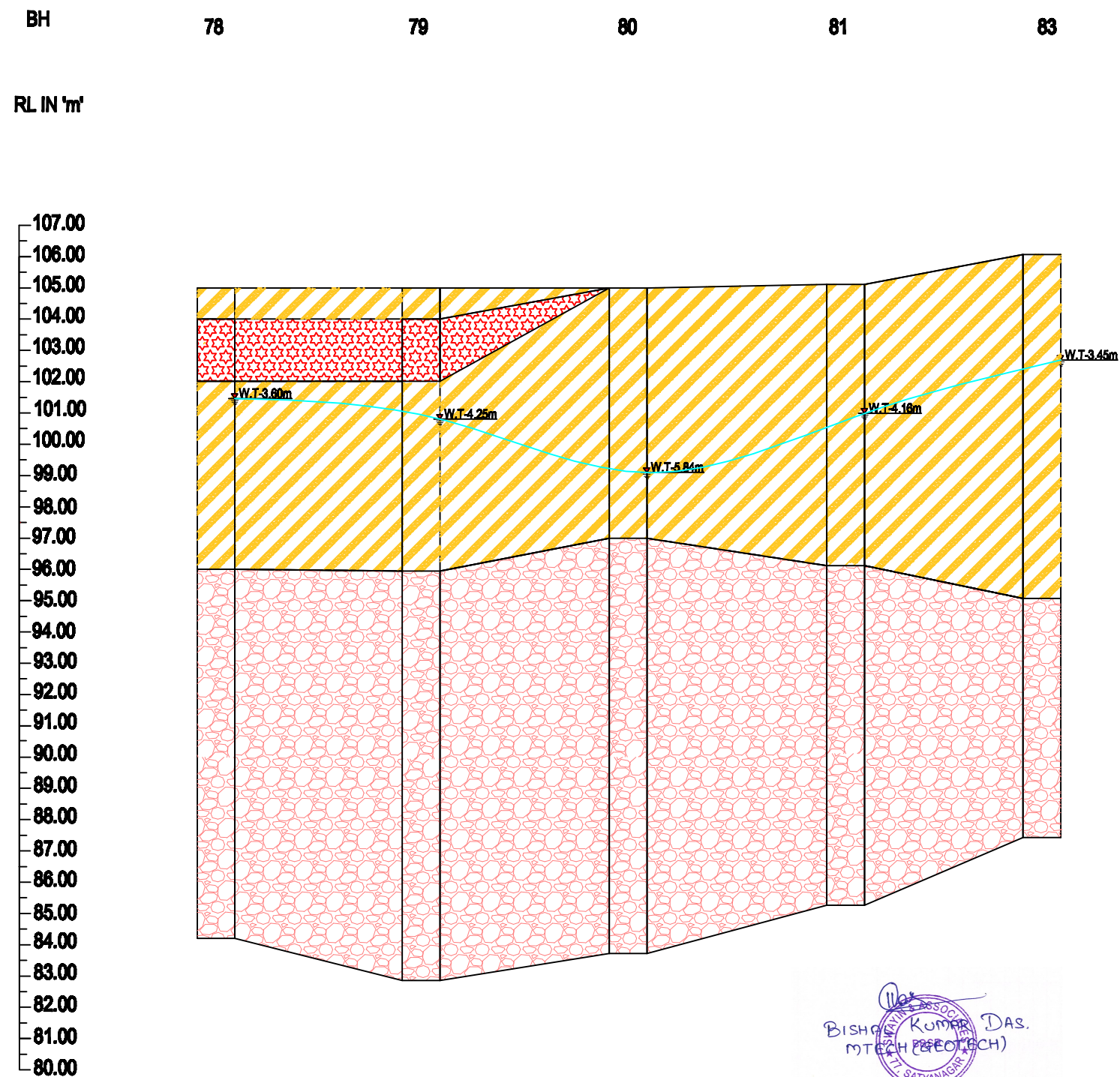
CLIENT :  **TALCHER FERTILIZERS LIMITED (TFL)**

CONTRACTOR : WUHUAN ENGG. CO., LTD.

INVESTIGATED AND PREPARED BY :-
 **SWAYIN & ASSOCIATES .**
 77, SATYA NAGAR, BHUBANESWAR
 PH-(0674) 2570015, 2572871

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND	
2	MORRUM	
3	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

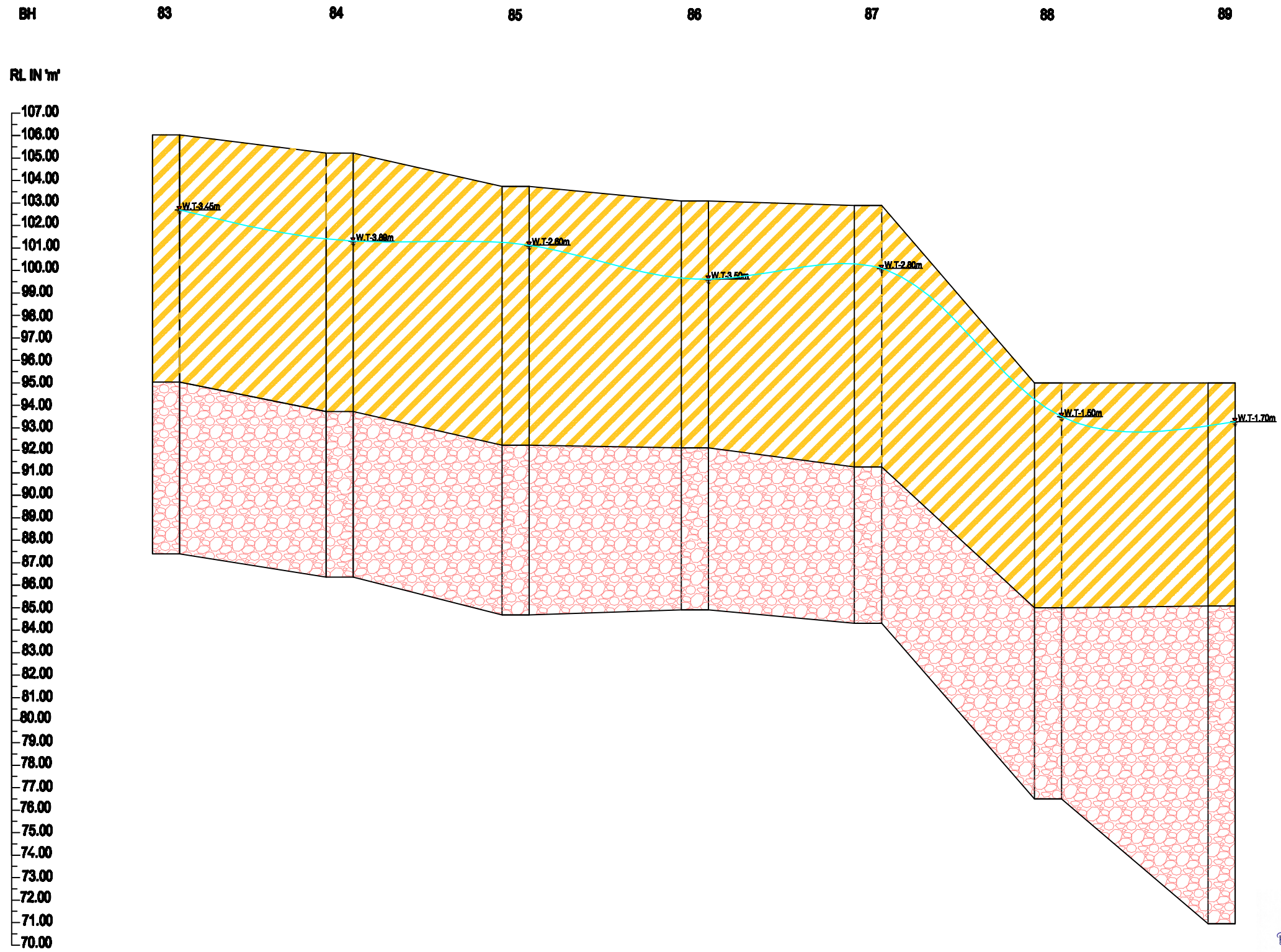
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INVESTIGATED AND PREPARED BY :-
SWAYIN & ASSOCIATES .
 77, SATYANAGAR, BHUBANESWAR
 PH-(0674) 2570015, 2572371

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

BISHU KUMAR DAS.
 M.TECH (P&OT) (ECH)
 TALENT SATYANAGAR

SUB-SOIL & CROSS PROFILE



LEGEND:

1	CLAYEY SAND	
	D.I ROCK	

NOTE : ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.

PROJECT : DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

CLIENT : TALCHER FERTILIZERS LIMITED (TFL)

CONTRACTOR : WUHUAN ENGG. CO., LTD.

INVESTIGATED AND PREPARED BY :-

SWAYIN & ASSOCIATES .
77, SATYA NAGAR, BHUBANESWAR
PH-(0674) 2670016, 2672871

(Signature)
BISHAL KUMAR DAS.
M.TECH (GEO TECH)
TALCHER

LOCATION	COAL STORAGE AREA
TITLE	SUB-SOIL & CROSS PROFILE

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -34	SHEET NO: -01
DEPTH:	17.18 m	CO-ORDINATES: E : 110.50 m N : 1256.90 m	GROUND LEVEL: RL- 94.912 M
COMMENCED ON: 25.02.2020	COMPLETED ON: 27.02.2020	LOCATION: - A.S.U	TYPE : - B
WATER TABLE : 0.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00													
COMPACTED CLAY	CI	1.50	1.50		1.50					99	SPT	01				
SANDSTONE	SEDIMENTARY	3.00	3.00		3.00					>100	SPT	02				
	SEDIMENTARY	4.30	4.30		4.50					>100	SPT	03				
			6.00		6.00						CS	01	18	NIL		
			7.50		7.50						CS	02	25	NIL		
			9.00		9.00						CS	03	29	12		
CLAYSTONE	SEDIMENTARY	10.50	10.50		10.50						CS	04	38	14		
			12.00		12.00						CS	05	58	21		
			13.50		13.50						CS	06	68	32		
			15.00		15.00						CS	07	72	40		

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER S.
 -WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE REC

BISHWAJIT KUMAR DAS
MTECH (GEO TECH)
77, SATYANAGAR

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 09	No. of Water Sample : 01
	No. of SPT: 03	




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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -34	SHEET NO: -02
DEPTH:	17.18 m	COMPLETED ON: 27.02.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 25.02.2020	COMPLETED ON: 27.02.2020	CO-ORDINATES: E : 110.50 m N : 1256.90 m	GROUND LEVEL: RL- 94.912 M
WATER TABLE : 0.00m		LOCATION: - A.S.U	TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYSTONE BH TERMINATED AT DEPTH → 17.18M	SEDIMENTARY	15.00	15.00		15.00							CS	07	72	40	
			16.00		16.50							CS	08	54	20	
			17.00		17.18							CS	09	57	21	
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 09 No. of Water Sample : 01
 No. of SPT: 03


 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)


NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -35	SHEET NO: -01
DEPTH:	12.85 m	CO-ORDINATES: E : 110.50 m N : 1219.97 m	GROUND LEVEL: RL- 94.540 M
COMMENCED ON: 28.02.2020	COMPLETED ON: 29.02.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE :1.02 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00													
			1.00													
COMPACTED CLAY	CI	1.70	2.00		1.50					68	SPT	01				
			3.00													
SANDSTONE	SEDIMENTARY	3.00	3.00		3.00					>100	SPT	02				
			4.00													
			4.50													
			5.00													
			6.00													
			7.00													
CLAYSTONE	SEDIMENTARY	7.50	7.50								CS	01	16	NIL		
			8.00													
			9.00													
			10.00													
			10.50													
			11.00													
			12.00													
			12.00													
BH TERMINATED AT DEPTH 12.85M		12.85	13.00													
			13.50													
			14.00													
			15.00													

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLING
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 06 No. of Water Sample : 01
 No. of SPT: 03

BISHNU KUMAR DAS
M.TECH (GEO TECH)

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -36	SHEET NO: -01
DEPTH:	12.69 m	CO-ORDINATES: E : 110.50 m N : 1182.65 m	GROUND LEVEL: RL- 94.900 M
COMMMENCED ON: 28.02.2020	COMPLETED ON: 29.02.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 0.90 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00													
			1.00													
COMPACTED CLAY	C	2.00	2.00		1.50						39	SPT	01			
			3.00													
SANDSTONE		3.00	3.00		3.00						>100	SPT	02			
			4.20													
			4.50									CS	01	23	NIL	
			5.00													
			6.00									CS	02	28	NIL	
			7.00													
			7.50									CS	03	46	18	
			8.00													
			9.00									CS	04	55	22	
			10.00													
			10.50									CS	05	58	26	
			11.00													
			12.00									CS	06	62	27	
BH TERMINATED AT DEPTH 12.69M		12.69	12.69													
			13.00													
			14.00													
			15.00													

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAM
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL
 No. of Large diameter sample: NIL

No. of Undisturbed sample: NIL
 No. of CORE: 06
 No. of SPT: 03

No. of Vane Shear Test : NIL
 No. of Water Sample : 01

BISHAL KUMAR DAS.
 MTECH (GEOTECH)
 77, SATYANAGAR

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -37	SHEET NO: -01
DEPTH:	17.45 m	CO-ORDINATES: E : 110.50 m N : 1145.57 m	GROUND LEVEL: RL- 95.120 M
COMMENCED ON: 29.02.2020	COMPLETED ON: 02.03.2020	LOCATION: - A.S.U	TYPE :- B
WATER TABLE :1.00 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRES.	SYMBOL	SAMPLE DEPTH IN METRES.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND (DENSE)	SC	0.00	0.00														
COMPACTED CLAY	CI	1.50	1.50		1.50						43	SPT	01				
SANDSTONE	SEDIMENTARY	3.00	3.00		3.00						>100	SPT	02				
CLAYSTONE	SEDIMENTARY	4.50	4.50		4.50							CS	01	36	10		
		6.00	6.00		6.00								CS	02	38	15	
		7.50	7.50		7.50								CS	03	41	19	
		9.00	9.00		9.00								CS	04	44	18	
		10.50	10.50		10.50								CS	05	48	22	
		12.00	12.00		12.00								CS	06	53	25	
		13.50	13.50		13.50								CS	07	56	26	
		15.00	15.00		15.00								CS	08	59	28	

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAM
 -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOV

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 10 No. of Water Sample : 01
 No. of SPT: 02

BISHWANATH KUMAR DAS.
MTECH (SPECIALTCH)
T.L. SATYANAGAR




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77, SATYANAGAR, BHUBANESWAR
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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -37	SHEET NO: -02
DEPTH:	17.45 m	CO-ORDINATES: E : 110.50 m N : 1145.57 m	GROUND LEVEL: RL- 95.120 M
COMMENCED ON: 29.02.2020	COMPLETED ON: 02.03.2020	LOCATION: - A.S.U	TYPE :- B
WATER TABLE :1.00 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYSTONE	SEDIMENTARY	15.00	15.00		15.00							CS	08	59	28	
			16.00		16.50							CS	09	63	31	
			17.00		17.45							CS	10	20	10	
BH TERMINATED AT DEPTH → 17.45M		17.45														
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


BISHWANATH KUMAR DAS
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 10	No. of Water Sample : 01
	No. of SPT: 02	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -38	SHEET NO: -01
DEPTH:	12.95 m	CO-ORDINATES: E : 110.50 m N : 1108.52 m	GROUND LEVEL: RL- 94.450 M
COMMENCED ON: 02.03.2020	COMPLETED ON: 03.03.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 0.00 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00													
COMPACTED CLAY	CI	1.50	1.50		1.50					45	SPT	01				
SANDSTONE	SEDIMENTARY	3.20	3.00		3.00					>100	SPT	02				
	SEDIMENTARY	4.50	4.50		4.50					>100	SPT	03				
CLAYSTONE	SEDIMENTARY	6.00	6.00		6.00						CS	01	15	NIL		
	SEDIMENTARY	7.50	7.50		7.50						CS	02	22	NIL		
	SEDIMENTARY	9.00	9.00		9.00						CS	03	31	NIL		
	SEDIMENTARY	10.50	10.50		10.50						CS	04	40	21		
	SEDIMENTARY	12.00	12.00		12.00						CS	05	40	25		
BH TERMINATED AT DEPTH 12.95M	SEDIMENTARY	12.95	12.95		12.95						CS	06	58	27		

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMP
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVER

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 06 No. of Water Sample : 01
 No. of SPT: 03



NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -39	SHEET NO: -01
DEPTH: 13.80 m	CO-ORDINATES: E : 148.49 m N : 1256.90 m	GROUND LEVEL: RL- 95.001 M
COMMENCED ON: 24.02.2020	COMPLETED ON: 26.02.2020	LOCATION: - A.S.U
WATER TABLE :1.45m		TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00													
			1.00													
			1.80													
COMPACTED CLAY	CI	2.00	2.00		1.50					48	SPT	01				
			3.00													
			3.60													
SANDSTONE		4.00	4.00		3.00					>100	SPT	02				
			4.50													
			5.00													
			6.00													
			7.00													
			8.00													
CLAYSTONE		9.00	9.00		4.50					>100	SPT	03				
			10.00													
			11.00													
			12.00													
			13.00													
BH TERMINATED AT DEPTH 13.80M		13.80	13.80		13.80											
			14.00													
			15.00													

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPL
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVER

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 06 No. of Water Sample : 01
 No. of SPT: 03



NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -40	SHEET NO: -01
DEPTH:	13.50 m	CO-ORDINATES: E : 148.53 m N : 1219.83 m	GROUND LEVEL: RL- 95.080 M
COMMENCED ON: 23.02.2020	COMPLETED ON: 26.02.2020	LOCATION: - A.S.U	TYPE :- D
WATER TABLE :0.80m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
COMPACTED CLAY	CI		0.00														
			1.50		37	SPT	01										
SANDSTONE	SEDIMENTARY		3.00		3.00												
			4.50		>100	SPT	02										
			4.50			CS	01	34	16								
			6.00			CS	02	58	18								
			7.50			CS	03	42	20								
			9.00			CS	04	48	22								
			10.50			CS	05	49	24								
CLAYSTONE	SEDIMENTARY		12.00		12.00												
			13.00			CS	06	52	26								
			13.50			CS	07	50	25								
BH TERMINATED AT DEPTH 13.50M																	

BISHWAJIT KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: -	UDS-UNDISTURBED SAMPLE, W- WATER SAMPLE,	DS- DISTURBED SAMPLE, P-PENETROMETRE TEST,	SPT-STANDARD PENETRATION TEST V- VANE SHEAR TEST	W- WATER SAMPLE, C-CORE RECOVERY
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No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 07	No. of Water Sample : 01
	No. of SPT: 02	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -41	SHEET NO: -01
DEPTH:	17.70 m	CO-ORDINATES: E : 148.50 m N : 1182.68 m	GROUND LEVEL: RL- 95.100 M
COMMENCED ON: 29.02.2020	COMPLETED ON: 02.03.2020	LOCATION: - A.S.U	TYPE :- B
WATER TABLE :1.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
COMPACTED CLAY	CI		0.00		1.50						42	SPT	01				
			2.90								>100	SPT	02				
SANDSTONE	SEDIMENTARY		3.00		4.50							CS	01	38	10		
			4.50									CS	02	40	19		
CLAYSTONE	SEDIMENTARY		5.00		6.00							CS	03	42	21		
			6.00									CS	04	45	25		
			7.00									CS	05	49	21		
			8.00									CS	06	53	29		
			9.00									CS	07	58	25		
			10.00									CS	08	62	30		
			11.00														
			12.00														
13.00																	
14.00																	
15.00																	

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 10 No. of Water Sample : 01
 No. of SPT: 02




BISHWANATH KUMAR DAS.
MTECH (P&TECH)
77, SATYANAGAR

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77, SATYANAGAR, BHUBANESWAR
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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -41	SHEET NO: -02
DEPTH:	17.70 m	COMPLETED ON: 02.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 29.02.2020	COMPLETED ON: 02.03.2020	CO-ORDINATES: E : 148.50 m N : 1182.68 m	GROUND LEVEL: RL- 95.100 M
WATER TABLE :1.00m		LOCATION: - A.S.U	TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYSTONE	SEDIMENTARY	15.00	15.00		15.00							CS	08	62	30	
			16.00		16.50							CS	09	51	20	
			17.00		17.70							CS	10	41	15	
BH TERMINATED AT DEPTH → 17.70M		17.70	18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

(Signature)
BISHU KUMAR DAS
MTECH (PPEOTECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 10	No. of Water Sample : 01
	No. of SPT: 02	

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -42	SHEET NO: -01
DEPTH:	13.25 m	CO-ORDINATES: E : 148.55 m N : 1145.60 m	GROUND LEVEL: RL- 94.980 M
COMMENCED ON: 26.02.2020	COMPLETED ON: 27.02.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 1.30m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00 - 1.50	0.00 - 1.50		1.50						44	SPT	01			
COMPACTED CLAY	CI	1.50 - 3.00	1.50 - 3.00		3.00						>100	SPT	02			
SANDSTONE	SEDIMENTARY	3.00 - 4.50	3.00 - 4.50		4.50							CS	01	23	NIL	
CLAYSTONE		4.50 - 6.00	4.50 - 6.00		6.00							CS	02	32	NIL	
	6.00 - 7.50	6.00 - 7.50		7.50							CS	03	48	12		
	7.50 - 9.00	7.50 - 9.00		9.00							CS	04	53	17		
	9.00 - 10.50	9.00 - 10.50		10.50							CS	05	50	18		
	10.50 - 12.00	10.50 - 12.00		12.00							CS	06	52	26		
BH TERMINATED AT DEPTH 13.25M	SEDIMENTARY	12.00 - 13.25	12.00 - 13.25		13.25							CS	07	56	28	

BISHWANATH KUMAR DAS
MTECH (GEO TECH)
77, SATYANAGAR

LEGEND: -	UDS-UNDISTURBED SAMPLE, W-WATER LEVEL	DS- DISTURBED SAMPLE, P-PENETROMETRE TEST,	SPT-STANDARD PENETRATION TEST V- VANE SHEAR TEST	W- WATER SAMPLE, C-CORE RECOVERY
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No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 07 No. of SPT: 02	No. of Water Sample : 01

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -43	SHEET NO: -01
DEPTH:	13.15 m	CO-ORDINATES: E : 148.57 m N : 1108.52 m	GROUND LEVEL: RL- 94.988 M
COMMENCED ON: 02.03.2020	COMPLETED ON: 03.03.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 0.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00		1.50						41	SPT	01			
		2.60	2.60													
COMPACTED CLAY	CI	3.00	3.00		3.00						>100	SPT	02			
		4.50	4.50													
SANDSTONE	SEDIMENTARY	4.50	4.50		4.50							CS	01	31	14	
		5.00	5.00									CS	02	35	16	
		6.00	6.00									CS	03	42	20	
		7.00	7.00									CS	04	48	23	
CLAYSTONE	SEDIMENTARY	7.00	7.00		7.50							CS	05	52	24	
		8.00	8.00									CS	06	55	26	
		9.00	9.00									CS	07	53	25	
		10.00	10.00													
		11.00	11.00													
		12.00	12.00													
BH TERMINATED AT DEPTH 13.15M		13.15	13.15		13.15							CS	07	53	25	

BISHWANATH KUMAR DAS
MTECH (P&OT) (IIT)
77, SATYANAGAR

LEGEND: -

UDS-UNDISTURBED SAMPLE,	DS- DISTURBED SAMPLE,	SPT-STANDARD PENETRATION TEST	W- WATER SAMPLE,
▽-WATER LEVEL	P-PENETROMETRE TEST,	V- VANE SHEAR TEST	C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 07	No. of Water Sample : 01
	No. of SPT: 02	

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -44	SHEET NO: -01
DEPTH:	14.40 m	CO-ORDINATES: E : 187.55 m N : 1256.97 m	GROUND LEVEL: RL- 94.890 M
COMMENCED ON: 25.02.2020	COMPLETED ON: 26.02.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 0.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00		1.50	43	SPT	01								
			2.54													
COMPACTED CLAY	CI	3.00	3.00		3.00	>100	SPT	02								
			4.00													
SANDSTONE	SEDIMENTARY	4.50	4.50		4.50	>100	SPT	03								
			6.00													
CLAYSTONE	SEDIMENTARY	6.00	6.00		6.00		CS	01	18	NIL						
			7.00		7.50	CS	02	24	NIL							
			8.00		9.00	CS	03	35	NIL							
			10.00		10.50	CS	04	46	21							
			11.00		12.00	CS	05	52	28							
			13.00		13.50	CS	06	62	35							
			14.00		14.40	CS	07	70	39							
BH TERMINATED AT DEPTH →		14.40	14.40													
			15.00													

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 07 No. of Water Sample : 01
 No. of SPT: 02

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -45	SHEET NO: -01
DEPTH:	17.97 m	CO-ORDINATES: E : 187.55 m N : 1219.97 m	GROUND LEVEL: RL- 95.111 M
COMMENCED ON: 02.03.2020	COMPLETED ON: 03.03.2020	LOCATION: - A.S.U	TYPE : - B
WATER TABLE : 1.10m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
COMPACTED CLAY	CI	0.00	0.00															
			1.50		40	SPT	01											
SANDSTONE	SEDIMENTARY	2.80	3.00		3.00													
			4.50		>100	SPT	02											
CLAYSTONE	SEDIMENTARY	4.50	4.50		4.50							CS	01	33	11			
			6.00	6.00									CS	02	38	12		
			7.50	7.50										CS	03	39	NIL	
			9.00	9.00										CS	04	45	14	
			10.50	10.50										CS	05	48	16	
			12.00	12.00										CS	06	52	20	
			13.50	13.50										CS	07	58	25	
			15.00	15.00										CS	08	62	28	

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 10 No. of Water Sample : 01
 No. of SPT: 02

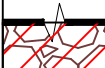
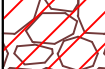



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -45	SHEET NO: -02
DEPTH:	17.97 m	COMPLETED ON: 03.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 02.03.2020	COMPLETED ON: 03.03.2020	CO-ORDINATES: E : 187.55 m N : 1219.97 m	GROUND LEVEL: RL- 95.111 M
WATER TABLE :1.10m		LOCATION: - A.S.U	TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYSTONE BH TERMINATED AT DEPTH → 17.97M	SEDIMENTARY	15.00	15.00		15.00							CS	08	62	28		
			16.00		16.50							CS	09	53	20		
			17.00		17.97	17.97							CS	10	56	20	
			18.00														
			19.00														
			20.00														
			21.00														
			22.00														
			23.00														
			24.00														
25.00																	
26.00																	
27.00																	
28.00																	
29.00																	
30.00																	

BISHWANTH KUMAR DAS.
MTECH (GEOTECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: 10 No. of Water Sample : 01
No. of SPT: 02

SWAYIN & ASSOCIATES

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Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -46	SHEET NO: -01
DEPTH:	13.40 m	CO-ORDINATES: E : 187.57 m N : 1182.70 m	GROUND LEVEL: RL- 94.341 M
COMMENCED ON: 02.03.2020	COMPLETED ON: 03.03.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 0.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRES.	SYMBOL	SAMPLE DEPTH IN METRES.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00		1.50						44	SPT	01			
		2.90	3.00			3.00						>100	SPT	02		
SANDSTONE	SEDIMENTARY	4.50	4.50		4.50							CS	01	32	15	
		6.00	6.00			6.00							CS	02	38	18
		7.50	7.50			7.50							CS	03	42	20
		9.00	9.00			9.00							CS	04	49	23
		10.50	10.50			10.50							CS	05	52	24
CLAYSTONE	SEDIMENTARY	12.00	12.00		12.00							CS	06	68	26	
		13.40	13.40			13.40							CS	07	56	25
		BH TERMINATED AT DEPTH 13.40M	13.40			13.40										

BISHW KUMAR DAS.
MTECH (GEO TECH)
TAL SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 07	No. of Water Sample : 01
	No. of SPT: 02	

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Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -47	SHEET NO: -01
DEPTH:	12.08 m	CO-ORDINATES: E : 187.58 m N : 1145.58 m	GROUND LEVEL: RL- 95.100 M
COMMENCED ON: 01.03.2020	COMPLETED ON: 02.03.2020	LOCATION: - A.S.U	TYPE : - D
WATER TABLE : 0.85m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND (DENSE)	SC	0.00	0.00													
			1.00													
COMPACTED CLAY	CI	2.00	2.00		1.50					47	SPT	01				
			3.00													
			3.00		3.00					>100	SPT	02				
			4.00													
			4.50		4.50						CS	01	24	NIL		
			5.00													
			6.00		6.00						CS	02	38	NIL		
			7.00		7.50						CS	03	46	20		
			8.00		9.00						CS	04	58	26		
			9.00		10.50						CS	05	61	29		
			10.00		12.08						CS	06	66	31		
BH TERMINATED AT DEPTH 12.08M		12.08	12.00		12.08											
			13.00													
			14.00													
			15.00													

BISHWANATH KUMAR DAS.
MTECH (GEO TECH)
T.L. SATYANAGAR

LEGEND: -	UDS-UNDISTURBED SAMPLE, ▽-WATER LEVEL	DS- DISTURBED SAMPLE, P-PENETROMETRE TEST,	SPT-STANDARD PENETRATION TEST V- VANE SHEAR TEST	W- WATER SAMPLE, C-CORE RECOVERY
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No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 06 No. of SPT: 02	No. of Water Sample : 01

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -48	SHEET NO: -01
DEPTH:	15.90 m	CO-ORDINATES: E : 187.56 m N : 1108.51 m	GROUND LEVEL: RL- 95.003 M
COMMMENCED ON: 26.02.2020	COMPLETED ON: 28.02.2020	LOCATION: - A.S.U	TYPE : - B
WATER TABLE : 0.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND (DENSE)	SC	0.00	0.00														
COMPACTED CLAY	C	1.50	1.50		1.50						39	SPT	01				
SANDSTONE	SEDIMENTARY	3.00	3.00		3.00						>100	SPT	02				
CLAYSTONE	SEDIMENTARY	4.50	4.50		4.50							CS	01	36	15		
		6.00	6.00		6.00								CS	02	38	18	
		7.50	7.50		7.50								CS	03	41	21	
		9.00	9.00		9.00								CS	04	46	23	
		10.50	10.50		10.50								CS	05	51	25	
		12.00	12.00		12.00								CS	06	56	27	
		13.50	13.50		13.50								CS	07	63	35	
		15.00	15.00		15.00								CS	08	67	40	

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 09 No. of Water Sample : 01
 No. of SPT: 02

BISHWANATH KUMAR DAS.
MTECH (GEOTECH)
77, SATYANAGAR

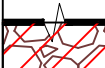

SWAYIN & ASSOCIATES


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Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -48	SHEET NO: -02
DEPTH:	15.90 m	CO-ORDINATES: E : 187.56 m N : 1108.51 m	GROUND LEVEL: RL- 95.003 M
COMMENCED ON: 26.02.2020	COMPLETED ON: 28.02.2020	LOCATION: - A.S.U	TYPE : - B
WATER TABLE : 0.00m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METERS	DEPTH IN METERS	SYMBOL	SAMPLE DEPTH IN METERS	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYSTONE BH TERMINATED AT DEPTH → 15.90M	SEDIMENTARY	15.00	15.00		15.00							CS	08	67	40	
		15.90	16.00		15.90							CS	09	76	51	
			17.00													
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


 BISHWANATH KUMAR DAS.
 M.TECH (P&EOT&ECH)
 77, SATYANAGAR, BHUBANESWAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 09	No. of Water Sample : 01
	No. of SPT: 02	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -49	SHEET NO: -01
DEPTH:	22.80 m	CO-ORDINATES: E : 899.618 m N : 1830.51 m	GROUND LEVEL: RL- 100.00 M
COMMMENCED ON: 19.03.2020	COMPLETED ON: 20.03.2020	LOCATION : -COAL STORAGE	TYPE : - B
WATER TABLE : 2.95m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
			1.00													
			2.00		1.50						62	SPT	01			
			3.00		3.00						>100	SPT	02			
			4.00													
			5.00		4.50						>100	SPT	03			
			6.00		6.00						>100	SPT	04			
CLAYEY SAND	SC		7.00													
			8.00													
			9.00		7.50						>100	SPT	05			
			10.00		9.00						>100	SPT	06			
			10.80													
			11.00													
			12.00		12.00							CS	01	NIL	NIL	
D.I ROCK	ROCK		13.00													
			14.00													
			15.00		15.00							CS	02	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -49	SHEET NO: -02
DEPTH:	22.80 m	CO-ORDINATES: E : 899.618 m N : 1830.51 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 19.03.2020	COMPLETED ON: 20.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 2.95m		TYPE : - B	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL			
			16.00															
			17.00															
			18.00									CS	03	NIL	NIL			
			19.00															
			20.00															
			21.00									CS	04	NIL	NIL			
			22.00															
			23.00									CS	05	NIL	NIL			
			BH TERMINATED AT DEPTH 22.80M		22.80	22.80		22.80										

BISHWANATH KUMAR DAS
MTECH (PEO/TECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -50	SHEET NO: -01
DEPTH:	17.50 m	CO-ORDINATES: E : 899.618 m N : 1784.518 m	GROUND LEVEL: RL- 101.00 M
COMMMENCED ON: 19.03.2020	COMPLETED ON: 20.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 2.95m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
			1.00								65	SPT	01			
			2.00													
			3.00		3.00						>100	SPT	02			
			4.00													
			4.50		4.50						>100	SPT	03			
			5.00													
			6.00		6.00						>100	SPT	04			
CLAYEY SAND	SC		7.00													
			7.50		7.50						>100	SPT	05			
			8.00													
			9.00													
			10.00		10.00						>100	SPT	06			
			11.00													
			12.00													
D.I ROCK	ROCK		13.00		13.00							CS	01	NIL	NIL	
			14.00													
			15.00		15.00											

Bishu Kumar Das
MTECH (GEOTECH)
TFL SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -50	SHEET NO: -02
DEPTH:	17.50 m	COMPLETED ON: 20.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 19.03.2020	COMPLETED ON: 20.03.2020	CO-ORDINATES: E : 899.618 m N : 1784.518 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE :2.95m		LOCATION	COAL STORAGE
			TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK BH TERMINATED AT DEPTH 17.50M	ROCK	15.00	15.00		15.00											
			15.50		15.50						CS	02	NIL	NIL		
		17.50	17.50		17.50											
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


BISHWANATH KUMAR DAS.
M.TECH (GEOTECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -51	SHEET NO: -01
DEPTH:	20.49 m	COMPLETED ON: 21.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 20.03.2020	COMPLETED ON: 21.03.2020	CO-ORDINATES: E : 899.618 m N : 1736.512 m	GROUND LEVEL: RL- 100.00 M
WATER TABLE : 3.95 m		LOCATION : -COAL STORAGE	TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
MORRUM	SM	0.00	0.00														
CLAYEY SAND	SC	1.50	1.50		1.50					63	SPT	01					
		2.00	3.00		3.00					91	SPT	02					
		4.00	4.50		4.50					>100	SPT	03					
		5.00	6.00		6.00					>100	SPT	04					
		6.00	7.50		7.50					>100	SPT	05					
D.I ROCK	ROCK	8.50	9.00		9.00						CS	01	NIL	NIL			
		9.00	10.50		10.50						CS	02	NIL	NIL			
		10.00	12.00		12.00						CS	03	NIL	NIL			
		11.00	13.50		13.50						CS	04	NIL	NIL			
		12.00	15.00		15.00						CS	05	14	NIL			

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 05 No. of Water Sample : 01
 No. of SPT: 05

BISHWANATH KUMAR DAS.
 MTECH (GEO TECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -51	SHEET NO: -02
DEPTH:	20.49 m	CO-ORDINATES: E : 899.618 m N : 1736.512 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 20.03.2020	COMPLETED ON: 21.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 3.95 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
D.I ROCK	ROCK	15.00	15.00		15.00							CS	05	14	NIL		
			16.00		16.50							CS	06	18	NIL		
			17.00		18.00							CS	07	20	NIL		
			18.00		19.50							CS	08	20	NIL		
			19.00		20.49							CS	09	25	NIL		
			20.00														
			21.00														
			22.00														
			23.00														
			24.00														
BH TERMINATED AT DEPTH 20.49M																	

BISHWANATH KUMAR DAS
M.TECH (GEOTECH)
SWAYIN & ASSOCIATES
77, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 05	No. of Water Sample : 01
	No. of SPT: 05	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -52	SHEET NO: -01
DEPTH:	18.54 m	COMPLETED ON: 23.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 21.03.2020	COMPLETED ON: 23.03.2020	CO-ORDINATES: E : 899.618 m N : 1681.526 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE : 3.95 m		LOCATION : -COAL STORAGE	TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
MORRUM	SM	0.00	0.00														
CLAYEY SAND	SC	1.95	2.00		1.50						75	SPT	01				
			3.00		3.00						82	SPT	02				
			4.50		4.50						>100	SPT	03				
			6.00		6.00						>100	SPT	04				
			7.50		7.50						>100	SPT	05				
			9.20		9.00						>100	SPT	06				
D.I ROCK	ROCK		10.00		10.50							CS	01	NIL	NIL		
			11.00		12.00							CS	02	NIL	NIL		
			13.00		13.50							CS	03	NIL	NIL		
			15.00		15.00							CS	04	11	NIL		

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 03 No. of Water Sample : 01
 No. of SPT: 06

BISHWANATH KUMAR DAS.
 MTECH (GEO TECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -52	SHEET NO: -02
DEPTH:	18.54 m	COMPLETED ON: 23.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 21.03.2020	COMPLETED ON: 23.03.2020	CO-ORDINATES: E : 899.618 m N : 1681.526 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE : 3.95 m		LOCATION : -COAL STORAGE	TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK BH TERMINATED AT DEPTH 18.54M	ROCK	15.00	15.00		15.00							CS	04	11	NIL	
			16.00		16.50							CS	05	15	NIL	
			17.00		18.00							CS	06	22	NIL	
			18.00		18.54							CS	07	NIL	NIL	
			19.00													
			20.00													
			21.00													
22.00																
23.00																
24.00																
25.00																
26.00																
27.00																
28.00																
29.00																
30.00																

BISHWANATH KUMAR DAS.
MTECH (PGEOTECH)
77, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

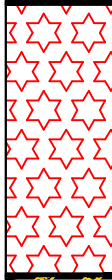


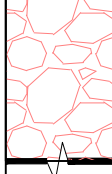
No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 03	No. of Water Sample : 01
	No. of SPT: 06	

SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.	
DIA OF HOLE:	150 mm			
DEPTH:	21.10 m			
COMMMENCED ON: 11.03.2020	COMPLETED ON: 12.03.2020	BORE HOLE NO: -53	SHEET NO: -01	JOB NO: -TLD/2020-03
WATER TABLE :2.65 m	CO-ORDINATES: E : 899.618 m N : 1626.398 m	GROUND LEVEL: RL- 101.00 M	LOCATION : -COAL STORAGE	TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN MTRS.	SYMBOL	SAMPLE DEPTH IN MTRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00 - 3.10	0.00 1.00 2.00 3.00		1.50	83	SPT	01								
CLAYEY SAND	SC	3.10 - 13.10	3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00		3.00 4.50 6.00 7.50 9.00 10.50 12.00	94 >100 >100 >100 >100 >100 >100	SPT SPT SPT SPT SPT SPT SPT	02 03 04 05 06 07 08								
D.I ROCK	ROCK	13.10 - 15.00	13.00 14.00 15.00		13.00 15.00		CS	01	NIL	NIL						

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 -WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

Bishu Kumar Das
 MTECH (GEO TECH)
 77 SATYANAGAR



No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL; No. of SPT: 08	No. of Water Sample : 01



SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -53	SHEET NO: -02
DEPTH:	21.10 m	COMPLETED ON: 12.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 11.03.2020	COMPLETED ON: 12.03.2020	CO-ORDINATES: E : 899.618 m N : 1626.398 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE : 2.65 m		LOCATION	COAL STORAGE
			TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			18.00		18.00							CS	02	NIL	NIL	
BH TERMINATED AT DEPTH 21.10M		21.10	21.10		21.10							CS	03	NIL	NIL	
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


BISHAL KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -54	SHEET NO: -01
DEPTH:	18.31 m	CO-ORDINATES: E : 844.125 m N : 1781.697 m	GROUND LEVEL: RL- 101.00 M
COMMENCED ON: 21.03.2020	COMPLETED ON: 23.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 4.2 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
MORRUM	SM	0.00	0.00														
CLAYEY SAND	SC	1.54	1.50		1.50					56	SPT	01					
			3.00		3.00					80	SPT	02					
			4.50		4.50					>100	SPT	03					
			6.00		6.00					>100	SPT	04					
			7.50		7.50					>100	SPT	05					
D.I ROCK	ROCK	9.10	9.00		9.00						CS	01	NIL	NIL			
			10.50		10.50						CS	02	NIL	NIL			
			12.00		12.00							CS	03	NIL	NIL		
			13.50		13.50							CS	04	NIL	NIL		
			15.00		15.00							CS	05	NIL	NIL		

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 01 No. of Water Sample : 01
 No. of SPT: 05

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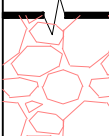
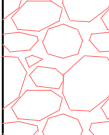

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
BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -54	SHEET NO: -02
DEPTH:	18.31 m	CO-ORDINATES: E : 844.125 m N : 1781.697 m	GROUND LEVEL: RL- 101.00 M
COMMENCED ON: 21.03.2020	COMPLETED ON: 23.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 4.2 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	05	NIL	NIL	
			16.00		16.50							CS	06	NIL	NIL	
			17.00		18.31	18.31							CS	07	25	NIL
BH TERMINATED AT DEPTH 18.31M			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


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M.TECH (GEO TECH)
SWAYIN & ASSOCIATES
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LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 01	No. of Water Sample : 01
	No. of SPT: 05	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -55	SHEET NO: -01
DEPTH:	24.08 m	CO-ORDINATES: E : 844.272 m N : 1736.516 m	GROUND LEVEL: RL- 101.00 M
COMMENCED ON: 21.03.2020	COMPLETED ON: 23.03.2020	LOCATION : -COAL STORAGE	TYPE : - B
WATER TABLE : 3.10m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
CLAYEY SAND	SC	1.60	1.50							58	SPT	01				
		2.00	3.00							82	SPT	02				
		3.00	4.50							>100	SPT	03				
		4.00	6.00							>100	SPT	04				
		5.00	7.50							>100	SPT	05				
		6.00	9.00							>100	SPT	06				
D.I ROCK	ROCK	9.00	12.00								CS	01	NIL	NIL		
		10.00														
		11.00														
		12.00														
		13.00														
		15.00	15.00								CS	02	23	NIL		

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 04 No. of Water Sample : 01
 No. of SPT: 06



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -55	SHEET NO: -02
DEPTH:	24.08 m	COMPLETED ON: 23.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 21.03.2020	COMPLETED ON: 23.03.2020	CO-ORDINATES: E : 844.272 m N : 1736.516 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE : 3.10m		LOCATION	COAL STORAGE
			TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	23	NIL			
			16.00															
			17.00															
			18.00				18.00							CS	03	28	NIL	
			19.00															
BH TERMINATED AT DEPTH 24.08M	ROCK	24.08	20.00															
			21.00										CS	04	30	NIL		
			22.00															
			23.00															
			24.00				24.08							CS	05	31	NIL	
			25.00															
			26.00															
			27.00															
			28.00															
			29.00															
			30.00															


BISHWANATH KUMAR DAS.
MTECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: -

UDS-UNDISTURBED SAMPLE,	DS- DISTURBED SAMPLE,	SPT-STANDARD PENETRATION TEST	W- WATER SAMPLE,
∇-WATER LEVEL	P-PENETROMETRE TEST,	V- VANE SHEAR TEST	C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 04	No. of Water Sample : 01
	No. of SPT: 06	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -56	SHEET NO: -01
DEPTH: 23.00 m	CO-ORDINATES: E : 844.220 m N : 1671.386 m	GROUND LEVEL: RL- 101.00 M
COMMMENCED ON: 05.03.2020	COMPLETED ON: 06.03.2020	LOCATION : -COAL STORAGE
WATER TABLE : 2.10m		TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00		1.50						97	SPT	01			
			1.00													
			2.00													
			3.00		3.00						>100	SPT	02			
			4.00													
		4.45	4.45		4.50						>100	SPT	03			
			5.00													
			6.00		6.00						>100	SPT	04			
			7.00													
			8.00													
			9.00		9.00						>100	SPT	06			
			10.00													
			11.00													
			12.00		12.00						>100	SPT	08			
			13.00													
			13.40													
			14.00		13.50						>100	SPT	09			
			15.00		15.00							CS	01	NIL	NIL	

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO










No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 09


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 MTECH (P&TECH)
 77, SATYANAGAR

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -56	SHEET NO: -02
DEPTH:	23.00 m	COMPLETED ON: 06.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 05.03.2020	COMPLETED ON: 06.03.2020	CO-ORDINATES: E : 844.220 m N : 1671.386 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE :2.10 m		LOCATION	COAL STORAGE
			TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER			
						20	40	60	80	100		TYPE	REF NO.						
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL				
			16.00																
			17.00		17.00									CS	02	NIL	NIL		
			18.00																
BH TERMINATED AT DEPTH 23.00M	ROCK	23.00	19.00																
			20.00		20.00									CS	03	NIL	NIL		
			21.00																
			22.00																
			23.00		23.00										CS	04	NIL	NIL	
			24.00																
			25.00																
			26.00																
			27.00																
			28.00																
			29.00																
			30.00																


BISHWANATH KUMAR DAS.
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES
77, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 09	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -57	SHEET NO: -01
DEPTH: 21.30 m	CO-ORDINATES: E : 844.214 m N : 1626.314 m	GROUND LEVEL: RL- 101.00 M
COMMMENCED ON: 07.03.2020	COMPLETED ON: 08.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE :2.80 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00		1.50						95	SPT	01			
			1.00													
			2.00													
			3.00		3.00						>100	SPT	02			
			4.00													
			4.50		4.50						>100	SPT	03			
			5.00													
			6.00		6.00						>100	SPT	04			
			7.00													
			7.50		7.50						>100	SPT	05			
			8.00													
CLAYEY SAND	SC		9.00		9.00						>100	SPT	06			
			10.00													
			10.50		10.50						>100	SPT	07			
			11.00													
			12.00		12.00						>100	SPT	08			
			13.00													
			13.50		13.50											
D.I ROCK	ROCK		14.00													
			15.00		15.00							CS	01	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 08
 No. of SPT: 08

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -57	SHEET NO: -02
DEPTH:	21.30 m	COMPLETED ON: 08.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 07.03.2020		CO-ORDINATES: E : 844.214 m N : 1626.314 m	GROUND LEVEL: RL- 101.00 M
WATER TABLE :2.80 m		LOCATION	COAL STORAGE
			TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			17.00	17.00		CS	02	NIL	NIL							
BH TERMINATED AT DEPTH 21.30M	ROCK	21.30	21.00		21.00							CS	03	NIL	NIL	
			21.30	21.30		CS	04	NIL	NIL							
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


 BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)


LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

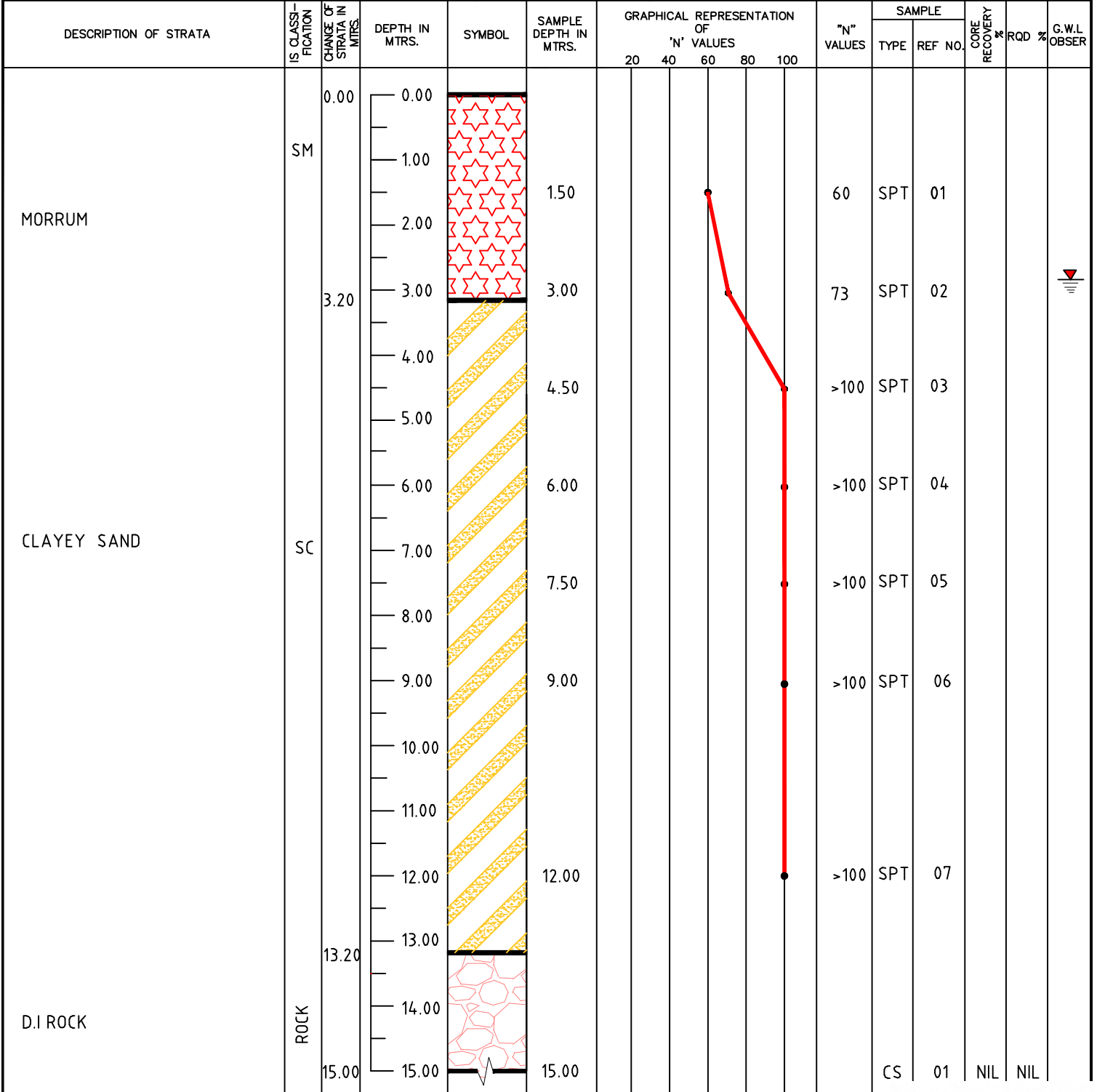
No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 09	

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING		CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.	
DIA OF HOLE:	150 mm		BORE HOLE NO: -58	SHEET NO: -01	JOB NO: -TLD/2020-03
DEPTH:	20.05 m		CO-ORDINATES: E : 844.371 m N : 1581.33 m	GROUND LEVEL: RL- 101.00 M	LOCATION : -COAL STORAGE TYPE : - B
COMMENCED ON: 06.03.2020	COMPLETED ON: 08.03.2020		WATER TABLE : 2.70 m		



LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

BISHWANATH KUMER DAS.
MTECH (GEO TECH)
77 SATYANAGAR

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 07



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -58	SHEET NO: -02
DEPTH:	20.05 m	CO-ORDINATES: E : 844.371 m N : 1581.33 m	GROUND LEVEL: RL- 101.00 M
COMMENCED ON: 06.03.2020	COMPLETED ON: 08.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 2.70 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK BH TERMINATED AT DEPTH 20.05M	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			16.00													
			17.00													
			18.00		18.00							CS	02	NIL	NIL	
			19.00													
		20.05	20.00		20.05							CS	03	NIL	NIL	
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


BISHU KUMAR DAS.
M.TECH (GEOTECH)
TFL, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 07	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -59	SHEET NO: -01
DEPTH:	24.27 m	COMPLETED ON: 21.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 20.03.2020	COMPLETED ON: 21.03.2020	CO-ORDINATES: E : 746.863 m N : 1781.682 m	GROUND LEVEL: RL- 100.00 M
WATER TABLE : 0.0 m		LOCATION : -COAL STORAGE	TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			1.50									>100	SPT	01			
			2.00														
			3.00									>100	SPT	02			
			4.00														
			4.50									>100	SPT	03			
			5.00														
			6.00									>100	SPT	04			
			7.00														
			7.50									>100	SPT	05			
			8.00														
			9.00														
	10.00									>100	SPT	06					
	11.00																
	12.00																
	13.00									>100	SPT	07					
D.I ROCK	ROCK	14.00	14.00														
		15.00	15.00														

BISHWANATH KUMAR DAS
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -59	SHEET NO: -02
DEPTH:	24.27 m	COMPLETED ON: 21.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 20.03.2020		CO-ORDINATES: E : 746.863 m N : 1781.682 m	GROUND LEVEL: RL- 100.00 M
WATER TABLE : 0.0 m		LOCATION	COAL STORAGE
			TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00						>100	SPT	08			
			16.00		16.00											
			17.00													
			18.00													
			19.00								CS	01	NIL	NIL		
			20.00													
			21.00													
			22.00								CS	02	NIL	NIL		
			23.00													
			24.00	24.27	24.00		24.27					CS	03	NIL	NIL	
BH TERMINATED AT DEPTH 24.27M																

Bishu Kumar Das
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -60	SHEET NO: -01
DEPTH:	19.40 m	CO-ORDINATES: E : 746.925 m N : 1736.335 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 06.03.2020	COMPLETED ON: 08.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 1.70 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			2.00									95	SPT	01			
			3.00									>100	SPT	02			
			4.00									>100	SPT	03			
			5.00									>100	SPT	04			
			6.00									>100	SPT	04			
			7.00									>100	SPT	05			
			8.00									>100	SPT	06			
			9.00									>100	SPT	06			
D.I ROCK	ROCK	13.50	13.50														
			14.00														
			15.00														
			15.00														
			15.00														
			15.00														

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 09



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -60	SHEET NO: -02
DEPTH:	19.40 m	CO-ORDINATES: E : 746.925 m N : 1736.335 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 06.03.2020	COMPLETED ON: 08.03.2020	LOCATION	COAL STORAGE
WATER TABLE :1.70 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			16.00		16.50							CS	02	NIL	NIL	
			17.00		18.00							CS	03	NIL	NIL	
			19.00	19.40	19.40							CS	04	NIL	NIL	
BH TERMINATED AT DEPTH 19.40M			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


 BISHNU KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 09	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -61	SHEET NO: -01
DEPTH:	18.00 m	CO-ORDINATES: E : 747.132 m N : 1671.397 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 05.03.2020	COMPLETED ON: 06.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 0.25 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
CLAYEY SAND	SC	0.00	0.00															
			1.00															
			2.00		1.50							>100	SPT	01				
			3.00		3.00							>100	SPT	02				
			4.00		4.50							>100	SPT	03				
			5.00		6.00							>100	SPT	04				
			6.00		7.50							>100	SPT	05				
			7.00		9.00							>100	SPT	06				
			8.00		10.50							>100	SPT	07				
			9.00		12.00							>100	SPT	08				
			10.00		13.00													
			11.00		15.00		15.00							CS	01	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

BISHWANATH KUMAR DAS.
 MTECH (GEO TECH)
 77, SATYANAGAR




SWAYIN & ASSOCIATES


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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -61	SHEET NO: -02
DEPTH:	18.00 m	CO-ORDINATES: E : 747.132 m N : 1671.397 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 05.03.2020	COMPLETED ON: 06.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 0.25 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL		
			16.00		17.00								CS	02	NIL	NIL	
			17.00		18.00								CS	03	NIL	NIL	
BH TERMINATED AT DEPTH 18.00M		18.00	18.00														
			19.00														
			20.00														
			21.00														
			22.00														
			23.00														
			24.00														
			25.00														
			26.00														
			27.00														
			28.00														
			29.00														
			30.00														


 BISHNU KUMAR DAS.
 MTECH (GEO TECH)
 77 SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -62	SHEET NO: -01
DEPTH:	16.50 m	CO-ORDINATES: E : 747.126 m N : 1626.314 m	GROUND LEVEL: RL- 99.00 M
COMMENCED ON: 11.03.2020	COMPLETED ON: 12.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 1.65 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC		0.00														
			1.00														
			1.50								98	SPT	01				
			2.00														
			3.00														
			4.00														
			4.50									>100	SPT	02			
			5.00														
D.I ROCK	ROCK		6.00		6.00												
			7.00														
			7.50														
			8.00														
			9.00														
			9.00									>100	SPT	06			
			10.00														
			10.50									>100	SPT	07			
			12.00		12.00												
			13.00														
			13.00														
			13.00									>100	SPT	08			
			15.00		15.00												

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -62	SHEET NO: -02
DEPTH:	16.50 m	CO-ORDINATES: E : 747.126 m N : 1626.314 m	GROUND LEVEL: RL- 99.00 M
COMMENCED ON: 11.03.2020	COMPLETED ON: 12.03.2020	LOCATION	COAL STORAGE
WATER TABLE :1.65 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK BH TERMINATED AT DEPTH 18.06M	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			16.50		16.50							CS	02	NIL	NIL	
			17.00													
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

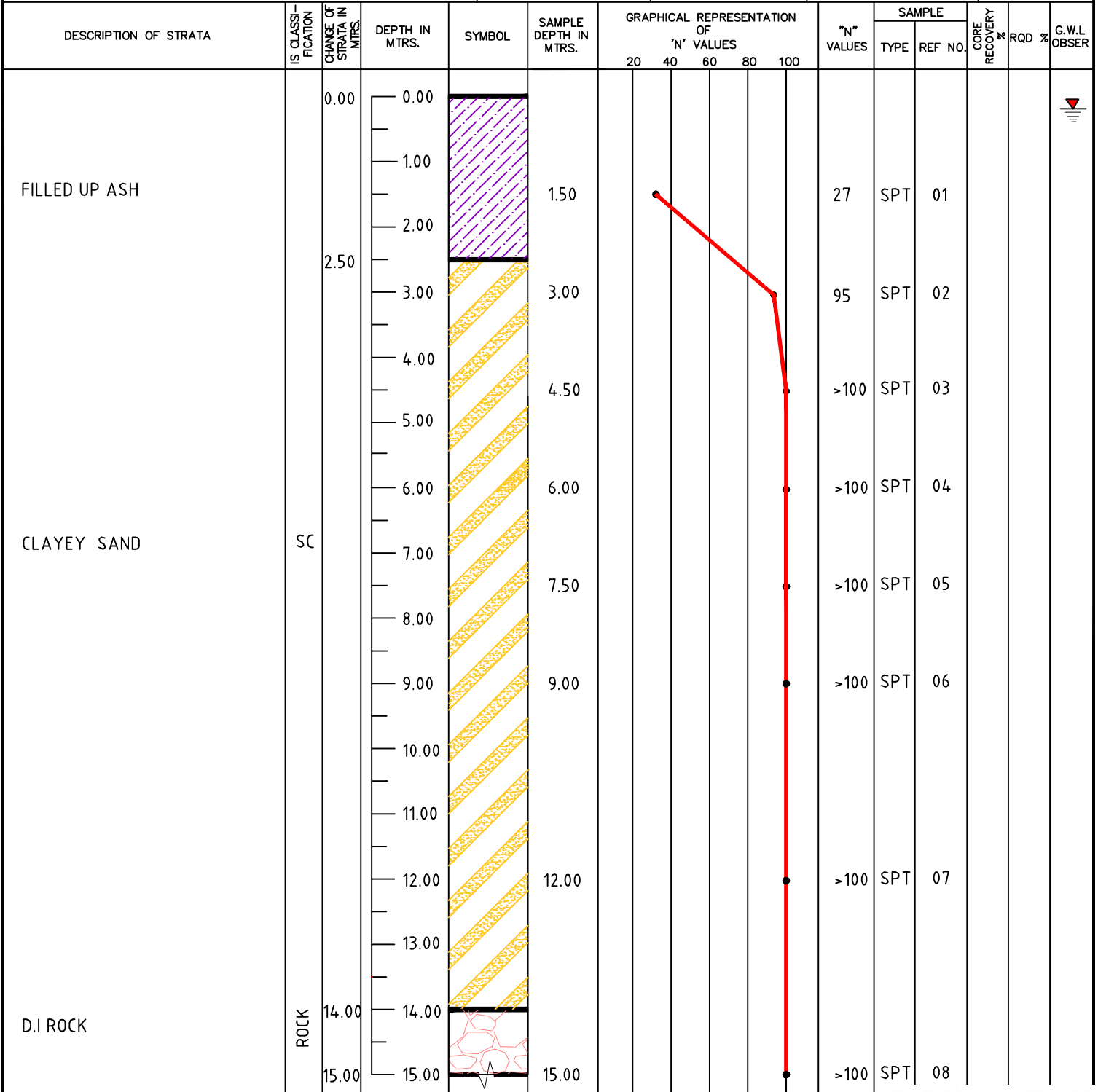

BISHWANATH KUMAR DAS.
M.TECH (GEO TECH)


LEGEND: -	UDS-UNDISTURBED SAMPLE, ∇-WATER LEVEL	DS- DISTURBED SAMPLE, P-PENETROMETRE TEST,	SPT-STANDARD PENETRATION TEST V- VANE SHEAR TEST	W- WATER SAMPLE, C-CORE RECOVERY
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No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL No. of SPT: 08	No. of Water Sample : 01

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -63	SHEET NO: -01
DEPTH:	18.00 m	CO-ORDINATES: E : 747.187 m N : 1581.149 m	GROUND LEVEL: RL- 100.50 M
COMMENCED ON: 05.03.2020	COMPLETED ON: 06.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 0.30 m			



LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

BISHU KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -63	SHEET NO: -02
DEPTH:	18.00 m	CO-ORDINATES: E : 747.187 m N : 1581.149 m	GROUND LEVEL: RL- 100.50 M
COMMENCED ON: 05.03.2020	COMPLETED ON: 06.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 0.30 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
D.I ROCK BH TERMINATED AT DEPTH 18.00M	ROCK	15.00	15.00		15.00						>100	SPT	08					
			16.00		16.50							CS	01	NIL	NIL			
			17.00		18.00		18.00							CS	02	NIL	NIL	
			18.00															
			19.00															
			20.00															
			21.00															
			22.00															
			23.00															
			24.00															


 Biswajit Kumar Das.
 M.TECH (GEOTECH)


LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -64	SHEET NO: -01
DEPTH:	18.00 m	COMPLETED ON: 07.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 05.03.2020	COMPLETED ON: 07.03.2020	CO-ORDINATES: E : 666.682 m N : 1581.029 m	GROUND LEVEL: RL- 99.90 M
WATER TABLE :1.20 m		LOCATION : -COAL STORAGE	TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
CLAYEY SAND	SC	0.00	0.00															
			1.50								>100	SPT	01					
			3.00									>100	SPT	02				
			4.50									>100	SPT	03				
			6.00									>100	SPT	04				
			7.50									>100	SPT	05				
			9.00									>100	SPT	06				
D.I ROCK	ROCK	9.80	10.00															
			12.00								>100	SPT	07					
			15.00															
			15.00															

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 07

BISHWANATH KUMAR DAS.
MTECH (GEO TECH)
77, SATYANAGAR




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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -64	SHEET NO: -02
DEPTH:	18.00 m	CO-ORDINATES: E : 666.682 m N : 1581.029 m	GROUND LEVEL: RL- 99.90 M
COMMENCED ON: 05.03.2020	COMPLETED ON: 07.03.2020	LOCATION	COAL STORAGE
WATER TABLE :1.20 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			16.00		16.50							CS	02	NIL	NIL	
			17.00		18.00							CS	03	NIL	NIL	
BH TERMINATED AT DEPTH 18.00M		18.00	18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

Bishwajit Kumar Das
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
No. of SPT: 07

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -65	SHEET NO: -01
DEPTH: 18.65 m	CO-ORDINATES: E : 666.633 m N : 1626.175 m	GROUND LEVEL: RL- 99.100 M
COMMENCED ON: 04.03.2020	COMPLETED ON: 05.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 0.50 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			2.00			1.50						>100	SPT	01			
			3.00			3.00						>100	SPT	02			
			4.00			4.50						>100	SPT	03			
			5.00			6.00						>100	SPT	04			
			6.00			7.50						>100	SPT	05			
			7.00			9.00						>100	SPT	06			
			8.00			10.50						>100	SPT	07			
			9.00	9.50		12.00							CS	01	NIL	NIL	
D.I ROCK	ROCK		12.00														
			13.00														
			14.00			13.50						>100	SPT	08			
	15.00		15.00								CS	02	NIL	NIL			

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -65	SHEET NO: -02
DEPTH:	18.65 m	CO-ORDINATES: E : 666.633 m N : 1626.175 m	GROUND LEVEL: RL- 99.100 M
COMMENCED ON: 04.03.2020	COMPLETED ON: 05.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 0.50 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK BH TERMINATED AT DEPTH 18.65 M	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			16.00		16.50							CS	03	NIL	NIL	
			17.00		18.65							CS	04	NIL	NIL	
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHWANATH KUMAR DAS
M.TECH (P&E) (BCH)
TFL, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -66	SHEET NO: -01
DEPTH: 19.25 m	CO-ORDINATES: E : 666.636 m N : 1671.213 m	GROUND LEVEL: RL- 100.00 M
COMMENCED ON: 07.03.2020	COMPLETED ON: 08.03.2020	LOCATION : -COAL STORAGE
WATER TABLE :2.00 m		TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			1.50								79	SPT	01				
			2.00														
			3.00								>100	SPT	02				
			4.00														
			4.50								>100	SPT	03				
			5.00														
			6.00								>100	SPT	04				
			7.00								>100	SPT	05				
D.I ROCK	ROCK	10.00	10.00														
			10.50							>100	SPT	07					
			12.00									CS	01	NIL	NIL		
			13.00														
			13.50								>100	SPT	08				
			14.00														
			15.00														
			15.00										CS	02	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

BISHWANATH KUMAR DAS.
 MTECH (GEOTECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES


77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -66	SHEET NO: -02
DEPTH:	19.25 m	COMPLETED ON: 08.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 07.03.2020	COMPLETED ON: 08.03.2020	CO-ORDINATES: E : 666.636 m N : 1671.213 m	GROUND LEVEL: RL- 100.00 M
WATER TABLE : 2.00 m		LOCATION	COAL STORAGE
			TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			16.00		16.50							CS	03	NIL	NIL	
			17.00		17.00							CS	04	NIL	NIL	
			18.00		19.00		19.25									
BH TERMINATED AT DEPTH 19.25 M		19.25														
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


 Bishwanath Kumar Das
 M.TECH (GEOTECH)
 SWAYIN & ASSOCIATES
 77, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -67	SHEET NO: -01
DEPTH: 21.00 m	CO-ORDINATES: E : 567.838 m N : 1580.973 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 12.03.2020	COMPLETED ON: 14.03.2020	LOCATION : -COAL STORAGE
WATER TABLE : 7.15 m		TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00 - 2.20	0.00 - 2.20		1.50						60	SPT	01			
CLAYEY SAND	SC	2.20 - 12.80	3.00		3.00						86	SPT	02			
			4.50		4.50						>100	SPT	03			
			6.00		6.00						>100	SPT	04			
			7.50		7.50						>100	SPT	05			
			10.00		10.00						>100	SPT	06			
D.I ROCK	ROCK	12.80 - 15.00	13.00 - 15.00		13.00						>100	SPT	07			
			15.00		15.00							CS	01	NIL	NIL	

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAI, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECO

No. of disturbed sample: NIL
No. of Large diameter sample: NIL

No. of Undisturbed sample: NIL
No. of CORE: NIL
No. of SPT: 07

No. of Vane Shear Test : NIL
No. of Water Sample : 01

BISHWANATH KUMAR DAS.
MTECH (GEO TECH)
77, SATYANAGAR

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -67	SHEET NO: -02
DEPTH:	21.00 m	COMPLETED ON: 14.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 12.03.2020	COMPLETED ON: 14.03.2020	CO-ORDINATES: E : 567.838 m N : 1580.973 m	GROUND LEVEL: RL- 105.00 M
WATER TABLE : 7.15 m		LOCATION	COAL STORAGE
			TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL			
			16.00															
			17.00															
			18.00				17.85							CS	02	NIL	NIL	
			19.00				19.00							CS	03	NIL	NIL	
			20.00															
			21.00		21.00		21.00											
			22.00															
			23.00															
			24.00															
BH TERMINATED AT DEPTH 23.00M																		

BISHWANATH KUMAR DAS
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: -

UDS-UNDISTURBED SAMPLE,	DS- DISTURBED SAMPLE,	SPT-STANDARD PENETRATION TEST	W- WATER SAMPLE,
∇-WATER LEVEL	P-PENETROMETRE TEST,	V- VANE SHEAR TEST	C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 07	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -68	SHEET NO: -01
DEPTH: 17.35 m	CO-ORDINATES: E : 567.777 m N : 1626.175 m	GROUND LEVEL: RL- 105.00M
COMMENCED ON: 12.03.2020	COMPLETED ON: 14.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 7.00 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
STIFF CLAY	CI	1.00	1.00													
MORRUM	SM	1.60	2.00		1.50					81	SPT	01				
CLAYEY SAND	SC	2.20	3.00		3.00					>100	SPT	02				
		4.00	4.50		4.50					>100	SPT	03				
		5.00	6.00		6.00					>100	SPT	04				
		7.00	7.50		7.50					>100	SPT	05				
		8.00	9.00		9.00					>100	SPT	06				
		10.00	10.50		10.50					>100	SPT	07				
		11.00	12.00		12.00					>100	SPT	08				
		12.50	13.00													
D.I ROCK	ROCK	13.00	13.50		13.50						CS	01	NIL	NIL		
		14.00	15.00		15.00							CS	02	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▬-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -68	SHEET NO: -02
DEPTH:	17.35 m	CO-ORDINATES: E : 567.777 m N : 1626.175 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 12.03.2020	COMPLETED ON: 14.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 7.00 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			16.00		16.50							CS	03	NIL	NIL	
BH TERMINATED AT DEPTH 17.35M		17.35	17.00		17.35											
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHAL KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -69	SHEET NO: -01
DEPTH: 17.09 m	CO-ORDINATES: E : 567.727 m N : 1671.010 m	GROUND LEVEL: RL- 104.400 M
COMMENCED ON: 13.03.2020	COMPLETED ON: 14.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 6.00 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			1.50								81	SPT	01				
			2.00														
			3.00								>100	SPT	02				
			4.00														
			4.50								>100	SPT	03				
			5.00														
			6.00								>100	SPT	04				
			7.00														
			7.50								>100	SPT	05				
			8.00														
			9.00								>100	SPT	06				
	10.00																
	10.50								>100	SPT	07						
	11.00																
	12.00								>100	SPT	08						
D.I ROCK	ROCK	13.00	13.00														
			13.50									CS	01	NIL	NIL		
			14.00														
	15.00		15.00														

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAI, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECO

No. of disturbed sample: NIL
No. of Large diameter sample: NIL
No. of Undisturbed sample: NIL
No. of CORE: NIL
No. of SPT: 08
No. of Vane Shear Test : NIL
No. of Water Sample : 01

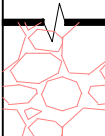
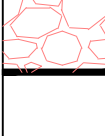
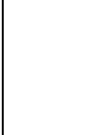


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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -69	SHEET NO: -02
DEPTH:	17.09 m	COMPLETED ON: 14.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 13.03.2020		CO-ORDINATES: E : 567.727 m N : 1671.010 m	GROUND LEVEL: RL- 104.400 M
WATER TABLE : 6.00 m		LOCATION	COAL STORAGE
			TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			16.00		16.50							CS	03	NIL	NIL	
BH TERMINATED AT DEPTH 17.09M		17.09	17.00		17.09											
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


BISHWANATH KUMAR DAS
M.TECH (GEOTECH)
77, SATYANAGAR

LEGEND: -

UDS-UNDISTURBED SAMPLE,	DS- DISTURBED SAMPLE,	SPT-STANDARD PENETRATION TEST	W- WATER SAMPLE,
∇-WATER LEVEL	P-PENETROMETRE TEST,	V- VANE SHEAR TEST	C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 08	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -70	SHEET NO: -01
DEPTH: 18.45 m	CO-ORDINATES: E : 517.741 m N : 1671.010 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 14.03.2020	COMPLETED ON: 15.03.2020	LOCATION : -COAL STORAGE
WATER TABLE : 6.00 m		TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
			1.00													
			2.00		1.50						61	SPT	01			
			3.00													
			4.00		3.00						63	SPT	02			
			5.00		4.50						>100	SPT	03			
			6.00		6.00						>100	SPT	04			
CLAYEY SAND	SC		7.00		7.50						>100	SPT	05			
			8.00													
			9.00													
			10.00		10.00						>100	SPT	06			
			11.00													
			12.00													
			13.00		13.00							CS	01	NIL	NIL	
D.I ROCK	ROCK		14.00													
			15.00		15.00											

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▬-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06

BISHU KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -70	SHEET NO: -02
DEPTH:	18.45 m	CO-ORDINATES: E : 517.741 m N : 1671.010 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 14.03.2020	COMPLETED ON: 15.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 6.00 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00											
			16.00		16.50							CS	02	NIL	NIL	
BH TERMINATED AT DEPTH 18.45M	ROCK	18.45	17.00		17.00											
			18.00		18.45							CS	03	NIL	NIL	
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHWANATH KUMAR DAS
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
No. of SPT: 06

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -71	SHEET NO: -01
DEPTH:	23.09 m	CO-ORDINATES: E : 468.816 m N : 1580.818 m	GROUND LEVEL: RL- 106.00 M
COMMMENCED ON: 16.03.2020	COMPLETED ON: 17.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 3.95m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
		1.60	1.50		1.50					70	SPT	01				
			3.00		3.00					>100	SPT	02				
			4.50		4.50					>100	SPT	03				
			6.00		6.00					>100	SPT	04				
			7.50		7.50					>100	SPT	05				
			10.00		10.00					>100	SPT	06				
CLAYEY SAND	SC	10.50	10.50													
			11.00													
			13.00		13.00						CS	01	NIL	NIL		
			14.00													
D.I ROCK	ROCK	15.00	15.00		15.00						CS	02	NIL	NIL		

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06

BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -71	SHEET NO: -02
DEPTH:	23.09 m	CO-ORDINATES: E : 468.816 m N : 1580.818 m	GROUND LEVEL: RL- 106.00 M
COMMENCED ON: 16.03.2020	COMPLETED ON: 17.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 3.95m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER			
						20	40	60	80	100		TYPE	REF NO.						
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL				
			16.00										CS	03	NIL	NIL			
			17.00										CS	04	NIL	NIL			
			18.00										CS	05	NIL	NIL			
			19.00										CS	06	NIL	NIL			
			20.00										CS	07	NIL	NIL			
			21.00										CS	08	NIL	NIL			
			22.00										CS	09	NIL	NIL			
			23.00										CS	10	NIL	NIL			
			23.09										CS	11	NIL	NIL			
			BH TERMINATED AT DEPTH 23.09M		23.09	23.00		23.09							CS	06	NIL	NIL	
						24.00													
			25.00																
			26.00																
			27.00																
			28.00																
			29.00																
			30.00																

BISHAL KUMAR DAS.
MTECH (P&OTECH)
77, SATYANAGAR




LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
No. of SPT: 06

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -72	SHEET NO: -01
DEPTH:	17.95 m	CO-ORDINATES: E : 468.844 m N : 1625.972 m	GROUND LEVEL: RL- 106.00 M
COMMENCED ON: 14.03.2020	COMPLETED ON: 15.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 7.30 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			2.00			1.50					64	SPT	01				
			3.00			3.00					>100	SPT	02				
			4.00			4.50					>100	SPT	03				
			5.00			4.50					>100	SPT	03				
			6.00			6.00					>100	SPT	04				
			7.00			7.50					>100	SPT	05				
			8.00			7.50					>100	SPT	05				
			9.00			10.00					>100	SPT	06				
			10.00			10.00					>100	SPT	06				
			11.00			13.00											
		D.I ROCK	ROCK	13.00	13.00		13.00							CS	01	NIL	NIL
	14.00																
	15.00					15.00											


BISHAL KUMAR DAS.
MTECH (GEO) (I.I.T. KANPUR)


LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR
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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -72	SHEET NO: -02
DEPTH:	17.95 m	CO-ORDINATES: E : 468.844 m N : 1625.972 m	GROUND LEVEL: RL- 106.00 M
COMMENCED ON: 14.03.2020	COMPLETED ON: 15.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 7.30 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00											
			15.50		15.50						CS	02	NIL	NIL		
BH TERMINATED AT DEPTH 17.95M	ROCK	17.95	17.95		17.95											
			18.00		18.00						CS	03	NIL	NIL		
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHWANATH KUMAR DAS
M.TECH (GEO TECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)		CONTRACTOR: WUHUAN ENGG. CO., LTD.	
DIA OF HOLE: 150 mm	BORE HOLE NO: -73	SHEET NO: -01	JOB NO: -TLD/2020-03	
DEPTH: 23.09 m	CO-ORDINATES: E : 468.772 m N : 1671.010 m		GROUND LEVEL: RL- 105.00 M	LOCATION : -COAL STORAGE TYPE : - B
COMMENCED ON: 15.03.2020	COMPLETED ON: 16.03.2020		WATER TABLE : 3.90 m	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
CLAYEY SAND	SC	0.00	0.00															
			1.00															
			2.00		1.50						88	SPT	01					
			3.00		3.00						>100	SPT	02					
			4.00		4.50						>100	SPT	03					
			5.00		6.00						>100	SPT	04					
			6.00		7.50						>100	SPT	05					
			7.00		9.10													
		D.I ROCK	ROCK	9.00	10.00									CS	01	NIL	NIL	
					11.00													
	12.00				13.00								CS	02	12	NIL		
	13.00				14.00													
	14.00				15.00													

BISHWANATH KUMAR DAS.
MTECH (GEOTECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: 05 No. of Water Sample : 01
No. of SPT: 05

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -73	SHEET NO: -02
DEPTH:	23.09 m	CO-ORDINATES: E : 468.772 m N : 1671.010 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 15.03.2020	COMPLETED ON: 16.03.2020	LOCATION : -COAL STORAGE	TYPE : - B
WATER TABLE : 3.90 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
D.I ROCK	ROCK		15.00		15.00													
			16.00		16.00						CS	03	20	NIL				
			17.00															
			18.00															
			19.00										CS	04	22	NIL		
			20.00															
			21.00										CS	05	20	NIL		
			22.00															
			23.00										CS	06	24	NIL		
			24.00															
			25.00															
			26.00															
			27.00															
28.00																		
29.00																		
30.00																		
BH TERMINATED AT DEPTH 23.09M			23.09		23.09													

BISHWANATH KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 05	No. of Water Sample : 01
	No. of SPT: 05	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -74	SHEET NO: -01
DEPTH:	18.98 m	CO-ORDINATES: E : 666.496 m N : 1736.244 m	GROUND LEVEL: RL- 106.00 M
COMMENCED ON: 06.03.2020	COMPLETED ON: 07.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 5.10 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
			1.00													
			2.00		1.50					68	SPT	01				
			3.00		3.00					>100	SPT	02				
			4.00													
			5.00		4.50					>100	SPT	03				
			6.00		6.00					>100	SPT	04				
CLAYEY SAND	SC	7.00	7.00													
			8.00													
			9.00		7.50					>100	SPT	05				
			10.00													
			11.00		9.00					>100	SPT	06				
			12.00		10.50					>100	SPT	07				
			13.00													
			14.00		12.00					>100	SPT	08				
D.I ROCK	ROCK	12.30	12.00													
			13.00													
			14.00													
			15.00		15.00						CS	01	NIL	NIL		

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 08

BISHWANATH KUMAR DAS.
 M.TECH (GEOTECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)		CONTRACTOR: WUHUAN ENGG. CO., LTD.	
DIA OF HOLE:	150 mm	BORE HOLE NO: -74	SHEET NO: -02	JOB NO: -TLD/2020-03	
DEPTH:	18.98 m	CO-ORDINATES: E : 666.496 m N : 1736.244 m		GROUND LEVEL: RL- 106.00 M	LOCATION COAL STORAGE TYPE : - D
COMMENCED ON:	06.03.2020	COMPLETED ON: 07.03.2020		WATER TABLE : 5.10 m	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL	
			18.00		18.00							CS	02	NIL	NIL	
			18.98		18.98							CS	03	NIL	NIL	
BH TERMINATED AT DEPTH 18.98M			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHAL KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
No. of SPT: 08

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -75	SHEET NO: -01
DEPTH:	17.95 m	CO-ORDINATES: E : 581.059 m N : 1736.146 m	GROUND LEVEL: RL- 106.00 M
COMMENCED ON: 13.03.2020	COMPLETED ON: 14.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 6.20 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00		1.50						95	SPT	01			
CLAYEY SAND	SC	2.00	2.00		3.00						>100	SPT	02			
		4.00	4.00		4.50						>100	SPT	03			
		6.00	6.00		6.00						>100	SPT	04			
		8.00	8.00		7.50						>100	SPT	05			
		10.00	10.00		9.00						>100	SPT	06			
		12.00	12.00		10.50						>100	SPT	07			
		14.00	14.00		12.00						>100	SPT	08			
		15.00	15.00		13.50						>100	SPT	09			
D.I ROCK	ROCK	13.50	13.50		15.00						>100	SPT	09			
			15.00									CS	01	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 09

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -75	SHEET NO: -02
DEPTH:	17.95 m	COMPLETED ON: 14.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 13.03.2020	COMPLETED ON: 14.03.2020	CO-ORDINATES: E : 581.059 m N : 1736.146 m	GROUND LEVEL: RL- 106.00 M
WATER TABLE : 6.20 m		LOCATION	COAL STORAGE
		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
D.I ROCK	ROCK	15.00	15.00		15.00							CS	01	NIL	NIL		
			16.00										CS	02	NIL	NIL	
			17.00											CS	03	NIL	NIL
BH TERMINATED AT DEPTH 17.95 M		17.95	18.00		17.95												
			19.00														
			20.00														
			21.00														
			22.00														
			23.00														
			24.00														
			25.00														
			26.00														
			27.00														
			28.00														
			29.00														
			30.00														

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LEGEND: -	UDS-UNDISTURBED SAMPLE, ∇-WATER LEVEL	DS- DISTURBED SAMPLE, P-PENETROMETRE TEST,	SPT-STANDARD PENETRATION TEST V- VANE SHEAR TEST	W- WATER SAMPLE, C-CORE RECOVERY
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No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL No. of SPT: 09	No. of Water Sample : 01

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -76	SHEET NO: -01
DEPTH: 21.45 m	CO-ORDINATES: E : 581.069 m N : 1703.705 m	GROUND LEVEL: RL- 102.00 M
COMMENCED ON: 11.03.2020	COMPLETED ON: 12.03.2020	LOCATION : -COAL STORAGE
WATER TABLE : 6.15 m		TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
CLAYEY SAND	SC	0.00	0.00															
			1.00															
			2.00		1.50		81	SPT	01									
			3.00		3.00		>100	SPT	02									
			4.00		4.50		>100	SPT	03									
			5.00		6.00		>100	SPT	04									
			6.00		7.50		>100	SPT	05									
			8.00		10.00		>100	SPT	06									
			9.00		12.00													
		D.I ROCK	ROCK	12.00	12.00													
					13.00	13.00												
	14.00			15.00														

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -76	SHEET NO: -02
DEPTH:	21.45 m	CO-ORDINATES: E : 581.069 m N : 1703.705 m	GROUND LEVEL: RL- 102.00 M
COMMENCED ON: 11.03.2020	COMPLETED ON: 12.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 6.15 m		TYPE : - B	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL		
			16.00														
			17.00			17.00							CS	03	NIL	NIL	
			18.00														
			19.00			19.00							CS	04	NIL	NIL	
			20.00														
			21.00														
			21.45			21.45							CS	05	NIL	NIL	
			22.00														
			23.00														
	24.00																
	25.00																
	26.00																
	27.00																
	28.00																
	29.00																
	30.00																

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LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -77	SHEET NO: -01
DEPTH: 18.09 m	CO-ORDINATES: E : 525.783 m N : 1720.186 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 13.03.2020	COMPLETED ON: 14.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 6.50 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
MORRUM	SM	0.00	0.00													
		1.80	1.50		1.50						63	SPT	01			
			3.00		3.00						72	SPT	02			
			4.50		4.50						>100	SPT	03			
			6.00		6.00						>100	SPT	04			
			7.50		7.50						>100	SPT	05			
			10.00		10.00						>100	SPT	06			
			12.70													
			13.00		13.00							CS	01	NIL	NIL	
			14.00													
			15.00		15.00							CS	02	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -77	SHEET NO: -02
DEPTH:	18.09 m	COMPLETED ON: 14.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 13.03.2020	COMPLETED ON: 14.03.2020	CO-ORDINATES: E : 525.783 m N : 1720.186 m	GROUND LEVEL: RL- 105.00 M
WATER TABLE : 6.50 m		LOCATION	COAL STORAGE
			TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			16.00		16.50							CS	03	NIL	NIL	
			17.00		18.09		18.09							CS	04	NIL
BH TERMINATED AT DEPTH 18.09M		18.09	18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHU KUMAR DAS.
MTECH (P&OT/TECH)
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LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
No. of SPT: 06

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -78	SHEET NO: -01
DEPTH:	20.81 m	CO-ORDINATES: E : 489.311 m N : 1736.150 m	GROUND LEVEL: RL- 105.00 M
COMMMENCED ON: 08.03.2020	COMPLETED ON: 09.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 3.60 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND	SC	0.00	0.00													
MORRUM	SM	1.00	1.00		1.50						53	SPT	01			
		2.00	2.00													
		3.00	3.00		3.00						87	SPT	02			
		4.00	4.00													
		5.00	5.00		4.50						>100	SPT	03			
		6.00	6.00													
CLAYEY SAND	SC	6.00	6.00		6.00						>100	SPT	04			
		7.00	7.00													
		8.00	8.00		7.50						>100	SPT	05			
		9.00	9.00													
		10.00	10.00		9.00							CS	01	NIL	NIL	
		11.00	11.00													
		12.00	12.00		10.50							CS	02	NIL	NIL	
		13.00	13.00													
		14.00	14.00		12.00							CS	03	NIL	NIL	
		15.00	15.00													
		15.00	15.00		15.00							CS	04	NIL	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 03 No. of Water Sample : 01
 No. of SPT: 05

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -78	SHEET NO: -02
DEPTH:	20.81 m	CO-ORDINATES: E : 489.311 m N : 1736.150 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 08.03.2020	COMPLETED ON: 09.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 3.60 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
D.I ROCK	ROCK	15.00	15.00		15.00							CS	04	NIL	NIL			
			16.00															
			17.00															
			18.00				18.00							CS	05	18	NIL	
			19.00															
			20.00				19.50							CS	06	22	NIL	
			20.81				20.81							CS	07	26	NIL	
BH TERMINATED AT DEPTH 20.81M			21.00															
			22.00															
			23.00															
			24.00															
			25.00															
			26.00															
			27.00															
			28.00															
			29.00															
			30.00															

Bishwajit Kumar Das
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LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 03	No. of Water Sample : 01
	No. of SPT: 05	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -79	SHEET NO: -01
DEPTH:	22.09 m	COMPLETED ON: 09.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 08.03.2020	COMPLETED ON: 09.03.2020	CO-ORDINATES: E : 453.835 m N : 1707.278 m	GROUND LEVEL: RL- 105.00 M
WATER TABLE : 4.25 m		LOCATION : -COAL STORAGE	TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND	SC	0.00	0.00													
		1.00	1.00		1.50						53	SPT	01			
MORRUM	SM	2.00	2.00													
		3.00	3.00		3.00						87	SPT	02			
		4.00	4.00													
		5.00	5.00		4.50						>100	SPT	03			
CLAYEY SAND	SC	6.00	6.00		6.00						>100	SPT	04			
		7.00	7.00													
		8.00	8.00													
		9.00	9.00		9.00							CS	01	NIL	NIL	
		10.00	10.00		10.50							CS	02	NIL	NIL	
D.I ROCK	ROCK	11.00	11.00		12.00							CS	03	25	NIL	
		12.00	12.00		13.50							CS	04	28	NIL	
		13.00	13.00													
		14.00	14.00													
		15.00	15.00		15.00							CS	05	26	NIL	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 08 No. of Water Sample : 01
 No. of SPT: 04

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -79	SHEET NO: -02
DEPTH:	22.09 m	COMPLETED ON: 09.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 08.03.2020	COMPLETED ON: 09.03.2020	CO-ORDINATES: E : 453.835 m N : 1707.278 m	GROUND LEVEL: RL- 105.00 M
WATER TABLE : 4.25 m		LOCATION	COAL STORAGE
			TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
D.I ROCK	ROCK	15.00	15.00		15.00							CS	05	26	NIL		
			16.00		16.50							CS	06	30	NIL		
			17.00		18.00							CS	07	36	NIL		
			19.00		19.50							CS	08	34	NIL		
			20.00		21.00							CS	09	35	NIL		
			22.09		22.00		22.09						CS	10	31	NIL	
					23.00												
					24.00												
					25.00												
					26.00												


 BISHWANATH KUMAR DAS.
 MTECH (P&OT&ECH)


LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 08	No. of Water Sample : 01
	No. of SPT: 04	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -80	SHEET NO: -01
DEPTH:	21.10 m	CO-ORDINATES: E : 420.949 m N : 1679.987 m	GROUND LEVEL: RL- 105.00 M
COMMENCED ON: 08.03.2020	COMPLETED ON: 09.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 5.84 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
CLAYEY SAND	SC		0.00															
			1.00															
			1.50								85	SPT	01					
			2.00															
			3.00								>100	SPT	02					
D.I ROCK	ROCK		4.00															
			4.50															
			5.00															
			6.00															
			6.00								>100	SPT	04					
			7.00															
			7.50															
			8.00															
			8.00															
			9.00															
D.I ROCK	ROCK		9.00															
			10.00															
			10.50															
			12.00															
			12.60															
D.I ROCK	ROCK		13.00															
			13.50															
			14.00															
15.00																		

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 03 No. of Water Sample : 01
 No. of SPT: 05










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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -80	SHEET NO: -02
DEPTH:	21.10 m	COMPLETED ON: 09.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 08.03.2020	COMPLETED ON: 09.03.2020	CO-ORDINATES: E : 420.949 m N : 1679.987 m	GROUND LEVEL: RL- 105.00 M
WATER TABLE :5.84 m		LOCATION : -COAL STORAGE TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					"N" VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	05	NIL	NIL	
			16.00		16.50							CS	06	NIL	NIL	
			17.00		18.00							CS	07	NIL	NIL	
			18.00		19.50							CS	08	20	NIL	
			19.00		21.00							CS	09	18	NIL	
			20.00		21.10							CS	10	15	NIL	
			21.00													
			22.00													
			23.00													
			24.00													
BH TERMINATED AT DEPTH 21.10M																

Bishwanath Kumar Das
MTECH (P&OT) (IIT KGP)
SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 03	No. of Water Sample : 01
	No. of SPT: 05	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -81	SHEET NO: -01
DEPTH: 19.85 m	CO-ORDINATES: E : 392.101 m N : 1658.403 m	GROUND LEVEL: RL- 105.10 M
COMMMENCED ON: 17.03.2020	COMPLETED ON: 18.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 4.16 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			1.50								84	SPT	01				
			2.00														
			3.00								94	SPT	02				
			4.00														
			4.50								>100	SPT	03				
			5.00														
			6.00								>100	SPT	04				
			7.00														
D.I ROCK	ROCK	9.00	9.00														
			10.00														
			10.50														
			11.00														
			12.00														
			13.00														
			13.50														
			14.00														
	15.00																

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 03 No. of Water Sample : 01
 No. of SPT: 05



SWAYIN & ASSOCIATES

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -81	SHEET NO: -02
DEPTH:	19.85 m	CO-ORDINATES: E : 392.101 m N : 1658.403 m	GROUND LEVEL: RL- 105.10M
COMMENCED ON: 17.03.2020	COMPLETED ON: 18.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 4.16 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	05	NIL	NIL	
			16.00		16.50							CS	06	25	NIL	
			17.00		18.00							CS	07	31	NIL	
			18.00		19.00											
			19.00		19.85							CS	08	42	NIL	
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
BH TERMINATED AT DEPTH 19.85M																

Bishu Kumar Das
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES
77, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: 03	No. of Water Sample : 01
	No. of SPT: 05	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -82	SHEET NO: -01
DEPTH: 18.30 m	CO-ORDINATES: E : 402.831 m N : 1625.808 m	GROUND LEVEL: RL- 104.00 M
COMMENCED ON: 16.03.2020	COMPLETED ON: 17.03.2020	LOCATION : -COAL STORAGE
WATER TABLE : 4.20 m		TYPE : - D

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
CLAYEY SAND	SC		0.00													
			1.50	77	SPT	01										
			3.00	90	SPT	02										
			4.50	>100	SPT	03										
			6.00	>100	SPT	04										
			7.50	>100	SPT	05										
			9.00		CS	01	NIL	NIL								
			10.50		CS	02	NIL	NIL								
D.I ROCK	ROCK		12.60		CS	03	NIL	NIL								
			13.50		CS	04	NIL	NIL								
			15.00		CS	05	10	NIL								

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: 02 No. of Water Sample : 01
 No. of SPT: 05



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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -82	SHEET NO: -02
DEPTH:	18.30 m	CO-ORDINATES: E : 402.831 m N : 1625.808 m	GROUND LEVEL: RL- 104.00 M
COMMENCED ON: 16.03.2020	COMPLETED ON: 17.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 4.20 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	05	10	NIL	
			16.00			16.5							CS	06	15	NIL
BH TERMINATED AT DEPTH 18.30M	ROCK	18.30	17.00		18.00							CS	07	21	NIL	
			18.00		18.30							CS	08	NIL	NIL	
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHOP KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL No. of CORE: 02 No. of Water Sample : 01
No. of SPT: 05

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)		CONTRACTOR: WUHUAN ENGG. CO., LTD.	
DIA OF HOLE: 150 mm	BORE HOLE NO: -83	SHEET NO: -01	JOB NO: -TLD/2020-03	
DEPTH: 18.77 m	CO-ORDINATES: E : 352.799 m N : 1625.746 m		GROUND LEVEL: RL- 106.070 M	LOCATION : -COAL STORAGE TYPE : - D
COMMENCED ON: 17.03.2020	COMPLETED ON: 19.03.2020		WATER TABLE : 3.45 m	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			2.00									78	SPT	01			
			3.00									>100	SPT	02			
			4.00									>100	SPT	03			
			5.00									>100	SPT	04			
			6.00									>100	SPT	04			
			7.00									>100	SPT	05			
			8.00									>100	SPT	05			
			9.00									>100	SPT	06			
			10.00									>100	SPT	06			
D.I ROCK	ROCK	11.00	11.00														
			12.00														
			13.00														
			14.00														
			15.00														

BISHWANATH KUMAR DAS
M.TECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)		CONTRACTOR: WUHUAN ENGG. CO., LTD.	
DIA OF HOLE:	150 mm	BORE HOLE NO: -83	SHEET NO: -02	JOB NO: -TLD/2020-03	
DEPTH:	18.77 m	CO-ORDINATES: E : 352.799 m N : 1625.746 m		GROUND LEVEL: RL- 106.070 M	LOCATION COAL STORAGE TYPE : - D
COMMENCED ON: 17.03.2020	COMPLETED ON: 19.03.2020	WATER TABLE : 3.45 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00											
			16.00		16.00						CS	02	NIL	NIL		
BH TERMINATED AT DEPTH 18.77M	ROCK	18.77	18.77		18.77											
			19.00								CS	03	NIL	NIL		
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

Bishu Kumar Das
MTECH (GEOTECH)
77, SATYANAGAR



LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ▬-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -84	SHEET NO: -01
DEPTH:	18.90 m	CO-ORDINATES: E : 352.797 m N : 1560.709 m	GROUND LEVEL: RL- 105.200 M
COMMENCED ON: 17.03.2020	COMPLETED ON: 18.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 3.89 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			1.50								65	SPT	01				
			2.00														
			3.00								>100	SPT	02				
			4.00														
			4.50								>100	SPT	03				
			5.00														
			6.00								>100	SPT	04				
			7.00								>100	SPT	05				
			8.00														
D.I ROCK	ROCK	11.50	11.50														
			12.00														
			13.00														
			14.00														
			15.00														

BISHWANATH KUMAR DAS.
MTECH (GEO TECH)
SWAYIN & ASSOCIATES





LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -84	SHEET NO: -02
DEPTH:	18.90 m	CO-ORDINATES: E : 352.797 m N : 1560.709 m	GROUND LEVEL: RL- 105.200 M
COMMENCED ON: 17.03.2020	COMPLETED ON: 18.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 3.89 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00											
			16.00		16.00						CS	02	NIL	NIL		
BH TERMINATED AT DEPTH 18.90M	ROCK	18.90	18.90		18.90											
			19.00		19.00						CS	03	NIL	NIL		
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													


BISHWANATH KUMAR DAS.
MTECH (GEOTECH)
TALCHER, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -85	SHEET NO: -01
DEPTH:	19.10 m	CO-ORDINATES: E : 352.799 m N : 1495.769 m	GROUND LEVEL: RL- 103.700 M
COMMENCED ON: 17.03.2020	COMPLETED ON: 18.03.2020	LOCATION : -COAL STORAGE	TYPE : - B
WATER TABLE : 2.60 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC		0.00														
			1.00														
			1.50								78	SPT	01				
			2.00														
			3.00								>100	SPT	02				
			4.00														
			4.50								>100	SPT	03				
			5.00														
			6.00								>100	SPT	04				
			7.00														
			7.50								>100	SPT	05				
8.00																	
9.00									>100	SPT	06						
10.00																	
10.50									>100	SPT	07						
11.00																	
11.50																	
D.I ROCK	ROCK		12.00														
			13.00														
			14.00														
			15.00														

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 07

BISHWAJIT KUMAR DAS.
 M.TECH (GEOTECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR
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BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -85	SHEET NO: -02
DEPTH:	19.10 m	CO-ORDINATES: E : 352.799 m N : 1495.769 m	GROUND LEVEL: RL- 103.700 M
COMMENCED ON: 17.03.2020	COMPLETED ON: 18.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 2.60 m		TYPE : - B	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			17.00		17.00							CS	03	NIL	NIL	
			19.10		19.10							CS	04	NIL	NIL	
BH TERMINATED AT DEPTH 19.10M																
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHWAJIT KUMAR DAS.
MTECH (GEO TECH)
T.T. SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, ∇ -WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 07	

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -86	SHEET NO: -01
DEPTH:	18.19 m	CO-ORDINATES: E : 352.914 m N : 1453.648 m	GROUND LEVEL: RL- 103.100 M
COMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION : -COAL STORAGE	TYPE : - D
WATER TABLE : 3.50 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER		
						20	40	60	80	100		TYPE	REF NO.					
CLAYEY SAND	SC	0.00	0.00															
			1.00															
			2.00															
			3.00															
			4.00															
			4.50															
			5.00															
			6.00															
			7.00															
			8.00															
	9.00																	
	10.00																	
	10.50																	
D.I ROCK	ROCK	11.00	11.00															
			12.00															
			13.00															
			14.00															
	15.00		15.00															

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 07

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -86	SHEET NO: -02
DEPTH:	18.19 m	CO-ORDINATES: E : 352.914 m N : 1453.648 m	GROUND LEVEL: RL- 103.100 M
COMMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 3.50 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00											
			16.00		16.50						CS	03	NIL	NIL		
BH TERMINATED AT DEPTH 18.19M	ROCK	18.19	18.00		18.19											
			18.19								CS	04	NIL	NIL		
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

Bishu Kumar Das
MTECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE, -W- WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 07	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -87	SHEET NO: -01
DEPTH: 18.55 m	CO-ORDINATES: E : 353.003 m N : 1407.574 m	GROUND LEVEL: RL- 102.900 M
COMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 2.80 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS.	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			2.00		1.50						65	SPT	01				
			3.00		3.00						71	SPT	02				
			4.00		4.50						>100	SPT	03				
			5.00		6.00						>100	SPT	04				
			6.00		7.50						>100	SPT	05				
			7.00		10.00						>100	SPT	06				
			8.00		11.60												
			9.00		12.00												
			10.00		13.00												
D.I ROCK	ROCK											CS	01	NIL	NIL		

Bishal Kumar Das
MTECH (GEOTECH)
77, SATYANAGAR

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST, W- WATER SAMPLE, -W- WATER LEVEL, P-PENETROMETRE TEST, V- VANE SHEAR TEST, C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -87	SHEET NO: -02
DEPTH:	18.55 m	CO-ORDINATES: E : 353.003 m N : 1407.574 m	GROUND LEVEL: RL- 102.900 M
COMMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION	COAL STORAGE
WATER TABLE : 2.80 m		TYPE : - D	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK BH TERMINATED AT DEPTH 18.55M	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL	
			18.55	18.55		18.55							CS	03	NIL	NIL
			16.00													
			17.00													
			18.00													
			19.00													
			20.00													
			21.00													
			22.00													
			23.00													
			24.00													
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

BISHWANATH KUMAR DAS.
MTECH (GEO TECH)
SWAYIN & ASSOCIATES
77, SATYANAGAR

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

SWAYIN & ASSOCIATES
77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -88	SHEET NO: -01
DEPTH: 18.50 m	CO-ORDINATES: E : 353.053 m N : 1361.245 m	GROUND LEVEL: RL- 95.00 M
COMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION : -COAL STORAGE TYPE : - D
WATER TABLE : 1.50 m		

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC	0.00	0.00														
			1.00														
			2.00								87	SPT	01				
			3.00								>100	SPT	02				
			4.00								>100	SPT	03				
			5.00								>100	SPT	04				
D.I ROCK	ROCK	10.00	10.00														
			11.00														
			12.00														
			13.00														
			14.00														
			15.00														

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

(Signature)
 BISHW KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06

SWAYIN & ASSOCIATES

77, SATYANAGAR, BHUBANESWAR
Web Site : www.swayinassociates.com

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -88	SHEET NO: -02
DEPTH:	18.50 m	CO-ORDINATES: E : 353.053 m N : 1361.245 m	GROUND LEVEL: RL- 95.00 M
COMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION : -COAL STORAGE	TYPE : -D
WATER TABLE : 1.50 m			

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER			
						20	40	60	80	100		TYPE	REF NO.						
D.I ROCK	ROCK	15.00	15.00		15.00							CS	02	NIL	NIL				
			16.00																
			17.00																
BH TERMINATED AT DEPTH 18.50M	ROCK	18.50	18.00		18.50							CS	04	NIL	NIL				
			19.00																
			20.00																
			21.00																
			22.00																
			23.00																
			24.00																
			25.00																
			26.00																
			27.00																
			28.00																
			29.00																
30.00																			

BISHAL KUMAR DAS.
MTECH (GEO TECH)
SWAYIN & ASSOCIATES

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAMPLE,
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECOVERY

No. of disturbed sample: NIL	No. of Undisturbed sample: NIL	No. of Vane Shear Test : NIL
No. of Large diameter sample: NIL	No. of CORE: NIL	No. of Water Sample : 01
	No. of SPT: 06	

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING: ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE: 150 mm	BORE HOLE NO: -89	SHEET NO: -01
DEPTH: 24.08 m	CO-ORDINATES: E : 353.197 m N : 1306.300 m	GROUND LEVEL: RL- 95.00 M
COMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	LOCATION : -COAL STORAGE
WATER TABLE : 1.70 m		TYPE : - B

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRES	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER	
						20	40	60	80	100		TYPE	REF NO.				
CLAYEY SAND	SC		0.00														
			1.00														
			1.50								84	SPT	01				
			2.00														
			3.00								>100	SPT	02				
			4.00														
			4.50								>100	SPT	03				
			5.00														
			6.00								>100	SPT	04				
			7.00								>100	SPT	05				
D.I ROCK	ROCK		9.80														
			10.00							>100	SPT	06					
			11.00														
			12.00														
			13.00									CS	01	NIL	NIL		
15.00																	

LEGEND: -
 UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ▽-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06

BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 77, SATYANAGAR

BORELOG DATA SHEET

NAME OF PROJECT: DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER.

TYPE OF BORING:	ROTARY CALYX DRILLING	CLIENT: TALCHER FERTILIZERS LIMITED (TFL)	CONTRACTOR: WUHUAN ENGG. CO., LTD.
DIA OF HOLE:	150 mm	BORE HOLE NO: -89	SHEET NO: -02
DEPTH:	24.08 m	COMPLETED ON: 19.03.2020	JOB NO: -TLD/2020-03
COMMENCED ON: 18.03.2020	COMPLETED ON: 19.03.2020	CO-ORDINATES: E : 353.197 m N : 1306.300 m	GROUND LEVEL: RL- 95.00 M
WATER TABLE : 1.70 m		LOCATION	COAL STORAGE
		TYPE : - B	

DESCRIPTION OF STRATA	IS CLASSIFICATION	CHANGE OF STRATA IN METRS	DEPTH IN METRS.	SYMBOL	SAMPLE DEPTH IN METRS.	GRAPHICAL REPRESENTATION OF 'N' VALUES					'N' VALUES	SAMPLE		CORE RECOVERY %	RQD %	G.W.L OBSER
						20	40	60	80	100		TYPE	REF NO.			
D.I ROCK	ROCK	15.00	15.00		15.00											
			16.00		16.00						CS	02	NIL	NIL		
			17.00													
			18.00													
			19.00				19.00					CS	03	NIL	NIL	
			20.00													
			21.00													
			22.00				22.00					CS	04	NIL	NIL	
			23.00													
			BH TERMINATED AT DEPTH 24.08M		24.08	24.00		24.08					CS	05	NIL	NIL
			25.00													
			26.00													
			27.00													
			28.00													
			29.00													
			30.00													

LEGEND: - UDS-UNDISTURBED SAMPLE, DS- DISTURBED SAMPLE, SPT-STANDARD PENETRATION TEST W- WATER SAI
 ∇-WATER LEVEL P-PENETROMETRE TEST, V- VANE SHEAR TEST C-CORE RECO

No. of disturbed sample: NIL No. of Undisturbed sample: NIL No. of Vane Shear Test : NIL
 No. of Large diameter sample: NIL No. of CORE: NIL No. of Water Sample : 01
 No. of SPT: 06





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BHUBANESWAR
www.swayinassociates.com

TRIAL PIT-03

LOCATION :- ASU AREA

CO-ORDINATE :- E-125.87 N-1202.44

PROJECT:- DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER, ODISHA, INDIA.

TP:-03

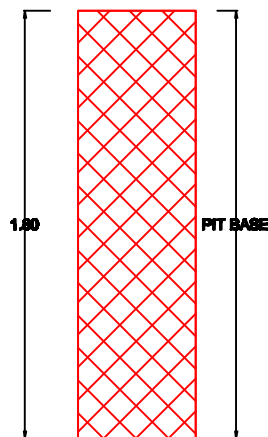
TOTAL DEPTH:1.80M

R.L:-94.682

DATE OF START :-15.05.2020

DATE OF COMP. :- 15.05.2020

SCALE IN METRES	STRATA				SAMPLE			LEGEND:-	
	DEPTH	SYMBOL			DEPTH (M)	TYPE	No.		
0.00	0.00	3.00 S	3.00 W	3.00 N	3.00 E				
1.00						1.00	UDS	01	1) CLAYEY SAND
1.50						3.00	3.00	3.00	3.00



BISHAL KUMAR DAS.
M.TECH (P&EOT&ECH)
SWAYIN & ASSOCIATES
77, SATYANAGAR



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77, SATYANAGAR,
BHUBANESWAR
www.swayinassociates.com

TRIAL PIT-04

LOCATION :- CSU AREA

CO-ORDINATE :- E-799.43 N-1736.353

PROJECT:- DETAILED SOIL INVESTIGATION WORKS, SURVEY WORKS OF COAL GASIFICATION & AMMONIA UREA PLANT, TALCHER, ODISHA, INDIA.

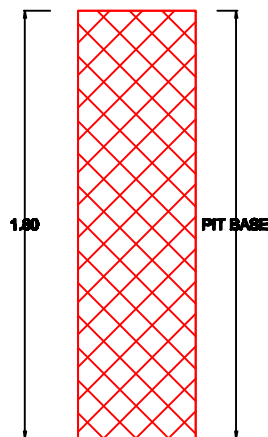
TP:-04

TOTAL DEPTH:1.80M
R.L:-100.00

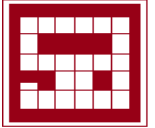
DATE OF START :-14.05.2020

DATE OF COMP. :- 14.05.2020

SCALE IN METRES	STRATA				SAMPLE			LEGEND:-	
	DEPTH	SYMBOL			DEPTH (M)	TYPE	No.		
0.00	0.00	3.00 S	3.00 W	3.00 N	3.00 E				
						1.00	UDS	01	1) CLAYEY SAND
									1.60
		3.00	3.00	3.00	3.00				



BISHW KUMAR DAS.
M.TECH (GEO TECH)
www.swayinassociates.com



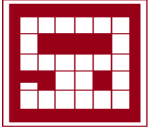
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-13)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm2 (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Modulus of Elasticity (E) Kg/cm ²	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
ASU AREA	BH-34	1.5	SPT	CI	1.77	1.33	33	0	7	93	-	-	-	2.64	0.53	0	-	-	0.172	0.0002	-	-	-	321.21	
	BH-35	1.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.07	0.935 x 10 ⁻⁴	270.84	
		3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27	
	BH-36	1.5	SPT	SC	1.90	1.54	23	0	57	43	-	-	-	-	-	-	0.11	20	0.065	0.000095	-	-	-	176.21	
		3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27	
	BH-37	1.5	SPT	CI	-	-	-	-	-	-	42	20	22	2.68	-	-	-	-	-	-	-	-	-	1.038 x 10 ⁻⁷	-
		3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27	
	BH-38	1.5	SPT	CI	1.76	1.33	32	-	-	-	-	-	-	2.65	0.51	0	-	-	0.063	0.000097	0.99	-	-	-	-
		3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27	
	BH-39	1.5	SPT	SC	1.88	1.55	21	0	56	44	30	20	10	-	-	-	-	-	-	-	-	-	-	-	205.58
		3.0	SPT	CI	-	-	-	0	6	94	-	-	-	-	0.55	0	-	-	-	-	-	13.33	-	-	324.27
	BH-40	1.5	SPT	CI	-	-	34	0	8	92	-	-	-	2.64	0.52	0	-	-	0.175	0.00018	-	-	-	-	131.54


 BISHU KUMAR DAS
 M.TECH (P.E.C.TECH)
 SATYANAGAR



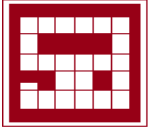
CLIENT: TALCHER FERTILIZERS LIMITED
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-13)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm2 (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Modulus of Elasticity (E) Kg/cm ²	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
ASU AREA	BH-41	1.5	SPT	CI	1.75	1.31	34	-	-	-	44	21	23	2.65	-	-	-	-	-	-	-	-	1.061 x 10 ⁻⁷	-	
	BH-42	1.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	0.13	18	-	-	-	5.87	-	192.52	
		3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27	
	BH-43	1.5	SPT	SC	1.90	1.54	23	-	-	-	32	21	11	-	-	-	-	-	0.066	0.000095	-	-	0.935 x 10 ⁻⁴	182.73	
		3.0	SPT	CI	-	-	-	0	7	93	-	-	-	2.64	0.54	0	-	-	-	-	-	-	-	-	324.27
	BH-44	1.5	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	0.10	21	-	-	-	-	-	-	189.26
		3.0	SPT	CI	1.77	1.33	33	-	-	-	41	20	21	-	-	-	-	-	0.174	0.0002	-	-	1.046 x 10 ⁻⁷	324.27	
	BH-45	1.5	SPT	CI	-	-	-	0	9	91	-	-	-	-	0.52	0	-	-	0.174	0.00021	-	-	-	-	140.72
	BH-46	1.5	SPT	CI	1.79	1.34	34	-	-	-	-	-	-	2.65	-	-	-	-	-	-	0.98	11.20	-	-	
	BH-47	1.5	SPT	SC	1.88	1.54	22	0	55	45	-	-	-	2.67	-	-	-	-	0.066	0.000094	0.73	-	0.954 x 10 ⁻⁴	202.31	
		3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27
	BH-48	1.5	SPT	SC	-	-	-	-	-	-	31	20	11	-	-	-	0.13	19	0.175	0.00021	-	5.20	-	-	176.21
3.0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	324.27	

BISHW KUMAR DAS.
 M.TECH (GEO TECH)
 SATYANAGAR



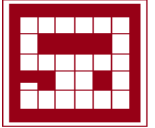
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
COAL STORAGE	BH-49	1.5	SPT	SM	2.01	1.69	19	27	63	10	-	-	-	-	-	-	-	-	-	-	-	8.27	-	832.09	
		3.0	SPT	SC	1.88	1.50	25	-	-	-	-	-	-	2.65	-	-	-	-	0.164	0.000109	0.76	-	-	-	
		4.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	375.26
		6.0	SPT	SC	-	-	-	-	-	-	-	29	19	10	-	-	-	-	-	-	-	-	13.33	-	-
		7.5	SPT	SC	1.86	1.52	22	-	-	-	-	-	-	-	-	-	0.10	23	-	-	-	-	-	-	-
	9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.33	0.976 x 10 ⁻⁴	-	
	BH-50	1.5	SPT	SM	1.99	1.69	18	-	-	-	-	-	-	2.68	-	-	0.00	34	-	-	-	-	-	-	868.8
		3.0	SPT	SC	-	-	-	2	60	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	1.87	1.51	24	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	-	0.76	-	375.26
		6.0	SPT	SC	-	-	-	-	-	-	-	32	21	11	-	-	-	-	-	-	-	-	13.33	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.12	20	-	-	-	-	-	-	-
	10.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.976 x 10 ⁻⁴	-	
	BH-51	1.5	SPT	SC	1.89	1.51	25	-	-	-	-	-	-	2.65	-	-	-	-	-	0.161	0.000111	0.75	-	0.914 x 10 ⁻⁴	-
		3.0	SPT	SC	-	-	-	0	58	42	34	20	14	-	-	-	-	-	-	-	-	-	-	-	345.89
		4.5	SPT	SC	1.86	1.51	23	-	-	-	-	-	-	2.67	-	-	-	-	-	-	-	0.77	-	-	-
		6.0	SPT	SC	-	-	-	0	62	38	30	20	10	-	-	-	-	-	-	-	-	-	13.33	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.09	26	-	-	-	-	-	-	-
	BH-52	1.5	SPT	SM	-	-	-	18	71	11	-	-	-	-	-	-	0.00	35	-	-	-	-	-	-	991.17
		3.0	SPT	SC	1.88	1.49	26	-	-	-	33	21	12	-	-	-	-	-	-	-	-	-	10.93	-	316.52
		4.5	SPT	SC	-	-	-	3	58	39	-	-	-	-	-	-	-	-	-	-	-	-	-	0.764 x 10 ⁻⁵	-
6.0		SPT	SC	1.86	1.50	24	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.77	-	-	-	
7.5		SPT	SC	-	-	-	-	-	-	-	31	20	11	-	-	-	-	-	-	-	-	13.33	-	-	
9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.11	24	-	-	-	-	-	-	-		


 BISHWANATH KUMAR DAS
 M.TECH (PRACTICAL)
 (SAYANPUR)



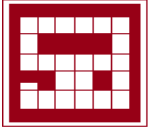
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)				
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)								
COAL STORAGE	BH-53	1.5	SPT	SM	2.00	1.71	17	-	-	-	-	-	-	2.68	-	-	-	-	0.165	0.000108	0.57	11.07	-	819.85				
		3.0	SPT	SM	-	-	-	21	70	9	-	-	-	-	-	-	-	0.00	34	-	-	-	-	-	-			
		4.5	SPT	SC	1.89	1.49	27	-	-	-	33	20	13	-	-	-	-	-	-	-	-	-	-	-	-	316.52		
		6.0	SPT	SC	-	-	-	0	59	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		7.5	SPT	SC	-	-	-	-	-	-	30	20	10	-	-	-	-	-	-	-	-	-	-	-	-	-		
		9.0	SPT	SC	1.86	1.52	22	-	-	-	-	-	-	-	2.67	-	-	-	-	-	-	-	0.75	-	-	-	-	
		10.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	24	-	-	-	-	-	-	-		
	12.0	SPT	SC	-	-	-	3	57	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.887 x 10 ⁻⁴	-		
	BH-54	1.5	SPT	SM	2.02	1.71	18	19	70	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		3.0	SPT	SC	-	-	-	2	56	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.67	-	-	
		4.5	SPT	SC	1.85	1.52	22	-	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	-	-	0.75	-	-	
		6.0	SPT	SC	-	-	-	-	-	-	31	20	11	-	-	-	-	0.13	19	-	-	-	-	-	-	-	-	
		7.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.932 x 10 ⁻⁴	-	
	BH-55	1.5	SPT	SM	-	-	-	23	66	11	-	-	-	-	-	-	-	0.00	36	-	-	-	-	-	-	-	-	
		3.0	SPT	SC	1.87	1.55	21	-	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	-	-	-	0.72	0.915 x 10 ⁻⁴	-
		4.5	SPT	SC	-	-	-	3	55	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		6.0	SPT	SC	-	-	-	-	-	-	32	22	10	-	-	-	-	0.11	25	-	-	-	-	-	-	-	-	
		7.5	SPT	SC	1.86	1.51	23	-	-	-	-	-	-	-	2.65	-	-	-	-	0.163	0.00011	-	13.33	-	-	-	-	
	BH-56	1.5	SPT	SM	1.99	1.69	18	-	-	-	-	-	-	-	2.68	-	-	-	-	-	-	-	0.59	-	-	-	-	
		3.0	SPT	SM	-	-	-	24	66	10	-	-	-	-	-	-	-	0.00	36	-	-	-	-	-	-	-	1297.08	
		4.5	SPT	SC	1.88	1.52	24	-	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	-	-	-	0.75	-	
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.961 x 10 ⁻⁴	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	375.26
		9.0	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.5	SPT	SC	-	-	-	-	-	-	33	22	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	20	-	-	-	-	-	-	-	-	-		

BISHAKH KUMAR DAS
 M.TECH (SOIL MECHANICS)
 S.WAYIN & ASSOCIATES



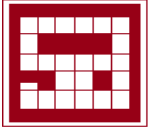
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)			
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)							
COAL STORAGE	BH-57	1.5	SPT	SM	-	-	-	19	69	12	-	-	-	-	-	-	-	-	-	-	-	12.67	-	-			
		3.0	SPT	SM	2.01	1.72	17	-	-	-	-	-	-	2.67	-	-	-	-	-	-	-	0.55	-	-	-		
		4.5	SPT	SC	-	-	-	3	56	41	-	-	-	-	-	-	-	-	-	-	-	-	-	0.889 x 10 ⁻⁴	-		
		6.0	SPT	SC	1.84	1.51	22	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	-	0.76	-	-	-	
		7.5	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	-	-	-	-	-	-	13.33	-	-	-	
		9.0	SPT	SC	-	-	-	-	-	-	30	21	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.10	24	-	-	-	-	-	-	-	-	-
	12.0	SPT	SC	1.86	1.50	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.002 x 10 ⁻⁴	-	-	
	BH-58	1.5	SPT	SM	2.00	1.71	17	-	-	-	-	-	-	2.69	-	-	-	-	-	-	-	-	0.57	-	-	-	-
		3.0	SPT	SM	-	-	-	23	66	11	-	-	-	-	-	-	0.00	34	-	-	-	-	-	-	-	-	966.69
		4.5	SPT	SC	1.88	1.53	23	0	56	44	-	-	-	-	-	-	-	-	-	-	-	-	9.73	-	-	-	-
		6.0	SPT	SC	-	-	-	0	59	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	375.26
		7.5	SPT	SC	-	-	-	-	-	-	34	22	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		9.0	SPT	SC	1.86	1.50	24	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	-	0.77	-	-	-	-
	BH-59	1.5	SPT	SC	1.85	1.47	26	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	-	-	-	-	-	-
		3.0	SPT	SC	-	-	-	3	62	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	32	21	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	1.87	1.52	23	-	-	-	-	-	-	2.66	-	-	-	-	-	0.162	0.000109	0.75	-	-	-	-	-
7.5		SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10.0		SPT	SC	-	-	-	0	62	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13.0		SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.13	19	-	-	-	-	-	-	-	-	-	


 BISHAL KUMAR DAS
 M.TECH (GEOTECH)
 17 SATYANAGAR

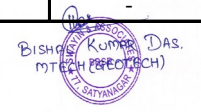


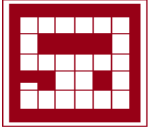
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm2 (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)		
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)						
COAL STORAGE	BH-60	1.5	SPT	SC	1.87	1.46	28	-	-	-	33	21	12	-	-	-	-	-	-	-	-	12.67	-	358.94		
		3.0	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		4.5	SPT	SC	-	-	-	-	-	-	31	20	11	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	1.86	1.52	22	-	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	0.74	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	26	-	-	-	-	-	-	-
		9.0	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.973 x 10 ⁻⁴	-	-
	12.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.33	-	-	-	
	BH-61	1.5	SPT	SC	-	-	-	0	57	43	-	-	-	-	-	-	0.09	27	-	-	-	-	-	-	-	-
		3.0	SPT	SC	1.86	1.49	25	-	-	-	-	-	-	-	2.66	-	-	-	-	0.165	0.000107	0.79	-	-	-	-
		4.5	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	33	21	12	-	-	-	-	-	-	-	-	-	-	-	-	-
		9.0	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	0.11	24	-	-	-	-	-	-	-	-
		10.5	SPT	SC	-	-	-	-	-	-	31	20	11	-	-	-	-	-	-	-	-	-	-	-	0.899 x 10 ⁻⁴	-
	BH-62	1.5	SPT	SC	1.86	1.51	23	-	-	-	-	-	-	-	2.65	-	-	-	-	-	-	0.75	13.07	-	-	-
		3.0	SPT	SC	-	-	-	0	55	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	33	21	12	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.10	23	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.796 x 10 ⁻⁴	-
	BH-63	3.0	SPT	SC	1.87	1.53	22	-	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	12.67	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74	-	0.833 x 10 ⁻⁴	-	-
		6.0	SPT	SC	-	-	-	2	59	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	375.26
		7.5	SPT	SC	-	-	-	-	-	-	30	19	11	-	-	-	-	-	-	-	-	-	-	-	-	-
		9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.13	20	-	-	-	-	-	-	-	-
12.0	SPT	SC	1.88	1.52	24	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		


 BISHWANATH KUMAR DAS
 M.TECH (P&E) (IIT KANPUR)
 17 SATYANARAYAN



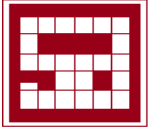
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-15)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)			
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)							
COAL STORAGE	BH-64	1.5	SPT	SC	1.86	1.52	22	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	0.74	-	-	375.26		
		3.0	SPT	SC	-	-	-	0	57	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		4.5	SPT	SC	-	-	-	-	-	-	33	21	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	22	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.33	-	-	-
		9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.908 x 10 ⁻⁴	-	-
	BH-65	1.5	SPT	SC	1.88	1.55	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	306.73	
		3.0	SPT	SC	-	-	-	-	-	-	32	21	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	2	59	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	25	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.927 x 10 ⁻⁴	-	-
		9.0	SPT	SC	1.87	1.52	23	-	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.75	-	-	-	-
	BH-66	1.5	SPT	SC	-	-	-	0	57	43	-	-	-	-	-	-	-	-	-	-	-	-	10.53	-	-	-	-
		3.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.894 x 10 ⁻⁴	-	-
		4.5	SPT	SC	1.86	1.50	24	-	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	0.77	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	30	19	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	21	-	-	-	-	-	-	-	-
	BH-67	1.5	SPT	SM	1.99	1.69	18	-	-	-	-	-	-	-	-	-	-	0.00	35	-	-	-	-	-	-	-	-
		3.0	SPT	SC	-	-	-	0	56	44	-	-	-	-	-	-	-	-	-	-	-	-	-	7.47	-	-	-
		4.5	SPT	SC	1.86	1.51	23	-	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.76	-	-	-	-
6.0		SPT	SC	-	-	-	2	60	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7.5		SPT	SC	-	-	-	-	-	-	32	21	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10.0		SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09	26	-	-	-	-	-	-	-	-	


 Bishnu Kumar Das
 M.Tech (Geotechnical)
 Swayin & Associates



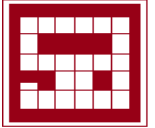
CLIENT: TALCHER FERTILIZERS LIMITED
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
COAL STORAGE	BH-68	1.5	SPT	CI	1.79	1.36	32	0	26	74	-	-	-	-	0.42	7	-	-	-	-	-	-	-	266.15	
		3.0	SPT	SC	-	-	-	0	55	45	-	-	-	-	-	-	-	-	-	-	-	13.33	-	375.26	
		4.5	SPT	SC	1.86	1.51	23	-	-	-	-	-	-	2.65	-	-	-	-	0.165	0.00011	0.75	-	-	-	
		6.0	SPT	SC	-	-	-	3	56	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		7.5	SPT	SC	-	-	-	-	-	-	34	22	12	-	-	-	-	-	-	-	-	-	-	-	
		9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.11	23	-	-	-	-	-	-	
		10.5	SPT	SC	1.89	1.52	24	2	59	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	12.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.905 x 10 ⁻⁴	-	
	BH-69	1.5	SPT	SC	1.87	1.53	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.80	-	-
		3.0	SPT	SC	1.90	1.57	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	30	21	9	-	-	-	-	-	-	-	-	-	-	-	-
		9.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	0.08	28	-	-	-	-	-	-	-	-
	BH-70	1.5	SPT	SM	2.02	1.70	19	-	-	-	-	-	-	-	-	-	0.00	36	-	-	-	-	-	-	819.85
		3.0	SPT	SC	-	-	-	3	54	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254.52
		4.5	SPT	SC	1.86	1.55	20	-	-	-	-	-	-	2.66	-	-	-	-	-	-	0.72	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	31	20	11	-	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.68	-	-	-
		10.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.932 x 10 ⁻⁴	-
	BH-71	1.5	SPT	SM	-	-	-	23	66	11	-	-	-	-	-	-	0.00	34	-	-	-	-	-	-	-
3.0		SPT	SC	-	-	-	0	57	43	-	-	-	2.65	-	-	-	-	-	-	-	-	-	-	-	
4.5		SPT	SC	1.87	1.51	24	-	-	-	-	-	-	2.66	-	-	-	-	0.163	0.000109	0.76	-	-	-	-	
6.0		SPT	SC	-	-	-	-	-	-	33	23	10	-	-	-	-	-	-	-	-	-	-	-	-	
7.5		SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.892 x 10 ⁻⁴	-	

Signature and Stamp of Rishabh Kumar, D.A., M.TECH (PRACTICE), SATYANARAYANA



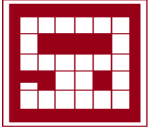
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
COAL STORAGE	BH-72	1.5	SPT	SC	1.85	1.50	23	0	56	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		3.0	SPT	SC	-	-	-	-	-	-	30	20	10	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	1.88	1.54	22	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.73	-	-	-
		6.0	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	0.12	21	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.87	-	-
		10.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.911 x 10 ⁻⁴	-
	BH-73	1.5	SPT	SC	-	-	-	0	55	45	-	-	-	-	-	-	-	-	-	-	-	-	11.73	-	336.1
		3.0	SPT	SC	1.90	1.52	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	0	59	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	29	19	10	-	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.10	24	-	-	-	-	-	-	-
	BH-74	1.5	SPT	SM	2.01	1.69	19	28	63	9	-	-	-	-	-	-	0.00	35	-	-	-	-	-	-	-
		3.0	SPT	SC	-	-	-	2	60	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	32	22	10	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	1.86	1.54	21	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	-	0.72	-	-
		7.5	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	-	-	-	-	-	-	13.33	-	-
		10.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.957 x 10 ⁻⁴	-
	BH-75	1.5	SPT	SM	1.98	1.69	17	-	-	-	-	-	-	2.68	-	-	-	-	-	-	-	-	0.58	-	1235.9
		3.0	SPT	SC	-	-	-	3	56	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	1.89	1.52	24	-	-	-	-	-	-	2.66	-	-	-	-	-	0.162	0.000108	-	-	-	-
		6.0	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	0.12	22	-	-	-	-	-	-	375.26
		7.5	SPT	SC	-	-	-	-	-	-	30	21	9	-	-	-	-	-	-	-	-	-	-	-	-
		10.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.67	-
		12.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.854 x 10 ⁻⁴	-

Bishwajit Kumar Das.
 M.TECH (GEO TECH)

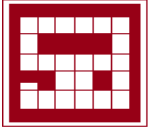
CLIENT: TALCHER FERTILIZERS LIMITED
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
COAL STORAGE	BH-76	1.5	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	-	-	-	-	10.80	-	-		
		3.0	SPT	SC	1.89	1.52	24	-	-	-	-	-	-	2.64	-	-	-	-	-	-	0.73	-	-	-	
		4.5	SPT	SC	-	-	-	-	-	-	-	34	23	11	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.11	24	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.932 x 10 ⁻⁴	-	
	BH-77	1.5	SPT	SM	-	-	-	24	65	11	-	-	-	-	-	-	0.00	35	-	-	-	-	-	-	844.33
		3.0	SPT	SC	1.87	1.53	22	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.74	-	-	283.89
		4.5	SPT	SC	-	-	-	2	57	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	31	21	10	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.876 x 10 ⁻⁴	-
	10.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.09	26	-	-	-	-	-	-	-	
	BH-78	1.5	SPT	SM	2.00	1.69	18	-	-	-	-	-	-	-	-	-	0.00	34	-	-	-	-	-	-	-
		3.0	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	-	31	20	11	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.903 x 10 ⁻⁴	-
		7.5	SPT	SC	1.87	1.52	23	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	0.74	-	-	-
	BH-79	1.5	SPT	SM	-	-	-	20	70	10	-	-	-	2.69	-	-	-	-	-	-	-	-	-	-	-
3.0		SPT	SC	1.89	1.51	25	-	-	-	-	-	-	2.65	-	-	0.11	23	-	-	-	0.75	-	-	-	
4.5		SPT	SC	-	-	-	0	59	41	-	-	-	-	-	-	-	-	0.164	0.000109	-	10.93	-	-		
6.0		SPT	SC	-	-	-	-	-	-	33	22	11	-	-	-	-	-	-	-	-	-	-	-		

BISHU KUMAR DAS
 M.TECH (GEO TECH)
 S.WAYIN & ASSOCIATES



CLIENT: TALCHER FERTILIZERS LIMITED

CONTRACTOR: WUHUAN ENGINEERING CO., LTD.

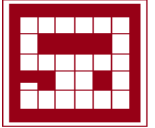
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-15)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)	
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)					
COAL STORAGE	BH-80	1.5	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	-	-	-	-	-	11.33	-	326.31	
		3.0	SPT	SC	1.86	1.52	22	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.74	-	-	
		4.5	SPT	SC	-	-	-	-	-	-	30	20	10	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	0.10	24	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.896 x 10 ⁻⁴	-
	BH-81	1.5	SPT	SC	1.90	1.50	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.20	-	-
		3.0	SPT	SC	-	-	-	2	57	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355.68
		4.5	SPT	SC	-	-	-	-	-	-	30	21	9	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	1.87	1.51	24	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.13	19	-	-	-	-	-	-	-
	BH-82	1.5	SPT	SC	-	-	-	0	56	44	-	-	-	-	-	-	-	-	-	-	-	-	10.27	-	-
		3.0	SPT	SC	1.87	1.51	24	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.867 x 10 ⁻⁴	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.10	25	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	0	61	39	33	23	10	-	-	-	-	-	-	-	-	-	-	-	-
BH-83	1.5	SPT	SC	1.87	1.53	22	-	-	-	31	20	11	-	-	-	-	-	-	-	-	-	-	10.40	-	303.47
	3.0	SPT	SC	-	-	-	2	56	42	-	-	-	2.64	-	-	-	-	-	-	-	-	-	-	-	
	4.5	SPT	SC	1.89	1.52	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74	-	
	6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.11	24	-	-	-	-	-	-	-	
	7.5	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		10.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.932 x 10 ⁻⁴	-

BISHWANKAR KUMAR DAS.
 (SENIOR PROJECT ENGINEER)
 SWAYIN & ASSOCIATES



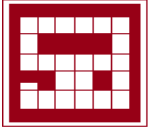
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)		
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)						
COAL STORAGE	BH-84	1.5	SPT	SC	1.96	1.63	20	11	60	29	-	-	-	2.68	-	-	-	-	-	-	0.64	-	-	-		
		3.0	SPT	SC	-	-	-	-	-	-	33	22	11	-	-	-	-	-	-	-	-	13.33	-	-	-	
		4.5	SPT	SC	1.86	1.51	23	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	-	-	0.913 x 10 ⁻⁴	-	-
		6.0	SPT	SC	-	-	-	0	59	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	21	-	-	-	-	-	-	-
	10.0	SPT	SC	-	-	-	0	61	39	30	20	10	-	-	-	-	-	-	-	-	-	-	-	-	-	
	BH-85	1.5	SPT	SC	-	-	-	3	60	37	-	-	-	-	-	-	-	-	-	-	-	10.40	-	-	303.47	
		3.0	SPT	SC	1.87	1.51	24	-	-	-	-	-	-	2.67	-	-	-	-	0.163	0.000108	0.77	-	-	-	-	
		4.5	SPT	SC	-	-	-	-	-	-	-	32	21	11	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.891 x 10 ⁻⁴	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.10	25	-	-	-	-	-	-	-	-
	10.5	SPT	SC	-	-	-	0	61	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	283.89	
	BH-86	1.5	SPT	SC	1.91	1.52	26	0	54	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		3.0	SPT	SC	-	-	-	-	-	-	30	20	10	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.86	-	-	-
6.0		SPT	SC	1.87	1.51	24	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.76	-	-	-	-	
7.5		SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.12	22	-	-	-	-	-	-	-	-	
10.5	SPT	SC	-	-	-	2	60	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.864 x 10 ⁻⁴	-		


 BISHWAJIT KUMAR DAS
 M.TECH (GEOTECH)
 SATYANIGRAH



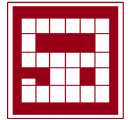
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB CONTRACTOR: SWAYIN & ASSOCIATES.

JOB No. TLD/2020-03

ANNEXURE - A SUMMARY OF LABORATORY TEST RESULTS ON SOIL SAMPLES

Location	Borehole No	Depth in Mtrs	Type of Sample	IS Classification (IS:1498-1970)	Density in gm/cc		Water Content (%) (IS:2720 Pt-II)	Particle Size (%) (IS:2720 Pt-IV)			Atterberg's Limits (IS:2720 Pt-V)			Specific gravity (IS:2720 Pt-III_2)	Triaxial Shear Test (UU) (IS:2720 Pt-12)		Direct Shear Test (IS:2720 Pt-11)		Consolidation Test (IS:2720 Pt-15)		Void Ratio	UCS in kg/cm ² (IS:2720 Pt-10)	Permeability Test (IS:2720 Pt-17)	Permeability Test (IS:2720 Pt-17)		
					Bulk	Dry		Gravel	Sand	Silt & Clay	LL	PL	PI		C in kg/cm ²	φ in degree	C in kg/cm ²	φ in degree	Cc	Mv (cm ² /kg)						
COAL STORAGE	BH-87	1.5	SPT	SC	1.87	1.46	28	-	-	-	33	21	12	-	-	-	-	-	-	-	-	12.67	-	-		
		3.0	SPT	SC	-	-	-	0	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	375.26	-	
		4.5	SPT	SC	-	-	-	-	-	-	31	20	11	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	1.86	1.52	22	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	0.74	-	-	-	-
		7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.10	26	-	-	-	-	-	-	-	-
	10.0	SPT	SC	-	-	-	0	58	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	BH-88	1.5	SPT	SC	1.85	1.47	26	-	-	-	-	-	-	2.64	-	-	-	-	-	-	-	0.80	-	-	-	-
		3.0	SPT	SC	-	-	-	3	59	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	32	21	11	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	1.87	1.52	23	-	-	-	-	-	-	2.66	-	-	-	-	-	-	-	0.75	-	-	-	-
	BH-89	7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.935 x 10 ⁻⁴	-	-
		1.5	SPT	SC	1.90	1.52	25	-	-	-	-	-	-	2.65	-	-	-	-	-	-	-	0.74	-	-	323.05	-
		3.0	SPT	SC	-	-	-	0	57	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4.5	SPT	SC	-	-	-	-	-	-	29	20	9	-	-	-	-	-	-	-	-	-	-	-	-	-
		6.0	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	0.13	20	-	-	-	-	-	-	-	-
7.5	SPT	SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.960 x 10 ⁻⁴	-	-		


 BISHWAJIT KUMAR DAS
 M.TECH (GEOTECHNICAL)
 SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

CALCULATION FOR VOID RATIO

Example for some Boreholes

1) For BH-38

Depth:-1.50m

Specific gravity: 2.65

Dry Density: 1.33

$$\text{Void Ratio } (e_0) = (2.65/1.33)-1$$

$$= 0.99$$

5) For BH-68

Depth:-4.50m

Specific gravity: 2.65

Dry Density: 1.51

$$\text{Void Ratio } (e_0) = (2.65/1.51)-1$$

$$= 0.75$$

2) For BH-47

Depth:-1.50m

Specific gravity: 2.67

Dry Density: 1.54

$$\text{Void Ratio } (e_0) = (2.67/1.54)-1$$

$$= 0.73$$

6) For BH-75

Depth:- 1.50m

Specific gravity: 2.68

Dry Density: 1.69

$$\text{Void Ratio } (e_0) = (2.68/1.69)-1$$

$$= 0.58$$

3) For BH-49

Depth:-3.00m

Specific gravity: 2.65

Dry Density: 1.50

$$\text{Void Ratio } (e_0) = (2.65/1.50)-1$$

$$= 0.76$$

7) For BH-84

Depth:- 1.50m

Specific gravity: 2.68

Dry Density: 1.63

$$\text{Void Ratio } (e_0) = (2.68/1.63)-1$$

$$= 0.64$$

4) For BH-60

Depth:-6.00m

Specific gravity: 2.65

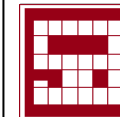
Dry Density: 1.52

$$\text{Void Ratio } (e_0) = (2.65/1.52)-1$$

$$= 0.74$$



BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)
 SATYANGIR



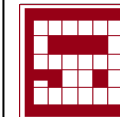
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CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ANNEXURE-B (ANALYSIS OF ROCK PROPERTIES)

Borehole No.	34	35	36	37	
Depth (in mtr)	15.00	12.00	12.00	4.50	
Core Piece No	7	5	6	1	
RQD (%)	40	28	27	10	
Density (g/cc)	2.49	2.48	2.48	2.54	
Water content	0.078	0.089	0.082	0.035	
Porosity	5.92	6.08	6.05	8.12	
Permeability	1.79×10^{-8}	2.45×10^{-8}	2.14×10^{-8}	1.65×10^{-7}	
Unconfined Compressive Strength (kg/cm ²)	134.54	131.45	129.15	198.46	
Point Load Test (kg/cm ²)	5.26	5.79	5.02	8.62	
Weatherability	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)	Completely Weathered(Grade-V)	
Term	Weak to Strong	Weak to Strong	Weak to Strong	Weak	
Mohr's Scale of Hardness	3.5	3	4	4	
Cohesion and angle of internal friction	Shear Strength, C	21.54 kg/cm ²	20.74 kg/cm ²	20.65 kg/cm ²	14.12 kg/cm ²
	ϕ	16°	15°	14°	27°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 30° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 30° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 30° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip	
Corrosivity	Moderately Corrosive	Moderately Corrosive	Moderately Corrosive	Moderately to Mildly Corrosive	
The rock deformability characteristics	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V Description of Rock : Very Poor	


 BISHWANATH KUMAR DAS.
 M.TECH (GEO TECH)

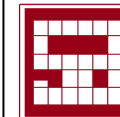



**CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES**

JOB No: TLD/2020-03

Borehole No.	37	38	39	40	
Depth (in mtr)	16.50	12.95	13.80	4.50	
Core Piece No	9	6	6	1	
RQD (%)	31	27	31	16	
Density (g/cc)	2.50	2.48	2.47	2.54	
Water content	0.079	0.084	0.094	0.035	
Porosity	6.02	5.85	6.13	8.12	
Permeability	2.22×10^{-8}	2.34×10^{-8}	2.19×10^{-8}	1.65×10^{-7}	
Unconfined Compressive Strength (kg/cm ²)	124.26	123.15	125.48	201.84	
Point Load Test (kg/cm ²)	4.72	5.34	5.21	8.75	
Weatherability	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)	Completely Weathered(Grade-V)	
Term	Weak to Strong	Weak to Strong	Weak to Strong	Weak	
Mohr's Scale of Hardness	3.5	4	4	4	
Cohesion and angle of internal friction	Shear Strength, C	19.15 kg/cm ²	20.74 kg/cm ²	19.65 kg/cm ²	14.75 kg/cm ²
	ϕ	17°	15°	16°	28°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 20° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 30° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 20° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip	
Corrosivity	Moderately Corrosive	Moderately Corrosive	Moderately Corrosive	Moderately to Mildy Corrosive	
The rock deformability characteristics	Quality of Deformation : IV Description of Rock : Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : IV Description of Rock : Poor	Quality of Deformation : V Description of Rock : Very Poor	


 BISHWANATH KUMAR DAS
 M.TECH (GEO TECH)

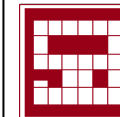



CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

Borehole No.	40	41	41	42
Depth (in mtr)	13.50	4.50	15.00	13.25
Core Piece No	7	1	8	7
RQD (%)	25	10	30	28
Density (g/cc)	2.56	2.54	2.50	2.48
Water content	0.83	0.042	0.62	0.55
Porosity	5.68	8.25	4.86	5.23
Permeability	2.14 x 10-8	1.95 x 10 ⁻⁷	2.19 x 10-8	2.04 x 10-8
Unconfined Compressive Strength (kg/cm ²)	136.26	199.54	162.34	132.24
Point Load Test (kg/cm ²)	4.62	8.65	5.66	5.33
Weatherability	Highly Weathered (Grade-IV)	Completely Weathered(Grade-V)	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)
Term	Weak to Strong	Weak	Weak to Strong	Weak to Strong
Mohr's Scale of Hardness	3.5	4	3.5	4
Cohesion and angle of internal friction	Shear Strength, C	19.15 kg/cm2	14.56 kg/cm2	18.66 kg/cm2
	φ	33°	27°	14°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 30° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 20° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 20° dip
Corrosivity	Moderately Corrosive	Moderately to Mildy Corrosive	Moderately Corrosive	Moderately Corrosive
The rock deformability characteristics	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V Description of Rock : Very Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor


BISHWANATH KUMAR DAS.
M.TECH (GEO TECH)

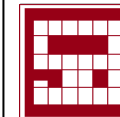



CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

Borehole No.	43	43	44	45
Depth (in mtr)	6.00	12.00	14.40	4.50
Core Piece No	2	6	7	1
RQD (%)	16	26	39	11
Density (g/cc)	2.57	2.56	2.53	2.56
Water content	0.037	0.83	0.62	0.038
Porosity	8.65	5.68	5.08	8.85
Permeability	1.78×10^{-7}	2.14×10^{-8}	1.98×10^{-8}	1.54×10^{-7}
Unconfined Compressive Strength (kg/cm ²)	203.68	136.26	136.34	199.37
Point Load Test (kg/cm ²)	8.62	4.62	5.78	8.49
Weatherability	Completely Weathered(Grade-V)	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)	Completely Weathered (Grade-V)
Term	Weak	Weak to Strong	Weak to Strong	Weak
Mohr's Scale of Hardness	4	3	3.5	4
Cohesion and angle of internal friction	Shear Strength, C	14.48 kg/cm ²	20.05 kg/cm ²	18.20 kg/cm ²
	ϕ	26°	32°	16°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 30° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Fractures closely with 30° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip
Corrosivity	Moderately to Mildly Corrosive	Moderately Corrosive	Moderately to Mildly Corrosive	Moderately to Mildly Corrosive
The rock deformability characteristics	Quality of Deformation : V Description of Rock : Very Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V Description of Rock : Very Poor


 BISHU KUMAR DAS.
 M.TECH (GEO TECH)

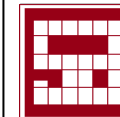



**CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES**

JOB No: TLD/2020-03

Borehole No.	45	46	46	47
Depth (in mtr)	15.00	4.50	12.00	12.00
Core Piece No	8	1	6	6
RQD (%)	28	15	26	31
Density (g/cc)	2.54	2.55	2.50	2.58
Water content	0.54	0.039	0.51	0.041
Porosity	5.21	8.72	6.34	11.54
Permeability	2.11 x 10 ⁻⁸	1.84 x 10 ⁻⁷	2.19 x 10 ⁻⁸	2.38 x 10 ⁻⁷
Unconfined Compressive Strength (kg/cm ²)	129.76	202.68	135.48	226.12
Point Load Test (kg/cm ²)	4.87	8.62	5.74	8.24
Weatherability	Highly Weathered (Grade-IV)	Completely Weathered(Grade-V)	Highly Weathered (Grade-IV)	Highly Weathered (Grade-IV)
Term	Weak to Strong	Weak	Weak to Strong	Weak to Strong
Mohr's Scale of Hardness	3.5	4	4	5
Cohesion and angle of internal friction	Shear Strength, C	12.00 kg/cm ²	14.65 kg/cm ²	17.02 kg/cm ²
	φ	13°	26°	15°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Fractures closely with 20° to 35° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 20° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 35° dip
Corrosivity	Moderately to Mildy Corrosive	Moderately to Mildy Corrosive	Moderately Corrosive	Moderately Corrosive
The rock deformability characteristics	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V Description of Rock : Very Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor	Quality of Deformation : V to IV Description of Rock : Very Poor to Poor

(Signature)
BISHW KUMAR DAS.
MTECH (GEOTECH)
SWAYIN & ASSOCIATES

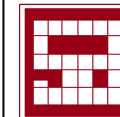


**CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES**

JOB No: TLD/2020-03

Borehole No.	48	48	51	55	
Depth (in mtr)	4.50	15.00	20.48	18.00	
Core Piece No	1	8	9	7	
RQD (%)	15	40	-	-	
Density (g/cc)	2.55	2.48	2.46	2.42	
Water content	0.039	0.048	0.082	0.089	
Porosity	8.72	6.01	7.03	6.96	
Permeability	1.84 x 10 ⁻⁷	2.24 x 10 ⁻⁸	1.34 x 10 ⁻⁸	1.26 x 10 ⁻⁸	
Unconfined Compressive Strength (kg/cm ²)	202.68	128.15	86.34	83.06	
Point Load Test (kg/cm ²)	8.62	4.35	2.41	2.43	
Weatherability	Completely Weathered(Grade-V)	Highly Weathered (Grade-IV)	Completely Weathered (Grade-V)	Completely Weathered(Grade-V)	
Term	Weak	Weak to Strong	Weak	3	
Mohr's Scale of Hardness	4	3.5	3		
Cohesion and angle of internal friction	Shear Strength, C	14.15 kg/cm ²	16.15 kg/cm ²	15.33 kg/cm ²	17.02 kg/cm ²
	φ	27°	25°	20°	15°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained Sands Moderate spaced Fractures with 25° dip	Type of Rock: Sedimentary Rock Classification: Claystone Group: Argillaceous Composition: Hard Clays Moderate spaced Fractures with 20° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained sands Moderate spaced Fractures with 15° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained sands Moderate spaced Fractures with 15° dip	
Corrosivity	Moderately to Mildly Corrosive	Moderately Corrosive	Moderately to Mild Corrosive	Moderately to Mild Corrosive	
The rock deformability characteristics	Quality of Deformation : V Description of Rock : Very Poor	Quality of Deformation : III to V Description of Rock : Very Poor to Fair	Quality of Deformation : IV Description of Rock : Poor	Quality of Deformation : IV Description of Rock : Poor	

(Signature)
BISHWANKAR KUMAR DAS.
M.TECH (GEO TECH)
L. SATYANAGAR

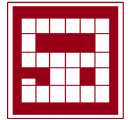


CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

Borehole No.	73	79	82	
Depth (in mtr)	23.09	21.00	17.00	
Core Piece No	6	9	7	
RQD (%)	-	-	-	
Density (g/cc)	2.45	2.44	2.46	
Water content	0.084	0.079	0.080	
Porosity	7.12	6.88	6.95	
Permeability	1.44 x 10-8	1.27 x 10-8	1.30 x 10-8	
Unconfined Compressive Strength (kg/cm ²)	78.06	90.23	82.38	
Point Load Test (kg/cm ²)	2.43	2.63	2.41	
Weatherability	Completely Weathered (Grade-V)	Completely Weathered (Grade-V)	Completely Weathered (Grade-V)	
Term	Weak	Weak	Weak	
Mohr's Scale of Hardness	3	3.5	3	
Cohesion and angle of internal friction	Shear Strength, C	18.12 kg/cm ²	16.42 kg/cm ²	15.76 kg/cm ²
	φ	17°	19°	20°
Mineralogical and Petrological composition	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained sands Moderate spaced Fractures with 10° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained sands Moderate spaced Fractures with 15° dip	Type of Rock: Sedimentary Rock Classification: Sandstone Group: Arenaceous (Sandy) Composition: Fine Grained sands Moderate spaced Fractures with 15° dip	
Corrosivity	Moderately to Mild Corrsive	Moderately to Mild Corrsive	Moderately to Mild Corrsive	
The rock deformability characteristics	Quality of Deformation : IV Description of Rock : Poor	Quality of Deformation : IV Description of Rock : Poor	Quality of Deformation : IV Description of Rock : Poor	


 Biswajit Kumar Das.
 M.TECH (GEO TECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

238 ROCK MECHANICS FOR ENGINEERS

Table 12.5

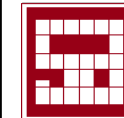
Geomechanical classification of jointed rock masses

Class No. and its description	1	2	3	4	5
	Very good	good	Fair	Poor	Very Poor
Rock Quality R.Q.D.(%)	90-100	75-90	50-75	25-50	< 25
Weathering	Unweathered	Slightly Weathered	Moderately weathered	Highly weathered	Completely weathered

REFERENCE:-

* For Rock classification reference is taken from "ENGINEERING CLASSIFICATIONS OF ROCK MASS-Dr P. Verma.


 BISWAJIT KUMAR DAS,
 M.TECH (GEO TECH)

CLIENT: TALCHER FERTILIZERS LIMITED
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

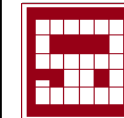
JOB No: TLD/2020-03

ANNEXURE-C (ANALYSIS OF CHEMICAL PROPERTIES OF WATER SAMPLES)

S No.	Borehole No.	pH	Chloride	Hardness	Sulphate	Carbondioxide	Ammonia	Magnesium
1	BH-35	7.30	93.65	260.15	136.26	0.86	0.36	6.17
2	BH-38	7.46	91.87	253.78	129.65	0.82	0.28	5.81
3	BH-41	7.25	94.02	252914	124.13	0.94	0.46	6.22
4	BH-42	7.37	92.54	266.94	132.54	0.92	0.33	5.68
5	BH-45	7.29	93.32	263.39	137.216	0.88	0.38	6.72
6	BH-46	7.40	95.96	260.43	140.285	0.91	0.45	6.54
7	BH-48	7.23	97.46	249.15	133.223	0.87	0.37	5.36
8	BH-52	7.40	89.96	252.09	118.96	0.90	0.42	6.23
9	BH-55	7.08	94.32	248.73	132.54	0.78	0.39	5.88
10	BH-72	7.14	97.81	261.18	126.87	0.86	0.41	6.07
11	BH-78	7.36	90.28	255.07	140.08	0.81	0.49	5.34
12	BH-80	7.22	94.33	258.74	133.77	0.88	0.53	5.68

- All test results are mentioned in mg/l except for pH.
- Ground water quality is assessed on the basis of water samples collected from site. Since the test results are in permissible limits, ground water of project site can be used for construction.


 BISHWANATH KUMAR DAS.
 M.TECH (P.E.C.TECH)

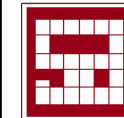
CLIENT: TALCHER FERTILIZERS LIMITED
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ANNEXURE-D (ANALYSIS OF CHEMICAL PROPERTIES OF SOIL SAMPLES)

S No.	Borehole No.	Depth in 'm'	Chloride (%)	Sulphate (%)
1	BH-34	1.50	0.19	0.14
2	BH-37	4.50	0.16	0.18
3	BH-39	1.50	0.22	0.15
4	BH-42	3.00	0.26	0.13
5	BH-43	3.00	0.19	0.19
6	BH-45	4.50	0.23	0.16
7	BH-48	1.50	0.25	0.17
8	BH-50	4.50	0.31	0.20
9	BH-61	1.50	0.28	0.17
10	BH-74	3.00	0.19	0.13
11	BH-78	4.50	0.22	0.16
12	BH-88	3.00	0.17	0.12


 BISHWAJIT KUMAR DAS.
 M.TECH (P&E) (IIT KGP)

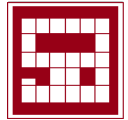
CLIENT: TALCHER FERTILIZERS LIMITED
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ANNEXURE-E (ANALYSIS OF CHEMICAL PROPERTIES OF ROCK SAMPLES)

S No.	Borehole No.	Depth in 'm'	Chloride (%)	Sulphate (%)
1	BH-36	10.50	0.052	0.024
2	BH-38	12.95	0.047	0.029
3	BH-39	12.00	0.053	0.033
4	BH-41	16.50	0.048	0.029
5	BH-43	13.15	0.046	0.031
6	BH-45	16.50	0.052	0.026
7	BH-47	10.50	0.055	0.034
8	BH-51	15.00	0.062	0.028
9	BH-64	16.50	0.057	0.036
10	BH-73	13.00	0.063	0.031
11	BH-79	15.00	0.054	0.027
12	BH-82	16.50	0.060	0.032


 BISHWANATH KUMAR DAS.
 M.TECH (METEOROLOGICAL)
 T. SATYANAGAR

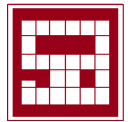


CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST RESULTS & GRAPHS


BISHU KUMAR DAS.
MTECH (BOTECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST PROCEDURE (AS PER IS 1888-1982)

a) PLATE SIZE AND THICKNESS:

The square plates used are of 0.50m was used for the Test.

b) TEST PIT:

Test was conducted at depths of 1.80m Below Ground Level after proper leveling. The top surface was finished and leveled properly.

c) PLACING OF TEST PLATE:

The plate was bedded to the soil by spreading fine sand carefully leveled and set horizontally at the bottom of the pit. At the commencement of the test the seating load of 10.00 kg/cm² at the plate level was applied.

d) METHOD OF LISTING:

Loading is applied by the method consisting of a hydraulic jack. The loading system is adequate to ensure that the test can be carried up to the specified limit. A ball and socket arrangement was inserted suitably in the assembly so as to allow the plate to rotate while keeping the direction of the load vertical throughout. Hydraulic jack with a load gauge attachment applied the loading increment.

e) LOAD INCREMENTS:

The numbers of loading increments were decided on the basis of ultimate bearing capacity according to clause no. 4.6 of IS 1888.

f) SETTLEMENT AND OBSERVATION:

Settlement was recorded with two dial gauges of 30mm range and least count of 0.01 mm placed diagonally opposite on the test plate. Settlement was observed for each increment of load after an interval of 1, 2.25, 4, 6.25, 9, 16, 25min. the average of two dial-gauge readings were considered. The next load increment was applied when the rate of settlement is less than 0.02 mm/ min.


BISHU KUMAR DAS.
MTECH (GEOTECH)
P. SATYANIGRAH





CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST REPORT

Client: TALCHER FERTILIZERS LIMITED	DOS: 15.05.2020
Co-ordinate: E-125.87 N-1202.44	DOC: 16.05.2020
Size of the plate: 500 mm x 500 mm x 25mm	Location:-ASU Area
Plate Loading Test No. 03	Depth of Testing: 1.80m
RL-94.682m	

Sl No:	Date	Time	Pressure at plate level	Load Intensity	Dial Gauge Readings		Settlement in mm		Remarks.
					D1	D2	Average	Net	
1	2	3	4	5	6	7	8	9	10
1	15.05.2020	3.30 PM	10kg/cm ²	40.00KN/m ²					
2		3.31 PM			1.30	1.32	1.31	1.31	
3		3.32 PM			1.33	1.35	1.34	1.34	
4		3.34 PM			1.36	1.38	1.37	1.37	
5		3.36 PM			1.39	1.43	1.41	1.41	
6		3.39 PM			1.40	1.44	1.42	1.42	
7		3.46 PM			1.45	1.49	1.47	1.47	
8		3.55 PM			2.05	2.09	2.07	2.07	
9		4.30 PM			2.11	2.15	2.13	2.13	
10	15.05.2020	4.35 PM	20 kg/cm ²	80.00KN/m ²					
11		4.36 PM			3.67	3.68	3.68	3.68	
12		4.37 PM			3.68	3.69	3.69	3.69	
13		4.39 PM			3.68	3.70	3.69	3.69	
14		4.41 PM			3.69	3.70	3.70	3.70	
15		4.44 PM			3.71	3.75	3.73	3.73	
16		4.51 PM			3.76	3.79	3.78	3.78	
17		5.00 PM			3.80	3.85	3.83	3.83	
18		5.35 PM			3.84	3.88	3.86	3.86	
19	15.05.2020	5.40 PM	40 kg/cm ²	160.00KN/m ²					
20		5.41 PM			4.78	4.93	4.86	4.86	
21		5.42 PM			4.79	4.94	4.87	4.87	
22		5.44 PM			4.79	4.95	4.87	4.87	
23		5.46 PM			4.80	4.95	4.88	4.88	
24		5.49 PM			4.81	4.96	4.89	4.89	
25		5.56 PM			4.81	4.97	4.89	4.89	
26		6.05 PM			4.91	5.06	4.99	4.99	
27		6.40 PM			5.01	5.10	5.06	5.06	


 BISHU KUMAR DAS
 M.TECH (GEOTECH)






CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST REPORT

Client: TALCHER FERTILIZERS LIMITED	DOS: 15.05.2020
Co-ordinate: E-125.87 N-1202.44	DOC: 16.05.2020
Size of the plate: 500 mm x 500 mm x 25mm	Location:-ASU Area
Plate Loading Test No. 03	Depth of Testing: 1.80m
RL-94.682m	

SI No:	Date	Time	Pressure at plate level	Load Intensity	Dial Gauge Readings		Settlement in mm		Remarks.
					D1	D2	Average	Net	
1	2	3	4	5	6	7	8	9	10
28	15.05.2020	6.45 PM	70 kg/cm ²	280.00KN/m ²					
29		6.46 PM			5.33	5.41	5.37	5.37	
30		6.47 PM			5.34	5.42	5.38	5.38	
31		6.49 PM			5.34	5.43	5.39	5.39	
32		6.51 PM			5.36	5.44	5.40	5.40	
33		6.54 PM			5.38	5.46	5.42	5.42	
34		7.01 PM			5.41	5.49	5.45	5.45	
35		7.10 PM			5.48	5.56	5.52	5.52	
36		7.45 PM			6.41	6.45	6.43	6.43	
37	15.05.2020	7.50 PM	100 kg/cm ²	400.00KN/m ²					
38		7.51 PM			7.31	7.42	7.37	7.37	
39		7.52 PM			7.32	7.44	7.38	7.38	
40		7.54 PM			7.35	7.46	7.41	7.41	
41		7.56 PM			7.38	7.46	7.42	7.42	
42		7.59 PM			7.39	7.47	7.43	7.43	
43		8.06 PM			7.42	7.49	7.46	7.46	
44		8.15 PM			7.53	7.58	7.56	7.56	
45		8.50 PM			7.61	7.64	7.63	7.63	
46	15.05.2020	8.55 PM	130 kg/cm ²	520.00KN/m ²					
47		8.56 PM			7.86	8.12	7.99	7.99	
48		8.57 PM			7.91	8.13	8.02	8.02	
49		8.59 PM			7.91	8.13	8.02	8.02	
50		9.01 PM			7.92	8.14	8.03	8.03	
51		9.04 PM			7.94	8.15	8.05	8.05	
52		9.11 PM			7.94	8.15	8.05	8.05	
53		9.20 PM			7.98	8.19	8.09	8.09	
54		9.55 PM			7.99	8.20	8.10	8.10	


 BISHWANATH RUMPA DAS
 M.TECH (GEO TECH)




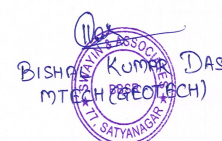
CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST REPORT

Client: TALCHER FERTILIZERS LIMITED	DOS: 15.05.2020
Co-ordinate: E-125.87 N-1202.44	DOC: 16.05.2020
Size of the plate: 500 mm x 500 mm x 25mm	Location:-ASU Area
Plate Loading Test No. 03	Depth of Testing: 1.80m
RL-94.682m	

Sl No:	Date	Time	Pressure at plate level	Load Intensity	Dial Gauge Readings		Settlement in mm		Remarks.
					D1	D2	Average	Net	
1	2	3	4	5	6	7	8	9	10
55	15.05.2020	10.00 PM	160 kg/cm ²	640.00KN/m ²					
56		10.01 PM			8.50	8.61	8.56	8.56	
57		10.02 PM			8.51	8.62	8.57	8.57	
58		10.04 PM			8.52	8.63	8.58	8.58	
59		10.06 PM			8.53	8.64	8.59	8.59	
60		10.09 PM			8.53	8.64	8.59	8.59	
61		10.16 PM			8.54	8.65	8.60	8.60	
62		10.25 PM			8.55	8.67	8.61	8.61	
63		11.00 PM			8.62	8.71	8.67	8.67	
64	15.05.2020	11.05 PM	200 kg/cm ²	800.00KN/m ²					
65		11.06 PM			10.41	10.47	10.44	10.44	
66		11.07 PM			10.42	10.48	10.45	10.45	
67		11.09 PM			10.42	10.48	10.45	10.45	
68		11.11 PM			10.43	10.48	10.46	10.46	
69		11.14 PM			10.45	10.50	10.48	10.48	
70		11.21 PM			10.50	10.54	10.52	10.52	
71		11.30 PM			10.61	10.65	10.63	10.63	
72	16.05.2020	12.05 AM			10.73	10.81	10.77	10.77	
73		12.10 AM	230 kg/cm ²	920.00KN/m ²					
74		12.11 AM			11.84	11.88	11.86	11.86	
75		12.12 AM			11.85	11.89	11.87	11.87	
76		12.14 AM			11.85	11.90	11.88	11.88	
77		12.16 AM			11.85	11.90	11.88	11.88	
78		12.19 AM			11.86	11.91	11.89	11.89	
79		12.26 AM			11.87	11.92	11.90	11.90	
80		12.30 AM			11.89	11.93	11.91	11.91	


 BISHAL KUMAR DAS
 M.TECH (GEO TECH)
 L. SATYANIGR




CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST REPORT

Client: TALCHER FERTILIZERS LIMITED	DOS: 14.05.2020
Co-ordinate: E-799.43 N-1736.353	DOC: 14.05.2020
Size of the plate: 500 mm x 500 mm x 25mm	Location:-CSU Area
Plate Loading Test No. 04	Depth of Testing: 1.80m
RL-100.00m	

Sl No:	Date	Time	Pressure at plate level	Load Intensity	Dial Gauge Readings		Settlement in mm		Remarks.
					D1	D2	Average	Net	
1	2	3	4	5	6	7	8	9	10
1	14.05.2020	7.31 AM	10kg/cm ²	40.00KN/m ²	0.24	0.40	0.32	0.32	
2		7.32 AM			0.25	0.41	0.33	0.33	
3		7.34 AM			0.26	0.42	0.34	0.34	
4		7.36 AM			0.27	0.46	0.37	0.37	
5		7.39 AM			0.28	0.47	0.38	0.38	
6		7.46 AM			0.29	0.48	0.39	0.39	
7		7.55 AM			0.35	0.51	0.43	0.43	
8		8.30 AM			0.47	0.65	0.56	0.56	
9	14.05.2020	8.35 AM	20 kg/cm ²	80.00KN/m ²					
10		8.36 AM			0.95	1.02	0.99	0.99	
11		8.37 AM			0.98	1.05	1.02	1.02	
12		8.39 AM			1.01	1.05	1.03	1.03	
13		8.41 AM			1.03	1.08	1.06	1.06	
14		8.44 AM			1.04	1.09	1.07	1.07	
15		8.51 AM			1.15	1.13	1.14	1.14	
16		9.00 AM			1.19	1.14	1.17	1.17	
17		9.35 AM			1.31	1.17	1.24	1.24	
18	14.05.2020	9.40 AM	40 kg/cm ²	160.00KN/m ²	3.84	3.88	3.86	3.86	
19		9.41 AM			3.96	3.80	3.88	3.88	
20		9.42 AM			3.97	3.80	3.89	3.89	
21		9.44 AM			3.98	3.82	3.90	3.90	
22		9.46 AM			4.01	3.95	3.98	3.98	
23		9.49 AM			4.06	4.01	4.04	4.04	
24		9.56 AM			4.07	4.02	4.05	4.05	
25		10.05 AM			4.50	4.40	4.45	4.45	
26		10.40 AM			4.50	4.40	4.45	4.45	


 BISHWAJIT KUMAR DAS.
 MTECH (GEO TECH)
 T. SATYANAGAR



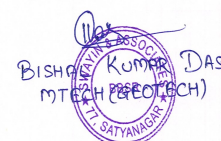
CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

PLATE LOAD TEST REPORT

Client: TALCHER FERTILIZERS LIMITED	DOS: 14.05.2020
Co-ordinate: E-799.43 N-1736.353	DOC: 14.05.2020
Size of the plate: 500 mm x 500 mm x 25mm	Location:-CSU Area
Plate Loading Test No. 04	Depth of Testing: 1.80m
RL-100.00m	

Sl No:	Date	Time	Pressure at plate level	Load Intensity	Dial Gauge Readings		Settlement in mm		Remarks.
					D1	D2	Average	Net	
1	2	3	4	5	6	7	8	9	10
27	14.05.2020	10.45 AM	60 kg/cm ²	240.00KN/m ²					
28		10.46 AM			6.09	5.95	6.02	6.02	
29		10.47 AM			6.11	6.01	6.06	6.06	
30		10.49 AM			6.13	6.03	6.08	6.08	
31		10.51 AM			6.15	6.06	6.11	6.11	
32		10.54 AM			6.16	6.09	6.13	6.13	
33		11.01 AM			6.19	6.11	6.15	6.15	
34		11.10 AM			6.25	6.19	6.22	6.22	
35		11.45 AM			6.29	6.21	6.25	6.25	
36	14.05.2020	11.50 AM	80 kg/cm ²	320.00 KN/m ²					
37		11.51 AM			8.26	8.43	8.35	8.35	
38		11.52 AM			8.27	8.45	8.36	8.36	
39		11.54 AM			8.28	8.47	8.38	8.38	
40		11.56 AM			8.31	8.48	8.40	8.40	
41		11.59 AM			8.33	8.51	8.42	8.42	
42		12.06 PM			8.39	8.53	8.46	8.46	
43		12.15 PM			8.40	8.50	8.45	8.45	
44		12.50 PM			8.41	8.51	8.46	8.46	
45	14.05.2020	12.55 PM	120 kg/cm ²	480.00KN/m ²					
46		12.56 PM			9.45	9.39	9.42	9.42	
47		12.57 PM			9.52	9.43	9.48	9.48	
48		12.59 PM			9.53	9.44	9.49	9.49	
49		01.01 PM			9.55	9.45	9.50	9.50	
50		01.04 PM			9.55	9.45	9.50	9.50	
51		01.11 PM			9.58	9.46	9.52	9.52	
52		01.20 PM			9.58	9.47	9.53	9.53	
53		01.55 PM			9.59	9.50	9.55	9.55	


 BISHNU KUMAR DAS
 M.TECH (RECTECH)
 T. SATYANAGAR





CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

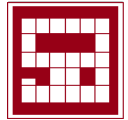
JOB No: TLD/2020-03

PLATE LOAD TEST REPORT

Client: TALCHER FERTILIZERS LIMITED	DOS: 14.05.2020
Co-ordinate: E-799.43 N-1736.353	DOC: 14.05.2020
Size of the plate: 500 mm x 500 mm x 25mm	Location:-CSU Area
Plate Loading Test No. 04	Depth of Testing: 1.80m
RL-100.00m	

Sl No:	Date	Time	Pressure at plate level	Load Intensity	Dial Gauge Readings		Settlement in mm		Remarks.
					D1	D2	Average	Net	
1	2	3	4	5	6	7	8	9	10
54	14.05.2020	02.00 PM	160 kg/cm ²	640.00KN/m ²					
55		02.01 PM			10.70	10.50	10.60	10.60	
56		02.02 PM			11.38	11.33	11.36	11.36	
57		02.04 PM			11.44	11.36	11.40	11.40	
58		02.06 PM			11.46	11.38	11.42	11.42	
59		02.09 PM			11.49	11.42	11.46	11.46	
60		02.16 PM			11.50	11.40	11.45	11.45	
61		02.25 PM			11.50	11.40	11.45	11.45	
62		03.00 PM			11.54	11.43	11.49	11.49	
63	14.05.2020	03.05 PM	200 kg/cm ²	800.00KN/m ²					
64		03.06 PM			13.89	13.70	13.80	13.80	
65		03.07 PM			13.89	13.70	13.80	13.80	
66		03.09 PM			13.90	13.71	13.81	13.81	
67		03.11 PM			13.91	13.71	13.81	13.81	
68		03.14 PM			13.94	13.76	13.85	13.85	
69		03.21 PM			14.00	13.82	13.91	13.91	
70		03.30 PM			14.01	13.85	13.93	13.93	
71		04.05 PM			14.03	13.91	13.97	13.97	
72	14.05.2020	04.10 PM	230 kg/cm ²	920.00KN/m ²					
73		04.11 PM			11.84	11.88	11.86	11.86	
74		04.12 PM			11.85	11.89	11.87	11.87	
75		04.14 PM			11.85	11.90	11.88	11.88	
76		04.16 PM			11.85	11.90	11.88	11.88	
77		04.19 PM			11.86	11.91	11.89	11.89	
78		04.26 PM			11.87	11.92	11.90	11.90	
79		04.30 PM			11.89	11.93	11.91	11.91	
80	REVERS								
81		05.00 PM	200 kg/cm ²	800.00 KN/m ²	15.01	13.55	14.28	14.28	
82		05.05 PM	150 kg/cm ²	600.00 KN/m ²	13.00	11.72	12.36	12.36	
83		05.10 PM	100 kg/cm ²	400.00 KN/m ²	10.70	9.75	10.23	10.23	
84		05.15 PM	50 kg/cm ²	200.00 KN/m ²	8.96	8.40	8.68	8.68	
85		05.20 PM	0 kg/cm ²	0 KN/m ²	8.11	8.06	8.09	8.09	


 BISHAL KUMAR DAS.
 M.TECH (GEOTECH)




CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

Load Intensity calculation for PLT

Size of the Plate = (0.50 x 0.50) m
= 0.25 m²

Pressure applied on Plate in 1st stage = 10 kg/cm²

Load Intensity = Applied Pressure on plate / Size of the Plate
= (10/0.25) = 40 Kn/m²


BISHAL KUMAR DAS.
MTECH (METALLURGY)
SATYANAGAR

PLATE LOAD TEST NO - PLT-03

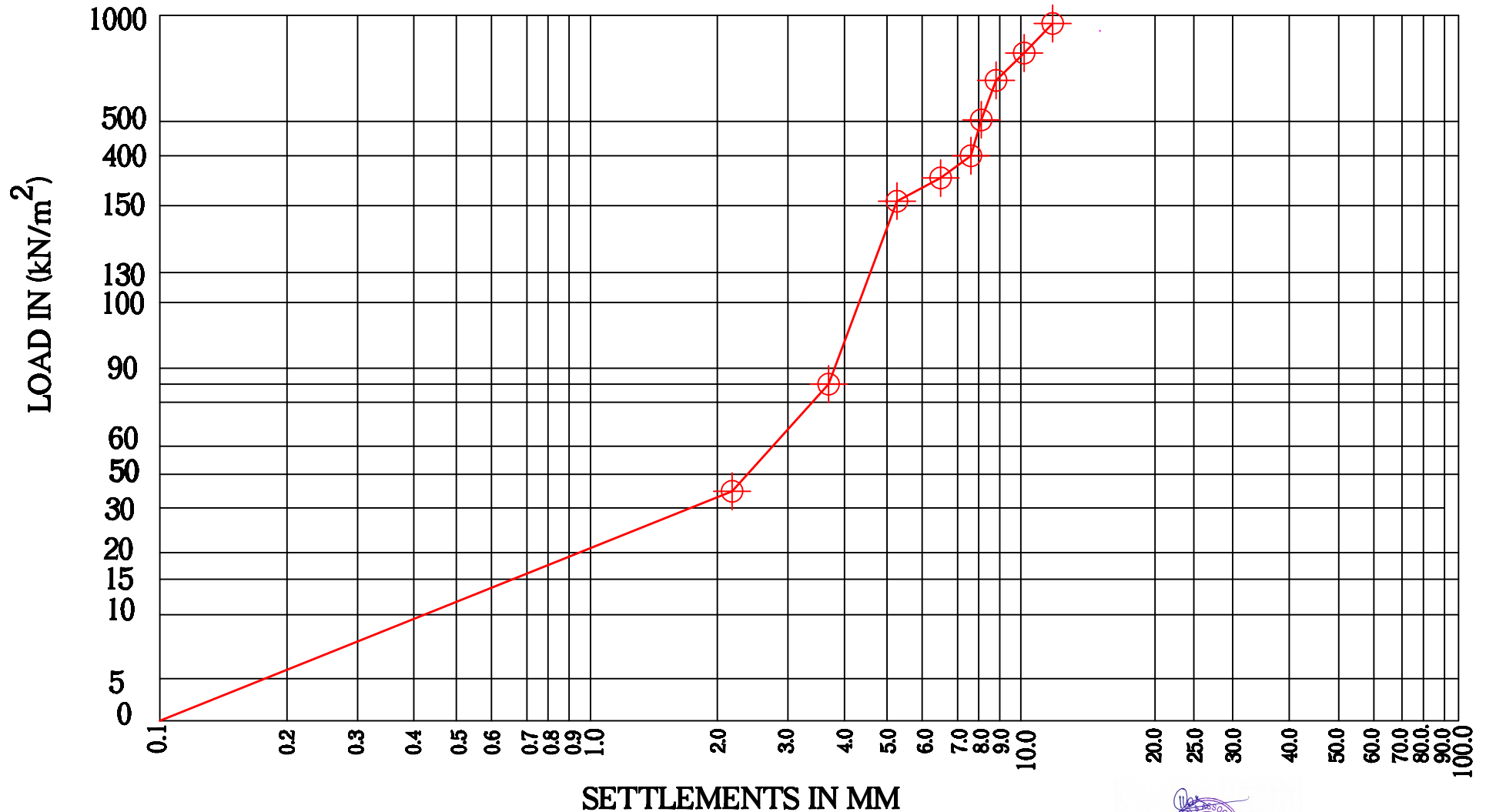
DEPTH - 1.80M

CLIENT : TFL (TALCHER FERTILIZERS LIMITED)

CO-ORDINATE: E-125.87, N- 1202.44

RL - 94.682M

SIZE OF THE PLATE :- 500mm X 500mm



LOAD-SETTLEMENT CURVE (LOG-LOG SCALE)

BISHWANT KUMAR DAS.
M.TECH (PRACTICAL)
SWAYIN & ASSOCIATES

PLATE LOAD TEST NO - PLT-04

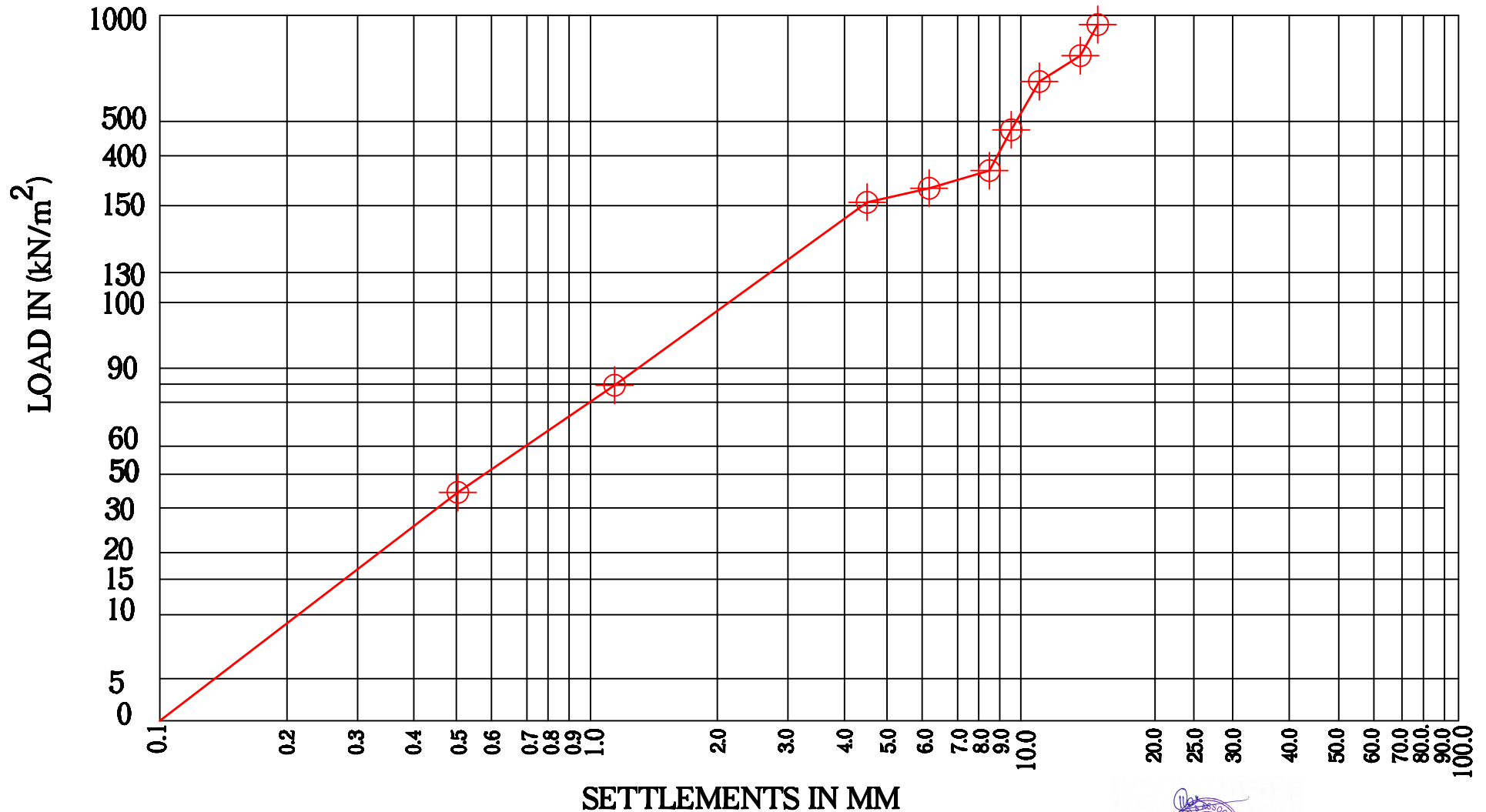
DEPTH - 1.80M

CLIENT : TFL (TALCHER FERTILIZERS LIMITED)

CO-ORDINATE: E-799.43, N- 1736.353

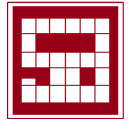
RL - 100.00M

SIZE OF THE PLATE :- 500mm X 500mm



LOAD-SETTLEMENT CURVE (LOG-LOG SCALE)

BISHWANT KUMAR DAS.
M.TECH (PRACTICAL)
SWAYIN & ASSOCIATES

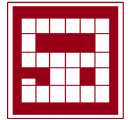


CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

ERT TEST RESULTS & GRAPHS


BISHAL KUMAR DAS.
MTECH (GEOTECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
SUB - CONTRACTOR: SWAYIN & ASSOCIATES

JOB No: TLD/2020-03

SCOPE OF WORK

The scope of work in brief involved in the above studies included-

- Soil Resistivity survey at Spacing of 100cm, 200cm, 400cm, 600cm, 800cm and 1000cm at each location.

CORROSION SURVEY

METHODOLOGY:

Corrosion Survey:

- Method -- Wenner Configuration
- Electrode Spacing -- 50cm, 100 cm, 200cm, 300cm, 400cm and 500cm at each location(Care has to be taken while taking readings)

INSTRUMENT USED & PROCEDURE

Digital Soil Resistivity Meter	:	01 No.
Make	:	Electronic Devices, Panki, and Kanpur.
Least Count	:	0.01 Ohm.
Method	:	Werner configuration
Electrode spacing	:	100cm, 200cm, 400cm, 600cm, 800cm and 1000cm at each location.


BISHAL KUMAR DAS.
M.TECH (P&OT) (IIT KANPUR)
SATYANAGAR



CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES


JOB No: TLD/2020-03

TABULATION OF ELECTRICAL RESISTIVITY TEST RESULTS

S No.	ERT No.	Date	Location	Spacing in mtr.	Resistance in Ω	Resistivity in $\Omega\text{-m}$ ($\rho=2\pi rR$)
1		2	3	5	6	7
1	1	16.03.20	ASU Area	1.00	9.12	57.27
				2.00	6.95	87.29
				4.00	3.63	91.19
				7.00	2.36	103.75
				9.00	2.10	118.69
2	2	16.03.20		1.00	8.50	53.38
				3.00	4.95	93.26
				5.00	3.38	106.13
				7.00	2.48	109.02
3	3	13.05.20		10.00	1.90	119.32
				1.00	9.14	57.40
				2.00	7.18	90.18
				4.00	3.94	98.97
				6.00	2.83	106.63
4	4	13.05.20		8.00	2.22	111.53
			10.00	2.01	126.23	
			1.00	9.15	57.46	
			2.00	7.08	88.92	
			4.00	3.84	96.46	
			6.00	2.72	102.49	
			8.00	2.15	108.02	
			10.00	1.91	119.95	

TABULATION OF ELECTRICAL RESISTIVITY TEST RESULTS

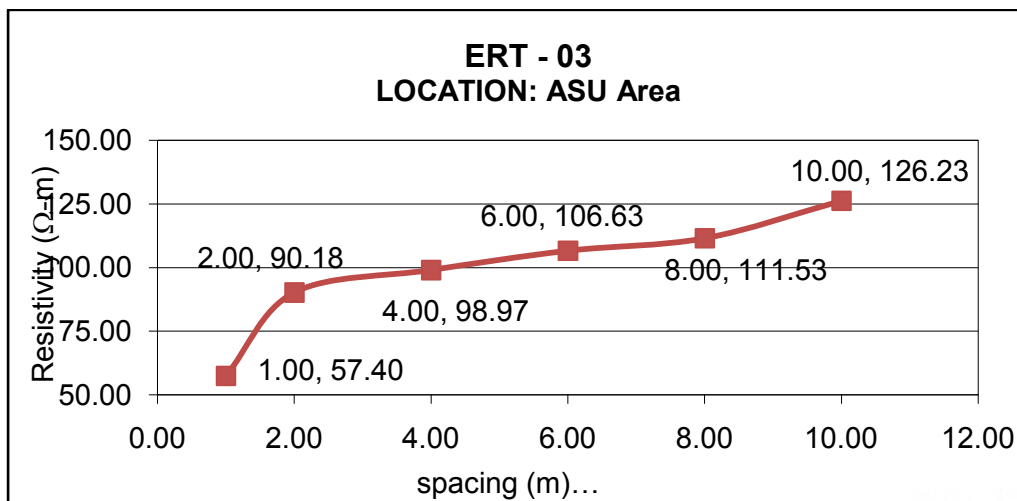
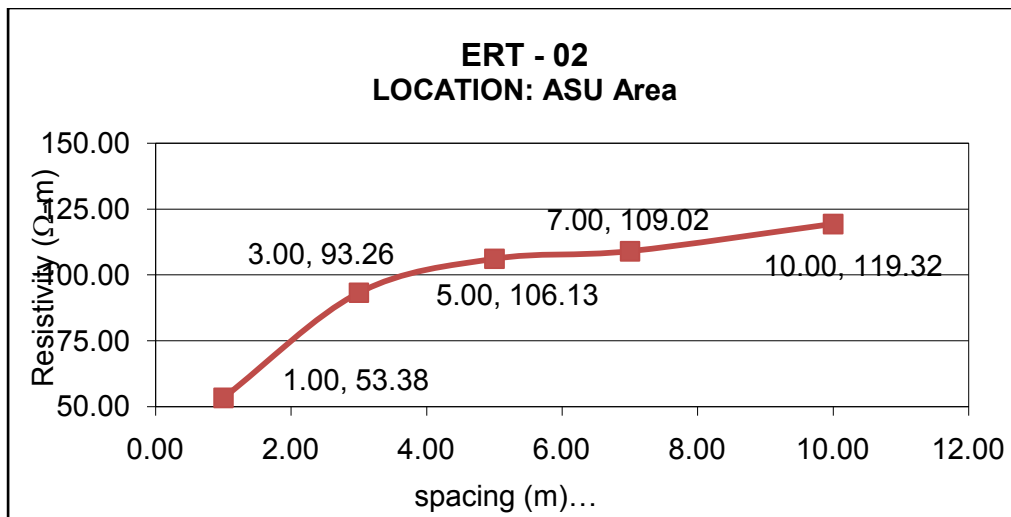
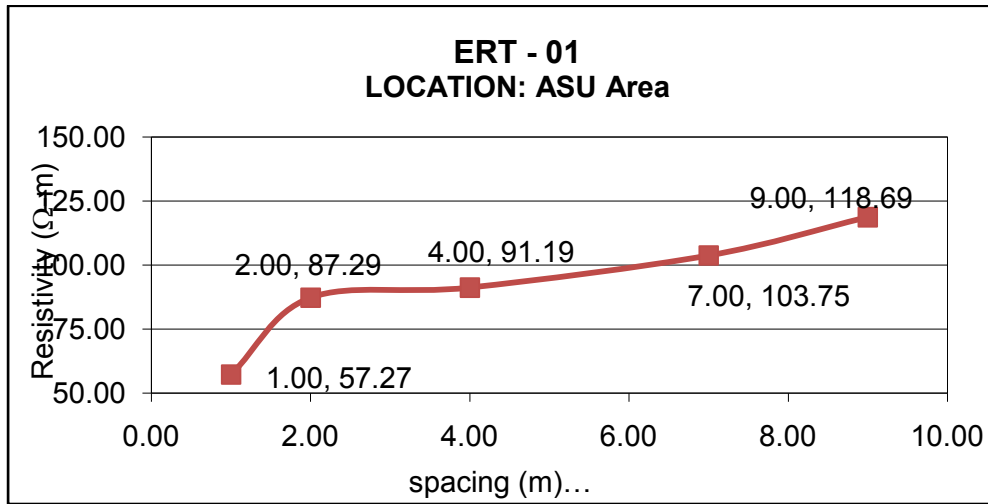
S No.	ERT No.	Date	Location	Spacing in mtr.	Resistance in Ω	Resistivity in $\Omega\text{-m}$ ($\rho=2\pi rR$)
1		2	3	5	6	7
1	1	16.03.20	CSU Area	1.00	8.79	55.20
				2.00	5.25	65.94
				4.00	3.06	76.87
				6.00	2.13	80.26
				9.00	1.62	91.56
1	1	16.03.20		1.00	9.13	57.34
				2.00	5.12	64.31
				4.00	3.05	76.62
				6.00	2.15	81.01
				9.00	1.68	94.95

Signature: 
 BISHWANATH KUMAR DAS.
 M.TECH (ELECTRICAL)
 T. SATYANAGAR

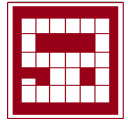


**CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES**

JOB No: TLD/2020-03

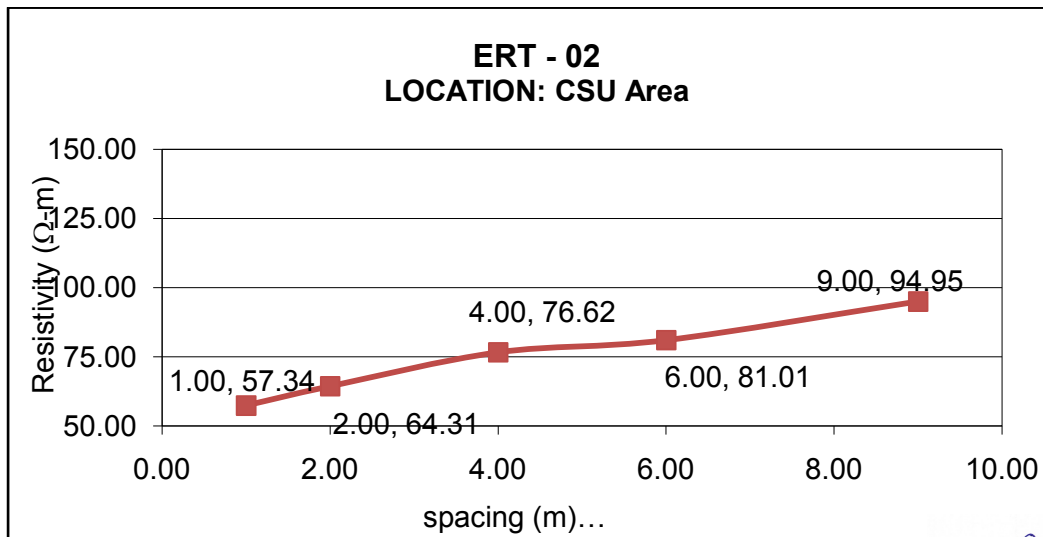
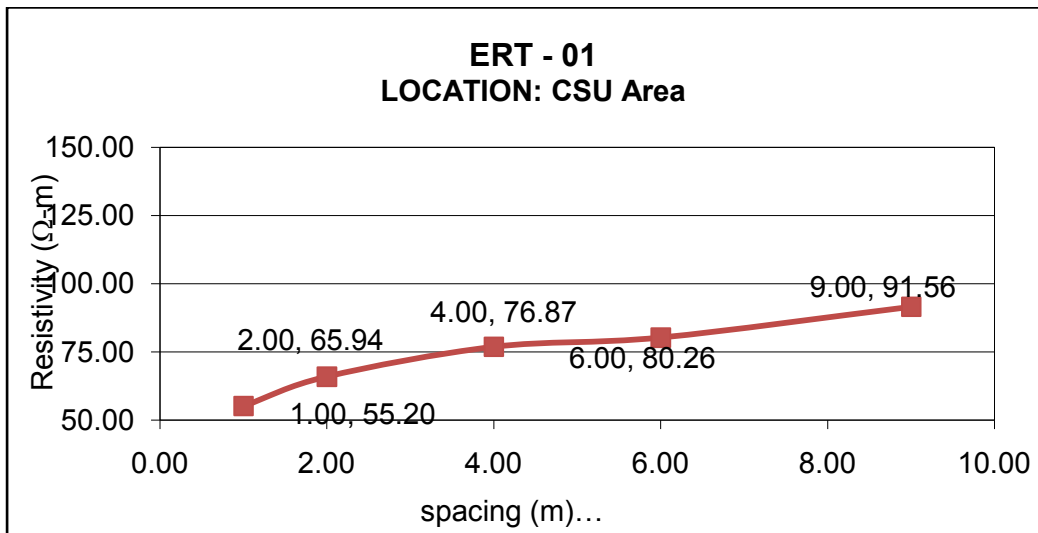
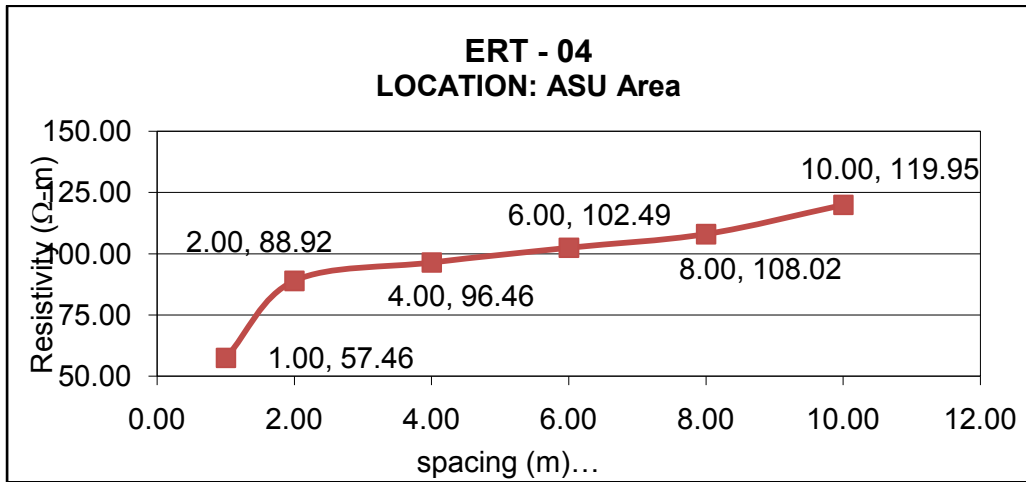




BISWAJIT KUMAR DAS.
 MTECH (GEOTECH)

CLIENT: TALCHER FERTILIZERS LIMITED.
 CONTRACTOR: WUHUAN ENGINEERING CO., LTD.
 SUB - CONTRACTOR: SWAYIN & ASSOCIATES

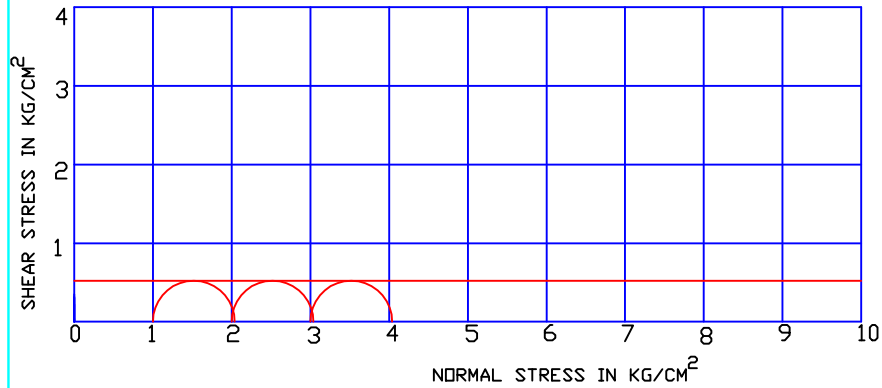
JOB No: TLD/2020-03




 BISHWANATH KUMAR DAS
 M.TECH (ELECTRICAL)
 IIT KANPUR
 SATYANAGAR

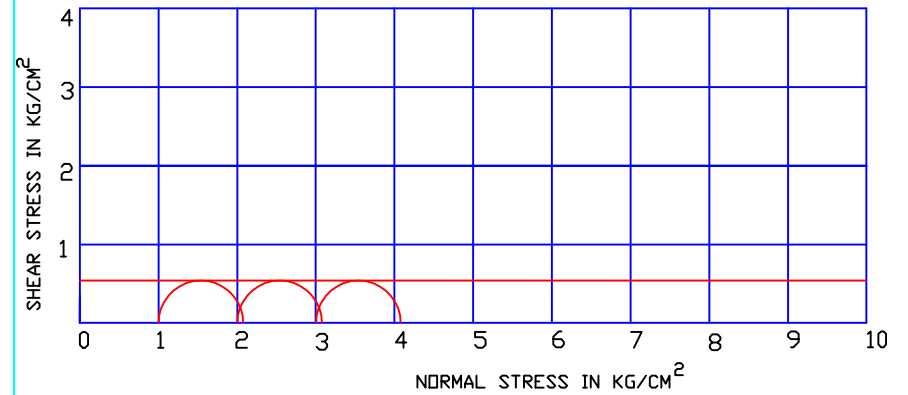
LOCATION:-ASU AREA
DEPTH :-1.50M.
BH-40

CONSOLIDATION UNDRAINED
 $C=0.52\text{KG}/\text{CM}^2$
 $\phi=0^\circ$



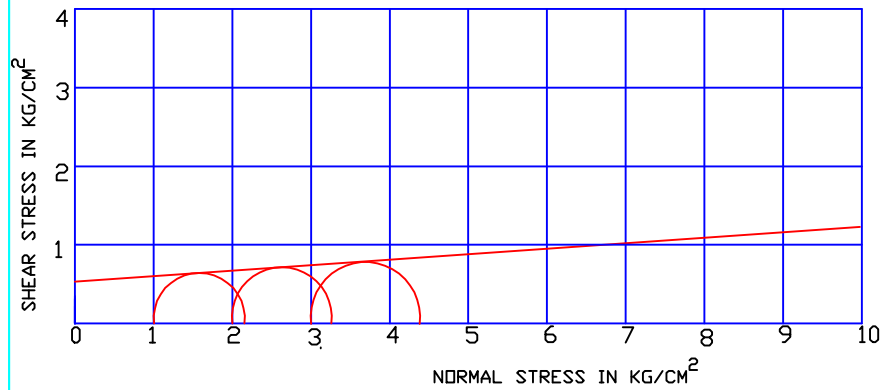
LOCATION:-ASU AREA
DEPTH :-3.00M.
BH-43

CONSOLIDATION UNDRAINED
 $C=0.54\text{KG}/\text{CM}^2$
 $\phi=0^\circ$



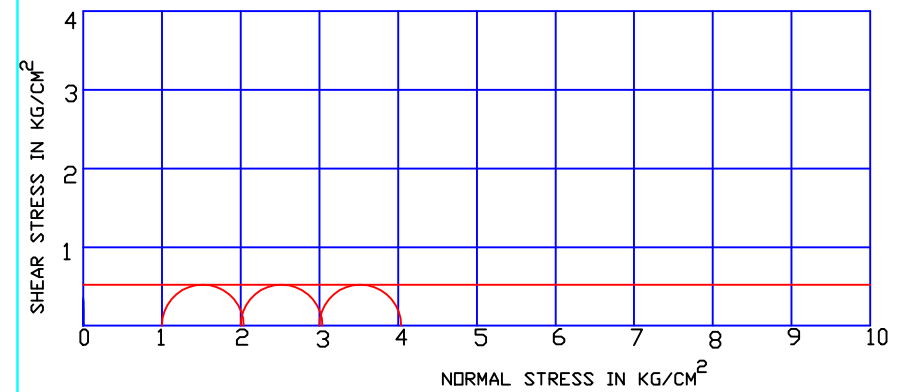
LOCATION:-ASU AREA
DEPTH :-3.00M.
BH-44

CONSOLIDATION UNDRAINED
 $C=0.53\text{KG}/\text{CM}^2$
 $\phi=4^\circ$



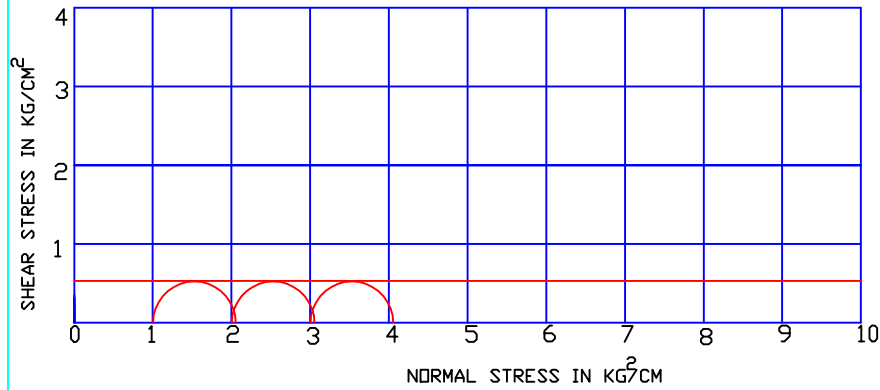
LOCATION:-ASU AREA
DEPTH :-1.50M.
BH-45

CONSOLIDATION UNDRAINED
 $C=0.52\text{KG}/\text{CM}^2$
 $\phi=0^\circ$



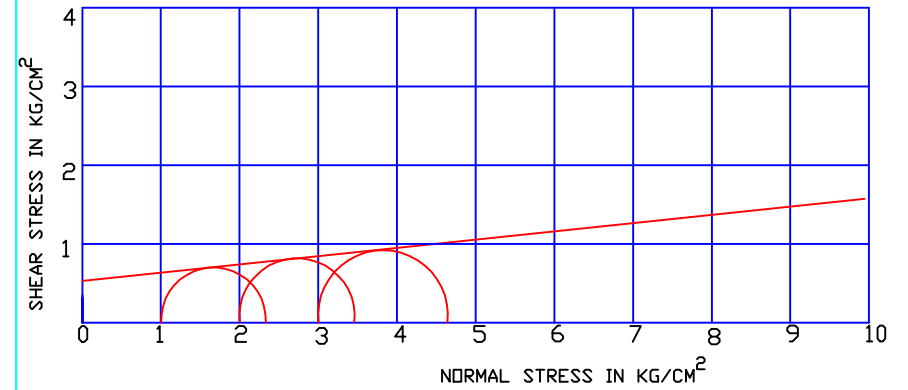
LOCATION:-ASU AREA
DEPTH :-1.50M.
BH-34

CONSOLIDATION UNDRAINED
C=0.53KG/CM²
φ=0°



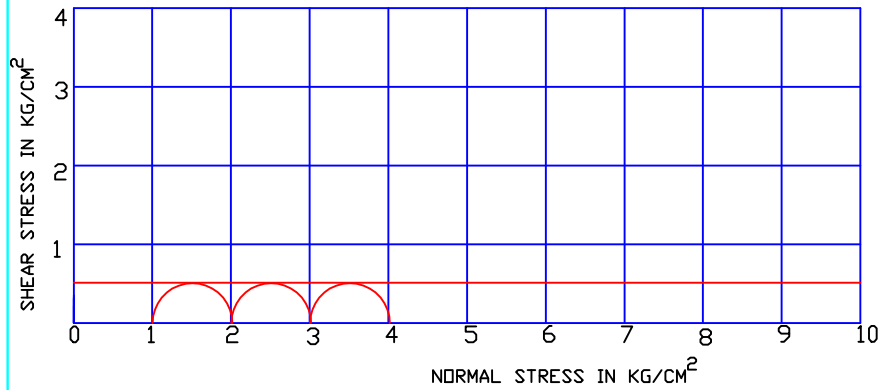
LOCATION:-ASU AREA
DEPTH :-1.50M.
BH-37

CONSOLIDATION UNDRAINED
C=0.53KG/CM²
φ=6°



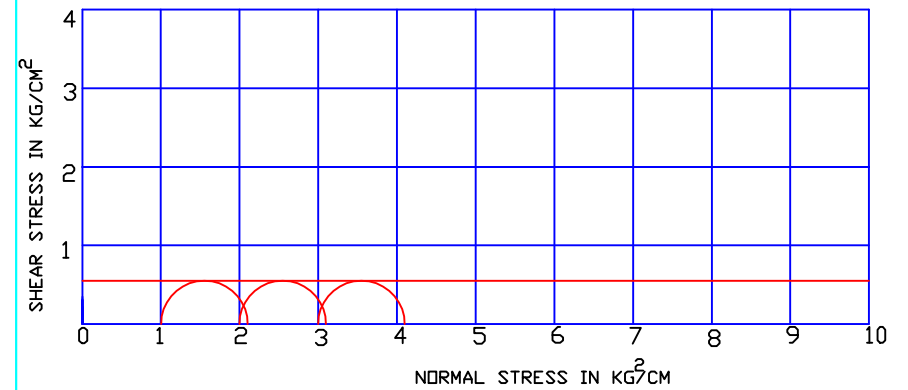
LOCATION:-ASU AREA
DEPTH :-1.50M.
BH-38

CONSOLIDATION UNDRAINED
C=0.51KG/CM²
φ=0°



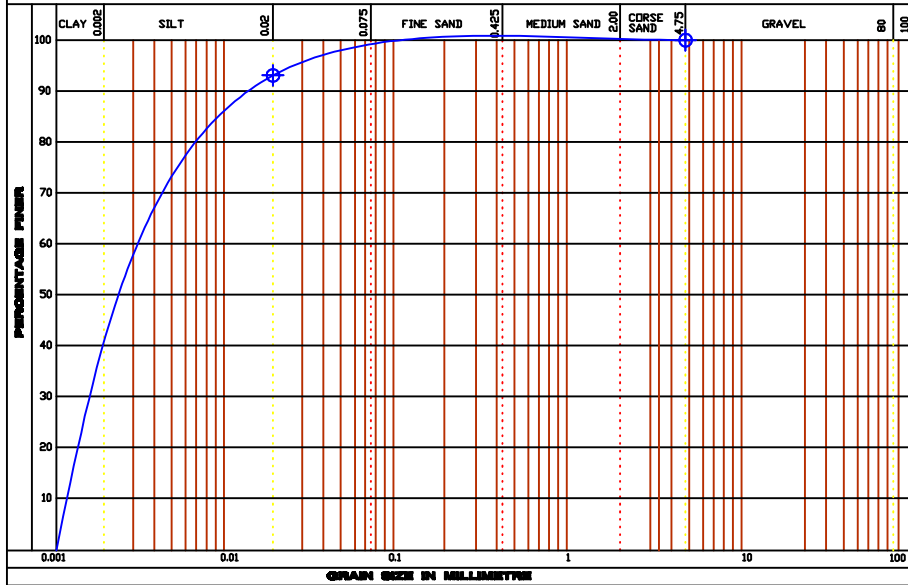
LOCATION:-ASU AREA
DEPTH :-3.00M.
BH-39

CONSOLIDATION UNDRAINED
C=0.55KG/CM²
φ=0°



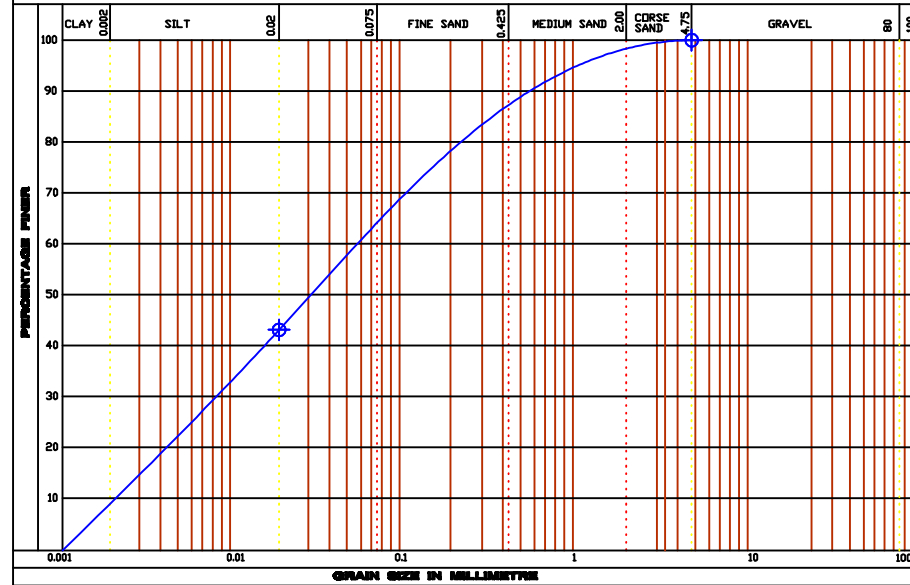
LOCATION - ASU AREA
DEPTH-1.50M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 24



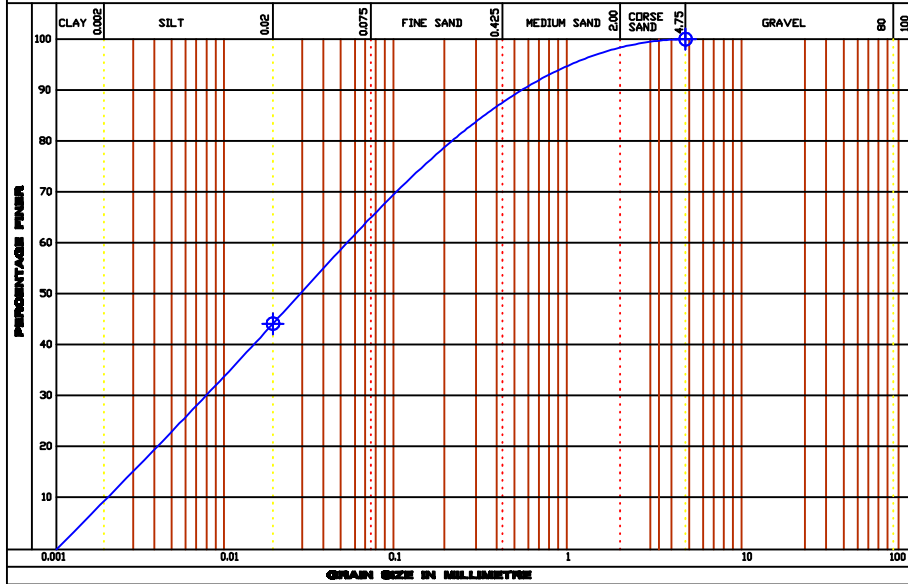
LOCATION - ASU AREA
DEPTH-1.50M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 25



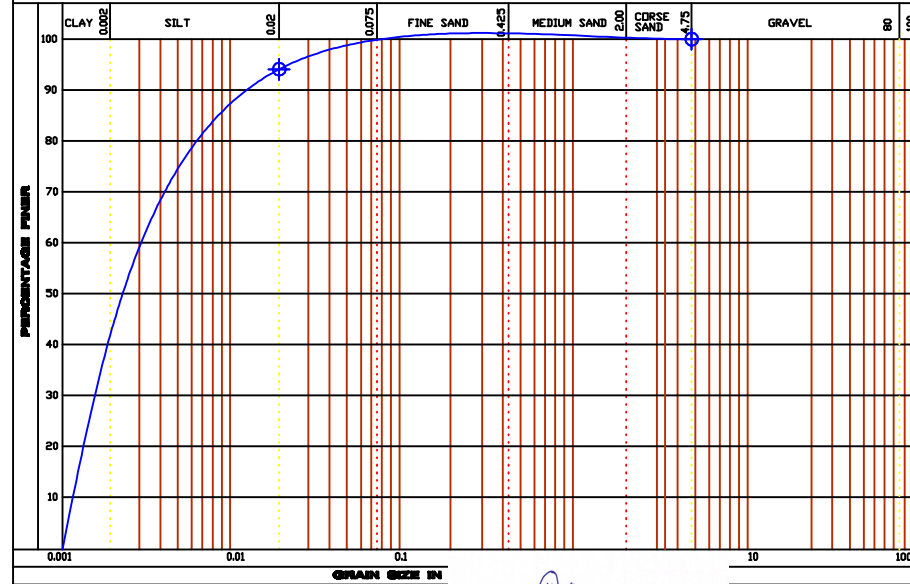
LOCATION - ASU AREA
DEPTH-1.50M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 26



LOCATION - ASU AREA
DEPTH-3.00M
GRAIN SIZE DISTRIBUTION CURVE

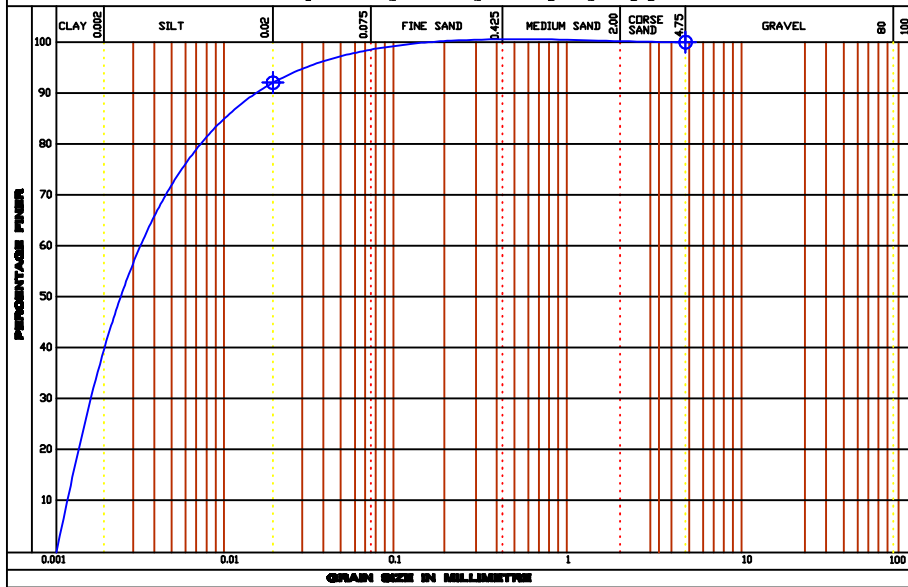
SLH NO- 27



Dex
 BISHW KUMAR DAS.
 M.TECH (GEOTECH)
 S.WAYIN & ASSOCIATES

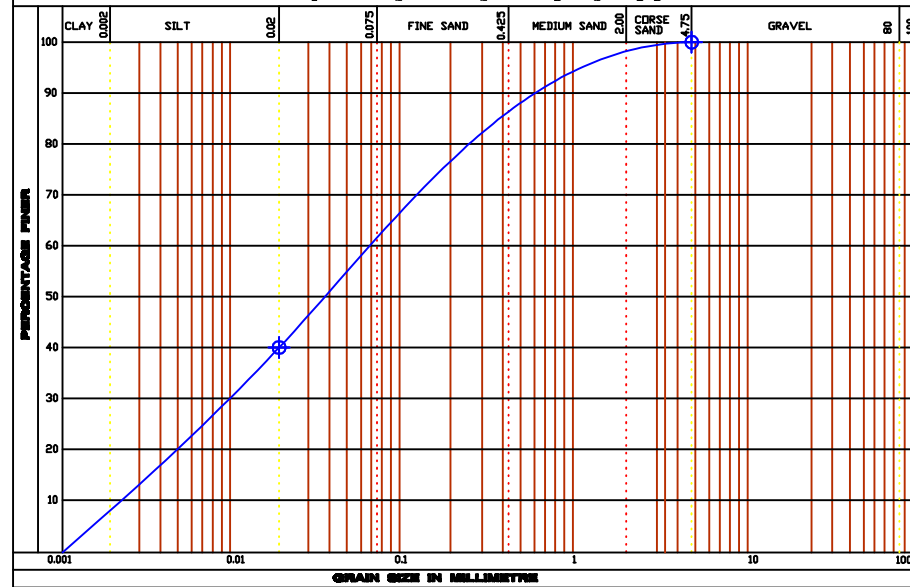
LOCATION - ASU AREA
DEPTH-1.50M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 40



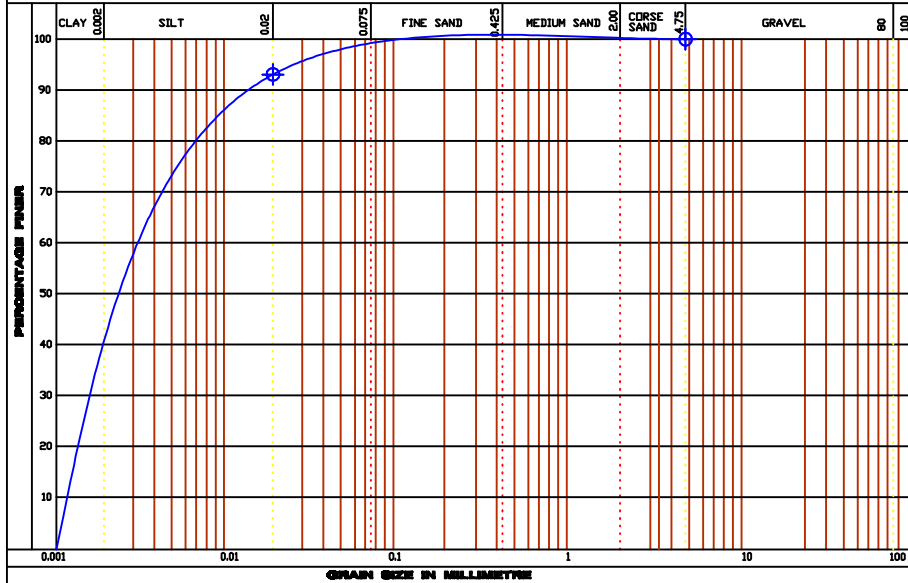
LOCATION - ASU AREA
DEPTH-1.50M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 42



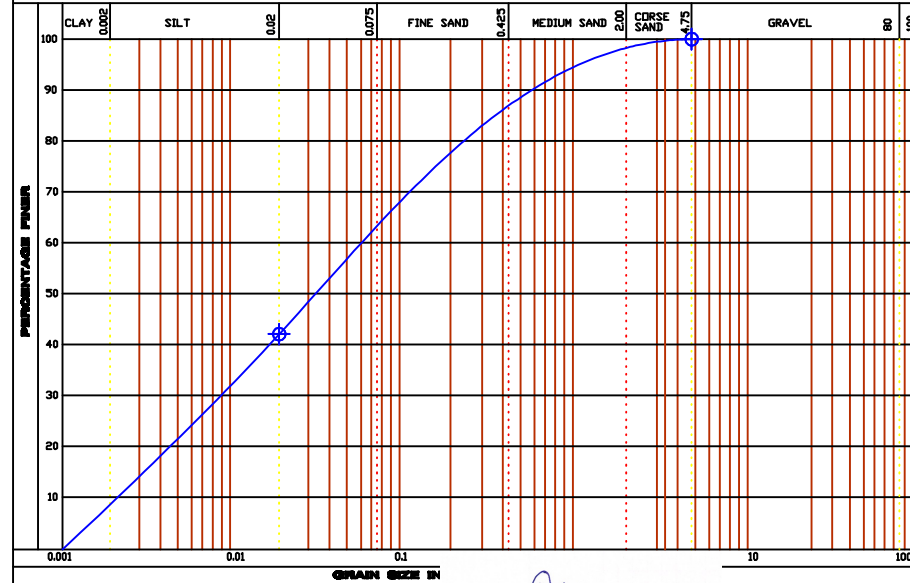
LOCATION - ASU AREA
DEPTH-3.00M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 48

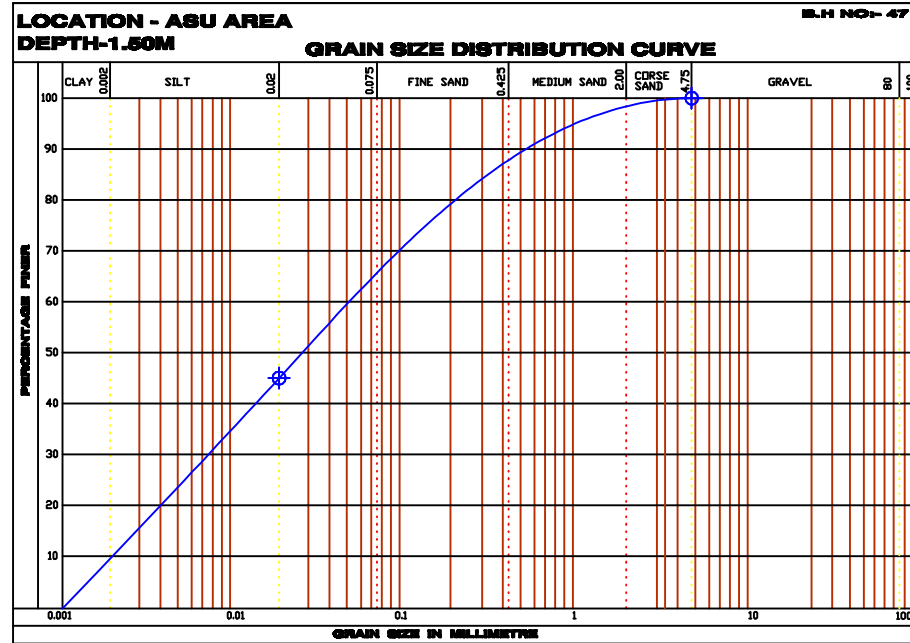
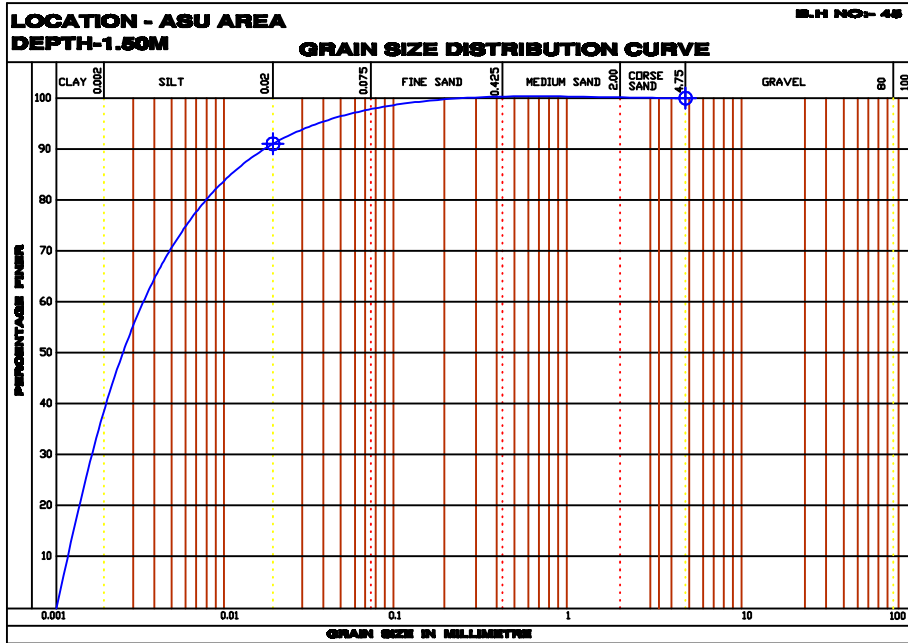



LOCATION - ASU AREA
DEPTH-1.50M
GRAIN SIZE DISTRIBUTION CURVE

SLH NO- 44

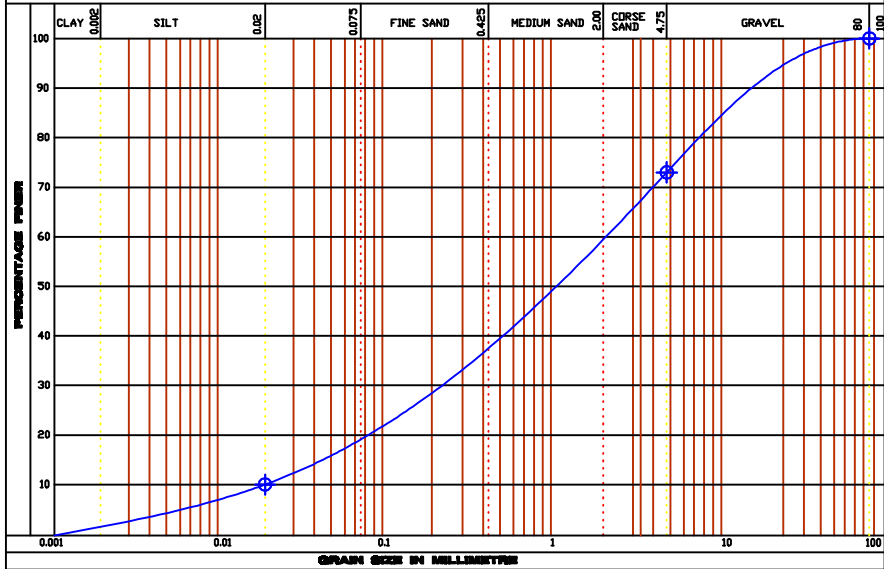


BISHWAL ENGINEERING ASSOCIATES
RUPAK KUMAR DAS
M.TECH (GEOTECH)
T. SATYANARAYAN

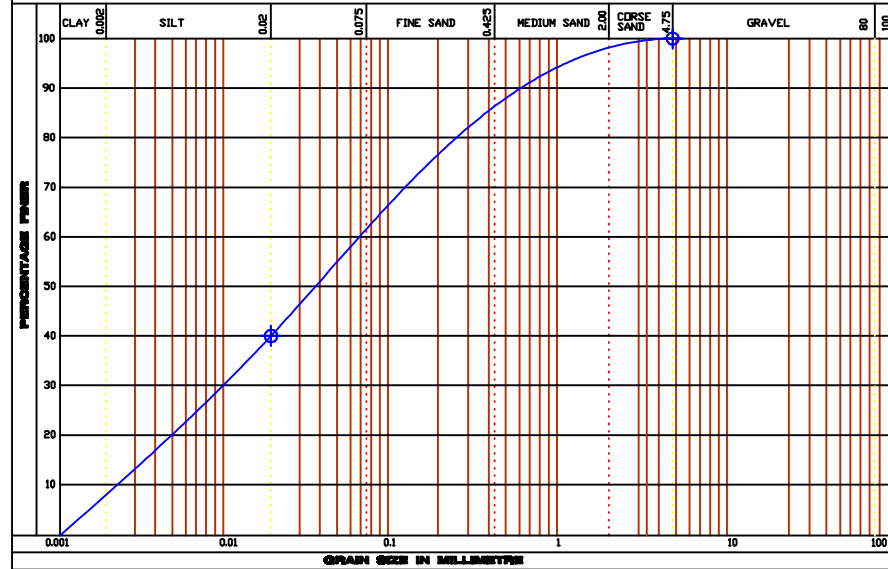



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 M.TECH (P&OT/GECH)


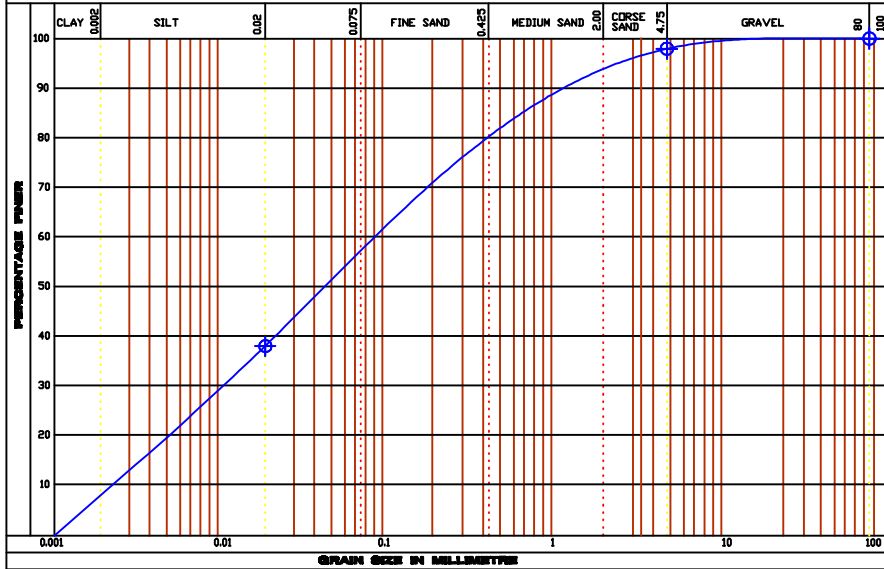
LOCATION - COAL STORAGE B.H NO- 48
DEPTH-1.50M **GRAIN SIZE DISTRIBUTION CURVE**



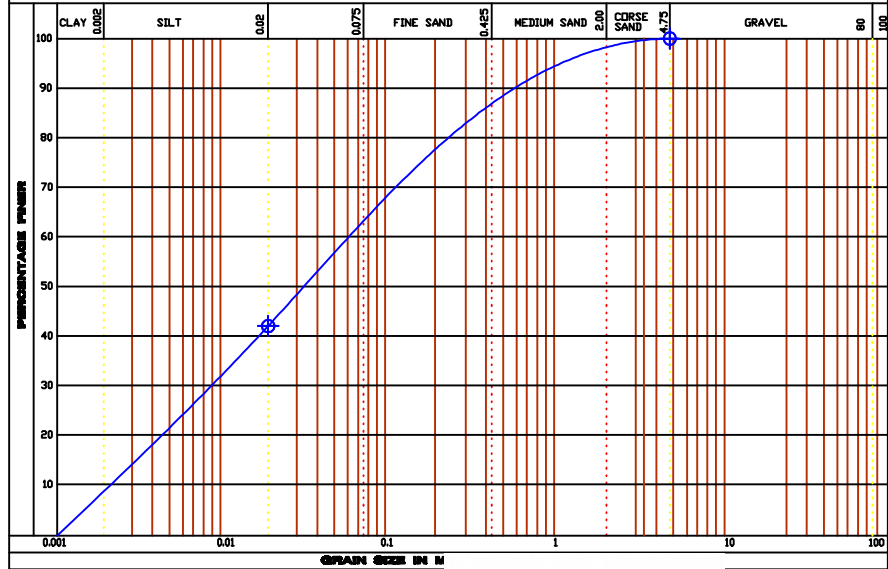
LOCATION - COAL STORAGE B.H NO- 48
DEPTH-4.50M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 48
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**

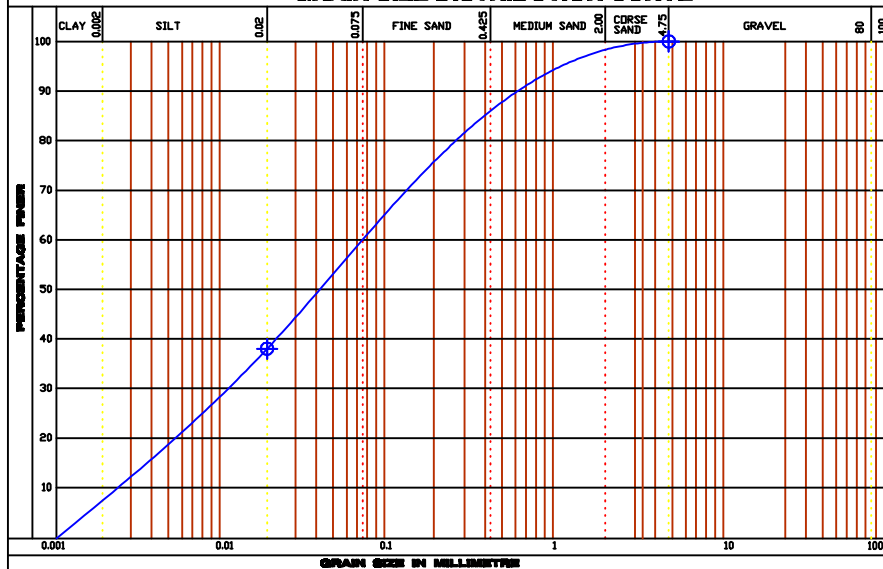


LOCATION - COAL STORAGE B.H NO- 48
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**

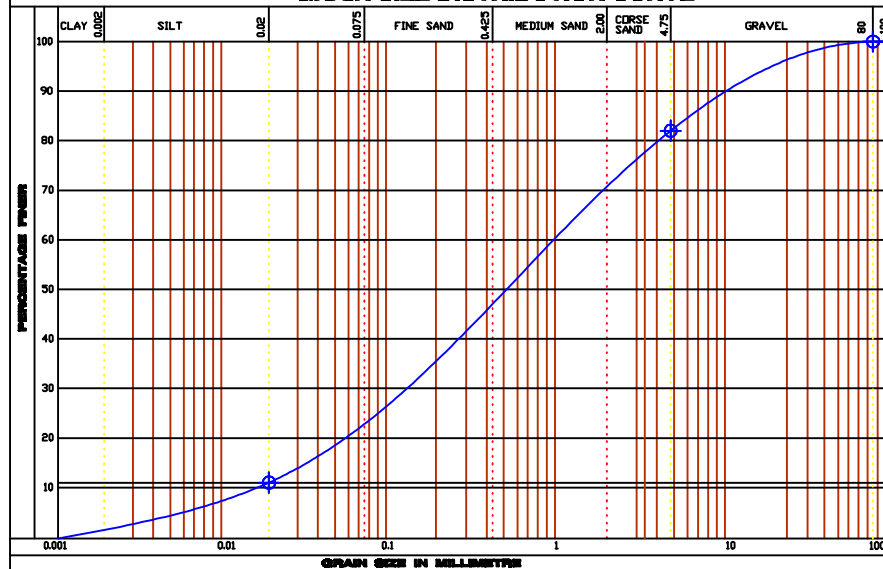



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 M.TECH (GEO TECH)
 SATYANAGAR

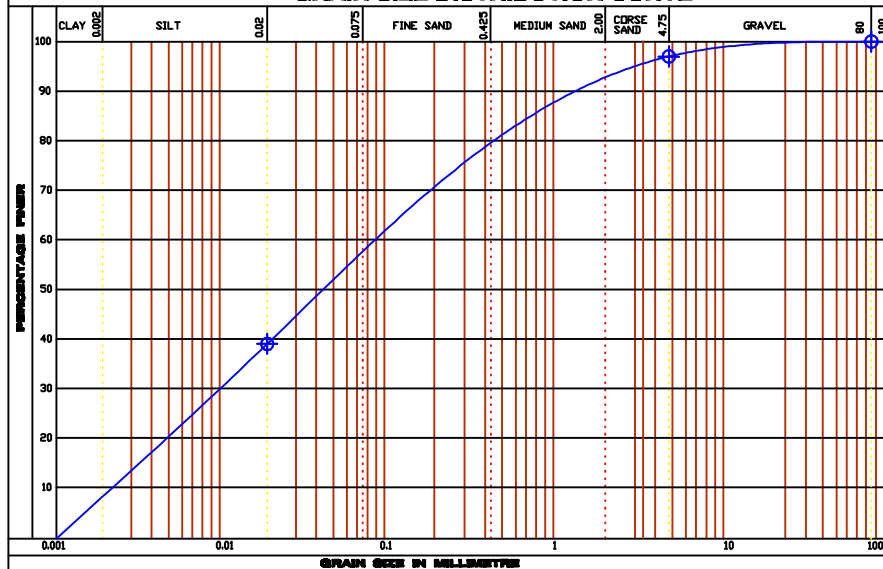
LOCATION - COAL STORAGE B.H NO- 81
DEPTH-6.00M **GRAIN SIZE DISTRIBUTION CURVE**



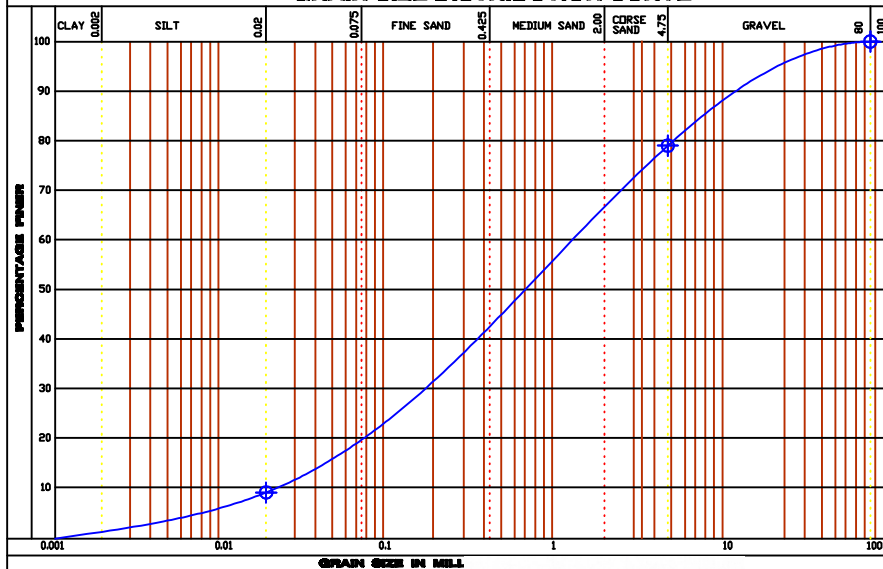
LOCATION - COAL STORAGE B.H NO- 82
DEPTH-1.50M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 83
DEPTH-4.50M **GRAIN SIZE DISTRIBUTION CURVE**

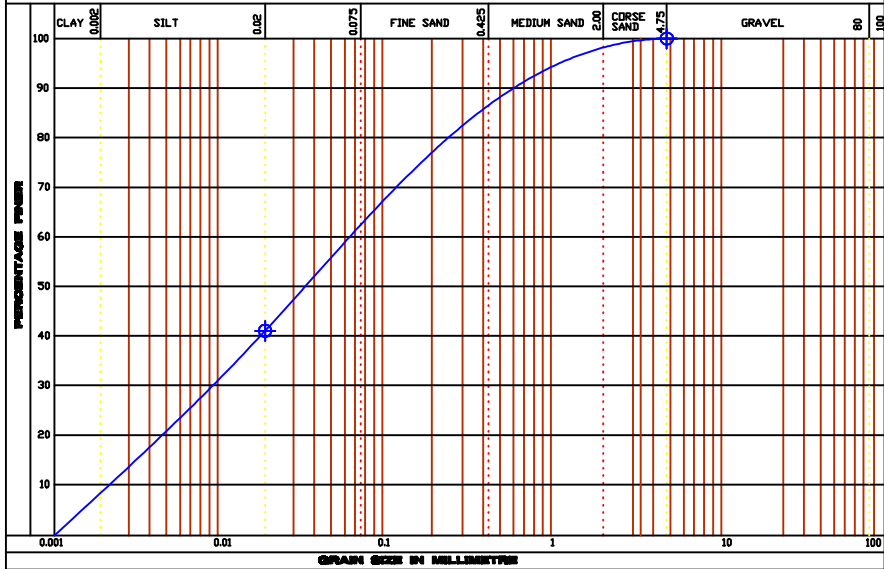


LOCATION - COAL STORAGE B.H NO- 84
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**

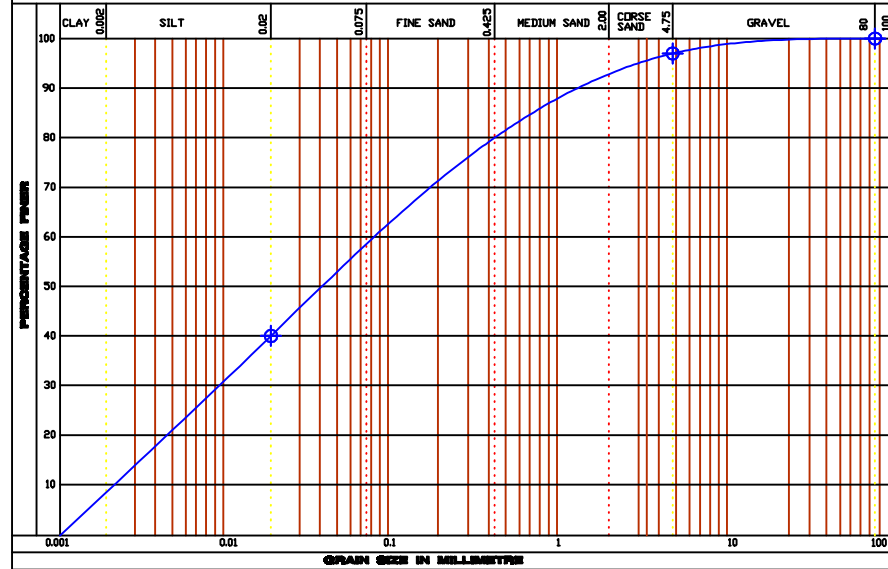


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 M.TECH (GEOTECH)
 REG. NO. 15151

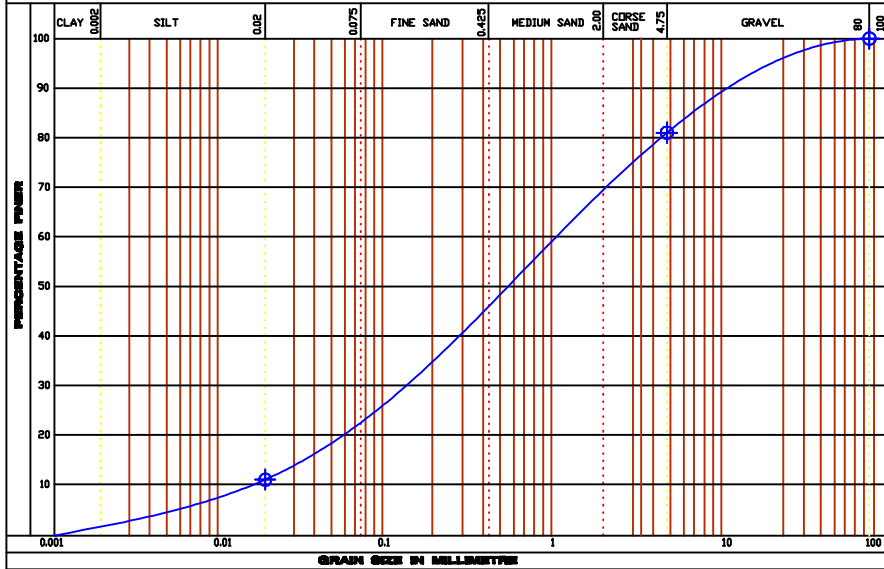
LOCATION - COAL STORAGE B.H NO- 88
DEPTH-6.00M **GRAIN SIZE DISTRIBUTION CURVE**



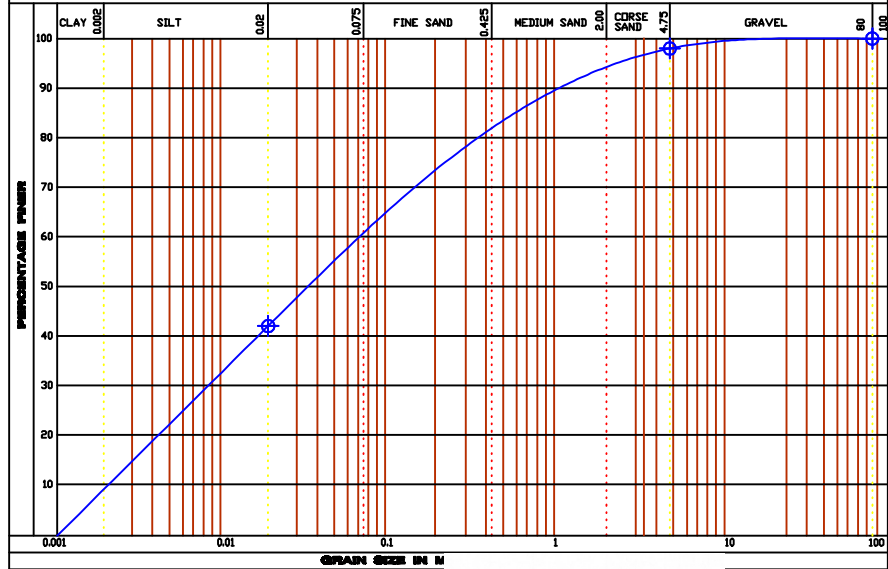
LOCATION - COAL STORAGE B.H NO- 88
DEPTH-12.00M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 84
DEPTH-1.50M **GRAIN SIZE DISTRIBUTION CURVE**

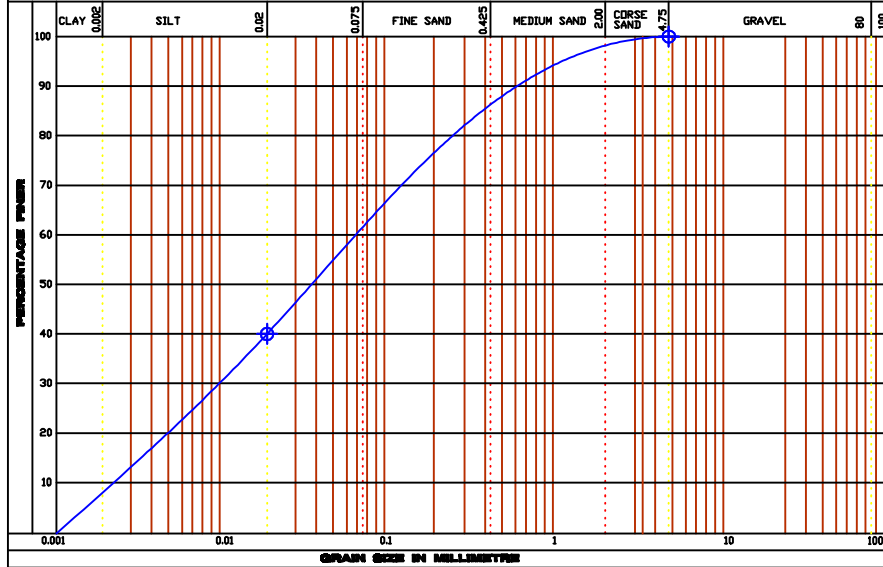


LOCATION - COAL STORAGE B.H NO- 84
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**

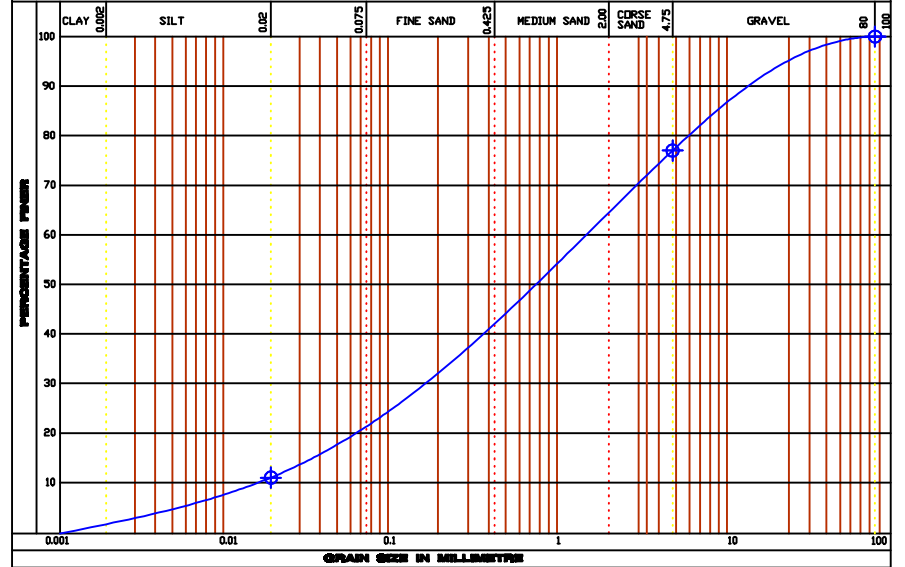



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 M.TECH (GEO TECH)
 SATYANAGAR

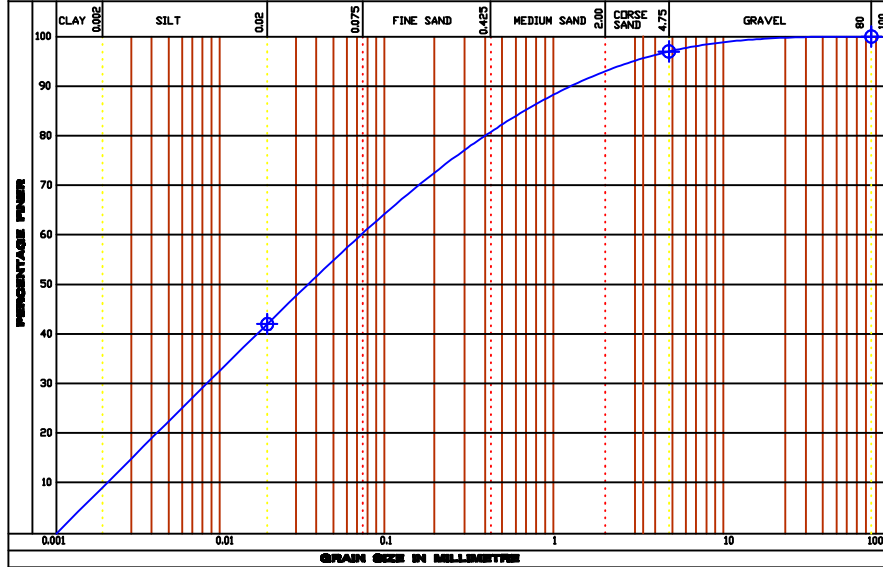
LOCATION - COAL STORAGE B.H NO- 84
DEPTH-7.50M **GRAIN SIZE DISTRIBUTION CURVE**



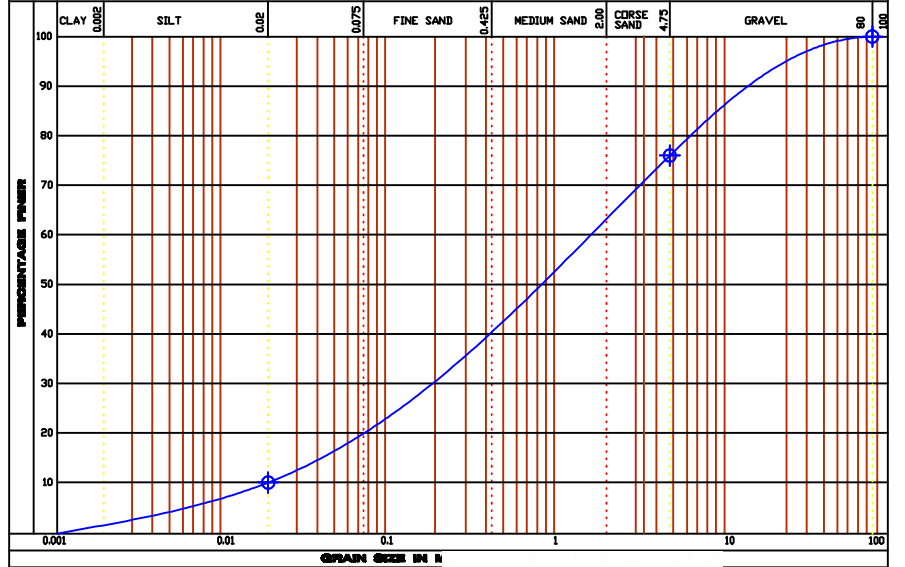
LOCATION - COAL STORAGE B.H NO- 85
DEPTH-1.50M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 86
DEPTH-4.50M **GRAIN SIZE DISTRIBUTION CURVE**

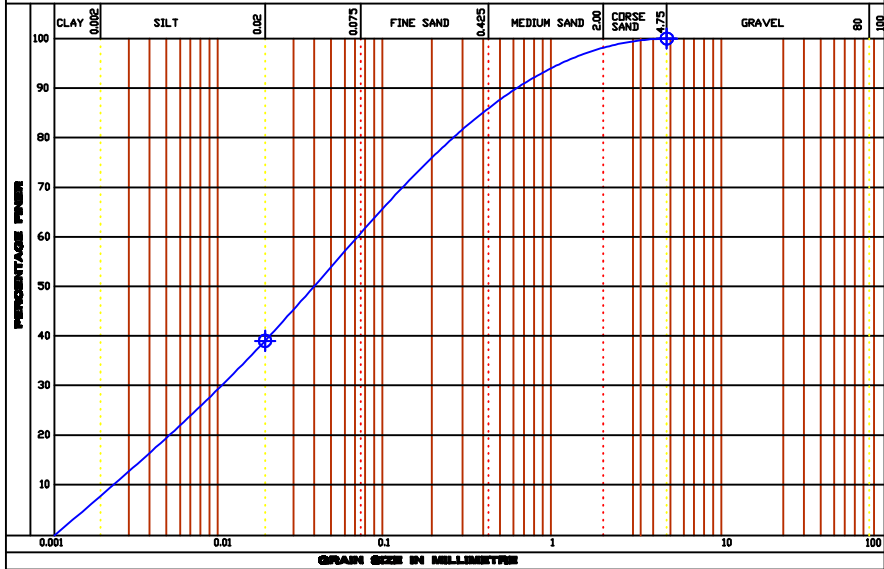


LOCATION - COAL STORAGE B.H NO- 88
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**

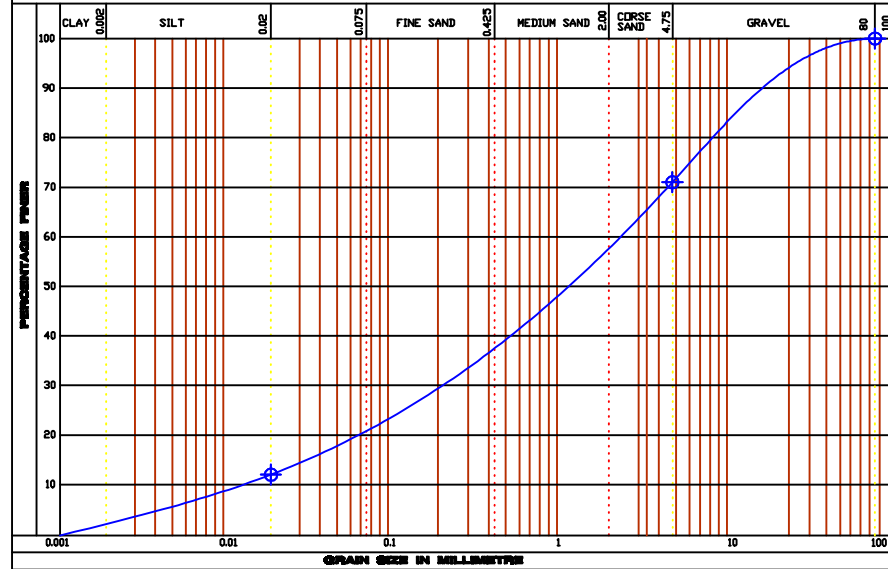


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 SATYANAGAR

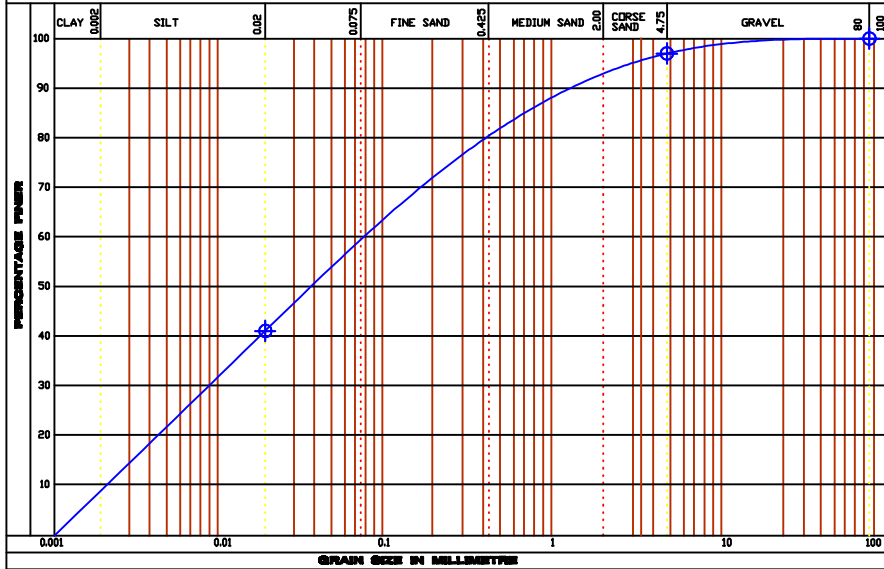
LOCATION - COAL STORAGE B.H NO- 56
DEPTH-9.00M **GRAIN SIZE DISTRIBUTION CURVE**



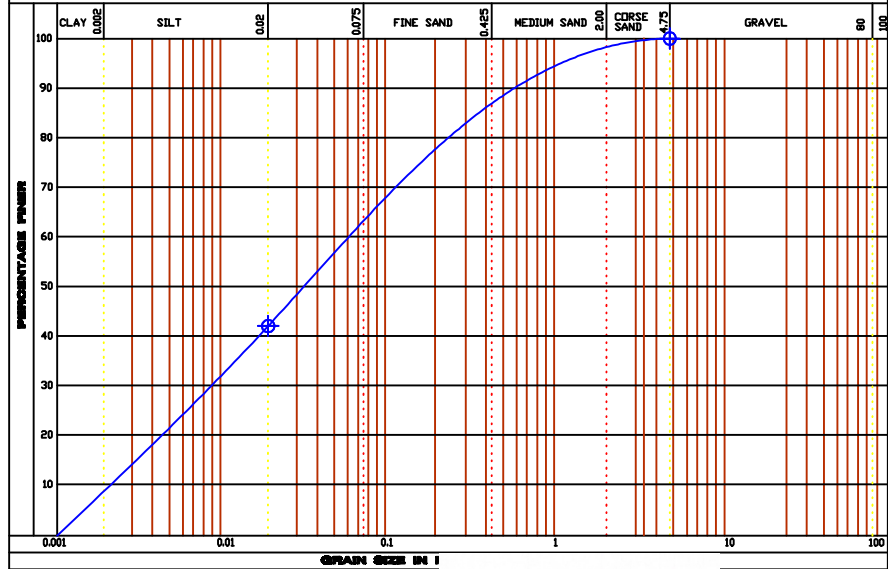
LOCATION - COAL STORAGE B.H NO- 57
DEPTH-1.50M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 57
DEPTH-4.50M **GRAIN SIZE DISTRIBUTION CURVE**

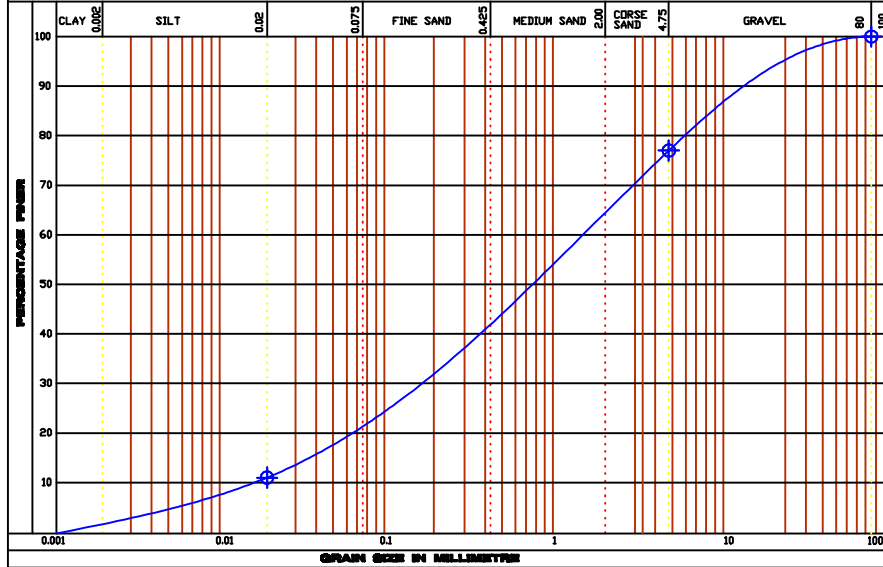


LOCATION - COAL STORAGE B.H NO- 57
DEPTH-7.50M **GRAIN SIZE DISTRIBUTION CURVE**

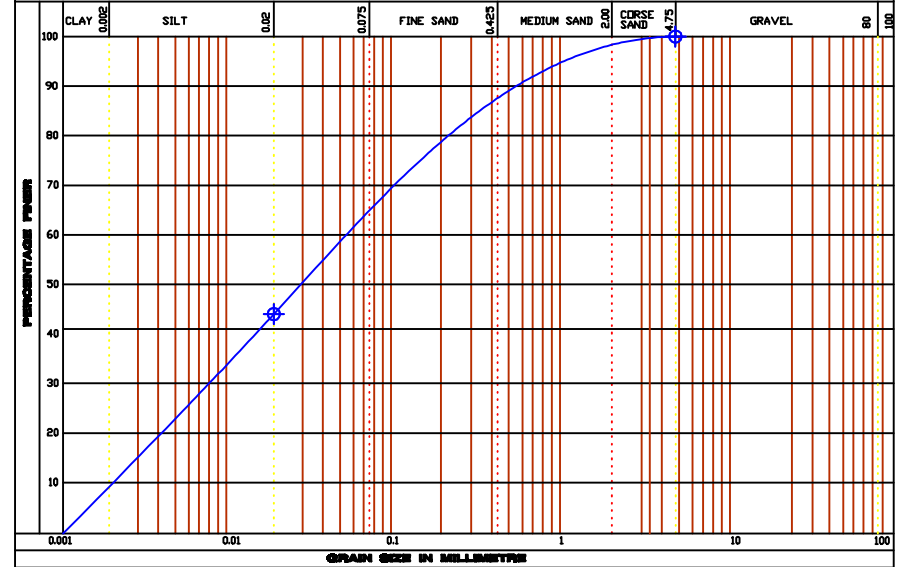



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 T. SATYANARAYANA

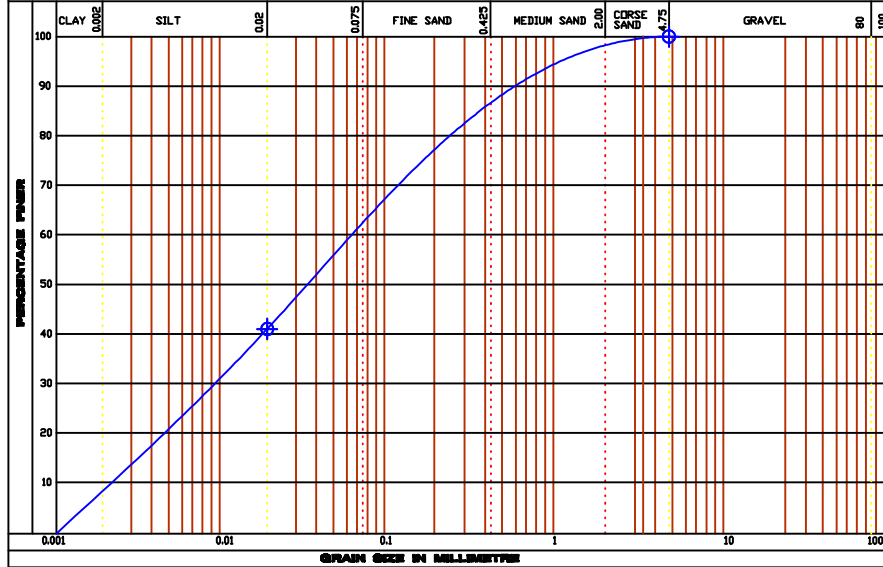
LOCATION - COAL STORAGE B.H NO- 58
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**



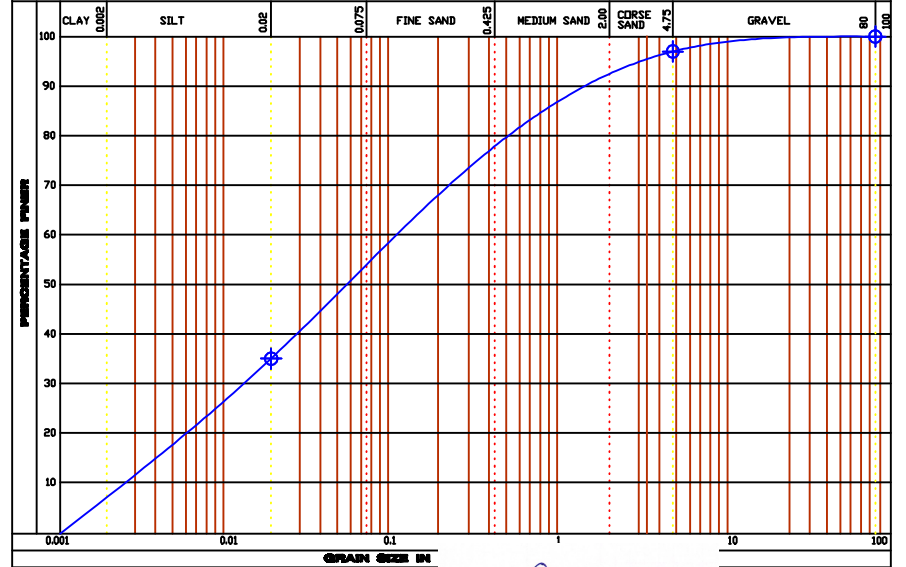
LOCATION - COAL STORAGE B.H NO- 58
DEPTH-4.50M **GRAIN SIZE DISTRIBUTION CURVE**




LOCATION - COAL STORAGE B.H NO- 58
DEPTH-6.00M **GRAIN SIZE DISTRIBUTION CURVE**

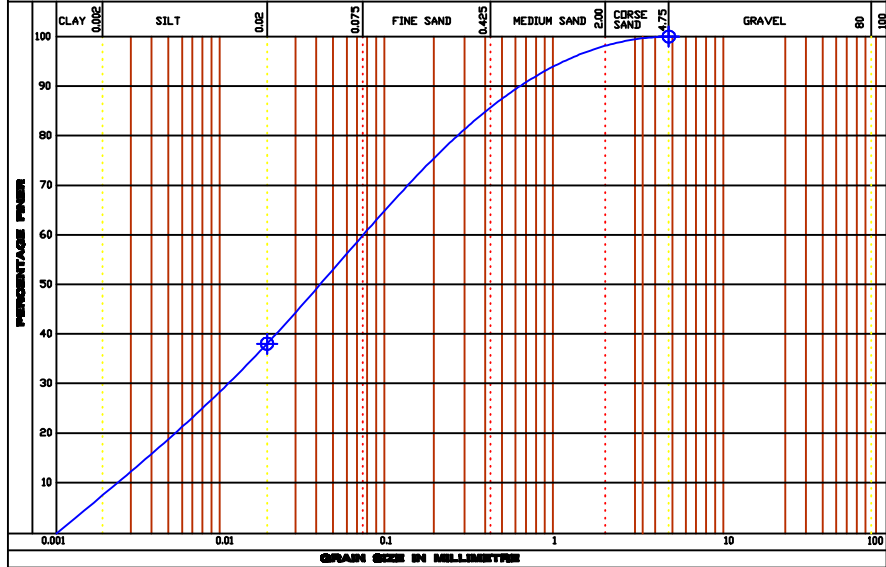


LOCATION - COAL STORAGE B.H NO- 58
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**

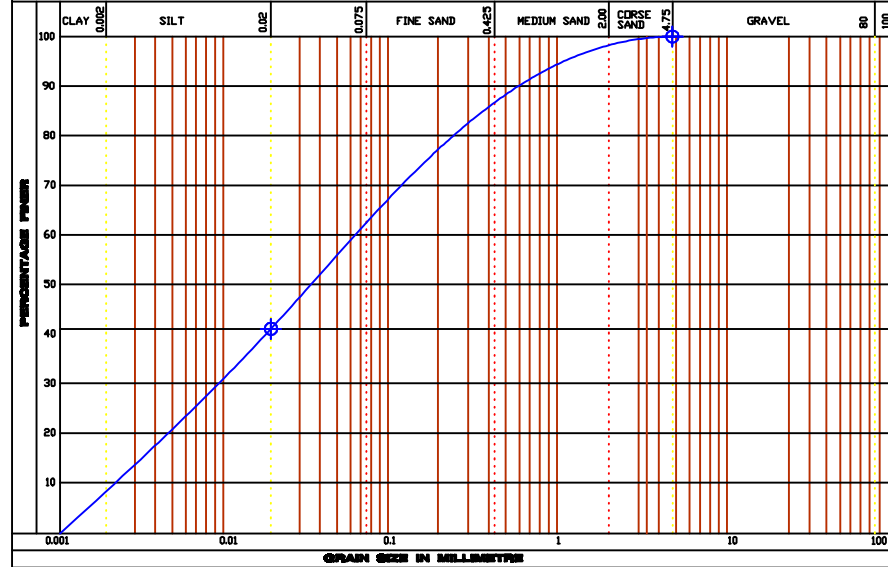



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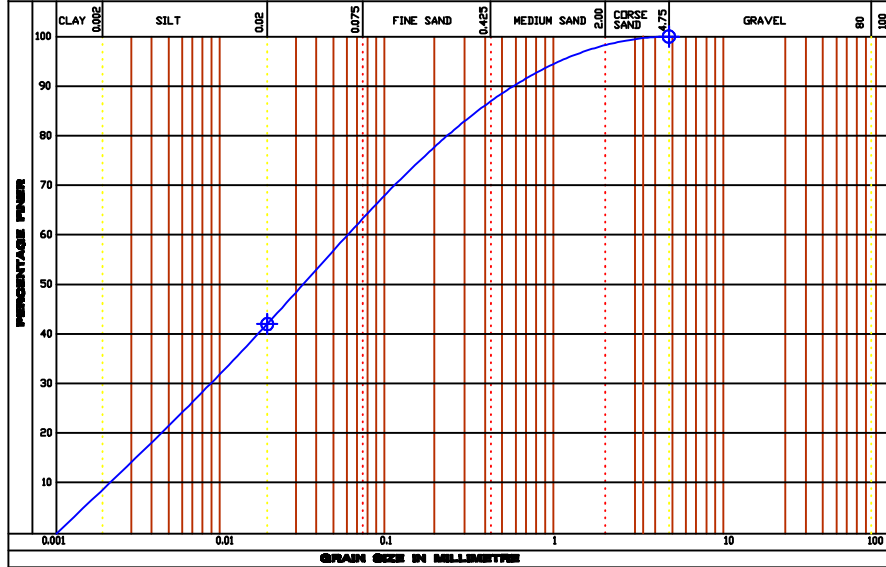

LOCATION - COAL STORAGE B.H NO- 88
DEPTH-10.00M **GRAIN SIZE DISTRIBUTION CURVE**



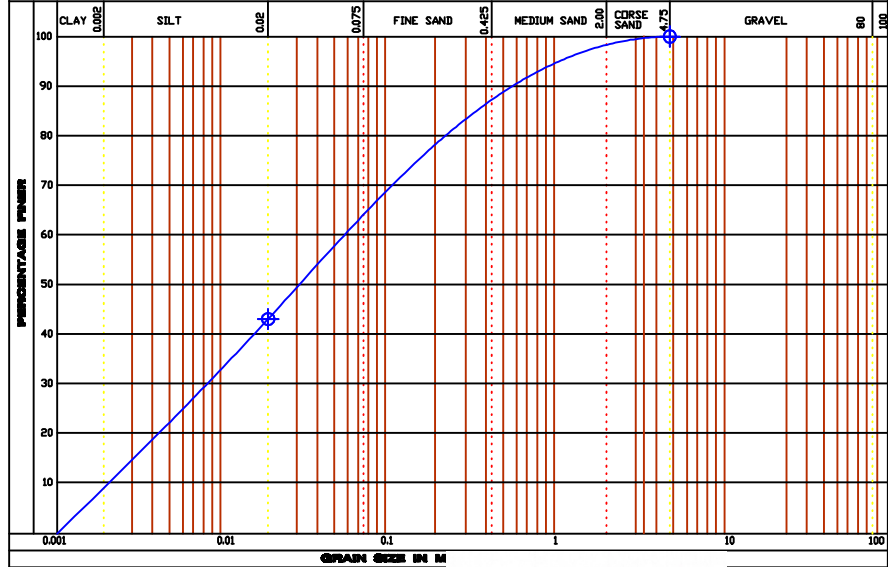
LOCATION - COAL STORAGE B.H NO- 89
DEPTH-3.00M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 89
DEPTH-9.00M **GRAIN SIZE DISTRIBUTION CURVE**



LOCATION - COAL STORAGE B.H NO- 81
DEPTH-1.50M **GRAIN SIZE DISTRIBUTION CURVE**



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 M.TECH (GEOTECH)
 SATYANAGAR