



**COAL GASIFICATION BASED AMMONIA PLANT FOR SOUTH
EASTERN COALFIELDS L IMITED**
TENDER NO.: PNMM/PC-277/E-4001, DATED 29.01.2022



Date 04.03.2022

Amendment – I

TENDER NO.: PNMM/PC-277/E-4001, DATED 29.01.2022

Sub.: Coal Gasification based Ammonia Plant for South Eastern Coalfields Limited.

This is for information of Bidders, that **Amendment-I** date **04.03.2022** is being issued and shall be read in conjunction with the original Tender document issued on 29.01.2022.

*All other terms & conditions of original Tender documents shall remain unchanged.

For & on behalf of
South Eastern Coalfields Limited (SECL)

P. R. Sahu
Addl. G.M (M.M)



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Sl. No.	Reference of Bidding Document				Existing Clause	Amended Clause									
	Vol-/ Sec	Page No.	Clause No.	Subject / Heading											
PART I, COMMERCIAL															
1.0 INSTRUCTIONS TO BIDDERS															
a	5.0	SHEE T 27 OF 27	30.0	INTEGRITY PACT		<p>A new clause is inserted as second paragraph : Names and details of the Independent External Monitor (IEM) of SECL</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Name</th> <th>Address</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Shri S. Srinivasan, IAS(Retired)</td> <td>1. Flat No. - D5/107, Block No.. – 5, V Floor, Kendriya Vihar, BB Road Bangalore-560064, Karnataka. (e-mail:s.srinivasan1980@gmail.com)</td> </tr> <tr> <td>2</td> <td>Shri Anup Krishan Mehra, (Ex-Director(Commercial) , MOIL Ltd)</td> <td>5thFloor,MahimaKamliniAppt.,PalmR oad,CivilLines,Nagpur-440001 (e-mail:anupmehra1955@gmail.com)</td> </tr> </tbody> </table>	Sl. No.	Name	Address	1	Shri S. Srinivasan, IAS(Retired)	1. Flat No. - D5/107, Block No.. – 5, V Floor, Kendriya Vihar, BB Road Bangalore-560064, Karnataka. (e-mail:s.srinivasan1980@gmail.com)	2	Shri Anup Krishan Mehra, (Ex-Director(Commercial) , MOIL Ltd)	5 th Floor,MahimaKamliniAppt.,PalmR oad,CivilLines,Nagpur-440001 (e-mail:anupmehra1955@gmail.com)
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1	Shri S. Srinivasan, IAS(Retired)	1. Flat No. - D5/107, Block No.. – 5, V Floor, Kendriya Vihar, BB Road Bangalore-560064, Karnataka. (e-mail:s.srinivasan1980@gmail.com)													
2	Shri Anup Krishan Mehra, (Ex-Director(Commercial) , MOIL Ltd)	5 th Floor,MahimaKamliniAppt.,PalmR oad,CivilLines,Nagpur-440001 (e-mail:anupmehra1955@gmail.com)													
2.0 CONDITIONS OF CONTRACT															
a	6.0	SHEE T 5 OF 57	ARTICLE- 1.0: DEFINITIONS	FEED AND UTILITIES DELIVERY POINT”	Means the Railway Wagon/ Truck Lorry receipt point for Feed (Coal) where weight of the coal will be checked and received by BOO Processor. Delivery point for Utilities shall be flange(s)/ points (for power) where BOO Processor shall connect for receiving the feed and Utilities. Feed	means the belt/pipe conveyor or by truck/dumper receipt point for Feed (Coal) means the Railway Wagon/ Truck Lorry receipt point for Feed (Coal)– where weight of the coal will be checked and received by BOO Processor. Delivery point for Utilities shall be flange(s)/ points (for power) where BOO Processor shall connect for receiving the feed and Utilities. Feed and Utilities Delivery Point shall be the point outside the battery limit of BOO									



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					and Utilities Delivery Point shall be the point outside the battery limit of BOO Processor. BOO Processor also accepts title to and risk of loss of Feed and Utilities after the Delivery Point.	Processor. BOO Processor also accepts title to and risk of loss of Feed and Utilities after the Delivery Point.
b	6.0	SHEET 16 OF 57	8.2	ARTICLE-8: SPECIFICATIONS	Coal Specification: Owner will deliver or cause to be delivered Coal to BOO Processor at Delivery Point (i.e. the transfer of Title / custody of Raw Coal from Owner to BOO Processor shall be at the point where the Truck is emptied / unloaded in to the unloading Hopper of Production Plant meeting the specifications as indicated in Volume II, Section 1.4, Design Basis.	Coal Specification: Owner will deliver or cause to be delivered Coal to BOO Processor at Delivery Point (i.e. the transfer of Title / custody of Raw Coal from Owner to BOO Processor shall be at the point where the Truck belt/pipe conveyor or by truck/dumper is emptied / unloaded in to the unloading Hopper of Production Plant meeting the specifications as indicated in Volume II, Section 1.4, Design Basis.
PART II, TECHNICAL						
1.0 DESIGN BASIS						
a	1.4		2.3	FEEDSTOCK	Required Raw coal shall be supplied by Road trucks by the owner at plant B.L.	Required raw coal shall be supplied by the owner at the Plant Battery Limit either by Belt/Pipe conveyor or by Trucks/Dumpers. Provisions to be made for both the systems.
2.0 MATERIAL HANDLING						



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a	2.8		1.0	SCOPE	Required quantity of raw Coal shall be supplied by the owner at the unloading Ground hopper from truck/Dumper.	Required raw coal shall be supplied by the owner at the Plant Battery Limit either by Belt/Pipe conveyor or by Trucks/Dumpers. Provisions to be made for both the systems.
b	2.8		3.1	COAL/FLUXANT HANDLING	ROM Coal (100mm)/Fluxant (Limestone) shall be received from trucks/dumpers at the plant battery limit.	ROM Coal (100mm) shall be received at the plant battery limit either by belt/pipe conveyor or by truck/dumper, provision to be made for both the systems. Fluxant (Limestone) shall be received From trucks/dumpers at the plant battery limit.
3.0 PROJECT DESCRIPTION						
a	1.1		2.1	PLANT SITE	Plant site will be handed over to BOO Processor after 01 month from award of work.	Plant site will be handed over to BOO Processor within 03 months from award of work.
4.0 RAW MATERIAL AND UTILITY SPECIFICATIONS						
a	1.5		1.1	RUN OF MINE(ROM) COAL	Specification of ROM coal feed to coal gasification Plant is mentioned in this clause as attached asAnnexure1.5A.	Coal Analysis attached as Annexure1.5A
b	1.5		1.2	RAW WATER	Water Analysis is mentioned in this clause as provided in Annexure1.5B.	Water analysis attached as Annexure1.5B.

PROXIMATE ANALYSIS

Annexure - 1.5 A

SECL

bh. No	depth		thickness	correlation	sample no	nature of	M%	Ash%	VM%	FC%	CV	HU	Grade	Vmu%
	from	to												
SB-1	22.86	34.5	10.88	Dhejagir Horizon	B(C1-C6)bcs	Ex	5	35.6	23.5	35.9	-	3297	F	35.7
SB-1	22.86	34.5	10.88	-do-	B(C1-C6)l	In	4.9	37.1	-	-	-	3104	F	-
SB-1	84.13	85.92	1.79	L-1	(C)	Ex	5	17.1	28.4	49.5	-	5850	B	35
SB-1	95.81	96.98	1.17	Masan top	(D)	Ex	4.8	19.4	30.1	45.7	-	5560	C	38.1
SB-1	112.9	114.3	1.4	L-2	(E)	Ex	4.8	19.4	30.1	45.7	-	5560	C	35.6
SB-1	128.82	130.87	2.05	UP	(F)	Ex	5.1	13.8	27.3	53.8	-	6292	A	32.5
SB-3	56.36	57.8	1.44	L-1	(A)	Ex	5.2	17.6	28.2	49	-	5754	B	35
SB-3	66.65	67.99	1.34	MT	B(C1-C2)bcs	Ex	5.2	21.6	28.1	45.1	-	5202	C	31.8
SB-3	82.77	84.34	1.57	L-2	C(C1-C2)bcs	Ex	4.6	26.4	25.4	43.6	-	4622	D	34.3
SB-3	96.3	98.15	1.85	UP	(D)	Ex	5.4	9.9	28.4	56.3	-	6789	A	32.7
SB-7	56.25	57.51	1.26	L-2	A(C1-C2)bcs	Ex	5.9	20.9	27.2	46	-	5202	C	35.3
SB-7	68.73	70.25	1.52	UP	(B)	Ex	5.5	9.1	26.9	58.5	-	6885	A	30.8
SB-14	29.96	30.97	1.01	L-2	A(roof-C2)bcs	Ex	6.4	22.1	27	44.5	-	4967	C	35.8
SB-14	48.18	49.93	1.75	UP	(B)	-	6.6	12	27.6	53.8	-	6333	A	32.9
SB-22	23.93	24.98	1.05	M	(A)	Ex	5.5	21.1	28.3	45.1	-	5229	C	36.7
SB-22	39.83	41.23	1.4	L-2	B(C1-C2)bcs	Ex	5.7	21.6	26.9	45.8	-	5133	C	35.1
SB-22	56.63	57.58	0.95	UP	(C)	Ex	4.7	29.4	24.36	41.6	-	4194	E	33.9
SB-28	29.78	31.04	1.26	Masan	(A)	Ex	6	24.1	28.9	44	-	5160	C	-
SB-28	44.85	46.4	1.55	L2	B(C1-C2)bcs	Ex	6.4	19.2	26.3	42.1	-	5267	C	33.6
SB-33	50.1	51.1	1	Masan	A(C1-C2)bcs	Ex	5.4	21.6	28.9	44	-	5174	C	37.7
SB-33	63.22	64.15	0.93	L2	(B)	Ex	6.1	18.7	28.1	44.1	-	5478	C	35.8
SB-42	30.95	32.57	1.62	L1	(A)	Ex	6.6	13.9	29.1	50.4	-	6071	B	35.5
SB-42	41	42.25	1.25	Masan	B(C1-C2)bcs	Ex	7.2	17.8	29	46	-	5450	C	37.2
SB-42	41	42.25	1.25	Masan	B(C1-C2)bcs	In	6.7	21.5	-	-	-	5008	C	-
SB-42	69.52	70.45	0.93	UP	(D)	Ex	7.5	9.1	28.9	54.5	-	6609	A	33.9
SB-47	108.67	110.6	1.93	L2	(D)	Ex	4.6	22.3	27.6	45.5	-	5188	C	35.8
SB-47	124.53	126.44	1.91	UP	(E)	Ex	5	12	27.1	55.9	-	6554	A	31.7
SB-52	35.82	39.93	4.11	Masan Top	A(C1-C2)bcs	Ex	5.2	21.7	27.9	45.2	-	5188	C	36.3
SB-52	50.51	51.56	1.05	L2	(B)	Ex	5.6	18.4	27	49	-	5588	C	33.9
SB-69	37.73	38.89	1.16	Masan Top	6268C	Ex	5	22	27.6	45.4	8001	5174	C	35.9
SB-69	67.85	69	1.15	UP	6272 C	Ex	5.4	8	29.1	57.5	7051	7051	A	33
SI-4	21.94	23.74	1.8	UP	(A)	Ex	8	13.5	26.5	52	-	5050	B	32.6
SI-21	75.95	77.48	1.53	Masan(combined)	4664 C	Ex	7.8	17.5	27.1	47.8	5700	5436	C	34.7
SI-45	39.94	41.61	1.67	Masan(combined)	4809 C	Ex	9	14.6	27.7	48.7	5845	5643	B	36.7
SI-45	47.69	48.93	1.24	L2	4810+4812 C	Ex	6	15.7	29.7	48.6	6075	59.5	B	-

ULTIMATE ANALYSIS SECL

S.No.	BH	Seam Intersection Depth (m)			Sample No.	Seam Correlation	Ultimate Analysis					GCV (K.Cal./Kg)	Total Sulphur
		From	To	Thickness			C	H	N	S	O		
1	SB-3	96.3	98.15	1.85	(D)	UP	69.5	4.1	1.3	1.04	-	6670	
							83.3	4.9	1.5	1.1		7965	
2	SB-6	65.91	67.28	1.37	C(C-1-C.2)bc	Local-2	55.5	3.4	0.99	0.07	-	5365	
							84.5	5.2	1.5	0.5		8165	
		85.49	86.6	1.11	(D)	UP	70.1	4.1	1.3	0.4	-	6720	
							83.3	4.8	1.6	0.6		7990	
3	SB-15	75.1	76.82	2.11	(D)	Local-1	62.7	3.8	1.03	0.5	-	6005	
							81.4	4.9	1.3	0.6		7990	
		89.08	91.15	2.07	E(C1-C4)bc	Masan (Comb.)	59.2	3.6	1.07	0.5	-	-	
		95.45	96.64	1.19	(F)	Local-2	66.8	4.1	1.3	0.4	-	6360	
							81.1	4.9	1.5	0.5		7720	
4	SB-16	105.6	108.84	3.24	D(C1-C4)bc	Local-2	58.1	3.5	0.97	0.4	-	5540	
							84.6	5.2	1.4	0.5		8070	
5	SB-19	76.9	78.2	1.3	(C)	Local-1	63.7	4	1.09	0.4	-	6185	
							83.6	5.3	1.4	0.5		8125	
6	SB-31	35.65	36.53	0.88	(A)	Local-1	62.5	4.1	1.1	0.3	-	-	
							83.5	5.5	1.5	0.4		-	
7	SB-36	47.54	50.15	2.61	A(C1-C2)bc	Masan Top	60.1	3.8	1.2	0.3	-	-	
							83.2	5.2	1.6	0.4		-	
		64.95	66.65	1.7	B(C1-C2)bc	Local-2	61.9	3.7	1.2	0.3	-	-	
							83.6	5	1.7	0.4		-	
8	SB-48	47.13	48.48	1.35	4830C	Masan Top	62.4	3.8	1.1	0.4	7.6	6020	0.55
9	SB-50	127.5	128.97	1.47	(G)	UP	74.1	3.8	1.4	-	-	-	
							84.4	4.3	1.6			-	
10	SB-58	95.15	96.6	1.45	4851C	Masan Top	62.1	3.7	1.1	0.3	7.6	5990	0.5
11	SB-61	80.25	81.75	1.5	4892C	Local-1	65.6	4	1.2	0.4	7.1	6310	0.6
												8044	
		92.32	93.37	1.05	4893C	Masan Top	57.9	3.5	1	0.3	6.9	5840	0.65
												8388	
		108	109.32	1.32	4894 to 4896C	Local-2	60.2	3.6	1.1	0.4	7.4	5830	0.6
8024													
122.39	124.36	1.97	4897C	UP	67.5	4	1.2	0.3	7.4	6510	0.5		
										8102			
12	SB-63	60.65	61.9	1.25	2099C	Local-1	64.6	4.2	1.2	0.4	9.3	6455	-
												8099	
		88.75	90.54	1.79	2101C	Local-2	53.7	3.2	1	0.5	6.6	5280	-
												7511	
13	SB-65	22.01	23.43	1.42	4918C to 4920C	Dhejagir	-	-	-	-	-	5010	0.5
												7511	

ASH ANALYSIS SECL


BH No.	Depth		thickness(m)	Seam correl.	Band	Sample No.	SiO2(%)	Al2O3(%)	Fe2CO3(%)	TiO2(%)	P2O5(%)	SO3(%)	CaO(%)	MgO(%)	MnO(%)	Alkalies (By diff.)(%)
	from	to														
DHEJAGIR SEAM																
SB-65	22.01	23.43	1.42	Dhejagir Seam	In	4918-4920	58.18	38.96	4.52	2.14	0.01	0.78	2.06	1.95	-	1.4
SB-67	19.67	20.88	1.21		Ex	6217-6218	58.08	29.06	4.04	2.18	0.01	0.9	2.58	1.65	-	1.5
DCAL-1 SEAM																
SB-48	38	39.23	1.23	L-1	Ex	4829C	59.72	27.34	3.66	1.9	0.01	0.8	2.83	2.6	-	1.14
SB-61	80.25	81.75	1.5	L-1	Ex	4892C	58.83	28.76	4.02	2.09	0.01	0.84	2.18	1.89	-	1.38
/MASAN (COM.) SEAM																
SB-48	47.13	48.48	1.35	MASAN TOP	Ex	4830C	57.89	29.14	3.88	2.12	0.01	0.72	3.14	1.84	-	1.26
SB-61	92.32	93.37	1.05	MASAN TOP	Ex	4893C	57.78	29.14	5.72	2.2	0.01	0.76	1.68	1.27	-	1.44
SB-29	88.41	90.23	1.82	MASAN (COMB)	Ex	4760C	58.16	27.3	4.82	2.14	0.01	0.82	3.28	2.01	-	1.46
DCAL-2 SEAM																
SB-61	108	109.32	1.32	Local-2	Ex	4894C-4896C	57.91	29.34	4.01	1.98	0.01	0.68	2.89	1.8	-	1.38
SB-65	111.31	113.06	1.75	Local-2	Ex	4940-4942C	56.66	29.14	5.9	2.2	0.01	0.82	2.49	1.3	-	1.48
SI-72	35.03	36.35	1.32	Local-2	Ex	4897C	58.87	30.15	5.35	1.6	0.05	0.45	0.97	0.92	0.14	1.5
SI-29	93	94.41	1.41	Local-2	Ex	3655C-4761C	59.38	27.02	4.29	2.2	0.01	0.92	2.78	2.02	-	1.38
ER PATPAHARI																
SB-61	122.39	124.36	1.97	UP	Ex	4897C	60.16	28.3	3.9	1.95	0.01	0.88	2.43	1.15	-	1.22
SI-72	48.51	50.27	1.76	UP	Ex	3657C-3660C	57.65	31	6.15	1.65	0.01	0.35	1.02	0.95	0.1	1.09
SI-57	41.68	43	1.32	UP	Ex	6329C	58.34	27.21	4.96	1.98	0.01	0.93	3.26	2.05	-	1.26




EFFLUENT WATER TEST REPORT
For the year 2021-2022
BHATGAON AREA

Name of the Customer	South Eastern Coalfields Ltd, Bilaspur		Date of Issue	12.10.2021
Name of the Project	Mahan II O.C.M	Sample Reference No.	CMPDI/ENV/HSD/2021/579, Date: 15.09.2021	
Name of the Station	19. Upstream of Mahan river (WRT Mahan)	Date of Sampling	14.09.2021	Date of Analysis
Name of the Station	20. Downstream of Mahan river (WRT Mahan)	Date of Sampling	14.09.2021	14.09.2021 to 10.10.2021

Sl. No	Parameter	Method of Analysis	Observed Value		Lower Detection Limit	General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules	Uncertainty of Measurement (at 95% C.L & K= 1.96)
			19	20			
1	Colour & Odour	Qualitative Assessment	Acceptable	Acceptable	--	Acceptable	---
2	Temperature, °C	IS 3025 (Part 9):1984, (RA:2002), Thermometric method	22.6	22.8	0.5°C	Shall not exceed 5°C above the receiving temp.	±0.14°C at 1.071°C
3	Total suspended Solids, mg/l	IS 3025 (Part 17):1984, (RA : 1996), Gravimetric Method	67	98	10.0	100.0	±0.445 mg/l at 24.429 mg/l
4	pH Value,	IS 3025 (Part 11):1983, (RA : 1996), Electrometric Method	6.77	6.82	1.00	5.5 to 9.0	±0.0884 at 4.025
5	Oil & Grease, mg/l	IS 3025 (Part 39):1991, (RA : 2003), Partition Gravimetric Method	BDL	BDL	4.0	10.0	±1.81 mg/l at 9.94 mg/l
6	Total Residual Chlorine, mg/l	APHA, 23rd Edition, 2017, DPD Method 4500G	0.06	0.07	0.02	1.0	±0.003 mg/l at 0.02 mg/l
7	Ammonical Nitrogen, mg/l	APHA, 23rd Edition, 2017 4500-NH ₃ F, Phenate Method	0.07	BDL	0.02	50.0	±0.0018 mg/l at 0.02mg/l
8	Total Kjeldahl Nitrogen, mg/l	APHA, 23rd Edition, 2017 4500 B, Macro Kjeldahl Method	11.21	BDL	5.0	100.0	±0.7803 mg/l at 14.01 mg/l
9	Free Ammonia, mg/l	APHA, 23rd Edition, 2017 4500-NH ₃ F, Phenate Method	BDL	BDL	0.1	5.0	±0.0097 mg/l at 1.003 mg/l
10	B.O.D(3 days 27°C), mg/l	IS 3025 (Part 44):1993, (RA : 2003), 3 days Incubation at 27°C	BDL	BDL	2.0	30.0	±11.7596682 mg/l at 202.4 mg/l
11	C.O.D, mg/l	APHA, 23rd Edition, 2017, 5220C, Closed Reflux, Titration Method	16	16	8.0	250.0	±6.209 mg/l at 247.427 mg/l
12	Arsenic, mg/l	IS 3025 (Part 37):1988, AAS- VGA Method	BDL	BDL	0.002	0.2	±0.0081 mg/l at 0.0184 mg/l
13	Lead, mg/l	APHA, 23rd Edition, 2017, 3113B, AAS-GTA Method	BDL	BDL	0.005	0.1	±0.000266 mg/l at 0.005098 mg/l
14	Hexavalent Chromium, mg/l	APHA, 23rd Edition, 2017, 3500 – Cr ⁶⁺ B Colorimetric Method	BDL	BDL	0.05	0.1	±0.001 mg/l at 0.098mg/l
15	Total Chromium, mg/l	IS 3025 (Part 52):2003 AAS-Flame Method	BDL	BDL	0.05	2.0	±0.004 mg/l at 0.05 mg/l
16	Copper, mg/l	IS 3025 (Part 42) : 1992 , AAS-Flame Method	BDL	BDL	0.03	3.0	±0.131 mg/l at 4.895 mg/l
17	Zinc, mg/l	IS 3025 (Part 49) : 1994, (RA : 2009), AAS-Flame Method	0.07	0.01	0.01	5.0	±0.0013 mg/l at 0.01 mg/l
18	Selenium, mg/l	IS 3025 (Part 56):2003,	BDL	BDL	0.001	0.05	±0.000938 mg/l at 0.001 mg/l
19	Nickel, mg/l	IS 3025 (Part 54):2003 AAS- Flame Method	BDL	BDL	0.1	3.0	±0.0106 mg/l at 0.1 mg/l
20	Fluoride, mg/l	APHA, 23rd Edition, 2017, 4500 ⁻ D SPADNS Method	0.34	0.26	0.1	2.0	±0.0014 mg/l at 0.976 mg/l
21	Dissolved Phosphate, mg/l	APHA, 23rd Edition, 2017, 4500-P, C Vanadomolybdophosphoric Acid, Colorimetric Method	0.36	0.39	0.2	5.0	±0.125 mg/l at 1.230 mg/l
22	Sulphide, mg/l	APHA, 23rd Edition, 2017, 4500- S ²⁻ F. 4500D Iodometric Method	BDL	BDL	0.04	2.0	±0.0243 mg/l at 0.128 mg/l
23	Phenolic compounds, mg/l	APHA, 23rd Edition, 2017, 5530. C, Chloroform Extraction Method	BDL	BDL	0.001	1.0	±0.0204 mg/l at 0.1004 mg/l
24	Manganese, mg/l	IS 3025 (Part 59):2006 AAS- Flame Method	BDL	0.16	0.05	2.0	±0.026 mg/l at 2.442 mg/l
25	Iron, mg/l	IS 3025 (Part 53):2003 AAS- Flame Method	BDL	BDL	0.05	3.0	±0.0782 mg/l at 7.952 mg/l
26	Nitrate Nitrogen, mg/l	APHA, 23rd Edition, 2017, 4500 B, UV-Spectrophotometric Method	BDL	BDL	0.4	10.0	±0.088 mg/l at 0.4 mg/l
27	Cadmium, mg/l	APHA 23rd Edition, 2017, 3111B, AAS-GTA Method	BDL	BDL	0.001	2.0	±0.000232 mg/l at 0.00475 mg/l
28	Dissolved Solids, mg/l	IS 3025 (Part 16):1984 R : 2006, Gravimetric Method	129	138	30	2000	±4.473 mg/l at 592.0 mg/l


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Note: 1) The results above relate to the samples tested as received.
 2) This report can not be reproduced in part or full without the written permission of the HOD (Env), CMPDI, RI-V.
 3) LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit