



НҮҮРСНИЙ ОВООЛГЫН ҮЗҮҮЛЭЛТ

№ ETT_SP_TC



ISO 45001:2018



ISO 9001:2015



ISO 14001:2015



НҮҮРСНИЙ ОВООЛГЫН ЧАНАРЫН ДУНДАЖ ҮЗҮҮЛЭЛТ

<p>НИЙТ ЧИЙГ (ar)</p> <p>6.0%</p> <p>(-3.0; +3.0)</p>	<p>ҮНСЛЭГ (db)</p> <p>18.5%</p> <p>(-5.0; +5.0)</p>	<p>ДЭГДЭМХИЙ (daf)</p> <p>32.0%</p> <p>(-5.0; +5.0)</p>
<p>НИЙТ ХҮХЭР (ad)</p> <p>≤1.5%</p> <p>max</p>	<p>ИЛЧЛЭГ (ar)</p> <p>5500</p> <p>(-800; +500)</p>	<p>НҮҮРСНИЙ ХЭМЖЭЭ</p> <p>128.0</p> <p>МЯН.ТН</p>

НҮҮРСНИЙ ОВООЛГЫН ШИНЖИЛГЭЭНИЙ ҮР ДҮН

ALS GROUP LLC
Mongol Nekhmel Building, 2nd khoroo
Chinggis Avenue, Khan-Uul District
Ulaanbaatar, Mongolia
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CERTIFICATE OF ANALYSIS
23E34, 49, 68, 89, 118, 23F146, G102-TT

CLIENT: Erdenes Tavantolgoi JSC
ADDRESS: Finance Center, Jigijidjav-8
1st khoroo, Chingeltei District
Ulaanbaatar, Mongolia
ATTN: Galtzaya.B
PROJECT NO. xxx
LAB. JOB NO. 23E34, 49, 68, 89, 118, 23F146, G102-TT
NO. SAMPLES: 26
Notes/Comments: xxx

SAMPLES RECEIVED: 8/05/2023-18/07/2023
INSTRUCTIONS RECEIVED: 8/05/2023-18/07/2023
DATE OF REPORT: 9/05/2023-19/07/2023
STATUS OF REPORT: FINAL
ANALYSIS COMPLETE: 9/05/2023-19/07/2023
PREPARATION CODE: CRUSH-01, 02; MILL-01
ANALYSIS CODE: 1.1. COKING COAL
2.1. THERMAL COAL
TM, MOIS, ASH, VOL, TSUL,
GCV, CSN, CKIN
APPROVED BY: Laboratory Manager
CHECKED BY: Chief Chemist

These test results are representative only of the sample received in the laboratory.

LAB NO.	STANDARD METHOD	SAMPLE NO.	AS RECEIVED BASIS					AIR DRIED BASIS						
			GB/T 211	GB/T 212	GB/T 212	GB/T 212	ISO 19579	GB/T 213	GB/T 212	GB/T 212	GB/T 212	GB/T 212	ISO 19579	GB/T 213
			Total Moisture (TM)	Ash (ASH)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)	Moisture (MOIS)	Ash (ASH)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)
			%					kcal/kg	%					kcal/kg
1	ESS-22-S9TR-1A-502		6.06	18.88	22.66	52.40	1.94	6005	1.47	19.81	23.77	54.96	2.04	6298
2	ESS-22-S9TR-1B-503		6.12	19.82	21.57	52.49	0.58	5992	1.67	20.76	22.59	54.98	0.61	6277
3	ETT_SP_30005-2A		6.26	21.96	22.52	49.27	0.65	5628	2.91	22.74	23.32	51.03	0.67	5829
4	ETT_SP_30005-2B		5.69	17.31	24.43	52.56	0.86	6099	1.90	18.01	25.42	54.68	0.89	6345
5	ETT_SP_30005-2C		3.75	17.54	24.73	53.97	0.77	6432	1.53	17.95	25.30	55.22	0.79	6581
6	ETT_SP_30005-2D		6.14	17.75	23.89	52.23	0.75	6021	2.34	18.47	24.85	54.34	0.78	6265
7	ETT_SP_30005-2E		5.34	19.31	23.70	51.64	0.57	6051	2.01	19.99	24.53	53.46	0.59	6263
8	ETT_SP_30005-2F		6.04	19.54	23.11	51.31	0.48	5910	2.29	20.32	24.03	53.36	0.50	6146
9	ETT_SP_30005-3A		3.23	26.69	22.33	47.74	1.11	5520	1.84	27.08	22.66	48.43	1.13	5600
10	ETT_SP_30005-3B		2.16	20.78	24.74	52.33	0.72		1.16	20.99	24.99	52.86	0.73	
11	ETT_SP_30005-3C		2.39	21.39	24.56	51.66	0.95		1.23	21.64	24.86	52.27	0.96	
12	ETT_SP_30005-3D		2.48	19.81	24.77	52.95	0.87		1.09	20.09	25.12	53.70	0.88	
13	ETT_SP_30005-3E		2.69	20.09	24.91	52.31	0.79		1.29	20.38	25.27	53.06	0.80	
14	ETT_SP_30005-3F		3.08	22.21	24.62	50.08	1.10		1.31	22.62	25.07	51.00	1.12	
15	ETT_SP_30005-4A		3.08	18.23	24.69	54.00	0.53	6566	1.36	18.55	25.13	54.96	0.54	6682
16	ETT_SP_30005-4B		1.40	20.62	24.67	53.31	0.61	6516	0.84	20.74	24.81	53.61	0.61	6553
17	ETT_SP_30005-4C		1.22	20.69	24.48	53.62	0.89	6540	0.69	20.80	24.61	53.90	0.89	6574

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release. COPY RIGHT PROTECTED DOCUMENT

LAB NO.	SAMPLE NO.	STANDARD METHOD												
		GB/T 211	GB/T 212	GB/T 212	GB/T 212	ISO 19579	GB/T 213	GB/T 212	GB/T 212	GB/T 212	GB/T 212	ISO 19579	GB/T 213	
		AS RECEIVED BASIS					AIR DRIED BASIS							
Total Moisture (TM)	Ash (ASH)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)	Moisture (MOIS)	Ash (ASH)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)			
%					kcal/kg	%					kcal/kg			
18	ETT_SP_30005-4D	1.74	25.77	22.99	49.50	0.75	5984	1.03	25.96	23.16	49.86	0.76	6027	
19	ETT_SP_30005-4E	1.62	19.84	19.84	25.29	53.26	0.88	6561	0.82	20.00	25.49	53.69	0.89	6614
20	ETT_SP_30005-4F	1.76	24.06	24.75	49.43	1.60	6131	0.83	24.29	24.98	49.90	1.62	6190	
21	ETT_SP_30005-5A	2.64	19.20	22.75	55.41	0.55	6383	1.77	19.37	22.95	55.90	0.56	6440	
22	ETT_SP_30005-5B	4.28	23.52	19.00	53.20	0.45	5741	2.30	24.00	19.39	54.30	0.46	5860	
23	ETT_SP_30005-5C	4.51	20.20	19.88	55.42	0.43	5997	2.55	20.61	20.28	56.56	0.43	6121	
24	ETT_SP_30005-5D-1	4.06	18.09	19.78	58.07	0.43	6227	2.65	18.36	20.07	58.92	0.44	6318	
25	ETT_SP_30005-5E-1	3.64	17.72	20.37	58.27	0.45	6421	2.11	18.00	20.70	59.20	0.45	6523	
26	ETT_SP_30005-5F-1	2.95	21.59	18.67	56.78	1.24	6236	1.42	21.93	18.97	57.68	1.26	6334	

QUALITY ASSURANCE/QUALITY CONTROL DATA

STDALSWS-23/20	ASH	VOL	GCV	TSUL
Certified Value	18.85	18.18	7673	6.616
Standard Deviation	0.05	0.16	17	0.017
Unit	%	%	kcal/kg	%
Analyzed value	10.84	18.20	7661	0.615

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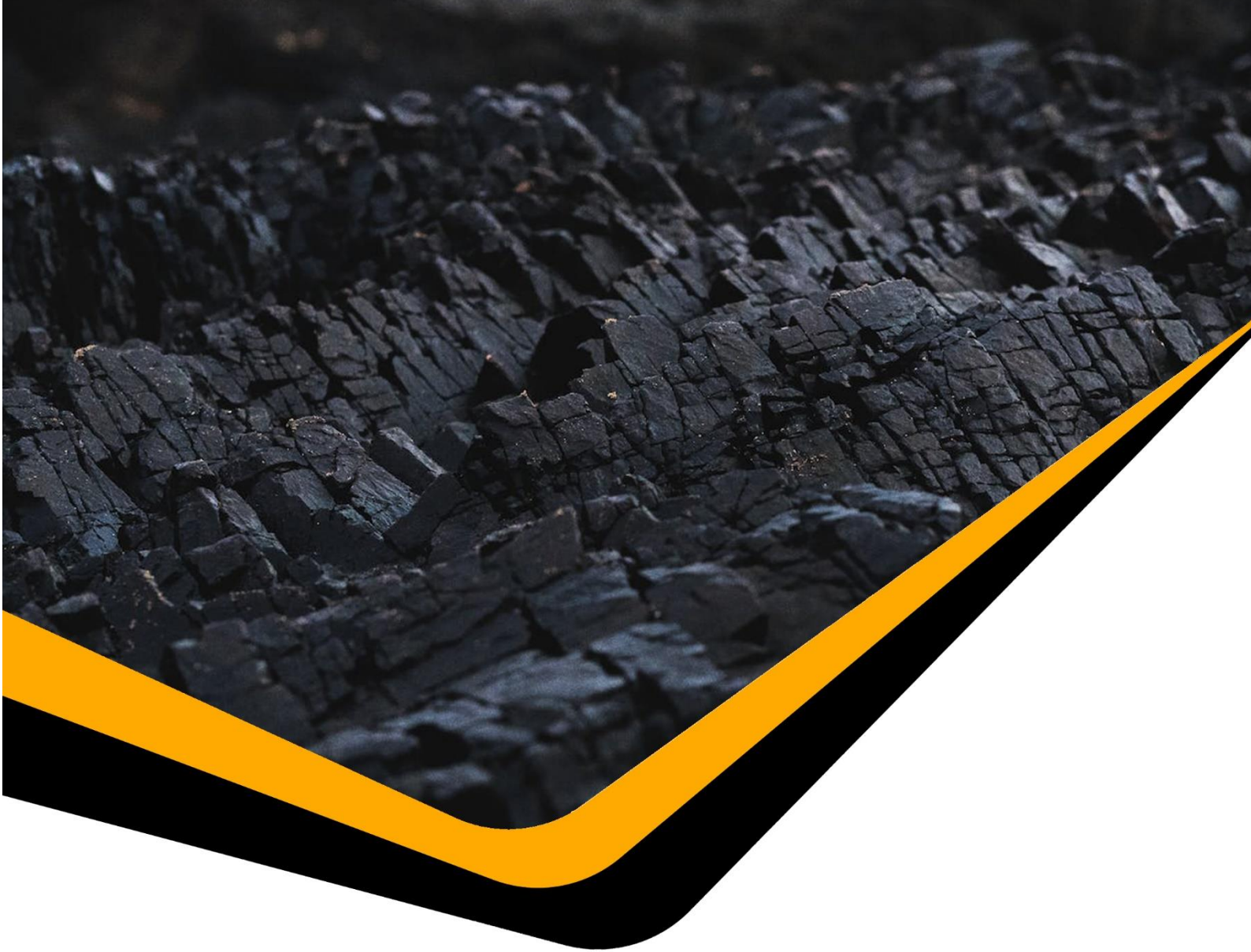
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PREPARATION CODE: CRUSH-01, 02; MILL-01
ANALYSIS CODE: 1.1_COKING COAL
2.1_THERMAL COAL
TM, MOIS, ASH, VOL, TSUL,
GCV, CSN, CKIN

These test results are representative only of the sample received in the laboratory.

LAB NO.	SAMPLE NO.	STANDARD METHOD										Crucible Swelling Number (CSN)	GB/T 5447	
		GB/T 212	GB/T 212	GB/T 212	ISO 19579	GB/T 213	GB/T 212	GB/T 212	ISO 19579	GB/T 213	GB/T 5448		Coal Caking Index (CKIN)	
		DRY BASIS					DRY, ASH-FREE BASIS							
Ash (ASH)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)	%		5:1	3:3		
1	ESS-22-S9TR-1A-502	20.10	24.12	55.78	2.07	6392	30.19	69.81	2.58	8000	-	-	0	
2	ESS-22-S9TR-1B-503	21.11	22.98	55.91	0.62	6383	29.13	70.87	0.78	8092	-	-	0	
3	ETT_SP_30005-2A	23.42	24.02	52.56	0.69	6004	31.37	68.63	0.90	7840	-	-	0	
4	ETT_SP_30005-2B	18.36	25.91	55.74	0.91	6467	31.73	68.27	1.11	7921	-	-	12	
5	ETT_SP_30005-2C	18.22	25.70	56.08	0.80	6683	31.43	68.57	0.98	8173	26	-	-	
6	ETT_SP_30005-2D	18.91	25.45	55.64	0.80	6415	31.38	68.62	0.98	7911	-	-	-	
7	ETT_SP_30005-2E	20.40	25.04	54.56	0.61	6392	31.46	68.54	0.76	8031	-	-	-	
8	ETT_SP_30005-2F	20.80	24.59	54.61	0.52	6290	31.05	68.95	0.65	7942	-	-	-	
9	ETT_SP_30005-3A	27.58	23.08	49.34	1.15	5704	31.87	68.13	1.59	7877	-	-	-	
10	ETT_SP_30005-3B	21.24	25.28	53.48	0.74	6392	32.10	67.90	0.94	8000	1.0	-	8	
11	ETT_SP_30005-3C	21.91	25.17	52.92	0.97	6392	32.23	67.77	1.24	8092	1.0	-	12	
12	ETT_SP_30005-3D	20.31	25.40	54.30	0.89	6392	31.87	68.13	1.12	8092	1.5	-	14	
13	ETT_SP_30005-3E	20.65	25.60	53.75	0.81	6392	32.26	67.74	1.02	8092	1.5	-	15	
14	ETT_SP_30005-3F	22.92	25.40	51.68	1.13	6392	32.96	67.04	1.47	8092	1.5	-	14	
15	ETT_SP_30005-4A	18.80	25.48	55.72	0.55	6775	31.38	68.62	0.68	8344	-	-	-	
16	ETT_SP_30005-4B	20.92	25.02	54.07	0.62	6609	31.63	68.37	0.78	8357	-	-	-	
17	ETT_SP_30005-4C	20.94	24.78	54.28	0.90	6620	31.34	68.66	1.14	8374	-	-	-	

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LAB NO.	SAMPLE NO.	STANDARD METHOD										Crucible Swelling Number (CSN)	GB/T 5447	
		GB/T 212	GB/T 212	GB/T 212	ISO 19579	GB/T 213	GB/T 212	GB/T 212	ISO 19579	GB/T 213	GB/T 5448		Coal Caking Index (CKIN)	
		DRY BASIS					DRY, ASH-FREE BASIS							
Ash (ASH)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)	Volatile Matter (VOL)	Fixed Carbon (FC)	Total Sulphur (TSUL)	Gross Calorific Value (GCV)	%		5:1	3:3		
18	ETT_SP_30005-4D	26.23	23.40	50.37	0.76	6090	31.72	68.28	1.04	8255	-	-	-	
19	ETT_SP_30005-4E	20.16	25.70	54.13	0.90	6668	32.20	67.80	1.12	8353	-	-	-	
20	ETT_SP_30005-4F	24.49	25.19	50.32	1.63	6241	33.36	66.64	2.16	8266	-	-	-	
21	ETT_SP_30005-5A	19.72	23.37	56.91	0.57	6556	29.11	70.89	0.71	8166	-	-	-	
22	ETT_SP_30005-5B	24.57	19.85	55.58	0.47	5998	26.32	73.68	0.63	7952	-	-	-	
23	ETT_SP_30005-5C	21.15	20.81	58.04	0.45	6281	26.40	73.60	0.57	7965	-	-	-	
24	ETT_SP_30005-5D-1	18.86	20.62	60.53	0.45	6491	25.41	74.59	0.55	7999	-	-	-	
25	ETT_SP_30005-5E-1	18.39	21.14	60.47	0.46	6663	25.90	74.10	0.57	8165	-	-	-	
26	ETT_SP_30005-5F-1	22.25	19.24	58.51	1.27	6425	24.75	75.25	1.64	8264	-	-	-	



ISO 45001:2018



ISO 9001:2015



ISO 14001:2015



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Чингэлтэй дүүрэг,
Улаанбаатар хот

