STRATIGRAPHIC COLUMNS OF KRYVORIZKIY IRON-ORE CAMP

General Stratigraphic Scale

Acrotheme	Eonotheme	Erotheme	System	Division	Sub-Division	Stage
PHANEROZOIC	CENOZOIC	NEOGENE		Pliocene	Upper	
					Lower	
				Miocene	Upper	
					Middle	
					Lower	
				Oligocene	Upper	Chattian
					Lower	Rupelian
				Eocene	Upper	Priabonian
					Middle	Bartonian
						Lutetian
					Lower	Ypresian
				Paleocene		
	MESOZOIC	CRETACEOUS		Upper		
				Lower		Albian
						Aptian
						Barremian
PROTEROZOIC	PALEOPROTEROZOIC					
ARCHEAN	NEO-ARCHEAN					
	MESO-ARCHEAN					

Regional Stratigraphic Scale

Regio-Stages (Horizons)		Sub-Regio-Stage
Southern Area	Central Area	
Akchagylskiy		
Cimmerian		
Pontian		Upper
		Lower
Meotic		Upper
		Lower
Sarmatian		Upper
		Middle
		Lower
Konkskiy	Novopetrivskiy	
Karaganskiy		
Chokratskiy		
Tarkhanskiy		
Gornostaivskiy	Berekskiy	
Askaniyskiy		
Sirogozkiy		
Molochanskiy	Mezhygirskiy	
Planorbeloviy		
Alminskiy	Obukhivskiy	
Kumskiy	Kyivskiy	
Novopavlivskiy	Buchatskiy	
Simferopolskiy	Kanivskiy	
Bakhchysaraiskiy		

Local Stratigraphic Units

Age Index	Lithology	Unit Thickness (in meters)	Description of Stratigraphic Units
$N_2čb$		30	Sequence of red-brown clays
N_2ap		9	Pile of alluvial sands. Brick-red sands with lenses and interbeds of muddy clays
			SOUTHERN AREA OF UKRAINIAN SHIELD
N_1ks		8	Kosivski layers. Greenish-grey clays, in places with ocher stains and calcareous concretions
N_1v		14	Pile of limestones. Oolite and shelly limestones with interbeds of sands, clays, in places marls. In limestones fauna: *Monodacna psendocatieus Barb, M. sp. Dreissensia simplex Barb., D. novorossica Sinz.*
N_1bg		12	Bagerivski Layers. Greenish-grey clays, sandy in places, grey diverse-grained sands, rarely marls and limestones. At the base with conglomerate lenses. Molluscs *Ervilia, Dosinia.*
N_1gl		20	Geliksovi Layers. Marls and limestones; rarely sands, clays. At the base with diverse-grained sand interbeds and lenses. In limestones fauna: *Mactra caspia Eichw., Maktra cp podolica* (Eichw.)
N_1vm		15	Zbruchski Layers. Intercalation of sands and clays, rarely marls, detritus limestones occur. Fauna: *Mactra fabreana* (Orb.) *Gerastoderma fittoni fittoni* (Orb.)
N_1zb		15	Zbruchski Layers. Intercalation of sands and clays, rarely marls, detritus limestones occur. Fauna: *Ervilia pussila dissita* (Eichw.) *Gerastoderma plikatum plikatum* (Eichw.)
$N_1čk$		10	Chokratski Layers. Green, greenish-grey to black clays, sands, with marl interbeds. At the base diverse-grained sands, rarely coaliferous clays. Foraminifera: *Discorbis aff. tschokrakensis Bogd*
$P_3ml\text{-}as$		45	Molochanska, Sirogozka and Askaniyska suites undivided. Aleuritic clays, calcareous clays, grey aleurites; grey fine-grained sand. In calcareous clays (column bottom) abundant ostracodes.
P_3bs		90	Borysfenska Suite. Aleuritic, greenish-grey clays with glauconite, in places sandy; glauconite sands, manganese ores. In the lower part diversified foraminifera complex: *Spiroplectammina carinata oligocenica I. Nikit., Saccammina variabilis Bogd.*
P_2al		9	Alminska Suite. Tripoli-like flinted sandstones, siliceous clays, in places with glauconite; конітом; фауна молюсків: *Spondylus bushi* (Phil.)
P_2hd		75	Khadzhybeyska Suite. Friable, bluish-grey, white marls; bluish-green, calcareous clays; aleurites, clayey sands, in places conglomerate lenses at the base. Mollusc remnants: *Barbatia appendiculata* (Sow.), foraminifera *Nodosaria sp., Nodosaria capitata Boll.*
P_2vg		35	Pile of coaliferous clays and sands. Rarely secondary kaolines, brown coal lenses, aleurites, greenish-grey, dark-green clays with fauna *Barbatia appendiculata* (Sow.) *Corbula obavata Koen;* in places bauxite-like rocks at the base
K_1kd		17	Kodymska Suite. Coaliferous clays, sands, secondary kaolines, aleurite lenses and interbeds. Spore-pollen complex: *Senonicus Ross, Plicitera delicats* (Bolch.), *Clavifera triplex.*

Maykopska Series

Column Correlation between Adjacent Areas

Age Index	Lithology	Unit Thickness (in meters)	Description of Stratigraphic Units
$N_2čb$		28	Pile of red-brown clays.
N_2ap		7	Pile of alluvial sands
			CENTRAL AREA OF UKRAINIAN SHIELD
N_1sg		18	Pile of parti-coloured clays. Montmorillonite clays, greenish-grey with brown, ocher-yellow, cherry-red spots and stains
N_1gl		15	Geliksovi Layers. Quartz, fine-medium-grained, ocher sands, often clayey; limestone, marl interbeds and lenses
N_1p		18	Pile of sands. Quartz parti-coloured sands, fine-medium-grained, lenses of limestones and sandstones, in places grey clays, sometimes coaliferous (0-3 m). In sands - increased, in places economic concentrations of ilmenite, rutile, zircon, etc.
N_1np		32	Poltavska Series. Novopetrivska Suite. Quartz, light-coloured, in places parti-coloured, iron-enriched sands with lenses of sandstones and montmorillonite clays, interbeds and lenses of clays (in places coaliferous), diverse-grained sands. In places (in the upper part) the sands contain increased, sometimes economic concentrations of ilmenite, rutile, zircon, etc.
P_3mz		14	Kharkivska Series. Mezhygirska Suite. Non-carbonate sands, glauconite-quartz, with sandstone lenses; glauconite clay interbeds.
P_2ob		12	Obukhivska Suite. Glauconite, non-carbonate clays and sands, fauna: *Barbatia ex. gr. modio- liformi Dech, Dentalium cf.*
P_2kv		35	Kyivska Suite. Bluish-green, grrenish-grey, grey, in places white (kaolinite) clays, quartz, glauconite-quartz sands with sandstone lenses. In clays fauna: *Nonion umbilicatuem (Mont.), Cibicides sp.,* in sands: *Turitella turgida v. Koen*
$P_2bč$		20	Buchatska Series. Coal-bearing pile. Coaliferous clays and sands, brown coal with abundant spore-pollen complex *(Ilex, Nyssa, Rhus i gr.)*
		12	Under-coal pile. Quartz sands, diverse-grained in the lower part, in places gravelous, with coaliferous admixtures, interbeds and lenses of clays, secondary kaolines, rarely bauxite-like rocks

INGULO-INGULETSKIY AREA OF UKRAINIAN SHIELD

KIROVOGRADSKA LTZ

Ingulo-Inguletska Series

$PR_1čč$	1500	Checheliivska Suite. Biotite and garnet-biotite gneisses with interbeds of biotite-pyroxene and biotite-amphibole gneisses, meta-aleurolitic schists and meta-aleurolites
PR_1sp	1500	Spasivska Suite. Two-pyroxene, pyroxene and biotite-pyroxene gneisses and mafic gneisses with interbeds of magnetite-pyroxene and graphite-amphibole-biotite gneisses and mafic gneisses
PR_1rd	200 - 1200	Rodionivska Suite. Pyroxene-bearing quartzites, graphite, graphite-pyroxene-biotite, graphite-amphibole-biotite ngneisses and mafic gneisses, marbles, calciphyres and diopsidites

INGULO-KRYVORIZKA LTZ

Ingulo-Inguletska Series

PR_1gl	800 - 3000	Gleyuvatska Suite. Polymictic conglomerates, oligomictic meta-sandstones, meta-aleurolitic schists and meta-aleurolites, biotite, amphibole-biotite, garnet-biotite, pyroxene-amphibole-biotite schists and gneisses, rare marble interbeds
PR_1rd_2	400 - 1300	Rodionivska Suite. Upper Sub-Suite. Marbles, graphite-mica, graphite-actinolite-biotite schists (in amphibolite facies - calciphyres, graphite, graphite-amphibole-biotite gneisses and mafic gneisses), interbeds of silicate-magnetite quartzites, skarnoid len
PR_1rd_1	260 - 1200	Rodionivska Suite. Lower Sub-Suite. Quartzites and quartzite-sandstones, silicate-magnetite quartzites, actinolite-biotite, andalusite-graphite-biotite schists (in amphibolite facies - amphibole-biotite, sillimanite-graphite-biotite gneisses and mafic gneis
PR_1ar	0 - 200	Artemivska Suite. Silicate-magnetite quartzites, amphibole-biotite and biotite gneisses and mafic gneisses, skarnoid lenses
PR_1zr_2	0 - 80	Zelenorichenska Suite. Upper Sub-Suite. Sillimanite-biotite, garnet-biotite, two-mica mafic gneisses with interbeds of meta-sandstones, calciphyres, graphite-biotite and talc-carbonate schists
PR_1zr_1	0 - 100	Zelenorichenska Suite. Lower Sub-Suite. Amphibole gneisses, amphibolites. At the base - mica quartzites with sillimanite

MIDDLE-DNIPREAN AREA OF UKRAINIAN SHIELD

KRYVORIZKO-KREMENCHUTSKA LTZ

Kryvorizka Series

PR_1gl	0 - 700	Gleyuvatska Suite. Biotite, garnet-biotite, actinolite-biotite schists, in places with graphite; interbeds of meta-aleurolites, meta-sandstones and meta-conglomerates
PR_1gd_2	400 -1000	Gdantsivska Suite. Upper Sub-Suite. Graphite-mica, graphite-actinolite-biotite schists; dolomite marbles; interbeds of ferruginous quartzites
PR_1gd_1	200 - 800	Gdantsivska Suite. Lower Sub-Suite. Meta-sandstones and quartzites with meta-conglomerate interbeds, ferruginous quartzites, high-grade iron ores, graphite-mica, chlorite-mica, chlorite-magnetite schists
PR_1sx_3	400 - 640	Saksaganska Suite. Upper Sub-Suite. Ferruginous quartzites, jaspilites, high-grade iron ores, hematite-chlorite, sericite-chlorite, chlorite-biotite, biotite-amphibole schists
PR_1sx_2	260	Saksaganska Suite. Middle Sub-Suite. Sericite-biotite, chlorite-actinolite, graphite-sericite, hematite-chlorite schists, ferruginous quartzites
PR_1sx_1	40 - 300	Saksaganska Suite. Lower Sub-Suite. Ferruginous quartzites and jaspilites, sericite, chlorite, actinolite schists
PR_1sk_3	20 - 180	Skelyuvatska Suite. Upper Sub-Suite. Talc, talc-carbonate, talc-chlorite schists with interbeds of phillites, meta-sandstones and marbles
PR_1sk_2	20 - 180	Skelyuvatska Suite. Middle Sub-Suite. Sericite, chlorite-sericite, two-mica schists
PR_1sk_1	80 - 160	Skelyuvatska Suite. Lower Sub-Suite. Arkose meta-sandstones, quartzites, meta-conglomerates
PR_1nk	50-400	Novokryvorizka Suite. Chlorite-actinolite, biotite-actinolite with interbeds of meta-basalts (amphibolites) and meta-sandstone lenses. At the base - mica quartzites with andalusite

VERKHIVTSIVSKO-CHORTOMLYTSKA LTZ

Konkska Series

AR_3sl	200	Solenivska Suite. Meta-andesite-dacites, meta-dacites, meta-rhyodacites
AR_3af	140 - 360	Alferivska Suite. Actinolitites and tremolitites with meta-sandstone and quartzite interbeds
$AR_3čr$	240	Chortomlytska Suite. Meta-andesite-basalts, meta-andesites
AR_3sr	400-3200	Surska Suite. Meta-basalts, meta-dolerite-basalts, meta-andesite-basalts, actinolite, chlorite-actinolite, chlorite-mica schists (in amphibolite facies - amphiblites and amphibole, amphibole-biotite gneisses), interbeds of komatiite meta-basalts (actinolitites, tremolitites, serpentinites), meta-sandstones, barren and silicate-magnetite quartzites

KONKSKA LTZ

Konkska Suite

AR_3kn	70 - 850	Undivided rocks. Amphibolites, amphibole, biotite-amphibole, pyroxene gneisses and mafic gneisses, silicate-magnetite quartzites

MESO-ARCHEAN

Ar_2bz	250-2800	Bazavlutska Sequence. Amphibolites with interbeds of amphibole, biotite-amphibole, biotite gneisses and mafic gneisses and silicate-magnetite quartzite lenses