



DESCRIPTION OF MAP UNITS
Abbreviations in parentheses show interpretation based on ramp CDF contrast stretch (CS) 2C or ratio, ramp CDF stretch (RS) 2D computer-enhanced Landsat images of frame 1226-07013 from geology by R. E. Anderson, W. R. Greenwood, and D. B. Stoeser. The following formations are explained in the text: **g**, **gq**, **jdq**, and **q**.
* Asterisk indicates that color altered by vegetation reflectance. Compiled by G. F. Brown and Salman Bloch

R. E. Anderson (1978) Mayza' and Wadi Aif quadrangles 17/43B, 17/43A	W. R. Greenwood (1980) Malahah and Wadi Wasat quadrangles 18/43D, 18/44C	D. B. Stoeser (Unpub. data) Wadi Tarib quadrangle 18/43C
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SEDIMENTARY ROCKS

Qa —Alluvium: light tone (CS)	Qal —Alluvium: very light tan, in places bluish cast (CS)	Tl —Laterite and saprolite: bright orange red (CS)
Tl —Laterite: bright red (RS)	OCw —Wajid Sandstone: salmon tone (RS)	
Jc —Sandy limestone and calcareous: grayish green (RS)		
Ja —Sandstone: moderate brown (CS)		
OCw* —Wajid Sandstone: salmon tone (RS)		
OCw₂ —grayish olive tone (RS)		

IGNEOUS ROCKS

Extrusive

Ts* —Sirat volcanics: bluish purple (RS)	Tt —Feldspathoidal trachyte: blue-gray (CS)
	Tb —Flood basalt: dark brown (CS); light tone slightly green *(RS)

Plutonic and hypabyssal

gp —Granophyre: moderate brown (RS)	gqm —Muscovite quartz monzonite: dark blue green (RS)	gm —Biotite quartz monzonite: moderate olive brown (RS); grayish yellow (CS)
grp —Leucocratic granite: bluish green with arfvedsonite	qmba —Biotite-arfvedsonite quartz monzonite: reddish green (RS)	gr₂ —Granite or quartz monzonite: light olive green (CS); dark reddish olive green *(RS)
qm* —Quartz monzonite: olive gray (RS)	qmb —Biotite quartz monzonite: moderate blue (RS)	gr₁ —Biotite quartz monzonite: moderate olive brown (RS); grayish yellow (CS)
	gqm —Biotite hornblende granodiorite to quartz monzonite: dark blue (RS)	gm —Biotite quartz monzonite: very light gray (CS). The quartz monzonite can be distinguished on contrast stretch
	gqm —bluish black (RS)	gqm —bluish black (RS)
	gqm₂ —bright blue (RS)	gqm₂ —bright blue (RS)
	gq —Granodiorite and quartz diorite: 2-pyroxene diorite and hornblende metadiorite: light gray andesinite	ko —Mixture of gr₁ and qd (diortite): moderate olive brown (RS)
	gq₁ —Moderate yellowish green (RS)	kt —Mixture of gr₁ and qd (quartz diorite): moderate brown (RS)
	gq₂ —Olive gray (RS); dark yellowish brown (CS)	kf —Mixture of gr₁ and qd₂ (granodiorite): moderate olive green (RS); dark grayish yellow (CS)
	dal* —diorite and andesinite: dark gray	g₁ —Biotite quartz monzonite: moderate olive brown (RS) identical reflectance signature
	dal₁ —Bluish green with purple tint (RS)	gd —Hornblende biotite quartz diorite: moderate olive brown (RS); pale blue (CS)—identical reflectance signature
	dal₂ —Dark yellowish green (RS)	
	gs* —Granitic rocks, zoisite-biotite-quartz diorite, granodiorite, and quartz monzonite	
	g₁ —Medium olive green with bluish tint (RS)	
	g₂ —Olive green (RS)	
	gq* —Siliceous to intermediate rocks: light grayish olive green (RS)	
	di* —Mafic to intermediate rocks	
	di₁ —Light grayish olive green (RS) (same spectral signature as that of qd on both RS and CS)	
	di₂ —Moderate bluish yellow green (RS)	
	qd —Quartz diorite: dusky yellow green (RS)	
	qd₁ —Yellow green with light brown hue (RS)	
	qd₂ —Grayish brown (CS)	
	di —Biotite hornblende diorite: greenish yellow (RS)	
	gb —Gabbro: blue green (RS)	
	gdb —Gabbro, diorite, and quartz diorite: light greenish gray brown (RS)	
	gdb₂ —Moderate bluish yellow green (RS) (same spectral signature as di₂ on Mayza' map)	
	qp —Quartz porphyry: orange green (RS)	
	qdn —Quartz diorite gneiss: greenish tan (CS); dusky yellow green (RS)	
	dgn —Diorite to quartz diorite gneiss: greenish tan (CS); dusky yellow green (RS)	

METAMORPHIC ROCKS

mr* —Metasedimentary schist: light yellowish green (RS)	jdqg —Graphitic metasedimentary conglomerate, phyllite, and marble: orange yellow (RS) same reflectance	gb₁ —Metamorphosed gabbroic rocks, pre- or early tectonic: light blue (RS)
jt —Quartz-feldspathic meta-tuff and associated metasedimentary rocks, mostly graphitic and pyritiferous: dark yellow (RS)		gb₂ —Metamorphosed mafic gabbro and ultramafic rocks: light blue (RS)
jd —Metadiorite and associated metasedimentary rocks:		gd —Metagranodiorite and quartz diorite, pre- or early syntectonic: very light gray, lighter than gm (CS)
jd₁ —Moderate yellow (carbonaceous) (RS)		
jd₂ —Light olive, brownish hue (RS); brownish gray (CS)		
jd₃ —Moderate brown (RS)		
jm —Metavolcanic and metasedimentary rocks, undivided: light olive, brownish hue (same as jd₂) *(RS); olive black (CS)		
jm_v —Metavolcanic rocks-andesite and basalt lava: grayish green (RS)		
jms —Metasedimentary rock, pyritiferous slate, graphitic schist, metaconglomerate, and biotite schist		
	jd_w —Metabasaltic to dacitic flows and breccia: grayish green (RS)	ms —Metasedimentary graywacke, graphitic schist: orange yellow (same as jt on Mayza' map) (RS)
		mv —Metavolcanic: light bluish green, some orange tone (RS)
		mu —Undifferentiated metamorphics

— Geologic contact — Fault - - - Boundary representation is not necessarily authoritative.

A. SEMICONTROLLED AERIAL PHOTOMOSAIC

B. COLOR COMPOSITE LANDSAT IMAGE AND GEOLOGIC MAP



C. ENHANCED, RAMP-STRETCHED SIMULATED-COLOR LANDSAT IMAGE

D. ENHANCED, RAMP-STRETCHED, AND RATIOED SIMULATED-COLOR LANDSAT IMAGE

IMAGERY AND GEOLOGY OF THE ZAHRA'N AREA (TEST AREA 2), SOUTHERN SAUDI ARABIA

