

Heavy Mineral Separation and Summary

Arco NGI #7 Well, North Slope, Alaska

Procedure

Heavy mineral separation was performed on core chips from the Arco NGI #7, Prudhoe Bay, Alaska. Where possible, samples were grouped into 10 foot intervals to facilitate analysis. A complete listing of samples examined is given in Table I.

Following disaggregation of the samples using a porcelain mortar and pestal, the fine fraction was removed using a 200 mesh sieve. The remaining samples were placed in test tubes along with bromoform, centrifuged 15 minutes at 2250 rpms and allowed to settle an additional 15 minutes. The test tubes were frozen in liquid nitrogen and the lower portion of the test tube, containing the heavy fraction, was removed with a saw. After thawing, the heavy fraction was poured into filter paper and washed with acetone. The samples were air dried, mounted on glass slides with Canada balsam and examined using binocular, petrographic and scanning electron microscopes. The minerals were identified by using a combination of optical properties and elemental analysis obtained through use of an EDX system. Results of the analysis are given in Table II.

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Table II

(Correction)

Depth	Sample Weight	Heavy Fraction Weight	Heavy Fraction Wt. %	% Opaques *	% Zircon	% Rutile	% Barite	% Sphalerite	% Apatite	% Tourmaline
8050-8059'	3.46	.12	3.47	80					20	
8060-8069'	2.28	.09	3.95	30					70	
8070-8079'	1.56	.15	9.62	75					25	
8080-8089'	7.92	3.60	45.45	95					5	
8111'	2.00	.01	.50	50					50	
8140'	1.58	.03	1.90	90	10					
8178'	3.16	1.73	54.75	100						
8180-8189'	17.48	.01	.06	60				40		
8190-8199'	21.31	.01	.05	25	30	20	10	10		5
8200-8209'	21.79	.12	.55	20	30	25	15	10		
8210-8219'	11.19	.01	.09	50	20			30		
8220'	4.40	.01	.23	60	20	10	10			

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* Opaques include nonreflective minerals such as pyrite, magnetite, ilmenite, etc.

NGI #7

Table I

(2nd correction)

Grouping	Depths Represented
8050-8059'	8055, 8058'
8060-8069'	8067'
8070-8079'	8076, 8078'
8080-8089'	8083, 8084, 8088'
8110-8119'	8111'
8140-8149'	8140'
8170-8179'	8178'
8180-8189'	8181, 8183, 8186, 8188'
8190-8199'	8190, 8192, 8194, 8195, 8197, 8199'
8200-8209'	8201, 8202, 8203, 8205, 8206, 8208'
8210-8219'	8210, 8212, 8214, 8216, 8218'

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