L. Pigage
Whitehorse Office

005130

CURRAGH RESOURCES INC

INTER OFFICE MEMORANDUM

FARO OFFICE

DATE: March 23, 1990

TO: BILL DUNN
CHIEF ENGINEER

FROM: DAVE TENNEY
CHIEF GEOLOGIST

SUBJECT: SPECIFIC GRAVITY FROM MULTIPLE REGRESSION

The attached table shows the results of using over 800 diamond drill core pulps in a multiple regression calculation to obtain specific gravity of the main ore bearing rock types in the Faro Pit from the percentages of lead, zinc and iron in the drill core samples. Porosity, estimated at 2% for all rock types, will reduce the calculated sepcific gravities accordingly. The specific gravities and lead, zinc and iron assaying were done in Whitehorse by Northern Analytical, using the sample pulps.

From the diamond drill hole database for drilling during late 1989 and early 1990, 44 drill holes were extracted (record 317 to 360: 89F-05, 90F-19) which produced an s.g. & assay database containing 963 records. These were sorted by rock type using the computer codes 20,30,40,50,60,70 etc (see attached) and the data "cleaned" by removing records where information was missing (indicated by -1) to provide a main database containing 863 records. Individual databases for each rock type were then prepared and multiple regression analysis run as indicated in the attachments. (Fig 2). Very little data, eight records, were available for rock type 60, baritic ore, but this rock type will not be encountered in significant quantities during the remaining life of the Faro Pit. As the diamond drilling is in areas we are about to mine the regression formulae should fairly predict actual densities.

STATISTICAL CORRELATION

Correlation coefficients varied from 0.944 for pyritic quartzite (considered excellent) to .648 for siliceous semi-massive pyritic sulphide. Note that no waste rock types were included in this study (Fig. 1) The correlation co-efficients are all in the good to excellent range and in my view indicate some improvement in the precision of tonnage estimates will result when the regression formulae are put into use.

CONCLUSION:

The available data is sufficient to give very high confidence in our specific gravity regression formulae for all ore types. The formulae will now be put into use in the diamond drill and blasthole databases, and monitored to ensure accuracy. Specific gravity determinations on diamond drill core pulps from the Faro Pit previously done at Northern Analytical will be stopped.

D. Tenney.

Dave Tenney
Chief Geologist

DT:cc
cc: G. Jilson
L. Pigage
B. Pisony
M. Wasel

FIG. 1

SPECIFIC GRAVITY FORMULAE
FROM MULTIPLE REGRESSION ANALYSIS

ROCK TYPE	CONSTANT	COEFF %PB	COEFF % ZN	COEFF % FE	CORR(ERR) COEF	MEAN	SD
21	2.55	+.05	+.02	+.041	.91(.14)	3.07	.33
31	2.41	+.03	+.02	+.055	.944(.14)	3.61	.43
40	2.81	+.09	0.00	+.044	.648(.26)	4.26	.35
50	2.51	+.11	+.01	+.050	.791(.28)	4.37	.46
60	2.45	+.06	+.14	+.036	.887(.24)	4.33	.52
70	3.12	0.00	+.04	+.028	.717(.25)	4.20	.35

Note very high correlation coefficients.

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FIG 2

REC	STAT	ROCK CODE	DESCRIPTION	RELATIVE DENSITY [tn/bcf]	PEN	SLOPE ANGLES [DEGREES] NW	N	NE	W	E	SW	S	SE
1	2	20	2ACD ribbon banded graphitic quartzite	.083	1	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
2	2	21	2ACD-ribbon banded graphitic quartzite/basal horizon	.083	1	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
3	2	22	2ACD ribbon banded graphitic quartzite/middle horizon	.083	1	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
4	2	23	2ACD ribbon banded graphitic quartzite/upper horizon	.083	1	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
5	2	30	2BCD pyritic quartzite	.090	2	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
6	2	31	2BCD pyritic quartzite/basal horizon	.090	2	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
7	2	32	2BCD pyritic quartzite/middle horizon	.090	2	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
8	2	33	2BCD pyritic quartzite/upper horizon	.090	2	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
9	2	40	2EC semi-massive quartzose pyritic sulphides	.099	4	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
10	2	50	2EF pyritic massive sulphides	.107	4	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
11	2	60	2EFG baritic massive sulphides	.112	4	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
12	2	70	2H pyrrhotitic massive sulphides	.104	5	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
13	2	80	1H/2ABCDEFG Altered metabasite interbanded with ore	.085	4	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
14	1	100	1DO/1CO/1CD schist and phyllite waste	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
15	1	110	1D2/1EO graphitic schist and phyllite	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
16	1	120	2L/1D4 altered schist and phyllite (WME)	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
17	1	130	1H/1F Altered metabasite	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
18	1	150	3A basal graphitic unit of 3D Calc-silicate	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
19	1	160	3D Calc-silicate	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
20	1	170	3D BXA Calc-silicate breccia	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
21	1	180	10E Biotite hornblende quartz diorite	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
22	1	190	10F Smokey quartz feldspar porphyry	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
23	1	300	Unconsolidated overburden	.060	7	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5
24	1	400	Partially above topography	.076	7	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
25	1	500	Air	.000	0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
26	1	1	simplified ore type "A"	.085	1	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
27	1	2	simplified ore type "BG"	.104	4	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
28	1	3	simplified ore type "H"	.105	5	45.0	39.0	36.5	45.0	38.5	45.0	45.0	45.0
29	1	10	Quartzose Ore Types - 2a,2bcd	.089	2	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
30	1	11	Massive Sulphide Ore Types - 2ef, 2eg, 2ec, 2eh	.111	4	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0

ANGLES

W	E	SW	S	SE
45.0	38.5	45.0	45.0	45.0
45.0	38.5	45.0	45.0	45.0