

016058

MAY 20 1969

# THE GALIGHER COMPANY

ESTABLISHED 1901



CABLE ADDRESS  
GALSAL

440 WEST EIGHTH SOUTH STREET  
P. O. BOX 209  
SALT LAKE CITY, UTAH 84110  
U.S.A.

*of 4/5*  
31

*make a*  
*cc. of*  
*Vancouver*

W.S.R.	✓
J.H.S.	✓
E.F.	
R.D.S.	
B.C.B.	
P.M.K.	✓
G.W.M.	
R.O.M.	
C.K.W.	
J.B.S.	
B.P.R.	
K.F.L.	
R.E.H.	
E.C.J.	○

TELEPHONE 359-8731  
AREA CODE 802

May 14, 1969

C  
O  
P  
Y

Mr. J. Gillies  
General Supervisor of Laboratories  
Noranda Mines Ltd.  
Rouyn-Noranda  
P. Q., Canada

Dear Mr. Gillies:

We thank you for your assay certificate relative to the analytical work which you conducted on the test products obtained in our Test No. 5, Lot No. 1833. The zinc assays check beautifully, the test calculated head being 4.87% Zn (re: our letter to you dated February 3rd).

It appears, however, that we may have a problem concerning the lead assays, the test head calculating at 4.32% Pb which is a little high. It looks as though the lead concentrates for Series 2 and 3 might have been switched, but changing these would not materially effect the calculated test heads. It would make a difference, however, in the results obtained in the individual series so we ask you to check this possibility.

The calculated mineralogical compositions of all of the lead and zinc concentrates, using the lead, zinc and iron assays, seem to be in agreement, total mineral percentages being in the range of 98-99%. Therefore, it would appear that the lead assays for these products should be okay. That leaves the zinc rougher tails and the various cleaner tailing products. Of the latter, only the Pb Cleaner Tail No. 1 would contain enough lead to effect the head assay. Since there might possibly be an error in the lead concentrates, it would be a good idea to check the lead assays for these. Therefore, we ask that you repeat the lead assays only for the following products:

1. The Pb Cleaner Concentrate No. 3 for Series 1, 2 and 3.
2. The Zn Rougher Tails for Series 1, 2 and 3.
3. The Pb Cleaner Tails No. 1.

THE GALIGHER COMPANY

Noranda Mines Ltd.

-2-

May 14, 1969

Also, please determine if the assays for the Pb Cleaner Concentrates for Series 2 and 3 might have been switched.

Sincerely yours,

THE GALIGHER COMPANY



R. O. Huch  
Metallurgist

ROH/lp

cc: Dr. P. M. Kavanagh  
Vice President - Exploration  
Kerr Addison Mines, Limited  
Suite 1600 - 44 King Street West  
Toronto 1, Ontario  
Canada

af 4/5. 31

**KERR ADDISON MINES LIMITED**  
(FOR INTER-OFFICE USE ONLY)

W.S.R.
J.H.S.
E.F.
R.D.S.
B.C.B.
P.M.K. ✓
G.W.M.
R.G.M.
C.K.W.
J.B.S.
G.P.R.
K.F.L.
P.F.H.
<u>E.C.I.</u>

To **Mr. J. H. Stovel** From **P. M. Kavanagh**

Subject **Metallurgical Testing - Vangorda Deposit** Date **April 11, 1969**

Lyall Ames has agreed that Galigher should proceed to closed circuit testing. He has suggested that they also do bulk Pb-Zn concentrate tests trying to keep the Iron content to less than 10%.

I have to-day verbally instructed Mr. Huch of Galigher to do the above work. On the matter of the bulk concentrate with less than a 10% iron content, Mr. Huch said they would calculate a bulk concentrate grade from the final products of their closed circuit testing and if that calculated concentrate contained more than 10% iron, he thought it would be difficult to make a favorable bulk concentrate with 10% iron or less.

PMK:lfr

Paul M. Kavanagh

cc: H. L. Ames  
W. M. Sirois



REFRACTORY ORES METALLURGICAL COMPARISON

08 4-5  
31  
CONFIDENTIAL

*Prepared by H. R. Ames*

	COMPANY	TEST	DATE	FICAT	LEAD - %			ZINC - %			Pb + Zn%	Pb + Zn%
					Head	Con	Recovery	Head	Con.	Recovery	Assay	Recovery
ENVY	Galigher	Lab.	Feb. 1967	<u>Differential</u>	3.4	70.1	89.0	5.9	54.0	86.0	124	175
B.M. & S. #12	B.M. & S.	MILL	1968		3.4	32.2	66.7	8.6	50.7	76.6	83	147
VANCOUVER	Noranda	Lab.	1954		3.2	46.1	77.6	5.2	53.0	49.5	99	127
	Mitsui	Lab.	1969		4.0	49.8	77.0	4.9	49.4	60.4	99	137
	Galigher	Lab.	1968		3.9	56.5	72.5	5.1	50.8	51.5	107	124
			Lab.	1969		4.1	48.0	72.8	4.3	55.9	41.7	104
ENVY	Galigher	Lab.	1968		4.1	47.1	61.4	5.1	54.0	39.9	101	101
	Mitsui	Lab.	1969		3.6	52.2	71.7	4.4	52.7	75.3	105	147
VANCOUVER	Mitsui	Lab.	1956	<u>Bulk</u>	3.8	20.4	78.2	5.2	35.6	92.3	56	170
	Noranda	Lab.	1965		3.7	24.2	81.5	5.3	36.4	85.0	61	166
B.M. & S. #6	B.M. & S.	MILL	Feb. 1969		2.5	13.8	69.7	5.7	36.5	79.8	50	149

OCT 31 1968

# NORANDA MINES LIMITED

NORANDA, QUEBEC



W.S.R.	
K.C.G.	
J.H.S.	✓
E.F.	✓
R.D.S.	
B.C.B.	
P.M.K.	✓
G.W.M.	
R.O.M.	
C.K.W.	
J.B.S.	
G.P.R.	
K.F.L.	
J.L.B.	
E.C.J.	○

October 29, 1968

of Y.S.  
31

cc for  
Vangorda files  
H.T.

Mr. R. O. Huch,  
Metallurgist,  
The Galigher Company,  
545-585 West Eighth South Street,  
P.O. Box 209,  
SALT LAKE CITY, Utah 84110

Dear Mr. Huch:

This is to acknowledge receipt of your letter and the mill test samples in connection with the Vangorda ore material. The lead and zinc assays have been completed and a certificate of analysis is attached. Copies are being mailed to Dr. Kavanagh and Mr. Sirola.

Yours very truly,

NORANDA MINES LIMITED

J. Gillies  
Gen. Supervisor of Laboratories.

JG/la

cc: Dr. P. M. Kavanagh ✓

Mr. W. M. Sirola



TO: Kerr Addison Mines Ltd.  
405 - 1112 West Pender Street  
VANCOUVER, B. C.

cc: Kerr Addison Mines Ltd.  
1600 - 44 King Street West  
TORONTO, Ontario  
ATTENTION: Mr. P. N. Kavanagh



**Certificate of Assay**  
**COAST ELDRIDGE**  
PROFESSIONAL SERVICES DIVISION  
WARNOCK HERSEY INTERNATIONAL LIMITED  
125 EAST 4TH AVE. VANCOUVER 10, B.C., CANADA

SEP 16 1968



45 Y.S. 17  
PHONE: (604) 876-4111  
TELEX: 04-50353 -  
CABLE ADDRESS:  
ELDRICO

W.S.A.  
R.C.C.  
J.H.S.  
E.F.  
R.D.S.  
B.C.H.  
P.M.V.  
G.W.H.  
R.A.G.  
C.L.V.  
P.S.

cc Y.S. 31  
cc. Vancouver 25  
FILE NO. A.3-Z-68-1758

DATE September 12, 1968

We Hereby Certify that the following are the results of assays made by us upon submitted DRILL CORE samples

MARKED	GOLD		SILVER	Lead (Pb)	Zinc (Zn)	Copper (Cu)	PER CENT.	Footage	Weight
	OUNCES PER TON	VALUE PER TON	OUNCES PER TON	PER CENT.	PER CENT.	PER CENT.		PER CENT.	PER CENT.
		\$							
15 C			1.66	4.30	5.06	0.12		160-200	38 lbs.
15 C			1.77	4.74	5.22	0.15		204-250	38 lbs.
A 24			1.62	3.96	4.60	0.21		151-7-200	65 lbs.

1/68 Gold calculated at \$ ..... per ounce

Note. Rejects retained one week.  
Pulps retained one month.  
Pulps and rejects may be stored for a maximum of one year by special arrangement.

Unless it is specifically stated otherwise, gold and silver values reported on these sheets have not been adjusted to compensate for losses and gains inherent in the fire assay process.

*H. Stages*

Provincial Assayer

KERR ADSON MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

MAY 31 1968

Vangorda 12  
sc 14/5 33

To P. M. Kavanagh From W. M. Sirola

Subject Metallurgical Testing, Vangorda and Swim Lakes, Y. T. Date May 30, 1968.

W.S.R.
K.C.G.
✓ J.H.S.
✓ E.F.
R.D.S.
B.C.B.
✓ P.M.K.
G.W.M.
R.O.M.
C.K.W.
J.B.S.
G.P.R.
K.F.L.
J.L.R.
(E.C.J.)

Thank you for sending me the Galigher final report on this work.

Huch seems to make a great deal out of the so-called "aging" but surely the basic problem is still one of liberation. I would think that all lead-zinc ores develop a microfilm of oxidation products and one wonders why the Vangorda area ores should be different from any other lead-zinc ore.

Since no determinations were made on silver, gold and copper, I wondered at what stage Galigher would report on this. It would also be helpful to know the iron content of the number three cleaner concentrates since there are definite limitations on the quantity of iron that is acceptable.

I have been curious about the comparison between the Anvil test work and our own and John Britton of Britton Laboratories here told me that the preliminary tests done in his lab on Anvil specimens were not very different from the results we obtained from Galigher. Britton apparently had to do considerably more testing on the Anvil ores before a satisfactory product was made. He points out that the Galigher people have access to the Colorado School of Mines pilot plant and he thinks that perhaps the final work on the Anvil ores was awarded to Galigher for that reason.

*W. M. Sirola*  
W. M. Sirola.

WMS/1k

of Y/S 32  
 FEB 8 1968

# NORANDA MINES LIMITED

## ASSAY REPORT

GALIGHTER COMPANY

NORANDA, QUE. Feb 6/68

PRODUCT	DATE	Au	Ag	Cu	SiO <sub>2</sub> %	Fe %	Pb %	Zn %	Ni %	As %	Al <sub>2</sub> O <sub>3</sub> %	S %						
	SAMPLED	OZS/TON																
Zn Ro Tail	1759 A	Test #7					.40	.374										
	B						.56	.462										
Pb #1 Cl Tail	1759 A						1.65	8.35										
	B						4.10	7.07										
Zn #1 Cl Tail	A						.52	.784										
	B						.84	1.766										
Pb #2 Cl Tail	1759 A						8.56	13.2										
	B						14.05	9.10										
Zn #2 Cl Tail	1759 A						2.39	5.19										
Pb #3 Cl Tail	1759 A						16.82	15.5										
Zn #3 Cl Tail	1759 A						4.45	7.29										
Pb #2 Cl Conc	1759 B						47.10	7.06										
Zn #2 Cl Conc	1759 B						2.69	54.0										
Pb #3 Cl Conc	1759 A						56.50	9.64										
Zn #3 Cl Conc	1759 A						4.61	50.8										
Zn #2 Cl Scav Tail	1759 B						3.39	7.55										
Zn #2 Cl Scav Conc	1759 B						4.58	45.0										

W.S.R.  
 K.C.G.  
 J.H.S.  
 E.F.  
 R.H.S.  
 B.C.B.  
 P.W.A. ✓  
 G.W.M.  
 R.O.M.  
 G.H.V.  
 J.  
 G.P.  
 V.

E.C.

Copy sent to Silvia

JAN 22 1968

# THE GALIGHER COMPANY

ESTABLISHED 1901



CABLE ADDRESS  
GALSAL

TELEPHONE  
159-8731

545.585 WEST EIGHTH SOUTH STREET

P. O. BOX 209

AREA CODE 801

SALT LAKE CITY, UTAH, 84110

U. S. A.

January 18, 1968

Mr. Jack Gillies  
c/o Noranda Mines Ltd.  
Rouyn-Noranda  
P.Q., Canada

Dear Mr. Gillies:

We are sending to you another suite of test samples for lead and zinc assays. These originated from our Test No. 7 for both Lot Nos. 1759-A and B.

Sincerely yours,

THE GALIGHER COMPANY

R. O. Huch  
Metallurgist

ROR/do

cc: Dr. P. M. Kavanagh

W.S.R.
K.C.G.
J.H.S.
E.F.
R.D.S.
B.C.B.
P.M.K. ✓
G.W.M.
R.O.M.
C.K.W.
J.B.S.
G.P.R.
K.F.L.
(E.C.I.)

C

O

P

Y

*Copy sent to Sivola*

of '5 33 JAN 18 1968  
cc Van 12  
✓ ✓ ✓

# THE GALIGHER COMPANY

ESTABLISHED 1901



CABLE ADDRESS  
GALSAL

545-585 WEST EIGHTH SOUTH STREET  
P. O. BOX 209

TELEPHONE  
359-8731  
AREA CODE 801

SALT LAKE CITY, UTAH, 84110  
U.S.A.

January 16, 1968

Dr. Paul M. Kavanagh  
Vice President-Exploration  
Kerr Addison Mines Limited  
Suite 1600-44 King Street West  
Toronto 1, Ontario  
Canada

Dear Dr. Kavanagh:

We've received the last group of assays from Noranda, the calculated test results being shown on the attached Thermofax copies (Test Nos. 4, 5 and 6 for Lots 1759-A & B).

You will note from these results that there is very little difference in lead recovery over the range of grinds tested. Zinc rejection is improved by the finer grinding, but we are not too concerned about this at this stage of the testing. We are hoping that a substantial zinc rejection (and iron) from the lead will be obtained when the lead concentrate is reground and cleaned, this being the case in the Anvil testing. We should be able to get these tests going, perhaps, tomorrow.

Thank you for your Christmas card, and we all hope that you had a happy holiday season and will enjoy a fruitful '68.

Sincerely yours,

THE GALIGHER COMPANY

R. O. Huch  
Metallurgist

ROH/do  
Enclosures

copy of letter and  
attachments sent to Surin  
SBW Jan 18/68

LEADERS IN EXPERIENCE AND SERVICE

AIR  
MAIL

METALLURGICAL RESEARCH DEPT.

CABLE  
"GALSAL"

THE GALIGHER COMPANY

P. O. BOX 209 - 545-585 WEST 8TH SOUTH STREET  
SALT LAKE CITY, UTAH 84110 - U.S.A.

TELEPHONE  
398-8731

OUR LOT NO. 1759-A  
DATE 12-15-67  
BY JX

TEST NO. 4

NAME Kerr Addison

Grind series

PRODUCT	Weight	Percent Weight	ASSAY				DISTRIBUTION			
			Pb	Zn			Pb	Zn		
<u>Pb Ro Conc</u>	<u>289</u>	<u>25.7</u>	<u>14.78</u>	<u>9.73</u>	<u>380.0</u>	<u>250.0</u>	<u>28.9</u>	<u>44.2</u>		
<u>Zn</u>	<u>208</u>	<u>19.9</u>	<u>1.40</u>	<u>14.30</u>	<u>27.9</u>	<u>284.5</u>	<u>6.5</u>	<u>50.5</u>		
<u>Sn</u>	<u>43</u>	<u>4.3</u>	<u>1.63</u>	<u>1.73</u>	<u>7.0</u>	<u>7.4</u>	<u>1.6</u>	<u>6.3</u>		
<u>Flt</u>	<u>505</u>	<u>50.1</u>	<u>0.26</u>	<u>0.47</u>	<u>13.0</u>	<u>23.5</u>	<u>3.0</u>	<u>4.2</u>		
<u>Heads (Ch.)</u>	<u>1009</u>	<u>100.0</u>	<u>4.28</u>	<u>5.65</u>	<u>427.9</u>	<u>565.4</u>	<u>100.0</u>	<u>100.0</u>		
<u>Pb Ro Tail</u>		<u>74.3</u>	<u>0.65</u>	<u>4.25</u>	<u>47.9</u>	<u>315.4</u>	<u>11.1</u>	<u>55.8</u>		

OPERATION	BM	Pb Ro	Zn	Cu	Flt	Conc	Conc	Conc	Zn Ro	Flt	GRINDING PRODUCT	
											MESH	%
TIME	<u>10</u>	<u>3</u>	<u>5</u>			<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>3</u>		
REAGENTS - LBS. PER TON												<u>Head</u>
<u>LiOH</u>	<u>4.0</u>					<u>4.0</u>						<u>+10</u>
<u>NaOH</u>	<u>0.15</u>											<u>+14</u>
<u>2% SO4</u>	<u>2.0</u>											<u>+20</u>
<u>R-343</u>		<u>0.05</u>	<u>0.025</u>									<u>+28</u>
<u>MIBC</u>		<u>0.03</u>	<u>0.03</u>									<u>+35</u>
<u>CuSO4</u>						<u>1.0</u>						<u>+48</u>
<u>R-200</u>							<u>0.08</u>			<u>0.04</u>		<u>+65</u>
												<u>+100</u>
												<u>+150</u>
MACHINE		<u>1070</u>										<u>+200</u>
R.P.M.		<u>1070</u>										<u>+325</u>
pH		<u>8.7</u>				<u>12.1</u>	<u>12.1</u>					<u>-325</u>
% SOLIDS		<u>50</u>										<u>50.2</u>
TEMPERATURE												

REMARKS:

METALLURGICAL RESEARCH DEPT.

CABLE  
"GALBAL"

THE GALIGHER COMPANY  
P. O. BOX 209 - 543-585 WEST 8TH SOUTH STREET,  
SALT LAKE CITY, UTAH 84110 - U.S.A.

TELEPHONE  
358-8731

OUR LOT NO. 1759-A  
DATE 12-15-67  
BY JX

TEST NO. 5 NAME Kerr Addition

same as test 4 except finer grind (15')

PRODUCT	Weight	Percent Weight	ASSAY				DISTRIBUTION			
			Pb	Zn			Pb	Zn		
Pb Ro Conc	274	23.2	16.55	10.23	384.0	237.8	98.8	42.2		
Zn "	192	18.0	1.42	16.50	26.6	294.0	6.1	82.8		
W. Bear "	46	2.6	1.48	1.05	3.7	2.7	0.9	0.5		
W. W. Tail "	407	56.8	0.32	0.46	18.0	25.8	4.2	4.6		
Head (Ch.)	100.9	100.0	4.32	5.63	432.7	563.0	100.0	100.0		
Pb Ro Tail		76.8	0.63	4.24	48.4	325.5	11.2	57.9		

OPERATION	BM	Pb Ro	Ro	Zn Ro	Cond	Cond	Cond	Zn Ro	Bear	GRINDING PRODUCT		
										MESH	%	%
TIME	15	3	5		5	5	5	5	3			
AGENTS - LBS. PER TON												
Time	4.0				4.0							
NaCN	0.15											
Zn SO4	2.0											
K-343		0.05	0.05									
MIBC		0.03	0.03									
Ca SO4					1.0							
Z-200						0.08		0.04				
MACHINE		1000										
R.P.M.		1000										
pH		9.7			12.1	12.0						
% SOLIDS		50										
TEMPERATURE												

REMARKS:

Head  
+10  
+14  
+20  
+28  
+35  
+48  
+65  
+100 1.6  
+150 8.9  
+200 9.9  
+225 22.8  
-325 57.4

METALLURGICAL RESEARCH DEPT.

CABLE  
"GALVAL"

THE GALIGHER COMPANY

P. O. BOX 208 · 545-555 WEST 8TH SOUTH STREET  
SALT LAKE CITY, UTAH 84110 - U.S.A.

TELEPHONE  
389-8731

OUR LOT NO. 1759 A  
DATE 12-15-67  
BY JX

TEST NO. 6 NAME Kerr Addison  
same as test 4 except finer grind (25').

PRODUCT	Weight	Percent Weight	ASSAY				DISTRIBUTION			
			Pb	Zn			Pb	Zn		
Pb Ro Conc	261	21.0	18.20	10.55	137.5	221.5	89.7	39.1		
Zn ✓	152	15.1	1.40	20.40	21.1	209.0	4.9	54.4		
✓ lead ✓	144	4.4	1.19	1.74	5.2	7.7	1.2	1.4		
✓ tail	595	59.5	0.30	0.48	17.8	28.6	4.7	5.1		
Head (Ch.)	1000	100.0	4.29	5.66	42.4	56.8	100.0	100.0		
Pb total		79.0	0.56	4.36	44.1	344.3	10.3	60.9		

OPERATION	TIME	AGENTS - LBS. PER TON	BM	Pb Ro	Ro	Zn Conc	Lead Conc	Conc	Zn Ro	Lead	GRINDING PRODUCT		
											MESH	%	%
			25	3	5	5	5	5	5	3			
Lime			4.0			4.0							
NaCl			0.15										
Zn SO4			3.0										
R-343				0.05	0.05								
MIBC				0.03	0.03								
Zn SO4						1.0							
2-200							0.08		0.04				
MACHINE				1000									
R.P.M.				1000									
PH				8.7		12.1	11.9	1	11.7				
% SOLIDS			50										
TEMPERATURE													

REMARKS: Tests 4, 5, 6 - Pb & Zn conc. high in matrix, extensive Fe flotation in both  
with 100% Zn conc. subject of a tight path in oil Zn flo to. The 25'  
mill - no the int tight.



METALLURGICAL RESEARCH DEPT.

CABLE  
"GALBAL"

THE GALIGHER COMPANY

P. O. BOX 208 - 545-888 WEST 8TH SOUTH STREET  
SALT LAKE CITY, UTAH 84110 - U.S.A.

TELEPHONE  
388-8731

OUR LOT NO. 1759-B  
DATE 12-15-67  
BY JX

TEST NO. 4

NAME Kerr Addition

PRODUCT	Weight	Percent Weight	ASSAY				DISTRIBUTION			
			Pb	Zn			Pb	Zn		
Pb Ro Conc	264	26.4	14.90	7.91	393.5	209.4	89.6	38.1		
Zn ✓	159	16.9	1.41	18.20	28.8	207.5	5.4	86.1		
✓ Head ✓	22	2.2	1.48	2.22	23	5.1	0.8	0.9		
✓ Tail ✓	544	54.5	0.34	0.49	18.5	26.7	4.2	4.9		
Head (ch.)	999	100.0	4.39	5.48	439.1	548.3	100.0	100.0		
Pb Ro Tail		73.6	0.62	4.61	486	339.3	10.4	61.9		

OPERATION	TIME	REAGENTS - LBS. PER TON	BM	Pb Ro	Ro	Coal	Coal	Coal	Pb Ro	Tail	GRINDING PRODUCT	
											MESH	%
7 round		5.0				4.0						
ALCOA		0.15										
Zn SO4		2.0										
<del>Pb Zn 3X antise 348</del>			0.05	0.025								
MIBC			0.03	0.03								
En SO4						1.0						
2-200							0.08			0.04		
											3.1	
MACHINE			1070									
R.P.M.			1070									
pH			9.0			12.3	12.2					52.1
% SOLIDS		50										
TEMPERATURE												

REMARKS:



# NORANDA MINES LIMITED

## ASSAY REPORT

08  
Y/S. 33 JAN 11 1968

cc Van. 12

W.S.R.  
K.C.G.  
J.H.S.  
E.F.  
R.D.S.  
B.C.B.  
P.M.K. ✓

G.V.M.  
R.D.M.  
C.K.W.  
I.P.C.

G.P.R.  
K.F.L.  
J.B.  
E.C.J.

GALICHER COMPANY

KERR ADDISON

NORANDA, QUE.

Jan 10/68

PRODUCT	DATE	AU	Ag	Cu	SiO <sub>2</sub>	FE	Pb	Zn	Ni	As	Al <sub>2</sub> O <sub>3</sub>	S			
	SAMPLED	OZS/TON			%	%	%	%	%	%	%	%			
Pb Ro Conc	1759A	#4					14.78	9.73							
Zn Ro Conc	1759A	#4					1.40	14.30							
Zn Scav Conc	1759A	#4					1.63	1.73							
Zn Scav Tail	1759A	#4					.26	.47							
Pb Ro Conc	1759A	#5					16.55	10.23							
Zn Ro Conc	1759A	#5					1.42	16.50							
Zn Scav Conc	1759A	#5					1.48	1.05							
Zn Scav Tail	1759A	#5					.32	.46							
Pb Ro Conc	1759A	#6					18.30	10.55							
Zn Ro Conc	1759A	#6					1.40	20.40							
Zn Scav Conc	1759A	#6					1.19	1.74							
Zn Scav Tail	1759A	#6					.30	.48							
Pb Ro Conc	1759B	#4					14.90	7.91							
Zn Ro Conc	1759B	#4					1.41	18.20							
Zn Scav Conc	1759B	#4					1.48	2.32							
Zn Scav Tail	1759B	#4					.34	.49							
Pb Ro Conc	1759B	#5					16.20	8.19							
Zn Ro Conc	1759B	#5					1.35	20.25							
Zn Scav Conc	1759B	#5					1.46	2.10							

*copy sent to Smith*

*01/11*



DEC 27 1967

of. 7/5-33

THE GALIGHER COMPANY

VA 112

ESTABLISHED 1901



545-585 WEST EIGHTH SOUTH STREET  
P. O. BOX 209  
SALT LAKE CITY, UTAH, 84110  
U. S. A.

CABLE ADDRESS  
GALSAL

TELEPHONE  
359-8731  
AREA CODE 801

W.S.R.  
K.C.G.  
J.H.S.  
E.F.  
R.D.S.  
B.C.B.  
P.M.K.  
G.W.M.  
R.O.M.  
C.K.W.  
J.B.S.  
G.P.R.  
K.F.L.  
H.I.B.  
E.C.J.

December 21, 1967

Mr. Jack Gillies  
c/o Noranda Mines Ltd.  
Rouyn - Noranda  
P.Q., Canada

Dear Mr. Gillies:

We thank you for your assay report dated December 8th. The assays check reasonably well as can be seen by the following:

	<u>% Pb</u>	<u>% Zn</u>
Head, Lot No. 1759-A (by Assay)	3.93	5.05
Head, Lot No. 1759-A (by Calculation)	4.18	5.12
Head, Lot No. 1759-B (by Assay)	4.13	4.96
Head, Lot No. 1759-B (by Calculation)	4.35	5.13

We are sending to you an additional suite of test samples for lead and zinc analyses and would appreciate your results as soon as they are available. Would you kindly specify in your sample identification the Lot No., Test No. and product? The numbers which we have written at the top of the sample envelopes are not identification numbers, but represent only the original test product weight.

Sincerely yours,

THE GALIGHER COMPANY

R. O. Huch  
Metallurgist

ROH/do

cc: Dr. P. M. Kavanagh

copy to Sivola

DEC 11 1967

of B  
Y/S 33

# NORANDA MINES LIMITED

## ASSAY REPORT

cc VA 12

GALIGHER CO.

KERR ADDISON

NORANDA, QUE. Dec 8/67

PRODUCT	DATE	AU	Ag	Cu	SiO <sub>2</sub> %	Fe %	Pb %	Zn %	Ni %	As %	Al <sub>2</sub> O <sub>3</sub> %	S %							
	SAMPLED	OZS/TON																	
Head Sample	1759 A						3.93	5.05											
Head Sample	1759 B						4.13	4.96											
Pb Po Conc #3	1759 B	#31					3.92	6.65											
Pb Po Conc #3	1759 A	#40					3.06	6.64											
Pb Po Conc #2	1759 B	#46					5.51	7.33											
Pb Po Conc #2	1759 A	#58					4.67	7.57											
Zn Po Conc	1759 B	#148					1.27	20.20											
Pb Po Conc #1	1759 B	#168					20.95	7.68											
Pb Po Conc #1	1759 A	#172					19.88	9.90											
Pb Po Conc	1759 A	#281					13.18	8.70											
Pb Po Conc	1759 B	#300					12.20	7.20											
Zn Po Tail	1759 B	#608					.44	.51											
Pb Po Tail	1759 A	#732					.51	3.80											
Pb Po Tail	1759 A	#773					.55	3.93											
Pb Po Tail	1759 B	#765					.60	4.90											

copy sent to Sivola

*J. J. [Signature]*

DB NOV 13 1967

# THE GALIGHER COMPANY

ESTABLISHED 1901



Y/S 33

cc Vancouver 12

CABLE ADDRESS  
GALSAL

545-585 WEST EIGHTH SOUTH STREET  
P. O. BOX 209  
SALT LAKE CITY, UTAH, 84110  
U.S.A.

TELEPHONE  
359-8731  
AREA CODE 801

W.S.R.
K.C.G.
J.H.S.
E.F.
R.D.S.
B.C.B.
P.M.K. ✓
G.W.M.
R.O.M.
C.K.W.
J.B.S.
G.P.R.
K.F.L.
J.I.B.
E.C.J.

November 10, 1967

Mr. Paul M. Kavanagh  
Vice President - Exploration  
Kerr Addison Mines Limited  
Suite 1600-44 King Street West  
Toronto 1, Ontario  
Canada

Dear Mr. Kavanagh:

Pursuant to our letter of November 1, we have now uncovered some difficulties in the lead assaying of the ore samples and various test products. Our Assayer (the Union Assay Office) has checked three different methods of analysis, and he turns up three different answers, these being as follows:

	% Pb		
Head, Lot No. 1759-A - <i>Vergada</i>	1.4	2.55	4.0
Head, Lot No. 1759-B - <i>Swain Lake</i>	2.1	3.85	4.55

In view of the apparent difficulty in obtaining accurate lead analyses on these samples, we were wondering if such problems were encountered in the Noranda Laboratory regarding the assaying. Presumably, a satisfactory lead assaying procedure was used during the Noranda investigation, and we request that the details of this procedure be sent to us so that it can be forwarded to the Union Assay Office.

We will plan to hold in abeyance further testing of these samples until we receive your comments.

Sincerely yours,

THE GALIGHER COMPANY

R. O. Huch,  
Metallurgist

ROH:gc

LEADERS IN EXPERIENCE AND SERVICE

AIR  
MAIL

KERR ADDISON MINES LIMITED  
(FOR INTER-OFFICE USE ONLY)

8 NOV 8 1967

Y/S 33

cc Van 12

To P. M. Kavanagh From W. M. Sirola  
Subject Metallurgical Testing - Swim Lakes & Vangorda Deposits Date November 6, 1967.

Thank you for sending me the letter from Galigher regarding the impending test work.

I am a little concerned about the differences between the lead-zinc content of both deposits as reported by Galigher. Herewith a comparison of their assaying and that of Coast Eldridge:

	<u>Coast Eldridge</u>	<u>Galigher Co.</u>
Vangorda Split Core:	Pb - 3.04, Zn - 5.96	Pb - 1.4, Zn - 5.80
	9.00	7.2

We cannot draw a direct comparison between Galigher's assay of Swim Lakes core which was 2.1 Pb and 5.75 Zn with our calculated grade of 3.5 Pb and 5.4 Zn but it seems to me that in both cases the ratios of lead to zinc are disproportionate in the Galigher assays.

It is my suggestion that the Galigher people should have both samples reassayed, preferably at another lab.

*Bill*  
W. M. Sirola.

WMS/lk

08-115-33  
NOV 3 1967

# THE GALIGHER COMPANY

ESTABLISHED 1901



CABLE ADDRESS  
GALSAL

545-585 WEST EIGHTH SOUTH STREET  
P. O. BOX 209  
SALT LAKE CITY, UTAH, 84110  
U.S.A.

W.S.R.	
K.C.G.	
J.H.S.	✓
E.F.	✓
R.D.S.	
B.C.B.	
P.M.K.	✓
G.W.M.	
R.O.M.	
C.K.W.	
J.B.S.	
G.P.R.	
K.F.L.	
J.A.P.	
E.C.J.	○

TELEPHONE  
359-8731  
AREA CODE 801

November 1, 1967

Mr. Paul M. Kavanagh  
Vice President - Exploration  
Kerr Addison Mines Ltd.  
Suite 1600 - 44 King Street West  
Toronto 1, Ontario  
Canada

Dear Mr. Kavanagh:

We are pleased to inform you that the two ore samples have been received, as well as your letter of October 23rd with the microscopic report. It appears from the latter that the mineral associations are much more intimate in your ore samples and this, most likely, is the probable reason that the Noranda laboratory had difficulty in concentrating the lead and zinc. It will be interesting to see the response to our flowsheet.

Head samples were prepared from the two samples, these being submitted to the Union Assay Office of this city for analysis. They reported the following:

<u>Our Lot No.</u>	<u>Deposit</u>	<u>% Pb</u>	<u>% Zn</u>
1759-A	Vangorda	1.4	5.80
1759-B	Swim Lake	2.1	5.75

We have not, as yet, started the testing of these two samples, but hope to do so soon. As soon as indicative results are obtained, we will plan to contact you.

Sincerely yours,

THE GALIGHER COMPANY

R. O. Huch  
Metallurgist

ROH/do

*Copy sent to Sirola  
M.K.*

LEADERS IN EXPERIENCE AND SERVICE

AIR  
MAIL

KERR ADDISON MINES LIMITED  
44 KING STREET WEST  
TORONTO 1, ONTARIO

cc of all this  
for Y/S 3

COPY

Vancouver 12

✓  
✓  
✓

October 10th, 1967.

Mr. Richard O. Huch,  
The Galigher Company,  
545-585 West Eighth South Street,  
Salt Lake City, Utah,  
U. S. A.

cc

○

Dear Mr. Huch:

Thank you for your letter of September 28th, 1967.

Today we are forwarding to you via air express from our Vancouver office one 50 lb. plus sample of split core from our Swim Lakes deposit.

This week we will be forwarding to you via air express from our Toronto office one 45 lb. sample of crushed core from our Vangorda deposit.

We estimate that both samples grade 8-10% combined lead-zinc.

Swim - 3.5 Pb  
5.0 Zn  
Vangorda - 2.8 Pb  
5.6 Zn

We wish that you would carry out preliminary metallurgical tests on each of the samples separately and at your earliest convenience.

Yours sincerely,

Paul K. Kavanagh  
Vice-President - Exploration.

PKK:sw

cc: W. M. Siroaa.

SEP 29 1967

# KERR ADDISON MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

To P. M. Kavanagh From W. M. Sirola

Subject Swim Lakes Core Sample For Metallurgical Testing Date September 27, 1967 ✓

Fred Chow has returned from Swim Lakes and has taken representative samples from the following drill hole sequence:



<u>A-4</u>	193 - 211 —	193 - 212	
	299 - 307 —	299 - 304	- 304 - 309
	425 - 435 ✓		
<u>A-29</u>	130 - 135.5 —	130.5 - 135.5	
	176 - 181 ✓		
	216 - 230 —	216 - 230.7	
<u>A-10</u>	356.2 - 362 —	356.2 - 360.9	- 360.9 - 365.9
	418.0 - 423 ✓		
<u>A-20</u>	160 - 164 ✓		

*Fred did not adhere exactly to exact original sample limits.*

We await your pleasure regarding shipment to the Galigher Company in Salt Lake City.

*I calculate an overall grade of 3.5% Pb - 5.0% Zn.*

*Bill*  
W. M. Sirola.

WMS/lk

# KERR ADLISON MINES LIMITED

(FOR INTER-OFFICE USE ONLY)

afB  
H.S. ✓  
J.H.S. ✓  
L.F. ✓  
R.D.S. ✓  
H.C. ✓  
S.A. ✓  
S. ✓  
R. ✓  
H.S. ✓  
G.P.R. ✓  
K.L. ✓  
A.H. ✓  
E.C.J. ✓

To W. M. Sirola From P. M. Kavanagh

Subject Swina Lakes Core Sample for Metallurgical Testing. Date September 21st, 1967

This is to confirm the arrangements we made over the phone on Monday, i.e. that Fred is to make a 50 lb. composite sample from mineralized sections of Holes A-4, A-6, A-10, and A-29, the sample to be representative of grain size and particularly to contain 8-10% combined lead-zinc. He is to use the remaining half-core for the sample.

Fred is to forward the sample to the Vancouver office and when it arrives you are to let me know, and then await notice from me to forward it on to The Galigher Company in Salt Lake City.

I want you to send me the data concerning the exact footage intervals that Fred uses from each hole in making the composite sample.

Paul M. Kavanagh

PMK:sw

cc: F. Chow.