

PROPOSED EXPLORATION

ECHO, DELTA AND CAPA MINERAL CLAIMS

April 1 - December 31, 1972

Latitude : 62°12'N.

Longitude : 132°45'W.

N.T.S. 105-K-2

By:

J. S. BROCK

DYNASTY EXPLORATIONS LIMITED

June, 1972

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Dynasty Explorations Limited is the holder of an 80% interest in the claims which are the subject of this application and Aylas Explorations Limited is the holder of a 20% interest.

Dynasty Explorations Ltd., the applicant herein, is negotiating on behalf of itself and Atlas, a joint venture agreement with three other companies which contemplates the assignment to those companies of up to a 60% interest in the subject claims.

Three Companies will be eligible to acquire an interest in the claims if they make their share of expenditures specified in the Joint Venture Agreement and a Feasibility Report is completed.

The Companies, and the interest which each may acquire are as follows:

Midwest Oil Production Ltd. 1700 Broadway, Suite 220 Denver, Colorado 80202	36%
General Crude Oil Company P.O. Box 2252 Houston, Texas 77001	12%
Aquitaine Company of Canada Ltd. 2000 Aquitaine Tower 540 - 5th Avenue S.W. Calgary, Alta.	12%

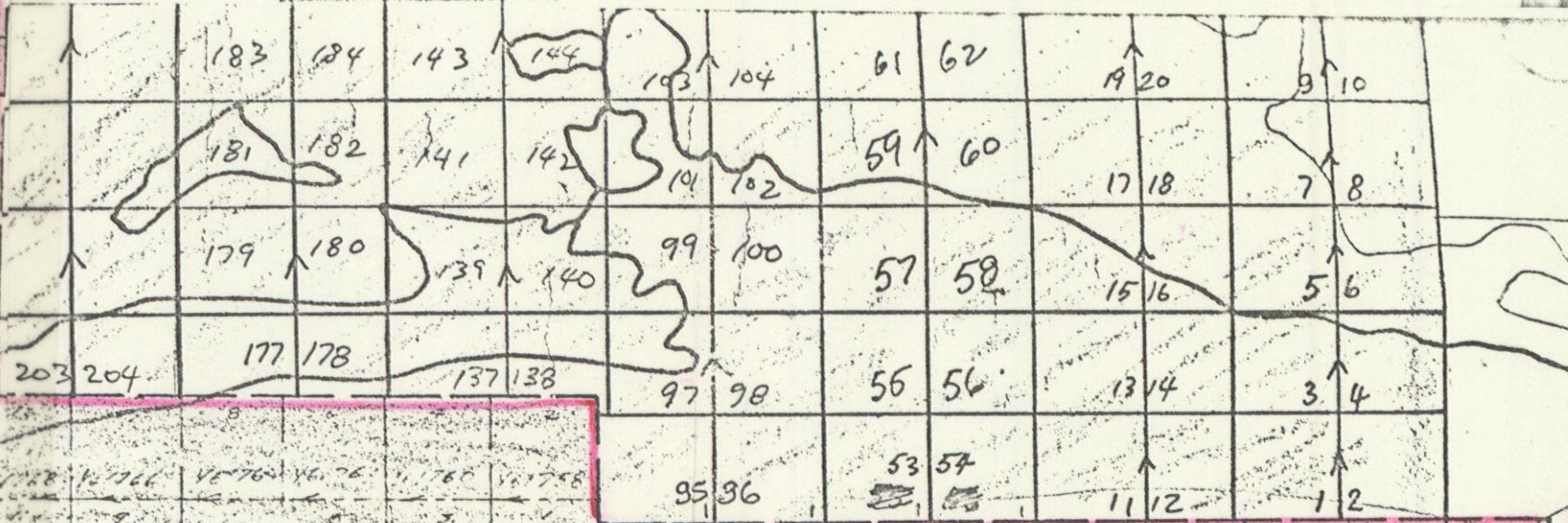
Dynasty's interest may be further reduced if it fails to contribute to the Joint Venture in the subsequent years.

The applicant hereby requests the approval of the Minister to the assignment of interests contemplated herein.

DELTA				
34	33	32	31	30
Y61732	Y61730	Y61728	Y61726	Y62003
38	36	34	32	30
Y61731	Y61729	Y61727	Y61725	Y62002
29	28	27	26	25
Y62101	Y62100	Y62099	Y62098	Y62097
24	22	20	18	16
Y62096	Y62094	Y62092	Y62090	Y62088
23	21	19	17	15
Y62095	Y62093	Y62091	Y62089	Y62087

N.T.S. 105-K-2  
1" = 1/2 MILE

DELTA						
1	3	5	7	9	11	13
Y62073	Y62075	Y62077	Y62079	Y62081	Y62083	Y62085
2	4	6	8	10	12	14
Y62074	Y62076	Y62078	Y62080	Y62082	Y62084	Y62086



46	144	142	140	138	136	134	132	130
Y61902	Y61900	Y61898	Y61896	Y61894	Y61892	Y61890	Y61888	Y61886
145	143	141	139	137	135	133	131	
Y61899	Y61897	Y61895	Y61893	Y61891	Y61889	Y61887		
50	48	46	44	42	40	38	36	34
Y61806	Y61804	Y61802	Y61800	Y61798	Y61796	Y61794	Y61792	Y61790
49	47	45	43	41	39	37	35	33
Y61805	Y61803	Y61801	Y61799	Y61797	Y61795	Y61793	Y61791	Y61789
86	84	82	80	78	76	74	72	70
Y61842	Y61840	Y61838	Y61836	Y61834	Y61832	Y61830	Y61828	Y61826
85	83	81	79	77	75	73	71	69
Y61841	Y61839	Y61837	Y61835	Y61833	Y61831	Y61829	Y61827	Y61825

18	16	14	12	10	8	6	4	2
Y61774	Y61772	Y61770	Y61768	Y61766	Y61764	Y61762	Y61760	Y61758
17	15	13	11	9	7	5	3	1
Y61773	Y61771	Y61769	Y61767	Y61765	Y61763	Y61761	Y61759	Y61757
36	34	32	30	28	26	24	22	20
Y61792	Y61790	Y61788	Y61786	Y61784	Y61782	Y61780	Y61778	Y61776
35	33	31	29	27	25	23	21	19
Y61791	Y61789	Y61787	Y61785	Y61783	Y61781	Y61779	Y61777	Y61775
58	56	54	52	50	48	46	44	42
Y61854	Y61852	Y61850	Y61848	Y61846	Y61844	Y61842	Y61840	Y61838
57	55	53	51	49	47	45	43	41
Y61853	Y61851	Y61849	Y61847	Y61845	Y61843	Y61841	Y61839	Y61837

95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Y61504	Y61502	Y61500	Y61498	Y61496	Y61494	Y61492	Y61490	Y61488	Y61486	Y61484	Y61482	Y61480	Y61478	Y61476	Y61474	Y61472	Y61470	Y61468	Y61466	Y61464	Y61462	Y61460	Y61458	Y61456	Y61454	Y61452	Y61450	Y61448	Y61446	Y61444	Y61442	Y61440	Y61438	Y61436	Y61434	Y61432	Y61430	Y61428	Y61426	Y61424	Y61422	Y61420	Y61418	Y61416	Y61414	Y61412	Y61410	Y61408	Y61406	Y61404	Y61402	Y61400	Y61398	Y61396	Y61394	Y61392	Y61390	Y61388	Y61386	Y61384	Y61382	Y61380	Y61378	Y61376	Y61374	Y61372	Y61370	Y61368	Y61366	Y61364	Y61362	Y61360	Y61358	Y61356	Y61354	Y61352	Y61350	Y61348	Y61346	Y61344	Y61342	Y61340	Y61338	Y61336	Y61334	Y61332	Y61330	Y61328	Y61326	Y61324	Y61322	Y61320	Y61318	Y61316	Y61314	Y61312	Y61310	Y61308	Y61306	Y61304	Y61302	Y61300	Y61298	Y61296	Y61294	Y61292	Y61290	Y61288	Y61286	Y61284	Y61282	Y61280	Y61278	Y61276	Y61274	Y61272	Y61270	Y61268	Y61266	Y61264	Y61262	Y61260	Y61258	Y61256	Y61254	Y61252	Y61250	Y61248	Y61246	Y61244	Y61242	Y61240	Y61238	Y61236	Y61234	Y61232	Y61230	Y61228	Y61226	Y61224	Y61222	Y61220	Y61218	Y61216	Y61214	Y61212	Y61210	Y61208	Y61206	Y61204	Y61202	Y61200	Y61198	Y61196	Y61194	Y61192	Y61190	Y61188	Y61186	Y61184	Y61182	Y61180	Y61178	Y61176	Y61174	Y61172	Y61170	Y61168	Y61166	Y61164	Y61162	Y61160	Y61158	Y61156	Y61154	Y61152	Y61150	Y61148	Y61146	Y61144	Y61142	Y61140	Y61138	Y61136	Y61134	Y61132	Y61130	Y61128	Y61126	Y61124	Y61122	Y61120	Y61118	Y61116	Y61114	Y61112	Y61110	Y61108	Y61106	Y61104	Y61102	Y61100	Y61098	Y61096	Y61094	Y61092	Y61090	Y61088	Y61086	Y61084	Y61082	Y61080	Y61078	Y61076	Y61074	Y61072	Y61070	Y61068	Y61066	Y61064	Y61062	Y61060	Y61058	Y61056	Y61054	Y61052	Y61050	Y61048	Y61046	Y61044	Y61042	Y61040	Y61038	Y61036	Y61034	Y61032	Y61030	Y61028	Y61026	Y61024	Y61022	Y61020	Y61018	Y61016	Y61014	Y61012	Y61010	Y61008	Y61006	Y61004	Y61002	Y61000	Y60998	Y60996	Y60994	Y60992	Y60990	Y60988	Y60986	Y60984	Y60982	Y60980	Y60978	Y60976	Y60974	Y60972	Y60970	Y60968	Y60966	Y60964	Y60962	Y60960	Y60958	Y60956	Y60954	Y60952	Y60950	Y60948	Y60946	Y60944	Y60942	Y60940	Y60938	Y60936	Y60934	Y60932	Y60930	Y60928	Y60926	Y60924	Y60922	Y60920	Y60918	Y60916	Y60914	Y60912	Y60910	Y60908	Y60906	Y60904	Y60902	Y60900	Y60898	Y60896	Y60894	Y60892	Y60890	Y60888	Y60886	Y60884	Y60882	Y60880	Y60878	Y60876	Y60874	Y60872	Y60870	Y60868	Y60866	Y60864	Y60862	Y60860	Y60858	Y60856	Y60854	Y60852	Y60850	Y60848	Y60846	Y60844	Y60842	Y60840	Y60838	Y60836	Y60834	Y60832	Y60830	Y60828	Y60826	Y60824	Y60822	Y60820	Y60818	Y60816	Y60814	Y60812	Y60810	Y60808	Y60806	Y60804	Y60802	Y60800	Y60798	Y60796	Y60794	Y60792	Y60790	Y60788	Y60786	Y60784	Y60782	Y60780	Y60778	Y60776	Y60774	Y60772	Y60770	Y60768	Y60766	Y60764	Y60762	Y60760	Y60758	Y60756	Y60754	Y60752	Y60750	Y60748	Y60746	Y60744	Y60742	Y60740	Y60738	Y60736	Y60734	Y60732	Y60730	Y60728	Y60726	Y60724	Y60722	Y60720	Y60718	Y60716	Y60714	Y60712	Y60710	Y60708	Y60706	Y60704	Y60702	Y60700	Y60698	Y60696	Y60694	Y60692	Y60690	Y60688	Y60686	Y60684	Y60682	Y60680	Y60678	Y60676	Y60674	Y60672	Y60670	Y60668	Y60666	Y60664	Y60662	Y60660	Y60658	Y60656	Y60654	Y60652	Y60650	Y60648	Y60646	Y60644	Y60642	Y60640	Y60638	Y60636	Y60634	Y60632	Y60630	Y60628	Y60626	Y60624	Y60622	Y60620	Y60618	Y60616	Y60614	Y60612	Y60610	Y60608	Y60606	Y60604	Y60602	Y60600	Y60598	Y60596	Y60594	Y60592	Y60590	Y60588	Y60586	Y60584	Y60582	Y60580	Y60578	Y60576	Y60574	Y60572	Y60570	Y60568	Y60566	Y60564	Y60562	Y60560	Y60558	Y60556	Y60554	Y60552	Y60550	Y60548	Y60546	Y60544	Y60542	Y60540	Y60538	Y60536	Y60534	Y60532	Y60530	Y60528	Y60526	Y60524	Y60522	Y60520	Y60518	Y60516	Y60514	Y60512	Y60510	Y60508	Y60506	Y60504	Y60502	Y60500	Y60498	Y60496	Y60494	Y60492	Y60490	Y60488	Y60486	Y60484	Y60482	Y60480	Y60478	Y60476	Y60474	Y60472	Y60470	Y60468	Y60466	Y60464	Y60462	Y60460	Y60458	Y60456	Y60454	Y60452	Y60450	Y60448	Y60446	Y60444	Y60442	Y60440	Y60438	Y60436	Y60434	Y60432	Y60430	Y60428	Y60426	Y60424	Y60422	Y60420	Y60418	Y60416	Y60414	Y60412	Y60410	Y60408	Y60406	Y60404	Y60402	Y60400	Y60398	Y60396	Y60394	Y60392	Y60390	Y60388	Y60386	Y60384	Y60382	Y60380	Y60378	Y60376	Y60374	Y60372	Y60370	Y60368	Y60366	Y60364	Y60362	Y60360	Y60358	Y60356	Y60354	Y60352	Y60350	Y60348	Y60346	Y60344	Y60342	Y60340	Y60338	Y60336	Y60334	Y60332	Y60330	Y60328	Y60326	Y60324	Y60322	Y60320	Y60318	Y60316	Y60314	Y60312	Y60310	Y60308	Y60306	Y60304	Y60302	Y60300	Y60298	Y60296	Y60294	Y60292	Y60290	Y60288	Y60286	Y60284	Y60282	Y60280	Y60278	Y60276	Y60274	Y60272	Y60270	Y60268	Y60266	Y60264	Y60262	Y60260	Y60258	Y60256	Y60254	Y60252	Y60250	Y60248	Y60246	Y60244	Y60242	Y60240	Y60238	Y60236	Y60234	Y60232	Y60230	Y60228	Y60226	Y60224	Y60222	Y60220	Y60218	Y60216	Y60214	Y60212	Y60210	Y60208	Y60206	Y60204	Y60202	Y60200	Y60198	Y60196	Y60194	Y60192	Y60190	Y60188	Y60186	Y60184	Y60182	Y60180	Y60178	Y60176	Y60174	Y60172	Y60170	Y60168	Y60166	Y60164	Y60162	Y60160	Y60158	Y60156	Y60154	Y60152	Y60150	Y60148	Y60146	Y60144	Y60142	Y60140	Y60138	Y60136	Y60134	Y60132	Y60130	Y60128	Y60126	Y60124	Y60122	Y60120	Y60118	Y60116	Y60114	Y60112	Y60110	Y60108	Y60106	Y60104	Y60102	Y60100	Y60098	Y60096	Y60094	Y60092	Y60090	Y60088	Y60086	Y60084	Y60082	Y60080	Y60078	Y60076	Y60074	Y60072	Y60070	Y60068	Y60066	Y60064	Y60062	Y60060	Y60058	Y60056	Y60054	Y60052	Y60050	Y60048	Y60046	Y60044	Y60042	Y60040	Y60038	Y60036	Y60034	Y60032	Y60030	Y60028	Y60026	Y60024	Y60022	Y60020	Y60018	Y60016	Y60014	Y60012	Y60010	Y60008	Y60006	Y60004	Y60002	Y60000

ECHO																	
86	84	82	80	78	76	74	72	70	68	66	64	62	60	58	56	54	52
Y61805	Y61803	Y61801															

Claim No.	Grant No.	No. of Claims	Staked by	Recording Date	Transfer Information		Due Date	Assessment Work and Remarks
					To	Date		
1-8	Y61509-Y61516	8	T. Skonseng	July 30/71			July 30/72	
9-16	Y61517-Y61524	8	D. Pastro	July 30/71			July 30/72	
17-24	Y61733-Y61740	8	G. Strarrup	Aug. 27/71			Aug. 27/72	
25-32	Y61741-Y61748	8	S. Cromwell	Aug. 27/71			Aug. 27/72	
33-36	Y61541-Y61544	4	R. Gislason	July 30/71			July 30/72	
37-44	Y61749-Y61756	8	P. Rolls	Aug. 27/71			Aug. 27/72	

Claim No.	Grant No.	No. of Claims	Staked by	Recording Date	Transfer Information		Due Date	Assessment Work and Remarks
					TO	Date		
32-39	Y61725-Y61732	8	P. Morton	Aug. 27/71			Aug. 27/72	
1-8	Y62073-Y62080	8	W. Roberts	Sept. 17/71			Sept. 17/72	
9-16	Y62081-Y62088	8	B. Roberts	Sept. 17/71			Sept. 17/72	
17-24	Y62089-Y62096	8	R. Wooley	Sept. 17/71			Sept. 17/72	
25-31	Y62097-Y62103	7	J. Rolls	Sept. 17/71			Sept. 17/72	

Claim No.	Grant No.	No. of Claims	Staked by	Recording Date	Transfer Information		Due Date	Assessment Work and Remarks
					To	Date		
1-8	Y61757-Y61764	8	J.S. Brock	Aug. 27/71			Aug. 27/72	
9-16	Y61765-Y61772	8	M. Rolls	Aug. 27/71			Aug. 27/72	
17-24	Y61773-Y61780	8	I.H.S.Vandenbos	Aug. 27/71			Aug. 27/72	
25-32	Y61781-Y61788	8	Eric Phillips	Aug. 27/71			Aug. 27/72	
33-40	Y61789-Y61796	8	W. C. Carson	Aug. 27/71			Aug. 27/72	
41-48	Y61797-Y61804	8	Jack Rolls	Aug. 27/71			Aug. 27/72	
49-56	Y61805-Y61812	8	H. Carson	Aug. 27/71			Aug. 27/72	
57-64	Y61813-Y61820	8	Judy Carson	Aug. 27/71			Aug. 27/72	
65-72	Y61821-Y61828	8	Bea Rolls	Aug. 27/71			Aug. 27/72	
73-80	Y61829-Y61836	8	L. Romfo	Aug. 27/71			Aug. 27/72	
81-88	Y61837-Y61844	8	Lee Carson	Aug. 27/71			Aug. 27/72	
89-96	Y61845-Y61852	8	N. Andrews	Aug. 27/71			Aug. 27/72	
97-104	Y61853-Y61860	8	M. J. Wood	Aug. 27/71			Aug. 27/72	
105-112	Y61861-Y61868	8	T. Churchill	Aug. 27/71			Aug. 27/72	
113-120	Y61869-Y61876	8	E. Churchill	Aug. 27/71			Aug. 27/72	
121-128	Y61877-Y61884	8	B. George	Aug. 27/71			Aug. 27/72	
129-136	Y61885-Y61892	8	R. McDonnell	Aug. 27/71			Aug. 27/72	
137-144	Y61893-Y61900	8	D. Atkinson	Aug. 27/71			Aug. 27/72	
145-147	Y61901-Y61903	3	T. Charlie	Aug. 27/71			Aug. 27/72	

# DYNASTY EXPLORATIONS LIMITED

330 MARINE BUILDING  
355 BURRARD STREET  
VANCOUVER 1, B.C.

## PROPOSED EXPLORATION ECHO-DELTA AND CAPA MINERAL CLAIMS

### INTRODUCTION

The Echo-Delta-Capa mineral claims, situated at the southeast end of the Anvil Range, were staked in 1971 over an area of phyllitic rocks bearing quartzose sections similar to those hosting sulphide deposits in the Anvil area. The staked area exhibits numerous conductive and magnetic structures as derived from both airborne and ground geophysical surveys.

Previous work in the area by Dynasty Explorations, as well as Anvil Mining Corporation, involved airborne geophysical surveys, limited gravimetric, ground magnetic and soil sampling surveys as well as drilling of 7 rotary drill holes on geophysical targets.

A large-scale detailed regional mapping program carried out by Dynasty in 1970 and 1971, coupled with a re-evaluation of all previous exploration work, contributed to Dynasty's renewed interest in the area. New interpretations involving the position and extent of the quartzose-phyllite host north of Swim Lakes led to the staking of the Echo-Delta and Capa Claims.

The quartzose-rich sequence of phyllite are in part masked by overburden cover and overlying phyllites. Deep penetrating electromagnetic surveys were therefore required to aid in mapping structure and positioning deep conductors. This survey

information, coupled with former gravity, magnetic, geochemical and drill data, has outlined 6 targets requiring drill testing. Other drilling for stratigraphic positioning of the meta-sedimentary sequences is also required and will be carried out after completion of additional gravity and electromagnetic fill-in coverage.

#### CLAIMS LOCATION AND ACCESS

The Capa-Delta-Echo claims are immediately adjacent to each other and are considered as one group.

Original claim staking was carried out in 1971 by Dynasty personnel and residents of Ross River, specifically hired for staking purposes.

Where possible, claim lines were oriented along former 'cat' survey baselines originally cut in the area for earlier geophysical work in 1965 and 1966.

The property is centred amongst the Swim Lakes, 18 miles east of Faro and 20 miles northwest of Ross River. Access to the area is best made by float-equipped aircraft from Ross River to any of five lakes in close proximity to the property. Alternatively, helicopter charters can usually be arranged from either Faro or Ross River to the claim groups.

Access within the area is good. Numerous tote trails exist, all of which are passable by 'bombardier' type tracked vehicles. It is possible to use such vehicle support for transport to Faro, however, the distance and time involved makes fixed-wing aircraft support from Ross River less expensive and time-consuming.

### EXPLORATION HISTORY

During 1964 and 1965 Dynasty Explorations carried out a mineral exploration program over an area of approximately 250 square miles, located in the Anvil-Vangorda Creek area of east-central Yukon, 125 miles northwest of Whitehorse. The Vangorda deposit, a massive lead-zinc sulphide body discovered in 1953, was centred in the area proposed for exploration, a northwest trending belt located between the southwestern flank of the Anvil Range and Pelly River. To effectively explore this area, a combination of geophysical and geochemical methods were essential due to extensive overburden cover varying in depth from a few feet to over 300 feet.

In 1964 Dynasty staked the Nasty and Cub claim groups over much of the area now covered by the Echo-Delta-Capa claims. In 1964 aeromagnetic surveys were flown over most of the claim group and surrounding area. Ground magnetic and geochemical soil sampling surveys were completed on the Nasty claims. In 1965 ground magnetic and gravity surveys were completed on the Cub Claims. At the same time 3 rotary drill holes were drilled on targets on the Nasty claims and 5 holes were drilled on the Cub claims. Additional ground magnetic, electromagnetic and soil sampling surveys were done north of the original Nasty Claims, now Delta claims, during 1966 and 1967 by Anvil Mining Corporation.

Geophysics and rotary drill programs were also carried out in 1965 on the Sea Claims south of the Echo-Capa-Delta area and the Beta Claims north of the Echo-Capa-Delta area. Records of this exploration were also used in present evaluation of the currently held claims.

A review of all the mineral exploration completed in the south-east Anvil area up to 1971 has been carried out in conjunction with recent exploration findings from a detailed regional mapping program and a program of deep penetrating E.M. surveys. Previous

exploration efforts in the area are now considered to have been inadequate as the regional geology of the district was not understood and contributed little to the locating of drill targets. Geophysical techniques were not as refined and deep-reaching as present applications. Out of 8 rotary holes attempted within the area of the presently located claims, only 6 were successful in reaching bedrock. These holes were drilled to test major gravimetric anomalies and, in certain cases, magnetic anomalies. Recent geophysical surveys have indicated major structures that have not yet been drilled.

Exploration work carried out between 1970 and 1971 by Dynasty is summarized below:

- Geology - Completion of regional mapping to scale 1:1320 for claim group area plus surrounding district including Swim Lakes and Blind Creek.
- Logging of all diamond drill holes and rotary borehole cuttings for previous drilling on claim group and surrounding area.

Prospecting - Locating of minor sulphide occurrences, gossans and rust seepages.

- Geochemical Surveys - Soil sampling of gridded areas over geophysical anomalies.
- Recce. contour soil sampling.
  - Stream sediment sampling.
  - Lakeshore bottom silt sampling.
  - Rock geochem sampling of outcrops and all available diamond drill core and rotary drill cuttings.

Geophysical Surveys - deep penetration electromagnetic survey was carried out over the entire area of the three claim groups using the newly-developed Crone C.E.M. equipment.

- magnetometer surveys were carried out over two portions of the Echo claims that were not adequately covered by previous surveys.

## GEOLOGY

The claims are situated at the southeast end of the Anvil Range, an elongate, doubly plunging antiform consisting predominantly of late Proterozoic to early Cambrian age meta-sediments and volcanics. The core of the antiform is intruded by the Anvil batholith of probable Cretaceous age, for most of its length.

The meta-sediments consist of a reasonably simple sequence of pelitic to limey sediments that have been regionally metamorphosed to skarny schists, micaceous to quartzose schists, and sericitic to calcareous phyllites. Amphibolite lenses of probable extrusive volcanic origin occur throughout the section but are thickest and most extensive near the top of the sequence. The sediment pile is divided into two units, based on differences in composition, texture and metamorphic grade. The lower unit (Unit 2), thought to be about 2000 feet thick, consists of coarse-grained, sericite-biotite quartz schists with garnet, staurolite and andalusite porphyroblasts, distinctive green and purple banded skarn, massive lenticular beds of recrystallized grey limestone and lenses of amphibolite. The upper unit (Unit 3), consists of phyllitic rocks which are very quartzose at the base of the unit and very limey at the top. Amphibolite lenses make up a small but significant proportion of the rock. Unit 3 is probably at least 3000 feet thick and appears to overlie Unit 2 conformably.

The Anvil, Vangorda and Swim ore deposits, plus several less significant mineral occurrences, all occur in the quartzose rocks at the base of Unit 3. This close stratigraphic control of the ore deposits, coupled with the close correlation between the metamorphic grade of the ores and the metamorphic grade of their enclosing host rocks, suggest a syngenetic or very early epigenetic origin for the mineralization. The exact genetic relationship between the ore deposits and the enclosing host strata

is not known but there is no doubt whatever that some relationship does exist and therefore, the advisability of concentrating exploration in the quartzose phyllite member is obvious.

At the southeast end of the Anvil Range, the Anvil Batholith outcrops are not restricted to the core of the Anvil antiform but occur instead in a roughly subcircular pattern about 12-15 miles in diameter. The emplacement of these intrusions was accompanied by a considerable amount of local uplift and, as a result, a basin-like structure has been superimposed on the older geometry of the rocks in this area. Faults and other deformational events have not altered the regional geometry of the rocks significantly, so the present outcrop pattern, with older rocks outcropping in a somewhat circular pattern and younger rocks in the middle, is a result of the combined influence of the SE-plunging Anvil antiform and local uplifts associated with the emplacement of the Anvil batholith.

### Structure

The structure of the Anvil Range meta sediments is simple in its regional aspects but highly complex in detail. Work in the vicinity of the Anvil mine has indicated that at least five different phases of deformation have effected the Cambrian and older rock units. Not all of these deformational events have had significant effects on the fabric and geometry of the rocks but evidence for all can be found throughout the Anvil Range.

The oldest deformational structure visible in the rocks is a strong penetrative foliation which characterizes the phyllitic and schistose members of the sequence. This planar structure, S<sub>2</sub>, is marked by the strong preferred orientation of mica plates, and is the dominant foliation along which the rocks break. It is parallel to the axial plane of numerous small, rootless, isoclinal folds which are outlined by quartz-rich bands and probably represents an axial plane cleavage.

The older planar structure, marked by compositional layering and by preferred orientation of mica minerals between the S<sub>2</sub> planes, may be a relic bedding structure or could be an older foliation. In general, all evidence of original bedding lamination within rock units has been destroyed by the S<sub>2</sub> foliation. Where firm evidence of bedding orientation does exist, such as at contacts between limestone lenses and more schistose rocks, the S<sub>2</sub> foliation seems to be subparallel to the bedding, at least on a large scale. Quartz-rich bands within massive, recrystallized limestone beds parallel bedding and the S<sub>2</sub> foliation; these may reflect original compositional bands in the limestone but more likely were formed later, during the metamorphism of the sediment pile. The greenstone lenses tend to have a strong S<sub>2</sub> foliation (resulting from chlorite orientation) close to their contacts with enclosing strata, but are more

massive and structureless near the cores. A lineation resulting from the parallel alignment of amphibole prisms occurs in the internal zones of some greenstone lenses.

The S<sub>2</sub> foliation surface everywhere in the Anvil Range is deformed by small crenulations which trend at about 150° and are usually less than 1 or 2 mm. high. These crenulations, L<sub>3</sub>, show up best in the phyllites because of the finer grain size but they occur in the schists of Unit 2 as well. The L<sub>3</sub> crenulations do not seem to be related to any of the larger deformational features of the Anvil Range.

The S<sub>2</sub> foliation and the Cambrian rock units as a whole were deformed by a period of gentle folding, F<sub>4</sub>, which is thought to have occurred at some time prior to the intrusion of the batholith and the formation of the Anvil Antiform. The axis of these folds in the southeast part of the Anvil range trend at approximately 270° to 290° and spacing of anticlinal crests is on the order of 1 or 2 miles. These folds have second and third order minor folds associated with them and in some places a nearly vertical S<sub>4</sub> axial plane cleavage is present. This cleavage shows up best in the greenstone lenses. In the schist unit it may be outlined by the preferred orientation of large biotite flakes. It always seems to cut the main S<sub>2</sub> foliation at a high angle.

The later deformational events, including the uplift, faulting and folding related to the emplacement of the Anvil Batholith and faulting related to the Tintina Fault System, have had the major effect on the present outcrop pattern and orientation of the Cambrian rock units but seem to have done little to alter the internal fabric of the rocks. The exact genetic relation between the emplacement of the Anvil Batholith and the formation of the major antiformal structures associated with it can be interpreted in two ways. Since the granitic rocks outcrop in

the core of the antiform it can be suggested that they intruded the zone of dilation and fracturing along the apex of the fold structure. This implies that the Anvil Antiform is older than the Cretaceous intrusions. It can be argued with equal support that the Anvil Antiform was produced at the same time as the batholith, as a result of uplift by the actively intruding plutonic rocks. In general the contacts of the batholith tend to be sub-parallel to the bedding of the rocks it intrudes and xenoliths don't seem to be very common, so perhaps the second explanation is the better of the two. In any case, the end result is an outcrop pattern in which the oldest rocks, those of Unit 2, tend to be close to the granitic core of the Anvil Range, while the younger rocks tend to be farther out.

The known mineral deposits in the Anvil Range are tabular structures that conform closely to the  $S_2$  foliation and tend to be elongated in a NW-SE direction, parallel to the general strike of the Anvil Antiform. The relative importance of original bedding, metamorphism and deformation in determining the present orientation of the orebodies is difficult to evaluate. It seems likely that structure and metamorphism have had a profound effect on the ore deposits and their present forms are probably due to these factors more than to primary attitude. In evaluating geophysical anomalies, the orientation of known deposits relative to the  $S_2$  structures must be kept in mind.

### Summary of Geology on the Capa-Delta-Echo Claims

Outcrops are uncommon on most of the area covered by the claims, but a reasonably reliable conception of bedrock geology can be obtained by projecting geologic contacts into the claim groups from surrounding areas that are better exposed. The 1965 rotary drill holes on the Capa and Echo claims, the geophysical surveys and photointerpretation, have all aided in mapping the claim group area.

Virtually all of the Capa and Echo claim groups are underlain by the quartz-rich lower member of the phyllite unit. Graphite-rich beds in Units 3a and 3b show up well on the electromagnetic surveys. The location and relative strike slip movement of some of the faults, as well as the position of other structures on the claims, have been postulated on the basis of electromagnetic information. The western part of the Echo claims, north of Moose Lake, is on strike with the quartz-rich phyllite band that encloses the copper-zinc mineral showings on the Sea claims, south of Swim Lake.

The surface bedrock geology on the Delta claims consists of phyllitic rocks that are higher in the section than the favourable quartz phyllite unit. However, the presence on the claim group of a prominent NE trending fault and east-west syncline, both with associated geophysical and geochemical anomalies, makes the claim group interesting. It seems possible that mineralization could have been mobilized upward along the fault from mineralized sections of the underlying Unit 3a. Minor mineral showings related to shear zones occur on the Sea claims about 4 -miles to the south.

The northwest portion of the Echo claims is probably underlain by Unit 3b. Unit 3a may underly 3b at reasonably shallow depths on the topographically lower areas near Echo and Nasty Lakes.

The relative location of the contact between Unit 3a and 3b is uncertain on this part of the claim group and will only be elucidated when more drill hole information is available.

Drill Logs and Lithochemical Profiles

In the course of mapping the Capa-Delta-Echo claims, all previous drill hole logs were evaluated and, in some cases, the holes were re-logged. Geochemical samples were taken for each 10 foot interval on two of the rotary drill holes on the property and for each 25 foot interval on five of the drill holes on the Sea claims, one mile west of the property.

## GEOCHEMICAL SURVEYS

Geochemical work in the Capa-Delta-Echo area included soil sample surveys, stream silt sampling, lake bottom silt sampling, and rock geochemical sampling of diamond drill core and rotary drill chip samples. Much of the geochemical work was experimental in nature and was intended to evaluate the effectiveness of various geochemical methods in the Anvil Range.

### (a) Soil Sampling Surveys

In general, the presence of permafrost and deep transported overburden in much of the Anvil Range makes soil sampling surveys unreliable. Over both the Anvil and Vangorda ore bodies the geochemical response was very spotty. For these reasons soil sampling is not considered to be a reliable exploration method in the Anvil Range.

Soil sampling was carried out over two small areas, one on the Echo claims south of Cub Lake and one on the Delta claims northwest of Cub Lake. Previous soil sampling surveys were carried out over various parts of the Echo and Delta claims and over areas north and east of Cub Lake. For the 1971 survey, samples were taken from the "B" or "B+C" soil horizons and were analyzed using an  $\text{HClO}_4$  (total extraction) leach. Sampling and analysis methods used for the previous surveys is not known.

No good, extensive geochemical anomalies were discovered by our soil sampling work or by previous surveys. All anomalies indicated on the "Geochem Interpretation" maps are either very weak or very spotty, involving at most a few samples. The highest value encountered on any survey was a 1300 ppm Zn. that occurred on the former Nasty claims.

Occasional values for Cu and Zn tend to be quite high in a band that begins on the slopes north of Nasty Lake and extends around the hillside over much of the Delta claims. Some copper values in this area range up to over 200 ppm. It is probable that these generally higher values are a result of the high metal content of the graphitic bedrock underlying this region. However, some of the highest values on the Delta claims occur in close association with the projected intersection of an  $F_4$  fold axis and a major NE trending fault, so some structurally-controlled concentration of mineralization may be indicated.

(b) Silt Sampling Surveys

In an attempt to avoid some of the limitations of soil sampling, a new silt sampling geochemical method was tried. Silt samples were collected from most streams and also from below the water surface along the shores of all lakes and ponds throughout the Swim Lakes area. There are several advantages to the silt sampling as opposed to the soil sampling geochemical approach:

- (1) The chemical environment for all the samples is very uniform.
- (2) The sample material itself is more uniform - the problem of obtaining all samples from the same soil horizon is avoided.
- (3) Fewer samples must be collected and analyzed, and the collecting of the samples is easier.

Lakes and streams are well distributed throughout the Swim Lakes area. Samples were collected at about 1000 foot intervals. Deep organic muds were encountered in some streams and ponds, and these were not sampled. A small boat was found to be useful for much of the lake shore sampling. The -80 mesh size fraction of the samples was analyzed using an  $HClO_4$  (total extraction) leach.

Histograms were drawn for the results and were used to determine the threshold values. Four areas with anomalous values were discovered on the Capa-Delta-Echo claims:

- (1) Two anomalous lake samples at the southwest end of Moose Lake occur in close proximity to a coincident ground magnetic and C.E.M. anomaly. This combined geochem-geophysical anomaly is on strike with the copper-zinc mineralization on the Sea claims one mile to the west. This should be regarded as a very high priority area to be tested with a drill hole.

A single stream silt, anomalous in copper, which occurs near the end of Moose Lake is downslope from some mineralized shear zones on the Sea claims and probably is related to those.

- (2) A single sample on the north shore of a small lake east of Echo Lake is anomalous in zinc. It is near a gravity anomaly which is coincident in part with a long C.E.M. conductor. This area also warrants testing with at least one drill hole.
- (3) Two stream silt samples at the east end of Moose Lake are anomalous for lead and zinc. The stream from which these samples were taken drains a swampy area which contains a weak magnetic anomaly. The samples are on strike with a long C.E.M. anomaly that lies a few hundred feet to the west.
- (4) Two samples on the south shore of Cub Lake were anomalous in copper. These are close to an old camp location and could possibly be the result of contamination from garbage or other junk left at the site

from previous years. They do not coincide well with any geophysical anomalies but they are on strike with a long C.E.M. conductor which lies to the southwest.

As a test of the method, lake-bottom silts were taken around the shoreline of Swim Lake to see if the Swim Deposit or the Sea claims mineral showings would have been discovered by a geochem survey of this type. The main drainage off the Swim orebody is into Swim Creek rather than into Swim Lake but nevertheless some anomalous samples do occur at the southwest corner of Swim Lake. Similarly, the main drainage from the Sea mineral showings is to the south, yet here as well some anomalous samples occur. These results indicate that lake bottom silt sampling may be a reliable geochemical method in the Anvil Range.

(c) Rock Geochemical Surveys

Rock chip samples were analyzed from a total of seven drill holes in the vicinity of the Capa-Delta-Echo claims. The holes for which geochemical profiles were determined included one hole on the Capa claims, one on the Nasty claims, and five on the Sea claims, one-half mile west of the property. The purpose of the rock analyses was to try to establish geochemical background values for different rock units which would aid in logging future rotary drill holes in the area. Samples were taken for every 10 foot interval for the two rotary holes sampled, Cub RH #2 and Nasty RH #3. The Sea diamond drill holes were analyzed over 25 foot intervals, each sample consisting of chips taken from the core at about every foot. This phase of the geochemical work was a distinct success in that the three members of the phyllite unit analyzed

were found to have distinctly different geochemical backgrounds for copper, lead and zinc. The following table summarizes the background geochemical data obtained from the two rotary holes:

<u>Rock Type</u>	<u>Mean Values</u>		
	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>
Non-graphitic 3b:	40 ppm	25 ppm	75 ppm
Graphitic lenses in 3b:	60	45	175
Graphitic,qtzose 3a:	120	30	300

The data from the Sea holes was not used in producing this table because all these holes are in mineralized zones, however, the analyses from unmineralized portions of the holes fit well with the data given for the "3a" rock type in the table. Geochemical data for greenstones is variable but tends to be high in copper, around 100 ppm, and about average in lead and zinc, around 30 and 100 ppm, respectively. The change in background geochemical values is very sharp at the contact between Unit 3b and 3a, even though there is not a significant change in the appearance of the drill cuttings.

Rock geochemical analysis should definitely be carried out on all rotary holes drilled in this area in the future. It should be a reliable aid in logging the holes and, as well, as more information becomes available, it may be possible to follow geochemical trends within the individual rock units.

## GEOPHYSICS

Previous geophysical work carried out between 1964 and 1968 throughout the area now covered by the Capa-Delta-Echo claims has included electromagnetic and aeromagnetic surveys, ground J.E.M. surveys, ground magnetic surveys and gravity surveys. Subsequent to recent compilation of these results, two main deficiencies were discovered. The original surveys were laid out with almost no regard to geology and, as a result, much potentially favourable ground was never covered by any ground geophysical survey. Secondly, the instruments used for both the A.E.M. and the ground E.M. were of limited depth penetration, less than 200 feet for both survey methods. However, of the numerous anomalies that were discovered through previous geophysical surveys, only four have ever been investigated with drill holes. To obtain a more complete geophysical picture, Dynasty, in 1971, completed ground magnetic surveys over all parts of the Capa-Delta-Echo claims that had not been covered previously either by air or ground magnetic surveys. In addition, Dynasty carried out a ground E.M. survey over virtually the entire area of the claims using a deeper penetrating Crone C.E.M. instrument. Recent geophysical surveys, coupled with new interpretations of previous geophysical results, have indicated significant anomalies and major structures that require drill testing.

### (a) Magnetic Anomalies

A compilation map shows all magnetic anomalies outlined on the claim group. The most significant features are located on Capa L16E, 8S, south of Cub Lake, also reflected by the aeromagnetic survey as well. This anomaly is centred in a marshy area of probable deep overburden and is on strike with C.E.M. and gravimetric anomalies that lie about 3000 feet to the west.

The second anomaly is at the west end of Moose Lake and coincides with a small C.E.M. conductor as well as some geochemical anomalies in silts. This anomaly is on strike with the pyrrhotite-rich mineralized zones on the Sea claims and may indicate an extension of those deposits.

(b) Electromagnetic Anomalies

The Crone C.E.M. instrument is an improved version of the reliable and well known Crone J.E.M. instrument. It consists of two coils which can be utilized in a variety of configurations. For our survey, the "horizontal shootback" method was used, with the coils transmitting and receiving in a horizontal position. The depth penetration capability of the C.E.M., as with the J.E.M., is a function of the coil separation. Under conditions of low background noise, the C.E.M. is capable of detecting conductors at 600 foot depths with a coil separation of 800 feet. Under the high noise conditions that prevailed while we were doing our survey, the maximum possible coil separation was 500 feet, which should result in a depth penetration of just under 500 feet. In a trail run over the Faro orebody, the C.E.M. clearly detected sulphides at a depth in excess of 300 feet.

The C.E.M. survey detected the presence of numerous electromagnetic anomalies on the Capa-Delta-Echo claims. Most of these anomalies are very long, narrow, formational-looking conductors which can probably be correlated with graphite-bearing lenses in Units 3a and 3b. This does not make these anomalous areas any less interesting, however, since both the Vangorda and the Swim ore deposits are located within similar large E.M. conductors reflecting graphitic horizons. The axis of most of these conductors

tends to conform with the strike of the  $S_2$  foliation of the underlying phyllite bedrock. Most of these conductors showed up on the A.E.M. survey as well.

As can be seen from the compilation map, a major band of E.M. anomalies begins on the Echo claims east of Swim Lake, extends discontinuously along the hillside north of Nasty Lake, and then curves around through the Delta claims in a N-NW orientation. This series of conductors is correlated tentatively with graphitic phyllites in Unit 3b. Another major anomaly begins in Echo Lake and extends to the northeast for at least  $2\frac{1}{2}$  miles. Two subparallel conductors lie to the south of this one. These anomalies probably reflect graphitic lenses in Unit 3a. The main E.M. anomalies on the south and east parts of the Capa claims as well are most certainly within Unit 3a.

In addition to these major conductors, many smaller anomalies occur. The most interesting of these is a small conductor at the west end of Moose Lake, which coincides with magnetic and geochem anomalies. A minor anomaly between Echo Lake and Nasty Lake is interesting in that its longest dimension is oriented perpendicular to the regional strike of the rocks in this area. Another small anomaly at the southern end of Line 64E on the Capa claims is close to a rust-stained creek. Several other minor C.E.M. anomalies occur over potentially favourable Unit 3a phyllite.

Several conductors were discovered during the 1965 A.E.M. survey in areas peripheral to the claims. At least one of these anomalies warrants further investigation. This anomaly, which lies just north of Cub Lake, is very

intense and is partly coincident with some weak geochemical and aeromagnetic anomalies.

None of the numerous large and small E.M. anomalies on the Capa-Delta-Echo claims were tested by the 7 rotary drill holes drilled in the area in 1965. Only two of the rotary drill holes were close to E.M. anomalies, and even these missed the main axis of the conductive zone.

All maximum field strength ratios and resultant dip angle anomalies are recommended for drill testing. All conductive axis coincident or partially coincident with magnetic, gravity or geochemical anomalies will be drilled as well.

PROPOSED EXPLORATION

Drilling of numerous geophysical targets and other specific areas for additional geologic information is recommended for a continuation of this program through 1972.

Emphasis on a continued regional geologic mapping program to further define the limits of the phyllite unit is also warranted. Regional and detailed mapping should be continued next season throughout areas of 'open' ground where quartz-rich phyllite probably occurs. The known section of Unit 3a should be traced north from the Capa group through to the general area of the Ace claims.

Additional claim staking of geophysical anomalies found over areas of favourable geology will be carried out in anticipation of follow-up drilling.

Certain areas of conductive response will be further investigated with gravity, magnetic and electromagnetic surveys. These areas are outlined on an accompanying map showing proposed work.

Of primary importance is the need for drill information from existing target areas. In view of this, the following holes to a maximum depth of 600 feet are recommended. It is anticipated that the majority of these holes will be short ones, 200 to 300 feet deep, dependant on on-site geologic observations of core during the actual drilling

Rock geochemical analysis will be carried out on all holes drilled to aid in logging as well as to possibly follow significant geochemical trends within the individual rock units.

Overburden samples will also be taken for geochemical analysis in the hope that subsurface sulphide float trains, not geochemically obvious from surface sampling, may be mapped.

Proposed Drill Targets

Echo-Capa-Delta Claims

<u>Hole No.</u>	<u>Location</u>	<u>Target</u>
72-1	Moose Lake Grid L 152W 50S	(a) Ground mag (b) C.E.M. anomaly (c) Geochem (d) Proximity to Sea Showings and favourable rock types.
72-2	Delta Grid L120N 35E	(a) Axis of major conductor (b) Possible F <sub>4</sub> fold axis (c) Weak Cu geochem
72-3	Delta Grid L128N 35E	(a) Strong Cu-Zn geochem (b) Probable fault area (c) Edge of C.E.M. anomaly
72-4	North of Cub Lake	(a) Strong A.E.M. anomaly (b) Weak associated aeromag and geochem. (c) Geologic information needed.
72-5	Nasty Lake Grid L8W 6N	(a) Gravimetric anomaly (b) Partly coincident C.E.M. conductor (c) Geologic information needed.
72-6	Capa Grid L16E 8S	(a) Magnetic anomaly (b) On strike of C.E.M. conductor (c) Weak geochem in creek draining the area.
72-7	Capa Grid L64E 58S	(a) Small C.E.M. conductor (b) Favourable rock types (c) Near a rusty creek - gossan zone
72-8	Capa Grid L144E, 15S	(a) Axis of intense C.E.M. conductor (b) Partly coincident Mag. (c) Favourable unit (3a) (d) Very high geochem values in Cub R.H.2 (to over 500 ppm Zn) could be geochem halo near adjacent sulphides

- 72-9 Moose Lake Grid  
L40W 3N (a) Axis of C.E.M. conductor  
(b) Location of fault  
(c) Geologic information needed.
- 72-10 Nasty Lake Grid  
L40E, 8N (a) Axis of major C.E.M. conductor  
(b) Weak geochem downslope
- 72-11 Nasty Lake Grid  
L104W, 7N (a) Peak of gravimetric anomaly  
(b) Partly coincident Aeromag.  
(c) On strike of C.E.M. anomalies to the east and west.
- 72-12 Echo Lake Grid  
L 188W 2S (a) Peak of C.E.M. conductor  
(b) Geologic information needed
- South Extremity of  
Echo claims (SE of  
Moose Lake)
- 72-13 - The area lacking in outcrop adjacent to the Sea claims and stratigraphically near the phyllite-schist contact should be tested.  
- Near major A.E.M. conductor
- 72-14 - Located at 184W on the Echo base line is centred on a C.E.M. conductor in the western portion of the claim group where no outcrop exists.
- 72-15 - Located north of Moose Lake at station 48W on the Moose Lake base line will test an encouraging area lacking in outcrop with an electromagnetic conductor.
- 72-16 - Located at station 42E on the Moose Lake base line will provide geology where there is no outcrop.
- 72-17 - One hole is needed to test the structurally complex area north of Cub Lake. This area is topographically low, has no outcrop, and contains weak zinc geochem anomalies. A large airborne electromagnetic anomaly partially coincident with an A.E.M. conductor makes this area favourable for drill testing.

- 72-18 - Aeromagnetic anomaly coincident with H.E.M. conductor axis. Can only be drilled from winter set-up on ice-covered lake.
- 72-19 - Aeromagnetic-gravity anomaly coincidence.
- 72-20 - Aeromagnetic anomaly coincident with H.E.M. conductor axis.
- 72-21 - Aeromagnetic anomaly within flanks of conductive zone (H.E.M. Survey)
- 72-22 - Aeromagnetic anomaly coincident with H.E.M. conductor axis.
- 72-23 - Aeromagnetic anomaly coincident with H.E.M. conductor axis.
- 72-24 - Strong H.E.M. conductor axis.
- 72-25 - Aeromagnetic anomaly
- 72-26 - H.E.M. conductor near 'rusty' creek.

These proposed drill holes, along with other holes proposed primarily for testing geophysical targets, will give good stratigraphic correlation and geologic sections through the Lower Anvil Creek Claims.

CAPA-DELTA-ECHO CLAIMS

BUDGET NOTES

Summary

Claims 03 - Staking (20 claims)	\$ 120	
31 - Acquisition (20 clms.)	230	
33 Maintenance (250 claims)	<u>4,600</u>	\$ 4,950
Geology: - 06		6,600
Geophysics: 07 - Gravity		14,500
Diamond Drilling: 09		78,000
Camp Operations: 21 - Gravity -	\$900	
General -	<u>700</u>	1,600
Freight & Transportation - Gravity	900	
Drilling	2,500	
General	<u>600</u>	40,000
		<hr/>
		\$ 109,650

Expediting and Non-direct charges

Administration 10%

Drilling

Contract \$78,000  
Transpntn. 2,500  
\$80,500

Gravity

Contract \$14,500  
Camp 900  
Transpntn. 900  
\$16,300

FINAL SUMMARY

Direct Costs	\$112,805
Van.Expl Office	5,640
Admin.	<u>11,280</u>
	\$129,725
Wages	11,855
Supplies	<u>100,950</u>
Direct Costs	<u>\$112,805</u>

03 - Staking - Assume 20 more claims needed

031 - 2 men x 2 days @\$25/day - 4 x 25 = \$100

033 - 20 \$120

- charged to July

31 - Property Acquisition

(1) fee for recording 20 claims \$10 x 20 - 200

(2) fee for transfer \$9.50/8 claims  
3 x \$9.50 - 30 \$230

- charged to July

33 - Property Maintenance

(1) fee for recording assessment  
work - \$15/claim for 3 yrs. x 250 claims - 3,800

(2) grouping charge \$5/16 claims 800 \$4,600

- charged to August (due date is in August)

06 - Geology

061 - to April 30 (Dean's wage) 805

½ of Dean's salary for 5 months 4,200  
all of salary for 1 month

(Salary - 1000/mo. +12%- 1200/mo.)

063 - \$200 (misc.) 200

064 - \$200 (assays) 200 \$ 5,405

( Core splitting - \$450 for July, )

( \$ 900 for Aug. & Sept. )

( Charged under Diamond Drilling )

07 - Geophysics

Gravity - 40 miles - 40% of 100 mile contract

072 - 40% of \$36,000 14,400

073 - \$100/month 100 \$14,500

09 - Diamond Drilling (12 - 500 ft. holes)

- Costs per week (assuming 9 wk. 10,000 ft. contract)  
(including mob-demob. + fuel over averaged  
9 weeks - see drilling budget summary)

092 - 6 x \$12,300 per week	74,000		
091 - Core splitter - 2½ months @\$200/month		2,250	
094 - Assay costs - \$3.00 per 10 ft. of core. 6000 ft. of core = 600 samples x \$3.00		<u>1,800</u>	\$ 78,050

21 - Camp Operations

212 & 213 - Drill crew camp costs are included  
in the contract footage cost.

- we supply camp gear and supplies  
for 3 man gravity crew but they  
have no cook:

3 men x \$10/day x 30 days = \$ 900

214 - Expenses to/from field  
for Dean, Brock, Etc.

Cover costs of food & accommodation  
in Whitehorse, Faro. etc.

- charged at rate of \$20/day

May	10 days	} X \$20	\$ <u>700</u>	\$ 1,600
June	5 days			
July	5 days			
Aug.	5 days			
Sept.	10 days			

22 - Freight & Transportation

221 - Supplies to/from field

(1) Office boxes to/from Vanc.) \$100/mo. \$ 500  
Core samples to assayer, )  
etc. ) May to  
Sept.

(2) Fuel for Bomber (fuel for  
drill is charged under  
drilling)  
Whse to Faro charge is \$1.50/100 lbs.  
Fuel weighs approx. 400 lbs.  
per drum  
(30 drums x 400 lbs) x \$1.50 = \$200

100

(Charged to Foto)

22 - Freight & Transportation (Cont'd.)

222 - Bodies to/from field - assume  
\$200 for return trip  
(\$160 + air fare +  
cost Whse-Faro )

J.S.B. 1 ret. trip per month \$200/mo.	1,000	
Dean 1 ret. trip May-Sept.	200	
Assistant 1 ret. trip	200	
Extra (cook(?) etc.) 2 ret. trips	<u>400</u>	\$1,800

223 - Helicopter  
1 move for gravity crew  
2 hrs. x \$150

\$ 300

224 - Beaver (see Beaver Budget sheet)

May - )		
June \$ 400)	\$ 200-gravity	
July 300)		
Aug. 100)	\$ 800-drilling	\$1,000
Sept. 200)		

225 - Bomber  
- charged to Foto right through the season.

226 - Truck

4 x 4 rental truck:  
\$120/wk. + 20¢ per mile - \$200/wk.

needed 2 weeks in May, 2 weeks in Sept.  
= \$200 x 4 weeks - \$ 800.

(½ charged to Foto Claims) \$ 400

\$40,000

PROJECTED USE OF BEAVER

Beaver Trips - all trips Ross River to/from Cub Lake,  
50 miles - cost \$1.00/mi.

May Move in camp to Foto - 6 trips )  
8 men, gear, groceries )  
Fuel for Bomber - 2 trips. ) All to Foto - \$600  
Names for staking - 4 trips )

June Supplies - 6 trips ) Foto - \$400  
Bomber fuel - 2 trips )  
Gravity crew - 4 trips )  
Drilling supply trips - 4 trips ) Capa, Delta,  
Echo \$ 400

July Supplies to Foto crew )  
out, turam in - 6 trips )  
Gravity - to Foto ) Foto - \$500  
Fuel for Bomber - 2 trips )  
Supplies for drilling - 6 trips ) Capa, Delta,  
Echo - \$ 300

August - Bomber fuel - 2 trips )  
Supplies to Foto, move ) Foto - \$ 700  
out Turam, gravity - 6 trips )  
Drilling-6 trips )

September - Camp demob. & contingencies - ) Foto - \$200  
8 trips ) Capa,  
Delta-Echo - \$200

DYNASTY EXPLORATIONS LIMITED  
1972 YEAR TO DATE EXPENDITURES

PROJECT TINTINA-ANVIL  
Capa-Delta-Echo

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
01 Property Examination												
02 Prospecting												
03 Staking							320					
04 Airborne Surveys												
05 Linecutting												
06 Geology			405	400	600	800	1,200	1,100	600	600		1,200
07 Geophysics						15,200						
08 Geochemistry												
09 Diamond Drilling						25,200	50,850	900	900			
10 Physical Work												
11 Access Roads												
21 Camp Operations					200	1,000	100	100	200			
22 Freight & Transportation					900	1,000	800	400	900			
31 Prop.Acq. & Option Pymts							230					
32 Participations												
33 Property Maintenance								4,600				
<b>Total Direct Expenditures</b>			405	400	1,700	43,200	54,200	7,800	3,300	600		1,200
41 Van.Office & Expediting			20	20	85	1,160	2,710	390	165	30		60
44 Admin. Allocation			40	40	170	4,320	5,420	780	330	60		120
<b>TOTAL</b>			465	460	1,955	49,680	62,330	8,970	3,795	690		1,380
Less Admin. Allocation												
Less Non-Cash Expense												
<b>Net Field Expenditure</b>												
<b>BUDGET (Accum.)</b>			465	925	2,880	52,560	114,890	123,860	127,654	128,344		
Over												
Under												
<b>Expenditure Analysis</b>												
Wages			405	400	600	1,300	2,650	2,500	2,200	600		1,200
Supplies & Services					1,100	41,900	51,550	5,300	1,100			

DYNASTY EXPLORATIONS LIMITED  
1972 YEAR TO DATE EXPENDITURES

PROJECT TINTINA-ANVIL  
 Capa-Delta-Echo

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
<b>01 PROPERTY EXAMINATION</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												
<b>02 PROSPECTING</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												
<b>03 STAKING</b>												
-1 Salaries & Wages							300					
-2 Contract Payments												
-3 Field Expenses							20					
-4 Assays												
							320					
<b>04 AIRBORNE SURVEYS</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												
<b>05 LINECUTTING</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												

DYNASTY EXPLORATIONS LIMITED  
1972 YEAR TO DATE EXPENDITURES

PROJECT TINTINA-ANVIL  
Capa-Delta-Echo

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
<b>06 GEOLOGY</b>												
-1 Salaries & Wages			405	400	600	600	1,200	900	600	600		1,200
-2 Contract Payments												
-3 Field Expenses						100		100				
-4 Assays						100		100				
			405	400	600	800	1,200	1,100	600	600		1,200
<b>07 GEOPHYSICS</b>												
-1 Salaries & Wages						700	700	700	700			
-2 Contract Payments						14,400						
-3 Field Expenses						100						
-4 Assays												
						15,200	700	700	700			
<b>08 GEOCHEMISTRY</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												
<b>09 DIAMOND DRILLING</b>												
-1 Salaries & Wages							450	900	900			
-2 Contract Payments						24,600	49,200					
-3 Field Expenses												
-4 Assays						600	1,200					
						25,200	50,850	900	900			
<b>10 PHYSICAL WORK</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												

DYNASTY EXPLORATIONS LIMITED  
1972 YEAR TO DATE EXPENDITURES

PROJECT TINTINA-ANVIL  
 Capa-Delta-Echo

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
<b>11 ACCESS ROADS</b>												
-1 Salaries & Wages												
-2 Contract Payments												
-3 Field Expenses												
-4 Assays												
<b>21 CAMP OPERATIONS</b>												
-1 Salaries & Wages												
-2 Groceries												
-3 Other Supplies						900						
-4 Expenses to/from field					200	100	100	100	200			
<b>22 FREIGHT &amp; TRANSPRTN</b>					200	1,000	100	100	200			
-1 Supplies to/from field					300	100	100	100	100			
-2 Trsptn.to/from field					600	200	400	200	400			
-3 Fld.Tsptn.-Helicopter						300						
-4 Fld.Tsptn.-Fixed Wing						400	300	100	200			
-5 Fld.Tsptn.-Bombardier									200			
-6 Fld.Tsptn.-Truck					900	1,000	800	400	900			

## CONCLUSIONS

The Anvil Range is an area holding a high potential for discovery of massive lead-zinc deposits. Although the source and process of mineralization is still unknown, all major zinc-lead mineralization is apparently stratigraphically controlled. The Faro orebodies, the Swim, Vangorda, Champ and Firth deposits, as well as the Sea showings, occur in quartzite within Unit 3a, the quartz rich phyllite. Pre-metamorphic emplacement is proposed since the deposits have features common to metamorphosed ores. Structural controls of ore deposition, if any, have been obliterated by metamorphism. Only through recent exploration has the extent and potential of the quartz rich phyllite host been realized. Detailing of such areas with geophysics and follow-up drilling will be an integral part of continued exploration as based on previous success with similar programs.

The success of the exploration leading to the discovery of the Faro orebodies was based on thorough prospecting of 'elephant country' for geophysical anomalies of a certain size and particular type. Further exploration of the area is warranted. Other major deposits can be discovered at depth in the district with recent better-developed and improved exploration techniques because the known discoveries all occur at the present fortuitous bedrock erosion surface, sizeable areas therefore remain relatively unexplored. Numerous, more subtle geophysical targets, have not been investigated by more detailed interpretations and drilling. Refinements in geologic, geochemical and geophysical approach using previous methods as a base will undoubtedly reveal other deposits in the area. Modifications of the electromagnetic method both for airborne and ground surveys, to allow greater depth penetration and conductor discrimination coupled with gravimetric detailing of all conductors, has been found to be the best method of continued geophysical

exploration in selected geologic environments of the Anvil area. All targets will have to be systematically drilled without exception since the most obvious massive sulphide targets would appear to have been found.

The current holdings of Dynasty Explorations within the Anvil area are well located with respect to the quartz rich phyllite section that hosts other massive sulphide deposits in the area. All properties require extensive drill testing of geophysical anomalies closely related to similar magnetic, electromagnetic and gravimetric expressions over known sulphide occurrences found in the Anvil Range.

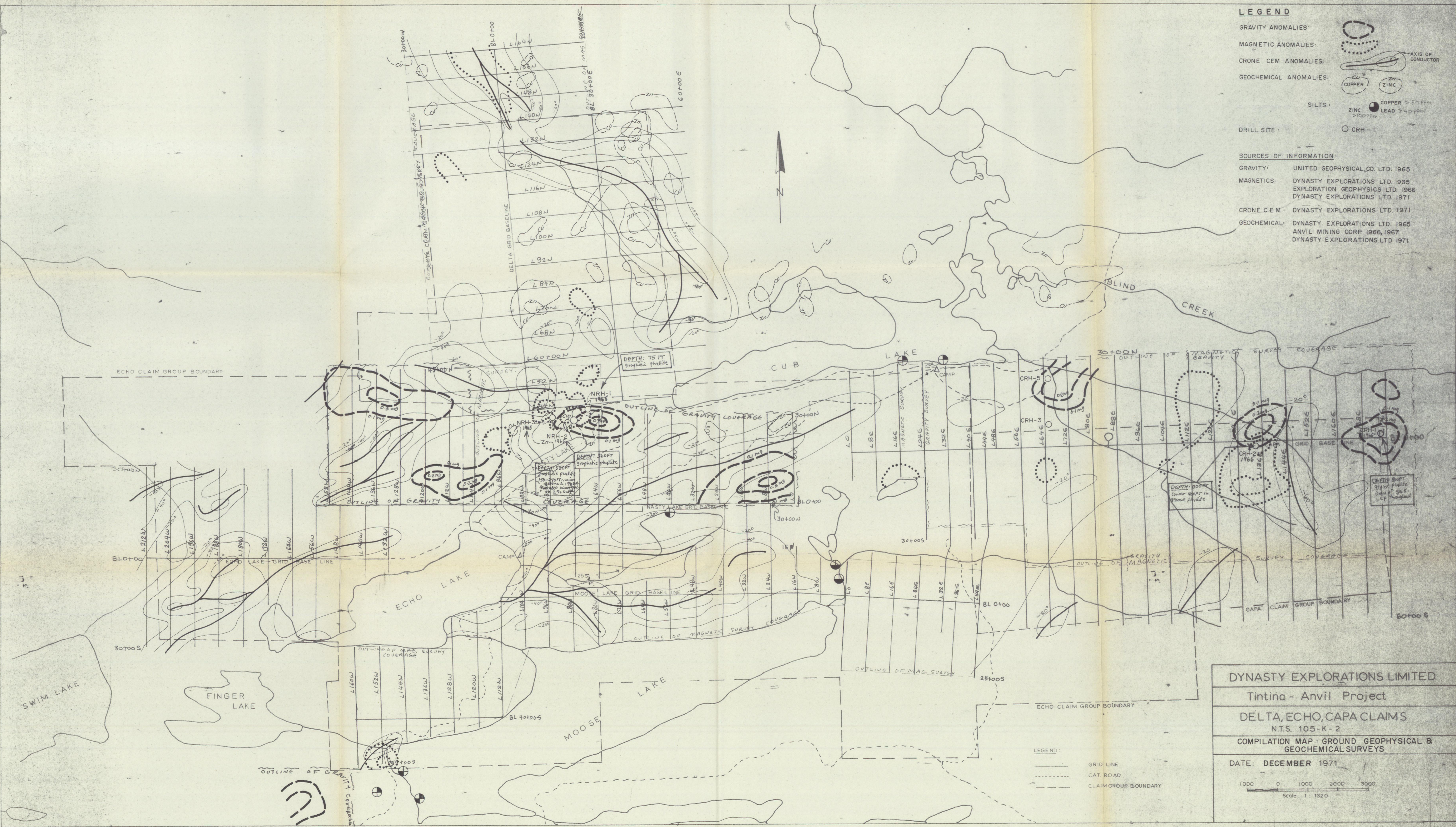
Dynasty's close involvement with the Anvil area over the past eight years has steadily increased our confidence in the potential of the district. It appears probable that in the order of 150-200 million tons of grade similar to the Faro and Vangorda sulphide bodies could exist as compared to Cominco's deposit at Kimberly (Trail) of approximately 150 million tons. The district's potential for new large lead-zinc deposits has not been tested, therefore, considering the opportunities that exist for new discoveries within an area that has received little detailed exploration to date, intensive exploration is proposed. Many major mineral districts have gone through the same cycle of initial activity, quiescence and then renewed discovery, and there is probably no better major potential in Western Canada.

Respectfully submitted,



J. S. Brock,

June, 1972



**LEGEND**

GRAVITY ANOMALIES:

MAGNETIC ANOMALIES:

CRONE CEM ANOMALIES:

GEOCHEMICAL ANOMALIES:

SILTS:

DRILL SITE:

CRH-1

**SOURCES OF INFORMATION:**

GRAVITY: UNITED GEOPHYSICAL CO. LTD. 1965

MAGNETICS: DYNASTY EXPLORATIONS LTD. 1965  
EXPLORATION GEOPHYSICS LTD. 1966  
DYNASTY EXPLORATIONS LTD. 1971

CRONE C.E.M.: DYNASTY EXPLORATIONS LTD. 1971

GEOCHEMICAL: DYNASTY EXPLORATIONS LTD. 1965  
ANVIL MINING CORP. 1966, 1967  
DYNASTY EXPLORATIONS LTD. 1971

**DYNASTY EXPLORATIONS LIMITED**

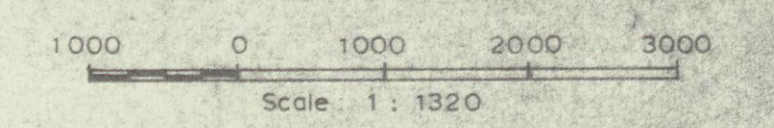
Tintina - Anvil Project

DELTA, ECHO, CAPA CLAIMS

N.T.S. 105-K-2

COMPILATION MAP: GROUND GEOPHYSICAL & GEOCHEMICAL SURVEYS

DATE: DECEMBER 1971

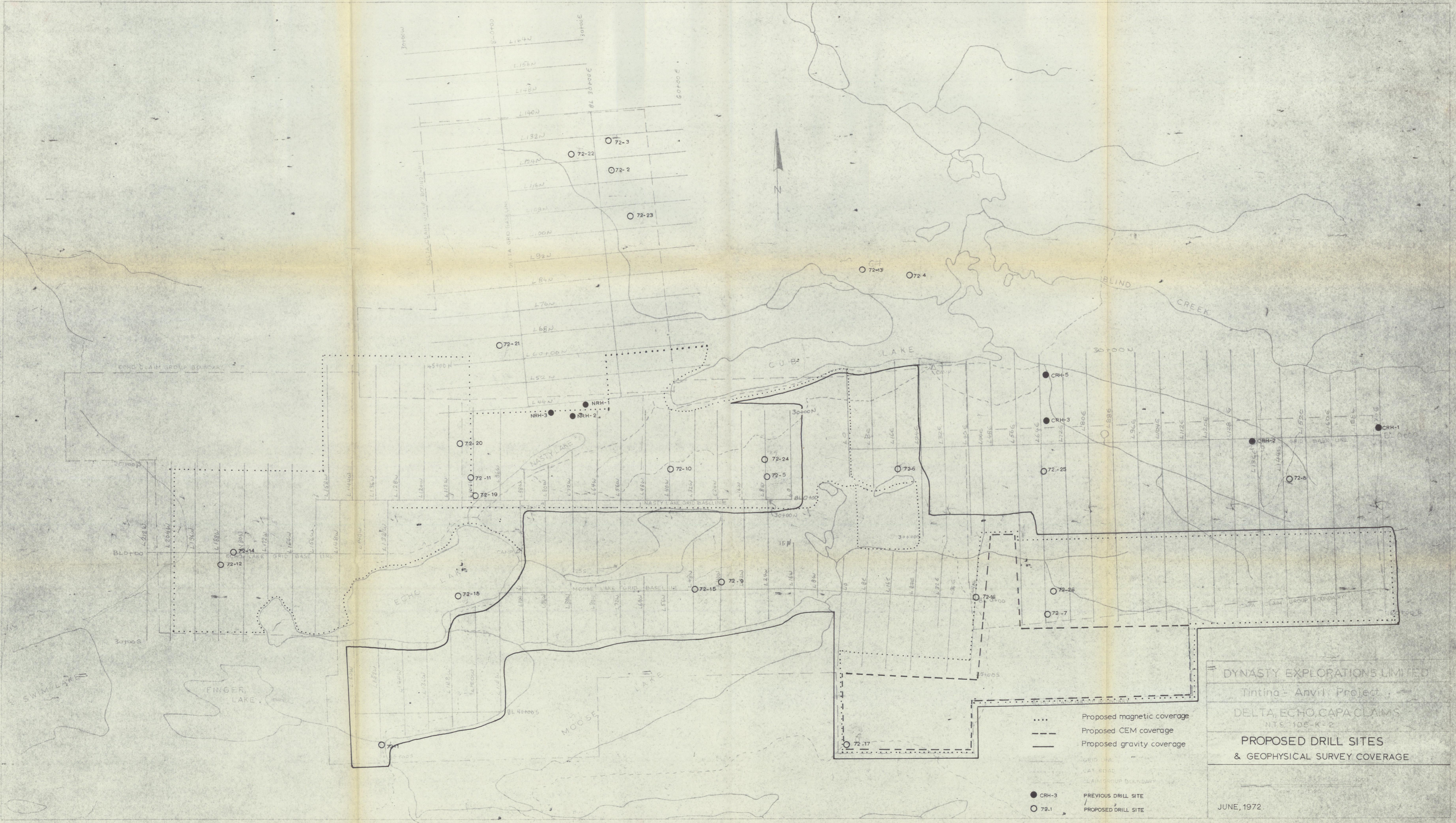


**LEGEND:**

GRID LINE

CAT. ROAD

CLAIM GROUP BOUNDARY



DYNASTY EXPLORATIONS LIMITED  
 Tintina - Anvil Project  
 DELTA, ECHO, CAPA CLAIMS  
 NTS 105-K-2  
**PROPOSED DRILL SITES  
 & GEOPHYSICAL SURVEY COVERAGE**

- .... Proposed magnetic coverage
- Proposed CEM coverage
- Proposed gravity coverage
- GRID LINE
- CAT ROAD
- CLAIM GROUP BOUNDARY
- CRH-3 PREVIOUS DRILL SITE
- 72.1 PROPOSED DRILL SITE

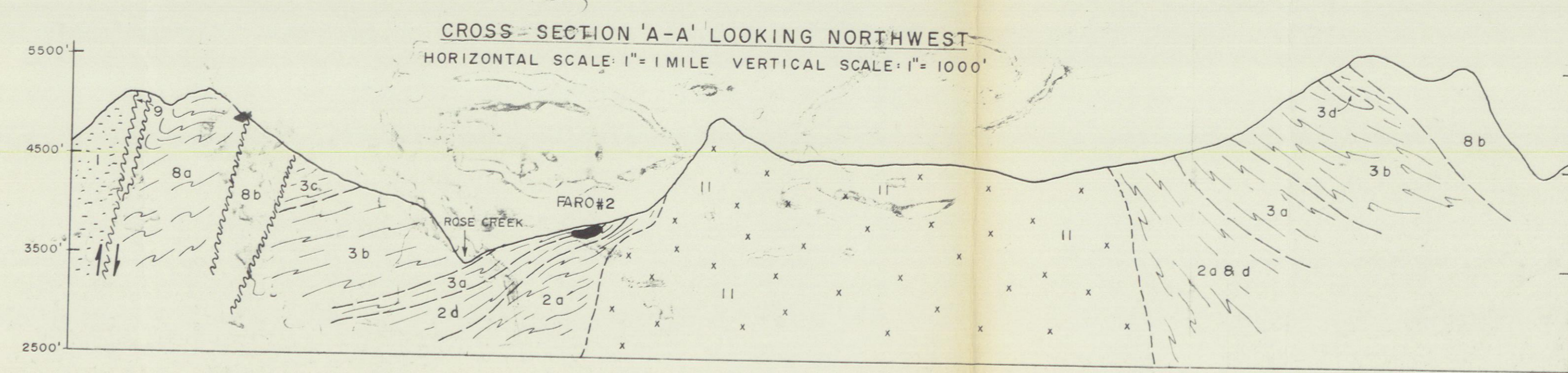
JUNE, 1972.



**LEGEND**

AGE	PROBABLE THICKNESS	DESCRIPTION
MIÉCOENIAN	100'	6 - THIN BEDDED, PLATY, BLACK, CARBONACEOUS, FETID CRINOIDAL LIMESTONE TO MASSIVE BUFF WEATHERING GREY BIOLASTIC DOLOMITE (1905)
WILDEVONIAN	50'	5 - MASSIVE MED TO LIGHT GREY, MED-COARSE GRAINED ORTHOQUARTZITE (1927)
PROOVIAN	400'	4 - GRAPHITIC BLACK CARBONACEOUS SLATE, BLACK SILTY SHALE, ARGILLITE, MINOR BLACK IRON BANDS, MINOR PYRITE (1949)
SILURIAN	4000'	3c - "GREENSTONE" DARK TO PALE GREEN, POINTED TO MASSIVE, AMPHIBOLITE, CHLORTICHP, AND ANDALUSITE (1921)
		3c - THINLY BEDDED SILTY LIMESTONE, LENSES OF PHYLITE AND SILTY GREY LIMESTONE (1920)
		3b - SILVERY GREY WEATHERING, FINE TO BLACK FOLIATED, SERICITE CHLORTICHP, BIOTITE, PHYLITE, CAN CONTAIN LARGE GREENSTONE LENSES (1944)
		3a - LIGHT TO DARK GREY, BLACK QUARTZ, SERICITE, BIOTITE, CHLORTICHP, PHYLITE, ALSO INDICATED QUARTZ GRANITE PHYLITE (1941) AND QUARTZITE (1941) (1941) CONTAINING SMALL GREENSTONE LENSES (1941)
		2d - DARK GREEN MASSIVE AMPHIBOLITE OCCURRING AS LENSES THROUGHOUT UNIT (1921)
		2d - TAN WEATHERING MEDIUM GRAINED QUARTZ BIOTITE SERICITE (MUSCOVITE) SCHIST WITH ANDALUSITE, GARNETS, AND STAUROITE (1941)
LOWER CAMBRIAN?	2000'	2c - MASSIVE WHITE TO CREAMY CRYSTALLINE LIMESTONE TO MARBLE (1905)
		2b - WHITEISH WEATHERING, BANDED PALE TO DARK GREEN, PURPLISH BROWN BANDED CALC-SILICATES WITH PHYLITIC AND SCHISTOSE PARTINGS (1916)
		2d - BROWN WEATHERING, MEDIUM TO COARSE GRAINED QUARTZ BIOTITE SCHIST WITH MINOR MANGANESE ANDALUSITE, GARNET, AND STAUROITE PORPHYROBLASTS COMMON (1947)
PROTEROZOIC		1 - "GRID UNIT" - GREY WEATHERING MEDIUM-DARK GREY, MANGANESE METACALCULITE, LOCALY FOLIATED, BANDED, MINOR CHLORTICHP, TO WALSLEY AND CARBONATE INTERFOLIATED BLACK GRAPHITIC QUARTZITE (COMMON) (1947)
PERMIAN TO MISSISSIPPIAN		7 - DARK GREY TO BLACK, MASSIVE TO THICK BEDDED, GRAPHITIC CHERT, ASSOCIATED DARK GREY GRAPHITIC CHERTY ARGILLITE AND ARGILLACEOUS SILTSTONE, MINOR ARGILLACEOUS LIMESTONE, GREY WEDGE AND CHERT PEBBLE CONGLOMERATE (1918)
PERMIAN	1500'	8b - MEDIUM TO DARK GREEN, MASSIVE, BASALTIC VARIETIES INCLUDING TUFFS, MASSIVE AMYGDALOIDAL FLOWS, FLEWDS AND PYROCLASTIC TYPES (1908)
PERMIAN	2000'	8a - PALE GREEN, GREENISH BROWN, LIGHT GREY MASSIVE TO THIN BEDDED ARGILLACEOUS AND TUFFACEOUS CHERT, WEATHERS OFF-WHITE, LOCALY BLACK RED DUE TO HEMATITE (JASPER), LOCALY BRECCIATED (1925)
TRIASSIC	300'	10a - THIN BEDDED, PLATY, MEDIUM GREY CALCAREOUS SLATE, WITH LOCALY INTERBEDDED FINE GRAINED ARGILLITE LIMESTONE
TRIASSIC	2000'	10 - BROWN WEATHERING CONGLOMERATE WITH QUARTZITE, SCHIST GRANITE (ONE'S, BASALT, CHERT AND LIMESTONE PEBBLES (1944)
PERMIAN TO TRIASSIC		9 - DARK GREEN TO BLACK SERPENTINITE AND RELATED PERIDOTITE (1907)
PERMIAN		8c - ANVIL BATHOLITE GROUP - ORIGINALLY LIGHT GREY CRINOIDAL OR BIOLASTIC LIMESTONE, NOW RECRYSTALLIZED, WEATHERS BUFF, CONTAINS MINOR QUARTZ, ESSENTIALLY A SPARITE (1906)

- SYMBOLS**
- LIMIT OF MAPPING
  - FOLIATION
  - POSTULATED FOLD AXIS
  - DEFINED, ASSUMED FAULTS
  - CONTACTS, DEFINED, ASSUMED
  - CLAIM BOUNDARIES
  - MASSIVE SULPHIDE DEPOSITS



DYNASTY EXPLORATIONS LTD.  
 TINTINA ANVIL PROJECT  
 REGIONAL GEOLOGY  
 NTS - 105 K 2,3,5,6,7  
 GEOLOGY: W.J. ROBERTS, P. LEAN (after B. KARVINEN and D. TEMPLEMAN-KLUIT)  
 SCALE: 1" = 1 MILE  
 DATE: NOVEMBER, 1971