

REPORT SUBMITTED BY URANERZ ON  
PERCUSSION SAMPLES TAKEN FROM  
DRILL HOLES POH 3, 4, 24, 25, 29, 32, 33,  
34, 35, 36, 74, 86, 87, 88, 97 ON EL 731


10 NOV 1986 RECEIVED



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**Central Mineralogical Services**

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7th November, 1986

REPORT CMS 86/10/16

YOUR REFERENCE:           Order No. 24455  
 DATE RECEIVED:           21st October, 1986  
 SAMPLE NOS.:              16 Samples  
 SUBMITTED BY:             R. Coles  
 WORK REQUESTED:         Petrology

*H. W. Fander*  
H.W. Fander, M. Sc.

Licen

**CR 87 / 143**

**NORTHERN TERRITORY  
 GEOLOGICAL SURVEY**





SAMPLE RECORD

SAMPLE NUMBER	TYPE	MAP TENEMENT	DRILL HOLE NO	CO-ORD/LOCATION	GRID	SAMPLE INTERVAL	DESCRIPTION	SRAT SITU	T S	BOOK REF
204 A 0577	3 3 5	3418	Esso PDH 3			100-105 ft	Qtz-hblde amphib. + py			✓
0578			PDH 24			60-100 ft	Qtz-feld-biot schist			✓
0579			PDH 25			70-115 ft	Mica - ? amphibolite			✓
0580			PDH 26			60-100 ft	amphib.			
0581			PDH 27			50-85 ft	Qtz-mica schist			
0582			PDH 28			95-135 ft	" " "			
0583			PDH 29			60-90 ft	Qtz mica schist + Qtz-Musc veins			✓
0584			PDH 32			105-120 ft	Chlorite-hornblende			✓
0585			PDH 33			50-85 ft	" "			✓
0586			PDH 34			60-115 ft	Chlorite-amphib.			✓
0587			PDH 35			70-100 ft	Qtz-mica schist + amphib			✓
0588			PDH 36			60-100 ft	" + pegmatite			✓
0589			PDH 74			60-90 ft	Qtz-feld gneiss + amphib.			✓
0590			PDH 86			60-110 ft	Chlorite Amphib			✓
0591			PDH 87			60-95 ft	Chlorite Amphib			✓
0592			PDH 88			70-110 ft	" "			✓
0593			PDH 96			70-105 ft	Amphib + schist			
0594			PDH 97			70-110 ft	Amphib			✓
0595			PDH 87			80-85	Chlorite schist Amphibolite + py			
0596			PDH 87			85-90	"			
0597	✓	✓	PDH 87			90-95	"			

REPORT CMS 86/10/16

Percussion Chip Samples

204A - 0577 (T.S. 56770)

Major Rock Type - Amphibolite. Composed of variable amounts of hornblende and andesine, with minor quartz, sporadic orange-brown Ti-biotite. Variations are more feldspathic, others contain pale augite as well as hornblende. Accessories include granular sphene, detrital zircon. Some biotite is chloritised, andesine is relatively fresh.

If these chips are all genetically related, they indicate a para-amphibolite assigned to the upper-amphibolite ranging into the hornblende-granulite facies of regional metamorphism.

Minor Rock Type - Microtonalite(?). One chip composed of about 55 % sodic andesine (fresh, poorly twinned), 30 % granular quartz, and 15 % chloritised biotite. The rock is medium-grained, with igneous-like fabric, but may well be non-igneous, possibly related to the amphibolites, perhaps from a more felsic lens; its fabric may actually be lineated in another orientation not visible in this section.

204A - 0578 (T.S. 56771)

This sample contains a wide variety of rock chips, generally poorly represented and yielding only very limited information; they include the following:

- a) Sericitised, chloritised amphibolite with quartz;
- b) Quartz-feldspar-muscovite-biotite granitoids;
- c) Quartz-muscovite-biotite-sillimanite gneisses;
- d) Garnet amphibolite.

The gneisses and granitoids could be related, i.e. from different parts of the same formation; both are coarse-grained, and all the chips are too small to do justice to the rocks. Probably all re metasediments, though the granitoids could be magmatic.

204A - 0579 (T.S. 56772)

Most chips are of similar composition, though with variations in fabric and mineral proportions. They consist of quartz, cloudy pink K-feldspar, and chloritised biotite and minor replacive muscovite, with accessory apatite and detrital zircon. Fabrics range from vaguely gneissic to pseudo-igneous and the rocks are medium-grained.

A few chips of chloritised amphibolite occur, composed mainly of chloritised hornblende and granular quartz; one was also biotitic, and two others were feldspathic.

204A - 0583 (T.S. 56773)

Most of the chips are metaquartzites, with varying but minor amounts of muscovite and/or sericitised feldspar; they resemble a metaquartzite described in the previous report (204A-0551). They generally consist of interlocking quartz grains with small intergranular sericite aggregates representing feldspar; some chips carry small random to subparallel muscovite flakes.

The sample includes fragments of very coarse quartz, and a micaceous goethite rock which may be a ferruginised mica schist, but is too heavily impregnated with goethite to be clearly recognisable.

204A - 0584 (T.S. 56774)

All the chips represent the same rock type, with only minor variations; however, the rock is completely altered and is recognised mainly by the reasonably well-preserved relict primary textures.

The rock is believed to have been a dolerite, but is now thoroughly chloritised; small random laths of chloritised plagioclase, and interstitial patches of hematite-chlorite, representing pyroxene, are the major components. Accessory minerals are secondary leucosene, and shreds of sericite. The surviving fabric is typical of dolerites.

The interesting feature is the universal and pervasive chloritisation; in the case of ferromagnesian minerals, chlorite is the normal end-product of alteration, but not so for plagioclase; thus, chloritisation was a metasomatic process in this rock.

204A - 0585 (T.S. 56775)

Fragments are poorly preserved and are altered, but most appear to be chloritised amphibolite. This consists of chlorite pseudomorphs after matted, subparallel hornblende laths, with minor interstitial quartz and fine micaceous hematite.

Other chips include a fine quartz-chlorite rock with fine graphite; its origin is not known as the available observations are inadequate.

204A - 0586 (T.S. 56776)

This consists of several different rock types, all of them altered metamorphics; the following rocks occur:

- a) Garnetiferous quartz-biotite-feldspar-graphite gneiss, in which the biotite is chloritised and most of the garnet is also chloritised. The rock is foliated or compositionally banded;
- b) Quartz-feldspar-biotite gneisses, argillised and chloritised, with variable composition and fabric; one chip contains graphite;
- c) Severely altered ?amphibolite, with introduced pyrite.

All the rocks are believed to be metasediments; if they are related, they can probably be assigned to the amphibolite facies.

204A -0587 (T.S. 56777)

All the chips are broadly similar and can be termed hornblende hornfels, though some may be fine dolerites; all are severely altered, which makes interpretation tentative.

Some chips (the possible dolerites) consist of small random laths of chloritised ?pyroxene (perhaps uralitised, then chloritised) with interstitial sericitised feldspar, and small leucoxene grains (?after primary magnetite). Others are similar, but contain scattered granular quartz in addition; and one chip is cut by a quartz-sericitised feldspar-pyrite vein; the quartzose chips may be hornfels and of different origin to those without quartz.

204A - 0588 (T.S. 56778)

This sample is composed of a variety of chips, including the following rock types:

- a) Very coarse cleavage-fragments of microcline, i.e. portions of larger crystals, possibly from a pegmatite; minor coarse muscovite;
- b) Coarse, weakly stressed quartz, from veins or pegmatites;
- c) Amphibolites, mainly hornblende and sericitised feldspar, with variable quartz and sporadic biotite, Probably banded;
- d) Quartz-feldspar-altered biotite microgneiss.
- e) Ferruginised, argillised ?amphibolite; virtually unrecognisable.

204A - 0589 (T.S. 56779)

The three rock chips comprising this sample consist of the following:

- a) A microcline rock, composed of 90-95 % polygonal grains of fresh microcline, with occasional quartz patches and small books of muscovite, and accessory apatite. There are veinlets of sericite, which has locally replaced the feldspar and the muscovite. The origin of this rock is not known (insufficient information);
- b) A quartz-feldspar-biotite gneiss, vaguely banded and medium- to coarse-grained. The biotite is chloritised, the feldspar completely sericitised and unrecognisable.
- c) A feldspar-quartz-biotite rock in which feldspar (the major mineral) is completely sericitised, and the biotite thoroughly degraded to a brown, vermiculite-like mineral. This rock, which has an igneous-like fabric, may be related to b), but at a different orientation.

204A - 0590 (T.S. 56780)

Although the chips (about 35 were sectioned) show some variation in fabric and composition, they are believed to be related. They can be categorised as chloritised amphibolites, composed of varying proportions of chloritised hornblende, altered feldspar, quartz, and biotite; some chips contain fine magnetite and sphene, and many carry fine introduced sulphides (pyrite, pyrrhotite). Textures and fabrics are not well-preserved on the whole, but lamination is recognisable in places. There are concordant quartz veins. Accessory apatite is present, and secondary leucoxene is fairly common throughout.

204A - 0591 (T.S. 56781)

This sample consisted of only two chips; both were sectioned. They may well be related, but one is obscured by pervasive iron-staining.

One of the chips is a foliated biotite schist, consisting of thin bands of matted-parallel chloritised biotite with interstitial sericitised feldspar, and lenses/thin bands of granular quartz. Ultrafine ?graphite is scattered through the biotite. There are randomly distributed pyrite cubes, and granular apatite occurs.

The brown, ferruginised rock is also a schist, finer-grained and originally more feldspathic and less biotitic than the other one; the feldspar is completely sericitised, but some of the biotite has survived.

204A - 0592 (T.S. 56782)

Most of the chips belong to one rock type, which is believed to be a completely altered basalt, but may have been a fine-grained hornblende hornfels. The rock now consists of chlorite pseudomorphs after small, randomly orientated laths of pyroxene or hornblende, with fine interstitial cloudy quartz, thought to represent feldspar, judging from indifferently preserved relict textures. Fine leucoxene-anatase occurs throughout, and there are occasional pseudomorphous aggregates after primary magnetite. Some chips contain fine sericite/chlorite intergrowths, instead of quartz, representing the feldspar.

One chip is of a different rock; it appears to be a quartz-(chloritised) biotite-altered feldspar gneiss, but is poorly represented.

The basalt would be regarded as intrusive, judging from its fabric, possibly representing a chilled margin of a coarser rock.



204A - 0594 (T.S. 56783)

Only a few chips comprised this sample, and were rather weathered, causing sectioning difficulties. However, they seem to come from the same unit, and are classified as garnet-biotite-quartz-feldspar gneisses.

There are scattered, partly altered garnet porphyroblasts in a mass of completely sericitised feldspar, and subparallel flakes of extensively chloritised green biotite with variably amounts of granular quartz; it is suspected that the rock is foliated or compositionally banded. The rock is argillised and goethite-impregnated, i.e. weathered. Fine secondary rutile needles have formed in the chloritised biotite.

204A - 0601 (T.S. 56784)

Almost all the chips are clearly related and are derived from a coarse granite or granite-pegmatite, believed to be of igneous-magmatic origin. They consist of various combinations of coarse quartz, coarse muscovite flakes/books, and orthoclase which is generally graphically intergrown with quartz. The textures are typically igneous.

One chip is of a completely different rock, unrelated to the pegmatite. It is a fairly fine-grained quartz-chlorite-graphite rock with a vague preferred fabric, but is not schistose. There are scattered pyrite grains. The chlorite very probably represents biotite, and some feldspar may have been present.

204A - 0602 (T.S. 56785)

All the chips are severely altered, and recognition is difficult for that reason and because of orientation problems. They consisted of varying proportions of quartz, feldspar, hornblende laths, and biotite, but are now composed of pseudomorphous chlorite, quartz, and sericite, with accessory apatite and secondary leucoxene. Some chips are extensively impregnated with fine micaceous hematite.

Depending on the orientation of each chip, the fabric appears hornfelsic or amphibolitic, but it is suspected that all are representative of amphibolites.

H.W. Fander, M. Sc.



DB	JR	DB	JW	LID	RE	PAGE: 1 of 2
LABORATORY: SGS AUSTRALIA PTY LTD						ORDER NO: 24454
UAL - 7 NOV 1986						DATE ASSAYED: THU., 6 NOV., 1986
SAMPLE RESULTS						LAB REF: L07143 / 320906

# SAMPLE RESULTS

SAMPLE NUMBER	U308	Th	Y	Sr	Rb	Bi	Cu	Pb
1 204A 0577	3	10	20	180	65	< 10	28	11
2 204A 0578	11	12	18	55	100	< 10	19	6
3 204A 0579	9	15	19	40	120	< 10	49	20
4 204A 0580	14	3	25	30	75	< 10	157	7
5 204A 0581	< 3	9	16	20	120	< 10	66	21
6 204A 0582	< 3	13	19	20	95	12	68	23
7 204A 0583	5	6	13	8	30	16	83	22
8 204A 0584	17	7	19	10	15	< 10	18	23
9 204A 0585	16	5	16	< 3	20	< 10	28	20
10 204A 0586	20	< 3	15	16	45	< 10	37	12
11 204A 0587	5	< 3	14	25	85	< 10	88	11
12 204A 0588	6	10	20	45	90	< 10	42	17
13 204A 0589	< 3	12	5	40	120	< 10	113	22
14 204A 0590	25	< 3	20	10	17	< 10	207	10
15 204A 0591	9	4	13	20	80	17	111	9
16 204A 0592	20	< 3	5	15	80	< 10	401	9
17 204A 0593	9	10	16	50	110	10	50	15
18 204A 0594	11	7	15	30	110	12	103	26
19 204A 0595								
20 204A 0596								
21 204A 0597		SAMPLE NOT SUPPLIED						
22								
23								
24								
25								
METHOD	XRF-1	XRF-1	XRF-1	XRF-1	XRF-1	XRF-1	D2(a)	D2(a)

Green and Yellow to Head Office  
 Pink to Field Office      LLD  
 Prep Code

ppm 3      ppm 3      ppm 3      ppm 3      ppm 3      ppm 10      ppm 2      ppm 2

LABS AUTHORIZING OFFICER

*M. Bulomshi*



SAMPLE RESULTS

SAMPLE NUMBER	Zn	Ni	Co	Au	Ag	As	Mo	Zr	
1 204A 0577	77	11	18	< 0.01	< 1	< 3	< 3	120	
2 204A 0578	38	25	17	< 0.01	< 1	3	< 3	120	
3 204A 0579	49	36	26	< 0.01	< 1	< 3	< 3	140	
4 204A 0580	87	85	77	< 0.01	< 1	6	< 3	80	
5 204A 0581	175	71	31	< 0.01	< 1	4	< 3	150	
6 204A 0582	124	82	41	< 0.01	< 1	< 3	< 3	130	
7 204A 0583	76	48	20	< 0.01	< 1	6	3	100	
8 204A 0584	113	139	59	< 0.01	< 1	4	< 3	130	
9 204A 0585	86	85	47	< 0.01	< 1	3	< 3	110	
10 204A 0586	60	99	58	< 0.01	< 1	4	< 3	90	
11 204A 0587	23	36	25	< 0.01	< 1	< 3	< 3	120	
12 204A 0588	42	37	35	< 0.01	< 1	< 3	< 3	120	
13 204A 0589	20	24	9	< 0.01	< 1	3	< 3	140	
14 204A 0590	50	100	51	< 0.01	< 1	< 3	< 3	80	
15 204A 0591	28	73	39	< 0.01	< 1	14	3	95	
16 204A 0592	62	61	33	< 0.01	< 1	< 3	< 3	45	
17 204A 0593	56	54	34	< 0.01	< 1	5	< 3	120	
18 204A 0594	92	83	84	< 0.01	< 1	6	< 3	75	
19 204A 0595				< 0.01					
20 204A 0596				< 0.01					
21 204A 0597				SAMPLE NOT SUPPLIED					
22									
23									
24									
25									
METHOD	D2(a)	D2(a)	D2(a)	D5/50	D2(a)	XRF-1	XRF-1	XRF-1	

Green and Yellow to Head Office  
Pink to Field Office LLD  
Prep Code

ppm 2 ppm 2 ppm 2 ppm 0.01 ppm 1 ppm 3 ppm 3 ppm 3

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*W. Buloychi*



**Uranerz Australia P.L.**

DE	LK	MD	HF		UES
JR	JR	DR	JW	UB	RE
RECEIVED 10 NOV 1986					
FILING CODE					

PAGE: 1 of 2

LABORATORY: SGS AUSTRALIA PTY LTD

ORDER NO: 24454

DATE ASSAYED: FRI., 7 NOV., 1986

LAB REF: LP7144 / 320907

**SAMPLE RESULTS**

SAMPLE NUMBER	Cr	Ba	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO
204A 0577	102	0.04	54.1	0.90	14.2	12.2	7.20	0.17
204A 0578	104	0.05	54.6	0.52	14.3	5.33	3.07	0.07
204A 0579	110	0.07	65.4	0.61	13.5	7.88	<0.05	0.13
204A 0580	188	0.11	58.5	0.84	13.1	12.5	<0.05	0.37
204A 0581	192	0.09	57.8	0.95	15.6	13.4	<0.05	0.28
204A 0582	332	0.07	53.9	0.81	19.6	13.6	<0.05	0.17
204A 0583	144	0.03	57.8	0.89	13.7	18.6	<0.05	0.08
204A 0584	136	0.02	31.9	1.95	16.0	20.6	3.38	0.04
204A 0585	244	0.02	39.6	1.03	16.2	20.4	3.52	0.14
204A 0586	130	0.03	53.2	0.88	12.7	10.1	3.38	0.05
204A 0587	88	0.04	72.0	0.47	9.96	6.99	<0.05	0.08
204A 0588	114	0.09	47.6	0.50	11.7	6.57	<0.05	0.17
204A 0589	94	0.03	68.9	0.33	13.5	3.75	<0.05	0.05
204A 0590	246	0.02	53.0	0.99	11.1	12.6	1.29	0.06
204A 0591	136	0.04	57.4	0.66	12.0	11.5	0.57	0.06
204A 0592	166	0.02	65.7	0.32	12.8	5.26	1.72	0.05
204A 0593	134	0.09	61.6	0.62	12.1	13.9	<0.05	0.16
204A 0594	112	0.25	58.0	0.69	12.4	14.3	<0.05	0.88
204A 0595								
204A 0596								
204A 0597								
METHOD	D2(a)	XRF-4	XRF-4	XRF-4	XRF-4	XRF-4	VJL	D3(a)

Green and Yellow to Head Office      ppm      %      %      %      %      %      %      %  
 Pink to Field Office      LLD      2      0.01      0.01      0.01      0.01      0.01      0.05      0.01  
 Prep Code      LABS AUTHORIZING OFFICER

*A. P.*



SAMPLE RESULTS

SAMPLE NUMBER	MgO	CaO	Na2O	K2O	P2O5	Ce	La	S
204A 0577	4.95	7.42	2.40	1.73	0.098	40	8	0.14
204A 0578	2.48	0.40	0.42	3.81	0.068	11	< 5	0.01
204A 0579	1.92	0.06	0.11	3.89	0.084	45	16	0.02
204A 0580	1.65	0.24	0.12	1.88	0.101	6	< 5	0.05
204A 0581	1.31	0.08	0.04	1.97	0.064	25	5	0.02
204A 0582	0.71	0.04	0.05	2.01	0.106	30	12	0.12
204A 0583	0.23	0.04	< 0.01	0.71	0.402	< 3	< 5	0.04
204A 0584	17.4	0.24	0.02	0.45	0.181	< 3	< 5	0.03
204A 0585	12.5	0.09	< 0.01	0.51	0.099	< 3	< 5	0.02
204A 0586	11.1	0.29	0.04	2.22	0.210	< 3	< 5	1.16
204A 0587	1.85	0.17	0.28	2.87	0.088	18	< 5	0.04
204A 0588	1.68	0.29	0.45	3.32	0.037	25	6	0.01
204A 0589	2.91	0.32	0.12	3.47	0.123	40	20	0.03
204A 0590	9.00	0.29	0.07	1.04	0.195	< 3	< 5	0.66
204A 0591	5.16	0.27	0.06	2.66	0.097	30	< 5	2.82
204A 0592	6.71	0.18	0.14	3.56	0.161	< 3	< 5	0.03
204A 0593	1.20	0.07	0.06	3.05	0.099	35	< 5	0.04
204A 0594	1.30	0.13	0.14	4.45	0.225	15	< 5	0.03
204A 0595								
204A 0596								
204A 0597								
METHOD	D3(a)	XRF-4	D3(a)	XRF-4	XRF-4	XRF-1	XRF-1	XRF-4

Green and Yellow to Head Office      %      %      %      %      %      ppm      ppm      %  
 Pink to Field Office      LLD      0.01      0.01      0.01      0.01      0.001      3      5      0.01  
 Prep Code      LABS AUTHORIZING OFFICER

*Lab*



SAMPLE RESULTS

PAGE: 1 of 2

LABORATORY: SGS AUSTRALIA PTY LTD

ORDER NO: 24454

DATE ASSAYED: FRI., 7 NOV., 1986

LAB REF: LP7144 / G20907

SAMPLE NUMBER	LOI						
204A 0577	1.96						
204A 0578	7.26						
204A 0579	6.66						
204A 0580	10.80						
204A 0581	8.68						
204A 0582	8.92						
204A 0583	7.72						
204A 0584	10.50						
204A 0585	9.45						
204A 0586	8.94						
204A 0587	5.50						
204A 0588	6.86						
204A 0589	6.02						
204A 0590	10.60						
204A 0591	10.59						
204A 0592	5.09						
204A 0593	6.71						
204A 0594	6.90						
204A 0595							
204A 0596							
204A 0597							
METHOD	GRAV						

Green and Yellow to Head Office  
Link to Field Office LLD 0.01  
Prep Code

LABS AUTHORIZING OFFICER  
*[Signature]*



JB	JR	DB	JW	LIB	RC
UAL 27 NOV 1986 RECEIVED					

LABORATORY: SGS AUSTRALIA PTY LTD

ORDER NO:

DATE ASSAYED: TUE., 25 NOV., 1986

LAB REF: LP7341 / G21177

# SAMPLE RESULTS

SAMPLE NUMBER	Li	Be					
204A0577	19	< 5					
204A0578	35	< 5					
204A0579	38	< 5					
204A0580	30	< 5					
204A0581	23	< 5					
204A0582	21	< 5					
204A0583	4	< 5					
204A0584	107	< 5					
204A0585	78	< 5					
204A0586	95	< 5					
204A0587	30	< 5					
204A0588	21	< 5					
204A0589	53	< 5					
204A0590	98	< 5					
204A0591	48	< 5					
204A0592	59	< 5					
204A0593	23	< 5					
204A0594	30	< 5					
METHOD	D3(a)	D3(a)					

Green and Yellow to Head Office

Pink to Field Office

LLD

Prep Code

ppm

1

ppm

5

LABS AUTHORIZING OFFICER