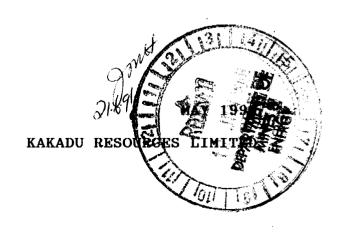
# REPORT ON ACTIVITIES ON MCN'S 1016 - 1027 INCLUSIVE SOUTH HOWLEY

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#### SUMMARY

MCN's 1016 - 1027 are geographically located along strike from and in an area of structural and stratigraphic similarity to the Cosmopolitan Howley Mine.

Work to date on MCN's 1016 - 1027 inclusive has included stream sediment sampling, grid soil sampling, geological mapping, costean excavation, chip sampling and drilling.

Although the results obtained have been generally disappointing a number of areas are considered to require further work. Specifically two zones of comparatively elevated gold values in Costean A. In the western portion of the grid and a cohesive area of anomalous gold values in the central portion of the grid require further evaluation.

## 1. INTRODUCTION

This report details work completed to April 1991 on behalf of or by Compass Resources NL and Kakadu Resources Ltd on MCN's 1016 - 1027 inclusive.

The area under Claims is considered prospective for gold due to its close association (structurally, stratigraphically and geographically) to the Cosmo Howley Mine.

## 2. LOCATION AND ACCESS

The South Howley area straddles the sealed Stuart Highway and lies 165 road kilometres south of Darwin in the Northern Territory. The Old Stuart Highway passes through the southern part of the tenement and the Fountainhead Road lies just west of the tenements.

Accommodation, fuel and phone facilities are available at Hayes Creek, situated approximately 6 kilometres south east of the area.

## 3. TENEMENT POSITION

Compass Resources NL 51% and Kakadu Resources Limited 49% hold Mineral Claims, these being Mcn's 1016 - 1027 inclusive, totalling 140 hectares.

## 4. PREVIOUS EXPLORATION

Previous exploration on MCN's 1016 - 1027 inclusive has been documented in the three previous Annual Reports to the Northern Territory Department on Mines and Energy.

This work included stream sediment, soil and trench sampling, geological mapping, ground magnetic survey and drilling.

The drilling programme was carried out on the basis of recommendation contained in a report by P T Goldner (Goldner 1988) on a review of previous exploration work undertaken by Union Oil.

## 4. PREVIOUS EXPLORATION (Cont)

A total of five holes totalling 260 metres were drilled. The deepest hole was SHDH 5 which was drilled to a depth of 53 metres. The water table occurred in the vicinity of 30 metres inclined depth.

Drill samples were collected in one metre intervals for logging purposes and split by riffles on site. Samples for assay were again split at Pine Creek AAL Laboratory and adjacent one metre samples were combined into one sample for assay purposes. Only gold was analysed using fire assay methods.

The assay results are included on the drill logs attached in Appendix 1 of this report and Analytical Reports are included as Appendix 3. Assay plots of drill holes are also presented in Appendix 2.

The maximum assay obtained was 0.19 ppm Au from hole SHDH-4 from an argillic section within highly altered dolerite.

The results obtained from the drilling programme are summarised below and the completed drill logs are presented in Appendix 1.

### SUMMARY OF DRILL HOLE RESULTS

Hole Azimuth	Incl	<u>Depth</u>	Max Au	Major Lithological Units
SHDH-1 90	65	50	0.14	Graphitic siltstone with interbedded brown siltstone band.
SHDH-2 90	65	57	0.12	As above.
SHDH-3 180	65	50	0.04	Siltstone followed by altered mafic units. Hole ends in dolerite.
SHDH-4 180	65	39	0.19	Altered dolerite progressively more unaltered with depth, traces of pyrite.
SHDH-5 180	65	63	0.01	From surface scree into dominantly graphitic siltstone rich in pyrite with depth.

Holes 1, 2 and 5 were drilled primarily into graphitic sediments. Hole 5 was particularly rich in pyrite however no anomalous gold values were obtained. the highest gold section, 0.19 ppm, in SHDH-4 was related to a shear zone within altered dolerite.

#### 5. CONCLUSIONS AND RECOMMENDATIONS

Lithological indications from the drill chips tends to indicate that there is a comparatively higher arsenopyrite-pyrite content in the graphitic sediments. The trend of soil arsenic anomalies also indicates the stratigraphic control of arsenic distribution. The highest arsenic values appear to occur just above the banded chert and ironstone unit.

Down slope migration of the arsenic anomalies occurred just east of drill holes SHDH-1 and SHDH-2. The slightly elevated gold values of these two holes near the surface are within the oxidised zone and could well be related to surface enrichment due to weathering.

A cross section for drill holes SHDH-4 and SHDH-5 has been prepared as Plant 2 and shows the interpreted geology of the section and indicates that the dips may be steeper than previously postulated from surface mapping.

Although the overall gold content of the samples collected from the drilling programme was low, the potential for gold mineralisation on the Tenements still remains to be completely tested.

Areas requiring further work include the north westerly plunging nose of a parasitic anticline on the north eastern part of the Tenements and areas along a lower stratagraphic horizon that has returned anomalous rock chip results.

Work carried out by the joint venture partners in the past year included a re-evaluation of previous exploration data, then the mapping of the area, including some interpretation of structure, culminating in follow up sampling of the two area mentioned above.

Tables 1 and 2 summarise results from rock chip sample and stream sediment surveys undertaken in the area.

The results have been compiled at 1:5,000 scale on an interpretive plan showing the approximate location of the prospective Koolpin Formation relative to current joint venture land holdings. Figure 1 shows rock chip values, whilst Figure 2 also shows compilation of stream sediment geochemistry on this base plan.

Additional targets for gold mineralisation were identified and work on these targets will be carried out in the next field season.

## 66. TOTAL EXPENDITURE

South Howley

\$159,912.75

\$159,912,75

## 7. REFERENCES

Chan, K M &		
Goldner PT	February 1987	Report on Exploration of EL 4867 in the Northern Territory for Year Ended February 11th 1987.
Goldner P T	February 1988	Report on Exploration of EL 4867 South Howley, Northern Territory for Year Ended February 11th 1988.
Kakadu Resources Ltd	February 1989	Report on Exploration of EL 4867 South Howley, for Year Ended February 1989.

APPENDIX 1

DRILL LOGS

DRILL HOLE NO: SHDH-1 COMMENCED: 20/4/88 COMPLETED: 20/4/88 NORTHING: 5067 m. EASTING: 4941 m. DEPTH: 50 m. INCLINATION: 65 deg. WATER TABLE: 31 m.

From	ТО	Description	Sample No.	Au ppm
0	2	Weathered siltstone and mudstones rubbles	44002	0.04
2	4	Graphitic siltstone with limonitic stains	44004	0.08
4	6	Brown graphitic siltstone	44006	<
6	8	Dark grey graphitic siltstone	44008	0.04
8	10	85% black graphitic siltstone and 10% quartz fragments	44010	<
10	12	85% black graphitic siltstone and 10% quartz fragments	44012	0.14
12	14	Graphitic siltstone, low % quartz frgts.	44014	0.04
14	16	Lt. stained graphitic siltstone	44016	0.06
16	18	Powdery graphitic siltstone with 10% siltstone fragments	44018	<
18	20		44020	<
20	22	Low qtz lt. stained graphitic siltstone	44022	0.04
22	24	Greenish clay derived from oxidised altered dolerite	44024	0.02
24	26	Same as #44024 with 20% clear qtz	44026	0.02
26	28	Same as $\#44024$ and contact with graphitic siltstone at 27 m	44028	0.04
28	30	Graphitic siltstone, low % qtz frgts.	44030	0.02
30	32	Powdery graphitic siltstone with 2% fine pyrites	44032	0.02
32	34	Low qtz graphitic siltstone	44034	0.04
34	36	Same as #44034	44036	0.06
36	38	Same as #44034	44038	0.01
38	40	Graphitic siltstone, 10% qtz frgts.	44040	0.01
40	42	Same as #44040	44042	0.01
42	44	Same as #44040	44044	0.01
44	46	Graphitic meta-siltstone wet return	44046	0.02
46	48	Same as #44046	44048	<
-48	50	Powdery graphitic siltstone traces of fine pyrites	44050	0.04

DRILL HOLE NO: SHDH-2 COMMENCED: 20/4/88 COMPLETED: 21/4/88 NORTHING: 5065 m. EASTING: 4945 m. DEPTH: 57 m. INCLINATION: 65 deg. WATER TABLE: 43 m.

Fron	n To	Description	Sample No.	Au ppm
0	2	Siltstone surface scree	44052	0.02
2	4	Oxidised limonite stained siltstone	44054	0.01
4	6	Dark grey graphitic siltstone	44056	0.04
6	8	70% powdery black graphitic meta-siltstone	44058	<
8	10	85% black graphitic siltstone powder	44060	0.06
10	12	85% black graphitic siltstone powder	44062	0.06
12	14	Graphitic siltstone, 1-2% qtz frgts.	44064	<
14	16	Graphitic siltstone, 20% lt.stained frgts.	44066	0.04
16	18	70% graphitic siltstone, 20% lt. stained fragments	44068	<
18	20	Graphitic siltstone, 2% qtz frgts.	44070	0.12
20	22	80% graphitic siltstone, 10% qtz frgts.	44072	0.02
22	24	Same as #44072	44074	0.02
24	26	Same as #44072 with rare hematite frgts.	44076	0.01
26	28	Same as #44072, contact with brown silt- stone at 28 m		
28	30	Brown siltstone	44078	0.04
30	32	Same as #44080	44080	< .
32	34	Same as #44080	44082	< .
34,	36	Same as #44080	44084 44086	<b>〈</b>
3 6	38	Same as #44080	44088	<
38	40	Graphitic siltstone, 5% pyrites	44090	< <
10	42	Powdery black graphitic meta siltstone	44090	
2	44	Same as #44092	44092	< <
4	46	70% powder 20% frgts. graphitic meta siltstone 0.5% qtz	44094	<
.6	48	Wet powdery graphitic siltstone, traces of fine pyrites	44098	`
8	50	Powdery graphitic siltstone, hematite frg.		`
.0	52	Graphitic siltstone, 3% pyrites	44102	` <
2	54	Graphitic siltstone, 7-8% pyrites	44104	`
4	56	Py powdery black graphitic meta siltstone	44106	·<
6	57	Same as #44106		0.04

AZIMUTH: N 180 deg.

DRILL HOLE NO: SHDH-3 COMMENCED: 21/4/88 COMPLETED: 21/4/88 NORTHING: 4775 m. EASTING: 4950 m. DEPTH: 50 m. AZIMUTH: N 180 deg. INCLINATION: 65 deg. WATER TABLE: 34 m.

From	To	Description	Sample No.	Au ppm
0	2	Surface scree	44112	0.02
2	4	Red siltstone	44114	0.03
4	6	Red siltstone	44116	0.02
6	8	Hematite rich oxidised mafic igneous rock	44118	0.03
8	10	Same as #44118	44120	0.04
10	12	Same as #44118	44122	0.04
12	14	Pink siltstone	44124	0.04
14	16	Dark green clay zone	44126	0.03
16	18	Dark green clay zone	44128	0.03
18	20	Light green altered dolerite	44130	0.03
20	22	Pink siltstone	44132	0.03
22	24	Dolerite with qtz fragments	44134	0.04
24	26	Dolerite	44136	0.04
26	28	Light green altered dolerite	44138	0.03
28	30	Light green altered dolerite	44140	0.03
30	32	Same as #44140	44142	0.03
32	34	Same as #44140	44144	0.03
34	36	Pink siltstone	44146	0.03
3 6%	38	Same as #44146	44148	0.03
38	40	Strongly hematised zone	44150	0.03
40	42	Same as #44150	44152	0.03
42	44	Same as #44150	44154	0.03
44	46	Same as #44150	44156	0.03
46	48	Oxidised red clay. Prob. altered dolerite	44158	0.03
48	50	Grey fresh dolerite minor pyrite	44160	0.04

DRILL HOLE NO: SHDH-4 COMMENCED: 21/4/88 COMPLETED: 21/4/88 NORTHING: 4850 m. EASTING: 5700 m. DEPTH: 50 m. AZIMUTH: N 180 deg. INCLINATION: 65 deg. WATER TABLE: 39 m.

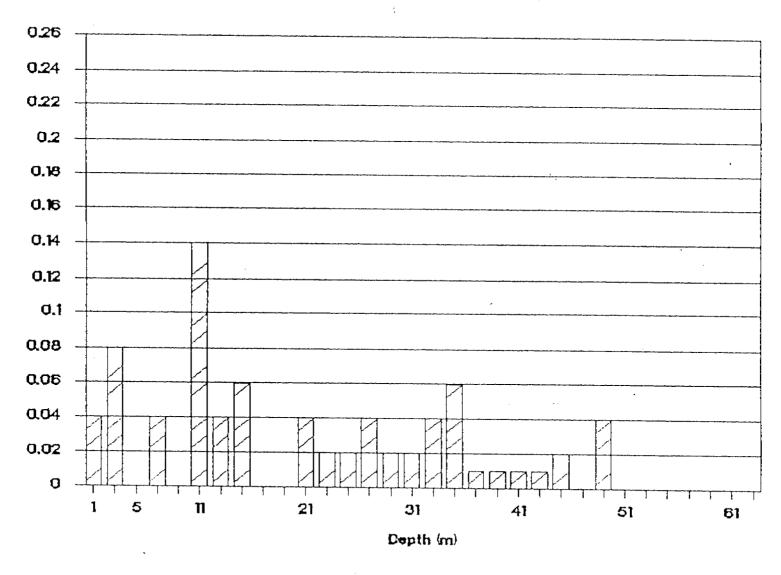
From	To	Description	Sample No.	Au ppm
0	2	Terra Rosa	44162	0.05
2	4	Yellow oxidised siltstone	44164	0.05
4	6	Yellow oxidised siltstone	44166	0.03
6	8	Weathered greenish yellow clay in dolerite	44168	0.03
8	10	Oxidised altered dolerite	44170	0.03
10	12	Same as #44170	44172	0.05
12	14	Same as #44170	44174	0.03
14	16	Lt. green clay from altered dolerite	44176	0.05
16	18	Lt. mustard green altered dolerite	44178	0.02
18	20	Same as #44178	44180	<
20	22	Same as #44178	44182	<
22	24	Partly alt. dolerite with fresh frgts.	44184	0.01
24	26	85% argillised dolerite	44186	0.01
26	28	Epidotised lt. green altered dolerite	44188	<
28	30	Same as #44188	44190	0.01
30	32	Same as #44188	44192	<
32	34	Highly altered dolerite	44194	0.19
34	36	Well fractured partly altered dolerite	44196	0.01
3 <i>6</i>	38	Progressively fresher dolerite, tr pyrite	44198	0.01
38	39	Fresh dolerite very tight hole	44199	0.01

DRILL HOLE NO: SHDH-5 COMMENCED: 22/4/88 COMPLETED: 22/4/88 NORTHING: 4885 m. EASTING: 5700 m. DEPTH: 63 m. AZIMUTH: N 180 deg. INCLINATION: 65 deg. WATER TABLE: 21 m.

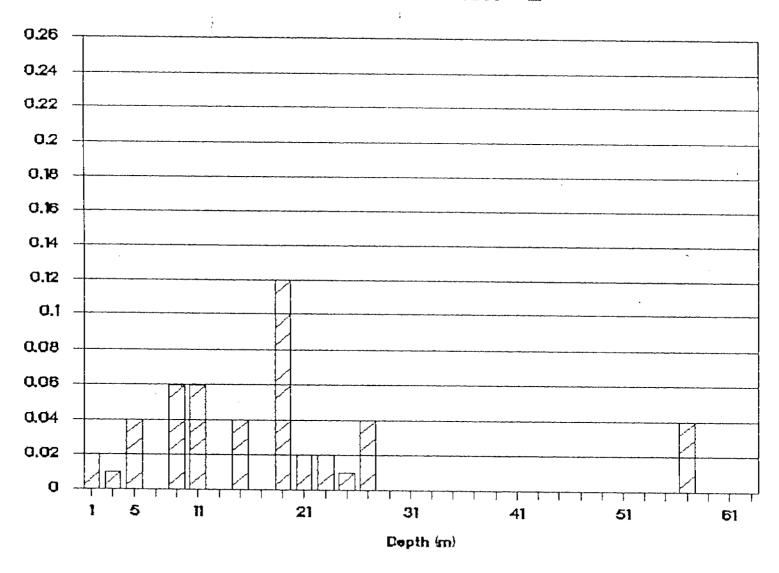
From	то	Description	Sample No.	Au ppm
0		Weathered graphitic siltstone	44202	0.01
2	4	Same as #44202	44204	<
4	6	Same as #44202	44206	<
6	8	Black graphitic clay zone	44208	<
8	10	98% graphitic powder, 2% hematised frgts.	44210	<
10	12	Same as #44210	44212	<
12	14	Powdery graphitic claystone	44214	<
14	16	Fine powdery graphitic clay	44216	<
16	18	98% graphitic powder	44218	<
18	20	Same as #44218	44220	<
20	22	Same as #44218	44222	<
22	24	Same as #44218	44224	<
24	26	Same as #44218	44226	<
26	28	Fine powdery graphitic clay	44228	<
28	30	Same as #44228	44230	<
30	32	Fine powdery graphitic clay 3%lithic frgt.	44232	<
32	34	Same as #44232	44234	<
34	36	96% graphitic powder 3% pyrite	44236	<
36	38	Same as #44236	44238	<
38	40	Fine graphitic powder, fine py lined siltstone fragments	44240	<
40	42	Same as #44240	44242	<
42	44	Black muddy graphitic section, fine py	44244	<
44	46	Same as #44244	44246	<
46	48	Pyrite rich (15%) graphitic siltstone	44248	<
48	50	Same as #44248	44250	<
50	52	Same as #44248	44252	<
52	54	Ptly oxidised graphitic siltstone with hematite and pyrite	44254	<
54.	56	Same as #44254	44256	< ⋅
56	58	Same as #44254	44258	0.01
5 8	60	Same as #44254	44260	0.01
60	62	Pyrite rich (40%) graphitic siltstone	44262	0.01
62	63	Same as #44262	44263	<

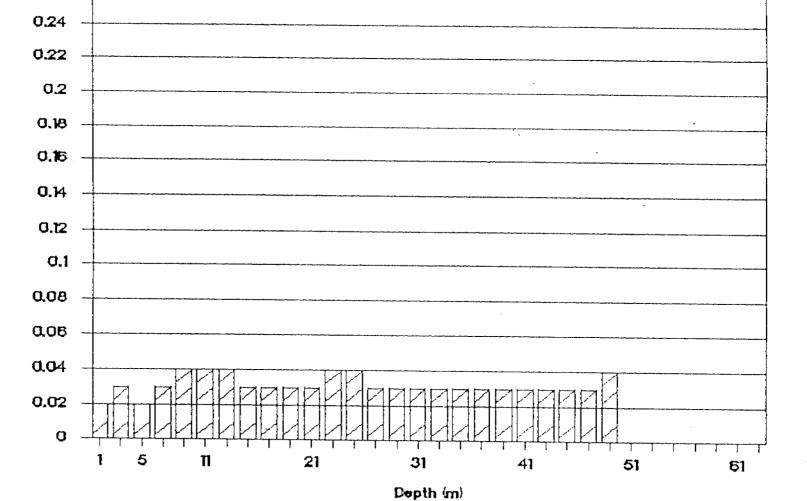
APPENDIX 2

PLOT OF GOLD ASSAY RESULTS



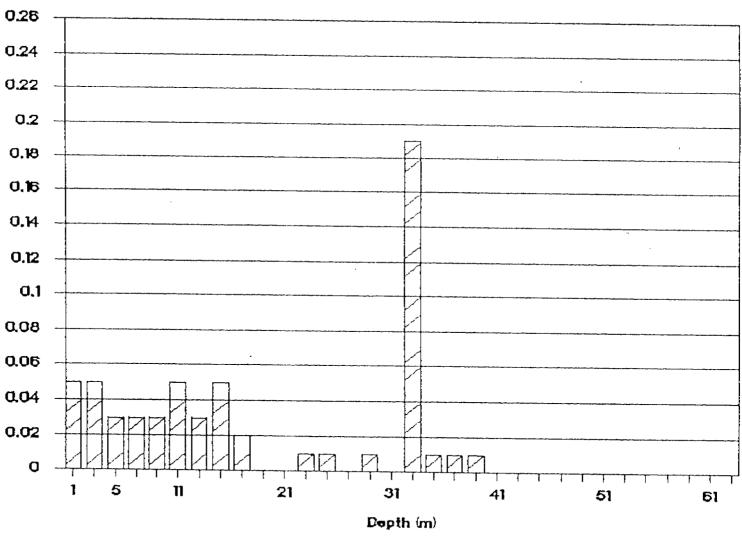
Au ppm

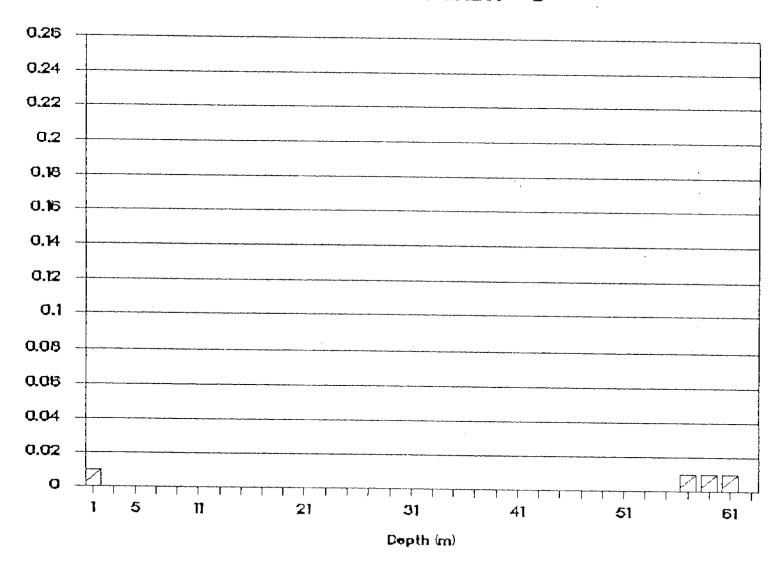




AL PPM

0.28





APPENDIX 3

ANALYTICAL REPORTS



# Assay Laboratories Group

PINE CREEK! Lot 174 Ward Street
P.O. Box 41 NT 5782
Ph. (089) 761 261
Fax. (089) 761310

# UNION OIL

Report: PC 11353

DATE: 28/04/1988

Client reference: 14032

Copies to:

AMPLES:	received	22/04/1988	五人転記	PREPARATION CODE
4				

1	ANALYSIS	Code	Quality Parameter	Detection Limit	üpits
7	Av	FA50/D410	Acc. ± 15%	0.01	១០៩
7	Au (R:	: : :	1 1 1	0.01	<b>១១</b> ៤



REPORT: PC 11353

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REFORTS TO 11000				P	Page 1 of 4			
Sample	Au	Au (R)						
44001+44002	0.04		<u> </u>	<u> </u>				
44003+44004	0.09					;		
44005+44006	<0.01							
44007+44008	0.04							
09+44010	<0.01	<0.01						
44011+44012	0.14					_		
44013+44014	0.04							
44015+44016	0.06							
44017+44018	<0.01					·		
44019+44020	<0.01					i una		
44021+44022	0.04		***************************************					
44023+44024	0.02							
44025+44026	0.02							
44027+44028	0.04					l. i		
44025+44030	0.07	0.92						
44031+44032	0.02	0.61						
44035-44034	0.04							
44035+44036	6.06							
44037+44038	0.01	0.01				÷.		
44039+44046	0.01	0.0)						
44041+44042	0.01	0,01	<del>- · · · · · · · · · · · · · · · · · · ·</del>			3		
44042+44044	0.01	0.0)						
44045±44046	0.02							
44047+44048	<0.01	0.01				·		
44049+44050 	0.04							



REPORT: PC 11353

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			3.4	•		
Sample	Au	Άμ(R)				
44001+44053	0.07				 	
44055+44054	0.01	V - V 1				
44355+44056	0.04					
44057+44059	<0.01					
59+44060	0.06					
44061+44062	0.06				 	
44053+44064	<0.01					
44065+44066	0.04					
44067+44068	<0.01					
44069+44070	0.12					
+ 44071+44072	0.02	0.04			 	·
44073+44074	0.02					
44075+44076	0.01	0,01				
44077+44078	0.04			•		
9+44080	<0.01					
44081+44082	<0.01					
# 4 O € 3 + 4 4 t € #	<0.01					
44085+44085	<0.01	<0.01				
44087+44088	<0.01					
44395+44699	(0.0)					
44691+44652	<0.01				 . <u> </u>	
44093944094	<0.01					
44095+44096	<0.01					
44097+44098	<0.01		•			
44099+44100	<0.01	<u></u>	ing and the second			e et egging



REPORT: PC 11353

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Sample	Au	Au (R)					The second second
66101+4410	<0.01						
44103+44104	.0.01	0.61					
44105+44136	80.01						
44107	( . O 4						
111+44112	0.02	0.02					
44113+44114	0.03						
44115~44116	0.02						
44117+44119	0,03						
44119+44120	0.04			<b>\</b>			
44121+44122	0.04						
44523+44124	0.04	<del></del>					<u> </u>
44125÷44126	0.03						
44127+44128	0.03						
44129+44130	0.03	,					
131+44132	0.03						
44133-44134	0.04						
44178+44136	Ú,ÇA						
44137+44138	0.03						
44139+44140	0.03						
44141+44143	6.03	0.03	•				
44143+44144	0.03					•	
44145+44146	0.03						
44147+44148	0.03						
44149+44150	c.03						
44151+44152	0.03	<u>. * .</u>	ing the state of t	er karlını eli teres	et ta <u>nkir kenin</u>	i Statistical agency of the	a estenti



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		State Charles State Charles State Charles		·	
Sample	Au	Au(R)			
44150+44154	0.03		•		•
44155+44156	0.03	0.01			
44157+44158	0.03				
44159+44160	0.04				
61+44162	0.05				
44163+44164	0.05			 	
44165+44166	0.03				
44167+44168	0.05				
44169+44176	0.03				
44171+44172	0.05	0.03			
44173+44174	0.03				
44175+44176	0.08				
44177+44178	0.02				
44179+44150	40.€1				
<b>81+44182</b>	(0.01				
44183+44184	0.61			 	
44185+44188	0.01				
44187+44158	16.51				
44189+44190	0.00				
44191+44197	( C. O.)				
44193-40194	0.39	0.16			
64195+44146	<b>9.</b> 91				
44197÷44198	0.01				
44199+44200	0.01				

Data in ppm unless otherwise stated.





## Assay Laboratories Group

PINE CREEK! Lot 174 Ward Street
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## UNION OIL

Report: PC 11386

DATE: 28/04/1988

lient reference: 14032 ADD. TO FC1135

Copies to:

AMPLES: received 22/04/1988

TYFE

PREPARATION CODE

ANALYSIS	Code	Quality Parameter	Detection Limit	Units
Au	FA50/D610	Acc. ± 15%	0.01	pp:m
Au(R)	: : :	; ; ;	0.01	ppw ppw



REPORT: PC 11386

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Sample	Au	Au (R)			 
44201+44202	0.01				
44203+44204	<0.01				
44205+44206	<0.01				
44207+44208	<0.01 .			•	
44209+44210	<0.01				
44211+44212	<0.01				
44213+44214	<0.01	<0.01			
44215+44216	<0.01				
44217+44218	<0.01				
44219+44220	<0.01		·		
44221+44222	<0.01	•			
44223+44224	<0.01		•		
44225+44226	<0.01				
44227+44228	<0.01				
229+44230	<0.01				
44231+44232	<0.01	<0.01	• .		
44233+44234	<0.01				
44234+44236	<0.01				
44237+44238	<0.01	•			
44239+44240	<0.01				
44241+44242	<0.01				 
44243+44244	<0.01				
44245+44246	<0.01				
44247+44248	<0.01				
14249+44250	<0.01				

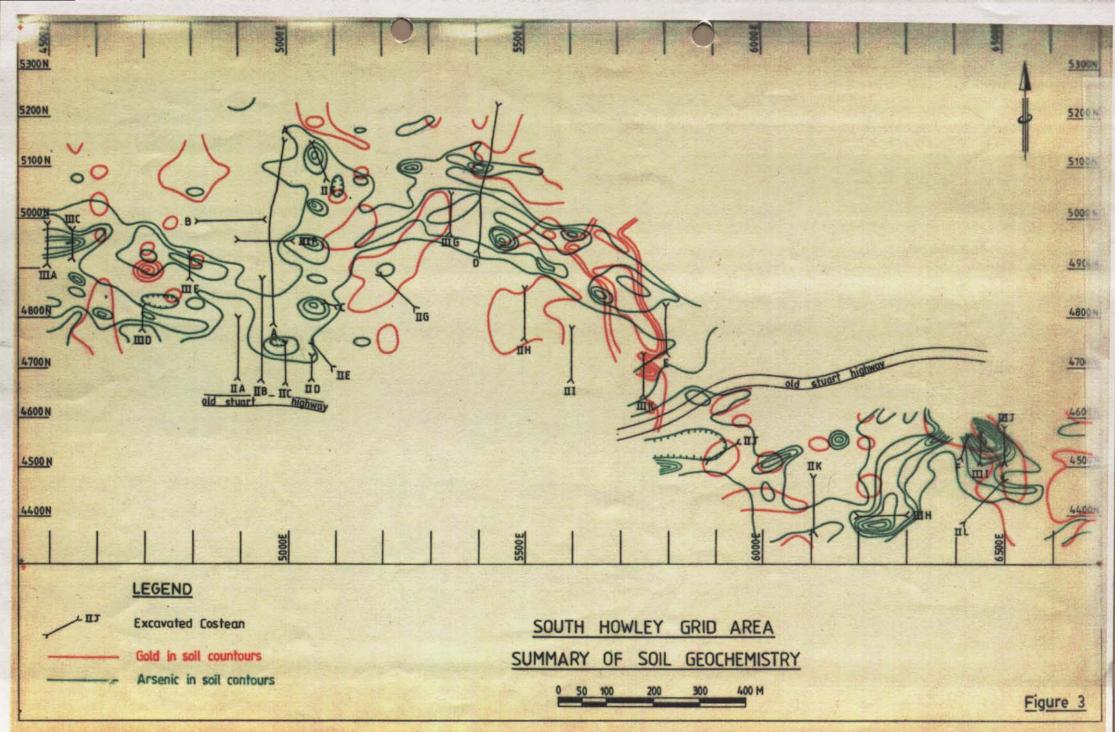


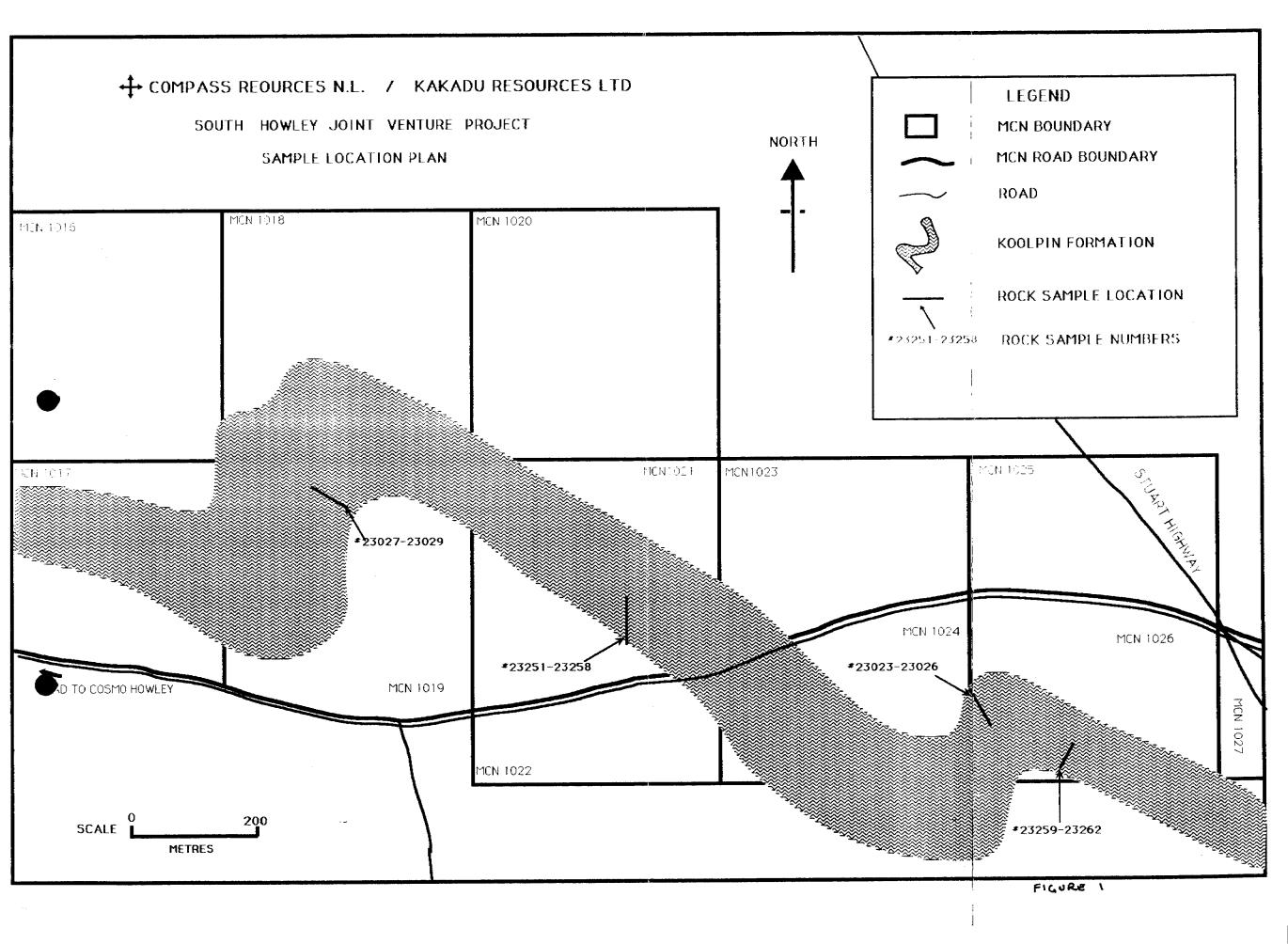
REPORT: PC 11386

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Sample	Au	Au(R)
 44251+44252	<0.01	
44253+44254	(0.01	
44255+44256	<0.01	<0.01
44257+44258	0.01	
259+44260	0.01	
 44251+44262	0.01	<0.01
44263	<0.01	

Data in ppm unless otherwise stated.





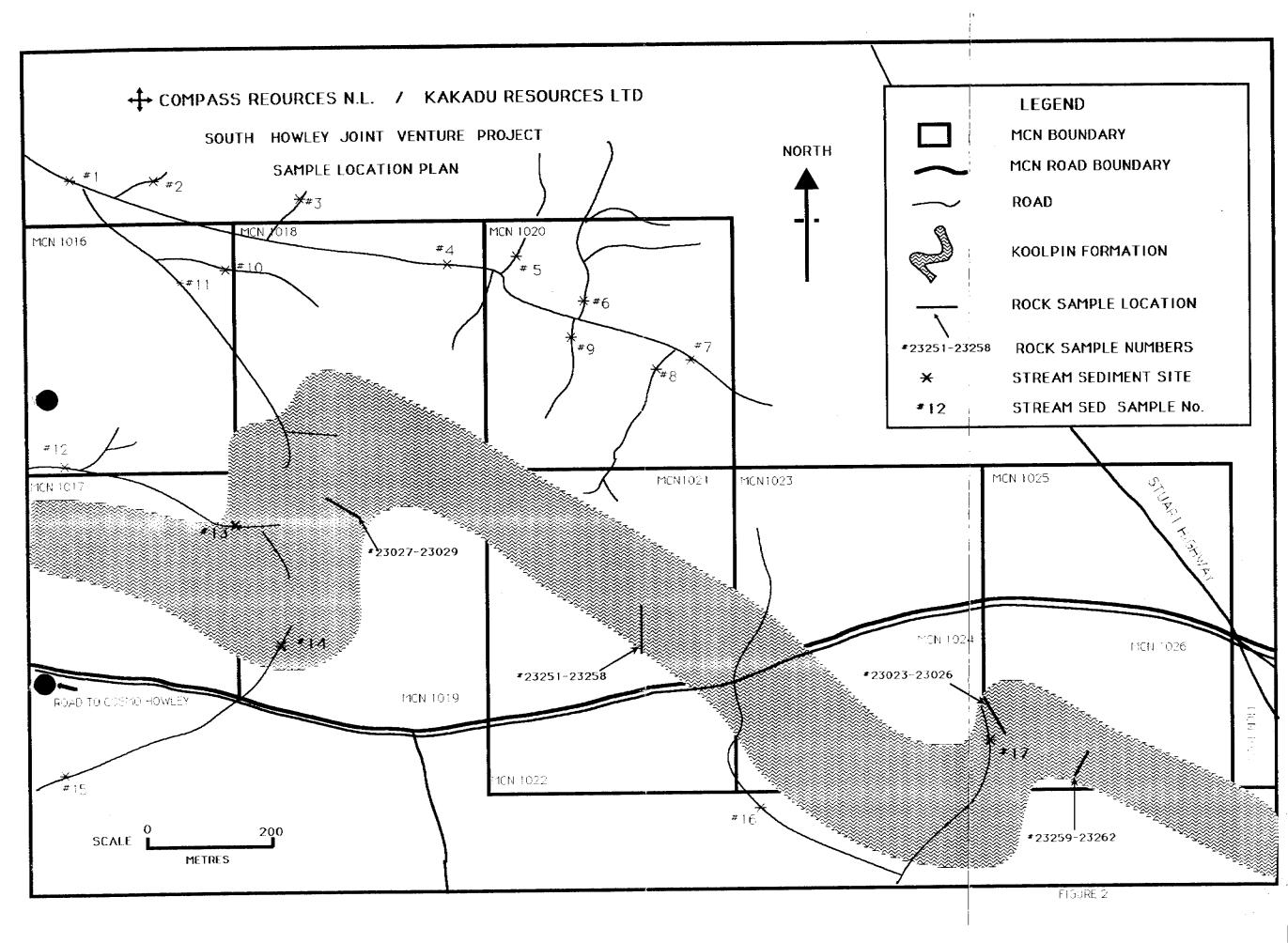


TABLE 1

ROCK CHIP SAMPLES (ppm)

Sample No.	Au
23023	0.034
23024	0.016
23025	0.009
23026	0.015
23027	0.006
23028	<0.005
23029	<0.005
23251	0.261
23252	0.316
23253	0.437
23254	0.409
23255	0.021
23256	0.018
23258	0.153
23259	0.016
23260	0.010
23261	0.306
23262	0.092

TABLE 2
STREAM SEDIMENT SAMPLES (ppm)

Sample	Au	Au	As
Site	$\mathtt{Silt}$	Pancon	Silt
1	.0007	0.032	17
2	<0.005	0.230	11
3	<0.005	0.111	7
4	0.005	0.122	13
5	<0.005	<0.005	<2
6	<0.005	0.053	3
7	<0.005	<0.005	15
8	<0.005	0.009	10
9	<0.005	0.005	12
10	<0.005	0.072	10
11	0.011	0.007	18
12	<0.005	0.008	12
13	0.007	0.007	26
14	<0.005	<0.005	5
15	<0.005	<0.005	7
16	<0.005	<0.005	14
17	<0.005	<0.005	10