

MAP NO.: ASSESSMENT REPORT  
105F 10 PROSPECTUS  
CONFIDENTIAL X  
OPEN FILE

DOCUMENT NO: 093129  
MINING DISTRICT: WATSON LAKE  
TYPE OF WORK: GEOCHEMISTRY

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REPORT FILED UNDER: JAMES S DODGE

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DATE PERFORMED: JULY 11, 1993

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DATE FILED: AUGUST 30, 1993

---

LOCATION: LAT.: 61°41'N

---

AREA: PORCUPINE CREEK

---

LONG.: 132°44'W

---

VALUE \$: 400

---

CLAIM NAME & NO.: GAMMA 1-2 (YB34969-970)

---

WORK DONE BY: JAMES S DODGE

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WORK DONE FOR: JAMES S DODGE

---

DATE TO GOOD STANDING:

---

REMARKS: 16 CHIP SAMPLES WERE COLLECTED AND ANALYSED FOR CERIUM



ROCK SAMPLING PROGRAM

GAMMA 1-2 CLAIMS

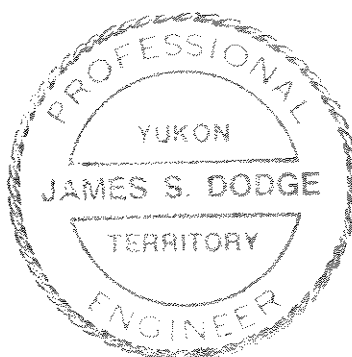
**093129**

CLAIM SHEET 105F/10

James S. Dodge 09 August, 1993

Latitude  $61^{\circ}41'$ ; Longitude  $132^{\circ}44'$

Work Done 11 July, 1993



This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (1) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 400.

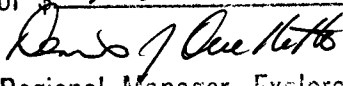
*for*   
Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

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INTRODUCTION

The 1993 work on the Gamma 1 & 2 claims comprised preparation of a generalized geologic map, verification of location of radioactive sites using a Precision Model 111B scintillometer, and obtaining representative rock chip samples to determine their content of cerium (Ce), since this element is normally the major light rare-earth component. These outcrops were discovered by the writer while prospecting under the Yukon Mining Incentives Program in 1992.

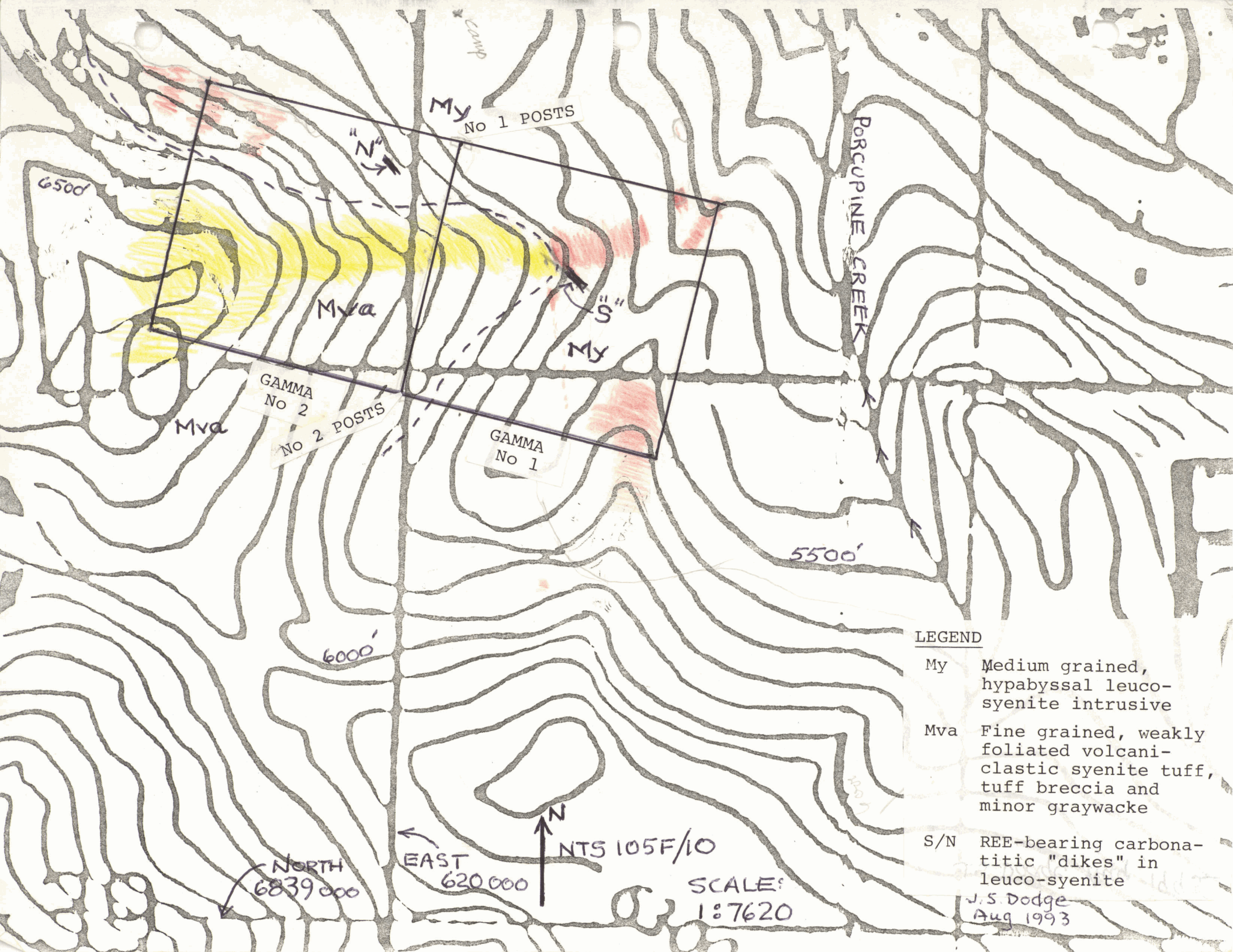
Field work was conducted by the writer on 11 July, 1993.

PROPERTY LOCATION AND ACCESS

The Gamma property comprises two contiguous quartz ~~miner~~ mineral claims recorded at the Watson Lake Mining Recorder's as follows:

<u>CLAIM NAME</u>	<u>GRANT NUMBERS</u>	<u>EXPIRY DATE</u>
Gamma 1-2	YB34969 - YB34970	31 July, 1993

The claims are located at approximately 61°41' North Latitude and 132°44' West Longitude on NTS Claim Sheet 105F/10, some 37 kilometers south-southwest of the village of Rrss River. Access in 1993 was by helicopter.



GAMMA  
No 2  
No 2 POSTS

My  
No 1 POSTS

GAMMA  
No 1

LEGEND

- My Medium grained, hypabyssal leucosyenite intrusive
- Mva Fine grained, weakly foliated volcanoclastic syenite tuff, tuff breccia and minor graywacke
- S/N REE-bearing carbonatitic "dikes" in leuco-syenite

J.S. Dodge  
Aug 1993

SCALE:  
1:7620

NORTH  
6839000

EAST  
620000

NTS 105F/10

### GEOLOGICAL SETTING

The Gamma claims lie entirely above timberline and embrace an east-west trending ridge forming the north-facing sidewall of a cliff-forming cirque. A steep, grass covered slope dominates the south-facing terrain of the ridge. Altitudes on the property range from 1580 meters to over 2010 meters.

The claims cover bedrock exposures of Mississippian age leuco-syenite and replacement type carbonatite intrusives. Several boulders of lamprophyre were noted in the cirque talus. Unconformably overlying these hypabyssal rocks is a thick succession of Mississippian volcaniclastics comprising cream colored tuffs, tuff breccias, and minor dark gray graywacke with interfingering dolomites. Diopsidic skarn and hornfels outcrop approximately 100 meters north of the northern boundary of Gamma No. 2 claim in the thermal aureole of coarse grained, mela-syenite and pyroxenite intrusives.

### MINERALIZATION

During a gamma ray radiometric reconnaissance in 1992, two in-line bedrock areas of anomalously high thoritic radioactivity were detected. Chip samples in 1992 from both sites were assayed by Chemex Labs Ltd of Toronto for yttrium, niobium, and zirconium. Only moderately anomalous values

in these elements were revealed. However, one sample was subsequently analyzed for the suite of 15 rare-earth elements by the Toronto laboratory of Chemex. That sample assayed over 2% in combined light rare-earth elements.

Thus, two chip samples from each of the two radioactive sites were selected for determination of cerium (Ce) content. Among the light rare-earths, cerium has shown consistently to be the dominant rare-earth element in other samples from the syenite terrane in the Pelly Mountains.

Laboratory processing normally requires three weeks time, and analytical results are not now in hand at this writing, but will follow when available.

#### Sample Sites

"S" designates the initial anomalously high (12x background) radioactive discovery on Gamma No. 1 claim, as shown on Figure 1.

Host is a near-vertical, massive, dark gray, fine grained calcarbonate "dike" situated within fine grained leuco-syenite terrane. The dike-like trend of 130°A is exposed in a hand dug trenching through thin overburden (Photo No. 1). Exposures indicate widths ranging from 3 meters at the 5545' altitude at the southern end to its pinch-out some 60 meters north and at 25 meters higher altitude into Mississippian ankerite-bearing, weakly foliated volcanoclastic tuffs.



PHOTO No. 1 Looking northeast across the "S" radioactive showing of the "dike" of carbonatized leucosyenite exposed beneath thin overburden. Two chip samples were taken in 1993 as a composite sample from this and two nearby bedrock exposures.

It is the writer's interpretation that the carbonate "dike" represents a late-stage carbonate metasomatic replacement of syenite by volatile mineralized solutions carrying rare-earths, niobium, zirconium, and thorium from a concealed fractionated carbonatite intrusive. This hypothesis is reinforced by the occurrence of a wide, coarse-grained carbonatite plug exposed in a canyon approximately 500 meters north of the Gamma claims.

"N" (Photo No. 2) designates the cliff exposure in the cirque on Gamma No. 2 whose discovery resulted from up-slope tracing of highly anomalous (15x background) radioactivity exhibited by a number of talus boulders.

Creamy to gray carbonate bedrock is exposed over a 5 meter width, and for a 15 meter lateral extent, in the lowest of the leuco-syenite cliff outcrops in the cirque approximately 250 meters north-northwest of site "S". Talus slides conceal all bedrock between "N" and the ridge pinch-out of locality "S". Approximately 50 meters north of the Gamma No. 2 claim, talus comprises over 50% skarn and hornfels originating from the dangerously scalable cirque cliffs.



PHOTO No. 2      Looking north along trend of "N" radioactive radioactive "dike" in carbonatized leuco-syenite. The steeply inclined "dike" here is approximately 5 meters wide across which two composite chip samples were taken.

CONCLUSIONS

The occurrence of a carbonatitic geologic setting for the two radioactive prospects on the Gamma property presents a potential for discovery of concentrations of the light rare-earth elements, principally cerium, lanthanum, neodymium, and praseodymium.

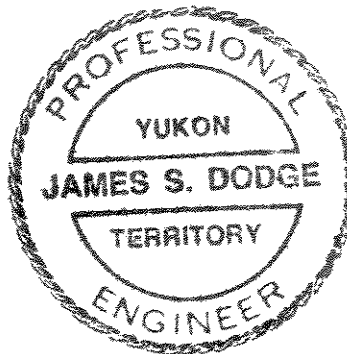
Analytical results by CHEMEX LAB for cerium on all four samples, namely, #578251-52 at site "S" on Gamma 1 claim and #578253-54 at site "N" on Gamma 2 claim, indicate only moderately anomalous values.

Thus, it does not now appear prudent to request analyses on these samples for additional light rare-earth elements.

Respectfully submitted,

*James S. Dodge*  
James S. Dodge  
Professional Engineer-Yukon

14 MacDonald Road  
Whitehorse, Yukon Y1A 4L2  
TEL: 403-633-3677  
15 August, 1993



## STATEMENT OF QUALIFICATIONS

I, James S. Dodge, of 14 MacDonald Road, Whitehorse, Yukon, Canada submit the following information which establishes some of my qualifications bearing on the necessary level of competence required to carry out the field work and preparation of this preliminary report on the Gamma 1-2 mining claims in the Yukon.

### Education

Missouri School of Mines, B.S. Mining Engineering 1941  
Princeton University, Field Geology, 1940  
Stanford University, M.S. Economic Geology 1951  
Albert Ludwigs Universitaet (Germany), Economic Geology 1952

### Experience

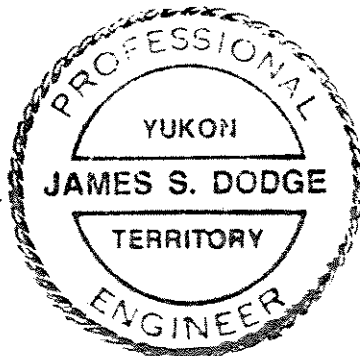
Active in mineral industry since 1941 (including U.S. Army engineers) in North and South America, Asia and Africa as prospector, company geologist, mining engineer, mine operator, and consultant in ferrous and non-ferrous metals and in industrial minerals. Among the many organizations which I have been associated as an employee and consultant:

Anaconda, Esso, Mitsui, USAEC, Ventures, DIAND, SCAP-Japan, Atlas, Glidden, Spartan/Nuspar, Hirst-Chichagof, Floyd Odlum, Yukon Barite and numerous small mining ventures.

Specifically applicable field experience includes (USAEC) examinations of numerous vein-type uranium and thorium deposits in western United States and central France. Briefly visited the bastnaesite REE mine at Mountain Pass, California. Over two years with Anaconda Mining Company in Butte, Montana as vein-type underground mine geologist.

### Professional Affiliations

Registered Professional Engineer (No. 311) by Association of Professional Engineers of the Yukon Territory  
Fellow of the Society of Economic Geologists  
Senior Member of Society of Mining, Metallurgy and Exploration



*James S. Dodge*  
James S. Dodge, P. Eng.





# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221

DODGE, JAMES S.

14 MACDONALD RD.  
WHITEHORSE, YUKON  
Y1A 4L2

INVOICE NUMBER

I 9 3 1 7 8 6 0

## BILLING INFORMATION

Date: 6-AUG-93  
Project:  
P.O. No.:  
Account: BKY

Comments:

Billing: For analysis performed on  
Certificate A9317860

Terms: Payment due on receipt of invoice  
1.25% per month (15% per annum)  
charged on overdue accounts

Please Remit Payments to:

**CHEMEX LABS LTD.**  
212 Brooksbank Ave.,  
North Vancouver, B.C.  
Canada V7J 2C1

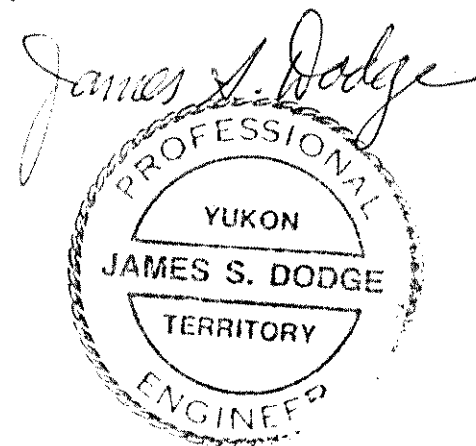
# OF SAMPLES	ANALYSED FOR CODE - DESCRIPTION	UNIT PRICE	SAMPLE PRICE	AMOUNT
16	205 - Geochem ring to approx 150 mesh	2.10		
	274 - 0-15 lb crush and split	3.05		
	135 - Ce NAA ppm	5.00		
	288 - NAA encapsulation/irradiation	7.50	17.65	282.40

Total Cost \$ 282.40  
(Reg# R100938885 ) GST \$ 19.77

TOTAL PAYABLE (CDN) \$ 302.17

$\$ 302.17$   
 $\frac{\$ 302.17}{16 \text{ smp.}} = \$ 18.88 \text{ each sample}$

GAMMA 1 2 samples @  $\$ 18.88_{ea} = \$ 37.76$   
GAMMA 2 2 samples @  $\$ 18.88_{ea} = \$ 37.76$   
TOTAL ANALYTICAL COST =  $\$ 75.52$



COPY



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 212 Brooksbank Ave., North Vancouver  
 British Columbia, Canada V7J 2C1  
 PHONE: 604-984-0221

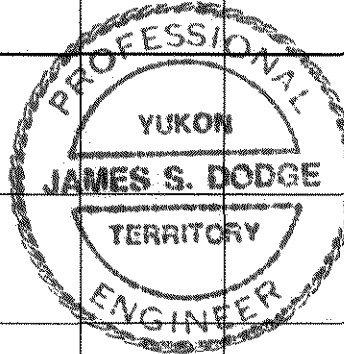
To: DODGE, JAMES S.  
 14 MACDONALD RD.  
 WHITEHORSE, YUKON  
 Y1A 4L2

Page Number : 1  
 Total Pages : 1  
 Certificate Date: 05-AUG-93  
 Invoice No. : I9317860  
 P.O. Number :  
 Account : BKY

Project :  
 Comments:

**CERTIFICATE OF ANALYSIS** **A9317860**

SAMPLE	PREP CODE		Ce NAA ppm									
578251	205	274	220.0	} GAMMA 1 Site "S" } GAMMA 2 Site "N"								
578252	205	274	528.0									
578253	205	274	154.0									
578254	205	274	968.0									
578255	205	274	106.0									
578256	205	274	74.0									
578257	205	274	118.0									
578258	205	274	152.0									
578259	205	274	1216.0									
578260	205	274	24.0									
578261	205	274	182.0									
578262	205	274	2044									
578263	205	274	< 2.0									
578264	205	274	74.0									
578265	205	274	274.0									
578266	205	274	218.0									



CERTIFICATION: *Heliana Stauder*