

**ELK CREEK CARBONATITE REE, NIOBIUM, AND PHOSPHATE MAPS
(MOLYCORP, INC.)**

COMPILED BY R. M. JOECKEL

CONSERVATION AND SURVEY DIVISION

SCHOOL OF NATURAL RESOURCES

UNIVERSITY OF NEBRASKA-LINCOLN

DISCLAIMER

This document contains maps produced by Molycorp, Inc. in the mid-1980s. These maps summarize data about total lanthanide oxide (LnO Anomalies), phosphate (P₂O₅ Anomalies) and niobium oxide (Nb₂O₅ Anomalies) concentrations in the Elk Creek carbonatite. On the basis of data at the disposal of the Conservation and Survey Division, School of Natural resources, lanthanide oxides ("LnO" in the map legends) include the oxides of cerium (Ce), lanthanum (Ln), and neodymium (Nd).

The maps included herein represent analytical data from drill holes (identified by the abbreviations "EC" and "CA", followed by a number). The original data are incorporated in a separate document.

These maps have been scanned from the original paper copies, but they have not undergone any additional processing or assessment of any kind, and therefore the Conservation and Survey Division, School of Natural Resources, University of Nebraska-Lincoln assumes no responsibility with respect to their accuracy or application.

DATA INCLUDED IN THIS REPORT

The original Molycorp, Inc. maps duplicated in this report are:

Plate 1: Nb₂O₅ anomalies, 500 to -300' elevations

Plate 2: LnO anomalies, 500 to -300' elevations

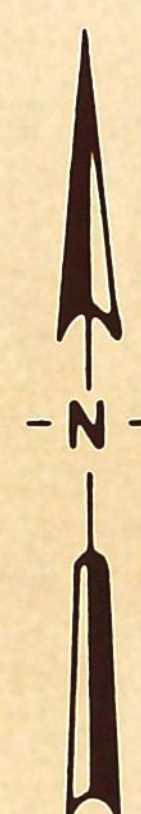
Plate 3: P₂O₅ anomalies, 500 to -300' elevations

Plate 4: Nb₂O₅ anomalies, -400 to -1300' elevations


Plate 5: LnO anomalies, -400 to -1300' elevations

Plate 6: P₂O₅ anomalies, -400 to -1300' elevations

RIIE



Outline of Elk Creek complex as determined from gravity modeling

REVISIONS					
DATE	BY				
				Nb ₂ O ₅ ANOMALIES,	
				500 TO ~300' ELEVATIONS	
				ELK CREEK	
		COUNTRY: JOHNSON/PAWNEE		STATE: NEBRASKA	
		SCALE 0 1000 2000 3000 N.			MAP No.
		DATE: 8-30-85	DATA BY:	DRAFTED BY:	PLATE I

RIIE

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Johnson
PawneeCa.
Ca.

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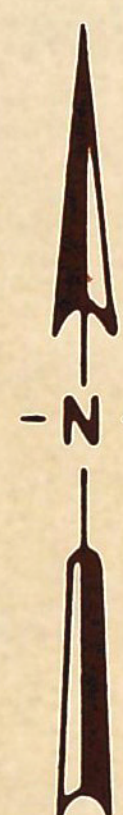
21

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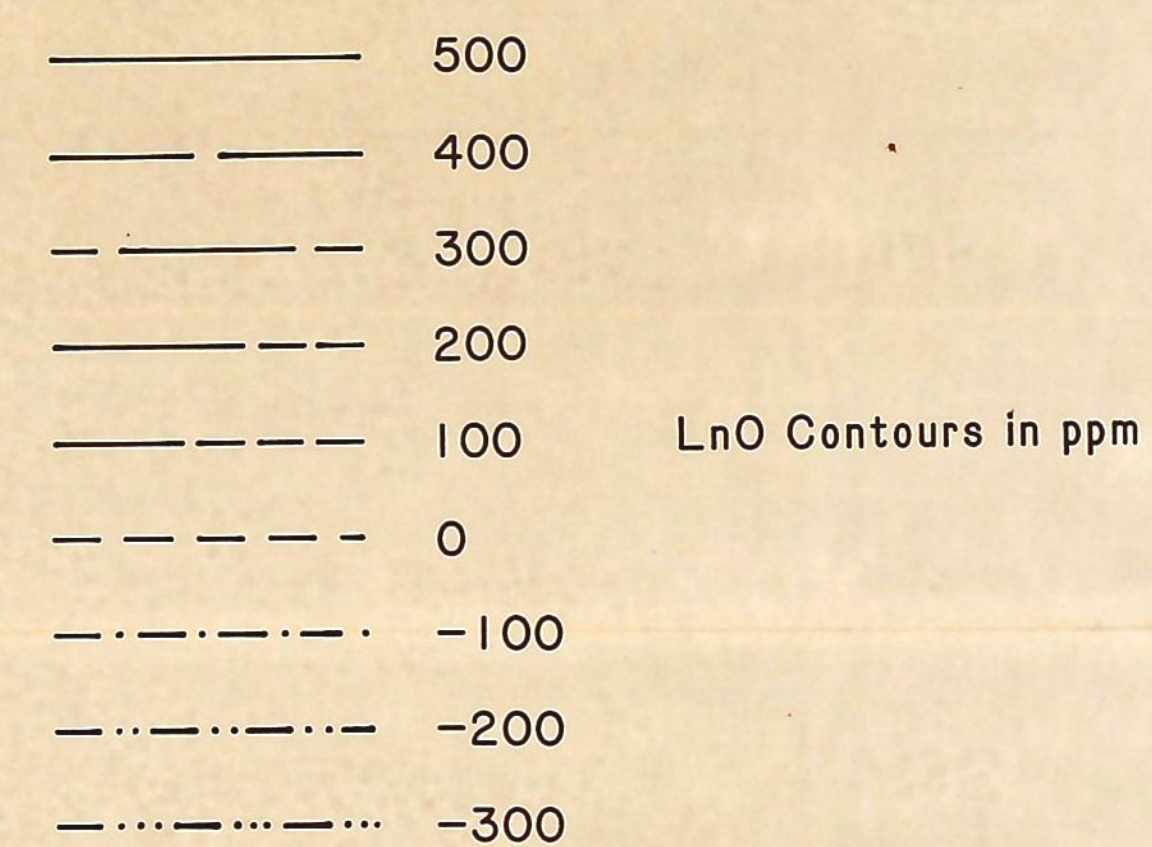
23

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RIIE



LEVEL (FEET)



- P-, EC- 1985 DRILL HOLES
- ★ PROPOSED DRILL HOLES
- DRILL HOLES WITH 10' OF $\pm 1.0\%$ LNo

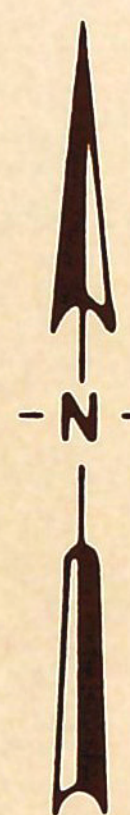
- Molycorp lease or option
- Dropped by Cominco American in 1983
- Open lands
- Acquired by Molycorp in 1983

- EC- • Molycorp DDH
- CA- • Cominco DDH
- NN-IO Nebraska State DDH

- Outline of Elk Creek complex as determined from gravity modeling

REVISIONS		DATE		BY	
<div style="text-align: center;"> union MOLYCORP </div>					
Lno ANOMALIES,					
500 TO -300' ELEVATIONS					
ELK CREEK					
COUNTY: JOHNSON/PAWNEE			STATE: NEBRASKA		
SCALE		1"=500'		MAP NO.	
DATE: 8-30-85		DATA BY: S. Dwyer / W. Cobb		DRAFTED BY: PCJ	
				PLATE 2	

RIIE



REVISIONS	union			
DATE BY	MOLYCORP			
	P ₂ O ₅ ANOMALIES, 500 TO -300' ELEVATIONS ELK CREEK			
	SCALE: JOHNSON/PAWNEE		STATE: NEBRASKA	
	0 1"=1000' 0 5000 10000		MAP No.	
DATE: 8-30-85	DATA BY: W. Frank	DRAFTED BY:	PLATE	3

RIIE

T4N

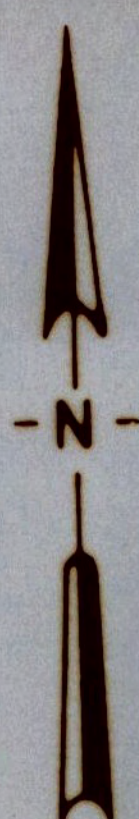
T4N

Johnson
Pawnee
Ca.

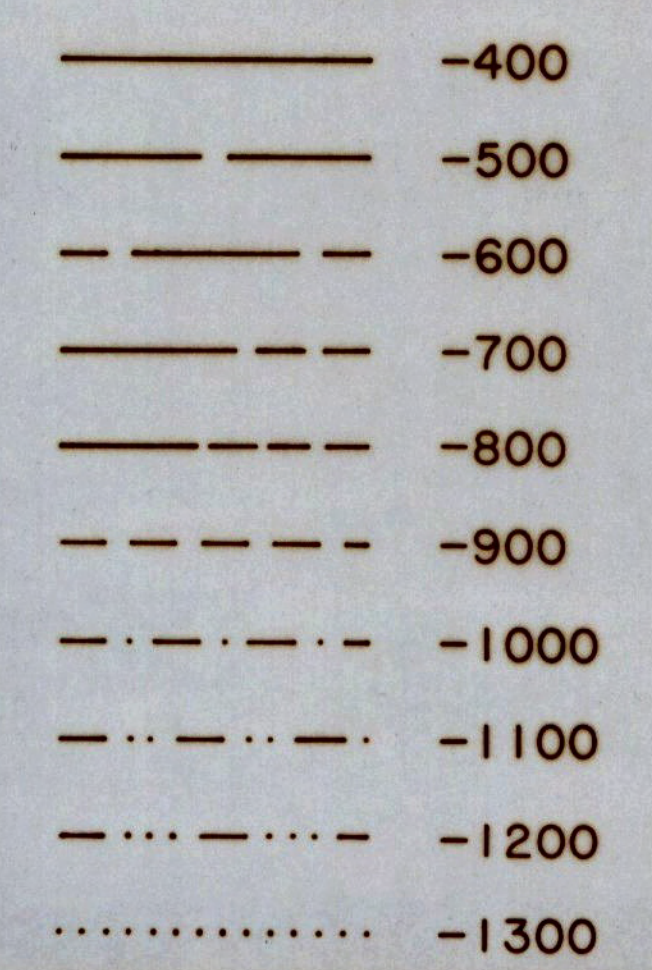
T3N

T3N

RIIE



LEVEL (FEET)

● DRILL HOLES WITH 10' OF 0.06% Nb₂O₅

Molycorp lease or option

 Dropped by Cominco
American in 1983

Open lands

 Acquired by Molycorp
in 1983

Molycorp DDH

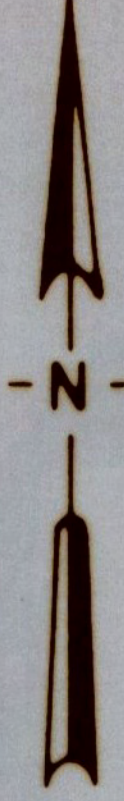
Cominco DDH

Nebraska State DDH

 Outline of Elk Creek complex as
determined from gravity modeling

REVISIONS		DATE BY	
Nb ₂ O ₅ ANOMALIES,			
-400 TO -1,300' ELEVATIONS			
ELK CREEK			
COUNTY: JOHNSON/PAWNEE		STATE: NEBRASKA	
SCALE 1"=1000'		MAP No.	
DATE: 8-30-85		DRAWN BY: [signature]	
		PLATE 4	

RIIE





LnO Contours in ppm

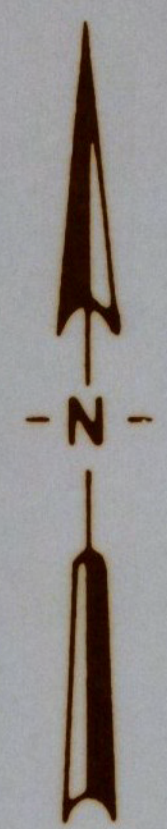
● DRILL HOLES WITH 10' OF $\geq 1.0\%$ LnO

Acquired by MolyCorp
in 1983

Outline of Elk Creek complex as determined from gravity modeling

REVISIONS			 MOLYCORP	
DATE	BY			
<p align="center">LnO ANOMALIES,</p> <p align="center">-400 TO -1,300' ELEVATIONS</p>				
<p align="center">ELK CREEK</p>				
COUNTY: JOHNSON/PANNEE			STATE: NEBRASKA	
<p>SCALE:  MAP No.</p>				
DATE: 8-30-85	DATA BY: J. C. B.	DRAWN BY: J. C. B.	PLATE	5

RIIE



-1100
-1200
-1300

Outline of Elk Creek complex as determined from gravity modeling

REVISIONS		union	
DATE	BY	MOLYCORP	
		P ₂ O ₅ ANOMALIES,	
		-400 TO -1,300' ELEVATIONS	
		ELK CREEK	
COUNTY:	JOHNSON/PAWNEE	STATE:	NEBRASKA
SCALE	 0 4000 8000 ft	MAP NO.	
DATE:	9-30-85	DATA BY:	DRAFTED BY: PLATE 6