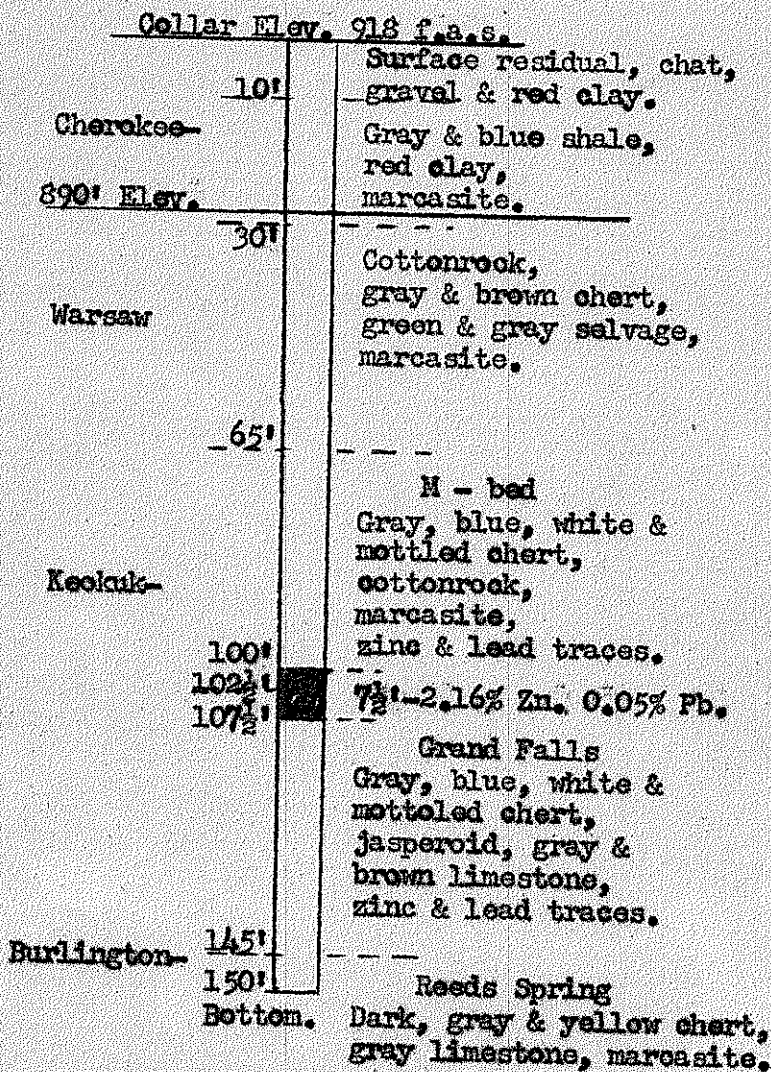


UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

NORTH EMPIRE PROJECT NO. 15-226
Cherokee County, Kansas.

SECTION OF CHURN DRILL HOLE NO. NE-20 C



Location coords. 3278-N., 2621-E.
Started June 2, 1948
Completed June 7, 1948
Water struck at 50 feet
Water stands at 20 feet.

Remarks:
Formations open. M-bed and top of Grand Falls mineralized. 7 1/2-foot section (100 to 107 1/2 feet.) Assays average value 2.16 % Zn. 0.05% Pb.

ASSAYS PERCENT METAL

Section	Sample % Recovery	Zinc	Lead
100-102 1/2	64	0.94	0.05
102 1/2-105	43	4.30	0.07
105-107 1/2	75	1.26	0.03
107 1/2-110	62	0.40	0.03

Scale: 1" = 30' vertical.

U. S. BUREAU OF MINES
CHURN DRILL HOLE LOG

Date Started: 6/2/1948
Date completed: 6/7/1948
Struck water at 50 feet
Water stands at 20 feet

Hole No. NE-20-C
Project 15-226, North Empire
Cherokee County, Kansas
Collar Elevation - 918 feet a.s.l.

Coordinate location: 3278-N, 2624-E

FEET		FORMATION
FROM	TO	
0	5	Surface chat, gray mud
5	10	Red clay, surface gravel
10	15	Gray shale, yellow clay
15	20	Gray shale
20	25	Blue shale, red clay
25	30	Blue shale, orange clay, little marcasite
30	35	Gray and some brown chert, cottonrock, much marcasite
35	45	Cottonrock, gray chert and marcasite selvage
45	50	Gray, blue, brown & mottled chert, some cottonrock, green selvage
50	55	Blue, gray & mottled chert, little white & brown chert, little shale, much marcasite, little cottonrock
55	65	Blue, gray, brown & mottled chert, little cottonrock, black and green shale, much marcasite, gray selvage.
<u>"K"-bed</u>		
65	70	Gray, blue, white, some mottled chert, marcasite, tr Pb
70	72½	Gray, blue, white and some mottled chert, marcasite, Tr Pb, little cottonrock
72½	75	Gray, white, blue chert, very little cottonrock, marcasite
75	80	Gray, white, yellow, blue and little brown chert, marcasite
80	85	Blue, gray and mottled chert, very little brown & yellow chert, marcasite
85	90	Blue, gray & mottled chert, little brown chert, marcasite, faint tr Zn
90	95	Blue, gray & mottled chert, marcasite, very faint tr Zn
95	100	Gray, blue, white chert, selvage, marcasite, tr Zn
100	102½	Dark gray, dark brown and gray chert, marcasite, some jasperoid, thin Zn shines
<u>Grand Falls</u>		
102½	105	White chert, jasperoid, some yellow chert, fair Zn, marcasite
105	107½	Gray, white and yellow chert, little jasperoid, Zn shines, little marcasite
107½	110	Gray, white, yellow and some blue chert, green shale, marcasite, thin Zn shines
110	115	Gray, white & some brown chert, little jasperoid, marcasite, tr Zn
115	120	Gray and white chert, tr marcasite, thin tr Zn

Hole No. 20-C (Continued)
 Project 15-226, North Empire
 Cherokee County, Kansas

Feet		Formation
From	To	
120	125	White, gray and yellow chert, marcasite, faint tr Zn
125	135	White, yellow, gray chert, cottonrock, some marcasite, faint Tr Zn
135	140	White, yellow, gray chert, cottonrock, brown limestone, faint tr marcasite, very faint tr Zn
140	145	Gray, white, yellow chert, cottonrock, little gray limestone, very little calcite, faint tr Zn, faint tr Marcasite
<u>Reed Springs</u>		
145	150	Dark, gray, light, gray and yellow chert, little cottonrock, little gray limestone, trace marcasite.

SECTION		PERCENT OF RECOVERY	ASSAY	
FROM	TO		ZINC	LEAD
100	102½	64	0.94	0.05
102½	105	43	4.30	0.07
105	107½	75	1.26	0.03
107½	110	62	0.40	0.03

No. Sludge samples - 33

No. assay samples - 4