Law Department
Brown&Root, Inc. Post Office Box Three, Houston, Texas 77001
And Associated Companies

W D Nelson
Assistant General
Counsel (713) 676 3307

A Halliburton Company

40115841

SUPERFUND RECORDS

19 October 1987

TES
Site Orange-Duc
ID# MOD980686281
Break 11 11
Other
10 19 87
0736

Mr. Jerry Cobble
1505 South Madison
Webb City, MO 64870

Dear Mr. Cobble:

Attached are the original Release of Lien and the Promissory Note marked Paid in Full.

Very truly yours,

W. D. Nelson

WDN/kl

Attachments

cc: Wayne Taylor
014BN12

BR000040000

008650

Mailing address of each transferee

Name
Address

Name
Address

(Acknowledgment)

STATE OF TEXAS }
COUNTY OF Harris }

This instrument was acknowledged before me on the 19th day of October 1987
by W D Nelson

My commission expires
12-20-88

Notary Public State of Texas
Notary's printed name

PAMELA KAY LARIVEE
Notary Public in and for the State of Texas
My Commission Expires 12-20-88

(Acknowledgment)

STATE OF TEXAS }
COUNTY OF }

This instrument was acknowledged before me on the day of 19
by

My commission expires

Notary Public State of Texas
Notary's printed name

(Corporate Acknowledgment)

STATE OF TEXAS }
COUNTY OF }

This instrument was acknowledged before me on the day of , 19 ,
by ,
of ,
a corporation, on behalf of said corporation

My commission expires

Notary Public State of Texas
Notary's printed name

AFTER RECORDING RETURN TO

PREPARED IN THE LAW OFFICE OF:

BR000040001

RELEASE OF LIEN

THE STATE OF ~~TEXAS~~ MISSOURI

COUNTY OF JASPER

KNOW ALL MEN BY THESE PRESENTS

THAT the undersigned of the County of Jasper and State of ~~Texas~~ Missouri, the legal and equitable owner and holder of that one certain promissory note in the original principal sum of TWENTY-SEVEN THOUSAND, SEVEN HUNDRED NINETY AND NO/100 ---------- Dollars ($ 27,790.00) dated June 8 1981, executed by JERRY COBBLE, payable to the order of BROWN & ROOT, INC., more fully described in a Deed of Trust, duly recorded in ~~Vol.~~ Book 1244 page 2130 of the Deed of Trust Records of Jasper County, ~~Texas~~ Missouri, said note being secured by said Deed of Trust lien against the following described property, to-wit

See Attachment A

BR000040002

for and in consideration of the full and final payment of all indebtedness secured by the aforesaid lien or liens, the receipt of which is hereby acknowledged, has released and discharged, and by these presents hereby releases and discharges, the above described property from all liens held by the undersigned securing said indebtedness

EXECUTED this 19 day of October, A.D 1987

W. Nelson Agent in Fact

TTACHMENT A

LEGAL DESCRIPTION

All of the Northwest Quarter of the Southeast Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri
All of the Southwest Quarter of the Northeast Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri
All of the Northeast Quarter of the Northwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri
All of the Southeast Quarter of the Northwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri
All of the Northeast Quarter of the Southwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri
All of the Southwest Quarter of the Northwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri
All of the Northwest Quarter of the Southwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri

EXCEPT Beginning at the Southwest corner of the Northwest Quarter (NW¼) of the Southwest Quarter (SW¼) of said Section 20, Township 28, Range 32, Jasper County, Missouri, thence North 160 0 feet, thence East 428 75 feet, thence South 160 0 feet, thence West 428 75 feet to the point of beginning

AND EXCEPT Beginning at a point 453 73 feet North of the Southwest corner of the Northwest Quarter (NW¼) of the Southwest Quarter (SW¼) of said Section 20, Township 28, Range 32, thence North 119 0 feet, thence East 203 0 feet, thence South 119 0 feet, thence South 203 0 feet to the point of beginning

AND EXCEPT Beginning at a point 1974 40 feet North of the Southwest corner of Section 20, Township 28, Range 32, Jasper County, Missouri, thence East 100 0 feet, thence North 90 0 feet, thence West 100 0 feet, thence South 90 0 feet to the point of beginning

ALSO All of the Northwest Quarter of the Northwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri except beginning 25 feet East and 25 feet South of the Northwest Corner of said quarter, thence East 135 0 feet, thence South 72 0 feet, thence West 135 0 feet, thence North 72 0 feet to the point of beginning

ALSO EXCEPT Beginning 257 0 feet South and 25 feet East of the Northwest corner of Northwest Quarter of the Northwest Quarter of Section 20, Township 28, Range 32, Jasper County, Missouri, thence East 135 0 feet, thence South 73 0 feet, thence West 135 0 feet, thence North 73 0 feet to the point of beginning

All being subject to all road right of ways and railroad right of ways and any easements of record

ALSO All of the Southwest Quarter of the Southwest Quarter of Section 17, Township 28, Range 32, Jasper County, Missouri

ALSO All of the Southeast Quarter of the Southwest Quarter of Section 17, Township 28, Range 32, Jasper County, Missouri

With all of the above described property and exceptions, this tract of land contained 397 0 acres more or less.

BR0000040004

Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1991

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 1

APPROVED

008651

HALLIBURTON COMPANY

Brown & Root Inc.
BOARD OF DIRECTORS

T L. AUSTIN JR. Chairman & Chief Executive Officer
T H CRUIKSHANK, Chairman & Chief Executive Officer Halliburton Company
J S HANNA, Executive Vice President Finance
J R.S MORRIS Chairman & Chief Executive Officer Brown & Root (UK) Limited
W B PIEPER, President & Chief Operating Officer
J W WILSON Senior Vice President General Counsel & Secretary

Brown & Root U S.A. Inc.
BOARD OF DIRECTORS
T L. AUSTIN JR. Chairman & CEO
W B PIEPER, President & COO
G M. MONTGOMERY Sr Vice President

SEE CHART 7

Brown & Root International, Inc.
BOARD OF DIRECTORS
T L. AUSTIN JR. Chairman & CEO
W B PIEPER, President & COO
T E. KNIGHT Executive Vice President

SEE CHART 17

BR000040005

Brown & Root, Inc
And Associated Companies

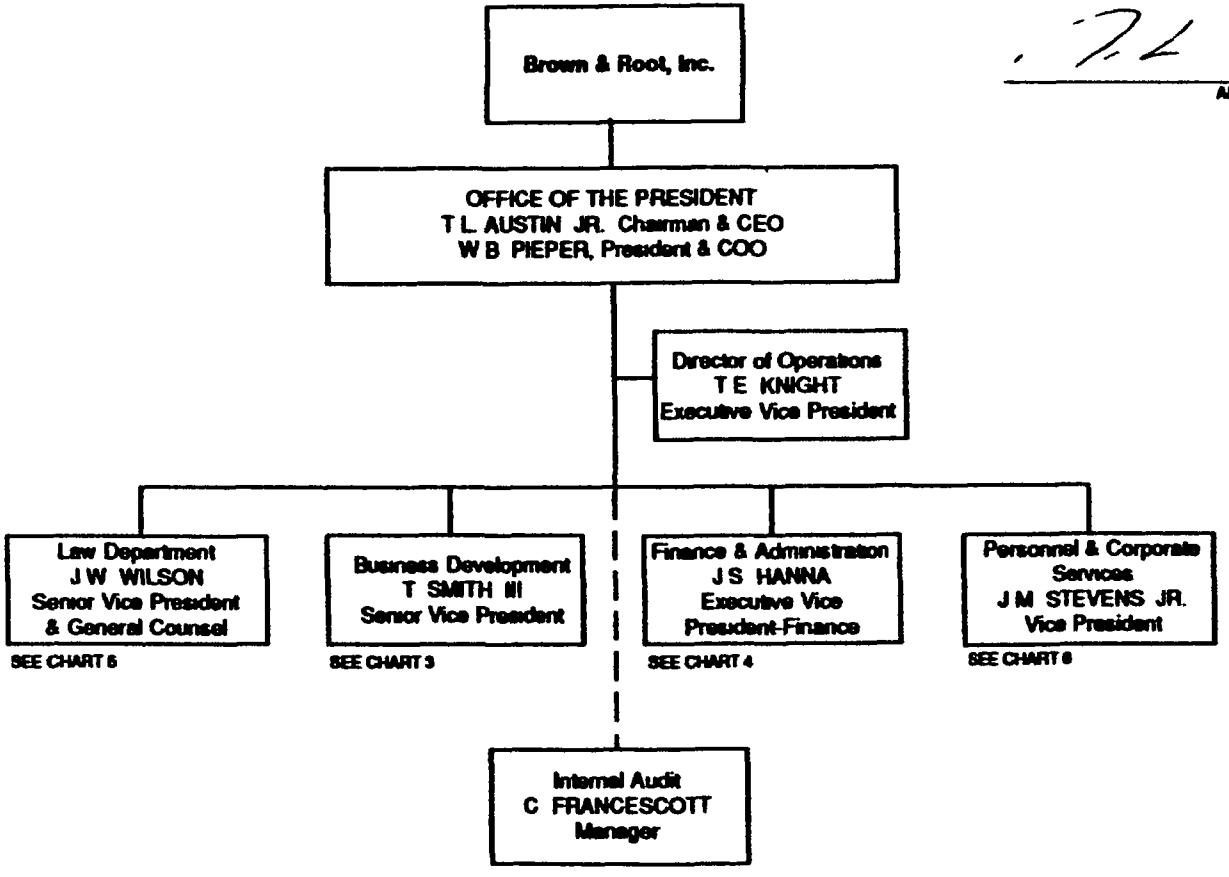
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 2

APPROVED



BR000040005

Brown & Root, Inc
And Associated Companies

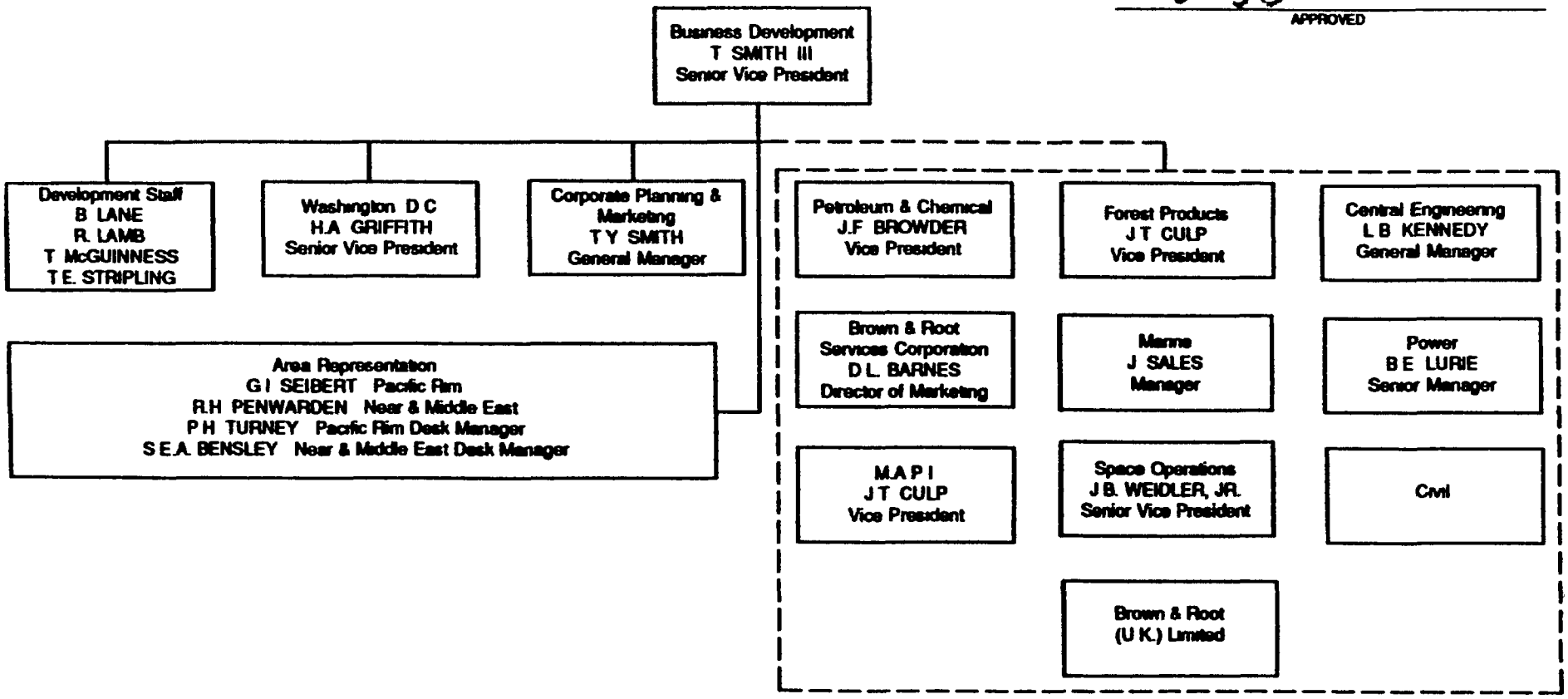
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 3

APPROVED



BR000040007

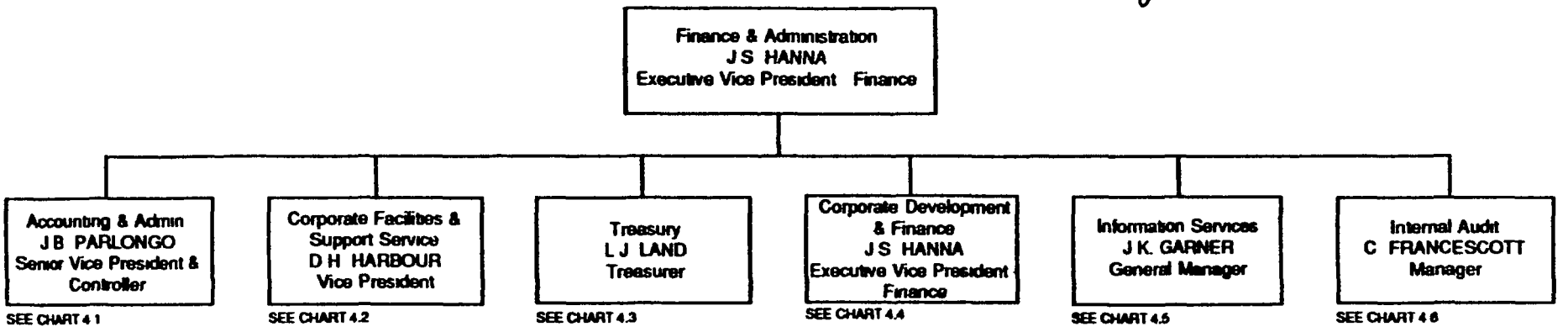
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4

J S Hanna
APPROVED



BR000040008

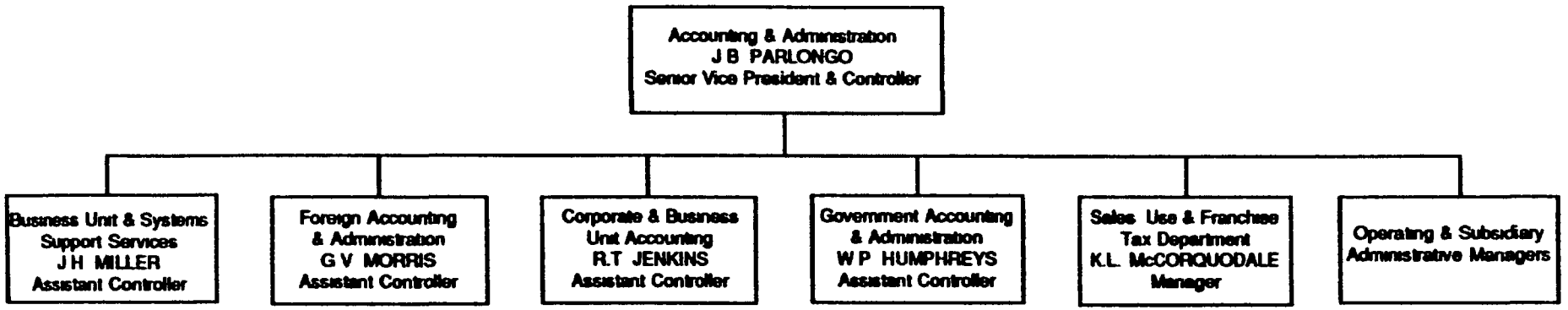
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4 1

J Hauma
APPROVED



BR00040009

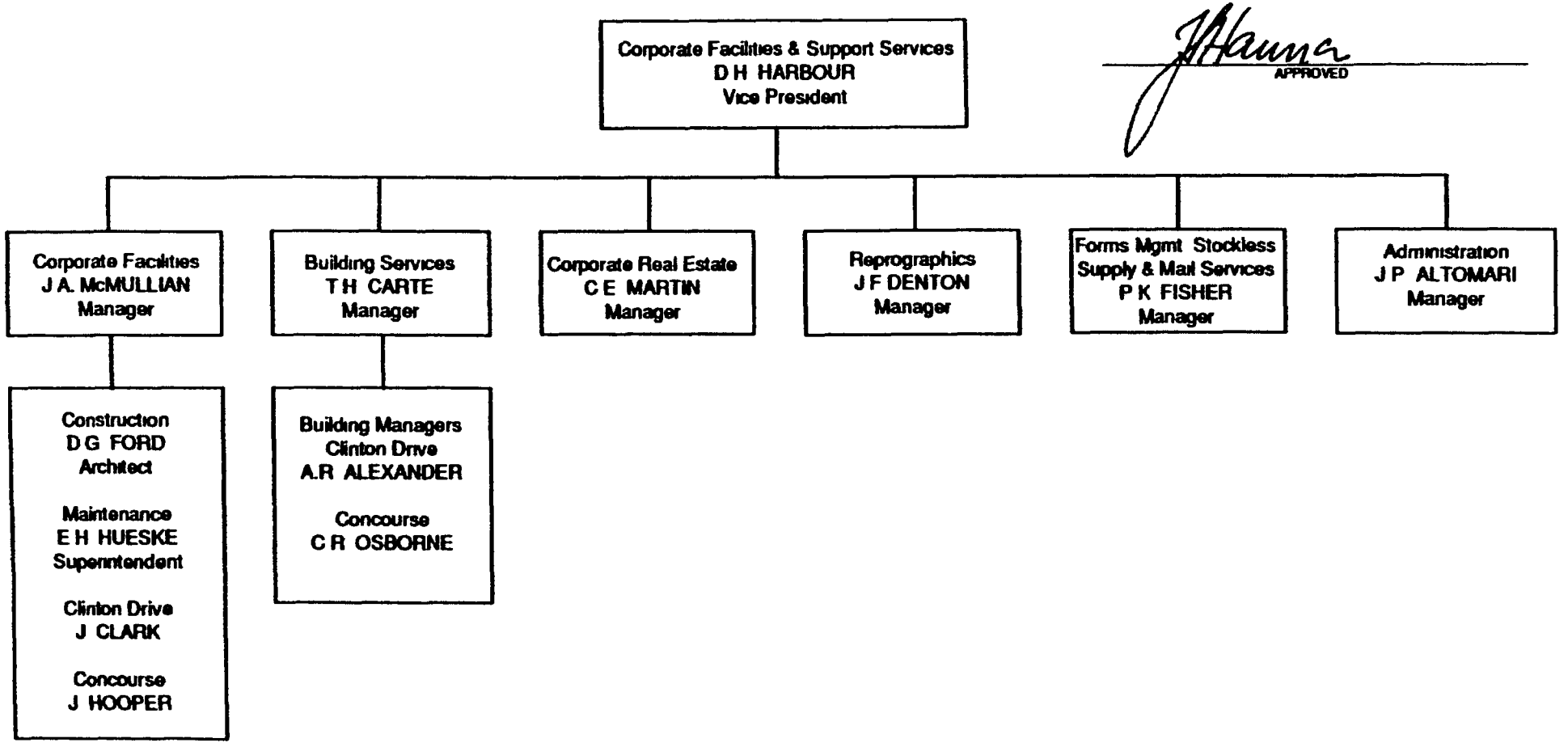
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4.2

APPROVED



BR00004001O

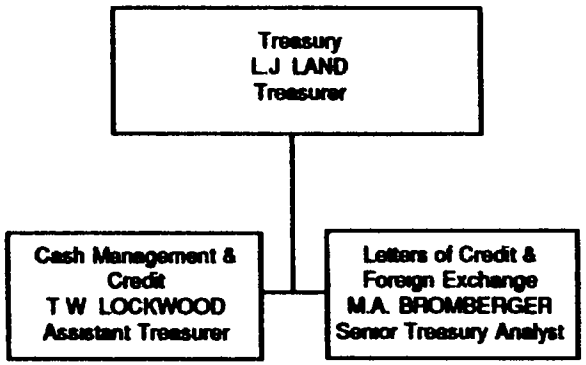
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4 3

J H Hanna
APPROVED



BR000040011

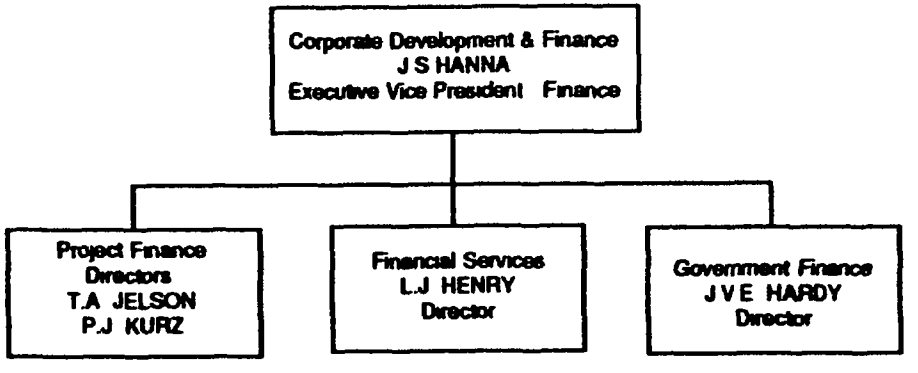
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSO CIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4 4

APPROVED



BR000040012

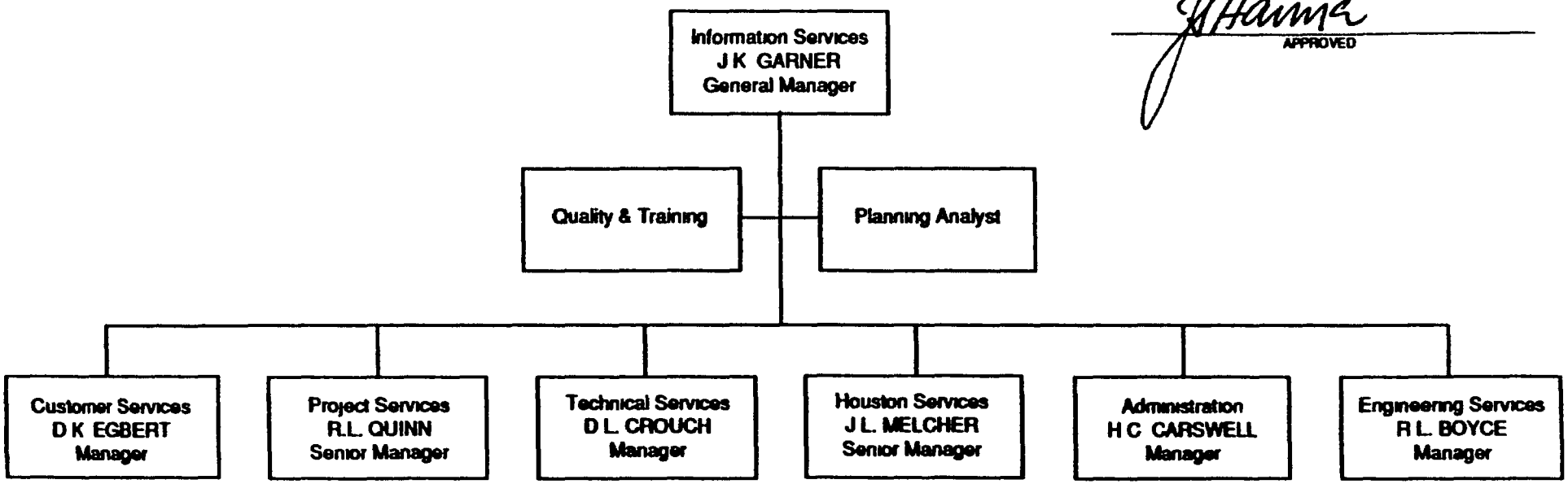
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4 5

APPROVED



BR0000400 13

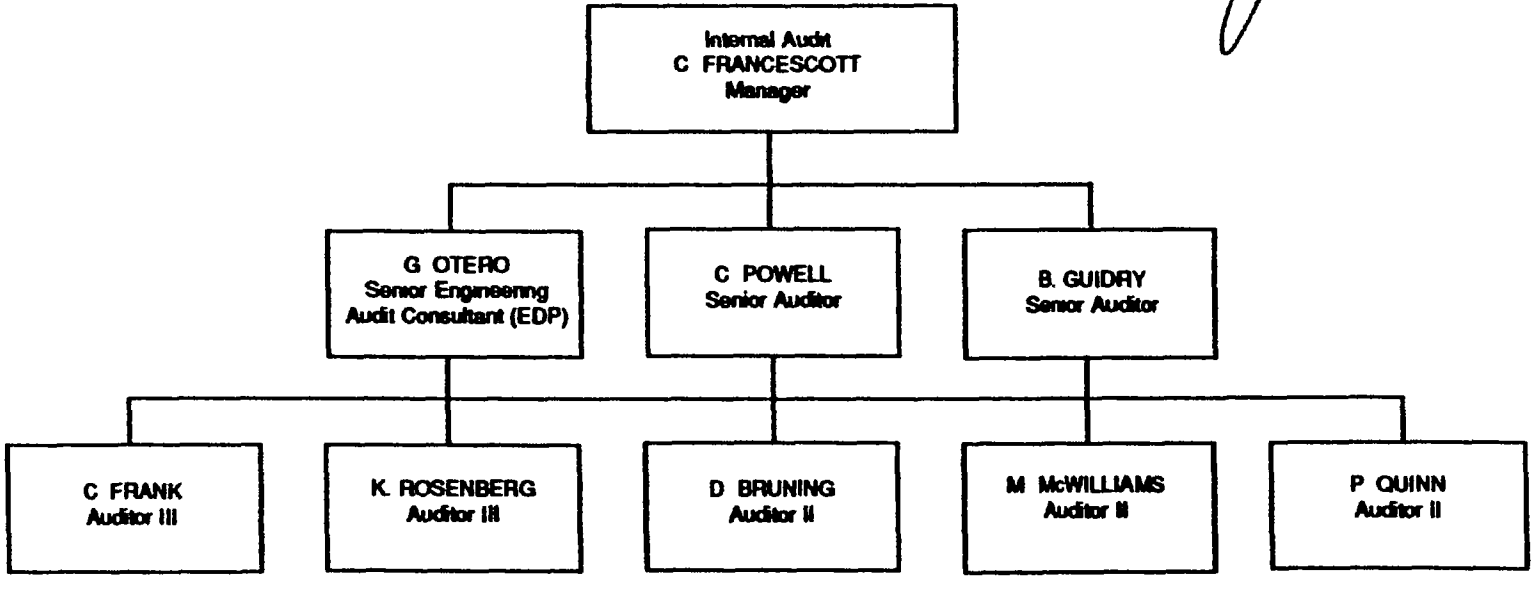
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 4 6

APPROVED



BR000040014

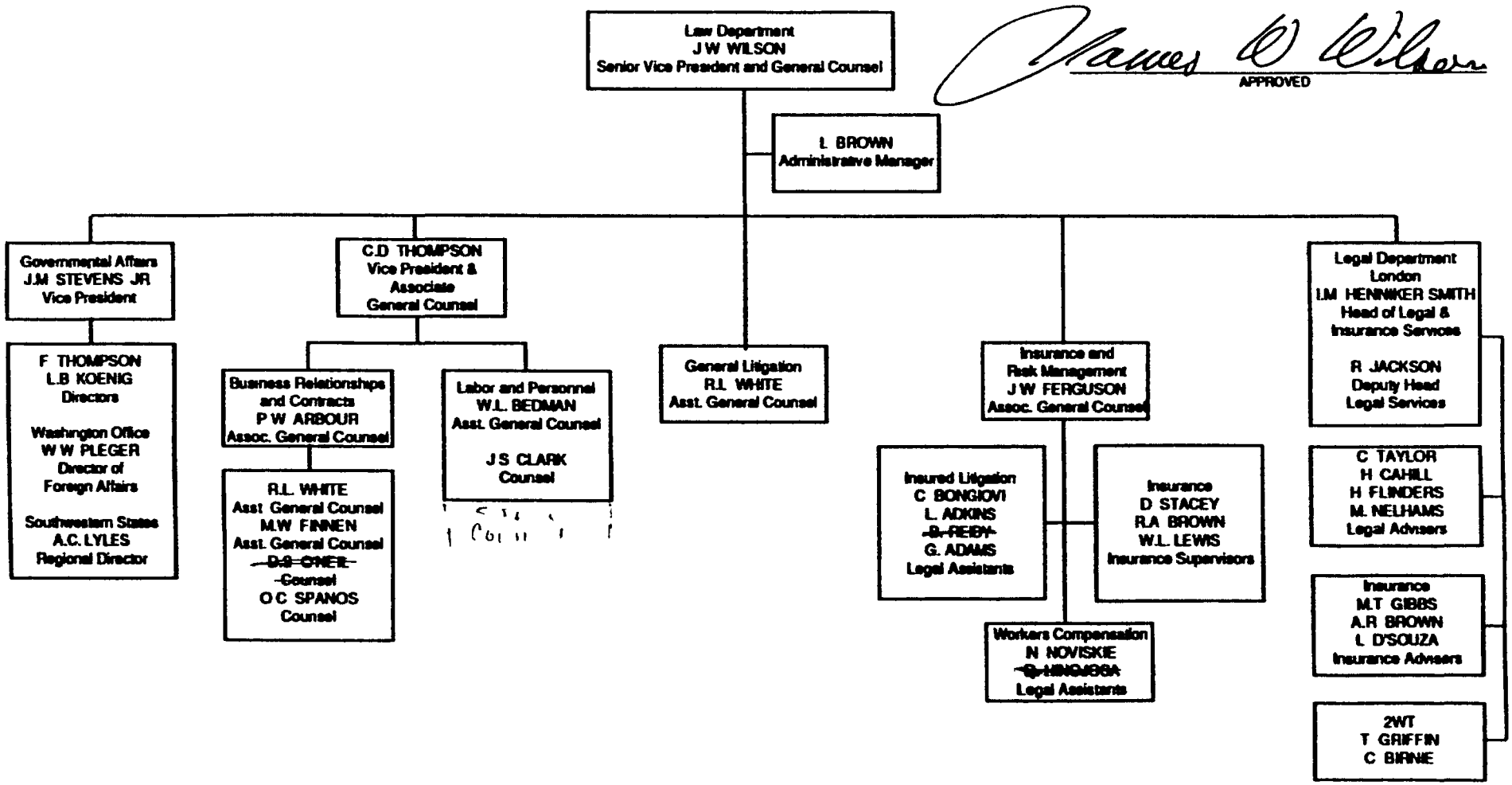
Brown & Root, Inc.
And Associated Companies

CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 5



APPROVED

BR000040015

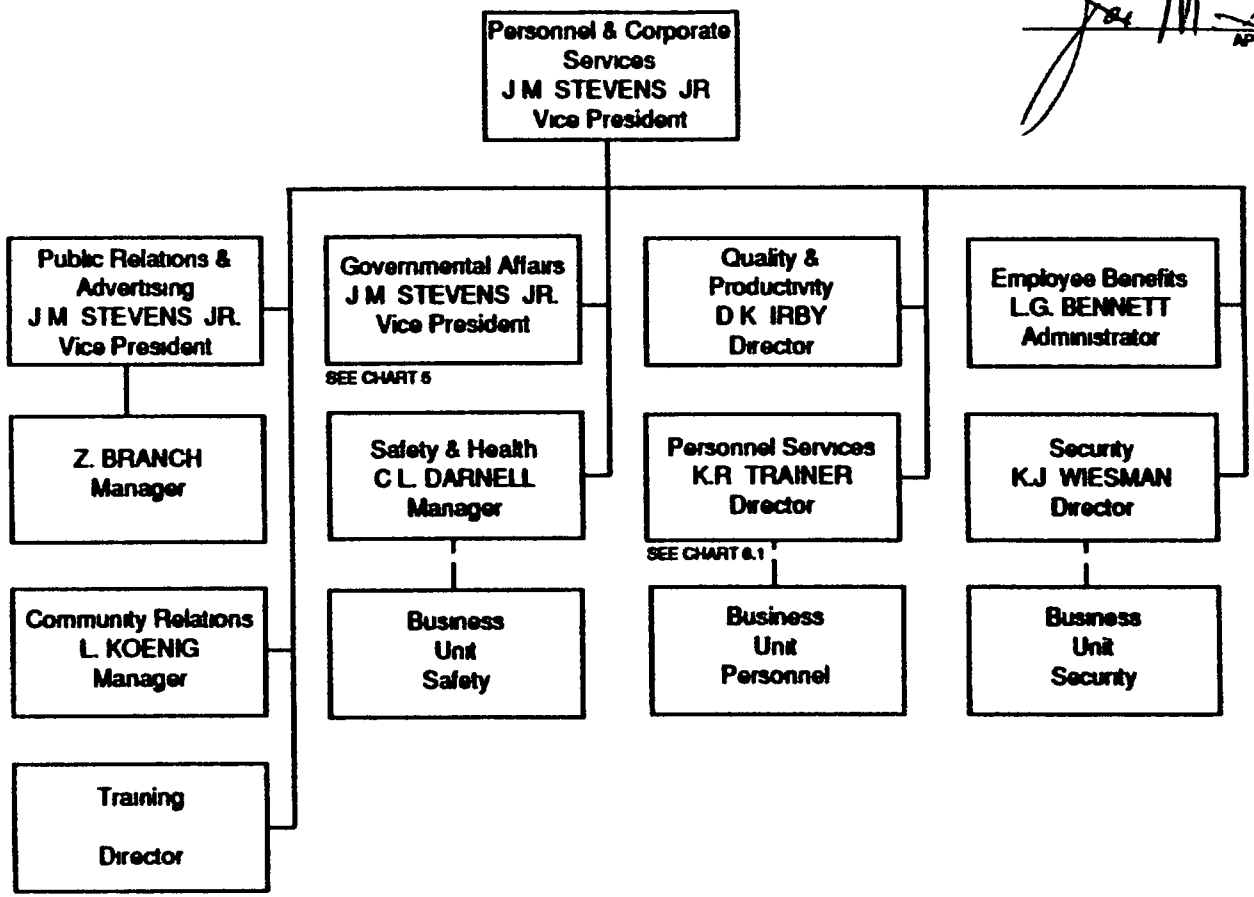
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 6

APPROVED



BR000040016

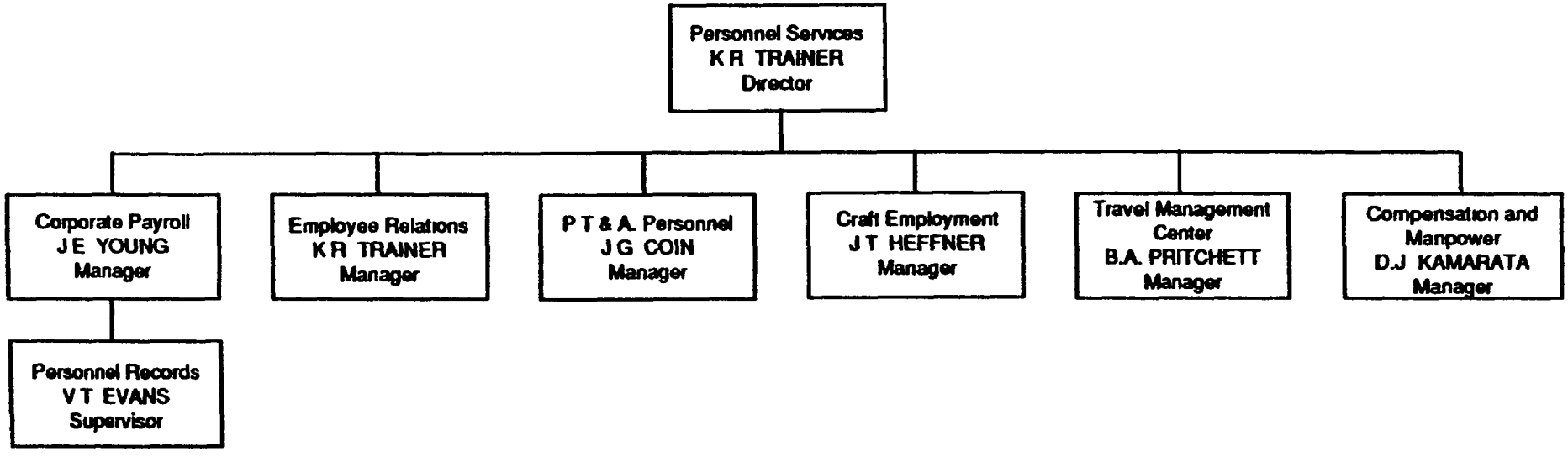
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 6 1

APPROVED



BR00004001 7

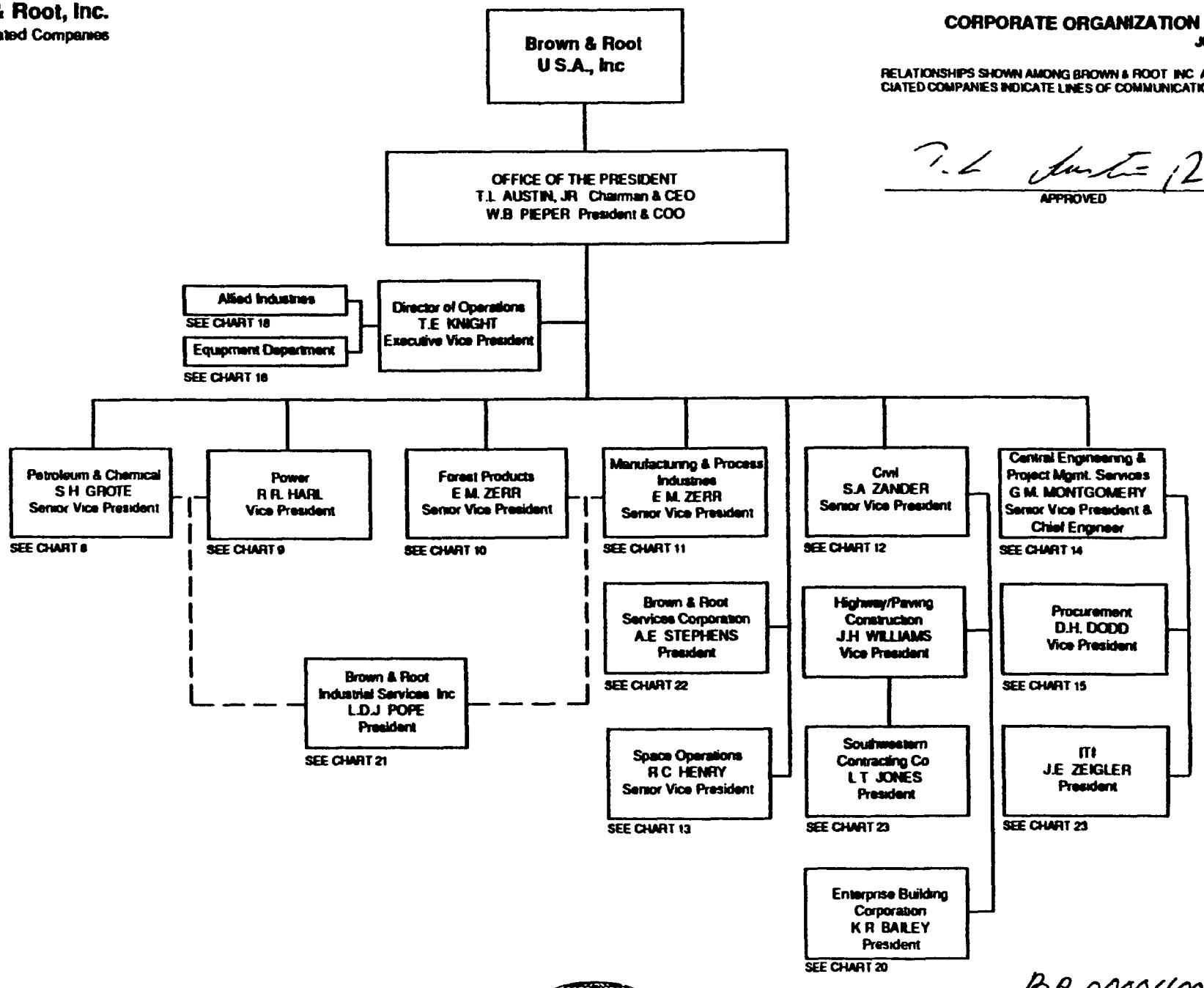
Brown & Root, Inc.
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 7

T.L. Austin Jr
APPROVED



BR 00004001 8

Brown & Root, Inc
And Associated Companies

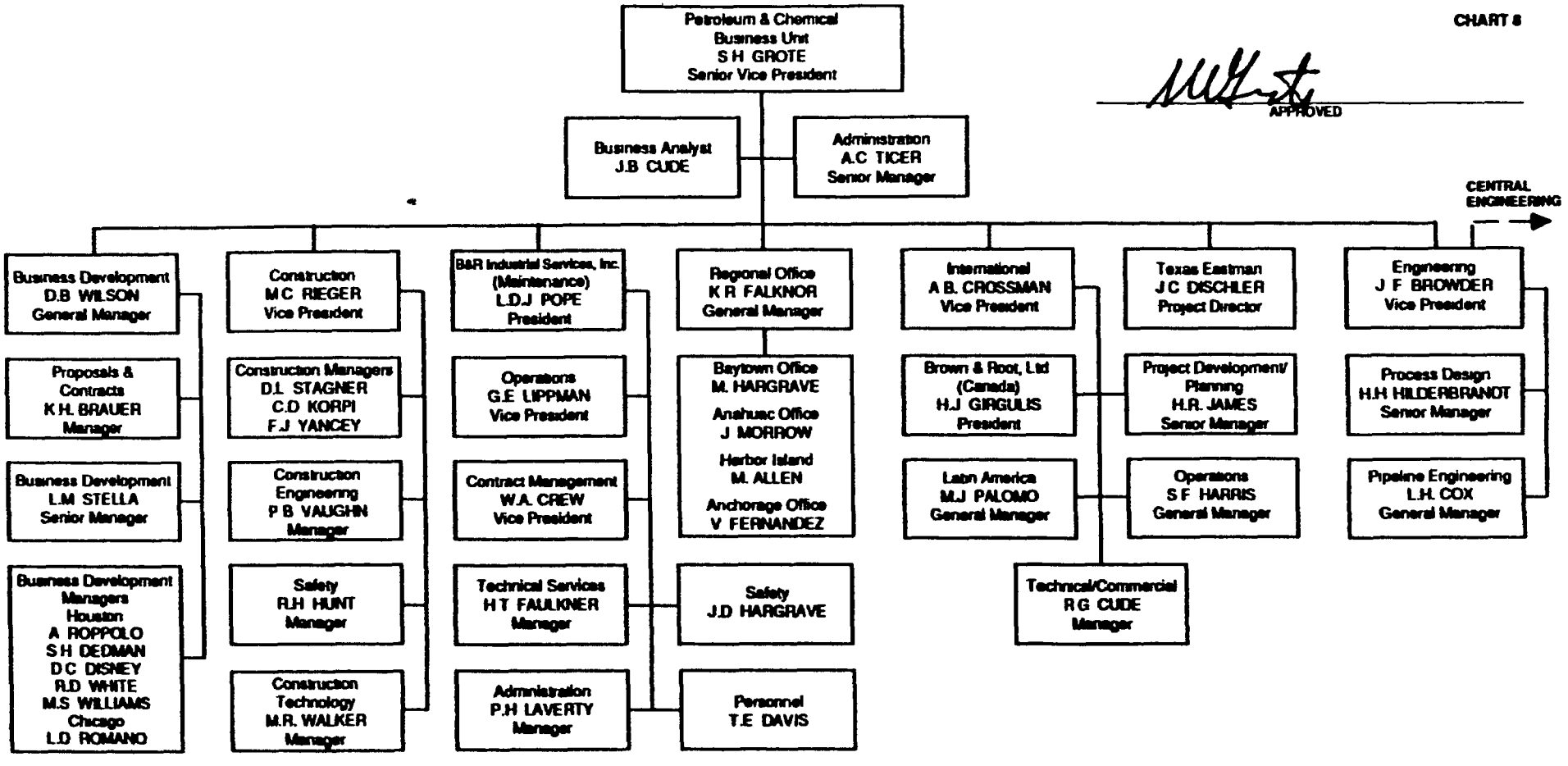
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 8

APPROVED



BR000040019

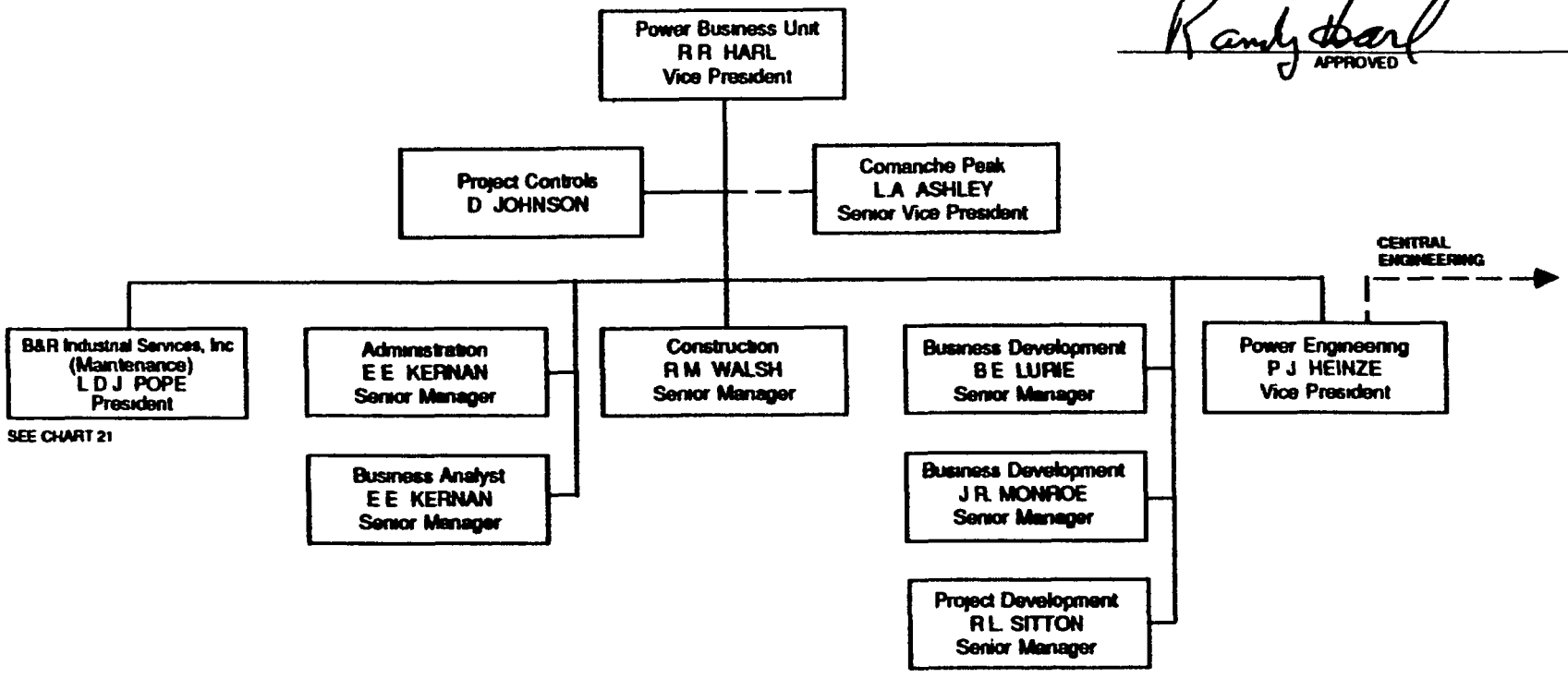
Brown & Root, Inc.
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 9

Randy Harl
APPROVED



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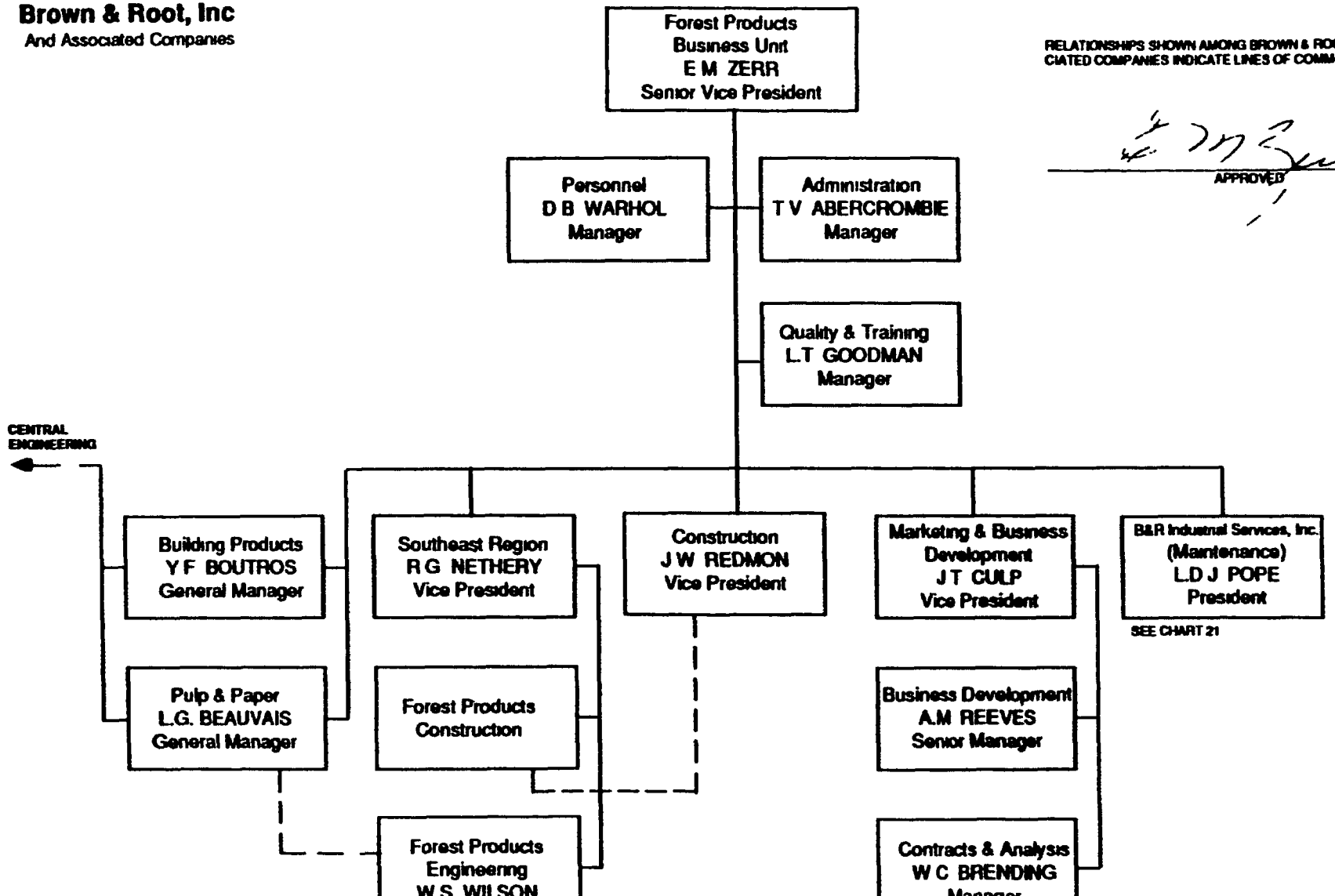
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 10

APPROVED



BR00004021

Brown & Root, Inc
And Associated Companies

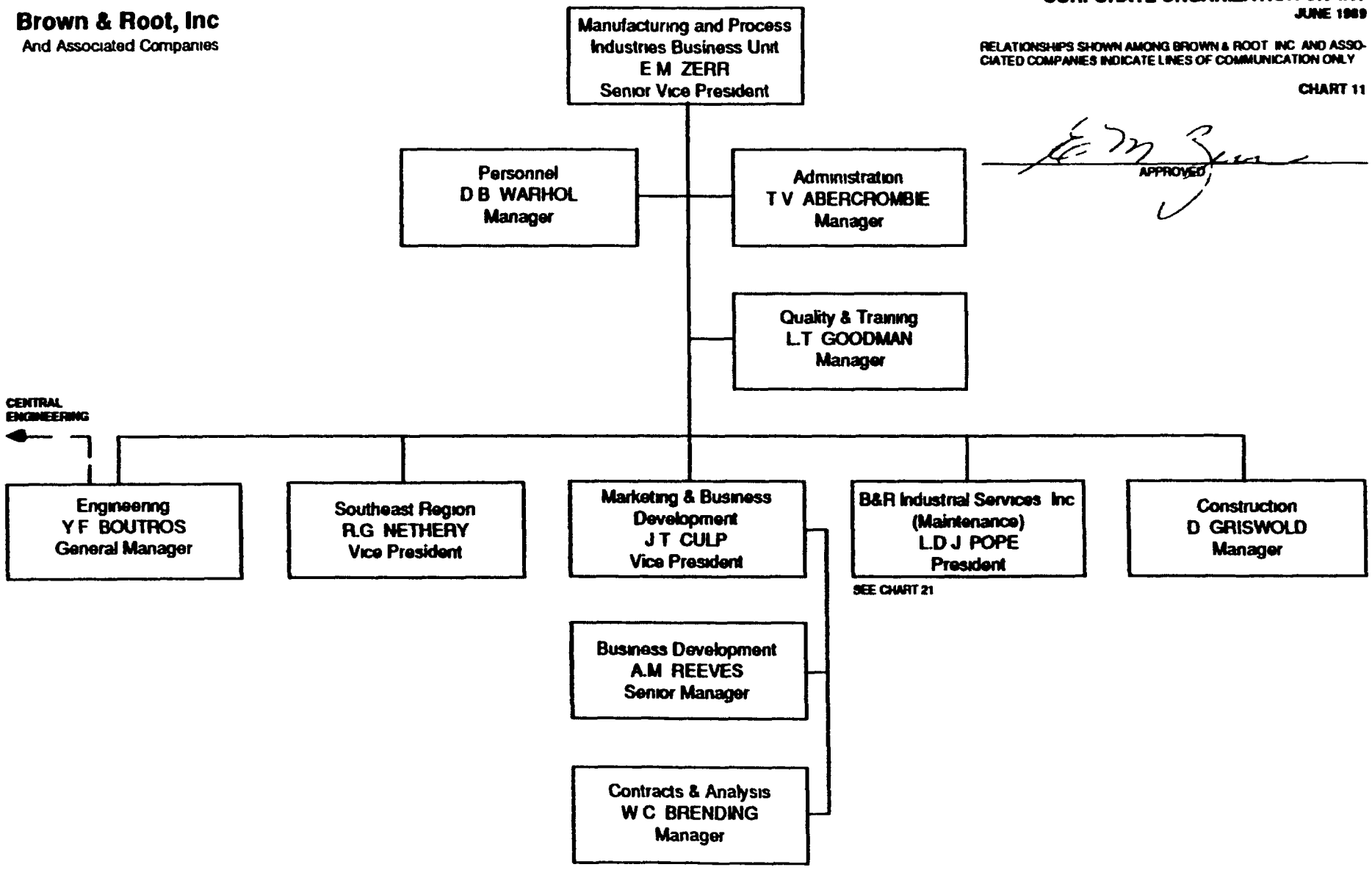
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 11

APPROVED



BR000040022

Brown & Root, Inc
And Associated Companies

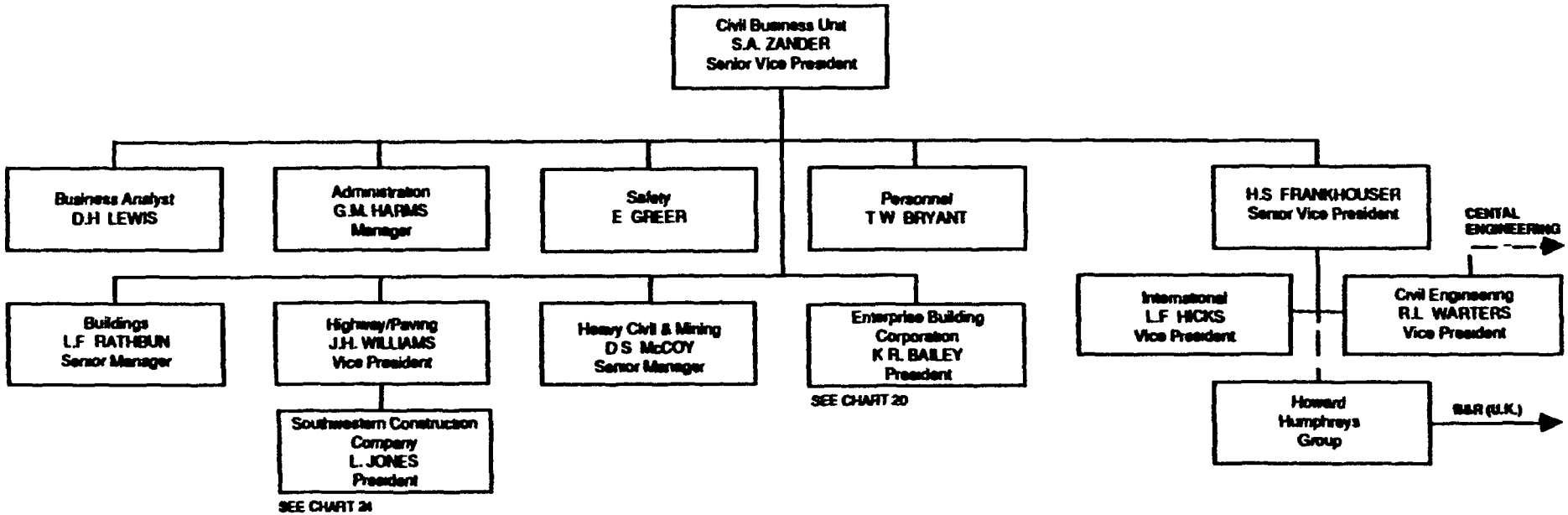
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 12

APPROVED



BR000640023

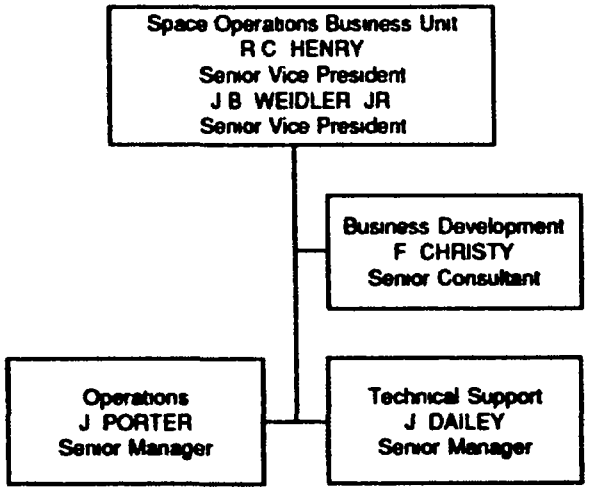
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSO CIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 13

APPROVED



BR000040023

Brown & Root, Inc
And Associated Companies

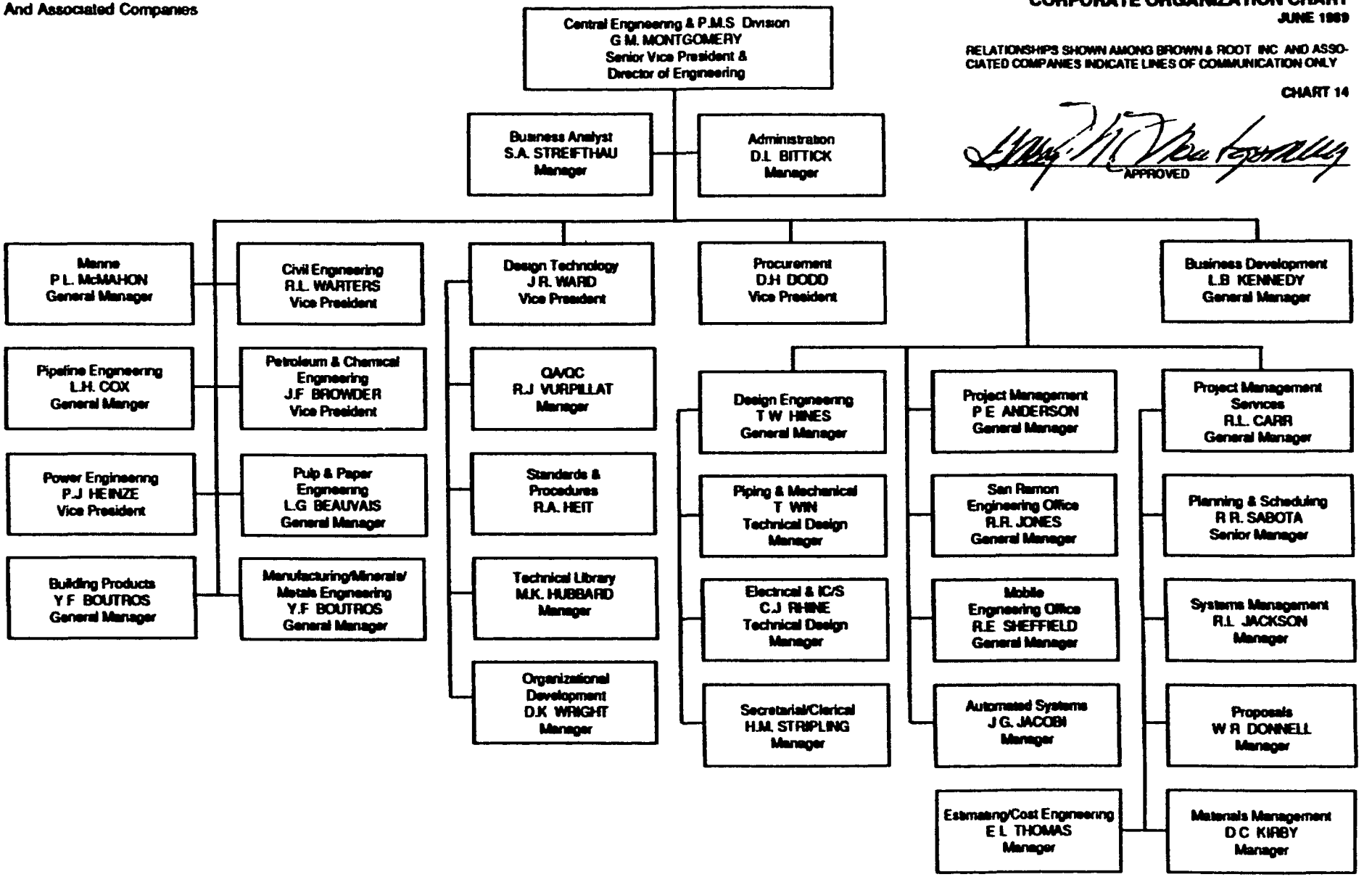
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 14

APPROVED



BR000040824

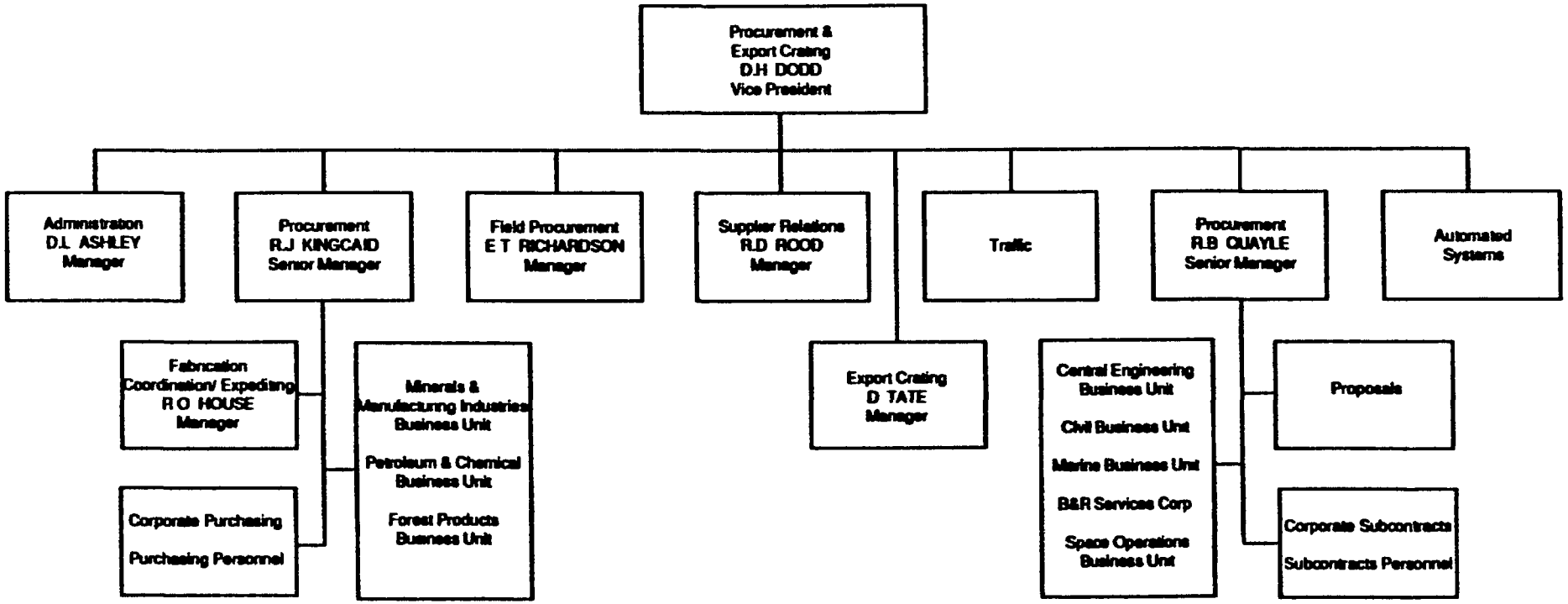
Brown & Root, Inc
And Associated Comapnies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 15

APPROVED



BR000040025

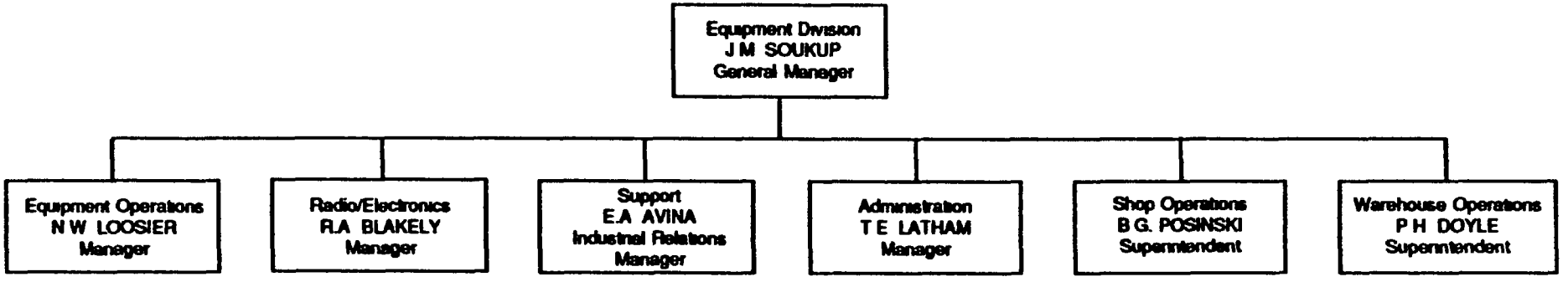
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 16

APPROVED



BR00004062 6

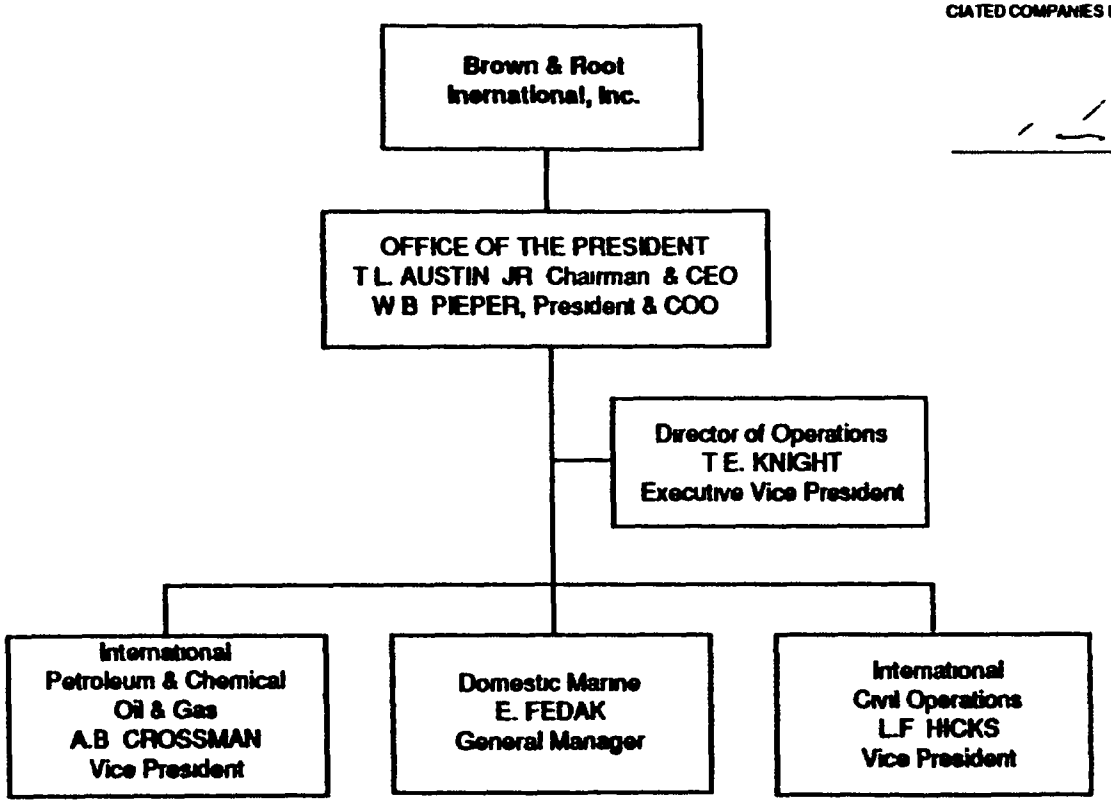
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 17

APPROVED



BR 00004002 7

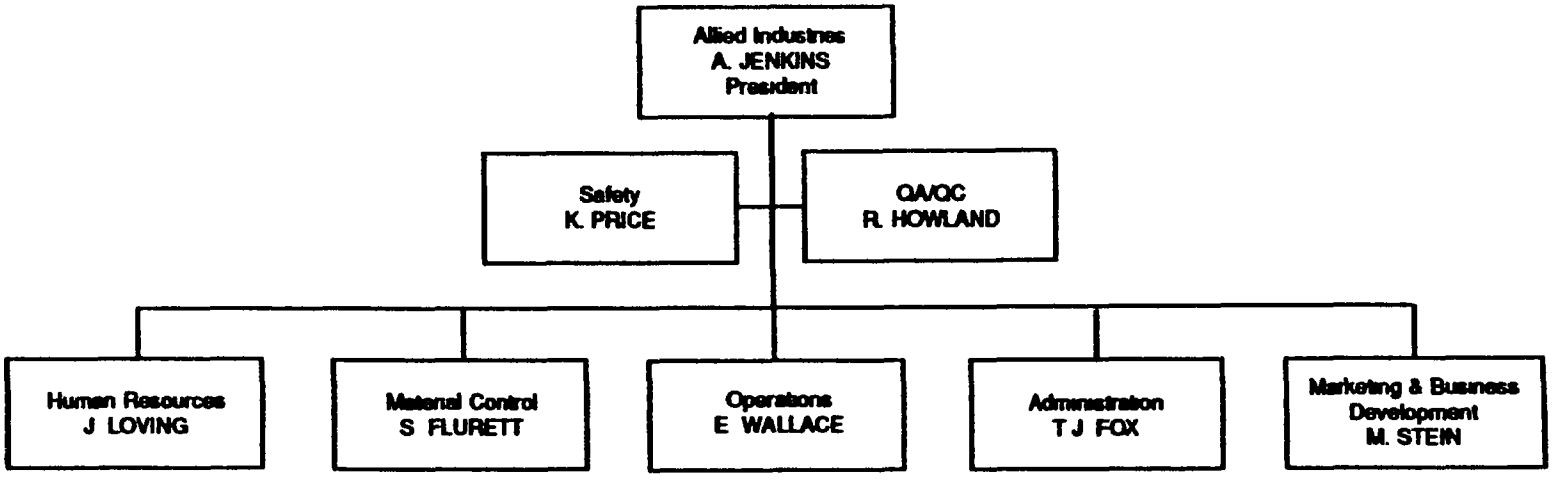
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 18

APPROVED



BR000040028

Brown & Root Development, Inc

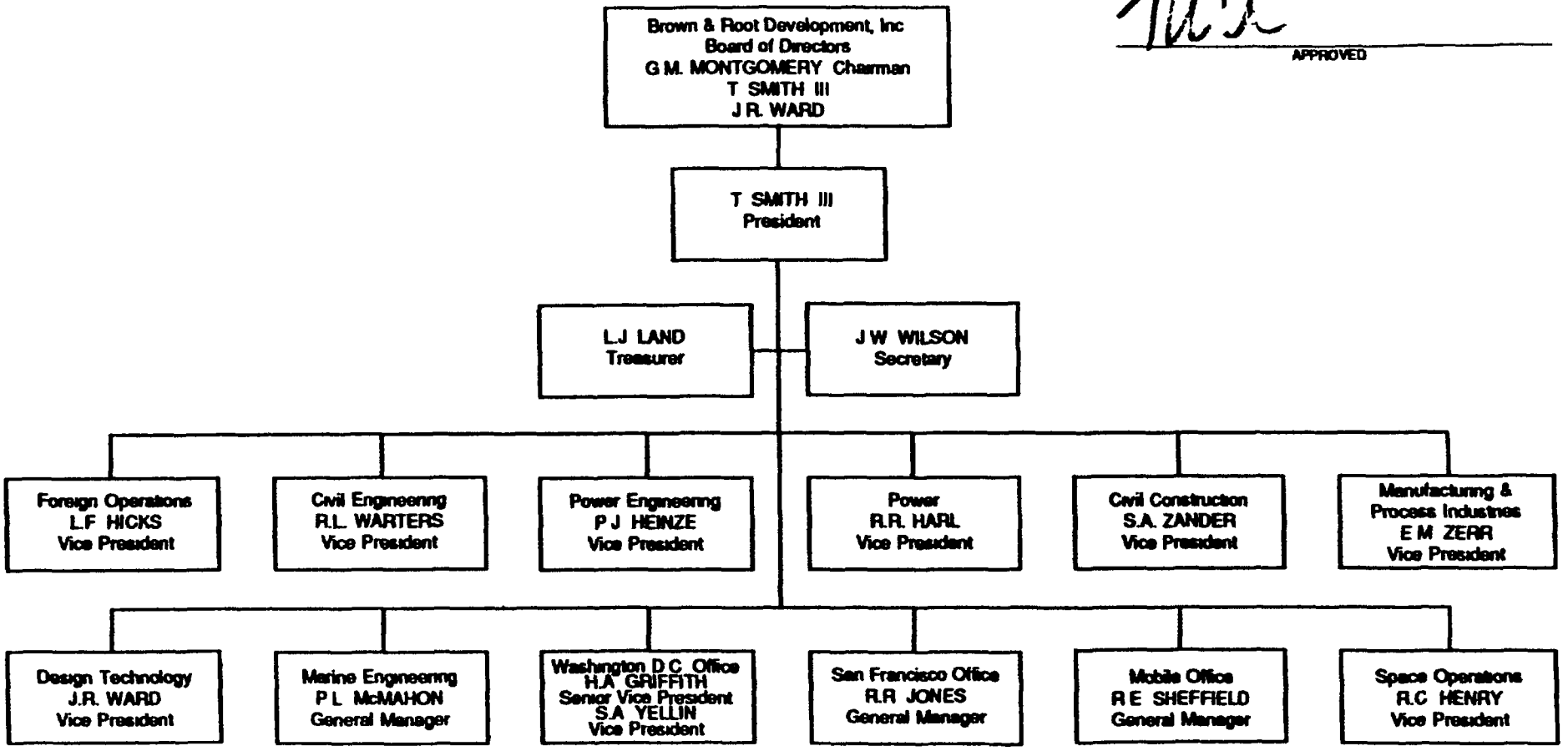
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 19

APPROVED



BR0000 40029

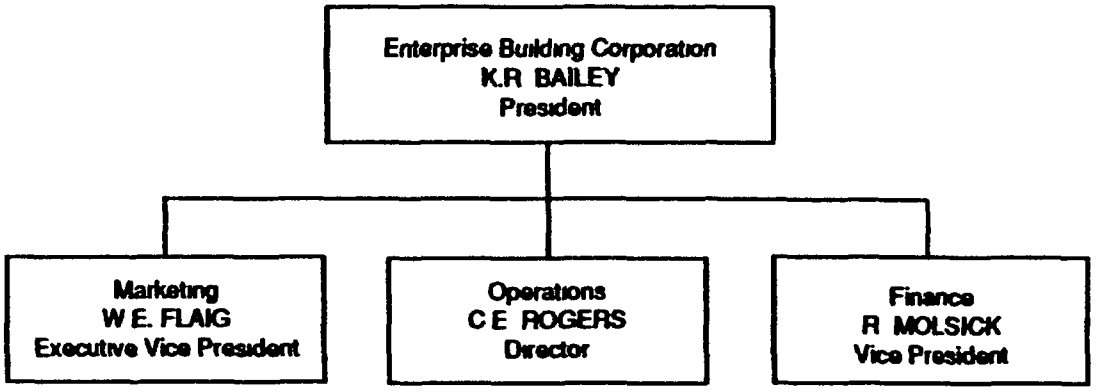
Enterprise Building Corporation

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 20

APPROVED



BR000040030

Brown & Root Industrial Services, Inc.

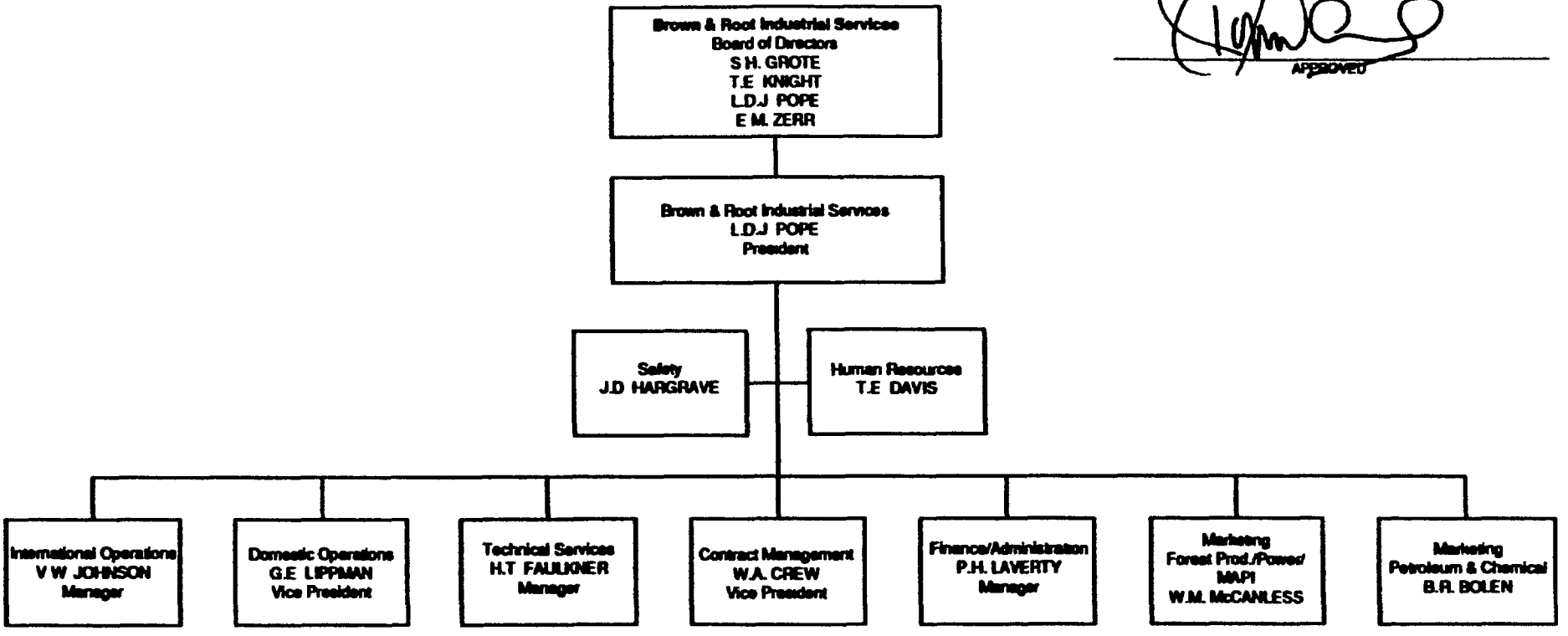
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 21

APPROVED



BR0000 40031

Brown & Root Services Corporation

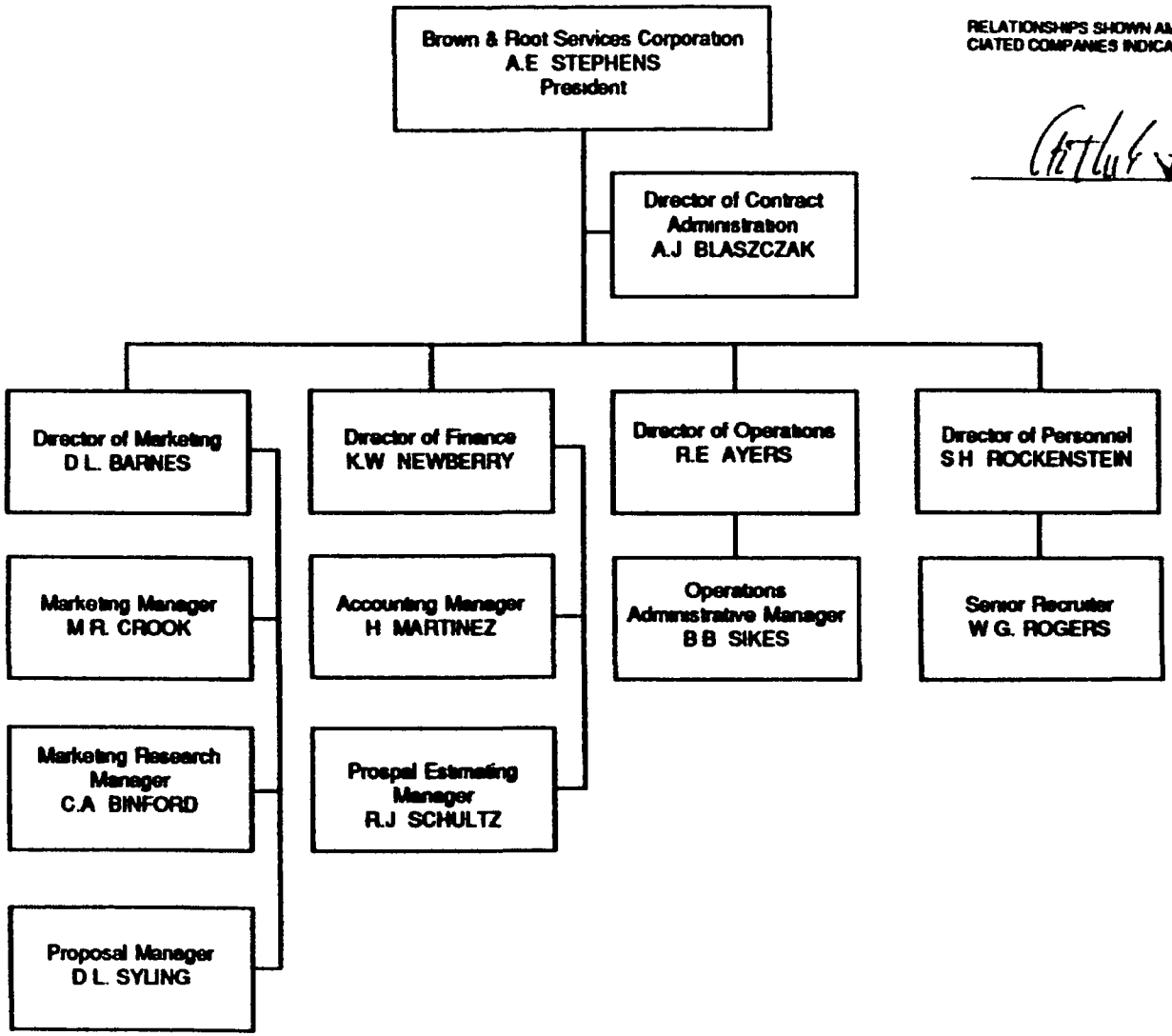
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 22

APPROVED



BR000040032

Instrument Technology International

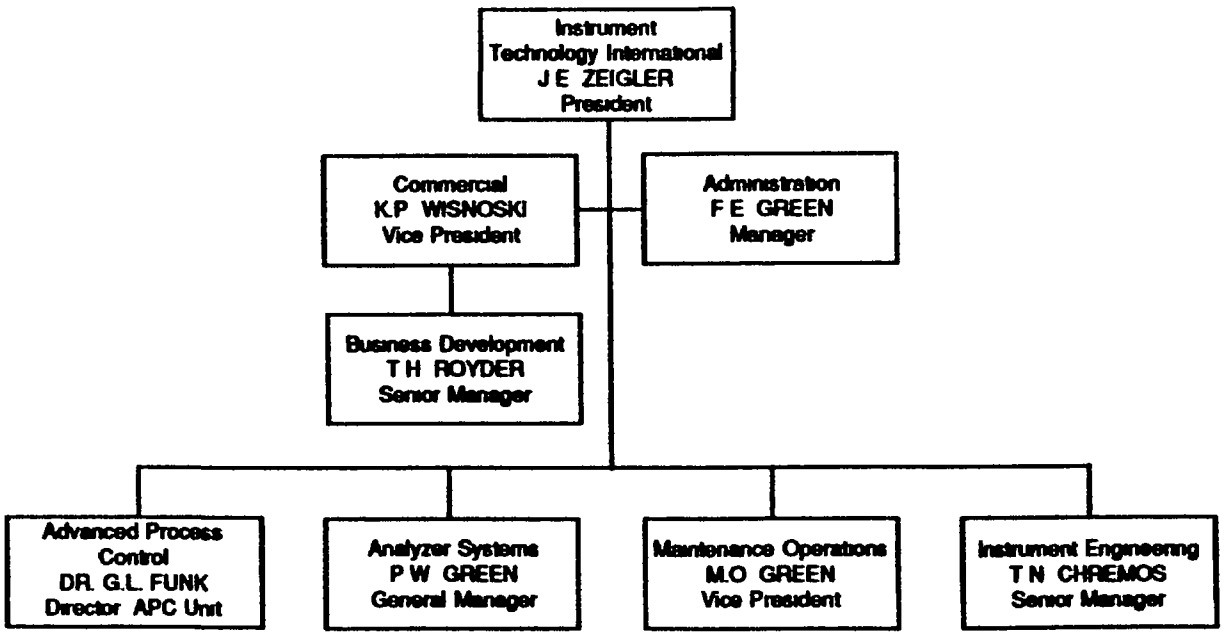
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 23

APPROVED



BR 000040033

SOUTHWESTERN CONTRACTING COMPANY

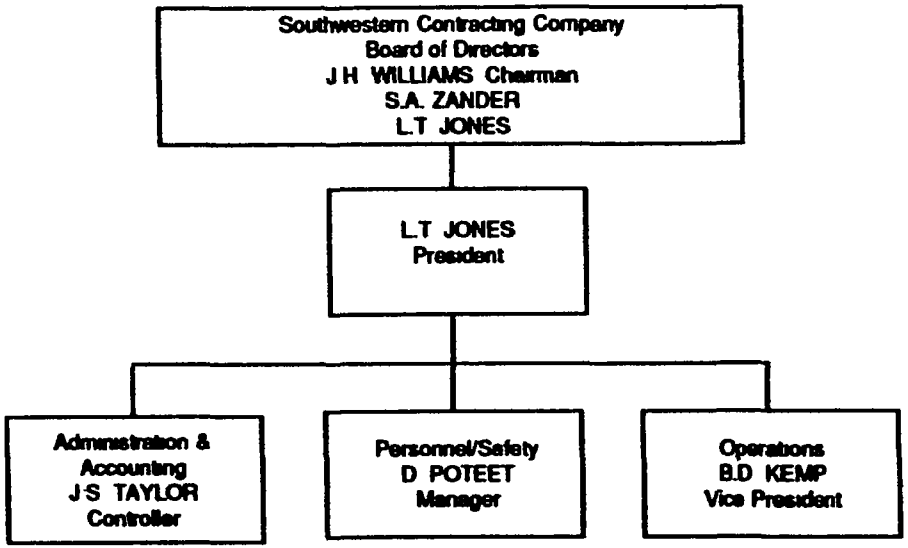
CORPORATE ORGANIZATION CHART

JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 24

L.T Jones
APPROVED



BR000040034

Associated Companies

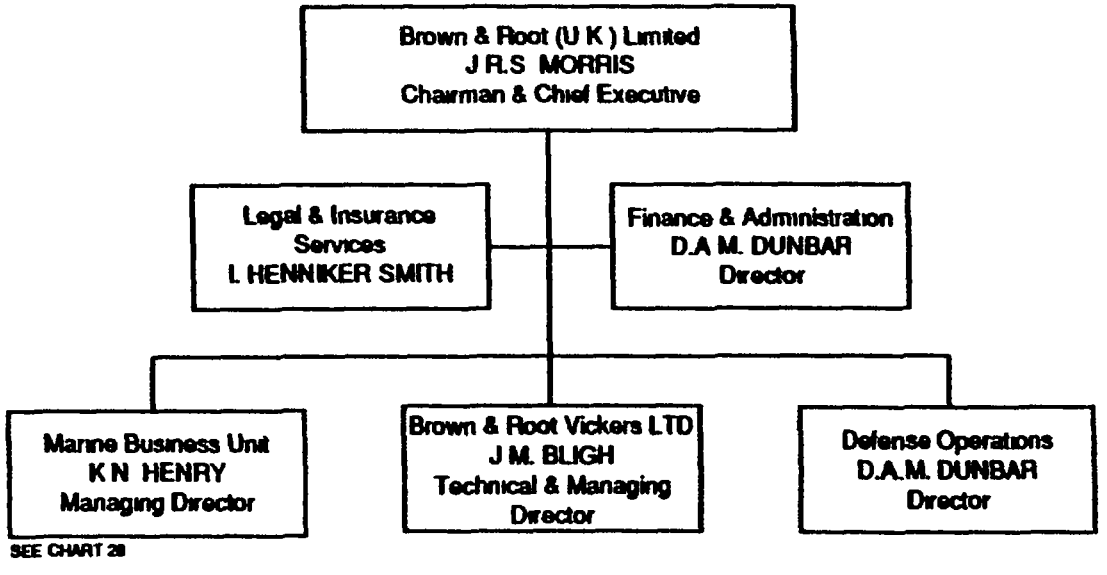
Brown & Root, Inc.
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 25

APPROVED



SEE CHART 28

BR000040033

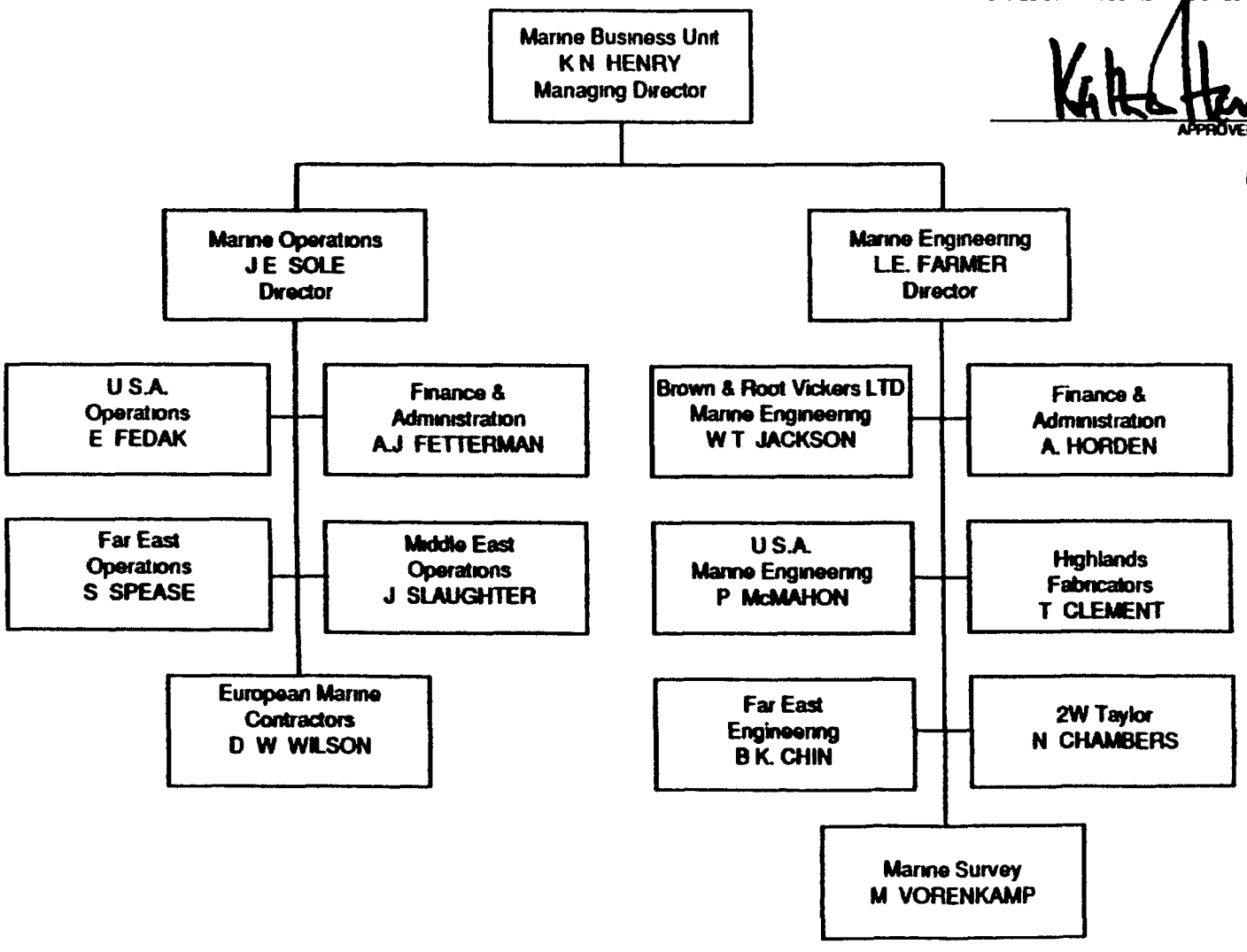
Brown & Root, Inc
And Associated Companies

CORPORATE ORGANIZATION CHART
JUNE 1989

RELATIONSHIPS SHOWN AMONG BROWN & ROOT INC. AND ASSOCIATED COMPANIES INDICATE LINES OF COMMUNICATION ONLY

CHART 26

APPROVED



BR0000400 34

DRILL RECORD

HCI /

Brown & Root, Inc — Quick Sever Lease

Sa 8,85

Superior

Ground

Fr	To	Fe	N	C
		1,783		
		10		
		C		
		Gravel		
		20		
		111		

Great Lakes

EP0000301 0

pp

008649

2

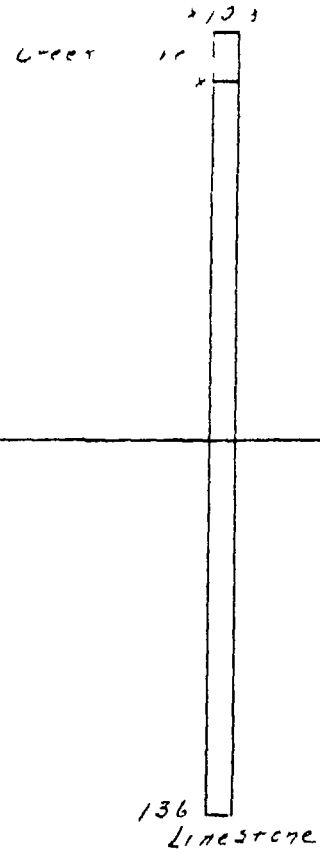
Brown & Root Inc — Quick Seven Lease

Twp — Rge — Satellite #C8

Thomas — Helper

Stand at — Completed

TOPOGRAPHY



No C -
Limestone Hole

BR0000001 1

DRILL RECORD

HOLE No 3

For Brown & Root Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8757

Drilled by Scott & Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼" Ft 6⅝" 4⅞ Left in hole

m	To	FORMATION
		8757 5 River Gravel 20 66 Limestone 800
		No Ore

BR000030142

Approved By Driller Contractor

DRILL RECORD

HOLE No 4

For Brown & Root, Inc Land Quick Seven Lease

Section _ Twn _ Rang _ Sea Level Elev 8788
(SEE LOCATION ON BACK OF SHEET)

Drilled by Gulbertson Helper

Water struck at _ Ft Stands at Ft Hole Started Completed

Casing used _ Ft 8¼ Ft 6¼" 4⅞ Left in hole

From	To	FORMATION
		8788
		River Gravel
		15
		Trace Zn & Pb
		20
		25
		Zn 4.02 %
		Pb 0.11 %
		40
		Zn 2.89 %
		Pb 0.16 %
		67½
		Thin Shines
		72½
		800
		Zn 2.50 %
		Pb 0.11 %
		95
		Trace Zn
		100
		Zn 1.53 %
		Pb 0.02 %
		110
		Thin Zn Shines
		145
		Zn 5.01 %
		Pb 0.03 %
		170
		Thin Zn Shines
		180

Good Hole

Highest Assay
ZnS = 19.95 %
PbS = 0.23 %

Lowest Assay
ZnS = 0.58 %
PbS = 0.02 %

Avg 155 ft
ZnS = 4.00 %
PbS = 0.08 %

000030143

Approved By _ Driller Contractor _

DRILL RECORD

HOLE No 5

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 876.7

Drilled by Scott + Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8 ¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
		876.7
		Clay 10
		River Gravel 20
		Shale
		75
		800
		Flint 90
		Flint 100 — Trace Zn
		Flint
		140
		145 — Zn 3.10%
		147½ — Zn 2.32% Pb 0.07%
		160 — Zn 0.63%
		165 — Pb 0.08%
		169½

Highest Assay
ZnS 4.65%
PbS 0.09%

Lowest Assay
ZnS 0.93%
PbS 0.06%

Avg 17½ ft 140 160
ZnS 2.62%
PbS 0.08%

BR000030144

Approved By

Driller Contractor

DRILL RECORD

HOLE No 6

For Brown & Root Inc. Land Quick Seven Lease

Section Twp Range Sea Level Elev 8795
(SEE LOCATION ON BACK OF SHEET)

Drilled by Riseling Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6 4⅞ Left in hole

From	To	FORMATION
		8795
		Clay 5
		Creek Gravel 20
		25 Tr Pb Sh Zn
		Shale 35 Zn 1.55% Pb 0.13%
		42½ 45
		Zn 1.82% Pb 0.21%
		70 Thin Zn Sh
		72½
		800
		Avg for 120
		Zn = 1.02% Pb = 0.12%
		Zn S = 1.53% Pb S = 0.14%
		Zn 0.70% Pb 0.09%
		155 Trace Zn
		163 Shed Ground

BR000030145

Approved By

Driller Contractor

DRILL RECORD

HOLE No 7

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8791

Drilled by Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft. 8¼" Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		8791
		Clay
		12
		River Gravel
		27
		80
		800
		Mud Opening 83
		No Ore
		Open Hole to 88
		164
		Sheet Ground

BP000000146

Approved By Driller Contractor

DRILL RECORD

HOLE No 8

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8792
(SEE LOCATION ON BACK OF SHEET)

Drilled by Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅜ L ft in hole

cm	To	FORMATION
		8792 Clay 12 River Gravel 28 Shale 35 Shale Seams 55 65 Tr Zn 800
		85 Zn 3 15% 21 - Avg 4730% Zn S 13 - 169% Zn S 106 Open Drift 152 Zn 113% 165

DP 000030147

Approved By Driller Contractor

DRILL RECORD

HOLE No 2

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 879.7

Drilled by Culbertson Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
		879.7
		5 River Gravel
		20
		30 Trace Zn
		60 Thin Zn Sh
		65 Zn 0.57%
		80
		Avg 65-80 = 0.86% Zn S
		80-125 = 3.86% Zn S
		Zn 2.57%
		125 Zn 0.60%
		135 Thin Zn Sh
		140
		164 Sheet Ground

800

BR000030148

Approved By Driller Contractor

DRILL RECORD

HOLE No 10

For Brown & Root, Inc Land Quick Seven Lease

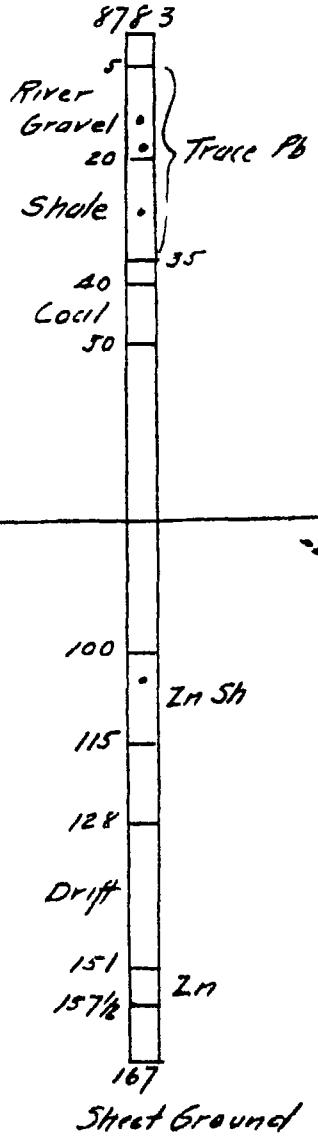
Section Twp Range Sea Level Elev 8783
(SEE LOCATION ON BACK OF SHEET)

Drilled by Scott & Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8 5/8 Ft 6 5/8 4 7/8 Left in hole

From	To	FORMATION



BR000030149

Approved By Driller Contractor

DRILL RECORD

HOLE No 11

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8788

Drilled by Scott & Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		8788
		10 River Gravel
		17 Pb Sh
		20
		25 Zn Sh
		35
		50 Zn
		55 Zn 2.37%
		62½ Zn
		65 Zn Sh
		70
		800
		Hard Limestone
		109 Limestone

Avg 55-62½ = 3.56% ZnS

" 50-65 = 2.89% ZnS

Hole apparently along West Wall of Ore Deposit

BP 00003015(

Approved By Driller Contracto

DRILL RECORD

HOLE No 12

For Brown & Root, Inc Land Quick Seven Lease

Section Tp (SEE LOCATION ON BACK OF SHEET) Range Sea Level Elev 8795

Drilled by Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
		8795
		12 River Gravel
		22 Gray Shale & Lime & Chert Boulders
		65
		800
		No Ore
		110 Mud Seams
		120
		153 Limestone

BR000030151

Approved By

Driller Contractor

DRILL RECORD

HOLE No 13

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF FIELD) Twp Range Sea Level Elev 8795

Drilled by Lee + Scott Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅛ Left in hole

From	To	FORMATION
		8795
		5 Sandstone
		10 Gravel
		15 Shale
		20
		Pb Sh
		35
		60
		65 Zn
		Zn Sh
		75
		78 Zn
		800
		Zn 1.15%
		Avg 60-95 = 1.74% ZnS
		110-132½ = 3.09% ZnS
		90
		95 Zn Sh
		100
		105 Zn Sh
		110
		112½ Zn
		Zn 2.13%
		132½
		Drift
		152

BR000030152

Approved By Driller Contractor

DRILL RECORD

HOLE No 14

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8783

(SEE LOCATION ON BACK OF SHEET)

Drilled by Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
		8783
		8 Shale
		20 Shale Seams
		30 Pb Sh
		55
		70
		800
		Zn Sh
		90 Zn 1.46%
		107½ Zn 0.62%
		137½ 1.40% Zn
		155 Fair Zn
		157½ Zn Sh
		167

Avg 90-107½ = 2.19% ZnS
107½-137½ - 0.93%
137½-155 = 2.10%
90 - 155 = 1.58% "

BP 000030153

Approved By Driller Contractor

DRILL RECORD

HOLE No 15

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 880.7

(SEE LOCATION ON BACK OF SHEET)

Drilled by Gorman Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8 1/4" Ft 6 1/4 4 7/8 Left in hole

From	To	FORMATION
		880.7
		12 River Gravel
		20
		0.65% Zn
		800
		Avg 20-140 = 0.99% Zn S
		Very open hole - Lots of
		Shale and Selvage to 75 ft
		140
		145 Drift
		154

BR00003015

Approved By Driller Contractor

DRILL RECORD

HOLE No 16

For Brown & Root Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8795

(SEE LOCATION ON BACK OF SHEET)

Drilled by Scott & Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4½ Left in hole

From	To	FORMATION
		8795
		5
		15
		20
		25
		30
		45
		50 Pb } 2 85% Zn 2.14% Pb
		60 } 0 43% Zn
		800
		87 Drift
		100
		102 2 30% Zn – 0 10% Pb
		110 Trace Zn
		120
		1 05% Zn – 0 06% Pb
		160
		164
		Sheet Ground

BRC00030155

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DRILL RECORD

HOLE No 17

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8799

(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ L ft in hole

m	To	FORMATION
		8799 9
		8 River Gravel
		17 Shale
		30 Pb Sh
		40 Pb + Zn Sh
		50
		50-90 0 39 Zn 0 87 Pb 0 5 + Zn S 1 00 Pb S
		90-112½ 0 28 Zn 0 18 Pb 0 42 Zn S 0 21 Pb S
		800
		Avg 0 35 % Zn 0 52 % Zn S
		0 58 % Pb 0 68 % Pb S
		Very Open Hole
		150 Drift
		157 Fair Zn
		159

BR000030156

DRILL RECORD

HOLE No 18

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Rang Sea Level Elev 8785
(SEE LOCATION ON BACK OF SHEET)

Drilled by R. O Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6⅝ 4⅞ Left in hole

To	FORMATION
	8785
	12 River Gravel 19
	Shale
	43 48
	Zn Sh 800
	Very Open Hole
	105
	Drift
	143

BR000030157

Approved By Drilling Contractor

DRILL RECORD

HOLE No 19

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8791

Drilled by R O. Denton Helper

Water truck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼" 4⅞ Left in hole

From	To	FORMATION
		8791
		9
		River Gravel
		18
		Shale
		54
		60 Avg 10 % Zn
		" 116 % Pb
		70
		800
		Avg 0 36 Zn
		0 09 Pb
		120
		Avg 60 70 = 150 % ZnS
		60 - 70 = 145 % PbS
		140
		165

BR000030158

Approved By Driller Contractor

DRILL RECORD

HOLE No 20

For _ Land _

Section Twp Range Sea Level Elev 8390

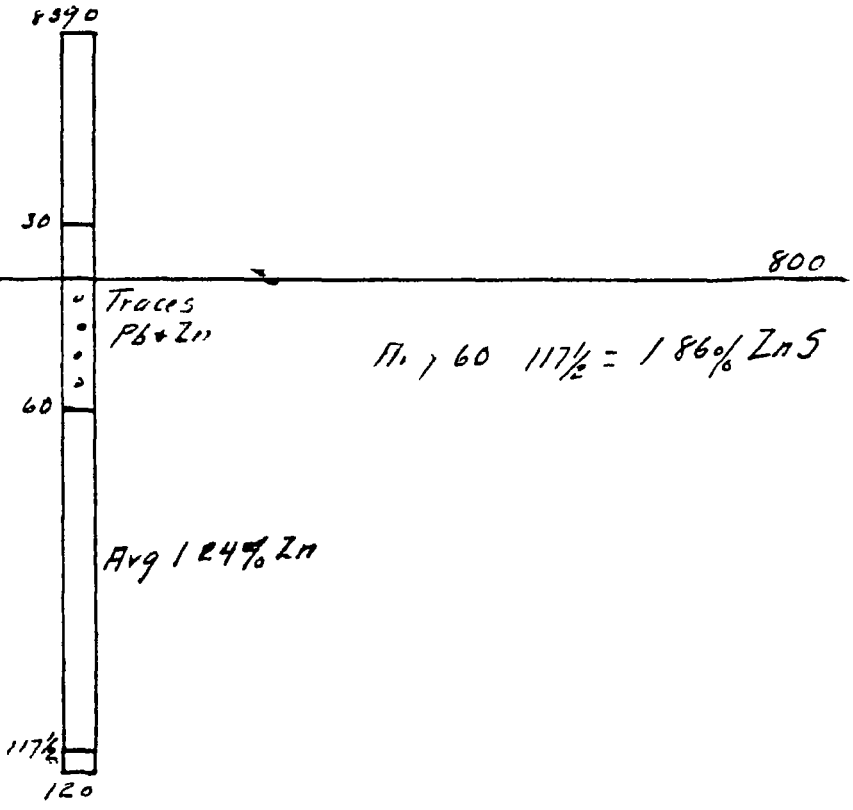
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper

Water struck at _ Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ _ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION



BR000030159

Approved By _ Driller Contractor

DRILL RECORD

HOLE No 21

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 882.8
(SEE LOCATION ON BACK OF SHEET)

Drilled by Scott & Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅜ Left in hole

From	To	FORMATION
		882.8
		Gravel 10
		15
		Shale
		25
		35
		Zn 0.29% Pb 1.58% 0.44 ZnS 1.84 PbS
		45
		50
		Zn Sh + Pb Sh
		60
		65
		70 Zn Sh
		72½ Zn
		800
		90
		95 Zn
		100
		Zn Sh
		120
		162
		Street Ground

BR000030160

Approved By Driller Contractor

DRILL RECORD

HOLE No 22

For Brown & Root, Inc Land Quick Seven Lease

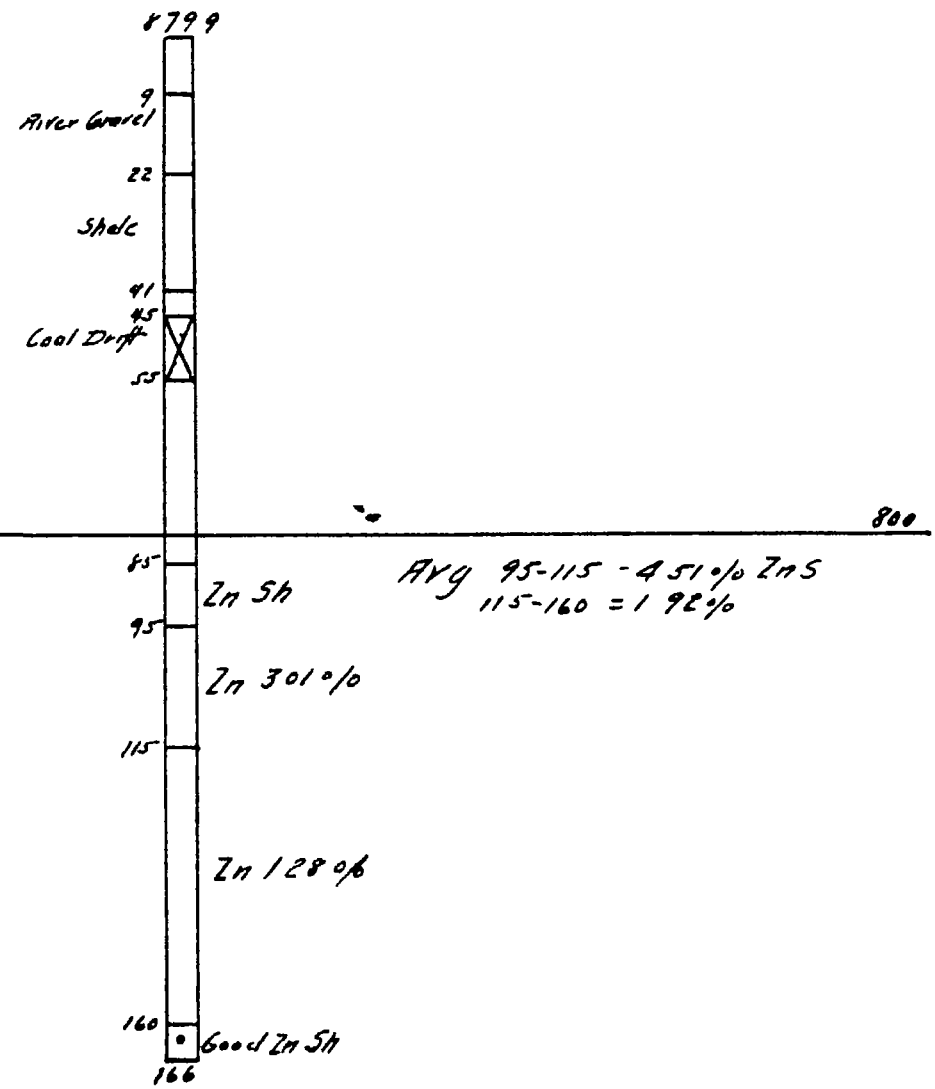
Section Twp Range Sea Level Elev 879.9
(SEE LOCATION ON BACK OF SHEET)

Drilled by Gorman Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼" 4⅞ Left in hole

m	To	FORMATION



Avg 95-115 - 4 51 o/o ZnS
115-160 = 1 92 o/o

BR000030161

Approved By Driller Contractor

DRILL RECORD

HOLE No 23

For Brown & Root, Inc. Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 879.4

Drilled by Claude Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

m	To	FORMATION
		879.4
		River Gravel
		Hard Limestone Hole
		Apparently Defines East Wall
		800
		80

BR000030162

Approved By Driller Contractor

DRILL RECORD

HOLE No 24

For Brown & Root, Inc. Land Quick Seven Lease

Section Twp Range Sea Level Elev 881.5

SEE LOCATION IN BACK OF SHEET

Drilled by R. O. Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼" Ft 6¼ 4⅛ Left in hole

From	To	FORMATION
		881.5
		9 River Gravel 17
		Shale
		Very Open Hole Shale mixed with chert to 155 ft
		50 Lime Stone 52
		Coal + Shale
		64 Zn Sh Pb Sh 70
		Zn 0.35% - Pb 0.09% 800
		92½ Zn 0.18% Pb 0.05% 100
		Thin Pb Sh
		135 140
		Thin Tr Zn
		155
		164 Sheet Ground

BR000030163

Approved By Driller Contractor

DRILL RECORD

HOLE No 25

For Brown & Root, Inc — Land Quick Seven Lease

Section — Twp — Range — Sea Level Elev 8802

(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton — Helper —

Water struck at Ft — Standing at Ft — Hole Started — Completed

Casing used Ft 8¼ — Ft 6¼ — 4⅞ Left in hole

From	To	FORMATION
		8802
		12 River Gravel
		14 Shale
		40 Shale & Coal
		65 Zn Tr
		75
		Very Open Hole Shale mixed with chert to 157½ ft Mineralization continuous from 65 to 165 ft 75-160 1/15 % ZnS
		800
		Zn 0.46% - Pb 0.11%
		97½
		Zn 1.71% - Pb 0.04
		107½
		Zn 0.72% - Tr Pb
		160
		165 Thin % Zn
		Sheet Ground

BR000030164

Approved By — Driller Contractor

DRILL RECORD

HOLE o 26

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 883 3

(SEE LOCATION ON BACK OF SHEET)

Drilled by Lee + Scott Helper

Water struck at Ft Stands Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		883 3
		10 River Gravel
		15 Shale
		20 Coal
		25
		40 Pb Sh
		50
		65 Zn 2.08% 312 Zn S
		70
		75 Zn 1.22% 183 Zn S 800
		90 Zn 0.59%
		105
		163 Sheet Ground

Very Open Hole to 140 ft

DR000030165

Approved By Drille Contractor

DRILL RECORD

HOLE No 27

For Brown & Root Inc. Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8801

Drilled by Claude Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

m	To	FORMATION
		8801
		15 River Gravel 21 Water
		Very Open Hole all way down Water in Creek Gravel washed Cuttings away Ore probably richer than sampling indicates
		Shale
		50
		Pb Tr
		65
		70 Zn 0 40%
		75
		800
		75-135
		Zn 0 98% - Pb Tr 1 47 Zn S
		135
		137½
		Drift
		156

BR000030166

Approved B Driller Contractor

DRILL RECORD

HOLE No. 28

For Brown & Root, Inc — Land Quick Seven Lease

Section — Twp. — Range — Sea Level Elev 8796

(SEE LOCATION IN BACK OF SHEET)

Drilled by German — Helper

Water struck at — Ft. Stand at — Ft. Hole Started — Completed

Casing used — F 8¼ — Ft 6¼ — 4⅜ Left in hole

From	To	FORMATION
		8796
		10 River Gravel
		22 Shale
		25 Lime Shale + Coal
		40 Pb Sh
		45
		55 Pb Sh
		60
		800
		85 Zn Sh
		90
		105 Zn Sh
		110
		115
		Zn Sh
		150
		160

Very crevicy ground from 55 to 72 ft Ground carried heavy Mundic from 25 to 110 ft Probably Edge Hole

BR000030167

Approved By — Driller Contractor

DRILL RECORD

HOLE No 29

For Brown & Root — Land Quick Seven Lease

Section — Twp (SEE LOCATION ON BACK OF SHEET) — Range — Sea Level Elev 8407

Drilled by Thomas — ~~Helper~~ Drilled in Little Frances Cave

Water struck at — Ft — Stands at — Ft — Hole Started — Completed

Casing used — Ft 8¼ — Ft 6¼ — 4⅞" Left in hole

From	To	FORMATION
		This Hole in badly caved ground Much of the cuttings got away in openings From 80 to 95 ft nearly all the cuttings were lost and no assays could be made
		8407
		Caved Dirt
		10
		Zn Trace - Pb Trace
		20
		Opening
		25
		800
		Zn 0.27% - Pb 0.08%
		80
		Lost Samples
		95
		100
		Zn 3.82%
		112½
		Zn 1.15%
		117
		Avg 100-117 3.11% Zn 4.66% Zn 5

BR000030168

Approved By — Driller Contractor

DRILL RECORD

HOLE No 30

For Brown & Root, Inc Land Quick Seven Lease

Sec Twp Range Sea Level Elev 861

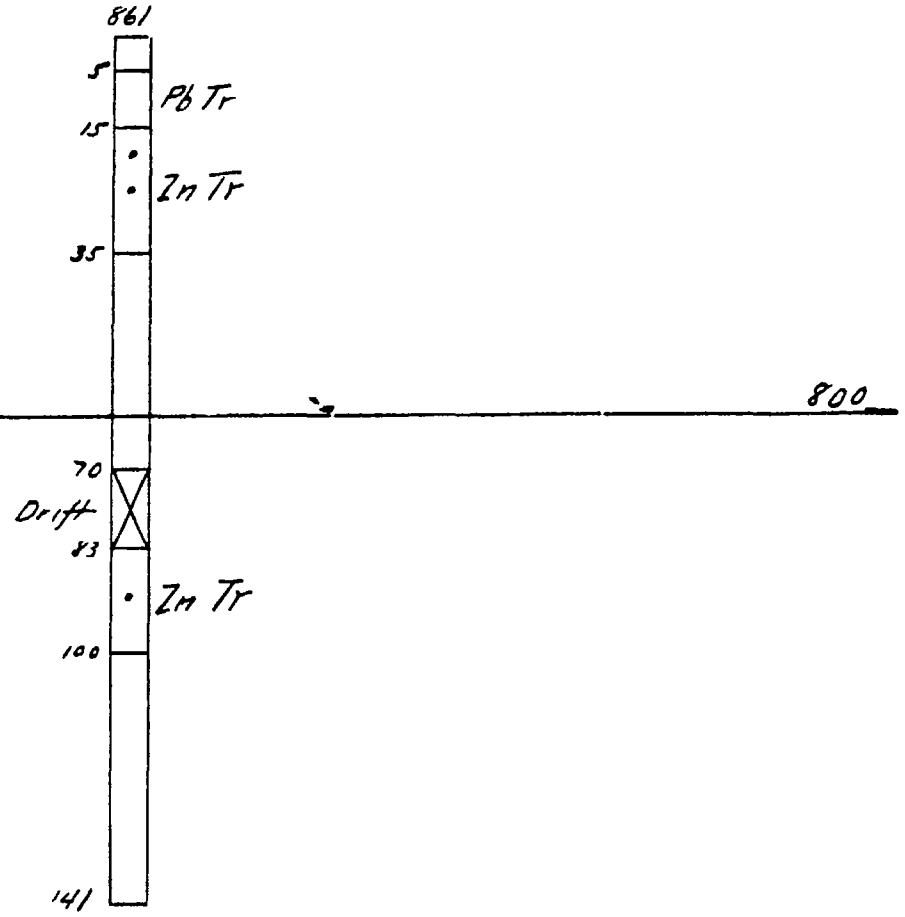
SEE LOCATION ON BACK OF SHEET

Drilled by R O Denton Helper Drilled in Quick Seven Cave

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

To	FORMATION



BR000020169

Approved By Driller Contractor

DRILL RECORD

HOLE No 31

For Brown & Root, Inc Land Quick Seven Lease

Section Twp (SEE LOCATION ON BACK OF SHEET) Range Sea Level Elev 862 1

Drilled by R O Denton ~~Helper~~ Located in Quick Seven Cove Check for DH #2

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼" Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
		862 1
		Shale
		30
		River Gravel
		55
		800
		Avg 55 142½ 579% Zn S
		Zn 386%
		142½
		Zn 124%
		152½
		Zn 071%
		161

BR000030170

Approved By Driller Contractor

DRILL RECORD

HOLE No. 32

For Brown & Root Inc — Land Quick Seven Lease

Section — Township (SEE LOCATION ON BACK) — Range — Sea Level Elev 8792

Drilled by Gorman — Helper

Water struck at — Ft. Stands at — Ft. Hole Started — Completed

Casing used — Ft. 8¼ — Ft. 6¼ — 4 — Left in hole

From	To	FORMATION
		8792
		8 River Gravel
		19
		35
		Zn 1.42% 2.13% ZnS
		65
		Zn Shines 800
		Est 100% Zn
		90
		Zn 3.29% 4.93% ZnS
		110 Lost Cuttings in Drift
		114
		Drift
		132
		Zn 1.61%
		142½
		Average
		35-142½ Zn 1.82% ZnS 2.74%

BR000030171

Approved By — Driller Contractor

DRILL RECORD

HOLE No 33

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 880 4
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper

Water struck at Ft Stand at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
		880 4
		12 River Gravel
		22
		25
		Zn 0 61 %
		65
		800
		Avg 25-155 = 1 26% ZnS
		Zn 1 04%
		Very Open Hole
		117½
		Zn 0 80%
		155
		161 Tr Zn

BR000030172

Approved By Driller Contractor

DRILL RECORD

HOLE No 34

For Brown & Root, Inc. Land Quick Seven Lease

Section Twp Range Sea Level Elev 8138

(SLE LOCATION ON BACK OF SHEET)

Drilled by Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

m	To	FORMATION
		8138
		800
		Zn 1 48%
		30
		Zn 0 64%
		55
		Zn 1 82%
		91

Avg 91 = 2 09% ZnS

BR000030173

Approved By

Drill r C ntractor

DRILL RECORD

HOLE No 35

For Brown & Root, Inc. Land Quick Seven Lease

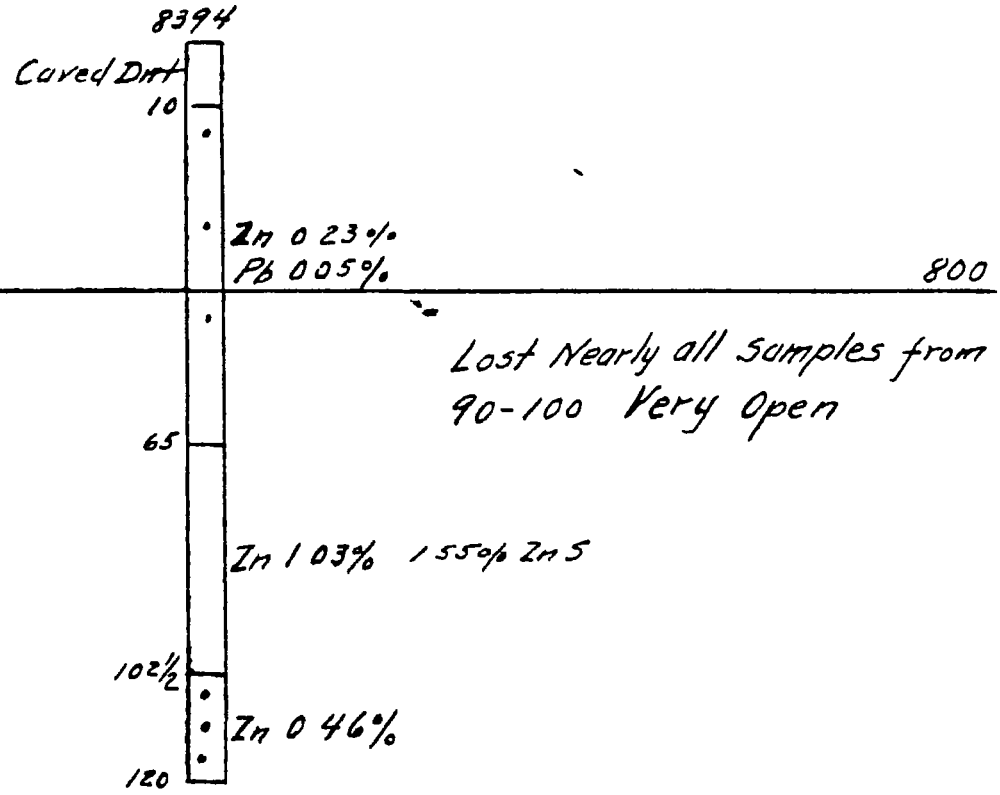
Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8394

Drilled by Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4½ Left in hole

m	To	FORMATION



3R000030174

Approved By Driller Contractor

DRILL RECORD

HOLE No 36

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 862

SEE LOCATION ON BACK OF SHEET

Drilled by R O Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		862
		Shale
		40
		48 Zn Tr
		55 Thin Zn Sh
		800
		Zn 2 49%
		105
		Zn 0 70 %
		Drift 125
		Zn 0 70 %
		135
		140

Arg
105-135 1 05% Zn S
55-135 2 18% Zn 3 27% Zn S

BR000030175

Approved By Driller Contractor

DRILL RECORD

HOLE No 37

For Brown & Root, Inc Land Quick Seven Lease

Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8154

Drilled by L A Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		8154
		800
		2 17% Zn 3 25% ZnS
		55
		75
		2 20% Zn 3 30% ZnS
		90
		95
		Sheet Ground

BR000030176

Approved By Driller Contractor

DRILL RECORD

HOLE No 38

For Brown & Root, Inc. Land Quick Seven Lease

Section Twp Range Sea Level Elev 8623
(SEE LOCATION ON BACK OF SHEET)

Drilled by R O Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		8623
		Soapstone
		25
		Clay Gravel Soap — Tr Zn
		52
		Flint — Tr Zn
		800
		65
		2 32% Zn 3 48% Zn S
		75
		7 07% Zn 10 60% Zn S
		Arg 65-154 6 53% Zn 9 80% Zn S
		154

BR000030177

Approved By Drill Co

DRILL RECORD

HOLE No 39

For Brown & Root, Inc. Land Quick Seven Lease

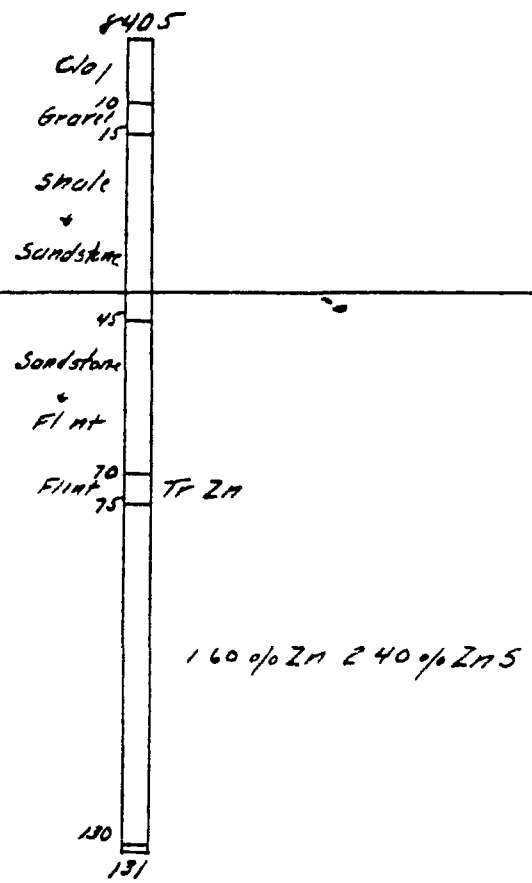
Section Twp (SEE LOCATION ON BACK OF SHEET) Range Sea Level Elev 8405

Drilled by Roy Thomas Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼" Ft 6¼ 4⅞ Left in hole

m	To	FORMATION



BR000030178

Approved By Date

DRILL RECORD

HOLE No 40

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8240
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
		8240
		Fill
		10
		Zn Sh 0.98% Zn 1.47% ZnS
		800
		35
		Tr Zn
		70
		0.65% Zn 0.97% ZnS
		114

BP 000030179

Approved By Driller Contractor

DRILL RECORD

HOLE No 41

For Brown & Root, Inc. Land Quick Seven Lease

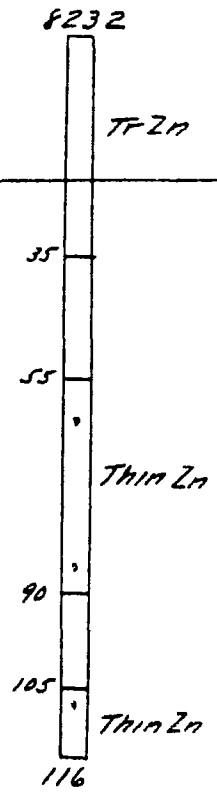
Section Twp Range Sea Level Elev 8232
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION



800

BR000030180

Approved By Driller Contractor

DRILL RECORD

HOLE No 42

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 823.8
(S E LOCATION ON BACK OF SHEET)

Drilled by H M Gorman Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¾" Ft 6¼ 4⅞" Left in bole

From	To	FORMATION
		823.8
		Shale
		10
		800
		10-80 16% Zn 24% Zn S
		80
		Fair Zn
		90
		Zn Sh
		116

BP000030181

Approved By Driller Contractor

DRILL RECORD

HOLE No 43

For Brown & Root, Inc. Land Quick Seven Lease

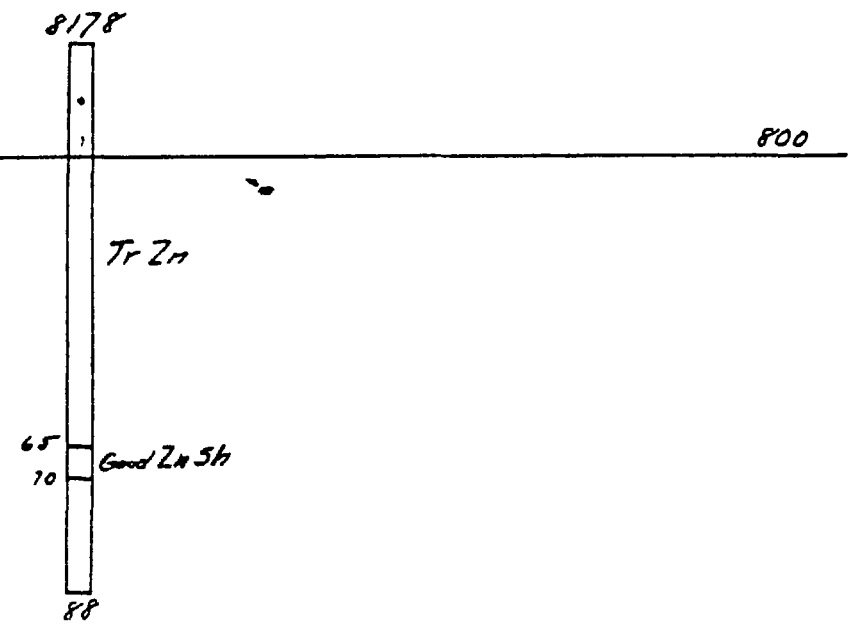
Section (SEE LOCATION ON BACK OF SHEET) Twp Range Sea Level Elev 8178

Drilled by L A. Lee Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION



BR000030182

Approved By Driller Contractor

DRILL RECORD

HOLE No 44

For Brown & Root, Inc — Land Quick Seven Lease

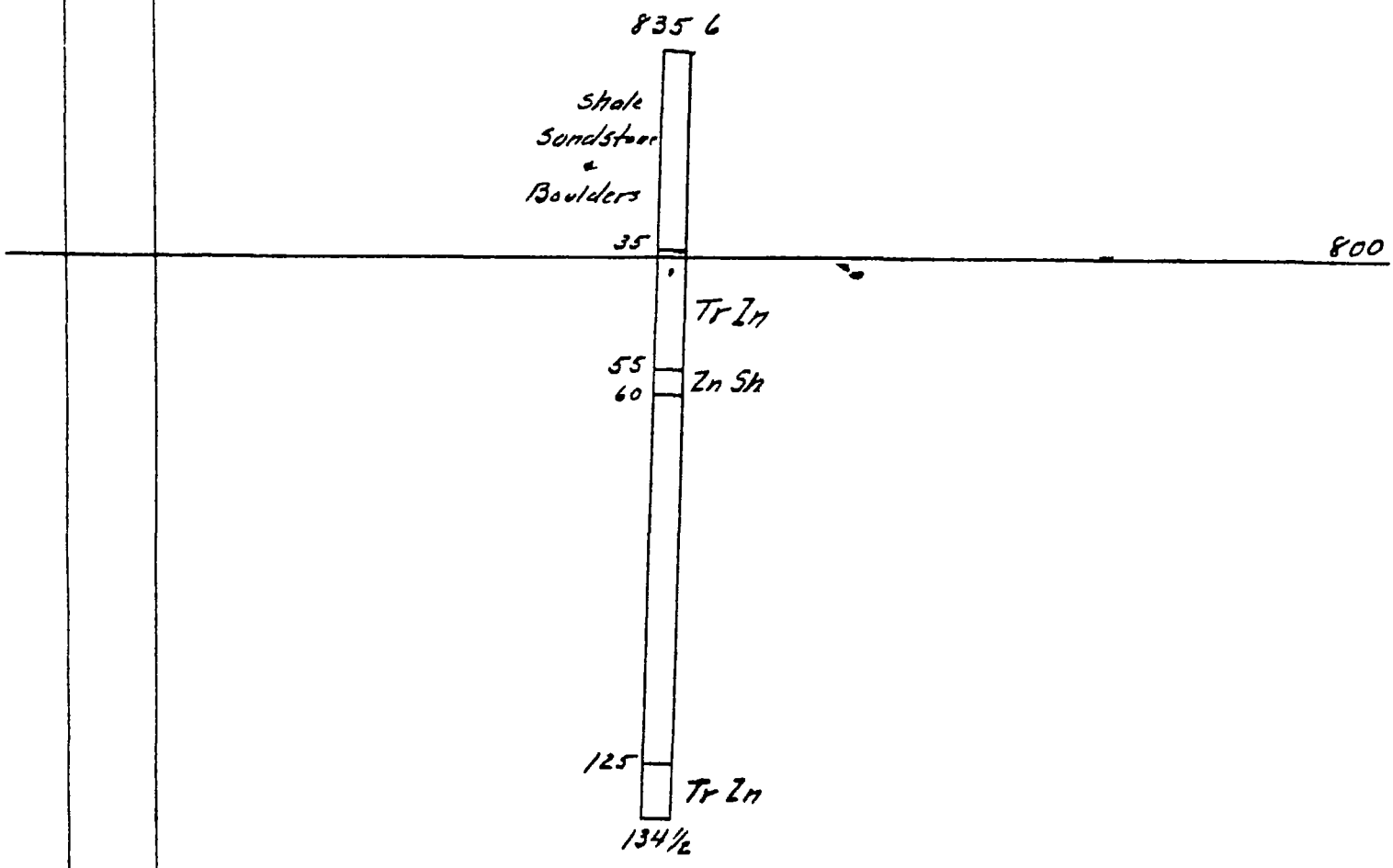
Section (SEE LOCATION ON BACK OF SHEET) Twp — Range — Sea Level Elev 835.6

Drilled by Claude Denton — Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅜ Left in hole

From	To	FORMATION



BR000030183

DRILL RECORD

HOLE No 45

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8398
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Little Frances Cove

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
		8398
		Shale & Gravel
		10
		Pb Sh
		30
		Pb & Zn Sh
		40
		Tr Pb
		Sh Zn
		55
		Avg 55-123
		Zn 2.28 % ZnS 3.42 %
		107½
		123

800

3R00003018c

Approved By Driller Contractor

DRILL RECORD

HOLE No 46

For Brown & Root, Inc — Land Quick Seven Lease

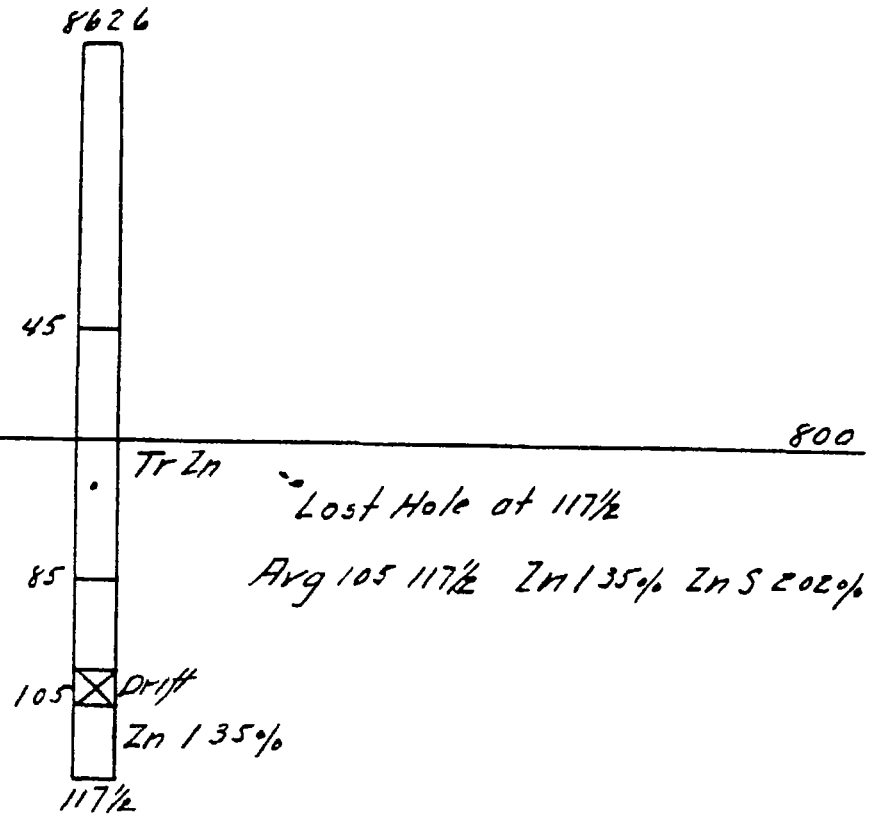
Section — Twp (SEE LOCATION ON BACK OF SHEET) — Range — Sea Level Elev 8626

Drilled by R O Denton — Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6 4 — 4 ⅝ Left in hole

From	To	FORMATION



BP 000030185

Appendix B — Driller Contractor

DRILL RECORD

HOLE No 46-A

For Brown & Root Inc Land Quick Seven Lease

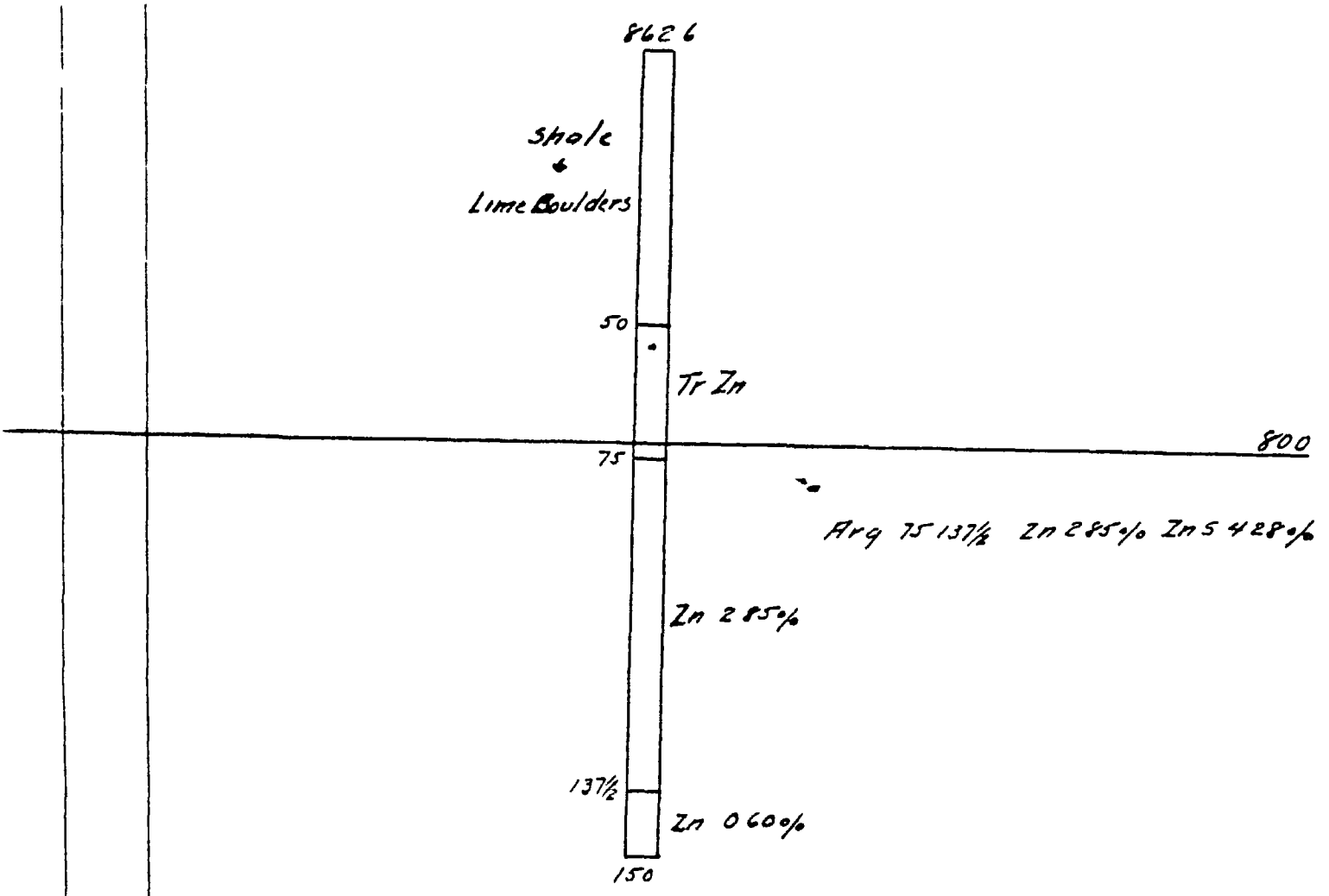
Section Twp Range Sea Level Elev 8626
(SEE LOCATION ON BACK OF SHEET)

Drilled by R O Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞" Left in bole

m	To	FORMATION



BR000030186

Approved By Driller Contractor

DRILL RECORD

HOLE No 47

For Brown & Root — Land Quick Seven Lease

Section — Twp — Range — Sea Level Elev 8229

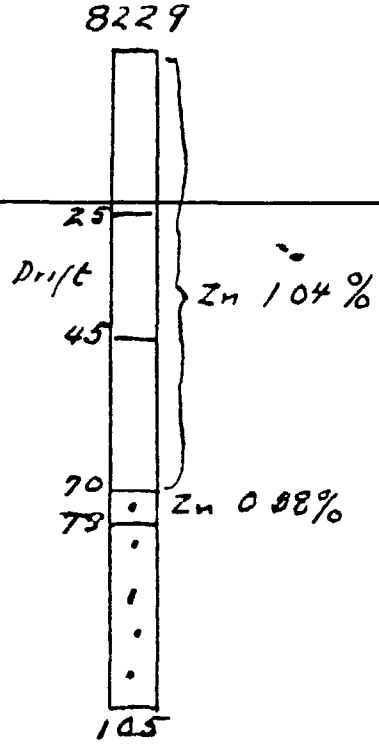
(SEE LOCATION CLAUSE SHEET)

Drilled by Gorman — Helper

Water struck at — Ft — Stands at — Ft — Hole Started — Completed

Casing used — Ft 8¼ — Ft 6 — 4 — Left in hole

From	To	FORMATION



50 0-70 = 1.56% Zn S

BR000030187

Approved By — Driller — Foreman

DRILL RECORD

HOLE No 48

For Brown & Root, Inc — Land Quick Seven Lease

Section — Twp — Range — Sea Level Elev 825

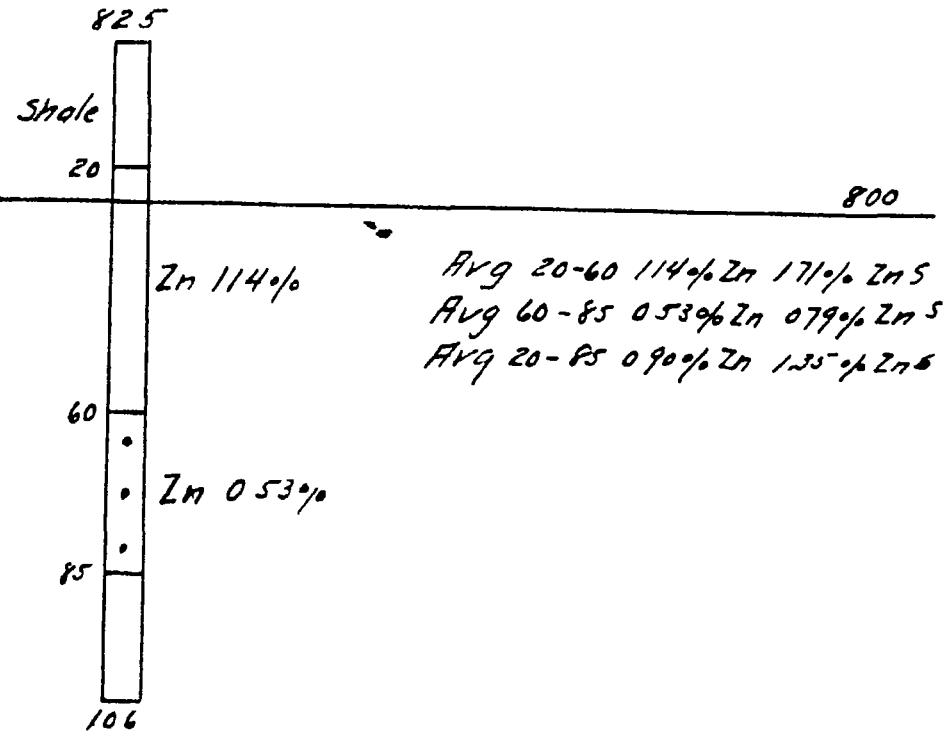
(SELECTION ON BACK OF SHEET)

Drilled by Leonard Lee — Helper

Water struck at — Ft — Stands at — Ft — Hole Started — Completed

Casing used — Ft 8¼ — Ft 6¼ — 4 ⅛ — Left in hole

From	To	FORMATION



BR000030188

Approved By — Driller Contractor

DRILL RECORD

HOLE No 49

For Brown & Root, Inc — Land Quick Seven Lease

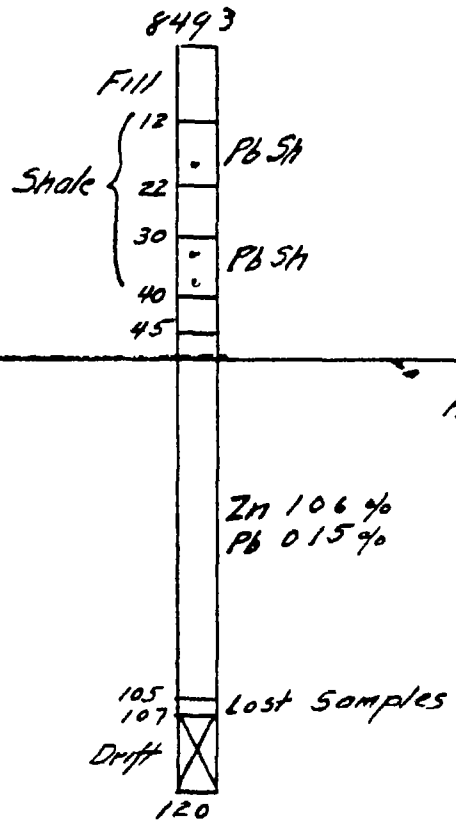
Section — Twp (SEE LOCATION MAP OF SHEET) — Range — Sea Level Elev 8493

Drilled by Roy Thomas — Helper

Water struck at — Ft — Stands at — Ft — Hole Started — Completed

Casing used — Ft 8¼ — Ft 6¼ — 4⅞" Left in hole

From	To	FORMATION



800

Avg 45-107 Zn 1.06% Pb 0.15%
= 1.59% ZnS 0.17% PbS

BR000030189

DRILL RECORD

HOLE No 50

For Brown & Root, Inc Land Quick Seven Lease

Section Twp Range Sea Level Elev 8407

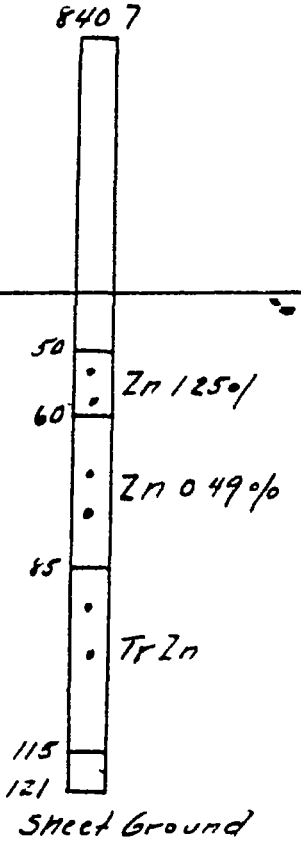
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION



Drilled in Shale, Sandstone, Selvage and broken chert

Avg 50-85 0.71% Zn 1.06% ZnS

BR000000190

DRILL RECORD

HOLE No 51

For Brown & Root

Land Quick Seven Lease

Section

Twp

SEE LOCATION ON BACK OF SHEET)

Range

Sea l Elev 8396

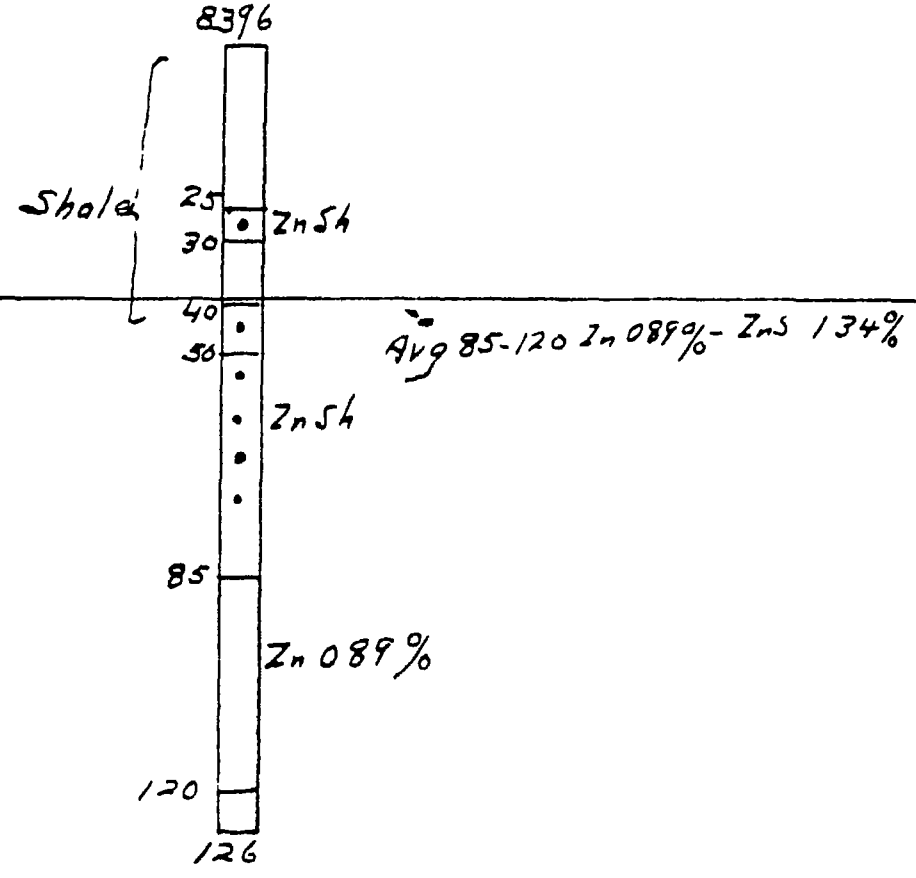
Drill d by Leonard Lee

Helper

Water struck at Ft Stands at Ft Hole Started Comp ted

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

m	To	FOR IATION



BR000030191

DRILL RECORD

HOLE No 52

For Brown & Root — Land Quick Seven Lease

S n — Twp — Rn e — Sea Le e Elev 826 3

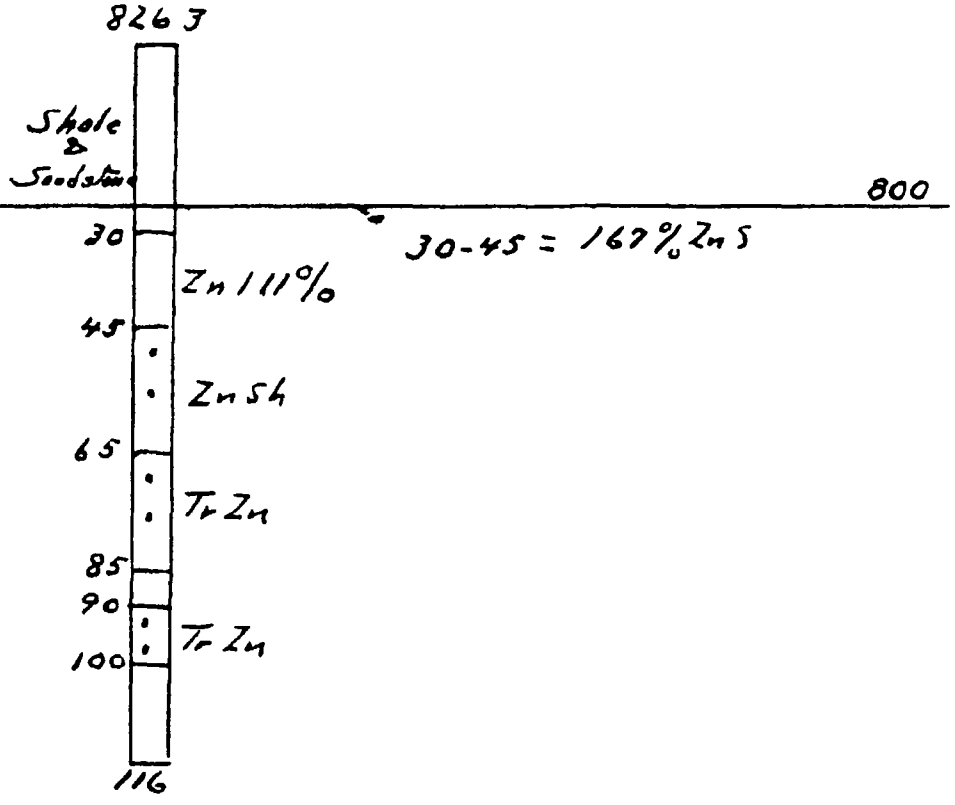
(SHEET)

Drilled b Gorman — Helper

Water struck a — Ft — Stands at — Ft — Hole Started — C mp ed

C sing used — Ft 8¼ — Ft 6 4 — 4⅞" Left in hole

To	FORMATION



BR000030132

Approved By — Driller Contractor

DRILL RECORD

HOLE No 53

For Brown & Root

Land Quick Seven Lease

Section (SEE SCALE ON BACK OF SHEET) Twp

Range

Sea Level Elev 845

Drilled by Claude Denton

Helper

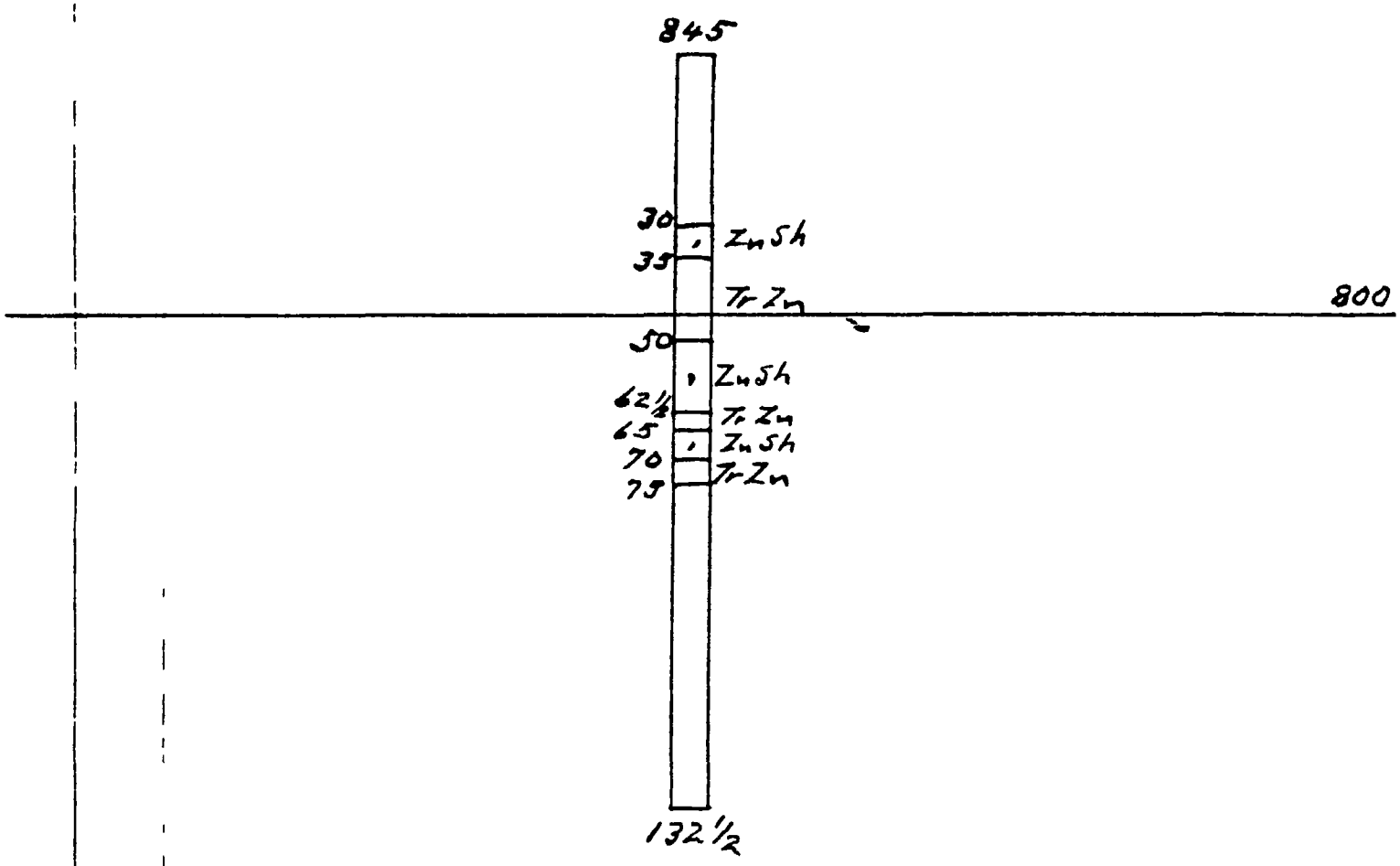
Water struck at Ft Stands at Ft

Hole Started

Completed

Casing used Ft 8¼" Ft 6¼ 4⅜" Left in hole

From	To	FORMATION



BR000030193

DRILL RECORD

HOLE No 54

For Brown & Root, Inc Land Quick Seven

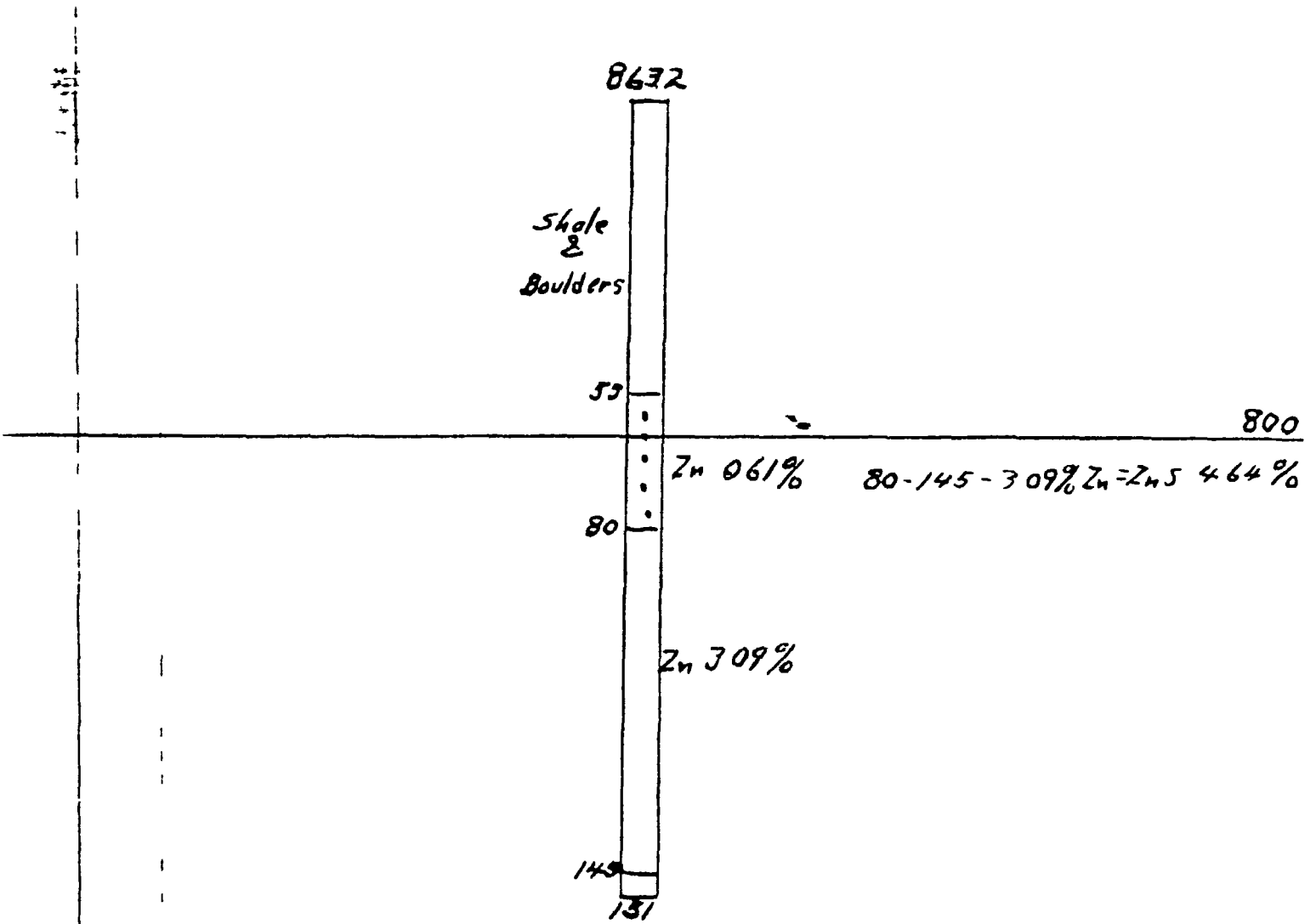
Section Twp Range Sea Level Elev 8672

Drilled by R O Denlon Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¾ Ft 6¾ 4⅝ Left in hole

From	To	FORMATION



BR000030194

DRILL RECORD

HOLE No B&R #1

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 N Range 32 W Sea Level Elev 878 3
(SEE LOCATION ON BACK OF SHEET)

Drilled by Ed Riseling Helper

Water struck at 45 Ft Stands at 15 Ft Hole started 2-7-1951 Completed 2-26-1951

Casing used 21 Ft 8¼ Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	5	Tailing - sludge - zinc trace
5	10	Sludge
10	20	Creek gravel
20	40	Creek gravel - gray lime - gray flint - blue mundic
40	65	Gray, blue and white flint - gray lime - selvage - mundic
65	95	Brown and gray lime - white flint
95	100	Gray lime - white flint - selvage
100	130	Brown lime - white flint
130	135	Brown lime
135	155	Brown lime - little white flint
155	160	White flint - brown lime
160	165	Brown lime - white flint
165	171	White and brown flint - brown lime - mundic

BR000030135

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #2

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29N Range 32W Sea Level Elev 870 ±
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Paul Lee

Water struck at 95 Ft Stands at Ft Hole started 2-10-51 Completed 2-28-51

Casing used 10 Ft 8¼ 20 Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	8	Clay and creek gravel
8	10	Blue and brown flint shelly
10	15	Blue flint and gray lime
15	36	Blue flint and brown lime
36	56	Brown lime, white and blue flint
56	60	Gray lime and white flint
60	65	Brown lime and white flint
65	70	Brown lime
70	75	Brown lime and white flint
75	110	Brown lime
10	115	Brown lime and white flint
115	136	Brown lime

BR000030196

Approved By

Driller Contractor

DRILL RECORD

HOLE No B&R #3

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. (SEE LOCATION ON BACK OF SHEET) Twp 29N Range 32W Sea Level Elev 875.7

Drilled by Carter Scott Helper

Water struck at Ft Stands at 16 Ft Hole started Febr 1951 Completed Febr 1951

Casing used Ft. 8¼ Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	5	Soil and clay
5	10	Clay and river gravel
10	20	River gravel
20	25	Hog chaw
25	30	White flint
30	40	White flint and lime
40	45	White flint and gray lime
45	50	Flint and lime
50	61	Hard lime and flint
61	66	Hard lime and flint

BR000030197

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #4

Co. Brown and Root — Land Quick Seven Lease

Section 6, Jasper County, Mo — Twp 29N — Range 32W — Sea Level Elev 878 8

(SEE LOCATION ON BACK OF SHEET)

Drilled by Ed Riseling — Helper

Water struck at 45 Ft — Stands at 15 Ft — Hole started 2-27-51 — Completed 3-8-51

Casing used 20 Ft. 8¼ — 33 Ft 6¼" — 4⅞" Left in hole

From	To	FORMATION
0	15	Surface - clay - creek gravel
15	20	Creek gravel - gray flint - trace lead and zinc
20	25	Creek gravel - gray flint - gray lime - zinc and lead trace
25	30	Creek gravel falling in - gray flint - gray lime - zinc shines - lead trace
30	32½	Creek gravel falling in - gray lime - gray flint - zinc shines - lead trace
32½	36	Gray lime - gray flint - fair zinc shines
36	40	Gray and white flint - gray and black lime - good zinc
40	42½	Gray and white flint - gray and dark gray lime - dark selvage - good zind
42½	45	Blue and gray flint - good zinc shines - gray lime
45	47½	Blue and gray flint - selvage - thin zinc shines
47½	50	Gray & blue flint, gray & black lime - mundic - selvage - fair zinc shines
50	52½	Gray & blue flint, gray & black lime - yellow mud - thin zinc shines
52½	55	Gray & blue flint, gray and black lime, trace zinc
55	60	Loose white, blue and gray flint, fair zinc shines
60	62½	Blue & gray flint - gray lime - fair zinc shines
62½	65	Blue and gray flint - gray lime - fair zinc shines
65	67½	Blue and gray flint - gray lime - fair zinc shines
67½	70	Gray and blue flint - gray lime - thin zinc shines
70	75	gray and blue flint - gray lime - fair zinc shines
75	80	Gray and blue flint - gray lime - trace zinc
80	85	Dark blue and gray flint - gray lime - fair zinc
85	87½	Gray and blue flint, speckled flint, good zinc
87½	90	Light gray and blue flint, gray lime, fair zinc shines
90	92½	Light gray and blue flint, gray lime, thin zinc shines
92½	95	Light gray and blue flint, gray lime, thin zinc shines
95	100	Dark and light gray speckled flint, gray lime, trace zinc
		(See reverse side for balance of drill hole log and assays)

BR000020138

Approved B — Drill Co. Paul Culbertson Drilling Co

DRILL RECORD

HOLE No B&R #5

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29N Range 32W Sea Level Elev 876 7
(SEE LOCATION ON BACK OF SHEET)

Drilled by Carher Scott Helper Leonard A Lee

Water struck at 16 Ft Stands at 153'4" Ft Hole started 1-29-51 Completed 3-15-1951

Casing used 25 Ft 8¼ 90 Ft 6¼" 163 4⅞" Left in hole

From	To	FORMATION
0	10	Clay
10	20	River gravel
20	25	Gray soap, some traces of lead
25	50	Soapstone - black
50	55	Soapstone, mundic
55	60	Soapstone, mundic, shines of jack
60	75	Soasptone and boulders
75	90	Blue and white flint
90	100	Blue and white flint, traces jack
100	110	Flint boulders and mud
110	140	Flint
140	145	Jack, selvage and flint
145	147½	Open selvage
147½	150	Jack, selvage and flint
150	160	White flint and shines
160	165	White flint with shines
165	169½	White and blue flint

ASSAYS MADE BY BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc	Lead
140	142½	2 68	-
142½	145	3 52	-
147½	150	3 98	0 05
150	152½	4 00	0 10
152½	155	1 42	0 05
155	157½	0.76	0 08
157½	160	1 40	0 08
160	162½	0 62	0 09
162½	165	0 64	0 06

BF 000030200

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #6

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. (SEE LOCATION ON BACK OF SHEET) Twp 29N Range 32W Sea Level Elev 879.5

Drilled by Ed Riseling Helper

Water struck at 45 Ft Stands at 30 Ft Hole started 3-9-1951 Completed 3-20-1951

Casing used 30 Ft 8¼ 63½ Ft 6¼" 138 4⅞" Left in hole

From	To	FORMATION
0	5	Sandy yellow clay
5	20	Creek gravel
20	25	Shale - mundic
25	32½	Shale - mundic - trace lead
32½	35	Shale - mundic - trace lead - zinc shines
35	52½	Shale - mundic - trace lead - good zinc shines
52½	67½	Gray flint - gray lime - trace lead - zinc shines - mundic
67½	75	Gray lime boulders - trace lead - thin zinc shines - mundic
75	95	Gray lime, blue and gray flint, thin zinc shines, mundic
95	105	Blue & gray speckled flint - selvage - trace zinc - mundic
105	110	Blue & gray flint, gray sandy lime, trace zinc, selvage, mundic
110	135	Gray sandy lime, slate, selvage, thin zinc, trace lead, mundic
135	140	Gray sandy lime, slate, selvage, gray flint, trac e zinc, mundic
140	145	Gray flint, gray lime, trace lead, trace zinc, mundic
145	155	Gray flint, trace zinc, trace lead, Mundic
155	163	Gray & white flint, very thin trace zinc - mundic

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

From	To	Zinc	Lead	From	To	Zinc	Lead	From	To	Zinc	Lead
35	37½	1 60	0.16	62½	65	0 74	0 02	105	110	0 52	0 08
37½	40	1 04	0 13	65	67½	1 32	0 21	110	115	0 34	0 09
40	42½	1 42	0 10	67½	70	0 80	0 24	115	120	0 54	0 07
45	47½	4 68	0 28	72½	75	1 12	0 15	120	125	0 44	0 07
47½	50	2.94	0 22	75	80	1 26	0 24	125	130	0 78	0 02
50	52½	1 44	0 38	80	85	0 96	0 22	130	135	0 60	0 05
52½	55	1 14	0 18	n85	90	0 98	0 02	135	140	0 64	0 15
55	57½	1 20	0 21	90	95	0 58	0 01	140	145	0 60	0 04
57½	60	2 54	0 32	95	100	0 40	0 10	145	150	0 70	0 04
60	62½	1.54	0 33	100	105	0 52	0 01	150	155	0 94	0 15

BR000030201

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #7

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev 879 1
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Paul Lee

Water struck at 30 Ft Stands at 24 Ft Hole Started 3-1-51 Completed 3-15-51

Casing used 134 Ft 8¼ 46 Ft 6¼ 88 4⅞ Left in hole None

From	To	FORMATION
0	12	Soil and clay
12	27	Creek gravel
27	35	Blue flint shelly
35	45	Blue flint, gray shale, soft
45	55	Blue flint shelly
55	65	Blue flint, shelly
65	68	Blue flint, gray lime, hard
68	70	Blue flint, gray shale, soft
70	75	Gray and white flint shelly
75	80	Blue flint, hard
80	83	Mud openings
83	88	Blue flint shelly
88	100	Blue flint, gray lime, medium hard
100	110	Brown lime, little blue flint, hard
110	135	Brown lime, little white flint, hard
135	139	Brown lime, hard
139	140	Cottonrock, seam, soft
140	150	Brown lime, little black lime, little blue flint, hard
150	155	Brown lime, little black lime, white and blue flint
155	160	Gray white and blue flint
160	164	Gray to white flint, little brown lime

BR000030202

Approved By

Driller Contractor Roy Thomas

DRILL RECORD

HOLE No B&R #8

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. (SEE LOCATION ON BACK OF SHEET) Twp 29 Range 32 Sea Level Elev 879.2

Drilled by Roy T homas Helper Paul Lee

Water struck at 30 Ft Stands at - Ft Hole Started 3-16-51 Completed 3-27-51

Casing used 193 Ft 8¼ 31 Ft 6¼ 162 4⅞ Left in hole None

From	To	FORMATION
0	12	Soil and clay
12	28	Clay and creek gravel
28	35	Soft sandy lime and black shale
35	45	Blue flint, soft lime, cottonrock and gray shale
45	50	Blue flint and gray shale seams
50	55	Blue flint cottonrock and gray shale boulder formation
55	65	Gray and blue flint shelly
65	85	Blue and gray flint shelly trace of zinc
85	92½	Blue gray and little white flint shelly fair zinc
92½	105	Blue gray and white flint shelly good zinc
105	106	Lost sample in drift
106	152	Drift
152	155	Blue gray and white flint, soft, good zinc
155	160	Blue gray and white flint, soft, good zinc
160	162½	Blue gray and white flint, shelly, good zinc shines
162½	165	Blue gray and white flint, shelly, fair zinc
165	169	Blue gray and little white and brown flint, good zinc shines

ASSAYS BY BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc
85	90	1 08
90	92½	1 20
92½	95	6 34
95	97½	6 64
97½	100	2 72
100	102½	3 90
102½	106	2 50
152	155	1 32
155	157½	1 40
157½	160	1 12
160	162½	0 80
162½	165	0 96

BR000030203

Approved By

Driller Contractor

DRILL RECORD

HOLE No B&R #9

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, M Twp 29 Range 32 Sea Level Elev 879.7
(SEE LOCATION ON BACK OF SHEET)

Drilled by Ed Riseling Helper

Water struck at 35 Ft Stands at Going Down Ft Hole Started 3-22-51 Completed 3-30-51

Casing used 17 Ft 8¼ 34 Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	5	Shale, yellow clay
5	20	Creek gravel, gray lime
20	30	Gray lime, gray flint, creek gravel
30	60	Gray and blue flint, gray lime, mundic, trace zinc
60	75	Blue & gray flint, little gray lime, mundic, thin zinc shines
75	80	Blue & gray flint boulders, mud, selvage seams, mundic, trace zinc
80	85	Blue & gray flint, fair zinc
85	100	Blue & gray and white rotten flint boulders, fair zinc, selvage
100	105	Gray and white flint, mud, selvage
105	110	Gray & white & blue flint, selvage, thin zinc
110	140	Gray, white and blue flint, selvage, spar, thin zinc
140	155	Gray and white water flint
155	160	Gray and white lime, gray flint
160	164	Gray and white lime, gray and blue flint, sheet ground

ASSAYS BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	To	Zinc
65	70	0 48
70	75	0 64
75	80	0 60
80	85	2 30
85	90	5 72
90	95	4 20
95	100	4 06
105	110	1 96
110	115	1 84
115	120	1 26
120	125	1 80
125	130	0 60
130	135	0 60

BR000030204

Approved By

Driller Contractor ~~Phil Culbertson Drilling Co~~

DRILL RECORD

HOLE No B&R #10

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev 878 3
(SEE LOCATION ON BACK OF SHEET)

Drilled by Carter Scott Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ 56 Ft 6¼ 154 4⅞ Left in hole

From	To	FORMATION
0	5	Soil and clay
5	20	Clay and river gravel - traces lead
20	25	Soapstone and mundic, trace of lead
25	35	Soapstone and mundic, traces of l4ad
35	40	Lime and mundic
40	45	Coal
45	50	Coal - mundic
50	70	Flint lime mundic
70	75	White flint and lime
75	85	Flint
85	95	White flint
95	100	White and blue flint
100	115	White flint and jack shines
115	120	Flint and lime
120	125	Black lime flint
125	128	Dark lime
128	151	Drift
151	155	Flint and jack
155	157½	Lime and flint and jack
157½	160	Lime and white flint
160	167	White flint

BR000030205

Approved By

Driller Contractor Leonard Lee

DRILL RECORD

HOLE No B & R #13

For Brown and Root Land Quick Seven Lease

Section 6 Twp 29 Range 32 Sea Level Elev

Jasper County, Missouri (SEE DESCRIPTION ON BACK OF SHEET) Located about 50' Northeast of #4

Drilled by Carter Scott Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used 23 Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
0	5	Soil and clay
5	10	Sandrock red
10	15	River Gravel
15	20	Sandy shale gray
20	25	Dark lime and flint, spar, traces of lead
25	30	Dark lime, dark flint and spar, traces of lead
30	35	Dark lime, spar and lead shines
35	40	Lime and flint
40	45	White flint
45	50	Dark lime and white flint
50	55	White flint
55	60	Gray lime boulder and white flint
60	65	Lime and flint and jack
65	70	Dark lime boulders and white flint jack shines
70	75	White flint, jack shines
75	78	Dark lime and flint, jack
78	80	White and blue flint and jack
80	85	White flint and gray lime and jack shines
85	87½	White flint and jack
87½	90	Lime and flint boulders, jack shines
90	95	Lime and flint, jack shines
95	100	White flint, hard
100	105	White flint, jack shines
105	110	Hard boulder flint, dark
110	112½	Dark flint and black shale and jack
112½	130	Dark shale and flint and jack
130	132½	Cuttings went in drift (132 - 152 drift)

ASSAYS MADE BY
THE BRUCE WILLIAMS LABORATORIES

Section From	Section To	Zinc
78	80	1 14
80	82½	0 70
87½	90	[illegible] 60
112½	115	2 44
115	117½	2 00
117½	120	2 04
120	122½	2 10
122½	125	2 [illegible]0
125	127½	1 88

BR000030206

Approved By Driller Contractor Leonard Lee

DRILL RECORD

HOLE No B & R #14

For Brown and Root Land Quick Seven Lease

Located at SE corner Little Francis Cave and about 150 feet Northeast of #8

Section 6 Twp 29 Range 32 Sea Level Elev

(SEE LOCATION ON BACK OF SHEET)

Jasper County, Missouri

Drilled by Roy Thomas Helper Paul Lee

Water struck at Ft Stands at Ft Hole Started 4-9-1951 Completed 4-19-1951

Casing used 86 Ft 8¼ 21 Ft 6¼ 65 4⅞ Left in hole None

From	To	FORMATION
0	8	Clay
8	18	Creek gravel
18	20	Black shale
20	30	Lime and sand boulders, shale seams
30	40	White & blue flint boulders & gray shale, trace of lead
40	45	Lime and sand boulders & blue shale, lead shines
45	50	Lime and sand boulders, blue shale, lead and zinc shines
50	55	Gray lime and blue flint, hard, zinc shines, trace of lead
55	60	Blue flint cotton rock, shale seams
60	70	Soft brown lime
70	90	Soft brown lime, blue & white flint, mud seams, zinc shines
90	97½	Blue & white flint, brown lime, mud seams, fair zinc
97½	100	Gray and white flint, zinc shines
100	107½	Blue, white & brown flint & brown lime, good zinc
107½	110	Blue & white flint & brown lime, zinc shines
110	112½	Blue & white flint & brown flint, brown lime, fair zinc
112½	117½	Gray & white flint, little brown lime, zinc shines
117½	120	Blue & white and brown flint, brown lime, fair zinc
120	122½	Blue flint, little white flint & brown lime, zinc shines
122½	127½	Blue & white flint, little gray lime, good zinc shines
127½	135	Blue & brown flint & brown lime, good zinc shines
135	145	Blue & white flint & brown lime, fair zinc
145	152½	Blue & brown flint & brown lime, good zinc
152½	157½	Gray, white and brown flint, fair zinc
157½	160	Gray, white and brown flint, zinc shines
160	166	Blue, gray & little white & brown flint, traces of zinc (plenty iron)

ASSAYS MADE BY

THE BRUCE WILLIAMS LABORATORIES

Section From	Section To	Zinc	Section From	Section To	Zinc
90	95	1 00	122½	125	0 70
95	97½	0 30	125	127½	0 50
97½	100	0 70	127½	130	0 54
100	102½	2 34	130	132½	0 34
102	105	2 14	135	137½	0 60
105	107½	1 02	137½	140	1 10
107½	110	0 80	140	142½	1 72
110	112½	0 44	142½	145	1 32
112½	115	0 40	145	147½	1 12
115	117½	0 34	147½	150	1 76
117½	120	1 10	150	152½	1 56
120	122½	0 56	152½	155	0 94

SR000030207

Approved By Driller Contractor Roy Thomas

DRILL RECORD

HOLE No B & R #15

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev 880 7
(SEE LOCATION ON BACK OF SHEET)

Drilled by H M. Gorman Helper Bill Cramer

Water struck at 75 Ft Stands at 60 Ft Hole Started 4-16-51 Completed 4-23-51

Casing used Ft 8¼ 20 Ft 6¼" 4⅞ Left in hole None

From	To	FORMATION
0	12	Surface clay
12	20	Gravel
20	23	Flint, shale and some mundic
23	32	Flint, shale, some mundic, lead shines
32	40	Flint, lime, some shale, lead shines
40	45	Flint, lime, some shale and mundic, trace jack
45	50	Lime, shale and jack shines
50	60	Lime and shale, good showing jack
60	65	Lime and shale, good showing jack
65	70	Good jack showing, lime and shale
70	75	Lime and white flint, some shale, fair jack
75	85	Lime and white flint, fair jack
85	95	Lime and white flint, fair jack showing
95	100	Lime and white flint, fair jack showing
100	105	Gray lime, white flint, fair jack, fairly hard
105	115	Gray lime, white flint, fair jack, softer
115	120	Gray lime, white flint, fair showing of jack
120	130	Gray lime, white flint, fair jack
130	135	Gray lime, white flint, some brown flint
135	140	Fair jack showing, gray lime, white and brown flint
140	145	Lost cuttings
145	154	Hit drift - total depth 154 feet

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO.

Section From	Section To	Zinc	Section From	Section To	Zinc
20	23	0 82	80	85	0 80
25	28½	0.40	85	90	0 64
28½	32	0 40	90	95	0 58
32	35	0.60	95	100	0 60
35	40	0 30	100	105	0 66
40	45	0 60	105	110	0 72
45	50	0 54	110	115	0 60
50	55	0 56	115	120	1 02
55	60	0 64	120	125	0 56
65	70	0 62	125	130	0 58
70	75	0 60	130	135	0 42
75	80	1 18	135	140	0 40

BR000030208

Approved By Driller Contractor

DRILL RECORD

HOLE No B & R #16

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET) Approximately 50' northwest of #13

Drilled by Carter Scott Helper

Water struck at Ft Stands at Ft Hole Started Completed Apr. 27, 1951

Casing used Ft 8¼ 23 Ft 6¼ 100 4⅞" Left in hole

From	To	FORMATION
0	5	Soil and clay
5	10	Clay and gravel
10	15	Sand rock and gravel
15	20	Gray shale
20	25	Gray lime
25	30	Gray lime flint and traces of lead
30	35	Dark lime and white flint
35	40	White flint
40	45	Dark flint and selvage
45	50	Dark flint and lead
50	55	White & blue flint, lead & jack
55	60	White flint, lead and jack
60	62½	Open
62½	65	Dark flint and jack shines
65	70	White flint
70	80	White flint, Jack & lead shines
80	85	White flint and lime
85	87	Open - no cuttings
100	102	White flint, jack
102	110	Brown lime, hard
110	120	Brown lime, flint, trace of jack
120	125	White flint
125	130	Brown lime & white flint & trace of jack
130	135	White flint & brown lime & shines of jack
135	150	Brown lime & white flint & shines of jack
150	164	Brown lime & white flint & traces of jack

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES - JOPLIN, MO.

Section From	Section To	Zinc	Lead
50	55	2.00	1 51
55	57	6.60	4.74
57	60	2.78	2.80
60	65	0.56	—
65	67½	0.46	—
67½	70	0.30	—
70	75	0.62	—
75	77½	0.58	—
77½	80	0 34	—
80	85	0.36	—
100	102	2 30	0.10
120	125	1.20	0.17
125	130	1.00	—
130	135	1.76	—
135	140	0.84	0 26
140	145	0 36	0.05
145	150	0 60	0.07
150	155	1 44	0.08
155	160	1.20	0.05
160	164	0 40	0.04

BP 000030209

Approved By Driller Contractor

DRILL RECORD

Hampton

HOLE No B & R #17

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev

(SEE LOCATION ON BACK OF SHEET) Located approx. 100' NE of Tex-Mo shaft

Drilled by Roy Thomas Helper Paul Lee

Water struck at Ft Stands at Ft Hole Started 4-23-1951 Completed 4-27-51

Casing used 55 Ft 8¼ 20 Ft 6¼ 35 4⅞" Left in hole None

From	To	FORMATION
0	8	Clay
8	17	Creek gravel
17	20	Black shale
20	30	Blue shale sand and flint boulders iron
30	40	Black sandstone shale seams, lead shines
40	50	Gray sandstone, lead and zinc shines
50	57½	Gray & white flint cottonrock, white selvage, lead shines
57½	65	Gray & white flint & black lime, lead shines
55	70	Blue & white flint, black lime, lead and zinc shines
70	80	Blue flint, brown lime, lead shines
80	87½	Blue & white flint & brown lime, lead and zinc shines
87½	90	Blue & little white flint & brown lime, lead shines, fair zinc
90	95	Blue & white flint, little brown lime, lead and zinc shines
95	103	Blue and white flint, lead and zinc shines
103	105	Gray shale
105	115	Blue & white flint, little black lime, shales seams, lead and jack shines
115	130	Blue & white flint, little black lime, lead and zinc shines
130	150	Blue & little white flint, black mud seams, thin lead and zinc shines
150	157	Drift
157	159	Blue flint, cottonrock, loose in bottom of drift, fair zinc sludge

ASSAYS MADE BY
THE BRUCE WILLIAMS LABORATORES, JOPLIN, Mo

Section From	Section To	Zinc	Lead	Section From	Section To	Zinc	Lead
50	55	—	0.64	97½	100	0 20	0.06
55	57½	—	0.98	100	102½	0 34	0.07
57½	60	0.20	0.39	102½	105	0 20	0 10
60	65	0.24	1.20	105	107½	0.28	0.13
65	70	1.06	1.51	107½	110	0.20	0 14
70	72½	0.40	2.23	110	112½	0 22	0 38
72½	75	0.26	0 92	112½	115	0.54	0 01
75	77½	0.20	0 42	115	117	0 22	0 01
77½	80	0 26	0.56	117	120	0.26	0.03
80	82½	0.34	0 28	120	125	0 20	0 03
82½	85	0 36	0.31	125	130	0.88	0.04
85	87½	0.52	0 35	130	135	0 36	0 03
87½	90	1.12	0.75	135	145	0.68	0 18
90	92½	0.44	0 23	145	150	0.30	0.04
92½	95	0.36	0 10	150	157	0.36	0 07
95	97½	0.30	0.05				

BR000030210

Approved By

Driller Contractor Roy Thomas

DRILL RECORD

Playter

HOLE No B & R #18

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev

(SEE LOCATION ON BACK OF SHEET) Located approx. 100' NW of Tex-Mo Shaft

Drilled by R. O. Denton Helper R. E Denton

Water struck at Ft Stands at Ft Hole Started 5-27-1951 Completed 5-28-1951

Casing used 19 Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	12	Soil and clay
12	19	Clay and creek gravel
19	43	Soapstone
43	48	Gray lime
48	55	Gray lime, zinc traces
55	60	Gray limestone, soapstone, zinc traces
60	70	White & light gray flint, zinc shines
70	80	White & light gray flint, zinc traces
80	95	White & light gray flint, few specks of zinc
95	105	White & light gray flint, soapstone, zinc shines
105	143	Drift

BF 000030211

Approved By

Driller Contractor R.O Denton

DRILL RECORD

HOLE No B&R #19

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET) Approximately 55' NE of #18

Drilled by R O Denton Helper R E Denton

Water struck at 140 Ft Stands at 100 Ft Hole Started 4-30-51 Completed 5-3-51

Casing used 18 Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	9	Soil and clay
9	18	Clay and creek gravel
18	54	Soapstone
54	60	Gray lime and mundic
60	65	Gray lime, coal, good lead thin zinc traces
65	70	Gray lime, mundic, soapstone, good lead and zinc
70	75	Gray lime, gray flint, lead and zinc shines
75	85	Gray lime, gray flint, lead and zinc traces
85	100	White, light gray and blue flint and lead traces
100	105	White, light gray & blue flint, gray lime, thin zinc and lead traces
105	110	Light gray and blue flint, gray lime, zinc shines
110	115	Gray and blue flint, gray lime, zinc traces
115	117½	Light gray and white flint, brown lime, zinc traces
117½	125	Light gray and white flint, few specks zinc
125	135	Gray and white flint, soapstone, few specks zinc
135	140	Gray and white flint, few specks zinc
140	160	Gray and white flint, mundic
160	165	Light gray and white flint

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Lead
60	65	-	0 38
65	67½	-	1 38
67½	70	-	2 49
70	72½	-	0 18
72½	75	0 20	0 15
75	77½	0 36	0 18
77½	80	0 24	0 16
80	85	0 24	0 20
105	110	0 60	-
110	112½	0 40	-
112½	115	0 24	-
115	117½	0 40	-
117½	120	0 28	-

BP 000030212

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #20

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Paul Lee

Water struck at 65 Ft Stands at 65 Ft Hole Started 4-28-51 Completed 5-4-51

Casing used 140 Ft 8¼ 20 Ft 6¼ 120 4⅞ Left in hole None

From	To	FORMATION
0	15	Shale and lime and flint boulders - cave dirt
15	30	White and gray flint, iron mud seams, loose
30	40	White & gray flint, iron black mud seams, soft, trace of lead
40	45	White & gray flint boulders, black mud, trace of lead and zinc
45	55	White & blue flint, brown lime, white selvage, trace of zinc
55	75	Blue and white flint mud seams, soft trace of zinc
75	80	Blue and white flint, shelly, zinc shines
80	85	Blue and white flint, shelly, fair zinc
85	92½	Blue, gray and white flint, shelly, good zinc
92½	95	Blue and white flint, shelly, fair zinc
95	100	Blue, white and yellow flint, shelly, good zinc shines
00	110	Blue, gray and brown flint, shelly, fair zinc
10	117½	Blue gray and brown flint, good zinc, trace of lead
17½	120	Blue, gray and white flint, hard, good zinc, but casing was split on bottom and was feeding in from bottom of drift

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Lead
60	65	0 60	-
65	70	0 60	-
70	75	0 52	-
75	80	0 60	-
80	85	1 34	-
85	87½	2 80	-
87½	90	0 76	-
90	92½	0 90	-
92½	95	0 90	-
95	97½	0 74	-
100	102½	1 18	-
102½	105	0 80	-
105	107½	0 86	-
110	112½	0 80	0 07
107½	110	0 90	0 16
112½	115	1 08	0 14
115	117½	2 00	0 14

BR000030213

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #21

For Brown and Root Land Quick Seven Mine

Section 6, Jasper County, Mo. (SEE LOCATION ON BACK OF SHEET) Twp 29 Range 32 Sea Level Elev 879.7

Drilled by Carter Scott Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used 23 Ft 8¼" 28 Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	10	Soil and clay
10	15	Clay and river gravel
15	20	Shale black
20	25	Black soapstone
25	35	White flint, lime and mundic
35	40	Lime and shines lead
40	45	Lime and shines lead
45	50	White flint
50	55	Gray lime and flint, jack shines
55	60	White flint and lead shines
60	65	White flint
65	70	White flint and jack shines
70	72½	White flint, jack
72½	75	White flint
75	85	White flint and blue flint
85	90	Flint white
90	95	White flint and jack
95	100	White flint
100	115	White flint and jack shines
115	120	White flint and jack shines
120	130	Black mud and flint
130	135	Black mud and flint
135	145	White flint
145	150	Dark flint
150	155	Flint and mud
155	162	White and blue flint

ASSAY BY
THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Lead
35	40	-	0 95
40	45	0 58	2 21
70	72½	1 00	-
72½	75	0 44	-

BR000030214

Approved By

Drilling Contractor

DRILL RECORD

HOLE No B&R #22

For Brown and Root Land Quick Seven lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Hugh M Gorman Helper Bill Cramer

Water struck at 90 Ft Stands at Ft Hole Started Completed

Casing used 22 Ft 8¼ 65 Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
0	9	Surface clay
9	22	Gravel
22	41	Shale, mundic, some flint
41	45	Lime, mundic, coal
45	55	Drift
55	60	Lime, shale, some mundic, lead shines
60	65	Lime, shale, some mundic
65	75	Lime, shale, white flint and mundic
75	80	Lime, white and blue and blue flint, some mundic
80	85	Not recorded
85	90	White and blue flint, zinc shines
90	95	White and blue flint, zinc shines - hit water
95	100	White flint, some lime, jack shines
100	115	White and blue flint, good showing zinc
115	120	White and blue flint, fair showing zinc
120	125	White and blue flint, some lime, fair showing zinc
125	135	White and blue flint, lime, good showing jack
135	140	White, blue and brown flint, lime, good jack showing
140	145	White, blue and brown flint, lime, good jack showing
145	155	Ditto
155	160	White, and blue flint, fair showing zinc
160	166	White and blue flint, zinc, good shines

ASSAYS MADE BY BRUCE WILLIAMS LABORATORIES, JOPLIN, MISSOURI

Section From	Section To	Zinc	Section From	Section To	Zinc
95	100	1 16	130	135	1 06
100	105	4 68	135	140	1 68
105	110	3 80	140	145	1 48
110	115	2 40	145	150	1 20
115	120	1 08	150	155	1 20
120	125	1 10	155	160	1 14
125	130	1 14			

BR000030215

Approved By Drill Cont. c.o

DRILL RECORD

HOLE No B&R #23

For Brown and Root Land QUICK SEVEN LEASE (Playter)

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev

(SEE LOCATION ON BACK OF SHEET) Approximately 80 feet east of #9

Drilled by Claude Denton Helper Boyd Fresno

Water struck at Dry Ft Stands at None Ft Hole Started 4-27-1951 Completed 5-2-1951

Casing used 11 Ft 8¼ 11 Ft 6¼ None 4⅞ Left in hole 11' - 8¼"

From	To	FORMATION
0	9	Clay gray soapstone
9	11	Creek gravel, cla y
11	15	Gray flint, gray lime
15	17	Gray lime, gray and blue flint
17	20	Gray and brown lime, gray and blue flint
20	25	Gray lime, gray flint
25	30	Gray lime, gray and blue flint
30	35	Brown lime, gray and blue flint
35	40	Gray and brown lime, gray and blue flint
40	45	Brown lime, gray and blue flint
45	50	Gray and brown lime, gray flint
50	55	Gray and brown lime, gray flint
55	60	Brown lime, gray flint
60	65	Brown lime, gray flint
65	70	Gray and brown lime, gray flint
70	75	Gray and brown lime, gray and blue flint
75	80	Brown lime, light gray flint
		No assays

BP 000030216

Approved By

Driller Contractor

DRILL RECORD

HOLE No B&R 24

For Brown & Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by R. O. Denton Helper R E Denton

Water struck at 150 Ft Stands at Ft Hole Started 5-4-51 Completed 5-7-51

Casing used 17 Ft 8¼ Ft 6¼" 4⅞ Left in hole

From	To	FORMATION
0	9	Soil and clay
9	17	Clay and creek gravel
17	50	Soapstone
50	52	Gray lime
52	55	Soapstone and mundic
55	64	Coal and soapstone, mundic, and few specks lead
64	80	Light gray flint, lead and zinc shines
80	90	Gray lime, light gray flint, thin lead traces
90	92½	Gray lime, light gray flint, lead and zinc traces
92½	100	Light gray flint, soapstone, lead and zinc traces
100	115	Gray lime, light gray flint, thin lead traces
115	135	Light gray and white flint, thin lead traces
135	140	Light gray and white flint, soapstone and mundic
140	155	Light gray and white flint, soapstone and mundic, thin traces zinc
155	164	Light gray and white blue flint

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Lead
70	72½	0 60	0 21
72½	75	0 40	0 11
75	77½	0 46	0 09
77½	80	0 44	0 05
80	82½	0 24	0 13
82½	85	0 12	0 05
85	87½	0 20	0 03
87½	90	0 24	0 07
90	92½	0 42	0 06
92½	95	0 16	0 07
95	97½	0 14	0 04
97½	100	0 24	0 03

BP 000020217

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R 25

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev

(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Boyd Irwin

Water struck at 110 Ft Stands at 105 Ft Hole Started 5-4-1951 Completed 5-7-1951

Casing used 15 Ft 8¼ Ft 6¼" 4⅞ Left in hole

From	To	FORMATION
0	5	Cinders and sludge
5	12	Soapstone
12	14	Creek gravel
14	30	Soapstone
30	40	Gray sandy lime, gray selvage, mundic
40	65	Coal, gray sand, mundic, gray selvage
65	80	Gray flint, gray selvage, mundic, zinc traces
80	87½	White flint, gray sandy flint, lead traces, zinc traces, Mundic
87½	92½	White, blue, light gray flint
92½	107	White, gray, blue glassy flint, zinc traces
107	110	White, blue flint, some brown lime, zinc shines
110	112½	White, blue flint, tiff, zinc shines, lead traces
112½	115	White flint, tiff, and zinc shines, lead traces
115	120	Gray, blue flint, zinc traces
120	127½	Gray, blue, brown flint, zinc shines
127½	130	Gray, blue, brown and white flint, zinc traces, thin lead shines
130	135	Gray, white, blue flint, zinc traces
135	140	Gray, white, brown, blue flint, dark gray selvage, soapstone, zinc traces
140	145	White, gray, brown flint, zinc traces
145	157½	White, gray, blue flint, zinc traces, some soapstone
157½	165	White, gray, light blue flint, thin zinc traces

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES-JOPLIN, MISSOURI

Section From	Section To	Zinc	Lead
75	80	0 40	0.03
80	82½	0 32	0 32
82½	85	0 30	0 20
85	87½	0 40	0 11
87½	90	0 80	0 06
90	92½	0 52	0 06
92½	95	0 44	0 05
95	97½	0 52	0 02
97½	100	1 24	0 05
100	102½	2 00	0 05
102½	105	2 16	0 03
105	107½	1 44	0 02
107½	110	0 60	0 03
110	112½	0 64	-

From To Section		Zinc	Lead
112½	115	0 94	-
115	117½	0 64	-
117½	120	0 90	-
120	122½	0 92	-
122½	125	0 82	-
125	127½	0 74	0 03
127½	130	0 84	0 03
130	135	0 52	-
140	145	0 48	-
145	150	0 32	-
150	155	0 80	-
155	157½	0 86	-
157½	160	1 14	-

BR000030218

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #26

For Brown and Root Land Quick Seven Mine

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Leonard Lee Helper Cook

Water struck at Ft Stands at Ft Hole Started 5-7-1951 Completed 5-14-1951

Casing used Ft 8¼ 14 Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	10	Mud
10	15	River gravel
15	20	Black shale
20	25	Shale and coal
25	35	Flint and lime
35	40	Flint, lime and gray selvage
40	50	Flirt, lime, gray selvage and lead shines
50	60	Flint and selvage
60	65	White and blue flint
65	70	Blue flint, lime and jack shines
70	75	Flint and lime
75	105	White flint and jack
105	110	Brown lime
110	115	White flint and jack
115	120	White flint
120	125	White and blue flint
125	135	Lime and white flint
135	140	White flint
140	150	White flint and brown lime
150	155	Brown lime and white flint
155	163	White and blue flint

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
620-622 Joplin Street, Joplin, Missouri

Section From	Section To	Zinc
65	70	2 08
75	80	0 75
80	85	1 88
85	90	1 04
90	95	0 68
95	100	0 48
100	105	0 60

BR000030219

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #27

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Missouri Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Boyd Irwin

Water struck at 75 & 122 Ft Stands at Ft Hole Started 5-8-1951 Completed 5-11-1951

Casing used Ft 8¼ 32 Ft 6¼ 83 4⅞ Left in hole

From	To	FORMATION
0	10	Clay
10	15	Clay, light gray soapstone
15	21	Creek gravel, clay - water in creek gravel
21	50	Soapstone
50	55	Soapstone, mundic, lead traces
55	57½	Soapstone, coal, lead traces, mundic
57½	60	Gray lime, gray flint, mundic, lead traces
60	70	Gray flint, gray selvage, Mundic, lead traces
70	85	Gray lime, white flint, gray selvage, lead trace
85	100	Gray flint, shale, mundic, selvage
100	105	Gray lime, gray flint, gray selvage, zinc trace
105	110	Gray and light blue flint, gray selvage, zinc shines
110	115	Gray and white flint, gray selvage, good zinc
115	125	Gray sand, lime, selvage, gray zinc, light gray flint
125	137½	White, gray blue flint, selvage, zinc shines
137½	156	Drift

ASSAYS BY THE BRUCE WILLIAMS LABORATORIES
620-622 Joplin Street, Joplin, Missouri

Section From	Section To	Zinc	Lead
65	70	0 40	—
75	80	0 68	—
105	110	1 90	—
110	112½	1 50	—
112½	115	0 84	—
115	117½	0 64	—
117½	120	0 52	—
120	122½	0 68	0 01
120	125	0 74	
122½	125	0 76	0 02
125	127½	0 90	
127½	130	0 88	
132½	135	1 16	

BR000030220

Approved By Drill Con to

DRILL RECORD

HOLE No. B&R #28

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev

(SEE LOCATION ON BACK OF SHEET)

Drilled by Hugh M. Gorman Helper Bill Cramer

Water struck at 105 Ft Stands at 100 Ft Hole Started May 8, 1951 Completed May 11, 1951

Casing used 22 Ft 8¼ Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
0	10	Surface clay
10	22	Gravel
22	25	Shale
25	30	Lime and mundic
30	35	Lime, mundic and a little coal
35	40	Lime, shale - some coal and mundic
40	45	Lime, shale, mundic and lead shines
45	55	Lime, flint, some mundic
55	60	Lime, flint, some mundic & Lead shines (55 - 72 very creviced ground)
60	65	Lime, flint, some mundic
65	70	Lime, white flint
70	75	White and blue flint, little mundic
75	80	White and blue flint, some lime
80	85	White and blue flint, some lime and mundic
85	90	White and blue flint, little lime & mundic - zinc shines
90	100	White and blue flint, little lime and mundic
100	105	White and blue flint, lime, some mundic
105	110	White and blue flint, lime, zinc shines
110	115	White and blue flint
115	150	White and blue flint, lime, zinc shines
150	160	White and blue flint, lime

BR000030221

Approved By

Driller Contractor

DRILL RECORD

HOLE No B&R #29

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Paul Lee

Water struck at 65 Ft Stands at 65 Ft Hole Started 5-5-1951 Completed 5-12-1951

Casing used 29 Ft 8¼ 98 Ft 6¼ 116 4⅞ Left in hole None

From	To	FORMATION
0	10	Cave dirt
10	20	Black sand boulders and black shale, iron, trace of lead and zinc
20	25	Cave
25	30	Coal black shale, iron, lead shines and trace of zinc
30	35	Lime and flint boulders, gray shale, lead and zinc shines
35	40	Lime boulders, gray shale, lead and zinc shines
40	48	Brown lime, lead and zinc shines
48	80	White and blue flint, creek gravel, black mud, cave dirt
80	95	Lost samples - lead and zinc shines
95	100	White and blue flint - zinc shines
100	112½	Blue and white flint - good zinc
112½	115	Blue and white & little brown flint, fair zinc, trace of lead
115	117	Blue and white and little brown flint, zinc shines

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
620-622 Joplin Street, Joplin, Mo

Section From	Section To	Zinc	Lead	Section From	Section To	Zinc	Lead
25	30	—	0 13	70	75	0 32	0 02
30	35	—	0 07	75	80	0.20	0 04
35	40	—	0 02	95	100	0 28	0 01
40	45	—	0 03	100	102½	3 20	—
45	50	0 36	0 02	102½	105	4 84	—
50	55	0 30	0 14	105	107½	3 40	—
55	60	0 24	0 12	107½	110	3 96	—
60	65	0 52	0 28	110	112½	3 70	—
65	70	0.24	0 05	112½	115	1 30	—
				115	117	1 00	—

BR000030222

Approved By Drill r Contractor

DRILL RECORD

HOLE No B&R #30

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by R. O. Denton Helper R. E. Denton

Water struck at Ft Stands at Ft Hole Started 5-8-1951 Completed 5-14-1951

Casing used Ft 8¼" 100 Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	5	Gray lime, gray flint, mundic
5	15	Gray and light gray flint, lead traces
15	25	Gray and white flint, zinc traces
25	35	Gray lime, light gray flint, zinc traces
35	45	Light gray and blue flint, gray lime
45	70	Gray lime and white flint
70	83	Drift
83	90	Light gray and white flint, zinc traces
90	100	Light gray and white flint, zinc shines
100	110	Light gray and white flint
110	120	Gray and white flint
120	130	White flint, brown lime
130	141	White flint
		No assay

BR000030223

Approved By

Drille Contractor

DRILL RECORD

HOLE No B&R #31

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by R.O. Denton Helper R.E. Denton

Water struck at 70 Ft Stands at Ft Hole Started 5-15-1951 Completed 5-18-1951

Casing used 45 Ft 8¼ 133 Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	30	Soapstone
30	55	Creek gravel, gray lime
55	85	Gray and light gray flint, good zinc
85	90	Blue and light gray flint, zinc shines
90	100	Light gray and white flint, soapstone, zinc shines
100	115	Gray and light gray flint, soapstone, zinc shines
115	120	Light gray flint, soapstone, thin zinc traces
120	142½	Light gray and white flint, zinc shines
142½	147½	Light gray, white and blue flint, fair zinc shines
147½	152½	Light gray and white flint, thin zinc shines
152½	161	Light gray and blue flint, zinc traces

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
620-622 Joplin Street, Joplin, Missouri

Section From	Section To	Zinc	Section From	Section To	Zinc
55	60	1 16	102½	105	4 48
60	62½	8 70	105	107½	4 02
62½	65	9 08	107½	110	3 30
65	67½	9 00	110	112½	0 48
67½	70	8 86	112½	115	1 04
70	72½	8 20	115	117½	1 52
72½	75	10 76	120	125	3 88
75	77½	6 40	125	127½	5 52
77½	80	2 90	127½	130	3 52
80	82½	1 94	130	132½	3 80
82½	85	2 20	132½	135	2 60
85	87½	2 60	135	137½	2 24
87½	90	4 38	137½	140	3 20
90	92½	4 56	140	142½	2 60
92½	95	4 12	142½	145	1 40
95	97½	4 20	145	147½	1 40
97½	100	4 60	147½	150	1 04
100	102½	4 18	150	152½	1 14

BR000030224

Approved By Drill Co

DRILL RECORD

HOLE No B&R #32

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by H M Gorman Helper

Water struck at Ft Stands at Ft Hole started 5-12-51 Completed 5-25-1951

Casing used 19 Ft 8¼" Ft 6¼" 140 4⅞" Left in hole 20' 4-7/8

From	To	FORMATION
0	8	Surface clay
8	19	Gravel
19	25	Lime
25	30	Lime and white and blue flint
30	35	Lime white and blue flint
35	40	Lime & white & blue & gray flint, jack shines
40	45	White & Blue & gray flint, good jack shines
45	50	White and blue and gray flint, zinc
50	55	White and blue and gray flint, zinc
55	60	White & blue and gray flint, fair showing zinc
60	65	White & blue and gray flint, good zinc shines
65	70	White and blue & gray flint, little lime, fair zinc shines
70	75	White, blue and gray flint, fair zinc shines
75	80	White, blue and gray flint, zinc shines
80	85	White, blue and gray flint, good zinc shines
85	90	White, blue and gray flint, good showing zinc
90	95	White, blue & gray flint, zinc
95	100	White, blue and gray flint, zinc
100	105	White, blue and gray flint, fair zinc
105	110	White, blue and gray flint, good zinc shines
110	114	Lost cutting
114	132	Drift
132	135	White & blue flint, selvage
135	140	White & blue flint, selvage, good zinc shines
140	142½	White & blue flint, selvage, shale

ASSAYS MADE BY
THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	To	Zinc
35	40	0 80
40	45	1 26
45	50	1 98
50	55	1 94
55	60	1 56
60	65	1 00
90	95	6 20
95	100	3 68
100	105	1 44
105	110	1 84
132	135	1 60

BR0000050225

Approved By Date

DRILL RECORD

HOLE No B&R 33

For Brown & Root Land Quick Seven lease

Section 6, Jasper county, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Earnest Donaldson

Water struck at 150 Ft Stands at 135 Ft Hole started 5-15-1951 Completed 5-21-1951

Casing used Ft 8¼" Ft 6¼" 22 4⅞" Left in hole

From	To	FORMATION
0	12	Clay and gravel
12	22	Creek gravel
22	25	Gray lime, Gray flint
25	45	Gray flint, gray sandrock, zinc traces, mundic
45	55	Gray sandy lime, gray and light gray flint, zinc traces, mundic
55	75	Gray sandy lime, gray and white flint, mundic. selvage, zinc shines
75	85	Gray & white, some brown flint, selvage, mundic, zinc traces
85	100	Gray & white, some brown flint, blue flint, selvage, zinc shines
100	117½	White, gray, light blue flint, gray sand, black shale, good zinc shines
117½	130	White, gray flint, gray sand, black shale, good selvage, zinc shines
130	135	White, gray flint, gray and black shale, mundic, zinc shines
155	161	White, blue flint(light), gray sand, black shale, zinc traces, mundic

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES - JOPLIN, MO.

Section From	Section To	Zinc	Section From	Section To	Zinc	Section From	Section To	Zinc
25	30	0.42	80	85	0 60	117½	120	0 54
30	35	0.38	85	90	0.74	120	122½	0.52
35	40	0 80	90	92½	0.70	122½	125	0.54
40	45	0.80	92½	95	1.26	125	130	0.94
45	50	0.60	95	100	1.20	130	132½	0.82
50	55	0.50	95	100A	0.98	132½	135	0 76
55	60	0 68	100	105	1.52	135	140	0.80
60	65	0.70	105	110	0.98	140	145	0 60
65	70	1.28	110	112½	1 00	145	150	1.00
70	75	1.36	112½	115	0 92	150	155	0.80
75	80	0.80	115	117½	1.08			

BR000030226

Approved By Drill Co

DRILL RECORD

HOLE No B&R #34

For BROWN & ROOT Land QUICK SEVEN LEASE

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Leonard Lee Helper Cook

Water struck at Ft Stands at Ft Hole started 5-15-1951 Completed 5-23-1951

Casing used Ft 8¼ 75 Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	5	Selvage and jack
5	15	Selvage and jack
15	30	Mud and boulders and jack
30	35	Loose flint and jack
35	50	Loose flint and jack
50	60	Flint and cottonrock, loose ground and jack
60	70	Flint and jack
70	80	Soapstone, flint and thin jack
80	85	Flint and mud
85	91	Timbers and drift, flint and jack

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Section From	Section To	Zinc
0	5	1.00	45	50	o.34
5	10	1 14	50	55	0.90
10	15	1 60	55	60	3.02
15	20	1.32	60	65	1.30
20	25	2.20	65	70	1.20
25	30	1.60	70	75	1 90
30	35	0.72	75	80	2.18
35	40	0.82	80	85	1.92
40	45	0.60	85	91	1 20

BP 000030227

Approved B Drill Con

DRILL RECORD

HOLE No B&R #35

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Paul Lee

Water struck at 65 Ft Stands at 65 Ft Hole started 5-14-1951 Completed 5-18-1951

Casing used 46 Ft 8¼" 118 Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	10	Cave dirt
10	25	Creek gravel - lead shines
25	30	Blue shale, creek gravel, iron, lead shines
30	35	Blue shale, black sand boulders, iron, lead and zinc shines
35	40	Gray shale, creek gravel, lead and zinc shines
40	48	Black shale, coal, iron and creek gravel, lead and zinc shines
48	55	Blue lime and white selvage - zinc shines
55	60	Blue shale, lime and flint boulders, zinc shines
60	65	Brown lime, white selvage, tiff
65	72½	Lime and sand boulders, white flint and white selvage zinc shines
72½	80	Lime and sand boulders, white flint, gray shale, good zinc shines
80	85	Blue and white flint and brown flint
85	90	Blue and white flint & brown flint - good zinc shines
90	100	Opening - lost samples
100	105	Blue and white and brown flint - fair zinc
105	110	Blue white and brown flint - zinc shines
110	120	Blue and white and gray flint - zinc shines

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES

Section From	Section To	Zinc	Lead	Section From	Section To	Zinc	Lead	Section From	Section To	Zinc	Lead
10	15	-	0.07	55	60	—	0.02	80	82½	0 70	—
15	20	-	0.08	60	62½	—	0 02	82½	85	1.76	—
20	25	-	0.04	62½	65	—	0.01	85	87½	1.18	—
25	30	-	0 03	65	67½	0.90	—	87½	100	0 58	—
30	35	-	0 05	67½	70	1.36	—	100	102½	0 66	—
35	40	-	0 10	70	72½	1.44	—	102½	105	0.60	—
40	45	-	0 02	72½	75	0 92	—	105	107½	0 54	—
45	50	-	0.06	75	77½	1.04	—	107½	110	0 48	—
50	55	-	0 08	77½	80	0 80	—	110	112½	0 34	—
								112½	115	0.32	—

BF0000050228

Approved By Drill Co[illegible]

DRILL RECORD

HOLE No B&R 36

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by R. O Denton Helper R E Denton

Water struck at 90 Ft Stands at 90 Ft Hole started 5-20-1951 Completed 5-24-1951

Casing used 50 Ft 8¼ 123 Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	40	Soapstone
40	48	Clay & creek gravel, few specks zinc
48	55	Light gray and white flint, thin zinc shines
55	60	Light gray & white flint, soaapstone, sandy lime, zinc shines
60	75	Gray & light gray flint, soapstone, good zinc
75	105	Gray & light gray flint, soapstone, zinc shines
105	110	Light gray and blue flint, soapstone, thin zinc shines
110	117½	Light bray and white flint, soapstone, zinc shines
117½	135	Drift, light gray and white flint boulders, timbers, zinc shines thin
135	140	Light gray and white flint, thin zinc shines
		(Timbers rolling in - couldn't get pipe through)

ASSAYS MADE BY BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Section From	Section To	Zinc
55	60	3 84	92½	95	3 26
60	62½	5 24	95	97½	1 80
62½	65	3 74	97½	100	1 56
65	67½	2 80	100	102½	1 20
67½	70	5 14	102½	105	1 30
70	72½	3 56	105	107½	0 92
72½	75	1.76	107½	110	0 90
75	77½	2.32	110	112½	0 68
77½	80	1 60	112½	115	0 78
80	82½	1 60	115	117½	0 58
82½	85	1 40	117½	120	0 48
85	87½	1 52	120	122½	0 66
87½	90	1 48	122½	125	0 60
90	92½	2 24			

(See reverse side for balance of assays)

BP000030229

Approved By Drill Co

DRILL RECORD

HOLE No B&R #37

For Brown and Root Land Quick SevenLease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Leonard A Lee Helper Paul Lee

Water struck at Ft Stands at Ft Hole started 5-24-51 Completed 5-29-51

Casing used Ft 8¼" 63 Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	20	Flint boulders, light shale, good jack
20	35	Flint and light shale and jack
35	40	Flint and lime boulders, thin jack
40	45	Flint, light shale, thin jack
45	50	Black shale, flint and thin jack
50	65	Black shale, flint, and lime boulders, traces of coal and jack
65	70	Light shale, flint and lime boulders and mundic
70	75	Shale, flint and lime
75	80	Shaley flint, mud and jack
80	85	Shaley flint, mud and jack shines
85	90	White flint
90	95	White and blue flint, sheet ground

ASSAYS MADE BY BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc	Section From	Section To	Zinc
0	5	3.40	35	40	1.50
5	10	3 16	40	45	1 28
10	15	5 44	45	50	1 16
15	20	3 18	50	55	0 80
20	25	1 56	75	80	3 84
25	30	1 48	80	85	1 16
30	35	0 88	85	90	1 60

BF 000000230

Approved By Driller Contractor Leonard Lee

DRILL RECORD

HOLE No B&R #38

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by R. O. Denton Helper R. E. Denton

Water struck at 70 Ft Stands at Ft Hole started 5-25-1951 Completed 5-31-1951

Casing used 56 Ft 8¼ 130 Ft 6¼" 4⅞" Left in hole

From	To	FORMATION
0	25	Soapstone
25	52	Clay, sand, creek gravel, soapstone, few specks of zinc
52	55	Light gray and gray flint, gray lime, few specks zinc
55	65	Light gray and blue flint, few specks zinc
65	75	Light gray and white flint, zinc shines
75	85	Light gray and white flint, cottonrock, good zinc
85	105	Light gray and white flint, good zinc
105	112½	Light gray and blue flint, good zinc
112½	120	Light gray and white flint, good zinc
120	125	Light gray and white flint, gray spar, soapstone, coal, good zinc, drift & timbers
125	135	Light gray and white flint, good zinc, drift and timoers
135	150	Light gray and white flint, zinc shines
150	154	Light gray and white and blue flint, zinc shines

ASSAYS MADE BY BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc	Section From	Section To	Zinc	Section From	Section To	Zinc
65	70	2 00	97½	100	14 56	127½	130	4 56
70	72½	2 96	100	102½	12 28	130	132½	3 80
72½	75	2 32	102½	105	9 60	132½	135	8 14
75	77½	5 12	105	107½	9 28	135	137½	4 20
77½	80	11 70	107½	110	7 36	137½	140	3 38
80	82½	6 48	110	112½	10 30	140	142½	2 94
82½	85	5 40	112½	115	7 18	142½	145	2 80
85	87½	5 80	115	117½	8 16	145	147½	2 90
87½	90	4 90	117½	120	10 48	147½	150	2 20
90	92½	6 70	120	122½	8 84	150	152½	1 94
92½	95	7 44	122½	125	12 08	152½	154	3 84
95	97½	11 64	125	127½	8 84			

BF000030231

Approved By Driller Contractor R O Denton

DRILL RECORD

HOLE No B & R #39

For Brown and Root, Inc. Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Lester Thomas

Water struck at 65 Ft Stands at 55 Ft Hole started 5-24-51 Completed 5-29-51

Casing used 36 Ft 8¼" 120 Ft 6¼" 4⅞" Left in hole None

From	To	FORMATION
0	10	Sandy clay
10	15	Creek gravel
15	25	Black shale, iron, trace of lead
25	35	Black sand boulders, black shale, iron, traces of lead and zinc
35	40	Opening, no sample
40	45	Black sand boulders
45	50	Black sand brown lime and white flint, white selvage
50	70	Blue and white flint, blue shale
70	75	Blue and white flint, gray shale, trace of zinc
75	80	Blue and white flint, gray shale, fair zinc
80	87½	White little blue flint, gray shale, good zinc shines
87½	97½	White blue and gray flint, zinc shines
97½	102½	Blue and white flint, fair zinc
102½	105	Blue white and brown flint, fair zinc
105	107½	Blue white and brown flint, zinc shines
107½	111	Open from 108 - 111 - lost sample
111	117½	Blue white and brown flint, zinc shines
117½	120	Blue and white flint, fair zinc
120	125	Blue and white flint and cottonrock, good zinc
125	127½	Blue and white flint and cottonrock, fair zinc
127½	131	Blue and white flint, hard, zinc shines

(See reverse side for assays made by The Bruce Williams Laboratories
620-22 Joplin Street, Joplin, Missouri)

RP 000030232

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #40

For Brown and Root, Inc. Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Earnest Donaldson

Water struck at 75 Ft Stands at 64 Ft Hole started Completed

Casing used Ft 8¼ Ft 6¼" 82 4⅞ Left in hole

From	To	FORMATION
0	10	Fill in
10	17½	White flint, gray sandy lime, gray selvage, zinc shines
17½	22½	White flint, gray sandy lime, gray selvage, zinc shines
22½	40	Gray sand rock, white flint, gray slevage, some black shale, zinc shines
40	55	Black shale, gray sandy shale, some white flint, zinc traces
55	65	Black shale, gray sandy shale, some white flint, zinc trace, mundic
65	75	White flint, black shale, gray selvage, thin zinc traces
75	100	White flint, brown selvage, black shale, zinc shines, mundic
100	105	White, blue speckle brown glassy flint, black shale, zinc shines and mundic
105	114	White, blue speckle brown glassy flint, soft brown flint, gray selvage, zinc shines, mundic

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc	Section From	Section To	Zinc
0	10	1 60	75	80	0 64
10	15	1 28	80	85	0 44
15	17½	1 04	85	90	0 70
17½	20	0 64	90	95	0 84
20	22½	0 54	95	100	0 70
25	30	0 52	100	105	0 64
30	35	0 50	105	109	0 60
35	40	0 28	109	114	0 72
70	75	0 54			

BP 006026233

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #41

For Brown and Root, Inc Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Earnest Donaldson

Water struck at 30 Ft Stands at 82 Ft Hole started 5-29-51 Completed 5-31-51

Casing used Ft 8¼ Ft 6¼ 82 4⅞ Left in hole

From	To	FORMATION
0	5	Sandy rock boulders, gray selvage, thin zinc trace
5	10	Sand rock, boulders, gray selvage, thin zinc trace
10	25	Sand rock, black shale, thin zinc trace
25	35	Sand rock, black shale, thin zinc trace
35	45	Sandrock, tiff
45	55	Sand rock, black shale
55	80	Sand rock, black shale, gray selvage, thin zinc traces
80	90	Gray sand, black shale, gray selvage, thin zinc, mundic
90	105	White, blue flint, gray sand rock, gray selvage
105	116	White & speckle brown flint, gray selvage, shale, thin zinc
		xx No Assays xx

BR000033234

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #42

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by H M Gorman Helper

Water struck at Ft Stands at Ft Hole Started 5-30-1951 Completed 6-2-51

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	12	Shale and selvage
12	20	Flint, shale & good jack shines
20	25	White and blue flint, good jack shines
25	30	White and blue flint, good showing jack
30	35	White & gray flint, fair showing jack
35	40	White & gray flint, good showing jack
40	45	White, blue and gray flint, shale, jack
45	50	White flint, selvage, shale, good showing jack
50	65	White and gray flint, jack
65	70	White and gray flint, some shale, jack
70	75	White and gray flint, good showing jack
75	80	White flint, gray lime, fair showing jack
80	90	White and blue flint, gray lime, shale, fair showing jack
90	95	Flint, lime, shale, jack shines
95	106	Flint, sand and shale, jack shines

ASSAYS BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc
10	15	1 40
15	20	1 56
20	25	1 02
25	30	1 12
30	35	1 60
35	40	1 20
40	45	2 98
45	50	1 74
50	55	2 44
55	60	1 72
60	65	1 28
65	70	1 22
70	75	1 80
75	80	1 44

BR000030235

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #43

For BROWN & ROOT Land QUICK SEVEN LEASE

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Leonard A. Lee Helper Paul Lee

Water struck at Ft Stands at Ft Hole Started 5/30/51 Completed 6/4/1951

Casing used Ft 8¼ 61 Ft 6¼ 4⅞" Left in hole

From	To	FORMATION
0	25	Light shale, traces of jack
25	35	Sand boulders, light shale, traces of jack
35	55	Sand rock boulders, traces jack
55	60	Light shale, traces jack
60	65	Light shale, traces jack
65	70	Flint and shale, good jack shines
70	75	Soapstone and flint, traces of jack
75	88	Flint, soapstone, mundick - filled in drift
		No assays

BR000030236

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #44

For BROWN & ROOT Land QUICK SEVEN LEASE

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Earnest Donaldson

Water struck at 130 Ft Stands at 50 Ft Hole Started 6-2-51 Completed 6-5-51

Casing used None Ft 8¼ Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
0	10	Boulders, shale
10	15	Gray, white flint, gray sand rock, gray selvage
15	35	Gray selvage, white flint, black shale
35	55	Gray sand rock, gray selvage, white flint, zinc traces
55	60	Gray sand rock, gray selvage, black shale, zinc shines
60	90	Black shale, gray sand rock, some white flint
90	120	White flint, gray sandrock, black shale, some brown lime
120	125	Gray sandrock, white flint, black shale, gray selvage
125	130	Gray flint, gray sand rock, gray selvage, thin zinc traces
130	134½	White, gray, light blue, light brown flint, thin zinc traces
		NO ASSAYS

BP 000030237

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R #45

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper Lester Thomas

Water struck at 70 Ft Stands at 65 Ft Hole Started 5/30/51 Completed 6/4/51

Casing used Ft 8¼ 120 Ft 6¼" 4⅞ Left in hole

From	To	FORMATION
0	5	Shale and creek gravel, fill dirt
5	10	Boulders
10	30	Blue and white flint, shelly, lead shines
30	40	Blue and white flint, shelly, mud seams, lead and zinc shines
40	50	Blue and brown flint, shelly, mud seam, trace of lead
50	55	Blue and white flint & cottonrock, zinc shines
55	85	Blue and white flint & cottonrock, fair zinc
85	102	Blue & white flint & cottonrock, good zinc
102	110	Blue & white & brown flint, little cottonrock, good zinc
110	115	Blue shale, creek gravel, white flint
115	117½	Lost sample
117½	120	Blue & white flint, old timbers in drift, good zinc
120	123	Blue & white flint, little brown flint, hard, good zinc

ASSAYS BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MISSOURI

Section From	Section To	Zinc
55	60	1 80
60	65	1 40
65	70	1 80
70	75	2 30
75	77½	1 74
77½	80	4 04
80	82½	3 52
82½	85	3 48
85	87½	3 34
87½	90	3.32
90	92½	1 90
92½	95	1 94
95	97½	2 74
97½	100	2 60
100	102½	2 80
102½	105	2 54
105	107½	1 56
110	112½	0 84
112½	115	0 86
115	120	2 18
120	123	3 02

BF 000030238

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#46

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 862.6
(SEE LOCATION ON BACK OF SHEET)

Drilled by R.O. Denton Helper R E. Denton

Water struck at 80 Ft Stands at 80 Ft Hole Started 6-2-1951 Completed 6-8-1951

Casing used 17 Ft 8¼" 117 Ft 6¼ 4⅞ Left in hole 20'-6¼" pipe lost in drift

From	To	FORMATION
0	45	Soapstone boulders
45	85	Light gray and white flint, few specks zinc
85	90	Cottonrock, light gray and white flint
90	117½	Light gray and white flint, zinc shines

Hit drift 100' lost 20'-6¼" casing - ruined 40 feet

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc %
105	110	1 42
110	112½	1 32
112½	115	1 24
115	117½	1 36

BF0000307.0

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#46A

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev 862.6
(SEE LOCATION ON BACK OF SHEET)

Drilled by R.O. Denton Helper R E Denton

Water struck at 80 Ft Stands at 80 Ft Hole Started 6-8-1951 Completed 6- 1951

Casing used 51 Ft 8¼ 122 Ft 6¼ 4⅞ Left in hole
1M 51 33386

From	To	FORMATION
0	50	Soapstone and lime boulders
50	70	Light gray and blue flint, few specks zinc
70	80	Light gray flint, zinc traces
80	90	Light gray flint, zinc shines
90	100	Light gray and white flint, zinc shines
100	117½	Light gray and white flint, good zinc shines
117½	130	Light gray and blue flint, good zinc shines
130	145	Gray and light gray flint, fair zinc shines
145	150	Light gray and white flint, zinc traces

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, Mo

Section From	Section To	Zinc
75	80	1 12
80	85	1 70
85	87½	1 14
87½	90	0 92
90	92½	1 30
92½	95	1 10
95	97½	2 04
97½	100	2 40
100	102½	4 62
102½	105	4 16
105	107½	4 96
107½	110	5 02
110	112½	5 50
112½	115	4 44
115	117½	4 82
117½	120	3 20
120	122½	4 72
122½	125	3 80
125	127½	3 76
127½	130	3 44
130	132½	1 72
132½	135	1 28
135	137½	1 22
137½	140	0 62
140	145	0 58

BR000030240

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#47

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 822 9
(SEE LOCATION ON BACK OF SHEET)

Drilled by Hugh M Gorman Helper

Water struck at Ft Stands at Ft Hole Started 6-4-1951 Completed 6-12-1951

Casing used Ft 8¼ 50 Ft 6¼ 4⅞ Left in hole
IM 51 33386

From	To	FORMATION
0	5	Selvage, shale, mundic and zinc shines
5	10	Ditto
10	15	Selvage, flint and zinc shines
15	20	Selvage, flint, shale, mundic and zinc shines
20	25	White flint, mundic and fair showing zinc
26	46	Opening - no cuttings
46	48	White flint, selvage, shale and zinc shines
48	50	White flint, selvage, sand, shale and zinc shines
50	60	White flint, selvage, shale, sand and zinc shines
60	80	White flint, shale, sand and zinc shines
80	100	White flint, shale, sand, mundic and zinc shines
100	105	White flint, shale, sand, mundic and very few zinc shines

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MISSOURI

Section From	Section To	Zinc
0	5	0 74
5	10	0 96
10	15	1 28
15	20	1 20
20	25	1 02
45	48	0 72
48	50	0 80
50	55	1 84
55	60	1 18
60	65	0 88
65	70	0 80
70	75	0 58

BR00003[illegible] 1

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#48

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 825 0
(SEE LOCATION ON BACK OF SHEET)

Drilled by Leonard A. Lee Helper Paul Lee

Water struck at ___ Ft Stands at ___ Ft Hole Started 6-3-1951 Completed 6-12-1951

Casing used Ft 8¼ 65 Ft 6¼" 4⅞ Left in hole
1 15 51 33386

From	To	FORMATION
0	20	Soapstone, flint, mundic, trace of jack
20	35	White flint, gray selvage, mundic and jack
35	45	White flint, black shale, mundic, jack
45	60	White flint, soapstone, mundic, jack
60	65	Shaley flint, thin jack
65	70	Shaley flint, jack
70	85	White flint, gray selvage, traces of jack
85	95	Brown lime, white flint
95	100	Gray selvage, white flint
100	106	Soapstone, sandrock boulders

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MISSOURI

Section From	Section To	Zinc
20	25	1 20
25	30	1 78
30	35	1 76
35	40	0 80
40	45	0 80
45	50	0 88
50	55	1 00
55	60	0 90
60	65	0 60
65	70	0 60
70	75	0 54
75	80	0 40
80	85	0 50

BR0000 30232

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#49

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 849.3
(SEE LOCATION ON BACK OF SHEET)

Drilled by Roy Thomas Helper A.R. Cook

Water struck at 70 Ft Stands at 70 Ft Hole Started 6- 1951 Completed 6- 1951

Casing used 20 Ft 8¼ Ft 6¼ 4⅞ Left in hole
1 15 51 33386

From	To	FORMATION
o	12	Fill dirt
12	22	Blue shale, iron, lead shines
22	30	Black sandstone, and black shale, iron
30	35	Gray shale, trace of lead and zinc
35	40	Black shale, gray sand boulders, iron, lead shines
40	45	Gray lime, white and blue flint, shale seams
45	50	Blue and white flint, little gray lime, shale seams, lead shines
50	80	Blue and white flint, shale seams, iron, fair zinc, lead shines
80	90	Blue and white flint, zinc shines
90	100	Blue and white flint, fair zinc
100	105	Blue and white flint, good
105	107	Lost samples
107	116	Open drift
116	120	Mud in bottom of drift

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc	Lead
45	50	0 66	0 80
50	55	2 24	0 40
55	60	0 76	0 05
60	65	0 94	0 23
65	70	1 72	0 03
70	75	1 24	0 05
75	80	0.60	0 05
80	85	0 76	0 07
85	90	0 54	0 01
90	95	0 86	0 02
95	100	1 32	0 04
100	105	1 08	0 03

BF 000036253

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#50

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 (SEE LOCATION ON BACK OF SHEET) Range 32 Sea Level Elev 840 7

Drilled by Claude Denton Helper Earney Donaldson

Water struck at ____ Ft Stands at ____ Ft Hole Started 6-9-1951 Completed 6-12-1951

Casing used ____ Ft 8¼" 21 Ft 6¼ 4⅞ Left in hole ____

1 15 51 33386

From	To	FORMATION
0	15	Boulders
15	35	Lime and some flint boulders, gray selvage
35	50	Gray sandy lime, gray flint, gray selvage, black shale
50	55	Gray sand rock, gray flint, gray selvage, some black shale, zinc shines
55	60	Graysand rock, gray flint, gray selvage, some black shale, zinc shines
60	62½	Gray sand rock, gray flint, gray sandy shale, gray selvage, black shale, zinc shines
62½	65	Gray sand rock, gray flint, gray sandy shale, black shale, zinc shines
65	70	Black shale, gray selvage, gray sandy lime, gray flint, thin zinc trace
70	75	Soapstone, some flint
75	95	Gray sandrock, gray flint, black shale, thin zinc trace
95	115	Gray and white speckled brown flint, gray selvage, zinc shines
115	121	Course, gray and white and blue flint

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MISSOURI

Section From	To	Zinc
50	55	1 50
55	60	1 00
60	62½	0 90
62½	65	0 60
65	70	0 52
70	75	0 32
75	80	0 40
80	85	0 44

BR000030244

Approved By ____ Driller Contractor ____

DRILL RECORD

HOLE No B&R-#51

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 839 6
(SEE LOCATION ON BACK OF SHEET)

Drilled by Leonard Lee Helper Paul Lee

Water struck at Ft Stands at Ft Hole Started 6-12-51 Completed 6-19-51

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole
IM 51 33386

From	To	FORMATION	
0	15	Black soapstone and river gravel	
15	25	Black soapstone and mundic	
25	30	Soapstone and jack shines	)
30	40	Soapstone, mundic	)
40	50	Black soap, jack shines	)
50	60	Sand and river gravel, jack shines	)
60	70	Sand and river gravel, jack shines	)
70	80	White flint, sand and river gravel, jack shines	)
80	85	White flint, sand, jack shines	)
85	90	White flint, jack shines	) - Broken ground
90	95	White flint, jack shines	)
95	100	White flint and sand, blue flint, jack shines	)
100	104	White flint, jack shines	)
104	110	Gray flint and white, jack shines	)
110	120	White and dark flint and hard jack shines	)
120	125	White and blue flint	)
125	126	White flint, loose	)

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES, JOPLIN, MO

Section From	Section To	Zinc %
85	90	0 80
90	95	0 68
95	100	1 14
100	104	1 18
104	110	0 94
110	115	0 68
115	120	0 82

BR000030245

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#52

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 826 3
(SEE LOCATION ON BACK OF SHEET)

Drilled by Hugh M. Gorman Helper

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼" Ft 6¼" 4⅞" Left in hole 60 16½

From	To	FORMATION
0	5	Shale and mundic
5	30	Shale and sand and mundic
30	35	Shale and sand and mundic and zinc shines
35	40	Shale and sand and mundic and zinc
40	45	Shale and sand and mundic and fair showing zinc
45	55	Shale, sand, mundic and zinc shines
55	60	Shale, sand, mundic, little white flint and thin zinc shines
60	65	Shale and sand, mundic and thin zinc shines
65	85	Shale, sand, mundic and trace of zinc
85	90	Shale, sand and little mundic
90	100	Shale, sand, mundic and traces of zinc
100	116	Shale, sand and mundic

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc
30	35	1 80
35	40	0 88
40	45	0 64

BR000070246

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-#53

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev 845.0
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Earney Donaldson

Water struck at Ft Stands at Ft Hole Started 6-13-1951 Completed 6-16-1951

Casing used Ft 8¼ 21 Ft 6¼ 4⅞ Left in hole
TM 3 51 33386

From	To	FORMATION
0	15	Sandrock, some lime boulders, gray selvage
15	30	Sandrock, gray selvage, gray flint
30	35	Gray selvage, sandrock, gray flint, zinc shines
35	40	White flint, gray sandrock, gray selvage, black shale, zinc trace
40	50	Sandrock, gray flint, black shale, gray selvage, thin zinc trace
50	55	Sandrock, gray flint, gray selvage, zinc shines
55	62½	Gray flint, sandrock, gray selvage, zinc shines
62½	65	Gray flint, sandrock, gray selvage, thin zinc traces
65	70	Gray flint, sandrock, gray selvage, black shale, zinc shines
70	75	Soapstone, black shale, gray selvage, sandrock, gray flint, zinc trace
75	100	White flint, gray selvage, black shale, gray shale, sandrock
100	110	White and gray flint, gray selvage, black shale
110	115	White flint, gray selvage, black shale, mundic
115	125	Gray speckled brown and light blue flint, black shale, selvage
125	132½	Gray and light blue, glassy flint, gray selvage
		No assay

ER000030247

Approved By Driller Contractor

DRILL RECORD

HOLE No. B&R-#54

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 863.2
(SEE LOCATION ON BACK OF SHEET)

Drilled by R.O Denton Helper R E Denton

Water struck at 90 Ft Stands at 80 Ft Hole Started 6/15/51 Completed 6/23/1951

Casing used TH PR Ft 8¼ 1 15 51 33386 135 Ft 6¼ 4⅞ Left in hole

From	To	FORMATION
00	55	Soapstone and lime boulders
55	60	Light gray and blue flint
60	80	Light gray and blue flint, thin lead and zinc shines
80	97½	Gray and light gray flint, fair zinc shines, lead trace
97½	110	Light gray, blue and white flint, thin zinc shines
110	140	Blue and white flint, good zinc shines
140	151	Light gray and white flint, thin zinc shines

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MO

Section From	Section To	Zinc
55	60	0 46
60	65	0 54
65	70	0 96
70	75	0 50
75	80	0 60
80	85	1 06
85	87½	0 96
87½	90	1 18
90	92½	1 76
92½	95	1 28
95	97½	1 20
110	115	1 92
115	120	1 12
120	125	2 84
125	127½	7 20
127½	130	6 74
130	132½	4 60
132½	135	4 40
135	137½	3 02
137½	140	1 86
140	145	1 38
145	150	0 98

BR000030248

Approved By Driller Contractor

DRILL RECORD

HOLE No. B&R-55

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev
(SEE LOCATION ON BACK OF SHEET)

Drilled by Claude Denton Helper Earney Donaldson

Water struck at 125 Ft Stands at 75 Ft Hole Started 6-18-51 Completed 6-27-51

Casing used Ft 8¼ 140 Ft 6¼ 4⅞ Left in hole
IM 5 51 33386

From	To	FORMATION
0	10	Shale and creek gravel
10	15	Gray and blue cottonrock, flint
15	40	Gray lime, gray and blue flint
40	55	Gray speckled, brown, blue and cottonrock flint
55	60	Gray and blue flint, gray selvage
60	75	Gray, white and blue flint, gray selvage
75	90	Gray speckled brown and blue flint, gray selvage
90	110	White, gray and blue flint, dark gray and white selvage
110	115	Gray and white flint, gray sandrock, gray selvage
115	120	Brown lime, gray and white flint, black shale, zinc traces
120	125	Lost cuttings in drift
125	134	Gray sandrock, gray, speckled brown and blue flint, cinders and zinc traces, drift
134	138	Drift, coarse gray and white flint, cinders, zinc traces
138	140	Gray cottonrock flint, blue and white flint, shale, sandrock, sludge, zinc traces
140	145	White cottonrock, gray flint, zinc traces
145	150	White cottonrock, gray, light blue flint, zinc shines
150	155	White cottonrock, gray, light blue flint, fair zinc shines
155	160	Light blue, gray and white glassy flint, mundic, zinc traces
160	165	Light blue, gray and white glassy flint, mundic, zinc traces

BR0000202 9

Approved By Driller Contractor

DRILL RECORD

HOLE No B&R-56

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo Twp 29 Range 32 Sea Level Elev 813 1
(SEE LOCATION ON BACK OF SHEET)

Drilled by Carter Scott Helper Paul Lee

Water struck at ____ Ft Stands at ____ Ft Hole Started ____ Completed ____

Casing used ____ Ft 8¼ Ft 6¼ 4⅞ Left in hole ____

From	To	FORMATION
0	15	Soapstone and sand
15	25	Creek gravel and sand
25	35	Creek gravel and sand, zinc trace
35	50	Creek gravel, white flint, zinc shines
50	60	Creek gravel, white flint, fair zinc shines
60	90	Creek gravel, white flint, fair zinc ore

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section From	Section To	Zinc
50	55	1 00
55	60	1 40
60	65	3 80
65	70	1 56
70	75	1 40
75	80	1 44
80	85	1 72
85	90	1 00

BF 000070250

Approved By ____ Driller Contractor ____

DRILL RECORD

HOLE No B&R 57

For Brown and Root Land Quick Seven Lease

Section 6, Jasper County, Mo. Twp 29 Range 32 Sea Level Elev 816 8
(SEE LOCATION ON BACK OF SHEET)

Drilled by Carter Scott Helper Paul Lee

Water struck at Ft Stands at Ft Hole Started Completed

Casing used Ft 8¼ Ft 6¼ 4⅞ Left in hole
IM 5 51 33386

From	To	FORMATION
0	10	River gravel and sand
10	25	River gravel and sand and soapstone
25	30	River gravel and flint
30	45	Sand and flint and river gravel
45	55	Sand and white flint
55	60	White flint, sand, and jack shines
60	65	White flint and jack shines
65	70	White flint and jack
70	75	Blue and white flint, jack
75	80	White flint and good jack
80	81	No cuttings, open drift

ASSAYS MADE BY THE BRUCE WILLIAMS LABORATORIES
JOPLIN, MISSOURI

Section

From	To	Zinc
30	35	0 48
35	40	0 24
40	45	0 48
45	50	0 84
50	55	1 00
55	60	1 16
60	65	2 16
65	70	8 00
70	75	3 80
75	80	3 76

BF 000000251

Approved By Driller Contractor

REPORT
ON
QUICK SEVEN LEASE

1	Map of Playter area
2	Contour map of Quick 7 Area
3	Map of ore reserves, Quick 7 Mine
4	Map of ore reserves, north area
5	Map of Layout Proposed Mill
6	Cross Section of Quick 7 Area
7	Cross Section of North area
8	Cross Section of old drill holes
9	Cross Section of new drill holes
10	Flow Sheet proposed mill
11	Plans proposed mill
12	Plans Proposed washing plant
13	Drill Logs
14	Assay Certificates

BF 000030252

OTTO RUHL
CONSULTING MINING ENGINEER
JOPLIN MO

June 30, 1951

FINAL ESTIMATES ON QUICK SEVEN LEASE DEVELOPMENTS

In making up the final estimates on the development work on the Quick Seven lease, the unit factors employed are set out below

Ore Cut-off - 1 00 ZnS

Overhead and administration

Superintendent	$8,500 00	per	annum
Assistant and ground man	4,800 00	"	"
Head Millman	4,800 00	"	"
Engineer - half time	3,750 00	"	"
Bookkeeper, etc	3,600 00	"	"
Total	$25,450 00	"	"

Rated on two years operation for 776,000 tons ore and stripping equals 07 per ton

Operating Costs	Per Ton	Per Cu Yd
Stripping costs		30
Mining & transportation costs	70	
Milling costs	50	
Administration costs	07	
Taxes	20	
	$1 77	$0 30

Royalty

On gross sales 10%

Daily mill capacity . . 1,000 tons per 24 hours

Trucks haul to mill from pit 1,000 feet

Maximum depth of pit - rim to bottom 170 feet

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HISTORY OF MINING AND DEVELOPMENT

Original drilling and development work were done on these tracts as follows

1 Original discovery made by the Quick Seven Mining Company about forty years ago and within three years, the Quick Seven, Little Francis, Tex-Mo and 1909 mines were developed into operating properties The ground was mined by underground methods and heavy timbering was required Work was done largely at the 140 to 165 foot depths These mines were all developed with only a few drill holes followed by immediate sinking of the shafts It was for this reason that little or no knowledge was obtained about the values in the upper shallow levels Four mills were operated and the production was large

2 The heavy ground resulted in frequent cave-ins and when the properties were finally abandoned three of them had caved to the surface over portions of the old workings

3 From the cave-ins it was learned that there was mineralization at the upper levels and some attempts were made at the Quick Seven to pull these upper levels to the lower open levels by glory-hole mining and some production was made in this manner

4 C C Playter recognizing the possibilities of open pit mining at the Quick Seven property began a prospect program of drilling on this portion of the lease about three years ago He put down nine drill holes within the caved area of the Quick Seven mine He had very favorable results and he followed this up by

BP 0000020251

strip mining about 3,500 tons of ore which yielded a recovery over a small mill in excess of eight percent zinc His work was largely in the south half of the cave

Later he optioned the lease to the McNabb Coal Company who had heavy stripping equipment which Mr Playter did not have for the work This concern sank fifteen more prospect holes, mostly in the north half of the caved area They then began stripping the area and mined about 4,000 tons of ore which showed a recovery of approximately 4 00 percent When the McNabb Company began work zinc was priced around $100 but when the market dropped to $55, and they could find no custom milling facilities, they ceased work as they hesitated in building their own plant with the price level at $50 Mr Playter repossessed the properties and eventually optioned a lease to Brown and Root

5 A planned program of drill prospecting was outlined and followed since February A total of 60 drill holes have been put down The water was pumped down to 100-foot level so that drilling could be carried out inside the pits

In addition to checking the original tonnage shown by the Playter and McNabb work additional ore amounting to 840,640 tons have been drilled out and the result of this work is shown in the following summary sheets

BR000030255

The drilling operations are divided into two general areas, or blocks, one called the Quick Seven with five blocks of ore, and the Little Francis area considered as one block While the water was being pumped out of the Quick Seven and Little Francis pits the drilling was done largely north of the Little Francis cave-in and resulted in the discovery of ore not shown by either the Playter or McNabb drilling and by the time the water was out of ahe pits and real check drilling began there was a new ore reserve of 840,640 tons of ore containing 17,821 tons of zinc concentrates and 1,008 tons of lead concentrates

Drilling within the Quick Seven and Little Francis caves fully checked the results of the Playter-McNabb drilling and the estimated reserves we now estimate inside the Quick Seven area to be 551,391 tons of ore, containing 17,587 tons of zinc concentrates

The reserves now available on this lease amount to 1,392,031 tons of ore containing 35,408 tons of zinc concentrates and 1,008 tons of lead concentrates with a gross value of $4,291,664 00 We estimate the cost of removing the overburden, mining and concentrating the ore at $3,210,228 00 This leaves a profit of $1,081,436 00 and also the return of an estimated capital investment of $400,000 00

The following pages give the summary sheets of all the data pertaining to the development of the lease

BR000030256

SUMMARY SHEETS
FOR BOTH
QUICK SEVEN AND LITTLE FRANCIS AREAS

	Tons Ore	Zinc Concentrates	Lead Concentrates	Total Value
Quick Seven pit	551,391	17,587	-	$2,022,505 00
Little Francis pit	840,640	17,821	1,008	2,269,159 00
Totals	1,392,031	35,408	1,008	$4,291,664 00

OVERBURDEN TO BE STRIPPED

Quick Seven	501,956 cu	yds
Little Francis	402,847 "	"
Total	904,803 cu	yds

COSTS OF RECOVERING ORE

Stripping 904,803 cu yds overburden at 0 30 cu yd	$ 271,441 00
Mining and transportation to mill, 1,392,031 tons at 0 70	974,422 00
Milling 1,392,031 tons ore at 0 50	696,015 00
Taxes and insurance, 1,392,031 at 0 20	278,406 00
Administration on stripping 904,803 cu yds at 0 07	63,336 00
Administration on mining 1,392,031 tons at 0 07	97,442 00
Royalty at 10% of gross sales - $4,291,664 00	429,166 00
Estimated amount of capital to be amortized	400,000 00
Total cost	$3,210,228 00
Net Income	$1,081,436 00

Factors

Value ton of ore	$	3 083
Cost of recovering concentrates per ton of ore	$	2 306
Profit per ton of ore	$	0 777
Percent concentrates recovered		2 543%

Ratio of overburden to ore - 1 cu yd overburden to 1 538 tons ore
Estimated life of property at 1,000 tons per day, 300 days per year - 4 64 yrs

BF 000030257

SUMMARY SHEET
FOR
QUICK SEVEN AREA
PIT

	Tons Ore	Tons Concentrates	Value
Block A	209,968	6,194	$ 712,310 00
Block B	176,332	7,829	900,335 00
Block C	71,971	1,994	229,310 00
Block D	31,760	981	112,815 00
Block E	61,360	589	67,735 00
Total	551,391	17,587	$2,022,505 00

Value of ton ore rock $3 668

Recovery factor 3 189%

COSTS OF RECOVERING ORE

Stripping 501,956 cu yds at 0 30 cu yd	$ 150,587 00
Mining & transportation 551,391 tons at 0 70	385,974 00
Milling 551,391 tons at 0 50 per ton	275,695 00
Taxes, state, county & income taxes & insurance 551,391 tons at 0 20	110,278 00
Administration on stripping 501,956 cu yds at 0 07	35,137 00
Administration on mining 551,391 tons ore at 0 07	38,597 00
Royalty at 10% on gross value - $2,022,505 00	202,250 00
Total	$1,198,518 00
Estimated amortization of entire mill and equipment	400,000 00
Grand total cost	$1,598,518 00
Total income	$2,022,505 00
Net income .	$ 423,987 00
Final cost factor per ton of ore mined	$ 2 899
Life of property at milling rate of 1,000 tons per day - 300 days per year	1 84 years
Estimated stripping time	0 16 years

BR000030258

SUMMARY SHEET
FOR

LITTLE FRANCIS PIT AREA

	Tons Ore	Tons Zinc Concentrates	Tons Lead Concentrates	Value
Total	840,640	17,821	1,008	$ 2,269,159 00

Value of ton ore rock $2 70

Recovery factor - ZnS 2 12%
PbS 0 12%

COSTS OF RECOVERING THE ORE

Stripping 402,847 cu yds at 0 30	$ 120,854 00
Mining & transportation 840,640 tons at 0 70	588,448 00
Milling 804,640 tons ore at 0 50	420,320 00
Taxes - state, county & income - also insurance - 840,640 tons at 0 20	168,128 00
Administration on stripping 402,847 cu yds at 0 07	28,199 00
Administration on mining 840,640 tons ore at 0 07	58,845 00
Royalty at 10% of gross sales - $2,269,159 00	226,916 00
Total	$ 1,611,710 00
Amortization of capital already made on Quick Seven	----
Grand Total cost	1,611,710 00
Gross income from sales concentrates	2,269,159 00
NET INCOME	$ 657,449 00
Final cost factor per ton ore mined	$ 1 917
Life of property at milling rate of1000 tons per day, 300 days per year	2 8 years

BR000020253

DRILL HOLE ANALYSIS - QUICK SEVEN AREA

AVERAGE OF BLOCK A HOLES

INDICATED ORE

Hole Number	Elevation	Levels	Face	Per-cent ZnS	Per-cent PbS	ZnS Assay Feet	PbS Assay Feet
M-2	809	774 - 701	73	2 73	0 08	199 24	5 61
M-3	809	784 - 713	71	5 65	0 04	401 24	2 81
M-6	810	777 - 724	53	2 36	0 04	125 22	1 92
M-7	809	783 - 723	60	2 45	0 00	147 00	0 0
M-8	809	779 - 722	57	4 31	0 01	245 64	0 42
M-9	809	779 - 716	63	2 17	0 02	136 67	1 72
M-10	809	759 - 730	29	2 85	0 04	82 62	1 07
M-11	814	779 - 727	52	2 23	0 01	116 02	0 57
M-13	811	748 - 726	22	1 93	0 0	42 50	0 0
M-14	810	780 - 718	62	3 16	0 0	196 30	0 0
M-15	814	772 - 729	43	2 03	0 0	87 50	0 0
BR-8	880	795 - 715	33	4 16	0 0	137 37	0 0
BR-42	824	814 - 734	80	2 41	0 0	168 70	0 0
BR-37	815	815 - 760	55	3 25	0 0	178 75	0 0
		740 - 725	15	3 30	0 0	49 50	0 0
BR-34	814	814 - 723	91	2 09	0 0	190 19	0 0
BR-56	813	763 - 723	40	2 49	0 0	99 60	0 0
BR-57	819	764 - 729	35	4 44	0 0	155 40	0 0
17holes Average			934 55'	2 95	0 01	2,759 46	14 12

BF 000000260

DRILL HOLE ANALYSIS - QUICK SEVEN AREA

AVERAGE BLOCK B HOLES

INDICATED ORE

Hole Number	Elevation	Levels	Face	Per-cent ZnS	Per-cent PbS	ZnS Assay Feet	PbS Assay Feet
Playter #1	842	822 - 777	45	3 02	0 0	135 90	0 0
" #2	829	812 - 709	103	4 40	0 0	453 09	0 0
" #3	848	803 - 752	51	1 68	0 0	85 88	0 0
" #4	855	820 - 793	27	2 00	0 0	54 00	0 0
" #5	855	840 - 778	62	1 50	0 0	93 00	0 0
" #7	846	846 - 771	75	1 50	0 0	112 50	0 0
" #8	847	827 - 760	67	3 00	0 0	201 00	0 0
" #9	851	821 - 731	90	8 89	0 0	799 95	0 0
B&R # 31	862	807 - 701	106	5 04	0 0	534 24	0 0
" # 36	862	807 - 727	80	3 27	0 0	261 60	0 0
" # 38	860	795 - 706	89	9 80	0 0	872 20	0 0
" #46-A	863	788 - 725½	62½	4 28	0 0	267 50	0 0
M-4	806	757 - 735	22	2 07	0 0	45 50	0 0
M-5	806	749 - 730	19	2 97	0 0	56 50	0 0
B&R #54	863	783 - 718	65	4 64	0 0	301 60	0 0
15 holes			963½	4 44	0 0	4274 46	0 0
Average			64'				

BR000030261

DRILL HOLE ANALYSIS - QUICK SEVEN AREA

AVERAGE OF HOLES IN SHALE CAVE BLOCK E

INDICATED ORE

Hole Number	Elevation	Levels	Face	Per-cent ZnS	Per-cent PbS	ZnS Assay Feet	PbS Assay Feet
B&R-47	823	778 - 748	30	1 50	0 0	45 00	0 0
" 48	825	805 - 740	65	1 35	0 0	87 75	0 0
" 50	840	790 - 755	35	1 06	0 0	37 10	0 0
" 52	826	796 - 761	35	1 28	0 0	45 05	0 0
" 43	818	818 - 743	75	0 28	0 0	21 25	0 0
" 40	824	824 - 710	114	0 90	0 0	102 60	0 0
6 holes			354	0 96	0 0	338 75	0 0
Average			59'				

BP 000020262

DRILL HOLE ANALYSIS - QUICK SEVEN AREA

DRILL HOLES INFLUENCING BLOCK C

INFERRED ORE

Hole Number	Elevation	Levels	Face	Per-cent ZnS	Per-cent PbS	ZnS Assay Feet	PbS Assay Feet
M-14	810	780 - 718	62	3 16	0 0	196 30	0 0
M-6	810	777 - 724	53	2 36	0 04	125 22	1 92
M-2	809	774 - 701	73	2 73	0 08	199 24	5 61
3 Holes			188	2 77	0 04	520 76	7 53
Average			63'				

DRILL HOLES INFLUENCING BLOCK D

INFERRED ORE

Hole Number	Elevation	Levels	Face	Per-cent ZnS	Per-cent PbS	ZnS Assay Feet	PbS Assay Feet
BR-36	862	807 - 727	80	3 27	0 0	261 60	0 0
BR-51	840	755 - 720	35	1 34	0 0	46 90	0 0
BR-57	819	764 - 729	35	4 44	0 0	155 40	0 0
3 Holes			150	3 09	0 0	463 90	0 0
Average			50'				

BR000000263

AREA ANALYSIS SHEETS - QUICK SEVEN AREA

BLOCK "A" - INDICATED ORE

Area	47,720 sq ft
Average height face (average 15 holes)	55 ft
Cubic feet in orebody	2,624,600 cu ft
Tons ore at 12-1/2 cu ft to ton	209,968 tons
Percent ZnS in ore (avg 15 holes)	2 95 %
Tons zinc concentrates (60%) in ore	6,194 tons
Value at $115 00	$712,310 00

BLOCK "B" - INDICATED ORE

Area	34,440 sq ft
Average height face (average 15 holes)	64 ft
Cubic feet in orebody	2,204,160 cu ft
Tons ore at 12-1/2 cu ft to ton	176,332 tons
Percent ZnS in ore (average 15 holes)	4 44 %
Tons zinc concentrates (60%) in ore	7,829 tons
Value at $115 00	$900,335 00

BLOCK "E" - INDICATED ORE

Area	13,000 sq ft
Average height face (average 8 holes)	59 ft
Cubic feet in orebody	767,000 cu ft
Tons ore at 12-1/2 cu ft to ton	61,360 tons
Percent ZnS in ore (average 8 holes)	0 96 %
Tons concentrates (60%) in ore	589 tons
Value zinc concentrates at $115 00	$67,735 00

BR000020264

AREA ANALYSIS SHEETS - QUICK SEVEN AREA

BLOCK "C" - INFERRED ORE

Area	14,280 sq ft
Average height face (avg 3 drill holes)	63 ft
Cubic feet in orebody	899,040 cu ft
Tons ore at 12-1/2 cu ft to ton	71,971 tons
Percent ZnS in ore (average 3 drill holes)	2 77 %
Tons zinc concentrates (60%) in ore	1,994 tons
Value at $115 00	$229,310 00

BLOCK "D" - INFERRED ORE

Area	7,940 sq ft
Average height face (avg 3 drill holes)	50 ft
Cubic feet in orebody	397,000 cu ft
Tons ore at 12-1/2 cu ft to ton	31,760 tons
Percent ZnS in ore (average 3 drill holes)	3 09 %
Tons zinc concentrates (60%) in ore	981 tons
Value at $115 00	$112,815 00

BR000020265

DRILL HOLE ANALYSIS - LITTLE FRANCIS AREA

AVERAGE OF NORTH AREA HOLES

INDICATED ORE

Hole Number	Elevation	Levels	Face	Per-cent ZnS	Per-cent PbS	ZnS Assay Feet	PbS Assay feet
BR-17	880	830 - 730	100	0 58	0 68	58 00	68 00
16	880	835 - 720	94	1 67	0 42	156 98	39 48
27	880	805 - 745	60	1 47	0 01	88 20	0 60
15	881	861 - 741	120	0 99	-	118 80	-
9	880	815 - 755	60	3 11	0 0	186 60	-
11	879	829 - 809	20	2 54	0 0	50 85	-
13	880	820 - 747½	72½	1 86	0 0	135 42	-
32	879	844 - 754½	89½	2 73	0 0	244 33	-
4	879	854 - 699	155	4 00	0 08	620 00	12 40
6	880	845 - 725	120	1 53	0 14	183 60	16 80
45	840	785 - 717	68	3 42	0 0	232 56	0 0
20	839	779 - 721½	57½	1 86	0 0	106 95	0 0
39	841	766 - 711	55	2 40	0 0	132 00	0 0
35	839	774 - 736½	37½	1 55	0 0	58 13	0 0
49	849	805 - 738	67	1 59	0 17	106 53	11 39
29	841	741 - 724	17	4 66	-	79 22	0 0
14	878	788 - 720½	67½	1 58	0 0	106 65	0 0
17 holes			1,260½	2 12	0 12	2664 82	148 67
Average			74'				

AREA ANALYSIS - LITTLE FRANCIS AREA

Area	142,000 sq ft
Average height face (avg 17 holes)	74 ft
Cubic feet in orebody	10,508,000 cu ft
Tons ore at 12-1/2 cu ft to ton	840,640 tons
Percent ZnS in ore (avg 17 holes)	2 12 %
Percent PbS in ore (" " ")	0 12 %
Tons zinc concentrates (60%) in ore	17,821 tons
Tons lead concentrates (80%) in ore	1,008 tons
Value zinc concentrates at $115 00	$2,049,415 00
Value lead concentrates at $218 00	$ 219,744 00
Total Value	$2,269,159 00

BP 000030266

OVERBURDEN
CALCULATION OF CUBIC CONTENTS OF
LITTLE FRANCIS OPEN PIT
6-22-1951

Sta	Area	Avg Area	Dist	Cu Ft	Cu Yds
7 + 16	9,227				
		13,058	25'	326,450	12,091
7 + 41	16,890				
		16,169	59'	953,971	35,332
8 + 00	15,448				
		19,758	20'	395,160	14,636
8 + 20	24,068				
		26,282	40'	1051,280	38,936
8 + 60	28,496				
		27,878	40'	1115,120	41,301
9 + 00	27,261				
		24,733	54'	1335,582	49,466
9 + 54	22,205				
		21,377	30'	641,310	23,752
9 + 84	20,550				
		18,115	26'	470,990	17,444
10 + 10	15,680				
		16,461	25'	411,525	15,241
10 + 35	17,242				
		16,974	94'	1595,556	59,095
11 + 29	16,706				
		16,624	71'	1180,304	43,715
12 + 00	16,543				
		16,111	44'	708,884	26,255
12 + 44	15,680				
		13,851	26'	360,126	13,338
12 + 70	12,022				
		6,011	55'	330,605	12,245
13 + 25	---				
				TOTAL	402,847

BF000000267

OVERBURDEN
CALCULATIONS OF CUBIC CONTENTS - QUICK SEVEN OPEN PIT
5-15-1951 Areas by planimeter
Scale 1"-50' Horiz 1"-30' Vert
Factor = 233

STATION	Area	Aver Area	Dist	Cubic Feet	Cubic Yards
0 + 00	--				
		640	25'	16,000	593
0 +125	1,281				
		2,038	25'	50,950	1,887
0 + 50	2,796				
		4,998	32'	159,936	5,923
o + 82	7,200				
		12,360	54'	667,440	24,720
1 + 36	17,521				
		19,502	102'	1,989,204	73,674
2 + 38	21,483				
		21,366	27'	576,882	21,366
2 + 65	21,250				
		21,669	37'	801,753	29,694
3 + 02	22,088				
		22,135	46'	1,018,210	37,711
3 + 48	22,182				
		30,222	68'	2,055,096	76,115
4 + 16	38,263				
		29,182	38'	1,108,916	41,071
4 + 54	20,100				
		22,515	35'	788,025	29,186
4 + 89	24,930				
		23,952	38'	910,176	33,710
5 + 27	22,974				
		23,909	80'	1,921,720	71,175
6 + 07	24,845				
		19,028	25'	475,700	17,618
6 + 32	13,212				
		12,912	48'	619,776	22,955
6 + 80	12,612				
		10,919	36'	393,084	14,558
7 + 16	9,227				
	TOTALS		716'		501,956

BF 000020268

Bates
30,0001 - 30,0010

C08648

BR00003000A

METALS RESERVE COMPANY
Washington, D. C.

May 15, 1944

Butler and Binion
Gulf Building
Houston 2, Texas

Re: Webb City, Missouri, Lead-Zinc Project

Gentlemen:

For your consideration, we enclose herewith two copies each of drafts of (a) proposed letter agreement terminating, upon the conditions stated therein, the letter agreement dated April 6, 1943 (AA-217) between this Company and Brown & Root, Inc. and George R. Brown, and (b) proposed letter agreement between this Company and D'Arcy M. Cashin and George R. Brown, both regarding the above project.

The enclosures will not, of course, be binding upon this Company until approved by its Directors. Upon advice from you that the proposed agreements are in form satisfactory to Brown & Root, Inc., George R. Brown and D'Arcy M. Cashin, they will promptly be submitted to the Directors.

Sincerely yours,

H DeWitt Smith (Signed)

H. DeWitt Smith
Executive Vice President

Enclosures

C O P Y

3R000030001

DRAFT 5/5/44

Brown & Root, Inc. and
George R. Brown
c/o Butler and Binion
Attorneys at Law
Gulf Building
Houston 2, Texas

Re: Letter Agreement dated April 6, 1943,
as amended (AA - 217)

Gentlemen:

Please refer to the above letter agreement between yourselves, jointly and severally, and ourselves under which you undertook to perform for us certain exploratory work on certain properties located in Townships 27, 28 and 29 North, Range 32 and 33 West, all in Jasper County, Missouri, under lease to George R. Brown, to determine whether further development of those properties was warranted.

By your letter of February 28, 1944, you notified us that, for the reasons stated therein, you could not under Paragraph 6 of the above letter agreement proceed for your own account with operations under the leases to George R. Brown covering the aforesaid properties and now held in escrow by the Webb City Bank, Webb City, Missouri, pursuant to Paragraph 7 of the agreement, and by your approval and acceptance of this letter each of you confirms that notification In your letter you requested us to make no disposition of those leases, as we have the right to do under the agreement, until you had had a reasonable time to submit an alternative proposal to us.

We granted your request, and your alternative proposal, in which D'Arcy M. Cashin joined as a party, was submitted to us by your letter of March 24, 1944 In effect, the proposal contemplates the termination of the above letter agreement and the relinquishment of our right under Paragraph 7 thereof to delivery and assignment to us of the above-mentioned leases, in consideration of certain undertakings by D'Arcy M. Cashin and George R. Brown

Since the War Production Board is not prepared to recommend the further development by us of the properties covered by the above-mentioned leases, and in view of the action on our part that would be required to prevent forfeiture of the leases if we should elect to have them assigned to us, we are willing, subject to the terms and conditions of the proposed letter agreement which we are today transmitting for acceptance by Messrs. George R. Brown and D'Arcy M Cashin, to accept the proposal made in your above-mentioned letter of March 24, 1944.

The Audit Report heretofore submitted by Baird, Kurtz & Dobson, Certified Public Accountants, Joplin, Missouri, covering your operations under the aforesaid letter agreement dated April 6, 1943 has been approved by us, and all necessary steps have been taken or are in progress to complete final settlement of your accounts with us under that agreement.

Accordingly, but subject to (1) your execution of the enclosed copy of this letter, (2) the execution by D'Arcy M. Cashin and George R. Brown of the above-mentioned letter agreement of even date herewith, and (3) completion of final settlement of your accounts with us under the aforesaid letter agreement dated April 6, 1943, including disposition in accordance with our instructions of your records and of any machinery, equipment and supplies purchased with funds advanced by us, we hereby terminate in all respects our letter agreement dated April 6, 1943 with you effective as of the date hereof, hereby releasing and relinquishing our right under Paragraph 7 thereof to receive delivery and assignment of the above-mentioned leases held in escrow by the Webb City National Bank.

Please confirm your acceptance of the termination, subject to the foregoing conditions, of the aforesaid letter agreement dated April 5, 194_, by signing and returning the enclosed copy of this letter

Very truly yours,

METALS RESERVE COMPANY

By_____
Executive Vice President

Accepted and agreed to:

BROWN & ROOT, INC.

By_____
(Title)

GEORGE R. BROWN

_____
George R. Brown

DRAFT 5/5/44

D'Arcy M. Cashin and
George R. Brown
c/o Butler and Binion
Gulf Building
Houston, 2, Texas

Re: Webb City, Missouri, Zinc and Lead Project

Gentlemen:

Please refer to your letter of March 24, 1944 which, since it requested termination of the letter agreement dated April 6, 1943 (AA - 217) between this Company and Brown & Root, Inc. and George R. Brown, was signed by Brown & Root, Inc., as well as by yourselves

In the above-mentioned letter you represent that D'Arcy M Cashin has secured so-called "top leases", in the form of the lease attached hereto as Exhibit A, on approximately 5,000 acres of the properties in the Webb City, Missouri, area presently subject to leases to George R. Brown being held in escrow by the Webb City Bank as provided in the aforesaid letter agreement dated April 6, 1943, and that such top leases will become effective immediately upon termination of the leases to George R. Brown

We understand that in consideration of the termination of the aforesaid letter agreement dated April 6, 1943 and our relinquishment of our right under Paragraph 7 thereof to delivery and assignment to us of the above-mentioned leases to George R. Brown you will agree with us as follows:

1. D'Arcy M Cashin hereby agrees to arrange with the respective lessors of the properties covered by the aforesaid top leases to D'Arcy M Cashin for the prompt cancellation of the leases to George R. Brown to which said top leases, respectively, are subject. George R. Brown hereby consents to such cancellation, and, in addition, agrees, by assigning to D'Arcy M. Cashin or otherwise, his

leases on properties upon which D'Arcy M. Cashin has not obtained too leases, to permit D'Arcy M. Cashin to keep alive, by conducting mining operations on the properties covered thereby, such of said leases to George R. Brown as D'Arcy M. Cashin, in his sole discretion, may determine. D'Arcy M. Cashin agrees to furnish to this Company, promptly after the end of each calendar quarter hereafter, a list of the leases to himself and to George R. Brown which are being maintained in full force and effect by D'Arcy M. Cashin.

2. If and when, in his sole discretion, zinc and lead mining and milling operations can be carried on profitably on all or part of the properties covered by any or all of the leases referred to in the preceding paragraph, D'Arcy M. Cashin agrees to develop such properties and to mine and mill the zinc-lead ores produced therefrom. Notwithstanding the foregoing, it is understood that D'Arcy M. Cashin does not obligate himself to carry on any such mining operations in any event, or to keep any of such leases alive by the payment of delay rentals, but that the determination of whether to carry on such operations or to make such payments is to rest solely within the best judgment of D'Arcy M. Cashin. In the event D'Arcy M. Cashin undertakes any such development or mining operations, he agrees to keep this Company reasonably informed as to the progress thereof and the results obtained.

3. D'Arcy M. Cashin hereby agrees that, if at any time he mines and mills zinc-lead ores from any or all of the properties subject to the leases referred to in Paragraph 1 hereof, he will reimburse to this Company the $ advanced by this Company under the aforesaid letter agreement dated April 6, 1943,

BR000030006

plus interest on the successive outstanding balances thereof at the rate of 4% per annum from the date of disbursement by this Company to the date of such reimbursement, at the rate of $10 per ton of all zinc concentrates and at the rate of $15 per ton of all lead concentrates, produced and sold from such properties until said $ plus 4% interest as aforesaid, shall have been fully reimbursed to this Company, provided, however, that in no event shall such payments by D'Arcy M. Cashin to this Company exceed in the aggregate during any single year after such mining operations have commenced a sum greater than 10% of the net profits from such operations during such year, as determined in accordance with standard and customary accounting practice in operations of similar character D'Arcy M. Cashin agrees that, until the aforesaid amount, plus 4% interest as aforesaid, shall have been fully reimbursed to this Company as aforesaid, this Company may at any reasonable time inspect such operations and any or all of the books and records of account maintained in connection therewith.

4. D'Arcy M. Cashin and George R. Brown hereby agree not to assign any of the aforesaid leases without having first obtained the written consent of this Company to the proposed assignment.

5. It is agreed that the provisions set forth in Exhibit B attached hereto are made a part of this agreement with the same force and effect as if fully set forth herein, D'Arcy M. Cashin and George R. Brown being referred to in said Exhibit B as "Contractor" and this Company being referred to therein as "Metals Reserve".

By letter agreement of even date herewith between this Company and Brown & Root, Inc. and George R. Brown we have, subject to your execution of the enclosed copy of this letter and to the completion of final settlement of the accounts of Brown & Root, Inc. and George R Brown under the aforesaid letter agreement dated April 6, 1943, terminated said letter agreement dated April 6, 1943 effective as of the date hereof, thereby relinquishing our right under said letter agreement to receive delivery and assignment of the above-mentioned leases to George R. Brown held in escrow by the Webb City National Bank

If the foregoing is acceptable to you, please sign and return to this office the enclosed copy of this letter, which will then constitute the agreement between yourselves, jointly and severally, and this Company, as of the date hereof, with respect to the foregoing matters.

Very truly yours,

METALS RESERVE COMPANY

By_____

Accepted and agreed to:

D'ARCY M. CASHIN

_____
D'Arcy M. Cashin

GEORGE R. BROWN

_____
George R. Brown

MINING LEASE

THIS INDENTURE M d th _____ day of _____ 19_____ between

_____

_____ Lessor (whether

o e or m re) ad D M Ca hin Lessee Witnesseth

1 Lesso in consider tion of _____ Dollars

i h nd p id f th y iti h ei pro id d and of the agreements of Lessee he ein contai ed hereby grants lea es and lets exclusi ly unto Lessee for the purpose of prospecting and mining for le d zinc and other val ble mine al substance the following described land (for purposes hereof considered s one parcel) sit t l J sper Co nty St t f Mis ouri to-wit

Subject to a lease to George R Brown, which the Lessor agrees to terminate upon default by the said George R Brown or his assign

TO HAVE AND TO HOLD id p mi s f id p rpo e ly u t L s e f r and during the full t rm f t n (10) ye rs t i g th d y d y fi t bo e writt (h call d primary term) nd so lo g th ft l d si or th v l bl min ral b t ce s prod ed from id l nd h re d or long s pr p ct g w k g per tion being conducted on id land h r by gi ing d g ti g t Lesse for th t rm he f th ex l si e right and li en t p osp t d mi said la d f l d i d th v l bl m l betan s togeth r with h right nd h ea e t mill d/or p ep f r m k t on id p emi d m d ell li le d l d th l bl mi l ubst es mined the con: with the right to constru t buildi g ther tru tu d t m ke xca tion openi g t k pil s dump dit he dr in ro d and th impro m te po s id premis s i cluding the use f w t r in id mi g oper ti d t pla such m h ry th on L may deem n c ss ry for ffi ntly p osp t g d mi i g id la d and milli g nd/or p epanng for m rket nd disposi g f o d/or on t mi d mill d p ep d f m k t with the xpress right to Less e to rem e all property so pla d th on t y tim duri g o within on ye fter th t mi tion or fo f itu of his l a e

2 IN CONSIDERATION WHEREOF Less e agrees to pay unto Lessor at th W bb City Bank of Webb City Missouri or its successors which bank and its successors r the ag nts of th Less a d whi h b k h ll onti the depository of any and all sum p y bl d thi l g rdl ss f ch ge in ownership i id l d or re t l or yaltie to ra th d b f th tenth f h month f ll wing ale of ore roy lty of 6 (5%) p r entum f ll m y r i d f ores m d d sold from said la d d ri g the p d g month with th privil g of L see t consume such o s d pay the said p tage of th m rk t pri as r y lty thereon

3 Th Less sh ll omme ce prospe ting r mining up n th l nds bov d scribed within three (3) months from the date he eof S ch prosp cti g or mining shall be carri d o continu ly d h ll t b sp nded at a y time for longer than thirty (30) d y cept on a count of old bla ccid nts strikes or oth r d tion b y d th trol f L ee

4 If prosp ct g o mi i g p ti hould t be c mm nc d s id l d wi hi thr (3) m ths from th d t f thi lea this l hall th n t rmi at to both p ties unl s on b f th pi t on f id th m th p ri d the Less e shall p y or t der th sum f

_____ Dollars

p r a e h el ll d re tals to the credit of Less in th deposit ry b k abo set out or its successor whi h sh ll ope t r t l d co th privilege of d fer ing the commen ement f p p t g mini g op atio or the sumi g f p p ti g mining op ations for a p riod f tw l e (12) m ths from the p ym t of s id ental In lik m er d p lik p yme ts or te d rs the comme c ment f prospe ti g mi ing op t h ll b f ther d f red for like p riod si ly during th p im ry te m f th l a d if p sp ting or mi ing is comm ed de thi l L m y p d m f th e si g year provid d he shall withi sixty (60) d y aft r spen l n p y o t d id r t l t L sor and may contin by like p yme ts to m ke su l l d ferments during the primary term

5 L sor d l th t th d w p yment o on id tion eived by him fo thi l t th tim f th execution is a good lid d sub t ti l con ide tion d fi ent s ll espects t support h d y t h ein including sp ifi ally the opti gr t d th L se to t d thi l from time t time d ri g th term hereof upon the payment r e d f th t l h b f pro id d All rent la d e h eu d m y b p id by L h k m il d post g prep id r L so r th deposit ry b nk b e n m d it f Les dit on o before th d r y h r l h ll b m p y bl S h b k d it c s ors l h by l oc bly m d th ag nt f Les t pt ll t l d y lties h ein pro ided a d th me sh ll onti deposit ry f uch roy lti tal during the lif f thi l a e r g di ss of h nges of ownership of s id land or aid rental nd roy lties

Fo ll f th p rp h of it l greed that the ab d s ib d la d mprises _____ cre wheth it tu lly compris mor less

6 L h ll h e the right to mill a d/ p ep e f m rk t re mined f om other properti and t tor on id p mi w t prod ct th refrom without payment f any tals o y lty the f

7 L m y m ve or mi d from th bo d rib d p m to oth r p operty for the purp e of milli g d/or p ep ri g me f m ket but Le s g ees th t th n and in th t t the id ore m d hall be pr p ly mpl d d y d nd royalty s h retof e p ovid d shall be p y bl th ron

8 Le so h r by w t d ag ee t d f d th titl t id l d d mi er la and agr es th t L ss e t its opt m y di ch rg y t x m rtg g o other lien upon id la d nd in t L d e o it sh ll b e brog t d to such li with the right to enforce same a d m y witho t wai ing any ther remedy L m y h pply r t l d oy lti i g h r d t wa d s tisfying s me W tho t imp rme t f L see s ght de th w rr nty i t f f ll re f t tl it i g d that if Le r owns an int e t i id l d l th n the ntire f e simple st t th th r y lti d t l t b p id L so shall be reduced prop ti t ly

9 L h ll h e the right to stor r ll w ts prod ts incl ding tailings sand d l dg d ri g the full t m f th s l se and in the event f sal two (2) t pe t roy lty h ll b p id t L s r L sh ll l h th right to re m ll wa t p od t i l d g ll t ih g d d sludg paying th f th m r y lty h b f provid d with re p ct to ore mi d d sold from said land

10 L m y t y time if he desires o to d p y ll royalties or ntals th n d pl ddition l s m of ten ($10 00) Dollars t L so d su r d r nd t mi t th l d the pon he shall b ll ed from ll obligations hereund r with like ff t If thi l h d ot b m de in whi h ent L shall ex cute nd reco d t hi w pen e p op release of thi mini g le e payment of said r tal nd oy lty d id T n D ll onsid tion t be m d t th d posit ry bank h etofore named

11 L will k p t book howi g q titi d ki d f or s mi d from id l d d id onsum d wh d wh m id d th mon ye l d f m l s d h books f r h ll b op t th i spe ti n of Lessor at all on bl ho

12 All mi i g op ti s sh ll be ca ri d on in uch mi lik d wo km n lik manner as the s m su lly d t d l such locality

13 Le r h ll h e the r ght to enter pon said l ds f the p rp se of inspection and examin tion at L or s own risk not i te f ri g h w v with the p osp ti g d mi i g p tion b i g nd ct d th eo by Le L m y gi thirty (30) day writt n oti of ny iol tion d f lt mpl ined of d if h iol tion r d f it i t m ed w thin s id p riod thi l e h ll th upon d d b d t mi d t the pti f the L so whi h m dy h ll be x l i

14 The L s e h ll h th right to assig s b l t thi l r y po tion f th c eag co ered he eby

15 Th m d d i f thi l h ll b bi di g pon d in t th ben fit f th heirs l g l rep t ti su sors and asigns f th p rties h to.

IN WITNESS WHEREOF this instrument is executed a d deliver d n th d t first abo e written

_____

_____

_____

_____

Lessor

_____

Lessee

3R000030009

STATE OF MISSOURI
County of _____ } ss

On this _____ day of _____ 19____ before me personally appeared _____ to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed. And the said _____ further declared himself to be a single and unmarried.

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed my official seal at my office in _____ the day and year first above written

My term expires _____ _____
Notary Public

STATE OF MISSOURI
County of _____ } ss

On this _____ day of _____ 19____ before me personally appeared _____ and _____, to me known to be the persons described in and who executed the foregoing instrument and acknowledged that they executed the same as their free act and deed.

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed my official seal at my office in _____ the day and year first above written

My term expires _____ _____
Notary Public

NO. _____

MINING LEASE

FROM

TO

Dated _____, 19____

Section _____ Township _____ Range _____

County _____

No. Acres _____

STATE OF _____
COUNTY OF _____ } ss.

This instrument was filed for record on the _____ day of _____ 19____ at _____ o'clock _____ M. and duly recorded in Book _____ Page _____ of the records of this office

By _____ Deputy

When recorded

Return to _____

THE AVALON PRINTING CO., AVALON, MO 187605 500 9 43

BR00030009-A

MRC Form No. 24, revised 11/11/43

EXHIBIT B

1. Assignment. (a) Contractor shall not, without the prior written consent of Metals Reserve, sell, assign or pledge this Contract or any of its rights, powers, privileges, duties or obligations hereunder. (b) Metals Reserve may assign its interest under this Contract to any other branch or agency of the Government of the United States of America, and upon such assignment such assignee shall acquire all the rights, powers and privileges of Metals Reserve hereunder and shall be bound by all the duties and obligations of Metals Reserve hereunder, and Metals Reserve shall thereby cease to have any rights, powers, privileges, duties or obligations hereunder, it being expressly understood that any such assignment by Metals Reserve of its interest in this Contract shall be subject to all the rights, powers, and privileges of Contractor hereunder and shall be conditioned upon such assignee's assuming all duties and obligations of Metals Reserve hereunder.

2. Non-Waiver Clause. The failure of either the Contractor or Metals Reserve to insist, in any one or more instances, upon the performance of any of the terms, covenants, and conditions of this Contract shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant or condition by the other party hereto, but the obligation of such other party with respect to such future performance shall continue in full force and effect.

3. Notice. Notice to either party hereto shall be sufficient only if given in writing addressed to such party at the address set forth in the Contract, or, if the Contract designates an Agent, to such Agent's address as set forth in the Contract, or to such other address as either party for itself may hereafter specify to the other in writing.

4. Default. Notwithstanding any other provisions of the Contract to which this is attached as an Exhibit, Metals Reserve may, by notice in writing to Contractor, cancel this Contract or any part thereof at any time, without payment of damages or penalty of any kind for such cancellation, in the event (a) a receiver, liquidator or trustee is appointed for Contractor or its property, or Contractor makes an assignment for the benefit of creditors, or Contractor becomes insolvent, or a petition is filed by or against Contractor pursuant to any of the provisions of the United States Bankruptcy Act, as amended, for the purpose of adjudicating Contractor a bankrupt, or for the reorganization of Contractor, or for the purpose of effecting a composition or rearrangement with Contractor's creditors, and such receiver, liquidator, or trustee is not discharged or any such petition filed against Contractor is not dismissed within sixty (60) days, (b) of the liquidation or dissolution of Contractor (if Contractor is a corporation), whether voluntary or involuntary, (c) of default by Contractor in the performance of any of the terms, conditions or covenants of this Contract or any amendment or supplement thereto and the failure of Contractor to cure such default within thirty (30) days from the giving of a written notice of such default by Metals Reserve to Contractor, (d) of the determination by Metals Reserve that Contractor obtained this Contract for the purpose of speculation.

5. Governing Law. This Contract shall be construed under and governed by the law of the State of New York.

6. Contingent Fees. Contractor warrants that Contractor has not employed any person to solicit or procure this Contract upon any agreement for a commission, percentage, brokerage or contingent fee. Breach of this warranty shall give Metals Reserve the right to deduct from any amounts due Contractor from Metals Reserve the amount of such commission, percentage, brokerage, or contingent fee or to recover said amount upon making demand therefor, without prejudice to any other rights of Metals Reserve.

7. Members of Congress. No member of or delegate to the Congress of the United States of America or Resident Commissioner shall be admitted to any share or part of this Contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

8. Compliance with Applicable Laws. In the performance of this Contract, Contractor shall comply with and give all stipulations and representations required by any applicable Federal, State, Municipal or local law, or Executive order, or any applicable rules, orders, regulations or requirements of any government department or bureau, including the provisions of and regulations under Walsh-Healey Act (49 Stat. 2036-2039) which are hereby incorporated herein by reference, but nothing herein contained shall be considered as preventing Contractor from contesting in good faith the validity of such law, rule, order, regulation or requirement or any charge that Contractor has not complied therewith. Contractor expressly agrees to comply with the applicable provisions of Executive Order 9301 establishing a minimum wartime work-week of forty-eight hours and any modifications thereof and any regulations issued pursuant thereto. Pursuant to Executive Order No. 8802 dated June 25, 1941 as amended by Executive Order 9346 dated May 27, 1943, Contractor hereby agrees that Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin and that Contractor will include in its subcontracts a similar provision obligating the subcontractor not to discriminate against any employee or applicant for employment because of race, creed, color or national origin.

RR0000030010

July 24, 1951

Mr Howard I Young, President
American Zinc, Lead and Smelting Company
1600 Paul Brown Building
Saint Louis 1, Missouri

Dear Howard:

I am enclosing report from Otto Ruhl on the Quick Seven and Little Francis Leases I am also enclosing photographs of some of the coring 75% of them are on about 25 ft centers

I am asking D'Arcy Cashin to tell Otto Ruhl to let your man look at any data he wants to in his office

Would appreciate hearing from you on any ideas that you have

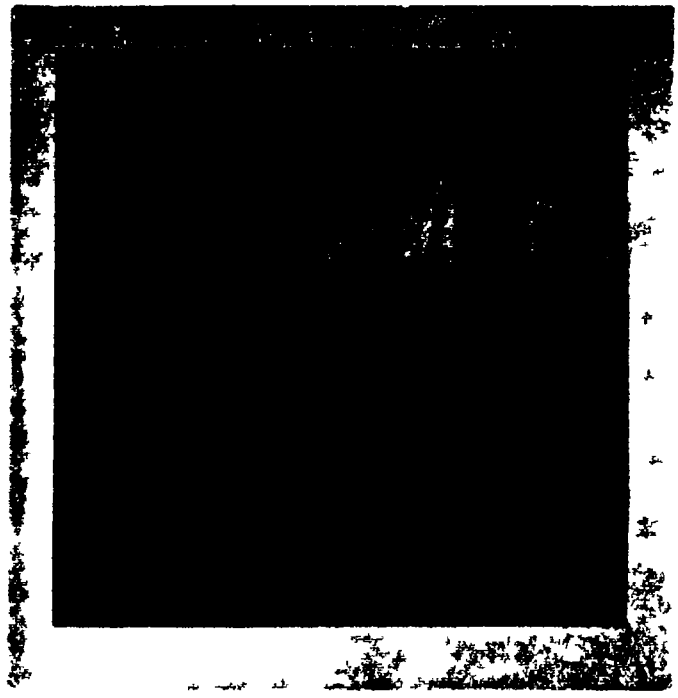
Personal regards,

Yours very truly,

George R Brown

GRB LME
Enc
bcc Otto Ruhl
207 N Pearl
Joplin Missouri

BR000030134



Drill rig working about perimeter
of Playter (Quick 7)

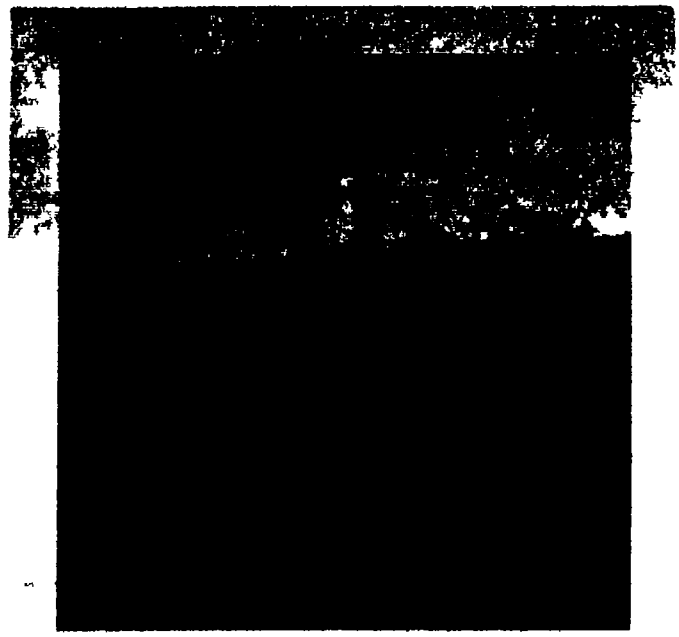
KODACOLOR PRINT
MADE BY
EASTMAN KODAK COMPANY
T M RE S U B PAT OFF
WEEK of May 7 1951
1 2

BR000030047

Extreme north edge of Little Francis showing rigs working around perimeter of Little Francis pit

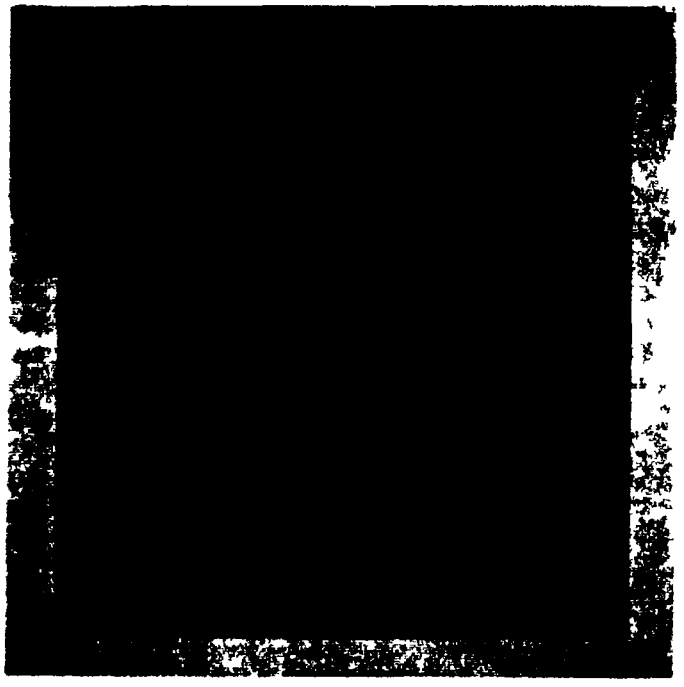
KODAK
M DE
EASTM KODAK COMPANY
T M REGIS U S PAT OFF
Week of May 7 1951
1 3

BR0000300 19



North edge of Little Francis showing pumping installation Drilling rig on north perimeter

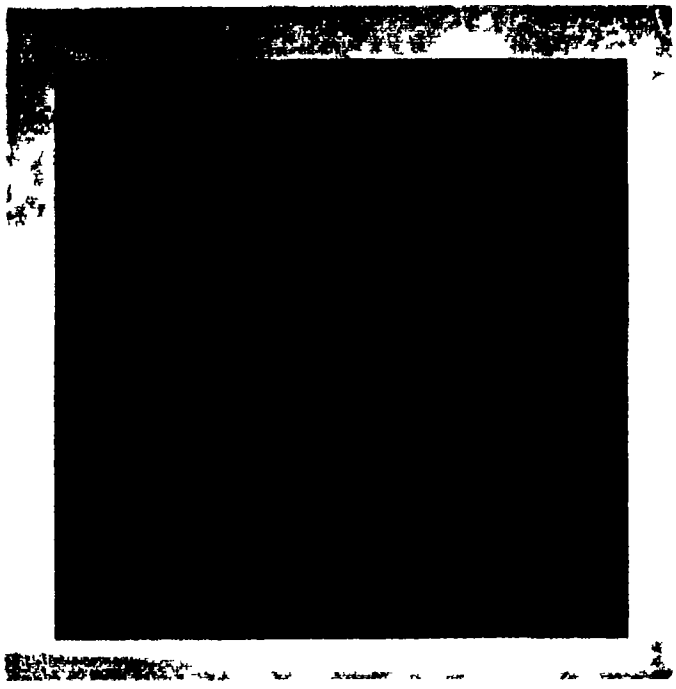
KODAK
MADE BY
EASTMAN KODAK COMPANY
T M REGIS U S PAT OFF
Week of May 7 1951
1 2 BR0000050050



- South portion of Little Francis pit showing drill rig working on south-east corner

KODACOLOR PRINT
MADE BY
EASTMAN KODAK COMPANY
TIME AT OFFICE
Week May 1951

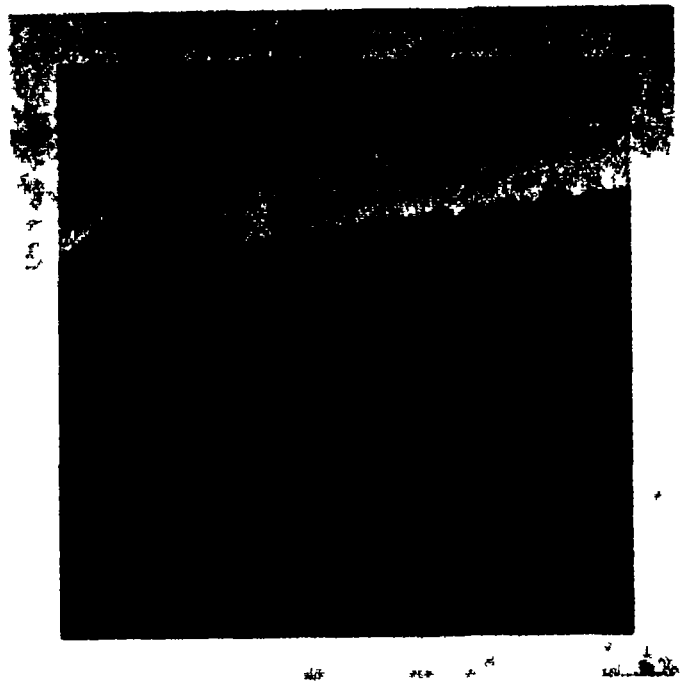
BR000030053



5 South portion of Quick Seven pit showing storage barn south edge and probable site of the mill

THIS IS A
KODACOLOR FILM
MADE BY
EASTMAN KODAK COMPANY
TRADE MARK REG. U.S. PAT. OFF.
Week May 7 1951
1

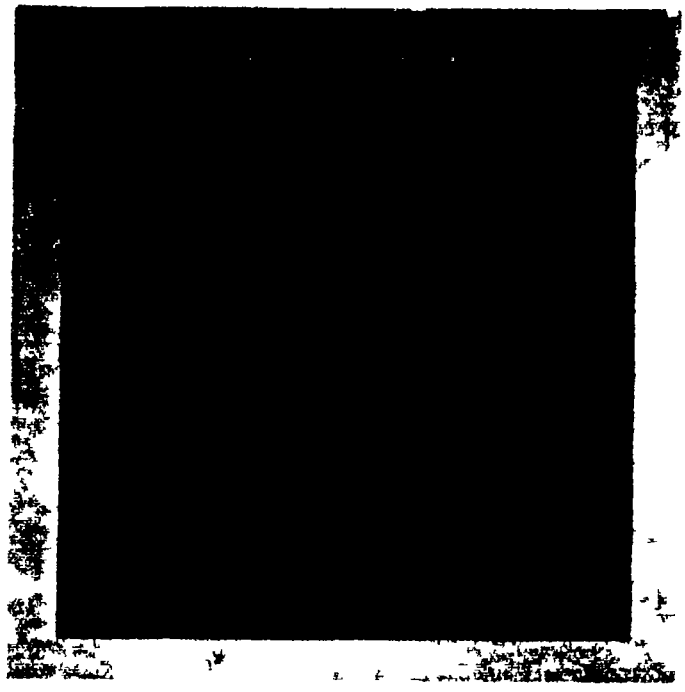
BR000030054



6 Southwest portion of Quick Seven Pit

KODACOLOR PRINT
MADE BY
EASTMAN KODAK COMPANY
T M REG'D U S PAT OFF
Week of May 7 1951
1 2

BR000030031



9 Drill rig on southeast part of Little Francis pit

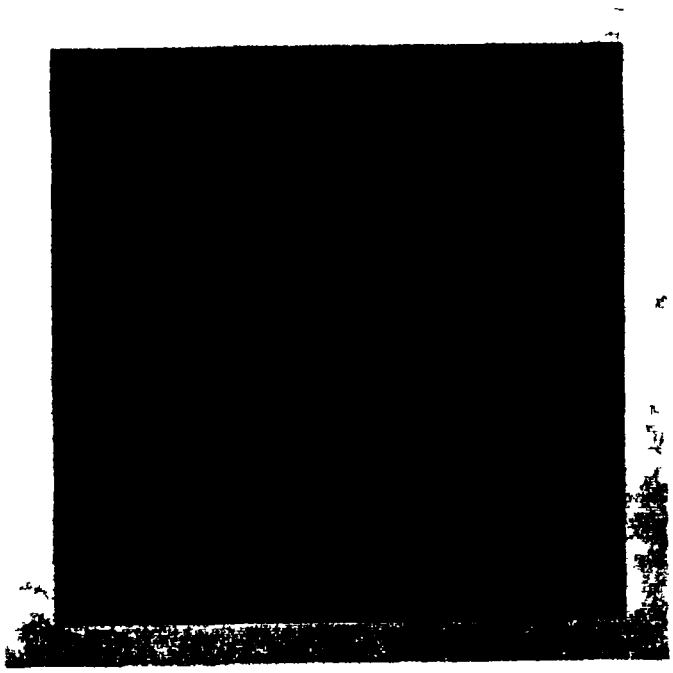
EKTACOLOR PRINT
MADE BY
EASTMAN KODAK COMPANY
T M REG U S PAT OFF
Week of May 7 1951
1 2

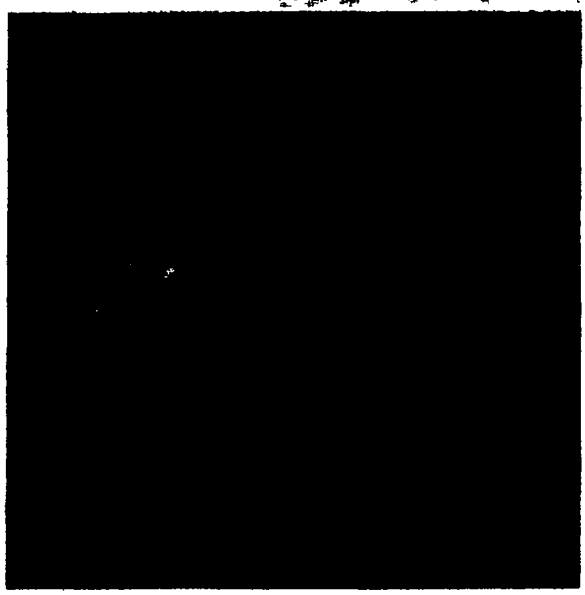
BR000030052

8 Looking south of chat pile - north boundary Little Francis property showing drill rigs operating about Little Francis and Quick Seven in the background

KODAK
TRADE MARK
EASTMAN KODAK COMPANY
T M REG S U S PAT OFF
Week of May 7 1951
1 2

DR00003004S

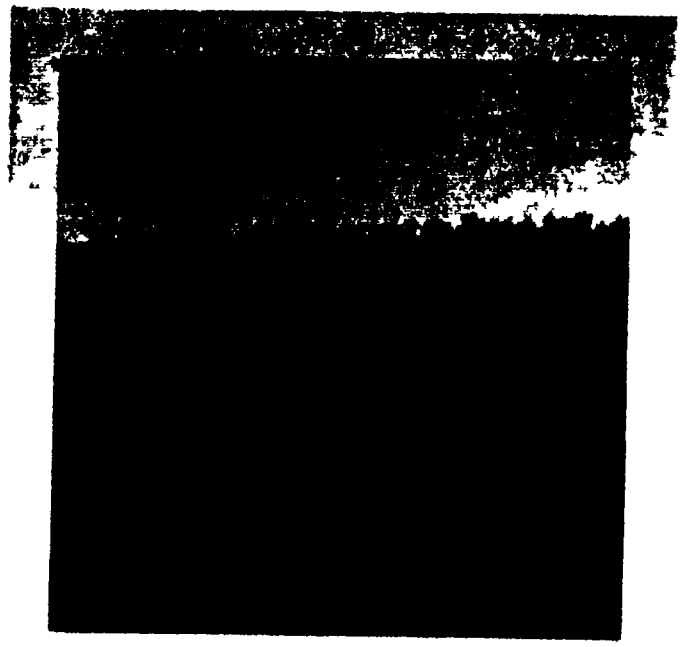




9 South part o Quick Seven pit

THIS IS A
KODACOLOR PRINT
MADE BY
EASTMAN KODAK COMPANY
T S U S ATOMIC
Wee o May 7 1951

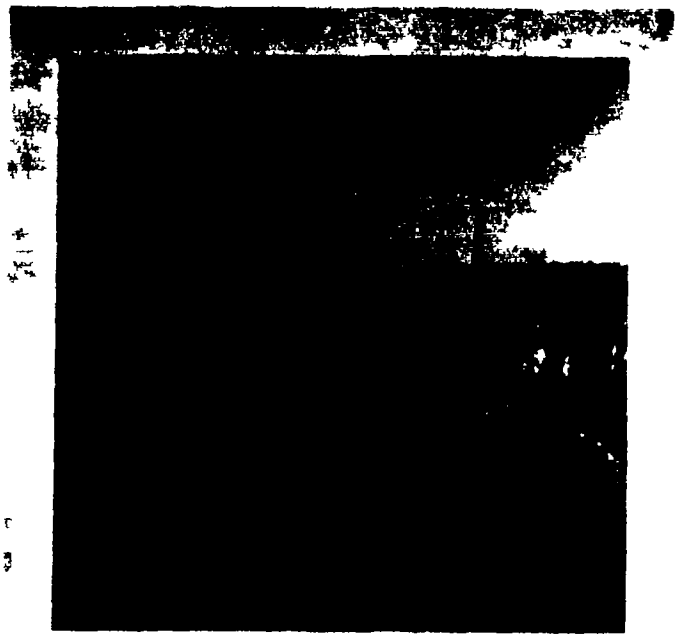
BR000030046



10 Southwest portion of Quick Seven pit

KODAC COR PR
MADE BY
EASTMA OAK
Week May 7 1951
1

BR000030055



11 Southwest portion of Quick Seven pit after dewatering

THIS IS A
KODAK COLOR PRINT
MADE BY
EASTMAN KODAK COMPANY
T M U S PAT OFF
Week of May 7 1951
1

BR000030056

12 Drilling in bottom Quick Seven pit - southeast side - very rich hole

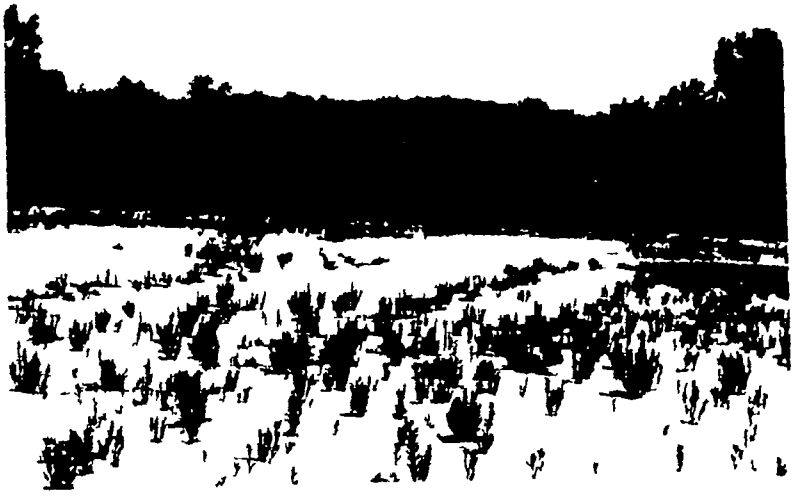
0 0 8 A

BR000030038

13 Drilling rig on westerly portion Quick Seven pit

008A

BR000030039



14 Area lying west of Quick Seven pit - probable storage area

008A

BR000030042

15 Storage area west of chat pile on south edge of Quick Seven Probable chat and rock storage area

0 0 8 A

BR000030044

16 Southeast portion of Quick Seven pit

008A

BR000030040

17 Southwest side of Quick Seven pit west of probable mill site Area for storage of chats and rocks

0 0 8 A

BR000030037

18 South side of Quick Seven pit Probable storage area - chats and rock

0 0 8 A

BR000030045

19 Storage warehouse south side of Quick Seven Mill will probably be located on side of present storehouse which would be moved

0 0 8 A

BR000030041

20 Chat pile south side of Quick Seven pit Area probably used for storage of chats

0 0 6 A

BR000030043

21 Southeast corner of Quick Seven pit showing overburden which will probably make a good ramp leading up to mill grizzley

0 0 8 A

BR000030036

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109 S Connell Street
Picher Oklahoma
Telephone 710

St Louis Missouri
306 Valley Drive
Telephone Imperial 3226

March 15, 1951

Brown & Root
c/o Mr. Otto Ruhl
304 Postoffice Building
Joplin, Missouri

			Zinc	Lead
582171	#6	35-37½	1.60	0.16
172		37½-40	1.04	0.13
173		40-42½	1.42	0.10
174		45-47½	4.68	0.28
175		47½-50	2.94	0.22
176		50-52½	1.44	0.38
177		52½-55	1.14	0.18
178		55-57½	1.20	0.21
179		57½-60	2.54	0.32
180		60-62½	1.54	0.33
181		62½-65	0.74	0.02
182		65-67½	1.32	0.21
183		67½-70	0.80	0.24
184		72½-75	1.12	0.15
185		75-80	1.26	0.24
186		80-85	0.96	0.22

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Joplin, Mo.

St Louis Missc
306 Valley Dr
T l ph Imperial 3

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582322	#6	85-90	0.98		0.02		
323		90-95	0.58		0.01		
324		95-100	0.40		0.10		
325		100-105	0.52		0.01		
326		105-110	0.52		0.08		
327		110-115	0.34		0.09		
328		115-120	0.54		0.07		
329		120-125	0.44		0.07		

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c/o Otto Ruhl

St Louis Missou
306 Valley Dr
T l p Imp 1 32

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582724	#6	125-130	0.78		0.02		
725		130-135	0.60		0.05		
726		135-140	0.64		0.15		
727		140-145	0.60		0.04		
728		145-150	0.70		0.04		
729		150-155	0.94		0.15		

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St Louis Missouri
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T l ph Im l 3226

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582785	Hole #8	85-90	1.08				
786		90-92½	1.20				
787		92½-95	6.34				
788		95-97½	6.64				
789		95-97½	2.72				

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St Louis Missouri
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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582922	#8	100-102½	3.90				
923		102½-105	2.50				
924		152-155	1.32				
925		155-157½	1.40				
926		157½-160	1.12				
927		160-162½	0.80				
928		162½-165	0.96				

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St Louis Missouri
506 Valley Drive
Telepho Imp 1 3226

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582914	#9	80-85	2.30				
915		85-90	5.72				
916		90-95	4.20				
917		95-100	4.06				
918		105-110	1.96				
919		110-115	1.84				
920		115-120	1.26				
921		120-125	1.80				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582751	Hole #9	65-70	0.48				
752		70-75	0.64				
753		75-80	0.60				

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St Louis Missouri
506 Valley Drive
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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
583023	#9	125-130	0.60				
024		130-135	0.60				

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St Louis Missouri
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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTUR
583715	#11	55-60	2.60				
716		60-62½	1.92				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
584504	B&R #13	78-80	1.14				
505		80-82½	0.70				
506		87½-90	1.60				
507		112½-115	2.44				
508		115-117½	2.00				
509		117½-120	2.04				
510		120-122½	2.10				
511		122½-125	2.80				
512		125-127½	1.88				

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Telephone Imperial 3226

April 20, 1951

Brown & Root
c/o Otto Ruhl
P.O. Box 304
Joplin, Missouri

			Zinc
584703	Hole #14	90-95	1.00
704		95-97½	0.38
705		95-97½	0.70
706		100-102½	2.54
707		102-105	2.14
708		105-107½	1.02
709		107½-110	0.60
710		110-112½	0.84
711		112½-115	0.40
712		115-117½	0.34
713		117½-120	1.10
714		120-122½	0.56
715		122½-125	0.70
716		125-127½	0.80
717		127½-130	0.54
718		130-132½	0.34
719		135-137½	0.60
720		137½-140	1.10
721		140-142½	1.72
722		142½-145	1.32
723		145-147½	1.12
724		147½-150	1.76
725		150-152½	1.86
726		152½-155	0.94

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April 20, 1951

Brown & Root
c/o Mr. Otto Ruhl
P.O. Box 304
Joplin, Missouri

			Zinc
584728	Hole #15	20-23	0.82
729		25-28½	0.40
730		28½-32	0.40
731		32-35	0.60
732		35-40	0.30
733		40-45	0.60
734		45-50	0.54
735		50-55	0.98
736		55-60	0.64
737		65-70	0.62
738		70-75	0.80
752		75-80	1.18

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April 24, 1951

Brown & Root
c/o Mr. Otto Ruhl
304 Postoffice Building
Joplin, Missouri

			Zinc
584989	B&R #15	80-85	0.80
990		85-90	0.64
991		90-95	0.58
992		95-100	0.80
993		100-105	0.66
994		105-110	0.72
999		110-115	0.60
995		115-120	1.02
996		120-125	0.56
988		125-130	0.58
997		130-135	0.42
998		135-140	0.40

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April 24, 1951

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304 Postoffice Building
Joplin, Missouri

			Zinc
584978	B&R #16	50-55	2.00
979		55-57	6.60
980		57-60	2.78
981		60-65	0.56
982		65-67½	0.46
983		67½-70	0.30
984		70-75	0.62
985		75-77½	0.58
986		77½-80	0.34
987		80-85	0.36

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April 27, 1951

Brown & Root
c/o Mr. Otto Kuhl
304 Postoffice Building
Joplin, Missouri

			Zinc	Lead
585295	B & R #17	50-55		0.64
296		55-57½		0.98
297		57½-60	0.20	0.39
298		60-65	0.24	1.20
299		65-70	1.06	1.51
300		70-72½	0.40	2.23
301		72½-75	0.26	0.92
302		75-77½	0.20	0.42
303		77½-80	0.26	0.56
304		80-82½	0.34	0.28
305		82½-85	0.36	0.31
306		85-87½	0.52	0.35
307		87½-90	1.12	0.75
308		90-92½	0.44	0.23
309		92½-95	0.36	0.10
310		97½-100	0.20	0.06
311		100-102½	0.34	0.07
313		102½-105	0.20	0.10
314		105-107½	0.28	0.13
315		107½-110	0.20	0.14
316		110-112½	0.22	0.38

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Telephone Imperial 3226

May 4, 1951

Brown & Root
c/o Mr. Otto Ruhl
304 Post Office Building
Joplin, Missouri

			Zinc	Lead
585741	#19	60-65		0.38
742		65-67½		1.38
743		67½-70		2.49
744		70-72½		0.18
745		72½-75	0.20	0.15
746		75-77½	0.36	0.18
747		77½-80	0.24	0.16
748		80-85	0.24	0.20
751		105-110	0.60	
752		110-112½	0.40	
753		112½-115	0.24	
754		115-117½	0.40	
755		117½-120	0.28	

THE BRUCE WILLIAMS LABORATORIES

Bruce Williams

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Picher Oklahoma
Telephone 710

St Louis Missouri
306 Valley Drive
Telephone Imperial 3226

May 4, 1951

Brown & Root
c/o Mr. Otto Ruhl
304 Post Office Building
Joplin, Missouri

			Zinc
585760	#20	60-65	0.60
761		65-70	0.60
762		70-75	0.52
763		75-80	0.60
764		80-85	1.34
765		85-87½	2.80
766		87½-90	0.76
767		90-92½	0.90
768		92½-95	0.90
769		95-97½	0.74
770		100-102½	1.18
771		102½-105	0.80
772		105-107½	0.86
749		95-97½	0.30
750		97½-100	0.36

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			Zinc	Lead
585918	B&R #24	70-72½	0.60	0.21
919		72½-75	0.40	0.11
920		75-77½	0.46	0.09
921		77½-80	0.44	0.05
922		80-82½	0.24	0.13
923		82½-85	0.12	0.05
924		85-87½	0.20	0.03
925		87½-90	0.24	0.07
926		90-92½	0.42	0.06
927		92½-95	0.16	0.07
928		95-97½	0.14	0.04
929		97½-100	0.24	0.03

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			Zinc	Lead
585930	B&R #25	75-80	0.40	0.03
931		80-82½	0.32	0.32
932		82½-85	0.30	0.20
933		85-87½	0.40	0.11
934		87½-90	0.80	0.06
935		90-92½	0.52	0.06
936		92½-95	0.44	0.05
937		95-97½	0.52	0.02
938		97½-100	1.24	0.05
939		100-102½	2.00	0.05
940		102½-105	2.16	0.03

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			Zinc	Lead
586061	B.R.#25	105-107½	1.44	0.02
062		107½-110	0.60	0.03
063		110-112½	0.64	
064		112½-115	0.94	
065		115-117½	0.64	
066		117½-120	0.90	
067		120-122½	0.92	
068		122½-125	0.82	
069		125-127½	0.74	0.03
070		127½-130	0.84	0.03
071		130-135	0.52	
072		140-145	0.48	
073		145-150	0.32	
074		150-155	0.80	
075		155-157½	0.86	
076		157½-160	1.14	

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			Zinc
586895	B&R #31	90-92½	4.56
896		92½-95	4.12
897		95-97½	4.20
898		97½-100	4.60
899		100-102½	4.18
900		102½-105	4.48
901		105-107½	4.02
902		107½-110	3.30
903		110-112½	0.48
904		112½-115	1.04
905		115-117½	1.52
906		120-125	3.88
907		125-127½	5.52
908		127½-130	3.52
909		130-132½	3.80
910		132½-135	2.60
911		135-137½	2.24
912		137½-140	3.20
913		140-142½	2.60
914		142½-145	1.40
915		145-147½	1.40
916		147½-150	1.04
917		150-152½	1.14

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
584978	BR #-6	50-55	2.00		1.51		
979		55-57	6.60		4.74		
980		57-60	2.78		2.80		

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
585312	B&R #16	100-102	2.30		0.10		
585292		120-125	1.20		0.17		
293		125-130	1.00				
294		130-135	1.76				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
585368	B & R #16	135-140	0.84		0.26		
369		140-145	0.36		0.05		
370		145-150	0.60		0.07		
371		150-155	1.44		0.08		
372		155-160	1.20		0.05		
373		160-164	0.40		0.04		

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
585358	3 & F .17	95-97½	0.[illegible]0		0.05		
359		112½-115	0.54		0.01		
360		115-117	0.22		0.01		
361		117-120	0.26		0.03		
362		120-125	0.20		0.03		
363		125-130	0.88		0.04		
364		130-135	0.36		0.03		
365		135-145	0.68		0.18		
366		145-150	0.30		0.04		
367		150-157	0.36		0.07		

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
585905	B&R #20	107½-110	0.90		0.16		
906		110-112½	0.80		0.07		
907		112½-115	1.08		0.14		
908		115-117½	2.00		0.14		

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
585756	#21	35-40			0.95		
757		40-45	0.58		2.21		
758		70-72½	1.00				
759		72½-75	0.44				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586230	Hole B&R #21	160-165	1.00				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
585909	B&R ~~#2~~ 22	95-100	1.16				
910		100-105	4.68				
911		105-110	3.80				
912		110-115	2.40				
913		115-120	1.08				
914		120-125	1.10				
915		125-130	1.14				
916		130-135	1.06				
917		135-140	1.68				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586057	B.R. ~~21~~ 22	140-145	1.48				
058		145-150	1.20				
059		150-155	1.20				
060		155-160	1.14				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586438	#26	65-70	2.08				
439		75-80	0.70				
440		80-85	1.88				
441		85-90	1.04				
442		90-95	0.68				
443		95-100	0.48				
444		100-105	0.60				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586445	#27	65-70	0.40				
446		75-80	0.68				
447		105-110	1.90				
448		110-112½	1.50				
449		112½-115	0.84				
450		115-117½	0.64				
451		117½-120	0.52				
452		120-122½	0.68		0.01		
453		120-125	0.74				
454		122½-125	0.76		0.02		
455		125-127½	0.90				
456		127½-130	0.88				
457		132½-135	1.16				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586231	Hole B&R #29	25-30			0.13		
232		30-35			0.07		
233		35-40			0.02		
234		40-45			0.03		
235		45-50	0.36		0.02		
236		50-55	0.30		0.14		
237		55-60	0.24		0.12		
238		60-65	0.52		0.28		
239		65-70	0.24		0.05		
240		70-75	0.32		0.02		
265		75-80	0.20		0.04		
266		95-100	0.28		0.01		

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586458	#29	100-102½	3.20				
459		102½-105	4.84				
460		105-107½	3.40				
461		107½-110	3.96				
462		110-112½	3.70				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586706	B & R #29	112½-115	1.30				
707		115-117	1.00				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586708	B & R #31	55-60	1.16				
709		60-62½	8.70				
710		62½-65	9.08				
711		65-67½	9.00				
712		67½-70	8.86				
713		70-72½	8.20				
714		72½-75	10.76				
715		75-77½	6.40				
716		77½-80	2.90				
717		80-82½	1.94				
718		82½-85	2.20				
719		85-87½	2.60				
720		87½-90	4.38				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588009	B & R 731	150-152½	0.58				
010		152½-155	0.92				
011		155-161	0.72				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586721	B & R #32	35-40	0.80				
722		40-45	1.26				
723		45-50	1.98				
724		50-55	1.94				
725		55-60	1.56				
726		60-65	1.00				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586918	B & R #32	90-95	6.20				
919		95-100	3.66				
920		100-105	1.44				
921		105-110	1.84				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587344	B&R #32	132-135	1.60				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587341	B&R 36	70-72½	3.56				
342	" 32	135-140	1.40				
343	"	140-142½	2.02				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586727	B & R #33	25-30	0.42				
728		30-35	0.38				
729		35-40	0.80				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587133	B&R #33	95-100	1.20				
134		95-100A	0.98				
135		100-105	1.52				
136		105-110	0.98				
137		110-112½	1.00				
138		112½-115	0.92				
139		115-117½	1.08				
140		117½-120	0.54				
141		120-122½	0.52				
142		122½-125	0.54				
143		125-130	0.94				
144		130-132½	0.82				
145		132½-135	0.76				
146		135-140	0.80				
147		140-145	0.60				
148		145-150	1.00				
149		150-155	0.80				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
586734	B & R #35	10-15			0.07		
735		15-20			0.08		
736		20-25			0.04		
737		25-30			0.03		
738		30-35			0.05		
739		35-40			0.10		
740		40-45			0.02		
741		45-50			0.06		
742		50-55			0.08		
743		55-60			0.02		
744		60-62½			0.02		
745		62½-65			0.01		

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			Zinc
586940	B & R #35	65-67½	0.90
941		67½-70	1.36
942		70-72½	1.44
943		72½-75	0.92
944		74-77½	1.04
945		77½-80	0.80
946		80-82½	0.70
947		82½-85	1.76
948		85-87½	1.18
949		97½-100	0.58
950		100-102½	0.66
951		102½-105	0.60
952		105-107½	0.54
953		107½-110	0.48
954		110-112½	0.34
955		112½-115	0.32

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			Zinc
587353	B&R #36	55-60	3.84
354		60-62½	5.24
355		62½-65	3.74
356		65-67½	2.80
357		67½-70	5.14
358		72½-75	1.76
359		75-77½	2.32
360		77½-80	1.60
361		80-82½	1.60
362		82½-85	1.40
363		85-87½	1.52
364		87½-90	1.48
365		90-92½	2.24
366		92½-95	3.26
367		95-97½	1.80
368		97½-100	1.56
369		100-102½	1.20
370		102½-105	1.30
371		105-107½	0.92
372		107½-110	0.90
373		110-112½	0.68
374		112½-115	0.78
375		115-117½	0.58
376		117½-120	0.48
377		120-122½	0.66
378		122½-125	0.60

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587341	B&R 3 6	70-72½	3.56				
342	" 3 2	135-140	1.40				
343	" 3 2	140-142½	2.02				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587548	B&R #36	125-127½	0.88				
549		127½-130	0.66				
550		130-132½	0.66				
551		132½-135	0.58				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587552	B&R #37	0-5	3.40				
553		5-10	3.16				
554		10-15	5.44				
555		15-20	3.18				
556		20-25	1.56				
557		25-30	1.48				
558		30-35	0.88				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587851	BR #37	35-40	1.50				
852		40-45	1.28				
853		45-50	1.16				
854		50-55	0.80				
855		75-80	3.84				
856		80-85	1.16				
857		85-90	1.60				

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			Zinc
587702	B&R #38	65-70	2.00
703		70-72½	2.96
704		72½-75	2.32
705		75-77½	5.12
706		77½-80	11.70
707		80-82½	6.48
708		82½-85	5.40
709		85-87½	5.80
710		87½-90	4.90
711		90-92½	6.70
712		92½-95	7.44
713		95-97½	11.64
714		97½-100	14.56
715		100-102½	12.28

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587858	B&R #38	102½-105	9.60				
859		105-107½	9.28				
860		107½-110	7.36				
861		110-112½	10.30				
862		112½-115	7.18				
863		115-117½	8.16				
864		117½-120	10.48				
865		120-122½	8.84				
866		122½-125	12.08				
867		125-127½	8.84				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588012	B & R #38	127½-130	4.56				
013		130-132½	3.80				
014		132½-135	8.14				
015		135-137½	4.20				
016		137½-140	3.38				
017		140-142½	2.94				
018		142½-145	2.80				
019		145-147½	2.90				
020		147½-150	2.20				
021		150-152½	1.94				
022		152½-154	3.84				

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			Zinc
587716	B&R #39	75-80	4.14
717		80-85	2.40
718		85-87½	1.08
719		87½-90	1.86
720		90-92½	0.88
721		92½-95	0.94
722		95-97½	1.14
723		97½-100	1.24
724		100-102½	1.04
725		102½-105	0.80
726		105-110	0.68
727		110-112½	0.90
728		112½-115	1.70
729		117½-120	1.40

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
587868	BRR #39	120-122½	2.20				
869		122½-125	1.64				
870		125-127½	1.06				
871		127½-130	1.30				

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			Zinc
587872	B & R #40	0-10	1.60
873		10-15	1.28
874		15-17½	1.04
875		17½-20	0.64
876		20-22½	0.54
877		25-30	0.52
878		30-35	0.50
879		35-40	0.28
880		70-75	0.54
881		75-80	0.64
882		80-85	0.44
883		85-90	0.70
884		90-95	0.84
885		95-100	0.70
886		100-105	0.64
887		105-109	0.60
888		109-114	0.72

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588023	B & R #42	10-15	1.40				
024		15-20	1.56				
025		20-25	1.02				
026		25-30	1.12				
027		30-35	1.60				
028		35-40	1.20				
029		40-45	2.98				
030		45-50	1.74				
031		50-55	2.44				
032		55-60	1.72				
033		60-65	1.28				
034		65-70	1.22				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
568158	B & R #42	70-75	1.80				
159		75-80	1.44				

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			Zinc
588160	B&R #45	55-60	1.80
161		60-65	1.40
162		65-70	1.80
163		70-75	2.30
164		75-77½	1.74
165		77½-80	4.04
166		80-82½	3.52
167		82½-85	3.48
168		85-87½	3.34
169		87½-90	3.32
170		90-92½	1.90
171		92½-95	1.94
172		95-97½	2.74
173		97½-100	2.60
174		100-102½	2.80
175		102½-105	2.54
176		105-107½	1.56

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588411	B&R #45	110-112½	0.84				
412		112½-115	0.86				
413		115-120	2.18				
414		120-123	3.02				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588415	B&R #46	105-110	1.42				
416		110-112½	1.32				
417		112½-115	1.24				
418		115-117½	1.36				

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			Zinc
588772	B & R #46A	75-80	1.12
773		80-85	1.70
774		85-87½	1.14
775		87½-90	0.92
776		90-92½	1.30
777		92½-95	1.10
778		95-97½	2.04
779		97½-100	2.40
780		100-102½	4.62
781		102½-105	4.16
782		105-107½	4.96
783		107½-110	5.02
784		110-112½	5.50
785		112½-115	4.44
786		115-117½	4.82
787		117½-120	3.20
788		120-122½	4.72
789		122½-125	3.80

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588881	BAR #46A	125-127½	3.76				
882		127½-130	3.44				
883		130-132½	1.72				
884		132½-135	1.28				
885		135-137½	1.22				
886		137½-140	0.62				
887		140-145	0.58				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588419	B&R #47	0-5	0.74				
420		5-10	0.96				
437		10-15	1.28				
438		15-20	1.20				
439		20-25	1.02				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588790	B & R 247	45-48	0.72				
791		48-50	0.80				
792		50-55	1.84				
793		55-60	1.18				
794		60-65	0.88				
795		65-70	0.80				
796		70-75	0.58				

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OUR NO	MARK	DESCRIPTION		ZINC	IRON	LEAD	LIME	MOISTURE
588797		B & R #48	20-25	1.20				
798			25-30	1.78				
799			30-35	1.76				
800			35-40	0.80				
801			40-45	0.80				
802			45-50	0.88				
803			50-55	1.00				
804			55-60	0.90				
805			60-65	0.60				
806			65-70	0.60				
807			70-75	0.54				
808			75-80	0.40				
809			80-85	0.50				

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			Zinc	Lead
589161	B&R #49	45-50	0.66	0.80
162		50-55	2.24	0.40
163		55-60	0.76	0.05
164		60-65	0.94	0.23
165		65-70	1.72	0.03
166		70-75	1.24	0.05
167		75-80	0.60	0.05
168		80-85	0.76	0.07
169		85-90	0.54	0.01
170		90-95	0.86	0.02
171		95-100	1.32	0.04
172		100-105	1.08	0.03

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
588810	B & R #50	50-55	1.50				
811		55-60	1.00				
812		60-62½	0.90				
813		62½-65	0.60				
814		65-70	0.52				
815		70-75	0.32				
816		75-80	0.40				
817		80-85	0.44				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589173	B & R #51	85-90	0.80				
174		90-95	0.68				
175		95-100	1.14				
176		100-104	1.18				
177		104-110	0.94				
178		110-115	0.68				
178		115-120	0.82				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589352	B & R #52	30-35	1.50				
353		35-40	0.88				
354		40-45	0.64				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589521	B & R #54	125-127½	7.20				
522		127½-130	6.74				
523		130-132½	4.60				
524		132½-135	4.40				
525		135-137½	3.02				

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589501	B & R #54	137½-140	1.86				
502		140-145	1.38				
503		145-150	0.98				

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			Zinc
589180	B & R #54	55-60	0.46
181		60-65	0.54
182		65-70	0.96
183		70-75	0.50
184		75-80	0.60
185		80-85	1.06
186		85-87½	0.96
187		87½-90	1.18
188		90-92½	1.76
189		92½-95	1.28
190		95-97½	1.20
191		110-115	1.92
192		115-120	1.12
193		120-125	2.84

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OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589650	B & W #56	50-55	1.00				
651		55-60	1.40				
652		60-65	3.80				
653		65-70	1.56				
654		70-75	1.40				
655		75-80	1.44				
656		80-85	1.72				
657		85-90	1.00				

BR000030127

ENGINEERS
INSPECTIONS and TESTS

The Bruce Williams Laboratories

ESTABLISHED 1898
Main Office 620 622 Joplin Street Telephone 556
JOPLIN, MISSOURI

CHEMISTS
INDUSTRIAL and ANALYTICA

Picher Oklahoma
109 S Connell Street
Telephone 710

St Louis Missour
306 Valley Drive
T l ph Imp i l 322

Broom & Root
c/o Mr. Otto Ruhl
Joplin, Missouri 6-27-51

OUR NO	MARK	DESCRIPTION		ZINC	IRON	LEAD	LIME	MOISTURE
589658		B & R #57	30-35	0.48				
659			35-40	0.24				
660			40-45	0.48				
661			45-50	0.84				
662			50-55	1.00				
663			55-60	1.16				
664			60-65	2.16				
665			65-70	8.00				
666			70-75	3.80				
667			75-80	3.76				

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Bro m .. Root
c/o Mr. Otto Ruhl
Joplin, Missouri 6-28-51

St Louis Missouri
306 Valley Drive
Telephone Imperial 3226

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589753	B & R #59	45-50	1.30				
754		50-55	2.20				
755		55-60	1.96				
756		60-65	1.98				
757		65-70	1.08				
758		70-75	1.08				
759		75-80	3.20				
760		80-82½	5.32				
761		82½-85	2.76				
762		85-87½	2.76				
763		87½-90	2.74				

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St Louis Missouri
306 Valley Drive
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Brown & Root
c/o Mr. Otto Ruhl
Joplin, Missouri 6-29-51

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
589889	B & R #59	90-92½	9.20				
890		92½-95	7.80				
891		95-97½	6.10				
892		97½-100	3.70				
893		100-102½	1.80				
894		102½-105	4.60				
895		105-110	2.16				
896		110-115	1.12				
897		115-120	1.64				
898		125-130	1.36				

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109 S Connell Street
Tel ph 710

Brown & Root
Joplin, Missouri 3-12-51

St Louis Missouri
306 Valley Drive
Telephone Imp rial 3224

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
581935	#5	140-142½	2.68				

BR000030131

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109 S Connell Street
Telepho 710

St Louis Missouri
306 Valley Drive
T leph Impe ial 3226

Brown & Root

Joplin, Missouri 3-9-51

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
581758	#5	142½-145	3.52				
759		147½-150	3.98		0.05		
760		150-152½	4.00		0.10		
761		152½-155	1.42		0.05		

BR000030132

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INDUSTRIAL and ANALYTICA

Picher Oklahoma
109 S Connell Street
T lepho e 710

St Louis Missou
306 Valley Dri
Teleph Imperial 32

Brown & Root 3-17-51
Joplin, Mo.

OUR NO	MARK	DESCRIPTION	ZINC	IRON	LEAD	LIME	MOISTURE
582318	#5	155-157½	0.76		0.08		
319		157½-160	1.40		0.08		
320		160-162½	0.62		0.09		
321		162½-165	0.64		0.06		

BR000030133

AUSTIN HOUSTON CORPUS CHRISTI

BROWN & ROOT Inc
ENGINEERS AND CONSTRUCTORS
P O BOX No 3
HOUSTON TEXAS

Skill Integrity and Responsibility

Joplin, Mo March 25, 1951

Mr George R Brown
c/o Brown & Root Inc
Houston 1, Texas

Dear Mr Brown

Mr D.M. Cashin requested I write you what I thought should be done at this time in the way of further development on the Playter and Lehigh properties

On the Playter lease I dont think we have much choice but to continue present plan of drilling until we find more ore or until we convince ourselves it doesnt exist This should take approximately thirty days longer To date we have

BR000030135

been able to hire only three drill rigs which have completed six holes and nearly finished three more Half of these holes show some ore — two of them fairly rich

Four holes were drilled on the perimeter of the Quick Seven Mine slumpage This is the largest ore body on the lease and we were in hopes of increasing its limits but are now convinced the only ore available at this mine lies under the water which we are now pumping

There is another small mine on the Playter lease known as the St Francis Mine which is also covered with water It is in the vicinity of this mine that the two good holes were drilled

BR000030136

Mr Ruhl is very optimistic and hopeful that the latter ore body can be extended beyond present indications When these limits are determined we propose to drill on the bottom of this pit because no holes have ever been drilled there as far as we can learn

We now have two eight inch deep well Pamona pumps running twenty four hours daily on the Playter property Dewatering of the entire lease should take about thirty days longer permitting inspection of both pits Actually the St Francis pit should be dry within ten days as it is shallower By the time the dewatering is complete the drilling should show pretty well how much ore is strippable

To date no work has been done on the Lehigh property If and when drill rigs are available I think the original forty acres should be drilled as soon as possible This will take a minimum of twenty five holes each approximately ninety feet deep Because boulder and chaty piles cover much of this surface area we are told resistivity work is practically worthless However, where the surface is open we are told it greatly reduces drilling cost For this reason it seems to us the resistivity work should be done now on the two hundred and forty acres recently purchased I see no object in owning this property if we dont determine whether or not it contains ore in sufficient quantity

BR0000364138

to justify stripping Otherwise it seems to me it would be a good time to dispose of it while it may have a market

Dr David Gallagher of the D M A made a speech last Thursday night informing the people what assistance could be expected from the government Judging from his remarks I think we should make application for 50% of our prospecting cost on all the work we propose to do of a prospecting nature, including the pumping, as soon as forms are available for this application

Hoping I have given you some ideas which will assist in making your decisions, I am

Yours truly

Tom Townsend

BR000030129

American Zinc, Lead and Smelting Company

HOWARD I YOUNG
PRESIDENT

1600 PAUL BROWN BUILDING
SAINT LOUIS 1 MISSOURI

July 30, 1951

Mr George Brown
Brown-Root Incorporated
Post Office Box 3
Houston, Texas

Dear George

I have received your letter of July 24 enclosing report prepared by Otto Ruhl on the Quick Seven and Little Francis leases This arrived at the time our Tri-State Manager, Mr Inman, was here and we had an opportunity to go over them

My present plans are to drive down to Joplin the middle or latter part of the week and spend a day with D'Arcy Cashin going over the situation on the ground to determine whether we can work out something that is mutually satisfactory and advantageous

Best regards,

Sincerely yours

Howard

HIY LJ

cc Mr D'Arcy M Cashin

BR000030011

QUOTATION Brown-Root Mill
Neck City, Mo

WASHING EQUIPMENT

One (1)	Finger gate for opening 4'6"x 4-6 R R rolls with 911 lift for opening gate complete with control valve adapted to be bolted against wood frame Air cylinder and valve.	(Approx)	$ 950 00
One (1)	Traveling grizzly Approx 10'0" x 4'0" bars spaced about 18" [redacted]. Complete with supporting frame and side boards		
One (1)	Motor drive and speed reducing equipment for above	(Approx)	$10,700.00
One (1)	Rotary scrubber 6'Ø 9-0 blind section used as scrubber 2-4'0" sections used for fine screening Approx 1" to 1½" pert		
	1-4'0" screening section perforations 6" round hole-above machine mounted on frame Machine to be individually motor driven Motor and speed reducing gears to be furnished with screen	(Approx)	$24,500 00
One (1)	Dewater drag 30" wide 26'0" long Complete with head & tail pulley Reducing gears Drive motor and belt fitted with angle scrapers Without tank	(Approx)	$ 2,600 00
One (1)	6" Wifley pump with V-belt motor drive completed with motor & drive	(Approx)	" 1,791 00
One (1)	Boulder conveyor 42" wide 50' long suitable for carrying 24 x 24 boulders 60' C C complete with motor drive but without supporting frame	(Approx)	$18,000 00
One (1)	Refuse conveyor to carry 12" boulders to be 24" wide 60'0" long complete with motor drive. Carried on wood frame	(Approx)	$10,000 00
One (1)	24" Mill conveyor 24" - 275' centers complete with drive	(Approx)	$19,200 00
One (1)	24" Jaw crusher with motor drive	(Approx)	$10,000 00
			$106,741 00

ESTIMATED PRICES ONLY - SUBJECT TO REVISION

LOT 2 PROM, CONTRACTOR BUILDING

Pieces:				
29	8" x 8"	34' 0"	Jig room col's.	
18	8" x 8"	30' 0"	Line shaft girders	
4	8" x 8"	20' 0"	2nd. Story col's.	
6	8" x 8"	30'	Jig sill's.	
2	8" x 8"	30'	Jig room sills.	
				Board feet: 9,564.
6	6" x 6"	26' 0"	Table room col's.	468
6	6" x 6"	12' 0"	Table room beams.	216
16	6" x 6"	12' 0"	Scr. frames.	576
80	6" x 6"	14' 0"	Elev. housing frames.	3,360
12	6" x 6"	14'0"	Dewater drer.	504
12	6" x 6"	Miscellaneous		304
240	2" x 6"	14'0"	Rafters.	3,360
22	2" x 6"	12'0"	Table room rafters.	264
520	2" x 6"	12'0"	Wall Certs.	6,240
180	2" x 6"	12'0"	Elev. Wall certs.	2,160
36	2" x 6"	12' 0"	Scr. frames	432
15	2" x 6"	12'0"	Dewater frame.	180
50	2" x 6"	12'0"	Miscellaneous	
24	12 lt	10 x 12	Windows & frames.	
16	2" x 12"	12'0"	Table spouts.	300
32	2" x 12"	12'0"	Tip spouts.	770
15	2" x 12"		Roll spout.	360
15	2" x 12"		Screen spout.	360

BOILER BLD

170	2" x 6"	948 27	4,500
82	2" x 6"	948 19	1,475
40	2" x 4"	948 27	2,970
175	2" x 4"	948 19	1,100
	1" x 12"	Boxing	1,200
7	4" x 6"	Jig sills	252

CLEANING

Lumber same as roller jig.

	1" 12"	Elev. housing	1,200
	1" x 4"	Elev. housing	300
60	2" x 9" 16'0"	Floor joists	1,500
	1" x 10"	Flooring-Boxing	3,000
	2" x 12"	Oak	1,200

MISC. & OUT

40	1" x 12" 12'		500
50	2" x 4" 12'		600
25	2" x 9" 12'		500
100	2" x 4" 12'	Roof Wall Ties	900
	2" x 12"	Oak Ore Bin	6,000
	2" x 12"	Oak Hard Iron Pattern	2,000
		TOTAL - Approx. 75,000 B.M.	

Surge Bin	Oak	10,000
Mill Conveyor		10,000
Tailing Conveyor		10,000

[illegible]
(cont.)

100 gas. Galvanized - [illegible] roof

[illegible]

Pieces:			Square:
41	2' x 2' x 6'	Wall piers.	653
41	3' x 3' x 1'	" footings.	350
200'0"	4'0" x 1'0"	Side walls.	800
64'0"	4' x 1'	End walls.	256
30'0"	114' x 6"	Floor.	2,010

[illegible]

5	14'0" x 6' x 1"	6 Piers	945
5	10'0" x 3' x 1"	Footings	1.50

[illegible]

6	7' x 14' - 0	Piers	882
6	3' x 7' x 1'-0	Footings	142

[illegible]

5	16' x 14' x 1'-6"	Table fdn.	1,680
5	16' x 2' x 1'		160

[illegible]

	14'0" x 12'0" x 4'	2,526
	Elev. foundations	608
		11,271 cu. ft.
		415 cu. yds.

BR000030027

FOOT [illegible], CO. [illegible]

[illegible] [illegible] [illegible] TO TOP [illegible], [illegible] CITY, MO.

One (1) 4'0" x 8'0" Screen-5/8" perforations. 30" gear, 2 7/16" shaft 21" pinion.

One (1) 4' x 8" [illegible] screen-1' [illegible] perforations. Gear same as above.

One (1) [illegible] x 8" return screen-5/8" perforations. (This screen is optional).

All Above Sets on Gear and Countershaft Drive.

Total $1,950.00

One (1) 42" x 16" gear driven roller-Primary complete with hard iron shells

One (1) 30" x 14" gear driven roller-Secondary-Primary complete with hard iron shells

One (1) set 36" x 14" paired roll, complete with hard iron tires. Return circuit (this roll is optional)

Total $8,000.00

One (1) 42" x [illegible]" 6 roll - 42" x 48" [illegible] tier, complete lease drive pulley and [illegible] $2,100 00

One (1) 36" x [illegible]" 7 roll [illegible] tier, complete lease drive pulley and [illegible] 2,100.00

One (1) [illegible] to [illegible] 500.00

Five (5) Concentrating tables 3,000.00

Two (2) 2" [illegible] V belt driven. 1,000 00

One (1) 5'0" diameter main settling cone, 12 gauge steel 400.00

Two (2) 3'0" diameter main settling cones, 12 gauge steel. 500.00

Total $9,600.00

One (1) return elevator.

One (1) [illegible] pulley 26" x 25" diameter crown finish.

One (1) [illegible] 3'6" on 4'8" - 2 15/16" shaft.

One (1) [illegible] pulley 26" x 20" crown finish on 2 15/16" shaft.

One (1) counter shaft 2 15/16" [illegible] end.

Two (2) [illegible] 2 15/16" x 5"

Two (2) [illegible] collars. 2 15/16"

Two (2) countershaft hangers 2 15/16" x 5"

Two (2) countershaft collars 2 15/16"

One (1) gear 26" diameter 2 15/16" bore.

One (1) pinion 8". 2 15/16" bore.

Total $ 763 00

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[illegible] CONCENTRATOR
(cont.)

TAILING CONVEYOR

One (1) Tail conveyor 24" x 175' Com lete with motor

Total $14,800 00

CUTTER ELEVATOR

One (1) Head pulley 20" face 30" diameter, Crown finish on CI 3 15/16" on 5'9" 3 7/16" shaft

One (1) Tail pulley 20" face 30" diameter, Crown finish on CI 3 15/16" 2 15/16" shaft

One (1) 30" [illegible] Iron.

Two (2) Head shaft journal boxes 3 7/16" shaft x 7".

Two (2) Countersh aft journal boxes 2 15/16 x 7" shaft.

Two (2) 3 7/16" [illegible]

Two (2) 2 15/16" [illegible]

Total $ 699,50

One (1) Tail elevator. Iron work [illegible] and Cutter elevator iron work. $ 699,50

DEWATER BELT

One (1) 30" diameter x 24" crown face [illegible] pulley on CI 5'6" on 5'9" 3 7/16" shaft.

One (1) Tail pulley 2' x 2' on CI 2 15/16" shaft.

One (1) 30" [illegible] 3 7/16" [illegible]
One (1) Pinion 2 15/16".
Two (2) Counter shafts 5'6" x 2 15/16" [illegible] } Compound Shaft

Two (2) 3 7/16" 7" journal boxes

Four (4) 2 15/16" journal boxes

Four (4) 2 15/16" journal boxes.

Total $ 729 00

[illegible] Motor Pinion
Main line shaft

One (1) 3 15/16" x [illegible] - [illegible]

One (1) pcs. 3 15/16" x 20' - [illegible]

Two (2) " 3 7/16" x 20' - [illegible]

One (1) 3 15/16" Fl. coupling.

One (1) 3 15/16" x 3 7/16" Fl. coupling.

One (1) 3 7/16" Fl coupling.

Total $ 634.00

ROOT & DRAIN, CO CRYSTRATOR
(cont.)

TAIL SHAFT

Two (2) rea 2 15/16" x 22'0" shaft.

One (1) " 2 15/16" Tail line.

Total $ 198.00

JOURNAL BOXES

Five (5) 2 15/16" x 10" Journal boxes.

Five (5) 2 15/16" Journal boxes Tip room.

Six (6) 2 15/16"x 7" " "

Two (2) 2 15/16" et cola

Two (2) 3 7/16" " "

Two (2) 2 15/16" " "

Total $ 289.00

LIFT [illegible]

Return Elevator - Line Shaft lev. One (1) 20 x 12 x 3 15/16"
One (1) 20 x 12 x 2 15/16".

Tail Elevator - One (1) 25 x 12 2 15/16".
One (1) 25 x 12 2 15/16".

Splitter Elevator - One (1) 20 x 12 x 2 15/16"
One (1) 20 x 12 x 2 15/16".

Mid Elevator - One (1) 20 x 12 x 2 7/16".
One (1) 20 x 12 x 2 7/16".

Screens - Dirt Lg 18" x 12" 2 15/16".
Scr. 42" x 12" 2 15/16"

Return Lg 18" x 8" 2 15/16".
Scr. 32" x 8" 2 15/16".

Sand Lg 18" x 8" 2 7/16".
Scr. 42" x 8" 2 7/16".

Gumber Tip - Lg Shaft One (1) 20 x 12 2 15/16".
One (1) 20 x 12 2 7/16".

Lumber Tip - Two (2) 30" dia x 12 face 2 7/16" bore.

Water Drop - One (1) 12" dia. x 8 face 2 15/16" bore.
One (1) 42" dia. x 8 face 2 15/16" bore.

Total $1,930.00

50 - 24" Elevator cups. #10 steel. $3.500 $525.00

50 - 15" " " #10 " $3.000 $450.00

30' C.I. 12" spouts

Total $1,125.00

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BOOT & IRON, CONCENTRATOR
(cont.)

PULLEY LIST

One (1) Main drive jig Room - Pk 72" x 3 15/16" bore pulley

One (1) motor 18" - 10 groove-D belt bore to fit motor - 150 load

Ten (10) D belts D4360.

Drive — Total $1,050.00

TABLE ROOM DRIVE

One (1) Motor pulley 13" - 5 grooves.

One (1) L s pulley 60" 2 15/16" bore

Five (5) 3 belts 3-300 V belt.

Drive — Total $ 435.00

CONVEYORS

~~One (1) 4-11 conveyor - 24" 175' centers~~ ~~100'-5" x 30"~~

One (1) Return elevator belt. 90'-9" " 24"

One (1) Bottom elevator belt 70'-9" " 20"

One (1) Sand elevator belt 90'-9" " 20"

One (1) Dry belt (Optional) 46'-9" " 24"

One (1) Return elevator belt drive 35-0 12" 6 ply.
Bottom " " " 30 12" 6 "
Pulling " " " 44 12" 6 "
Sand " " " 30 12" 6 "

Screens 70' 12"

Rolls- Primary 60' 12"
Rolls-Return 60' 12"

Jigs- Roucher 26-0 12" 6 ply
Cleaner 40-0 12" 6 "

Sand Trap 20-0 10" 6 "
" Rolls 60-0 10" 6 "

Tables 160' 4" 5 ply — Total $5,747.90

One (1) 4" Central mill pump with foot valve — Total $ 525.00

Five (5) Table drives 1½ x 8 flat face 3 7/16" bore. — Total $ 250.00

PUMP DRIVES

Two (2) 6" - 4 Groove Motor pulleys

Two (2) 8" - 4 " Pump "

Four (4) V belts 3'0" centers. — Total $ 145 00

ROT & [illegible] MOTOR
(cont.)

ROLL DRIVES

One (1) ri ry - 24 x 12 x [illegible] 15/16" on line shaft.

One (1) 24 x 12 x 3 15/16" bore. [illegible] turn 36" x 14.

One (1) and - 24" x 12 [illegible] 7/16" bore

Total $ 225.00

[illegible]

One (1) 150 [illegible], 6 [illegible] cle, _____ volt, [illegible] phase, slip ring type, 870 [illegible] motor.

Total $3,560 00

TAIL [illegible]

One (1) 20 [illegible] / [illegible] ee [illegible] above)

One (2) 5 [illegible] [illegible] motors

One (1) 25 [illegible] " [illegible] motors.

Total $1,870.00

100 ft. 12" tailing grout - [illegible] in [illegible] line, steel
250 ft. 12" " " mill.
2000 [illegible] 8 [illegible] steel

Total $ 590.00

Mill - 1 in [illegible] valves

[illegible] - [illegible]

Total $3,500.00

One (1) 10-0 x [illegible] [illegible] feeder [illegible] motor.

Total $1,700.00

GRAND TOTAL $61,064.90

ESTIMATED PRICES ONLY-SUBJECT TO REVISION