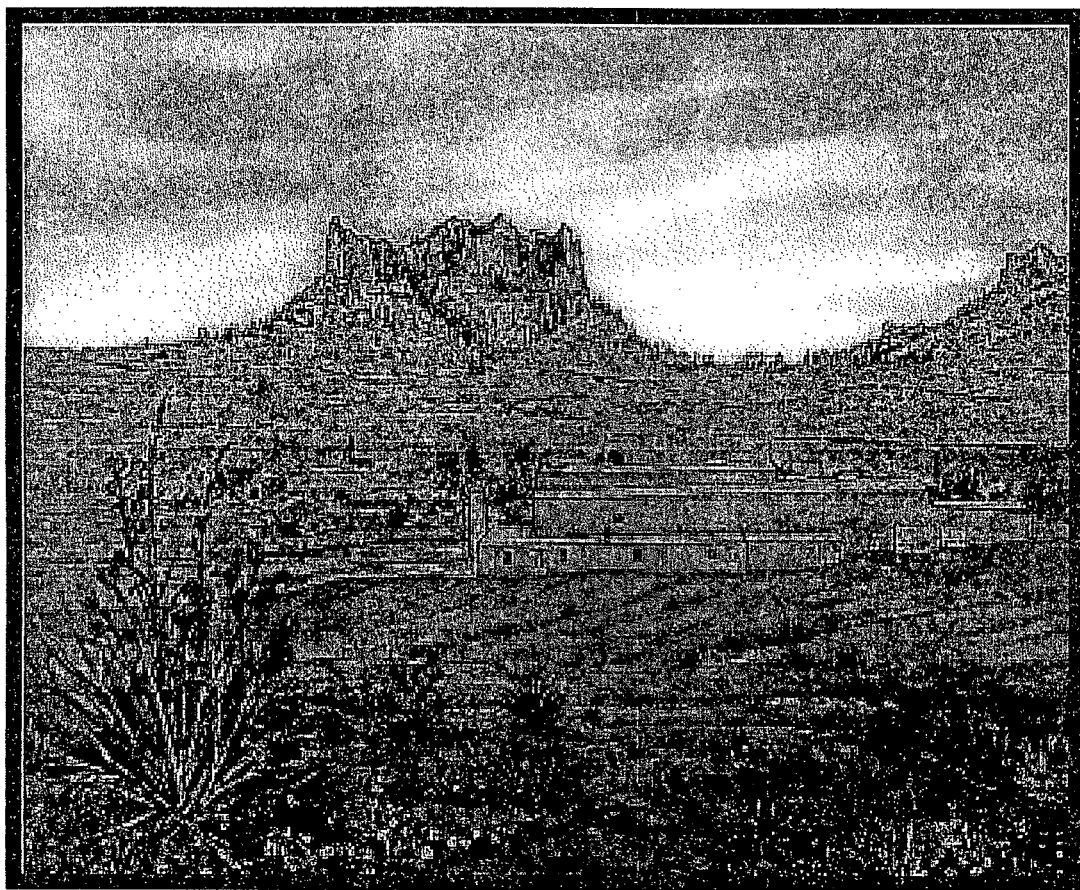


**Application for Amendment of
USNRC Source Materials License SUA-1534
Three Crow Expansion Area
Crawford, Nebraska**

**Environmental Report
Volume II
Appendices**



**Prepared by
Crow Butte Resources, Inc.
86 Crow Butte Road
Crawford, Nebraska 69339**

August 2010

CROW BUTTE RESOURCES, INC.



Nuclear Regulatory Commission

Environmental Report

Volume II - Appendices

Three Crow Expansion Area

August 2010

CROW BUTTE RESOURCES, INC.

Environmental Report Three Crow Expansion Area



TCEA Environmental Report Appendices

Appendix

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- D Geophysical Boring Logs
- E Three Crow Pumping Test #7 Report
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CROW BUTTE RESOURCES, INC.

Environmental Report Three Crow Expansion Area



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CROW BUTTE RESOURCES, INC.

**Environmental Report
Three Crow Expansion Area**



APPENDIX A

**WATER WELL COMPLETION
REPORTS**

Mail to
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008-194934-WNPF(2)

October 2001
DNR Form 145

Department of Natural Resources

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

BOW2006 1

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194934 Registration No. 6-151081
Owner Code No. 39475 Receipt No. 123418 WNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA
3. a. Well Location: SE 1/4 of the NE 1/4 of Section 30, Township 31 North, Range 52 West, Daves County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 2260 feet from the (North) section line and 916 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 30 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-1
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____ (indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y) _____
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y) _____
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y) _____
g. Location of water use of abandoned well: _____

8. Pump Information

6-151081

BOW2006-1

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA

c. Pumping Rate 15 gallons per minute. ☐ Measured ☒ Estimated

d. Drop pipe diameter 2 inches e. Length of drop pipe 120 feet

f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos

h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 135 feet. b. Static water level: 52.8 feet.
 c. Pumping water level 103 feet. d. Well Construction began 06/09/06
 e. Well construction completed 07/09/06 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	45	Casing	4.320	4.950	0.297	PVC		Certa-Iok
45	135	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	45	Grout	Neat Cement
45	135	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	40	Quaternary Alluvium			
40	132	ST/SS Interbedded			
132	170	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

BOW2006-1

Mail to:
DNR
PO Box 94878
Lincoln, NE 68509-4878
Phone (402) 471-2363

10302008-194935-WWPF(2)

Department of Natural Resources

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

BOW2006 Z

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194935 Registration No. 6-151082
Owner Code No. 39475 Receipt No. 123475 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2493
Drilling Firms Email Address NA

3. a. Well Location: SW 1/4 of the SE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 945 feet from the (South) section line and 2490 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 30 T 31N R 52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-2

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (45-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

BOW2006-2

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 15 gallons per minute. ☐ Measured ☒ Estimated
- d. Drop pipe diameter 2 inches e. Length of drop pipe 160 feet
- f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
- h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 180 feet. b. Static water level: 60 feet.
 c. Pumping water level 110 feet. d. Well Construction began 06/11/07
 e. Well construction completed 07/11/07 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are ☒ Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	75	Casing	4.320	4.950	0.297	PVC		Certa-lok
75	180	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	75	Grout	Neat Cement
75	180	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	40	Quaternary Alluvium			
40	175	ST/SS Interbedded			
175	180	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

BOW2006-2

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008 - 194936 - MNW(2)
Department of Natural Resources

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

BOW2006 3

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194936 Registration No. 6-151083
Owner Code No. 39475 Receipt No. R23478 MNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA
3. a. Well Location: SE 1/4 of the SE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 125 feet from the (South) section line and 30 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 30 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-3
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____ (indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y) _____
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y) _____
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y) _____
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA

c. Pumping Rate 15 gallons per minute. Measured ☒ Estimated ☐

d. Drop pipe diameter 2 inches e. Length of drop pipe 180 feet

f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos

h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 190 feet. b. Static water level: 77 feet.
 c. Pumping water level 127 feet. d. Well Construction began 04/29/05
 e. Well construction completed 05/29/05 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	50	Casing	4.320	4.950	0.297	PVC		Certa-Iok
50	190	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	50	Grout	Neat Cement
50	190	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	40	Quaternary Alluvium			
40	190	ST/SS Interbedded			
190	200	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Sal E. Lund
 Water Well Contractor's Signature

October 8, 2008
 Date

BOW2006-3

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

BOW2006-4

FOR DEPARTMENT USE ONLY

Registration Date _____ Sequence No. _____ Registration No. _____
Owner Code No. _____ Receipt No. _____ NRD _____

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA
3. a. Well Location: SW 1/4 of the SW 1/4 of Section 28, Township 31 North, Range 52 West, Sioux County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 1275 feet from the (South) section line and 790 feet from the (West) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 28 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-4

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) /(d) /(y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) /(d) /(y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) /(d) /(y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ No

Is pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
 c. Pumping Rate 5 gallons per minute. ☐ Measured ☒ Estimated
 d. Drop pipe diameter 2 inches e. Length of drop pipe 180 feet
 f. Pumping equipment installed 11/30/2009 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 280 feet. b. Static water level: 105 feet.
 c. Pumping water level 155 feet. d. Well Construction began 11/28/08
 e. Well construction completed 12/28/08 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	115	Casing	4.320	4.950	0.297	PVC		Certa-lok
115	205	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	115	Grout	Neat Cement
115	205	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	20	Quaternary Alluvium			
20	260	ST/SS Interbedded			
260	280	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Sal E. Land
 Water Well Contractor's Signature

December 8, 2009
 Date

BOW2006-4

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

BOW2006-5

FOR DEPARTMENT USE ONLY

Registration Date _____ Sequence No. _____ Registration No. _____
Owner Code No. _____ Receipt No. _____ NRD _____

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA

3. a. Well Location: NE 1/4 of the NE 1/4 of Section 25, Township 31 North, Range 53 West, Sioux County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 1106 feet from the (North) section line and 93 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 25 T 31N R53W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-5

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ No

Is pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
 c. Pumping Rate 5 gallons per minute. Measured ☒ Estimated ☐
 d. Drop pipe diameter 2 inches e. Length of drop pipe 140 feet
 f. Pumping equipment installed 11/30/2009 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 180 feet. b. Static water level: 50.4 feet.
 c. Pumping water level 100 feet. d. Well Construction began 10/23/09
 e. Well construction completed 11/22/09 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	60	Casing	4.320	4.950	0.297	PVC		Certa-lok
60	155	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	60	Grout	Neat Cement
60	155	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	20	Quaternary Alluvium			
20	155	ST/SS Interbedded			
155	180	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Rob E. Land
 Water Well Contractor's Signature

December 3, 2009
 Date

BOW2006-5

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

BOW2006-6

FOR DEPARTMENT USE ONLY

Registration Date _____ Sequence No. _____ Registration No. _____
Owner Code No. _____ Receipt No. _____ NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA

3. a. Well Location: SW 1/4 of the SW 1/4 of Section 30, Township 31 North, Range 52 West, Sioux County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 70 feet from the (South) section line and 7 feet from the (West) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 30 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-6

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ No

Is pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
 c. Pumping Rate 5 gallons per minute. ☐ Measured ☒ Estimated
 d. Drop pipe diameter 2 inches e. Length of drop pipe 140 feet
 f. Pumping equipment installed 11/30/2009 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 230 feet. b. Static water level: 50.3 feet.
 c. Pumping water level 100 feet. d. Well Construction began 10/23/09
 e. Well construction completed 11/22/09 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	60	Casing	4.320	4.950	0.297	PVC		Certa-lok
60	195	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	60	Grout	Neat Cement
60	195	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	20	Quaternary Alluvium			
20	195	ST/SS Interbedded			
195	230	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Sal E. Land December 8, 2009
 Water Well Contractor's Signature Date

BOW2006-6

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

BOW2006-7

FOR DEPARTMENT USE ONLY

Registration Date _____ Sequence No. _____ Registration No. _____
Owner Code No. _____ Receipt No. _____ NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA

3. a. Well Location: SW 1/4 of the NW 1/4 of Section 33, Township 31 North, Range 52 West, Sioux County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 1326 feet from the (North) section line and 1096 feet from the (West) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 33 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable BOW2006-7

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 5 gallons per minute. ☐ Measured ☒ Estimated
- d. Drop pipe diameter 2 inches e. Length of drop pipe 140 feet
- f. Pumping equipment installed 11/30/2009 g. Pump Brand Grundfos
- h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 180 feet. b. Static water level: 46.9 feet.
 c. Pumping water level 96.9 feet. d. Well Construction began 10/23/09
 e. Well construction completed 11/22/09 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are ☒ Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	60	Casing	4.320	4.950	0.297	PVC		Certa-lok
60	155	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	60	Grout	Neat Cement
60	155	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil			
10	20	Quaternary Alluvium			
20	155	ST/SS Interbedded			
155	180	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Sal E. Land
 Water Well Contractor's Signature

December 8, 2009
 Date

BOW2006-7

Mail to
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008 - 194926 - WNRFC2

Department of Natural Resources

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

COW2006-1

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194926 Registration No. 6-151074
Owner Code No. 39495 Receipt No. R23418 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA
3. a. Well Location: NE 1/4 of the NE 1/4 of Section 25, Township 31 North, Range 53 West, Sioux County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 1180 feet from the (North) section line and 45 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 29 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-1
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 25 gallons per minute. Measured ☒ Estimated ☐
- d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
- f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
- h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 829 feet. b. Static water level: 181 feet.
- c. Pumping water level 281 feet. d. Well Construction began 08/25/06
- e. Well construction completed 09/24/06 f. Bore hole diameter in inches Top 8 Bottom 8
- g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	764	Casing	4.320	4.950	0.297	PVC		Certa-lok
764	829	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

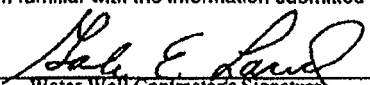
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	764	Grout	Neat Cement
764	829	Grout	Neat Cement

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	695	830	Sandstone w/ Clay Interbeds
10	30	Quaternary Alluvium	830	840	Shale
30	170	ST/SS Interbedded			
170	695	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 27, 2008
 Date

COW2006-1

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008 - 194929 - WWR(2)
Department of Natural Resources

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

COW2006 Z

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194929 Registration No. 6-15/075
Owner Code No. 39475 Receipt No. R23418 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2493
Drilling Firms Email Address NA

3. a. Well Location: NW 1/4 of the NE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 845 feet from the (North) section line and 2460 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 30 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-2

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 25 gallons per minute. ☐ Measured ☒ Estimated
- d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
- f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
- h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 851 feet. b. Static water level: 212 feet.
- c. Pumping water level 312 feet. d. Well Construction began 08/23/06
- e. Well construction completed 09/22/06 f. Bore hole diameter in inches Top 8 Bottom 8
- g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	781	Casing	4.320	4.950	0.297	PVC		Certa-Jok
781	851	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

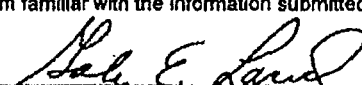
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	781	Grout	Neat Cement
781	851	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	681	862	Sandstone w/ Clay Interbeds
10	35	Quaternary Alluvium	862	880	Shale
35	195	ST/SS Interbedded			
195	681	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

COW2006-2

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2383

10302002-194930-WNRFC2)

October 2001
DNR Form 145

Department of Natural Resources

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

COW2006 3

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194930 Registration No. 6-151076
Owner Code No. 29475 Receipt No. 1223473 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2493
Drilling Firms Email Address NA

3. a. Well Location: NE 1/4 of the NE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 1240 feet from the (North) section line and 410 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 30 T 31N R 52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-3

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y) _____
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y) _____
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y) _____
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L. Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
 Pump Installer's Firm Email Address NA

c. Pumping Rate 25 gallons per minute. Measured ☒ Estimated ☐

d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet

f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos

h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 811 feet. b. Static water level: 185 feet.

c. Pumping water level 285 feet. d. Well Construction began 08/18/06

e. Well construction completed 09/17/06 f. Bore hole diameter in inches Top 8 Bottom 8

g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	731	Casing	4.320	4.950	0.297	PVC		Certa-lok
731	811	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	731	Grout	Neat Cement
731	811	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	640	814	Sandstone w/ Clay Interbeds
10	45	Quaternary Alluvium	814	840	Shale
45	200	ST/SS Interbedded			
200	640	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

COW2006-3

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

10302008-194931 NWRP(2)
October 2001
DNR Form 145
Department of Natural Resources

COW2006 4

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194931 Registration No. 6-151077
Owner Code No. 39475 Receipt No. R23418 UNIN NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA

3. a. Well Location: SE 1/4 of the SE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 206 feet from the (South) section line and 17 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 30 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-4

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

COW2006-4

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA

c. Pumping Rate 25 gallons per minute. Measured ☒ Estimated ☐
 d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
 f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 878 feet. b. Static water level: 233 feet.
 c. Pumping water level 333 feet. d. Well Construction began 08/21/06
 e. Well construction completed 09/20/06 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	783	Casing	4.320	4.950	0.297	PVC		Certa-Iok
783	878	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

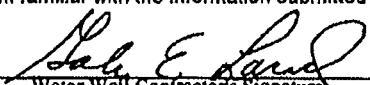
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	783	Grout	Neat Cement
783	878	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	660	885	Sandstone w/ Clay Interbeds
10	40	Quaternary Alluvium	885	910	Shale
40	230	ST/SS Interbedded			
230	660	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

COW2006-4

Mail to:
DNR
PO Box 94676
Lincoln NE 68509-4676
Phone (402) 471-2363

10302008-194927-WWRF(2)

October 2001
DNR Form 145

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

COW2006 5

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194927 Registration No. 6-151078
Owner Code No. 29475 Receipt No. 123478 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA
3. a. Well Location: SE 1/4 of the SW 1/4 of Section 29, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 141 feet from the (South) section line and 1940 feet from the (West) section line.
(CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 29 T 31N R 52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-5
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

B-K1678

8. Pump Information

- a. Is pump installed at this time? ☒ Yes ☐ No
 Is pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No
 If pump is installed by pump installer, please fill out license number below
- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 25 gallons per minute. Measured ☒ Estimated ☐
 d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
 f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 901 feet. b. Static water level: 261 feet.
 c. Pumping water level 361 feet. d. Well Construction began 08/29/06
 e. Well construction completed 09/28/06 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	851	Casing	4.320	4.950	0.297	PVC		Certa-lok
851	901	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	851	Grout	Neat Cement
851	901	Gravel Pack	Natural Gravel

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	680	901	Sandstone w/ Clay Interbeds
10	40	Quaternary Alluvium	901	920	Shale
40	255	ST/SS Interbedded			
255	680	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Rob E. Land
 Water Well Contractor's Signature

October 20, 2008
 Date

COW2006-5

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

0104201D - 202684 WNEF(2)
Department of Natural Resources
STATE OF NEBRASKA

October 2001
DNR Form 145

DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

COW2006-6

FOR DEPARTMENT USE ONLY

Registration Date 11/1/10 Sequence No. 202684 Registration No. 6-154913
Owner Code No. 39475 Receipt No. 124339 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2493
Drilling Firms Email Address NA
3. a. Well Location: SE 1/4 of the SW 1/4 of Section 28, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 62 feet from the (South) section line and 2311 feet from the (West) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) _____
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-6
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(Indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y) _____
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y) _____
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y) _____
g. Location of water use of abandoned well: _____

8. Pump Information

- a. Is pump installed at this time? ☒ Yes ☐ No
 Is pump installed by well owner in section 1? ☒ Yes ☐ No . Is pump installed by contractor in section 2? ☐ Yes ☒ No
 If pump is installed by pump installer, please fill out license number below
- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 25 gallons per minute. Measured ☒ Estimated ☐
 d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
 f. Pumping equipment installed 11/30/2009 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 940 feet. b. Static water level: 269 feet.
 c. Pumping water level 369 feet. d. Well Construction began 11/24/08
 e. Well construction completed 12/24/08 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	836	Casing	4.320	4.950	0.297	PVC		Certa-lok
836	881	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

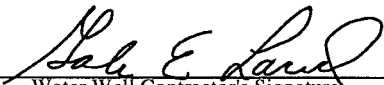
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	836	Grout	Neat Cement
836	881	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	675	881	Sandstone w/ Clay
10	20	Quaternary Alluvium	881	940	Shale
20	320	ST/SS Interbedded			
320	675	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

December 3, 2009
 Date

COW2006-6

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

October 2001
DNR Form 145

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

COW2006-7

FOR DEPARTMENT USE ONLY

Registration Date _____ Sequence No. _____ Registration No. _____
Owner Code No. _____ Receipt No. _____ NRD _____

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA

3. a. Well Location: SE 1/4 of the NW 1/4 of Section 28, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 1338 feet from the (North) section line and 2525 feet from the (West) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 28 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable COW2006-7

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA

c. Pumping Rate 25 gallons per minute. ☐ Measured ☒ Estimated
 d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
 f. Pumping equipment installed 11/30/2009 g. Pump Brand Grundfos
 h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 720 feet. b. Static water level: 213 feet.
 c. Pumping water level 313 feet. d. Well Construction began 11/19/08
 e. Well construction completed 12/19/08 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	645	Casing	4.320	4.950	0.297	PVC		Certa-lok
645	695	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	645	Grout	Neat Cement
645	695	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	629	694	Sandstone w/ Clay
10	20	Quaternary Alluvium	694	720	Shale
20	280	ST/SS Interbedded			
280	629	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 December 8, 2009
 Date

COW2006-7

Submit to:
Department of Natural Resources
301 Centennial Mall South
P.O. Box 94676
Lincoln, Nebraska 68509-4676
Phone (402) 471 2363

Oct 2007
DNR DECO

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES

This form is required to be filed
within 60 days of decommissioning
of the water well.

NOTICE OF WATER WELL DECOMMISSIONING

FOR DEPARTMENT USE ONLY

Date Filed 9/12/08 Owner Code No. 39475 Registration No. —
09122008 - 194217 - DECF (1) UPPER NIobrara WHITE NRD
Well ID

1. Well Owner's First Name _____ Last Name _____
OR Company Name Crow Butte Resources, Inc.
Attention Name Wade Beins
Address PO BOX 169
City Crawford State NE Zip 69339 Telephone 308 665 2215 ext 113

2. Contractor (if applicable) Landrill Exploration Telephone Number (308) 665 2493
Address 102 Pine St. Contractor License No. 19019
City Crawford State NE Zip Code 69339 +
Email: _____

3a. Well Registration No. Well was not registered
3b. Purpose of Well: Pump Test Well (monitoring)
3c. Date Well Last Operated Well was not completed 3d. Date of Decommissioning 8-1-06

3e. List complete well location: Legal, Footage and/or GPS Coordinates
Well location: SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 30, Township 31 North, Range 52 E W 7, Dawes County.
The well is 2420 feet from the (N ☒ or S ☐) section line and 950 feet from the (E ☒ W ☐) section line.

OR Latitude Degree: _____ Minute: _____ Second: _____
Longitude Degree: _____ Minute: _____ Second: _____

3f. Location of Water Use: Same as well location

4. Actual Method for Decommissioning of Well

Placement Depth in Feet		Detailed Description of Material
From	To	
768'	692'	20 tubes of bentonite chips
692'	0'	13 bags of Plug Gel abandonment mud weighing 8.8 lbs/gallon -
		Marsh Funnel Data TD vis 27 - Final vis 75

5a. Well Casing Size: 4.5' Certalok

5b. Bore Hole Diameter: 8 inch

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Wade Beins
Contractor (**owner)

9-10-08

Date

RECEIVED

SEP 12 2008

DEPARTMENT OF
NATURAL RESOURCES

* Owner may sign on wells prior to 7/1/2001 or sandpoint or if well no longer exists and it is unknown when decommissioning occurred

The Department reserves the right to request verification of information provided.

Mail to
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008 194928 - WNWPF(2)

October 2001
DNR Form 145

Department of Natural Resources
STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

CPW2006 2

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194928 Registration No. 0-151073
Owner Code No. 39475 Receipt No. 123478 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA
3. a. Well Location: SE 1/4 of the NE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 2290 feet from the (North) section line and 890 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction Yes No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable(give legal descriptions) Section 30 T 31N R 52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable CPW2006-2
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

CPW2006-2

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L. Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 25 gallons per minute. Measured ☒ Estimated ☐
- d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
- f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
- h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 871 feet. b. Static water level: 192 feet.
- c. Pumping water level 292 feet. d. Well Construction began 07/26/06
- e. Well construction completed 08/25/06 f. Bore hole diameter in inches Top 8 Bottom 8
- g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a		b	c	d	e	f	g	h
Placement Depth in Feet		Casing or Screen	Inside Diameter	Outside Diameter	Wall Thickness	Type of Material	Screen Slot Size	Trade Name
From	To							
0	791	Casing	4.320	4.950	0.297	PVC		Certa-lok
791	871	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

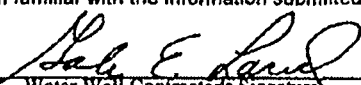
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	791	Grout	Neat Cement
791	871	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	665	869	Sandstone w/ Clay Interbeds
10	40	Quaternary Alluvium	869	900	Shale
40	230	ST/SS Interbedded			
230	665	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

CPW2006-2

Mail to
ONR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008 - 194932 - WNW2F(2) October 2001
DNR Form 145

STATE OF NEBRASKA

Department of Natural Resources

DEPARTMENT OF NATURAL RESOURCES

WATER WELL REGISTRATION

UBCOW21

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194932 Registration No. 6-151079
Owner Code No. 39475 Receipt No. 123418 WNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215

2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2493
Drilling Firms Email Address NA

3. a. Well Location: SE 1/4 of the NE 1/4 of Section 30, Township 31 North, Range 52 West, Dawes County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 2294 feet from the (North) section line and 845 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 30 T 31N R 52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable UBCOW2006-1

4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____

5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)

6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____

7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

UBCOW2006-1

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

- b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665 - 2215
 Pump Installer's Firm Email Address NA
- c. Pumping Rate 25 gallons per minute. ☐ Measured ☒ Estimated
- d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet
- f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos
- h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

- a. Total well depth 744 feet. b. Static water level: 193 feet.
- c. Pumping water level 243 feet. d. Well Construction began 07/28/06
- e. Well construction completed 08/27/06 f. Bore hole diameter in inches Top 8 Bottom 8
- g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	654	Casing	4.320	4.950	0.297	PVC		Certa-lok
654	744	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

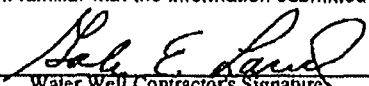
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	654	Grout	Neat Cement
654	744	Gravel Pack	Natural Gravel Pack

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	655	742	Sandstone w/ Clay Interbeds
10	40	Quaternary Alluvium	742	760	Clay
40	230	ST/SS Interbedded			
230	655	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 8, 2008
 Date

UBCOW2006-1

Mail to:
DNR
PO Box 94676
Lincoln, NE 68509-4676
Phone (402) 471-2363

10302008-194933-WNR(2)

October 2001
DNR Form 145

Department of Natural Resources

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
WATER WELL REGISTRATION

UBCOW21

FOR DEPARTMENT USE ONLY

Registration Date 10/30/08 Sequence No. 194933 Registration No. 6-151080
Owner Code No. 39475 Receipt No. R23478 UNW NRD

1. a. Well Owner's First Name _____ Last Name _____
b. Company Name Crow Butte Resources
c. Correspondent Name _____ Attention Wade Beins
Address PO BOX 169, 86 Crow Butte Road
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
2. Contractor's License No. 19019 Contractor's Name Gale Land
Contractor's Email Address NA
Drilling Firm Name Landrill Exploration
Address 102 Pine Street
City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2493
Drilling Firms Email Address NA
3. a. Well Location: SE 1/4 of the SE 1/4 of Section 30, Township 31 North, Range 52 West, Sioux County.
b. Natural Resources District Upper Niobrara/White NRD
c. The well is 218 feet from the (South) section line and 36 feet from the (East) section line.
(CIRCLE ONE) (CIRCLE ONE)
or Latitude Degree _____ Minute _____ Second _____
Longitude Degree _____ Minute _____ Second _____ Differential Correction _____ Yes _____ No
d. Street address and subdivision, if applicable _____
Block _____ Lot _____
e. Location of water use, if applicable (give legal descriptions) Section 29 T 31N R52W
f. If for irrigation, the land to be irrigated is _____ acres.
g. Well reference letter(s), if applicable UBCOW2006-2
4. Permits
Management Area Permit Number _____ Surface Water Permit Number _____
Geothermal Permit Number _____ Industrial Permit Number _____
Municipal Permit Number _____ Transfer Out-of-State Permit Number _____
Well Spacing Permit Number _____ Conduct Permit Number _____
Other Permit Number _____
5. Purpose of well (indicate one): _____ Aquaculture _____ Commercial/Industrial _____ Dewatering (over 90 days)
_____ Domestic _____ Ground Heat Exchanger _____ Groundwater Source Heat Pump _____ Irrigation _____ Injection
_____ Livestock X Monitoring _____ Observation _____ Public Water Supply (with spacing (46-638))
_____ Public Water Supply (without spacing) _____ Recovery _____ Other _____
(indicate use)
6. Wells in a Series.
a. Is this well a part of a series? _____ Yes go to part b of this section. X No go to part 7 of this application.
b. If one or more of the wells in the series is currently registered, give the well registration number. _____
c. How many wells in the series are you registering at this time? _____
7. Replacement and abandoned well information.
a. Is this well a replacement well? _____ Yes X No
b. Registration number of abandoned well: _____ If not registered, date abandoned well was constructed (m) / (d) / (y)
c. Replacement well is _____ feet from abandoned well. d. Abandoned well last operated (m) / (d) / (y)
e. Original well pump column size: _____ inches. f. Completion of original well abandonment on (m) / (d) / (y)
g. Location of water use of abandoned well: _____

8. Pump Information

a. Is pump installed at this time? ☒ Yes ☐ NoIs pump installed by well owner in section 1? ☒ Yes ☐ No Is pump installed by contractor in section 2? ☐ Yes ☒ No

If pump is installed by pump installer, please fill out license number below

b. Pump Installer's License No. 29370 Pump Installer's Name Robert L Dunn
 Pump Installer's Email Address NA
 Pump Installer's Firm Name Crow Butte Resources
 Pump Installer's Firm Address PO Box 169, 86 Crow Butte Road
 City Crawford State NE Zip Code 69339 Telephone Number (308) 665-2215
 Pump Installer's Firm Email Address NA

c. Pumping Rate 25 gallons per minute. ☐ Measured ☒ Estimated

d. Drop pipe diameter 2 inches e. Length of drop pipe 400 feet

f. Pumping equipment installed 2/14/2008 g. Pump Brand Grundfos

h. This well will be used to pump less than 50 gpm ☒ Yes ☐ No

9. Well Construction Information

a. Total well depth 766 feet. b. Static water level: 234 feet.
 c. Pumping water level 284 feet. d. Well Construction began 06/12/07
 e. Well construction completed 07/12/07 f. Bore hole diameter in inches Top 8 Bottom 8
 g. Casing and Screen Joints are Welded ☐ Glued ☐ Threaded ☐ Other Spline & Groove

10. Well Construction (Casing & Screen)- c, d, e & g measurements should be in inches to three decimal places

a Placement Depth in Feet		b Casing or Screen	c Inside Diameter	d Outside Diameter	e Wall Thickness	f Type of Material	g Screen Slot Size	h Trade Name
From	To							
0	666	Casing	4.320	4.950	0.297	PVC		Certa-lok
666	766	Screen	3.000	3.500	0.250	PVC	0.020	Johnson

11. Grout and Gravel Pack

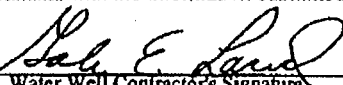
Placement Depth in Feet		Grout or Gravel Pack	Material Description
From	To		
0	666	Grout	Neat Cement
666	766	Grout	Neat Cement

12. Geologic Materials Logged

Depth in Feet		Description	Depth in Feet		Description
From	To		From	To	
0	10	Topsoil	660	769	Sandstone w/ Clay Interbeds
10	40	Quaternary Alluvium	769	770	Shale
40	230	ST/SS Interbedded			
230	660	Clay			

(Additional Sheets may be submitted)

13. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.


 Water Well Contractor's Signature

 October 28, 2008
 Date

UBCOW2006-2

CROW BUTTE RESOURCES, INC.

Technical Report Three Crow Expansion Area



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CROW BUTTE RESOURCES, INC.

**Environmental Report
Three Crow Expansion Area**



APPENDIX B

**WATER WELL ABANDONMENT
RECORDS**

CROW BUTTE RESOURCES, INC.

Environmental Report Three Crow Expansion Area



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Appendix B-1 Farner 1 Oil and Gas Test Well

Nebraska Oil and Gas Conservation Commission
Form 6

PLUGGING RECORD

Instructions: Within thirty days following the plugging of a dry hole, or the abandonment of a producing well, the owner or operator shall submit this form in duplicate for wells on patented or Federal lands, and in triplicate for wells on State lands. Geological information will be held confidential for a period of twelve months if requested in writing. Fill out form as completely as possible.

Operator Graham S. Campbell and Brinkerhoff Drilling Company, Inc.	
Address 1412 Walker Bank Building 870 Denver Club Building Salt Lake City, Utah 84111 Denver, Colorado 80202	
Well Number 1	Field and reservoir (if wildcat, so state) Farner F. Wildcat
Location NW SW Sec. 26 Twp. 31 N Range 52 W County Dawson	
Permit location 1950 N. from (N) line 660 N. from (S) line of SW 1/4	
Spud Date 8/24/69	Date Plugged 8/28/69
Date reached T.D. 8/27/69	Total Depth 3470' Log
Elevation 3909' KB (KB) (GL) (DP) 3899' GR	Producing rate on initial completion Oil (bbl/day) Gas (MCF/day) Water (bbl/day)
Application to drill this well was filed in name of: As Above	Producing rate at time of abandonment Oil (bbl/day) Gas (MCF/day) Water (bbl/day)

CONDITION OF HOLE

Note each abbreviation indicating oil or gas. Indicate which formations open to well bore at time of plugging.	Fluid Contact	Depth Interval	Size, kind and depth of plug used. Indicate same square cemented giving amount of cement.
Plug #1		610' - 505'	35 sq.
Plug #2		153' - 110'	15 sq.
Plug #3		Top of Surface Casing	10 sq.

Size, kind and depth of any additional plugs:

CASING RECORD

Size casing in O.D.	Weight lb./ft.	Set Depth	Amount Recovered	Amount left in well	Method of setting (shot, cement, etc.)
8-5/8"	24#	130.56'	None	130.56'	

Was hole filled with mud-lime fluid? **Yes**

If this well was plugged back for use as a fresh water well, give pertinent details of plugging operations to bore of fresh water well and attach letter of notification covering completion of this well as a fresh water well and agreeing to assume full liability for subsequent plugging which may be required.

I/We hereby swear or affirm that the statements herein made are complete and correct.

(If new dry hole, complete well log on reverse side of form)

Vice President

September 23, 1969

FORMATION LOG TOPS

Chadron Sandstone	550'
Pierre Shale	603'
Niobrara	2030'
Greenhorn	2572'
Muddy (1)	2860'
Muddy (2)	2950'
Muddy (3)	3040'
Skull Creek	3067'
Dakota Siltstone	3250'
Dakota Sandstone	3280'
Morrison	3420'

CORES: NONE

DST: NONE

LOGS: Schlumberger (ES, Sidewall Neutron Porosity
Sonic Gamma Ray

Appendix B-2 Federal 1 (W 030995) Oil and Gas Test Well

2

Subsidiary Oil and Gas Conservation Commission
Form 2

PLUGGING RECORD

Indemnitor: Within sixty days following the stopping of a dry hole, or the abandonment of a producing well, the owner or operator shall submit this form to appropriate law enforcement or Federal agency, and in duplicate for well on State lands. Confidential information will be held confidential for a period of twelve months if requested in writing. Fill out form as completely as possible.

Operator: **San Jacinto Petroleum Corp.**
Address: **500 San Jacinto Building, Houston 2, Texas**
Well Number: **1** Lease Name: **Federal (W 030995)** Field and number of wells in field: **Wildcat**
Location: **Sec. 17 Twp. 31N Range 52W** County: **DAVIES**
Fugate location: **500 N. Hwy 90 NE Sec. 540 N. Hwy 18 NW Sec. 17 1/4 of NE**
Start Date: **11-26-62** Date reached T.D.: **12-18-62** Date Plugged: **12-16-62** Total Depth: **5,584** P. & T. D.: **Surface**
Location: **3,754'** Reference (Dashed): **Specimen 01** Producing rate on initial completion: **None** Gas (MCF/day): **None** Water (Bbl/day): **None**
Additional to well this well was used in name of: **San Jacinto Petroleum Corp.** Producing rate at time of abandonment: **None** Gas (MCF/day): **None** Water (Bbl/day): **None**

CONDITION OF WELL

Notes such as: Stranded casing on the way, without proper casing report to well logs at time of plugging.

Notes	Final Casing	Depth, feet	Size, kind and depth of plug used, listed below
None	10.25" mud and cement plug		listed below.

Size, kind and depth of any additional plug: Spotted cement plugs 50-50 Pozalex plus 2% gel at following intervals:

5050-4870	50 sacks	575-475	50 sacks
3650-3500	50 sacks	3050	10 sacks
3050-2900	50 sacks	10125	mud between plugs

CASING RECORD

Size casing in O.D.	Weight per foot	Depth, feet	Amount removed	Amount left in well	Bottom of casing (feet, inches, etc.)
10-3/4"	32.75	586'	None	586'	

Was hole sealed with mud-cement plug? **YES**

If this well was plugged back for use as a high water well, give pertinent details of plugging operations to base of fresh water well and agreeing to assume full liability for subsequent plugging operations.

I/We hereby swear or affirm that the statements herein made are complete and correct.

Signature: *[Signature]*
Production Superintendent
Date: **January 4, 1963**

(If case dry hole, complete well log on reverse side of form)

Electrical Log Tools

Pierre	709
Niobrara	2125
Carlile	2410
Greenhorn	2623
"D"	2929
"G"	3002
"J"	3097
Skull Creek	3127
Dakota silt	3303
Dakota ss	3338
Morrison	3442
Sundance	3582
Spearfish	3818
Minnekahta	4092
Oyache	4127
Minnelusa (1) ss	4301
Minnelusa carbonate	4382
Middle Minnelusa	4751
Lower Minnelusa	5089
Fairbank ss	5190
Mississippian	5254
Cambrian ss	5350
Weathered or re-worked Pre-C	5359
Fresh Pre-Cambrian	5383

DET #1 4886-4904 (straddle test after logging using hookwall packers)
Open 30 min, Rec 30' very slightly gas out mud. BEWP O-O, 30 min BEWP
1608, FBIF unsuccessful, HP 2777-2817.

You will note in the attached transmittal letter we are requesting geological information on this well be held confidential for a period of 12 months.

SEP 23 1957

INSTRUCTIONS: Fill in completely as possible one copy and mail to Nebraska Geological Survey, Nebraska Hall, University of Nebraska, Lincoln, Nebraska within 15 days after posting (Revised Statutes of Nebraska, 1943, sections 87-313 to 87-317, amended by Legislative Bill 433, 2nd Session, Legislature of Nebraska.) Underline applicable words or letters, cross out those not applicable.

Legal Description Location (Example: C N/2-NE/4-NE/4):

1920 PL (B) (7) of (1)(K)(2) line of 20 PL (B) (5) of (B) (7) line of NE

Complete Mailing Address **Woodia, California** **BEST COPY**

Complete Mailing Address Denver, Colorado

Surface Pipe Data: Casing Size (inches) Size C. No. G. In. Weight _____ lbs.

Amount Est 173 N. Cement used... tax; and 22.54

Surface Hole Data: Size of hole: 1 in.; Depth of hole: 200 ft.

Total Depth of hole 3327 ft. Elevation 4000 ground

Nature of Well: (wildcat) (field extension well) (abandoned producer) derrick floor

Region for Abandonment **dry hole**

Casing record other than surface pipe (indicate amount, size and weight of each string run, how set or cemented).

whether pulled or left in hole and where cut (if partially pulled) 00000

Plugging Record (state in detail) each step in plugging procedure)

Plug set in bottom of surface casing and the sacks cement mixed and poured in. Another plug in top of casing with 10 sack cement on top.

Attach Electric or Radioactive Log or Drilling Time Record.

Plugging Procedure Approved by _____ Date _____
(Insert "blanket approval" in case of fields or areas where standard plugging procedure has been approved by
the Nebraska Geological Survey)

Name of Witness to Plugging Richard D. / Address 26 Patterson Building,
Geologist Denver, Colorado

AFFIDAVIT

I, RICHARD D. DELANEY of the H. F. Allmon Dilling Company, being first duly sworn on oath, state: That I have knowledge of the facts, statements and matters herein contained and that the same are true and correct.

In Witness whereof I heretofore set my hand and affix my official seal this 2 day of September 1957

My commission Expires: March 31, 1959

Notary Public, Gonzales, D. C.

Appendix B-4 Sikorski, Ralph 1 Oil and Gas Test Well

Nebraska Oil and Gas Conservation Commission
Form #

PLUGGING RECORD									
Interpretation: Within thirty days following the plugging of a dry hole, or the abandonment of a producing well, the owner or operator shall submit this form in duplicate for each well, including all related logs, and be responsible for work on State lands. Geological information will be held confidential for a period of twelve months if requested in writing. Fill out form as completely as possible.									
Operator Graham S. Campbell					and Brinkerhoff Drilling Company, Inc.				
Address 1412 Walker Bank Building Salt Lake City, Utah 84111					Address 870 Denver Club Building Denver, Colorado 80202				
Well Number 1	Lease Name Ralph Sikorski	Field and reservoir (if wildcat, so state) Wildcat							
Location NW 10 Sec. 10 Twp. 30 N Range 52 W		County Dawes							
Footage Location 500 N. from (R) line, 660 N. from (R) line of NW 10 Sec. 10									
Spud Date 8/19/69	Date received T.D. 8/23/69	Date Plugged 8/23/69	Driller 3826 Driller		P.S.T.D. 3826 Log				
References (booklets) 4176 GR 4186 KB		Producing rate at initial completion Oil (bbl/day) Gas (MCF/day) Water (bbl/day)							
Application to drill this well was filed in name of: As Above		Producing rate at time of abandonment Oil (bbl/day) Gas (MCF/day) Water (bbl/day)							
CONDITION OF HOLE									
Name each formation containing all or part, indicate which formations open to well bore at time of plugging.				PLM Content	Depth Interval	Size, kind and depth of plugs used. Indicate approx square cemented giving amount of cement.			
Plug #1					950' - 845'	35 Sacks Cement			
Plug #2					153' - 108'	15 Sacks Cement			
Surface casing capped									
Size, kind and depth of any additional plugs									
CASING RECORD									
Size casing in O.D.	Weight lb/ft.	Setting Depth	Amount Recovered	Amount left in well	Method of setting (shot, slipped, etc.)				
8-5/8"	24.4	128' KB	None	128'					
Was hole filled with mud-laden fluid?									
If this well was plugged back for use as a fresh water well, the plugging operations to base of fresh water sand. Attach letter from surface owner authorizing completion of this well as a fresh water well and stating its purpose and liability for subsequent plugging which may be required.									
I/We hereby agree to affirm that the above information is true and correct.									
(If new dry hole, complete well log on reverse side of form) SEP 2 - 1969 John Vice President September 2, 1969 Date									

FORMATION LOG TOPS

Pierrre	900'
Niobrara	2270'
Greenhorn	2807'
Muddy (1)	3100'
Muddy (2)	3190'
Muddy (3)	3227'
Muddy (4) (J)	3280'
Dakota siltstone	3490'
Dakota sandstone	3520'
Harrison	3585'

CORES: None

DST: None

LOGS: Schlumberger IES and Sonic Gamma Ray Compensated

Appendix B-5 Crow Butte Resources Well 194217

Oct 2007
DNR DECO

Submit to:
Department of Natural Resources
301 Centennial Mall South
P.O. Box 94676
Lincoln, Nebraska 68509-4676
Phone (402) 471 2363

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES

This form is required to be filed
within 60 days of decommissioning
of the water well.

NOTICE OF WATER WELL DECOMMISSIONING

FOR DEPARTMENT USE ONLY

Date Filed 9/12/08 Owner Code No. 39475 Registration No. 09122008
194217 - DECF (1) UPPER NI0324RA WHITE NRD
Well ID

1. Well Owner's First Name _____ Last Name _____

OR Company Name Crow Butte Resources, Inc.

Attention Name Wade Beins

Address PO BOX 169

City Crawford State NE Zip 69339 Telephone 308 665 2215 ext 113

2. Contractor (if applicable) Landrill Exploration Telephone Number (308) 665 2493

Address 102 Pine St. Contractor License No. 19019

City Crawford State NE Zip Code 69339

Email: _____

3a. Well Registration No. Well was not registered

3b. Purpose of Well: Pump Test Well (monitoring)

3c. Date Well Last Operated Well was not completed 3d. Date of Decommissioning 8-1-06

3e. List complete well location: Legal, Footage and/or GPS Coordinates

Well location: SE ¼ of the NE ¼ of Section 30, Township 31 North, Range 52 E ☐ W ☒, Dawes County.

The well is 2420 feet from the (N ☒ or S ☐) section line and 950 feet from the (E ☒ W ☐) section line.

OR Latitude Degree: _____ Minute: _____ Second: _____

Longitude Degree: _____ Minute: _____ Second: _____

3f. Location of Water Use: Same as well location

4. Actual Method for Decommissioning of Well

Placement Depth in Feet		Detailed Description of Material
From	To	
768'	692'	20 tubes of bentonite chips
692'	0'	13 bags of Plug Gel abandonment mud weighing 8.8 lbs/gallon -
		Marsh Funnel Data TD vis 27 - Final vis 75

5a. Well Casing Size: 4.5' Certalok

5b. Bore Hole Diameter: 8 inch

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

RECEIVED

Wade Beins

9-10-08

SEP 12 2008

Contractor (**owner)

Date

* ** Owner may sign on wells prior to 7/1/2001 or sandpoint or if well no longer exists and it is unknown when decommissioning occurred

The Department reserves the right to request verification of information provided.

Department of Natural Resources
301 Centennial Mall South
P.O. Box 94676
Lincoln, Nebraska 68509-4676
Phone (402) 471 2363

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES

This form is required to be filed
within 60 days of decommissioning
of the water well.

NOTICE OF WATER WELL DECOMMISSIONING

FOR DEPARTMENT USE ONLY

Date Filed 8/31/09 Owner Code No. 23333 Registration No. _____
08312009 - 200443 - DECE(1) UPPER NIobrara - WHITE NRD
Well ID

1. Well Owner's First Name Ne Game & Parks Last Name Fort Robinson
OR Company Name _____
Attention Name Mike Mraz
Address 3200 N Hwy 20
City Crawford State Ne Zip 68329 Telephone 665 2800
2. Contractor (if applicable) Jim Purson Telephone Number 800 665 2254
Address 291 4th St Rd Contractor License No. 39482
City Crawford State Ne Zip Code 68329 +
Email: _____

3a. Well Registration No. Unknown
3b. Purpose of Well: Livestock
3c. Date Well Last Operated Unknown 3d. Date of Decommissioning 7-6-09
3e. List complete well location: Legal, Footage and/or GPS Coordinates
Well location: SW 1/4 of the SW 1/4 of Section 17, Township 31 North, Range 52E W 1/2, Dawes County.
The well is 1050 feet from the (N ☐ or S ☒) section line and 912 feet from the (E ☐ W ☒) section line.

OR Latitude Degree: _____ Minute: _____ Second: _____
Longitude Degree: _____ Minute: _____ Second: _____

3f. Location of Water Use: Same as 3e

4. Actual Method for Decommissioning of Well

Placement Depth in Feet		Detailed Description of Material
From	To	
100	10	2" minus gravel
10	5	benzene chips
5	4	concrete cap
4	0	topsoil

5a. Well Casing Size: 5 5b. Bore Hole Diameter: unknown

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Jim Purson Contractor (**owner) 7-18-09 Date

* * Owner may sign on wells prior to 7/1/2001 or sandpoint or if well no longer exists and it is unknown when decommissioning occurred

The Department reserves the right to request verification of information provided.

RECEIVED

AUG 31 2009

DEPARTMENT OF
NATURAL RESOURCES

Oct 2007
DNR DECO

Submit to:
Department of Natural Resources
301 Centennial Mall South
P.O. Box 94676
Lincoln, Nebraska 68509-4676
Phone (402) 471 2363

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES

This form is required to be filed
within 60 days of decommissioning
of the water well.

SHEET 1 of 1

NOTICE OF WATER WELL DECOMMISSIONING

FOR DEPARTMENT USE ONLY

Date Filed 8/31/09 Owner Code No. 23333 Registration No. _____
08312009 - 200447 - DECO(1) UPPER NIobrara - WHITE NRD
Well ID

1. Well Owner's First Name Ne. Game & Parks East Name Fort Robinson
OR Company Name _____

Attention Name Mike Morano
Address 3200 Hwy 20
City Chawford State Ne Zip 68339 Telephone 308 665 2900

2. Contractor (if applicable) Jim Pinner Telephone Number 308 665 2254
Address 791 4 Mile Rd Contractor License No. 39482
City Chawford State Ne Zip Code 68339 +
Email: _____

3a. Well Registration No. _____

3b. Purpose of Well: livestock

3c. Date Well Last Operated. unknown 3d. Date of Decommissioning 7-2-09

3e. List complete well location: Legal, Footage and/or GPS Coordinates

Well location: SW 1/4 of the NE 1/4 of Section 8, Township 31 North, Range 52 E, W 1/2, Lane County.

The well is 1626 feet from the (N ☒ or S ☐) section line and 1239 feet from the (E ☒ W ☐) section line.

OR Latitude Degree: _____ Minute: _____ Second: _____

Longitude Degree: _____ Minute: _____ Second: _____

3f. Location of Water Use: same as 3e

4. Actual Method for Decommissioning of Well

Placement Depth in Feet		Detailed Description of Material
From	To	
<u>220</u>	<u>180</u>	<u>gravel</u>
<u>170</u>	<u>155</u>	<u>benzene chips</u>
<u>155</u>	<u>10</u>	<u>gravel</u>
<u>10</u>	<u>5</u>	<u>benzene chips</u>
<u>5</u>	<u>3</u>	<u>cement cap</u>

5a. Well Casing Size: 5" 5b. Bore Hole Diameter: _____

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Jim Pinner 7-11-09
Contractor (**owner) Date

** Owner may sign on wells prior to 7/1/2001 or sandpoint or if well no longer exists and it is unknown when decommissioning occurred

The Department reserves the right to request verification of information provided. RECEIVED

AUG 31 2009

DEPARTMENT OF
NATURAL RESOURCES

Oct 2007
DNR DECO

Submit to:
Department of Natural Resources
301 Centennial Mall South
P.O. Box 94676
Lincoln, Nebraska 68509-4676
Phone (402) 471 2363

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES

This form is required to be filed
within 60 days of decommissioning
of the water well.

NOTICE OF WATER WELL DECOMMISSIONING *chry ant*

FOR DEPARTMENT USE ONLY

Date Filed 8/31/09 Owner Code No. 23333 Registration No. _____
08312009 - 200450 - DECF(1) UPPER NIOBRARA - WHITE NRD
Well ID

1. Well Owner's First Name Ne Sam & Parker Last Name Fort Robinson

OR Company Name _____

Attention Name Nebraska MoranoAddress 3200 Highway 20City Crawford State Ne Zip 69339 Telephone 665 2900

2. Contractor (if applicable) Jim Proctor Telephone Number 308 665 2254

Address 291 4 Mile Rd Contractor License No. 39482City Crawford State Ne Zip Code 69339 +

Email: _____

3a. Well Registration No. _____

3b. Purpose of Well: Livestock3c. Date Well Last Operated unknown 3d. Date of Decommissioning 8-20-09

3e. List complete well location: Legal, Footage and/or GPS Coordinates

Well location: NE 1/4 of the SW 1/4 of Section 16, Township 31 North, Range 52E W 1/2, Dade County.The well is 2438 feet from the (N ☐ or S ☒) section line and 1259 feet from the (E ☐ W ☒) section line.

OR Latitude Degree: _____ Minute: _____ Second: _____

Longitude Degree: _____ Minute: _____ Second: _____

3f. Location of Water Use: None as 3e

4. Actual Method for Decommissioning of Well

Placement Depth in Feet		Detailed Description of Material
From	To	
<u>110</u>	<u>10</u>	<u>gravel</u>
<u>10</u>	<u>5</u>	<u>benzene chys</u>
<u>5</u>	<u>3</u>	<u>cement cap</u>
<u>3</u>	<u>0</u>	<u>top soil</u>

5a. Well Casing Size: 5"

5b. Bore Hole Diameter: _____

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Jim Proctor Contractor (**owner) 8-20-09 Date

* Owner may sign on wells prior to 7/1/2001 or sandpoint or if well no longer exists and it is unknown when decommissioning occurred

The Department reserves the right to request verification of information provided.

AUG 31 2009

DEPARTMENT OF
NATURAL RESOURCES

Appendix B-9 Nebraska Game & Parks Commission Well G-0022460A

NEBRASKA DEPARTMENT OF NATURAL RESOURCES
P.O. BOX 94676, LINCOLN, NEBRASKA 68509-4676
(402) 471-2363

DNR DECO
July 2006
FILE REF #

NOTICE OF WATER WELL DECOMMISSIONING

Instructions

Complete by printing in ink or typing the appropriate information. Submit the completed form to the above address within 60 days of decommissioning. This form is to be completed by water well contractor or pump installation contractor (owner signature not required) for all wells decommissioned after 7/1/2001, except for sandpoint wells. For wells decommissioned prior to 7/1/2001, or for a sand point well, the well owner may complete and sign the form if they did the actual decommissioning or if the well no longer exists, and it is unknown when the decommissioning occurred or who decommissioned the well.

1. Well Owner Name: Nebraska Game & Parks Commission

Address: Turf Agency

City: Lincoln State: NE Zip: 68503

Home Phone Number _____ Work Phone Number _____

2. Person Completing Decommissioning (if not owner)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Business Phone Number _____ Contractor's License Number _____

3a. Well Registration Number G-022460A

3b. Purpose of Well Irrigation

3c. Date Well Last Operated Unknown

3d. Date of Decommissioning Unknown

3e. Location of Well: SE 1/4 of the NE 1/4, Section 18

Township 31 Range 52 E ☐ W ☒

County Dawes

3f. The well is 2390 feet from the (N ☐ S ☒) section line

and 770 feet from the (E ☐ W ☒) section line OR

Latitude Degree _____ Minutes _____ Second _____

Longitude Degree _____ Minutes _____ Second _____

3g. Street Address of Block, Lot and Subdivision (if applicable).

UNKNOWN

3h. Location of Water Use: _____ 1/4 of the _____ 1/4, Section _____

Township _____ Range _____ E ☐ W ☒

County _____

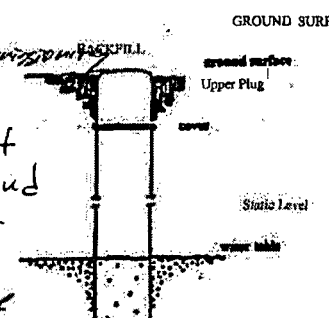
UNKNOWN

FOR DEPARTMENT USE ONLY

Filing Date 11-2-2007 Registration Number G-022460A
Owner Code 23333 NRD Upper Nebraska White
11022007 - 28828 - ABNF (1)

4a. Actual Method for Decommissioning of Well. Use Sketch below (if appropriate), or illustrate method of decommissioning on a separate sheet.

Actual decommissioning
unknown.
Wells cannot
be located and
do not exist
any more to
our knowledge



4b. Type of Back Fill Used in Upper Plug. (If excavated area is greater than three feet, indicate depth of excavation.)

4c. Illustrate method to create upper plug.

4d. Type, Amount, and Location of Materials Used in Lower Casing.

4e. Type and Thickness of Materials Used Between Confining Layers and at static water levels. Indicate plug depth(s) on left side of sketch.

4f. Well Casing Size _____

4g. Bore Hole Diameter _____

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Water Well Contractor's Signature _____

Date _____

Well Owner's Signature _____

Date _____

The Department reserves the right to request verification of information provided.

RECEIVED

NOV 02 2007

DEPARTMENT OF
NATURAL RESOURCES

Appendix B-10 Nebraska Game & Parks Commission Well G-0022460B

NEBRASKA DEPARTMENT OF NATURAL RESOURCES
P.O. BOX 94676, LINCOLN, NEBRASKA 68509-4676
(402) 471-2363

DNR DECO
July 2006
FILE REF #

NOTICE OF WATER WELL DECOMMISSIONING

Instructions

Complete by printing in ink or typing the appropriate information. Submit the completed form to the above address within 60 days of decommissioning. This form is to be completed by water well contractor or pump installation contractor (owner signature not required) for all wells decommissioned after 7/1/2001, except for sandpoint wells. For wells decommissioned prior to 7/1/2001, or for a sand point well, the well owner may complete and sign the form if they did the actual decommissioning or if the well no longer exists, and it is unknown when the decommissioning occurred or who decommissioned the well.

1. Well Owner Name: Nebraska Game & Parks CommissionAddress: InteragencyCity: Lincoln State: NE Zip: 68503

Home Phone Number: _____ Work Phone Number: _____

2. Person Completing Decommissioning (if not owner)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Business Phone Number: _____ Contractor's License Number: _____

3a. Well Registration Number G-022460.B3b. Purpose of Well Irrigation3c. Date Well Last Operated Unknown3d. Date of Decommissioning Unknown

3e. Location of Well: SE 1/4 of the NE 1/4, Section 18
Township 31 Range 32 E ☐ W ☒
County Douglas

3f. The well is 2140 feet from the (N ☐ S ☒) section line
and 770 feet from the (E ☐ W ☒) section line OR
Latitude Degree _____ Minutes _____ Second _____
Longitude Degree _____ Minutes _____ Second _____

3g. Street Address of Block, Lot and Subdivision (if applicable).

UNKNOWN

3h. Location of Water Use: _____ 1/4 of the _____ 1/4, Section _____
Township _____ Range _____ E ☐ W ☒
County _____

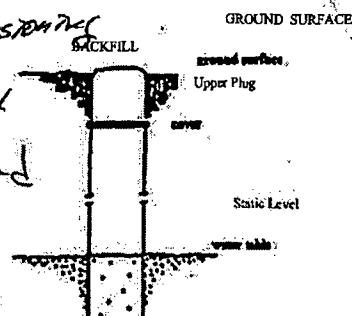
UNKNOWN

FOR DEPARTMENT USE ONLY

Filing Date 11-2-2007Registration Number G-022460.BOwner Code 23333NRD Upper Nebraska-White11022007 - 28829 - ABWF(1)

4a. Actual Method for Decommissioning of Well. Use Sketch below (if appropriate), or illustrate method of decommissioning on a separate sheet.

Actual Decommissioning
Unknown.
Wells cannot
be located and
do not exist
anywhere to
our knowledge



4b. Type of Back Fill Used in Upper Plug. (If excavated area is greater than three feet, indicate depth of excavation.)

4c. Illustrate method to create upper plug.

4d. Type, Amount, and Location of Materials Used in Lower Casing.

4e. Type and Thickness of Materials Used Between Confining Layers and at static water levels. Indicate plug depth(s) on left side of sketch.

4f. Well Casing Size _____

4g. Bore Hole Diameter _____

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Water Well Contractor's Signature _____

Date _____

Well Owner's Signature Michael MoranDate 10/31/07

The Department reserves the right to request verification of information provided.

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NOV 02 2007

DEPARTMENT OF
NATURAL RESOURCES

CROW BUTTE RESOURCES, INC.

**Environmental Report
Three Crow Expansion Area**



APPENDIX C

**MINERALOGICAL AND
PARTICLE SIZE DISTRIBUTION
ANALYSES**

CROW BUTTE RESOURCES, INC.

Environmental Report Three Crow Expansion Area



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PTS File No:

39978

Client:

Crow Butte Resources

X-RAY DIFFRACTION ANALYSIS DATA

Project Name:

Three Crow Core Samples

Project Number:

N/A

	Sample ID:	T-1050c Run 1 310-315'	T-1050c Run 2 440-445'	T-1050c Run 3 560-565'	T-1050c Run 5 900-905'
Mineral Constituents	Chemical Formula	Relative Abundance, percent			
Quartz	SiO_2	24	17	23	31
Cristobalite	SiO_2			8	
Tridymite	SiO_2			4	
Plagioclase Feldspar	$(Na,Ca)AlSi_3O_8$	8	7	6	1
K-Feldspar	$KAlSi_3O_8$	2	2	3	7
Calcite	$CaCO_3$	26	8	trc	trc
Dolomite	$(Ca,Mg)CO_3$			1	2
Siderite	$FeCO_3$			1	
Gypsum	$CaSO_4 \cdot 2H_2O$			2	
Fluorapatite	$Ca_5F(PO_4)_3$	1			trc
Pyrite	FeS_2				1
Hematite	$\alpha\text{-}Fe_2O_3$			1	
Kaolinite	$Al_2Si_2O_5(OH)_4$				3
Chlorite	$(Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$				5
Illite / Mica	$KAl_2(Si_3AlO_{10})(OH)_2$	2	2	3	17
Montmorillonite	$Na_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2 \cdot xH_2O$	<u>37</u>	<u>64</u>		
Mixed-Layered Illite/ Smectite	$K_{0.5}Al_2(Si,Al)_4O_{10}(OH)_2 \cdot 2H_2O$			<u>48</u>	<u>33</u>
% Illite Layers in M. L. I/S				10-30%	10-30%
TOTAL		100	100	100	100

PTS File No: 39978
 Client: Crow Butte Resources

X-RAY DIFFRACTION ANALYSIS DATA

Project Name: Three Crow Core Samples
 Project Number: N/A

	Sample ID:	T-1051c Run 1 290-295'	T-1051c Run 2 480-485'	T-1051c Run 3 600-605'	T-1051c Run 5 890-895'
Mineral Constituents	Chemical Formula	Relative Abundance, percent			
Quartz	SiO_2	25	12	36	40
Cristobalite	SiO_2				
Tridymite	SiO_2				
Plagioclase Feldspar	$(Na,Ca)AlSi_3O_8$	9	5	2	5
K-Feldspar	$KAlSi_3O_8$	3	2	2	3
Calcite	$CaCO_3$	trc	17		
Dolomite	$(Ca,Mg)CO_3$				5
Siderite	$FeCO_3$				
Gypsum	$CaSO_4 \cdot 2H_2O$		24		
Fluorapatite	$Ca_5F(PO_4)_3$			trc?	
Pyrite	FeS_2				1
Hematite	$\alpha\text{-}Fe_2O_3$				
Kaolinite	$Al_2Si_2O_5(OH)_4$				trc
Chlorite	$(Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$	trc			3
Illite / Mica	$KAl_2(Si_3AlO_{10})(OH)_2$	2	2	1	6
Montmorillonite	$Na_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2 \cdot xH_2O$	<u>61</u>		<u>59</u>	<u>37</u>
Mixed-Layered Illite/ Smectite	$K_{0.5}Al_2(Si,Al)_4O_{10}(OH)_2 \cdot 2H_2O$		38		
% Illite Layers in M. L. I/S			0-10%		
TOTAL		100	100	100	100

PARTICLE SIZE SUMMARY
(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: Three Crow Core Samples
PROJECT NO: N/A

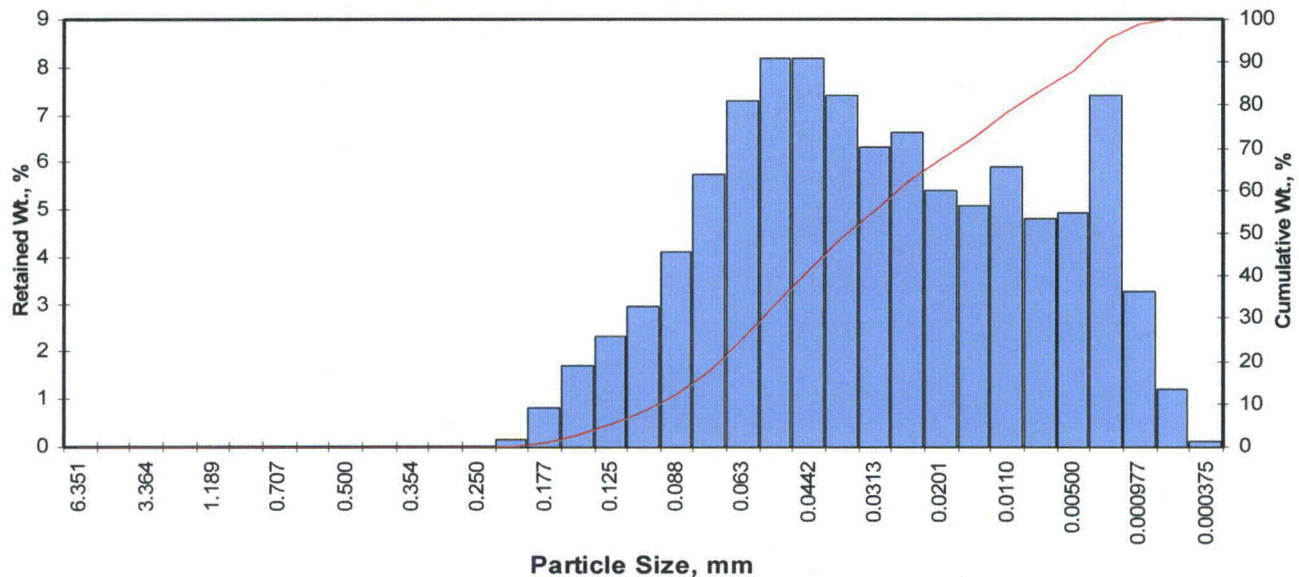
Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
T-1050c Run 1	310-315	Silt	0.036	0.00	0.00	0.00	17.84	70.18	11.99	82.16
T-1050c Run 2	440-445	Silt	0.032	0.00	0.00	6.31	21.01	56.33	16.35	72.68
T-1050c Run 3	560-565	Silt	0.016	0.00	0.00	0.00	14.99	58.22	26.80	85.01
T-1050c Run 5	900-905	Silt	0.004	0.00	0.00	0.00	0.01	42.13	57.86	99.99
T-1051c - Run 1	290-295	Silt	0.037	0.00	0.00	6.07	21.94	58.42	13.58	72.00
T-1051c - Run 2	480-485	Silt	0.012	0.00	0.00	0.00	4.64	65.90	29.46	95.36
T-1051c - Run 3	600-605	Clay	0.004	0.00	0.00	0.00	0.00	38.39	61.61	100.00
T-1051c - Run 5	890-895	Silt	0.007	0.00	0.00	0.00	2.77	57.41	39.81	97.23

(1) Based on Mean from Trask

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1050c Run 1
Depth, ft: 310-315

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.01	0.01	0.01
0.0083	0.210	2.25	70	0.17	0.17	0.18
0.0070	0.177	2.50	80	0.82	0.82	1.00
0.0059	0.149	2.75	100	1.71	1.71	2.71
0.0049	0.125	3.00	120	2.32	2.32	5.03
0.0041	0.105	3.25	140	2.96	2.96	7.99
0.0035	0.088	3.50	170	4.11	4.11	12.10
0.0029	0.074	3.75	200	5.74	5.74	17.84
0.0025	0.063	4.00	230	7.30	7.30	25.14
0.0021	0.053	4.25	270	8.17	8.17	33.31
0.00174	0.0442	4.50	325	8.19	8.19	41.50
0.00146	0.0372	4.75	400	7.42	7.42	48.92
0.00123	0.0313	5.00	450	6.34	6.34	55.26
0.000986	0.0250	5.32	500	6.62	6.62	61.87
0.000790	0.0201	5.64	635	5.40	5.40	67.27
0.000615	0.0156	6.00		5.10	5.10	72.37
0.000435	0.0110	6.50		5.91	5.91	78.28
0.000308	0.00781	7.00		4.82	4.82	83.10
0.000197	0.00500	7.65		4.91	4.91	88.01
0.000077	0.00195	9.00		7.40	7.40	95.41
0.000038	0.000977	10.00		3.27	3.27	98.68
0.000019	0.000488	11.00		1.22	1.22	99.90
0.000015	0.000375	11.38		0.10	0.10	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	3.00	0.0049	0.125
10	3.37	0.0038	0.097
16	3.67	0.0031	0.079
25	4.00	0.0025	0.063
40	4.45	0.0018	0.046
50	4.79	0.0014	0.036
60	5.23	0.0010	0.027
75	6.22	0.0005	0.013
84	7.12	0.0003	0.007
90	8.01	0.0002	0.004
95	8.92	0.0001	0.002

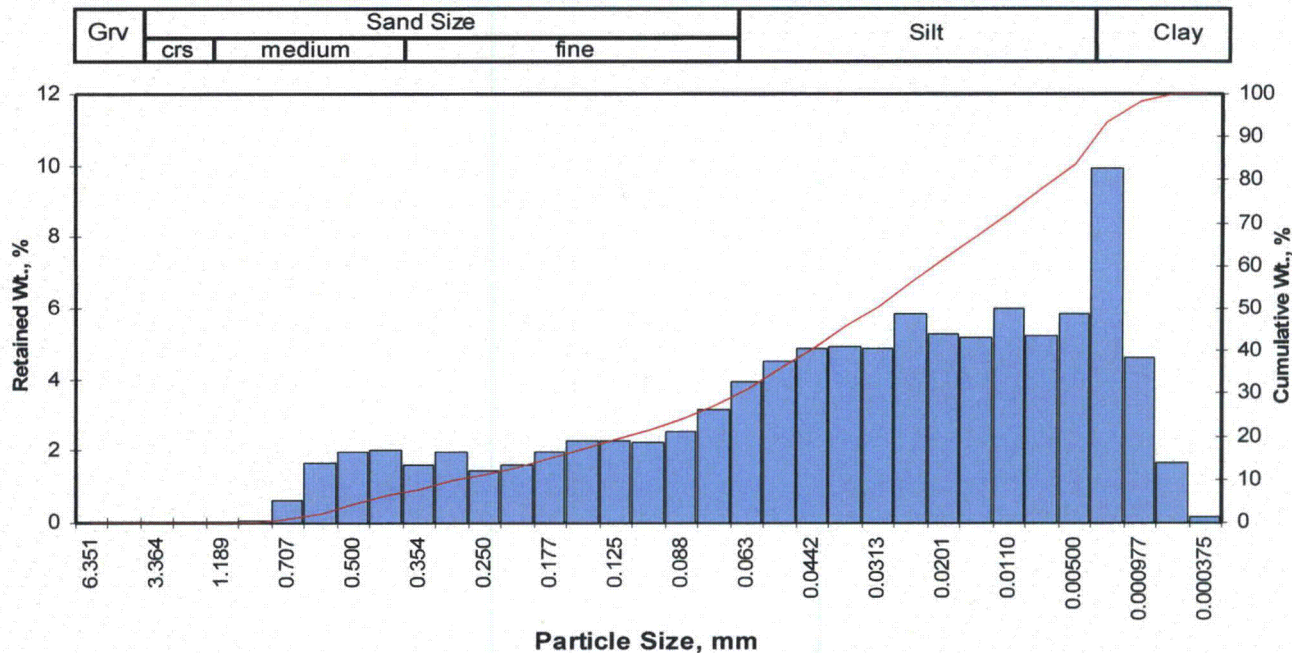
Measure	Trask	Inman	Folk-Ward
Median, phi	4.79	4.79	4.79
Median, in.	0.0014	0.0014	0.0014
Median, mm	0.036	0.036	0.036
Mean, phi	4.72	5.39	5.19
Mean, in.	0.0015	0.0009	0.0011
Mean, mm	0.038	0.024	0.027
Sorting	2.164	1.724	1.760
Skewness	0.803	0.349	0.371
Kurtosis	0.266	0.719	1.091

Grain Size Description	Silt
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	17.84
Silt	>0.005 mm	70.18
Clay	<0.005 mm	11.99
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1050c Run 2
Depth, ft: 440-445



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent	Cumulative Weight Percent greater than			
Inches	Millimeters						Weight percent	Phi Value	Particle Size	
									Inches	Millimeters
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00	5	1.09	0.0185	0.471
0.1873	4.757	-2.25	4	0.00	0.00	0.00	10	1.77	0.0115	0.293
0.1324	3.364	-1.75	6	0.00	0.00	0.00	16	2.62	0.0064	0.163
0.0787	2.000	-1.00	10	0.00	0.00	0.00	25	3.57	0.0033	0.084
0.0468	1.189	-0.25	16	0.00	0.00	0.00	40	4.47	0.0018	0.045
0.0331	0.841	0.25	20	0.05	0.04	0.04	50	4.98	0.0012	0.032
0.0278	0.707	0.50	25	0.64	0.64	0.68	60	5.55	0.0008	0.021
0.0234	0.595	0.75	30	1.67	1.67	2.35	75	6.73	0.0004	0.009
0.0197	0.500	1.00	35	1.94	1.94	4.29	84	7.69	0.0002	0.005
0.0166	0.420	1.25	40	2.02	2.02	6.31	90	8.51	0.0001	0.003
0.0139	0.354	1.50	45	1.61	1.61	7.92	95	9.30	0.0001	0.002
0.0117	0.297	1.75	50	1.94	1.94	9.86				
0.0098	0.250	2.00	60	1.47	1.47	11.33				
0.0083	0.210	2.25	70	1.60	1.60	12.93				
0.0070	0.177	2.50	80	1.97	1.97	14.90				
0.0059	0.149	2.75	100	2.27	2.27	17.17				
0.0049	0.125	3.00	120	2.26	2.26	19.43				
0.0041	0.105	3.25	140	2.22	2.22	21.65				
0.0035	0.088	3.50	170	2.51	2.51	24.16				
0.0029	0.074	3.75	200	3.16	3.16	27.32				
0.0025	0.063	4.00	230	3.92	3.92	31.24				
0.0021	0.053	4.25	270	4.49	4.49	35.73				
0.00174	0.0442	4.50	325	4.84	4.84	40.57				
0.00146	0.0372	4.75	400	4.93	4.93	45.50				
0.00123	0.0313	5.00	450	4.84	4.84	50.34				
0.000986	0.0250	5.32	500	5.83	5.83	56.17				
0.000790	0.0201	5.64	635	5.29	5.29	61.46				
0.000615	0.0156	6.00		5.15	5.15	66.61				
0.000435	0.0110	6.50		6.01	6.01	72.62				
0.000308	0.00781	7.00		5.21	5.21	77.83				
0.000197	0.00500	7.65		5.82	5.82	83.65				
0.000077	0.00195	9.00		9.95	9.95	93.60				
0.000038	0.000977	10.00		4.61	4.61	98.21				
0.000019	0.000488	11.00		1.66	1.66	99.87				
0.000015	0.000375	11.38		0.13	0.13	100.00				
TOTALS				100.00	100.00	100.00				

Grain Size Description (ASTM-USCS Scale)				Silt (based on Mean from Trask)			
Weight percent	Phi Value	Inches	Millimeters	Weight percent	Phi Value	Inches	Millimeters
5	1.09	0.0185	0.471				
10	1.77	0.0115	0.293				
16	2.62	0.0064	0.163				
25	3.57	0.0033	0.084				
40	4.47	0.0018	0.045				
50	4.98	0.0012	0.032				
60	5.55	0.0008	0.021				
75	6.73	0.0004	0.009				
84	7.69	0.0002	0.005				
90	8.51	0.0001	0.003				
95	9.30	0.0001	0.002				

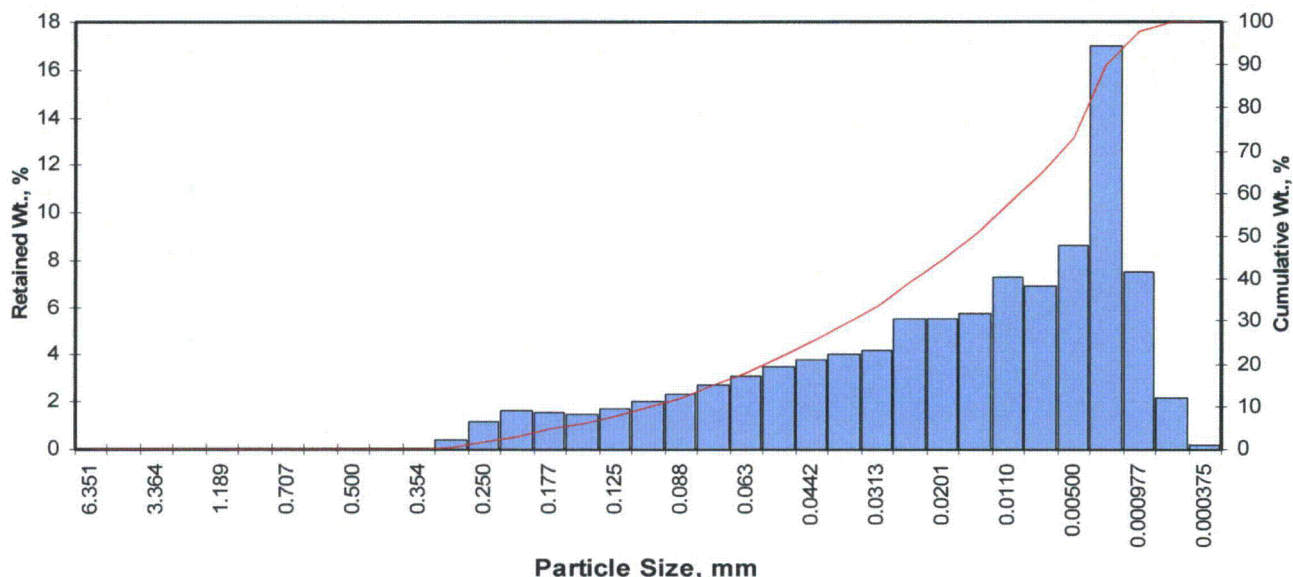
Measure	Trask	Inman	Folk-Ward
Median, phi	4.98	4.98	4.98
Median, in.	0.0012	0.0012	0.0012
Median, mm	0.032	0.032	0.032
Mean, phi	4.41	5.16	5.10
Mean, in.	0.0018	0.0011	0.0011
Mean, mm	0.047	0.028	0.029
Sorting	2.992	2.536	2.513
Skewness	0.892	0.069	0.060
Kurtosis	0.129	0.620	1.065

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	6.31
Fine Sand	200	21.01
Silt	>0.005 mm	56.33
Clay	<0.005 mm	16.35
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1050c Run 3
Depth, ft: 560-565

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.01	0.01	0.01
0.0117	0.297	1.75	50	0.36	0.36	0.37
0.0098	0.250	2.00	60	1.16	1.16	1.53
0.0083	0.210	2.25	70	1.65	1.65	3.18
0.0070	0.177	2.50	80	1.53	1.53	4.71
0.0059	0.149	2.75	100	1.44	1.44	6.15
0.0049	0.125	3.00	120	1.71	1.71	7.86
0.0041	0.105	3.25	140	2.05	2.05	9.91
0.0035	0.088	3.50	170	2.35	2.35	12.27
0.0029	0.074	3.75	200	2.72	2.72	14.99
0.0025	0.063	4.00	230	3.14	3.14	18.13
0.0021	0.053	4.25	270	3.49	3.49	21.62
0.00174	0.0442	4.50	325	3.80	3.80	25.42
0.00146	0.0372	4.75	400	4.03	4.03	29.45
0.00123	0.0313	5.00	450	4.21	4.21	33.66
0.000986	0.0250	5.32	500	5.49	5.49	39.15
0.000790	0.0201	5.64	635	5.47	5.47	44.62
0.000615	0.0156	6.00		5.74	5.74	50.37
0.000435	0.0110	6.50		7.30	7.30	57.67
0.000308	0.00781	7.00		6.92	6.92	64.59
0.000197	0.00500	7.65		8.61	8.61	73.20
0.000077	0.00195	9.00		17.00	17.00	90.21
0.000038	0.000977	10.00		7.50	7.50	97.71
0.000019	0.000488	11.00		2.15	2.15	99.86
0.000015	0.000375	11.38		0.14	0.14	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	2.55	0.0067	0.171
10	3.26	0.0041	0.104
16	3.83	0.0028	0.070
25	4.47	0.0018	0.045
40	5.37	0.0010	0.024
50	5.98	0.0006	0.016
60	6.67	0.0004	0.010
75	7.79	0.0002	0.005
84	8.51	0.0001	0.003
90	8.98	0.0001	0.002
95	9.64	0.0000	0.001

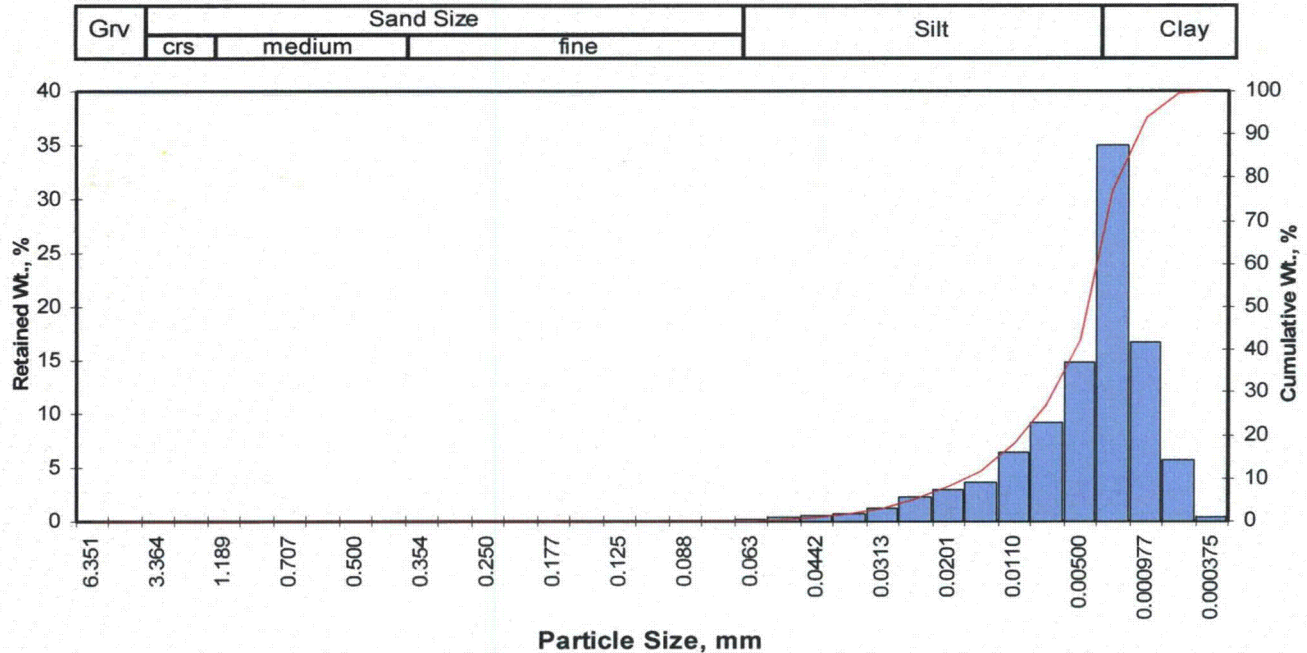
Measure	Trask	Inman	Folk-Ward
Median, phi	5.98	5.98	5.98
Median, in.	0.0006	0.0006	0.0006
Median, mm	0.016	0.016	0.016
Mean, phi	5.33	6.17	6.10
Mean, in.	0.0010	0.0005	0.0006
Mean, mm	0.025	0.014	0.015
Sorting	3.156	2.337	2.243
Skewness	0.899	0.082	0.057
Kurtosis	0.198	0.516	0.876

Grain Size Description	Silt
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	14.99
Silt	>0.005 mm	58.22
Clay	<0.005 mm	26.80
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1050c Run 5
Depth, ft: 900-905



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.00	0.00	0.00
0.0059	0.149	2.75	100	0.00	0.00	0.00
0.0049	0.125	3.00	120	0.00	0.00	0.00
0.0041	0.105	3.25	140	0.00	0.00	0.00
0.0035	0.088	3.50	170	0.00	0.00	0.00
0.0029	0.074	3.75	200	0.01	0.01	0.01
0.0025	0.063	4.00	230	0.14	0.14	0.15
0.0021	0.053	4.25	270	0.35	0.35	0.50
0.00174	0.0442	4.50	325	0.45	0.45	0.95
0.00146	0.0372	4.75	400	0.73	0.73	1.68
0.00123	0.0313	5.00	450	1.25	1.25	2.93
0.000986	0.0250	5.32	500	2.30	2.30	5.23
0.000790	0.0201	5.64	635	2.85	2.85	8.07
0.000615	0.0156	6.00		3.60	3.60	11.67
0.000435	0.0110	6.50		6.47	6.46	18.14
0.000308	0.00781	7.00		9.12	9.11	27.25
0.000197	0.00500	7.65		14.90	14.89	42.14
0.000077	0.00195	9.00		35.00	34.97	77.11
0.000038	0.000977	10.00		16.80	16.79	93.89
0.000019	0.000488	11.00		5.68	5.68	99.57
0.000015	0.000375	11.38		0.43	0.43	100.00
TOTALS				100.10	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	5.29	0.0010	0.026
10	5.83	0.0007	0.018
16	6.33	0.0005	0.012
25	6.88	0.0003	0.009
40	7.55	0.0002	0.005
50	7.95	0.0002	0.004
60	8.34	0.0001	0.003
75	8.92	0.0001	0.002
84	9.41	0.0001	0.001
90	9.77	0.0000	0.001
95	10.19	0.0000	0.001

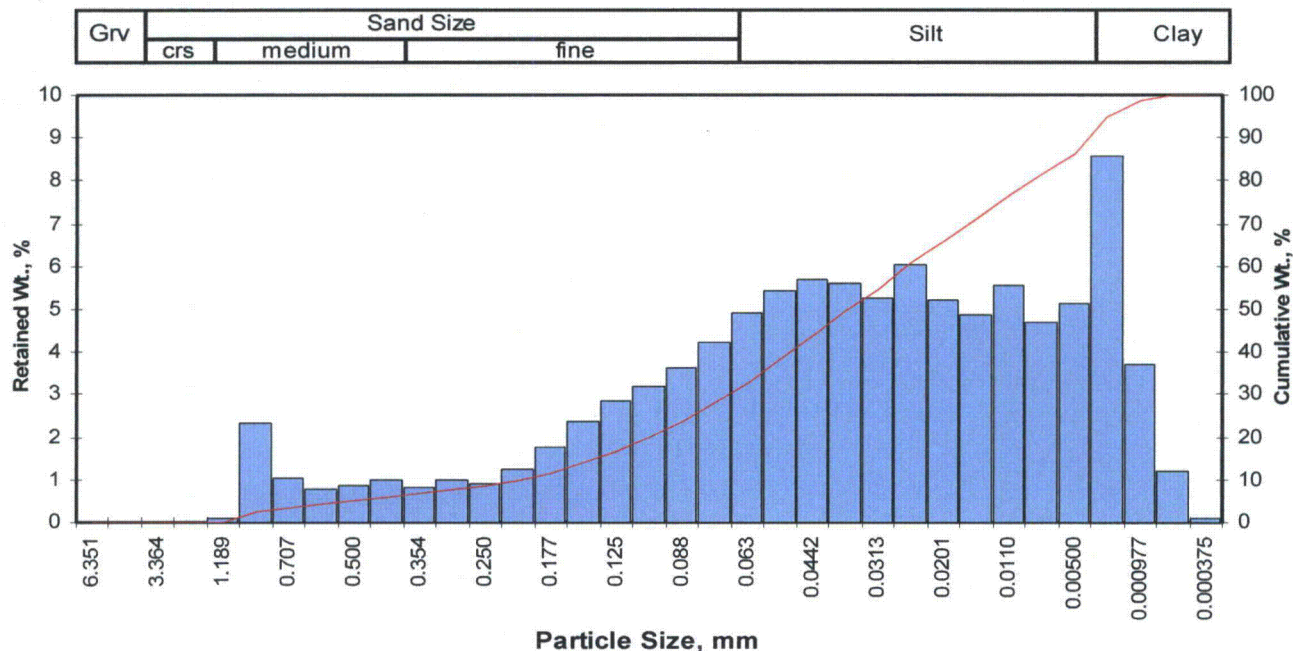
Measure	Trask	Inman	Folk-Ward
Median, phi	7.95	7.95	7.95
Median, in.	0.0002	0.0002	0.0002
Median, mm	0.004	0.004	0.004
Mean, phi	7.56	7.87	7.90
Mean, in.	0.0002	0.0002	0.0002
Mean, mm	0.005	0.004	0.004
Sorting	2.029	1.538	1.512
Skewness	1.037	-0.050	-0.067
Kurtosis	0.196	0.595	0.985

Grain Size Description	Silt
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	0.01
Silt	>0.005 mm	42.13
Clay	<0.005 mm	57.86
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1051c - Run 1
Depth, ft: 290-295



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.09	0.09	0.09
0.0331	0.841	0.25	20	2.32	2.32	2.41
0.0278	0.707	0.50	25	1.05	1.05	3.46
0.0234	0.595	0.75	30	0.78	0.78	4.24
0.0197	0.500	1.00	35	0.85	0.85	5.09
0.0166	0.420	1.25	40	0.98	0.98	6.07
0.0139	0.354	1.50	45	0.80	0.80	6.87
0.0117	0.297	1.75	50	1.01	1.01	7.88
0.0098	0.250	2.00	60	0.91	0.91	8.79
0.0083	0.210	2.25	70	1.23	1.23	10.01
0.0070	0.177	2.50	80	1.77	1.77	11.78
0.0059	0.149	2.75	100	2.38	2.38	14.16
0.0049	0.125	3.00	120	2.83	2.83	16.99
0.0041	0.105	3.25	140	3.17	3.17	20.16
0.0035	0.088	3.50	170	3.61	3.61	23.77
0.0029	0.074	3.75	200	4.23	4.23	28.00
0.0025	0.063	4.00	230	4.92	4.92	32.92
0.0021	0.053	4.25	270	5.44	5.44	38.36
0.00174	0.0442	4.50	325	5.70	5.70	44.06
0.00146	0.0372	4.75	400	5.59	5.59	49.65
0.00123	0.0313	5.00	450	5.25	5.25	54.90
0.000986	0.0250	5.32	500	6.04	6.04	60.93
0.000790	0.0201	5.64	635	5.21	5.21	66.14
0.000615	0.0156	6.00		4.89	4.89	71.03
0.000435	0.0110	6.50		5.58	5.58	76.61
0.000308	0.00781	7.00		4.68	4.68	81.29
0.000197	0.00500	7.65		5.13	5.13	86.42
0.000077	0.00195	9.00		8.59	8.59	95.01
0.000038	0.000977	10.00		3.72	3.72	98.73
0.000019	0.000488	11.00		1.19	1.19	99.92
0.000015	0.000375	11.38		0.08	0.08	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	0.97	0.0200	0.509
10	2.25	0.0083	0.211
16	2.91	0.0052	0.133
25	3.57	0.0033	0.084
40	4.32	0.0020	0.050
50	4.77	0.0014	0.037
60	5.27	0.0010	0.026
75	6.36	0.0005	0.012
84	7.34	0.0002	0.006
90	8.21	0.0001	0.003
95	9.00	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.77	4.77	4.77
Median, in.	0.0014	0.0014	0.0014
Median, mm	0.037	0.037	0.037
Mean, phi	4.38	5.13	5.01
Mean, in.	0.0019	0.0011	0.0012
Mean, mm	0.048	0.029	0.031
Sorting	2.623	2.214	2.323
Skewness	0.872	0.162	0.109
Kurtosis	0.173	0.812	1.182

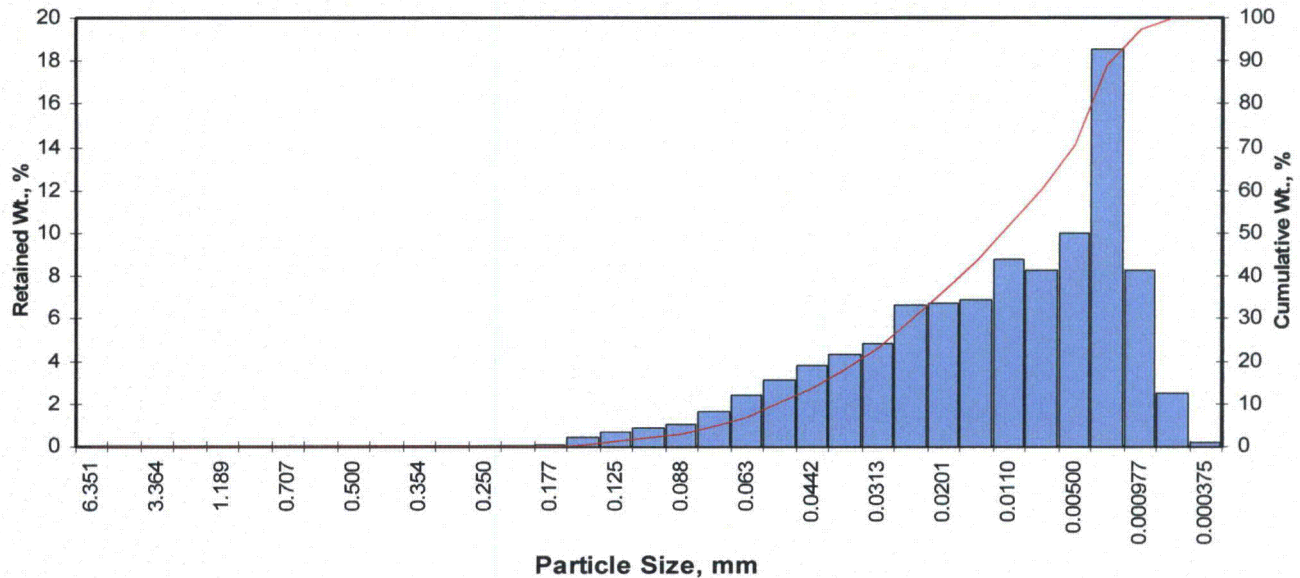
Grain Size Description	Silt
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	6.07
Fine Sand	200	21.94
Silt	>0.005 mm	58.42
Clay	<0.005 mm	13.58
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1051c - Run 2
Depth, ft: 480-485

Grv	Sand Size			Silt	Clay
	crs	medium	fine		



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.08	0.08	0.09
0.0059	0.149	2.75	100	0.39	0.39	0.48
0.0049	0.125	3.00	120	0.69	0.69	1.17
0.0041	0.105	3.25	140	0.82	0.82	1.99
0.0035	0.088	3.50	170	1.05	1.05	3.04
0.0029	0.074	3.75	200	1.60	1.60	4.64
0.0025	0.063	4.00	230	2.40	2.40	7.04
0.0021	0.053	4.25	270	3.14	3.14	10.18
0.00174	0.0442	4.50	325	3.77	3.77	13.95
0.00146	0.0372	4.75	400	4.31	4.31	18.26
0.00123	0.0313	5.00	450	4.84	4.84	23.10
0.000986	0.0250	5.32	500	6.67	6.67	29.77
0.000790	0.0201	5.64	635	6.72	6.72	36.50
0.000615	0.0156	6.00		6.93	6.93	43.43
0.000435	0.0110	6.50		8.80	8.80	52.23
0.000308	0.00781	7.00		8.31	8.31	60.54
0.000197	0.00500	7.65		10.00	10.00	70.54
0.000077	0.00195	9.00		18.50	18.50	89.05
0.000038	0.000977	10.00		8.26	8.26	97.31
0.000019	0.000488	11.00		2.52	2.52	99.83
0.000015	0.000375	11.38		0.17	0.17	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	3.79	0.0029	0.072
10	4.24	0.0021	0.053
16	4.62	0.0016	0.041
25	5.09	0.0012	0.029
40	5.82	0.0007	0.018
50	6.37	0.0005	0.012
60	6.97	0.0003	0.008
75	7.97	0.0002	0.004
84	8.63	0.0001	0.003
90	9.12	0.0001	0.002
95	9.72	0.0000	0.001

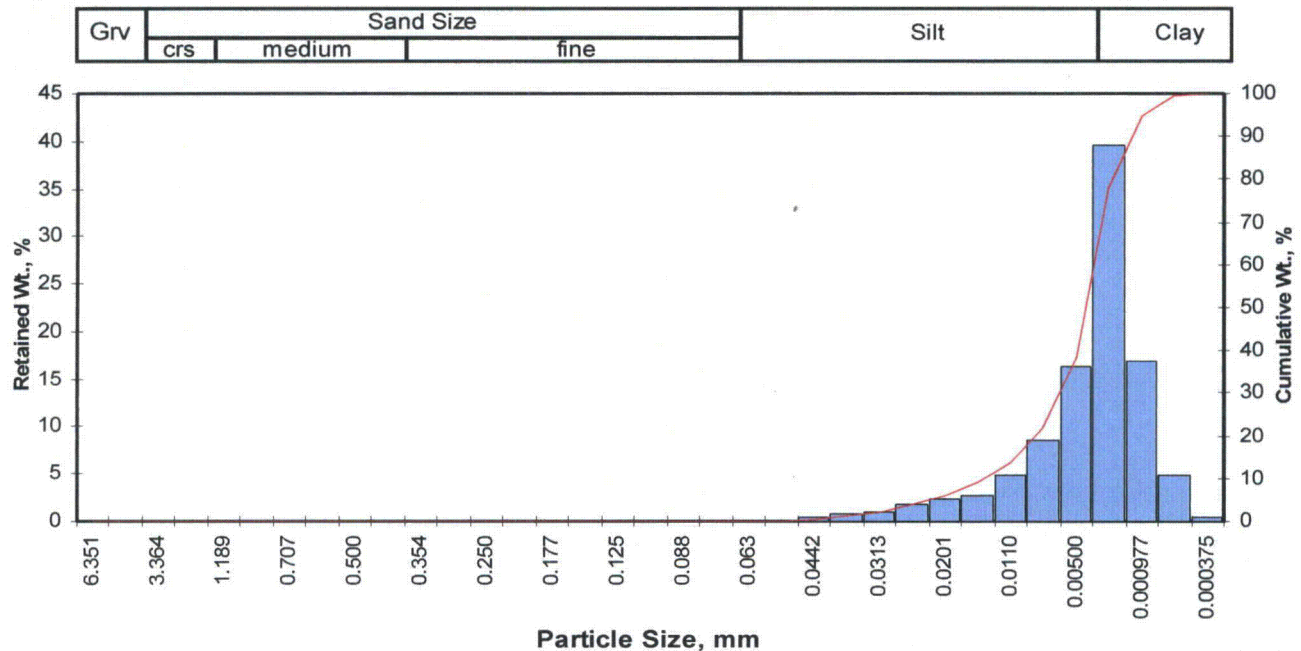
Measure	Trask	Inman	Folk-Ward
Median, phi	6.37	6.37	6.37
Median, in.	0.0005	0.0005	0.0005
Median, mm	0.012	0.012	0.012
Mean, phi	5.91	6.62	6.54
Mean, in.	0.0007	0.0004	0.0004
Mean, mm	0.017	0.010	0.011
Sorting	2.714	2.006	1.902
Skewness	0.896	0.125	0.127
Kurtosis	0.247	0.479	0.844

Grain Size Description	Silt
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	4.64
Silt	>0.005 mm	65.90
Clay	<0.005 mm	29.46
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1051c - Run 3
Depth, ft: 600-605



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.00	0.00	0.00
0.0059	0.149	2.75	100	0.00	0.00	0.00
0.0049	0.125	3.00	120	0.00	0.00	0.00
0.0041	0.105	3.25	140	0.00	0.00	0.00
0.0035	0.088	3.50	170	0.00	0.00	0.00
0.0029	0.074	3.75	200	0.00	0.00	0.00
0.0025	0.063	4.00	230	0.00	0.00	0.00
0.0021	0.053	4.25	270	0.07	0.07	0.07
0.00174	0.0442	4.50	325	0.36	0.36	0.43
0.00146	0.0372	4.75	400	0.72	0.72	1.15
0.00123	0.0313	5.00	450	1.02	1.02	2.17
0.000986	0.0250	5.32	500	1.75	1.75	3.92
0.000790	0.0201	5.64	635	2.27	2.27	6.19
0.000615	0.0156	6.00		2.69	2.69	8.88
0.000435	0.0110	6.50		4.81	4.81	13.69
0.000308	0.00781	7.00		8.49	8.49	22.19
0.000197	0.00500	7.65		16.20	16.20	38.39
0.000077	0.00195	9.00		39.50	39.51	77.90
0.000038	0.000977	10.00		16.80	16.80	94.71
0.000019	0.000488	11.00		4.94	4.94	99.65
0.000015	0.000375	11.38		0.35	0.35	100.00
TOTALS				100.00	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	5.47	0.0009	0.023
10	6.12	0.0006	0.014
16	6.64	0.0004	0.010
25	7.11	0.0003	0.007
40	7.70	0.0002	0.005
50	8.04	0.0001	0.004
60	8.39	0.0001	0.003
75	8.90	0.0001	0.002
84	9.36	0.0001	0.002
90	9.72	0.0000	0.001
95	10.06	0.0000	0.001

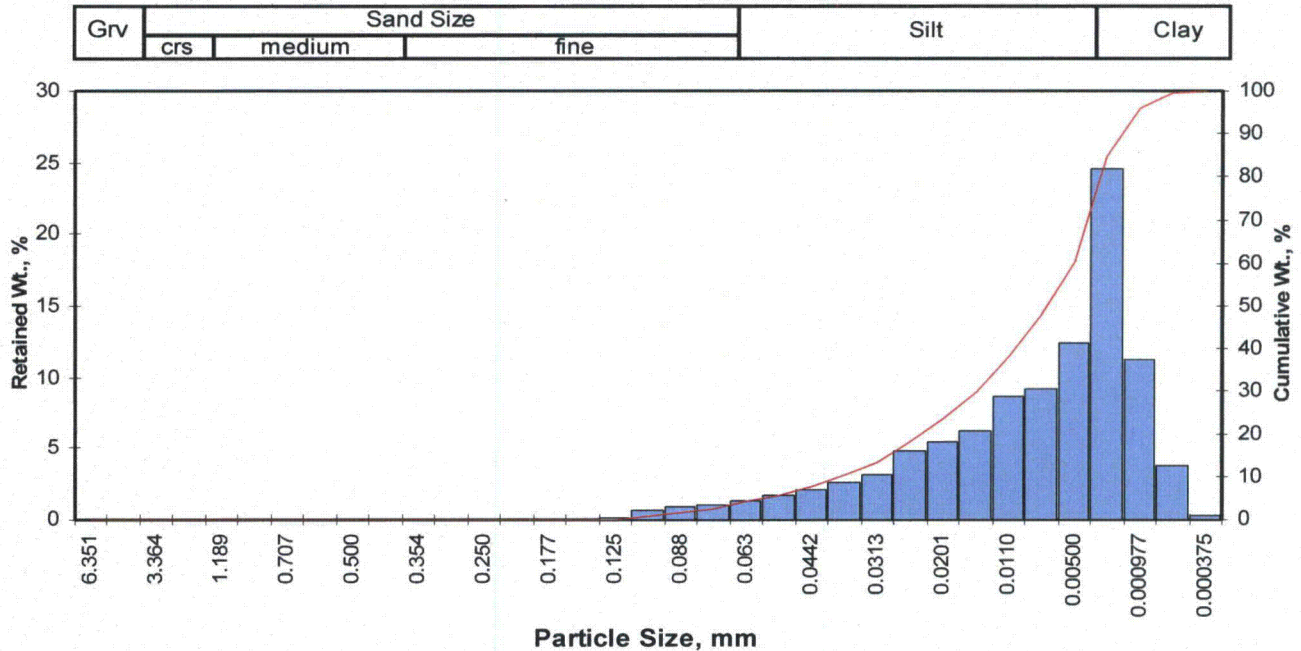
Measure	Trask	Inman	Folk-Ward
Median, phi	8.04	8.04	8.04
Median, in.	0.0001	0.0001	0.0001
Median, mm	0.004	0.004	0.004
Mean, phi	7.75	8.00	8.01
Mean, in.	0.0002	0.0002	0.0002
Mean, mm	0.005	0.004	0.004
Sorting	1.859	1.364	1.377
Skewness	1.026	-0.032	-0.077
Kurtosis	0.194	0.682	1.051

Grain Size Description	Clay
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	0.00
Silt	>0.005 mm	38.39
Clay	<0.005 mm	61.61
Total		100

Client: Crow Butte Resources
Project: Three Crow Core Samples
Project No: N/A

PTS File No: 39978
Sample ID: T-1051c - Run 5
Depth, ft: 890-895



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.00	0.00	0.00
0.0059	0.149	2.75	100	0.01	0.01	0.01
0.0049	0.125	3.00	120	0.19	0.19	0.20
0.0041	0.105	3.25	140	0.60	0.60	0.80
0.0035	0.088	3.50	170	0.89	0.89	1.69
0.0029	0.074	3.75	200	1.08	1.08	2.77
0.0025	0.063	4.00	230	1.33	1.33	4.10
0.0021	0.053	4.25	270	1.67	1.67	5.77
0.00174	0.0442	4.50	325	2.10	2.10	7.88
0.00146	0.0372	4.75	400	2.56	2.56	10.44
0.00123	0.0313	5.00	450	3.11	3.11	13.55
0.000986	0.0250	5.32	500	4.76	4.76	18.31
0.000790	0.0201	5.64	635	5.44	5.44	23.76
0.000615	0.0156	6.00		6.16	6.16	29.92
0.000435	0.0110	6.50		8.62	8.63	38.54
0.000308	0.00781	7.00		9.23	9.24	47.78
0.000197	0.00500	7.65		12.40	12.41	60.19
0.000077	0.00195	9.00		24.60	24.61	84.80
0.000038	0.000977	10.00		11.20	11.21	96.01
0.000019	0.000488	11.00		3.72	3.72	99.73
0.000015	0.000375	11.38		0.27	0.27	100.00
TOTALS				99.90	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	4.13	0.0022	0.057
10	4.71	0.0015	0.038
16	5.16	0.0011	0.028
25	5.71	0.0008	0.019
40	6.58	0.0004	0.010
50	7.12	0.0003	0.007
60	7.64	0.0002	0.005
75	8.46	0.0001	0.003
84	8.96	0.0001	0.002
90	9.46	0.0001	0.001
95	9.91	0.0000	0.001

Measure	Trask	Inman	Folk-Ward
Median, phi	7.12	7.12	7.12
Median, in.	0.0003	0.0003	0.0003
Median, mm	0.007	0.007	0.007
Mean, phi	6.51	7.06	7.08
Mean, in.	0.0004	0.0003	0.0003
Mean, mm	0.011	0.007	0.007
Sorting	2.592	1.896	1.823
Skewness	1.020	-0.029	-0.031
Kurtosis	0.220	0.524	0.862

Grain Size Description	Silt
(ASTM-USCS Scale)	(based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	2.77
Silt	>0.005 mm	57.41
Clay	<0.005 mm	39.81
Total		100

CROW BUTTE RESOURCES, INC.

Technical Report Three Crow Expansion Area



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CROW BUTTE RESOURCES, INC.

**Environmental Report
Three Crow Expansion Area**



APPENDIX D

GEOPHYSICAL BORING LOGS

CROW BUTTE RESOURCES, INC.

Environmental Report Three Crow Expansion Area



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ORD. REF. # K 5551H

[illegible]

Zone	Effective date of DEW 517	Writing Station L-5-B	Product Production	Phase 1000 (Comp. Band)
295C	1951	1C	Water	Ph. - 6 FLOW SP
295E	1957	17	Water	Ph. - 6 FLOW SP
3041	1066	20 AVE.	Water	Ph. - 11 ARCHEL 1st 1000
3285	3291	12	Water	Ph. - 11 ARCHEL 1st 1000
3291	3295	16041	---	Ph. - 22 ARCHEL 1st 1000
3295	3311	17	Water	Ph. - 22 ARCHEL 1st 1000
3381 10 3390	8	---	Water	Ph. - 22 FLOW SP
3520 10 3530	22 AVE.	---	Water	Ph. - 15 ARCHEL 1st 1000

QUANTITATIVE ANALYSIS

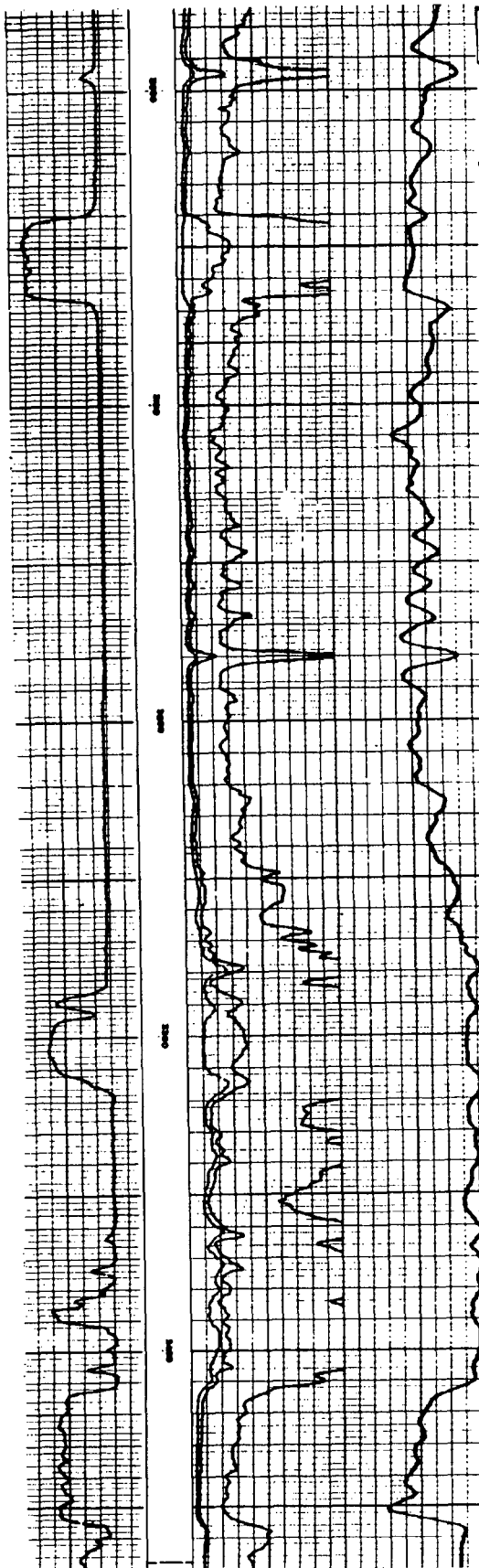
[illegible]

COMPANY C. S. CAMPBELL AND BRINKMOR DRILLING COMPANY
WELL F. ARLEN NO. 1
FED. WILCOAL
COUNTY DAVIS STATE NEBRASKA

SC# 84365
RCD 1449
DML RD161
Fm
D# 1503
D# 444
C#1503

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NOV 10 1960

Farnier #1 Page #1 of 3

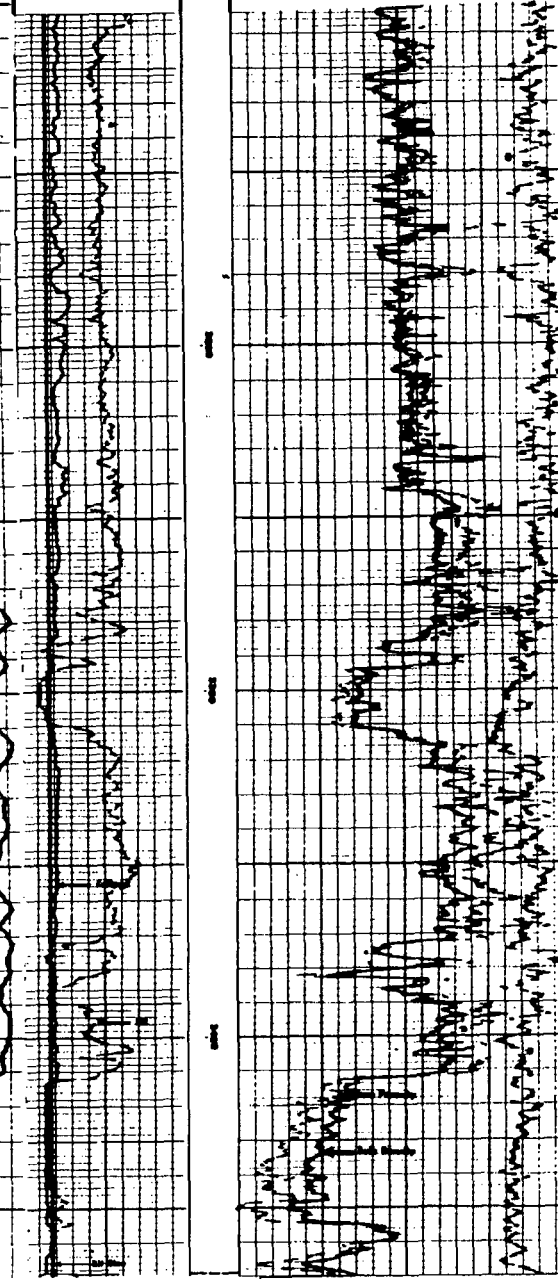


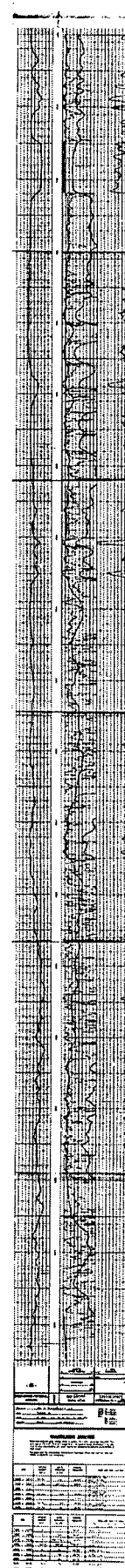
Location: C NW SW
 Sec. 26 Twp. 31N Rgn. 52W

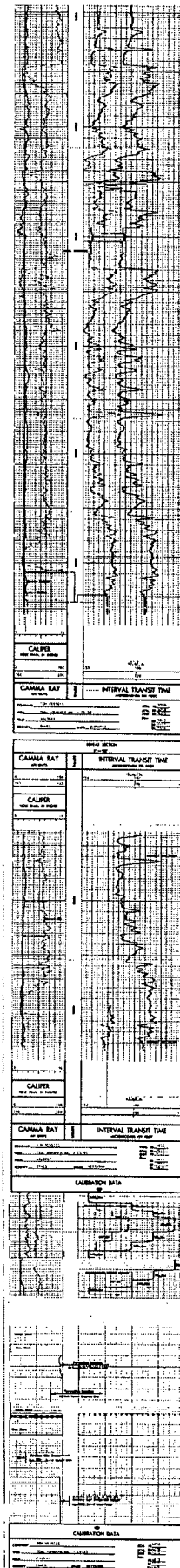
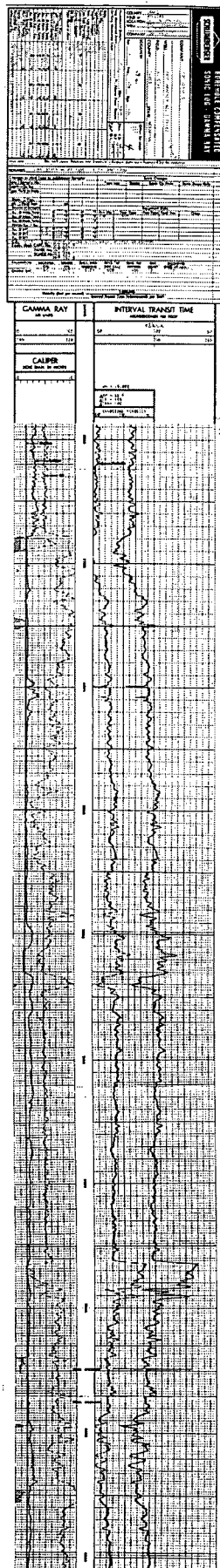
COMPANY: C. S. CAMPBELL AND BRINKHOFF DRILLING
 WELL: F. ARNER NO. 1
 FIELD: WILCOAT
 COUNTY: DAVES STATE: NEBRASKA

NO. 18568
 SCH. TO 18568
 DATE TO 18568
 DEPT: NE 18568
 OF 18568
 OF 18568

CALIPER HOLE DIAM. IN INCHES 6 16		CORRECTION GRAMS/CC. -35 0 35
GAMMA RAY AM UNITS 0 200 200 400		
BULK DENSITY GRAMS/CC. 2.0 2.5 3.0 SANDSTONE POROSITY 30% 20% 10% 0% 10%		

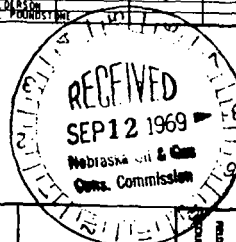






ROCKY MOUNTAIN WELL LOG SERVICE

ORD. REF. # K 522811

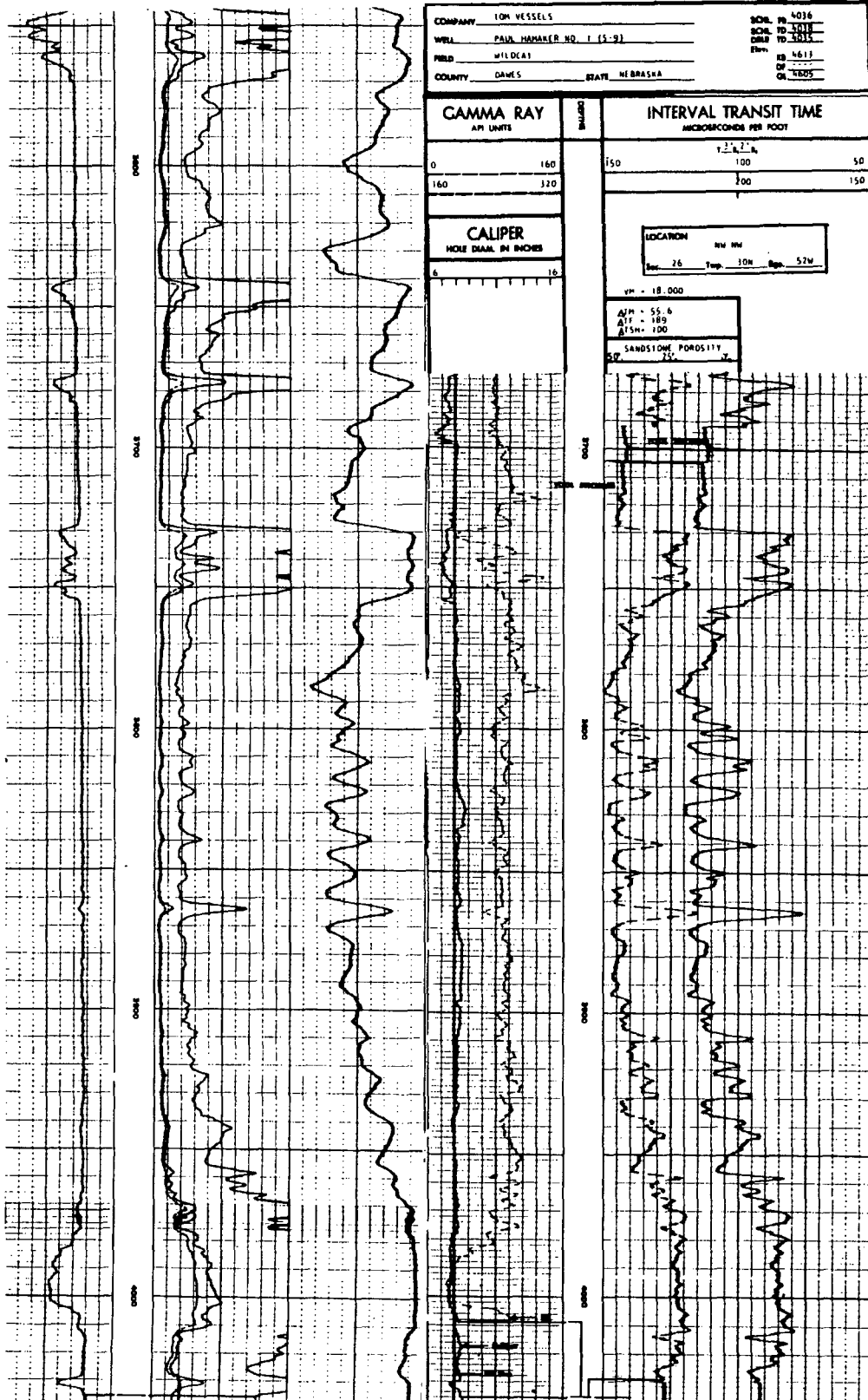
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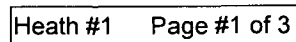
TIME	PERCENTAGE OF TIME	TOTAL SATURATION IN %	PERCENTAGE REPRODUCTION	PERIOD (HOURS)
35-6	33.60	24	40	24 - 2.5
15-60	15.61	90-100		24 - 2.5
16-1	16.44	100		24 - 2.5
26-5	16.65	100		24 - 0.5
37-0	17.10	95		24 - 0.5
39-10	19.73	100		24 - 0.7
29-8	10.4004	22-24	154.17	24 - 0.7
		90-100		

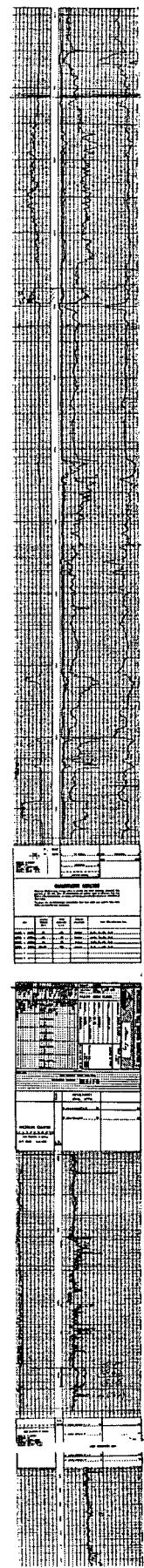
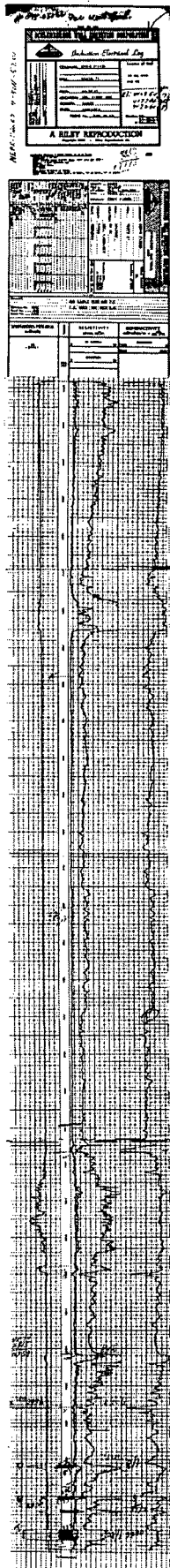
COMPLANT	UN 2832153	SON	N	+0.6
WELL	PAUL WHEELER NO. 1 (5-9)	SON	D	-0.5
PROD	WILLCOAT	PROD	D	-0.5
STATION	DATE 5	DATE	D	-0.5
	STATION		D	-0.5

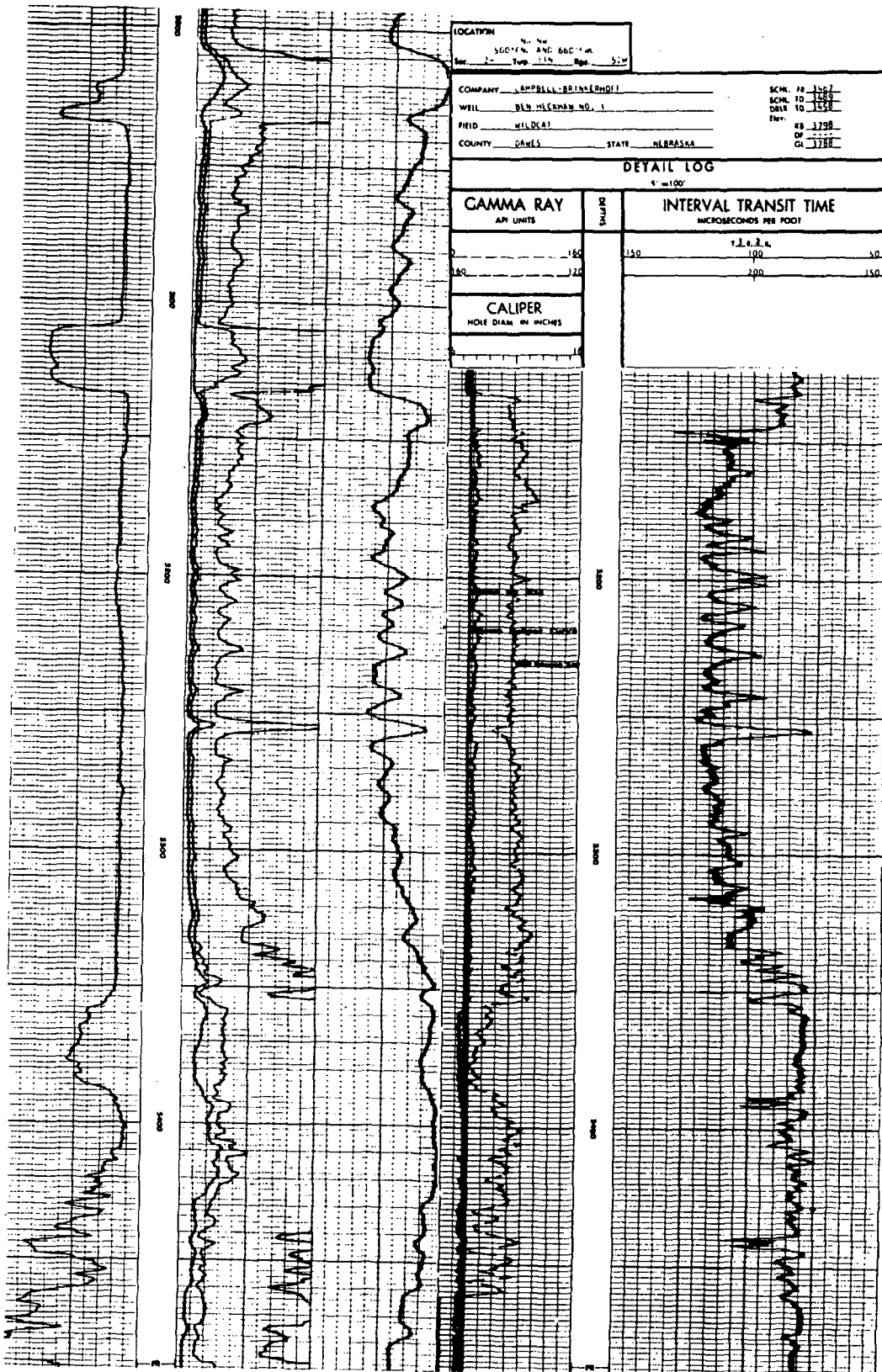
QUANTITATIVE ANALYSIS

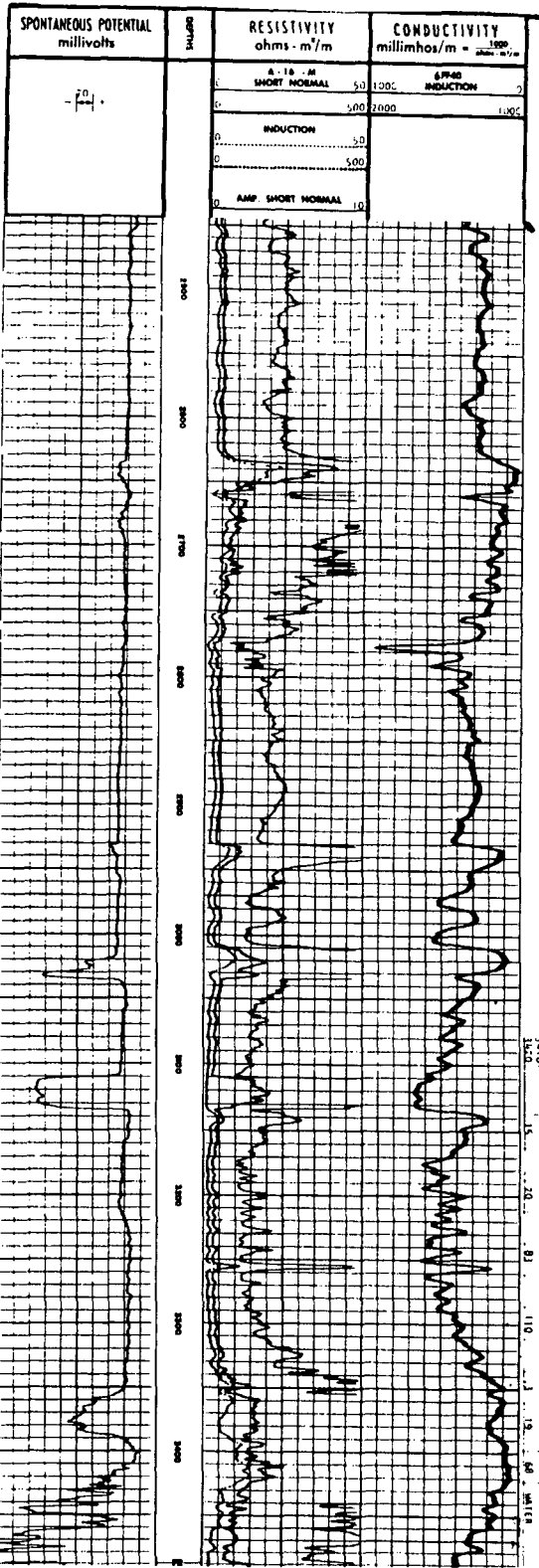
As people hear the Scholastic interpretation they react with awe and for their efforts are tested by your statements.











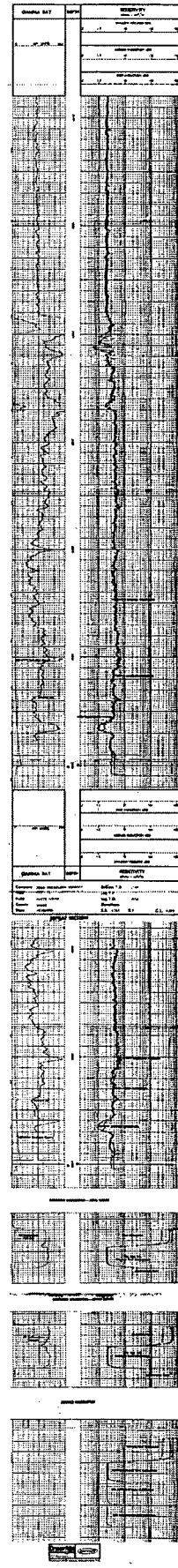
ABRIDGE-A-LOG **ROCKY MOUNTAIN WELL LOG SERVICE** **ORD. REF. # K5445H**

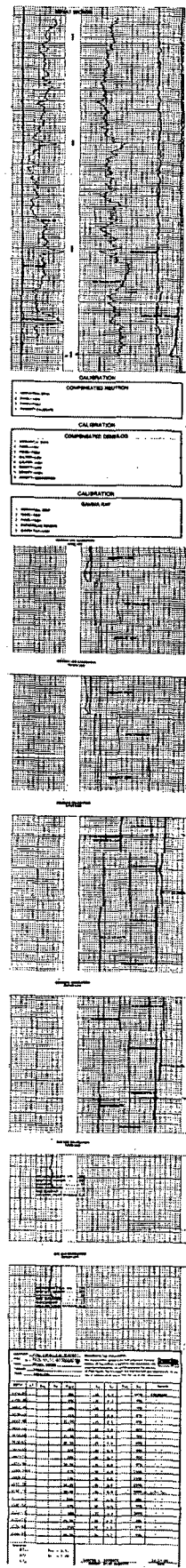
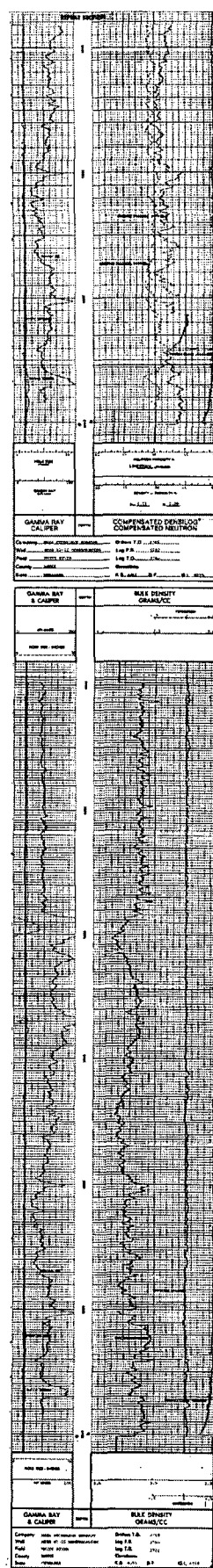
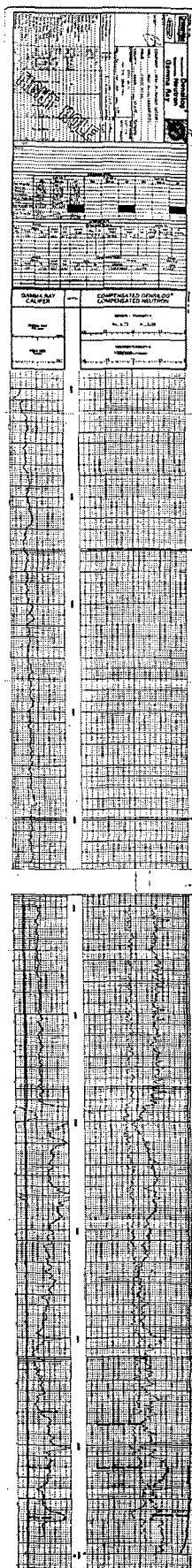


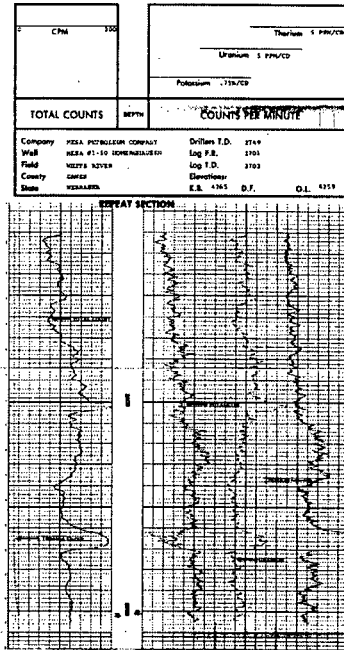
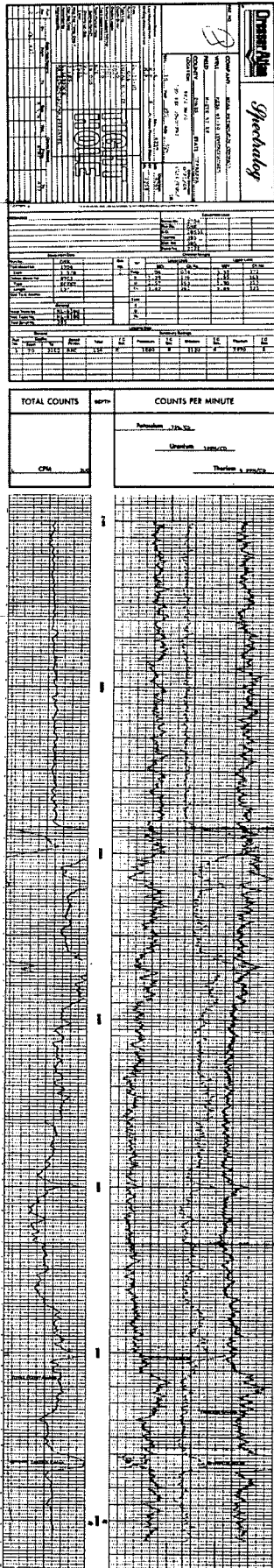
SOLBERGER INDUCTION ELECTRICAL LOG	
COMPANY: AMPELL-BRENNHOFF	
WELL: RIN. HECKMAN NO. 1	
FIELD: WILCOX	
COUNTY: DAKOTA STATE: NEBRASKA	
LOCATION: NW 1/4 Sec. 25, Twp. 31N, Rge. 52E	
Permanent Datum: 500 F.M. AND 660 F.M.	Elev. 3788
Log Measured From: 10 Ft. Above Perm. Datum	Elev. K.B. 3796
Drilling Measured From: S.S.	D.T. 3785
Date: 8-17-69	
Drill: 8 1/2"	
Depth: 3400	
Depth: 3400	
Log Interval: 10'	
Log Log Interval: 10'	
Coarse: 10'	
Coarse: 10'	
Log Log: 10'	
Type Fluid in Hole: 2.0	
Temp. Visc.:	
pH (Field Test): 7.0	
Source of Sample:	
Am. B. Temp. Test:	
Am. B. Temp. Test:	
Am. B. Temp. Test:	
Am. B. Temp. Test:	
Time Since Core:	
Equip. Location:	
Recorded By:	
Witnessed By:	



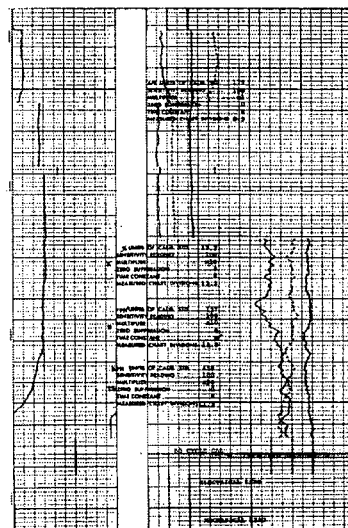
DEPTH	RESISTIVITY	CONDUCTIVITY	TEMP.	WATER
0	1000	1000	75	water
100	1000	1000	75	water
200	1000	1000	75	water
300	1000	1000	75	water
400	1000	1000	75	water
500	1000	1000	75	water
600	1000	1000	75	water
700	1000	1000	75	water
800	1000	1000	75	water
900	1000	1000	75	water
1000	1000	1000	75	water
1100	1000	1000	75	water
1200	1000	1000	75	water
1300	1000	1000	75	water
1400	1000	1000	75	water
1500	1000	1000	75	water
1600	1000	1000	75	water
1700	1000	1000	75	water
1800	1000	1000	75	water
1900	1000	1000	75	water
2000	1000	1000	75	water
2100	1000	1000	75	water
2200	1000	1000	75	water
2300	1000	1000	75	water
2400	1000	1000	75	water
2500	1000	1000	75	water
2600	1000	1000	75	water
2700	1000	1000	75	water
2800	1000	1000	75	water
2900	1000	1000	75	water
3000	1000	1000	75	water
3100	1000	1000	75	water
3200	1000	1000	75	water
3300	1000	1000	75	water
3400	1000	1000	75	water



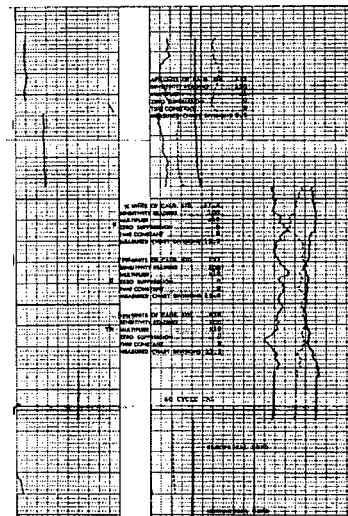


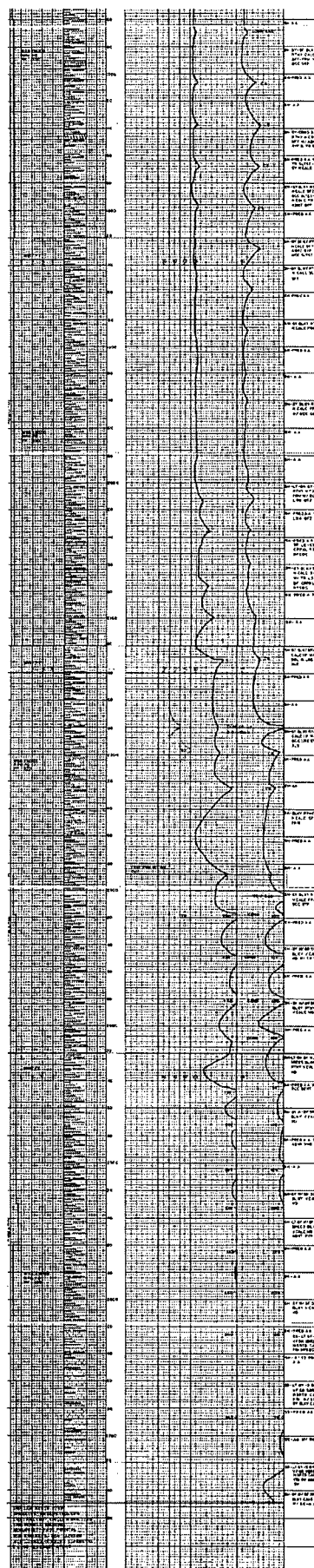


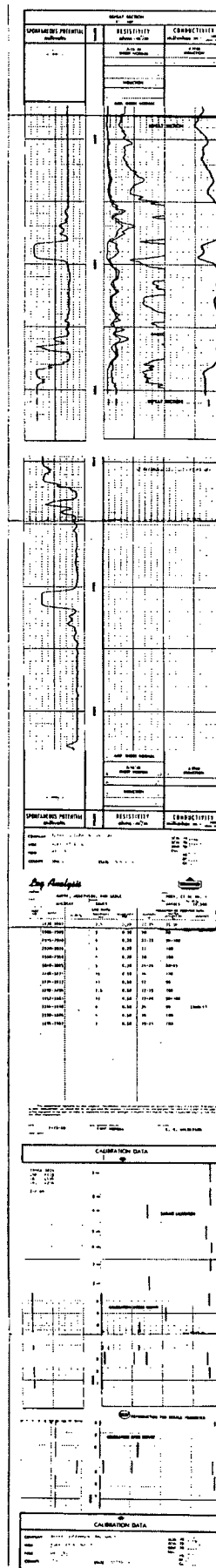
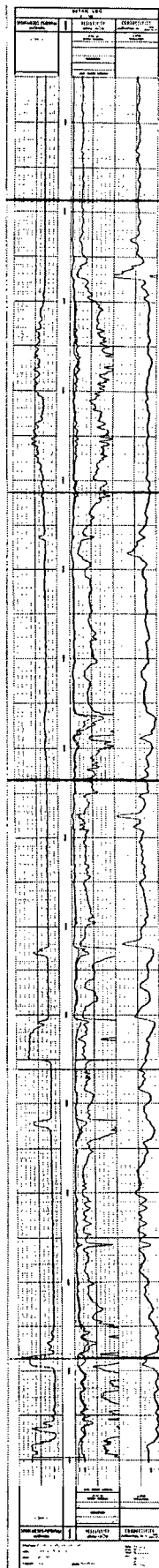
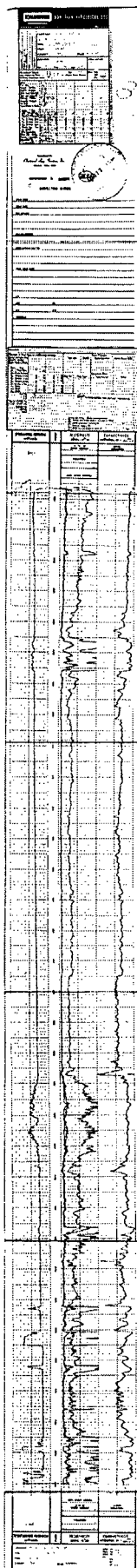
CALIBRATION-BEFORE SURVEY



CALIBRATION-AFTER SURVEY



[illegible]



ROCKY MOUNTAIN WELL LOG SERVICE

ORD. REF. # K 54454



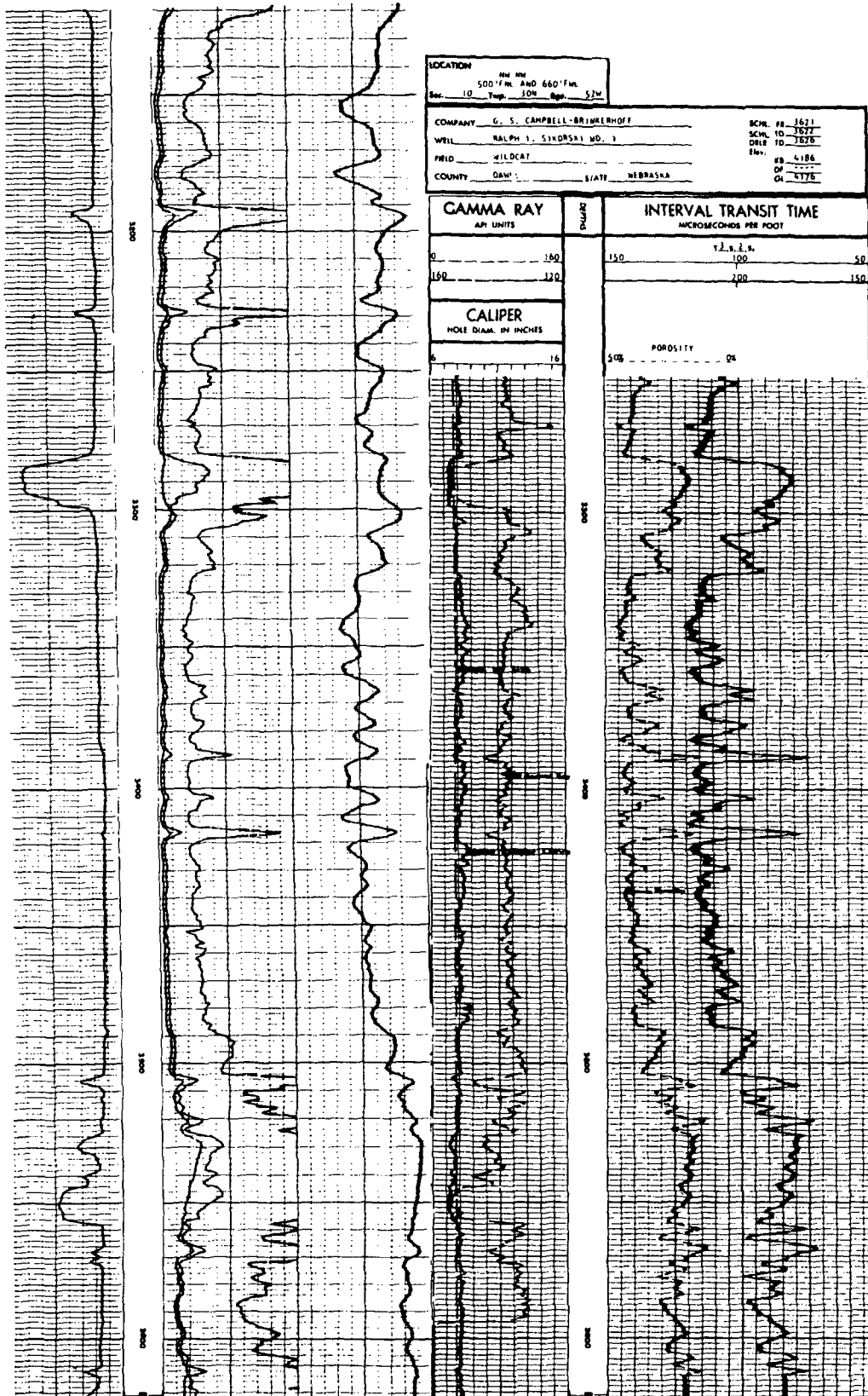
SCHLUMBERGER INDUCTION ELECTRICAL LOG

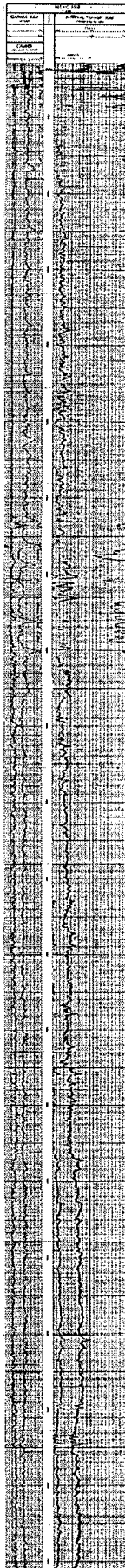
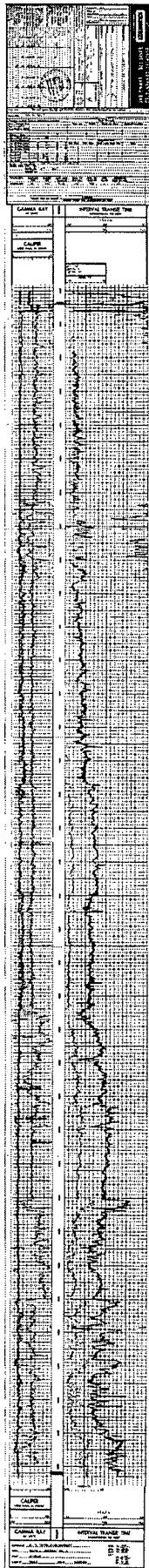
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RECEIVED
OCT 17 1969
Nebraska Oil & Gas
Cons. Commission

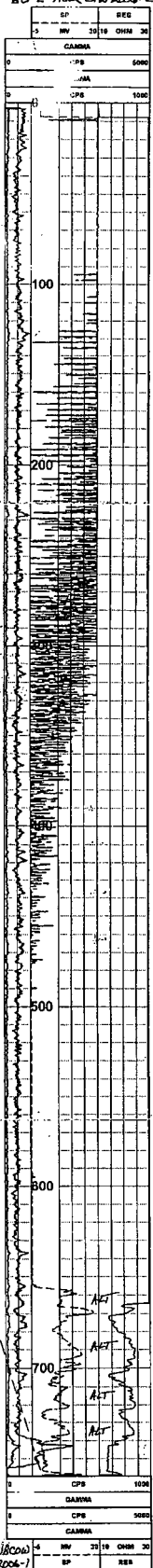
Zone	Effective Porosity 5 dm ²	Water Saturation h, %	Permeability Production	Perm and Core Data Band
B1	0.86	71	water	Perm 2.0 Very Shaly
B5	0.85	80	water	Perm 2.0 Very Shaly
B6	0.85	40	water	Perm 2.0 Very Shaly
B7	0.86	66	water	Perm 2.0 Very Shaly
B8	0.80	80	water	Perm 2.0 Very Shaly
B12	0.10	103	water	Perm .55
B13	0.16	100	water	Perm .55
B14	0.21	95	water	Perm .55
B15	0.20	95	water	Perm .55
B16	0.23	90	water	Perm .45
B17	0.53	50	water	Perm .4
B18	0.70	90	water	Perm .6
B19	0.78	78	water	Perm .6 Shaly
B20	0.78	78	water	Perm .6 Shaly
B21	0.78	78	water	Perm .6 Shaly
B22	0.78	78	water	Perm .6 Shaly
B23	0.78	78	water	Perm .6 Shaly
B24	0.78	78	water	Perm .6 Shaly
B25	0.78	78	water	Perm .6 Shaly
B26	0.78	78	water	Perm .6 Shaly
B27	0.78	78	water	Perm .6 Shaly
B28	0.78	78	water	Perm .6 Shaly
B29	0.78	78	water	Perm .6 Shaly
B30	0.78	78	water	Perm .6 Shaly
B31	0.78	78	water	Perm .6 Shaly
B32	0.78	78	water	Perm .6 Shaly
B33	0.78	78	water	Perm .6 Shaly
B34	0.78	78	water	Perm .6 Shaly
B35	0.78	78	water	Perm .6 Shaly
B36	0.78	78	water	Perm .6 Shaly
B37	0.78	78	water	Perm .6 Shaly
B38	0.78	78	water	Perm .6 Shaly
B39	0.78	78	water	Perm .6 Shaly
B40	0.78	78	water	Perm .6 Shaly
B41	0.78	78	water	Perm .6 Shaly
B42	0.78	78	water	Perm .6 Shaly
B43	0.78	78	water	Perm .6 Shaly
B44	0.78	78	water	Perm .6 Shaly
B45	0.78	78	water	Perm .6 Shaly
B46	0.78	78	water	Perm .6 Shaly
B47	0.78	78	water	Perm .6 Shaly
B48	0.78	78	water	Perm .6 Shaly
B49	0.78	78	water	Perm .6 Shaly
B50	0.78	78	water	Perm .6 Shaly
B51	0.78	78	water	Perm .6 Shaly
B52	0.78	78	water	Perm .6 Shaly
B53	0.78	78	water	Perm .6 Shaly
B54	0.78	78	water	Perm .6 Shaly
B55	0.78	78	water	Perm .6 Shaly
B56	0.78	78	water	Perm .6 Shaly
B57	0.78	78	water	Perm .6 Shaly
B58	0.78	78	water	Perm .6 Shaly
B59	0.78	78	water	Perm .6 Shaly
B60	0.78	78	water	Perm .6 Shaly
B61	0.78	78	water	Perm .6 Shaly
B62	0.78	78	water	Perm .6 Shaly
B63	0.78	78	water	Perm .6 Shaly
B64	0.78	78	water	Perm .6 Shaly
B65	0.78	78	water	Perm .6 Shaly
B66	0.78	78	water	Perm .6 Shaly
B67	0.78	78	water	Perm .6 Shaly
B68	0.78	78	water	Perm .6 Shaly
B69	0.78	78	water	Perm .6 Shaly
B70	0.78	78	water	Perm .6 Shaly
B71	0.78	78	water	Perm .6 Shaly
B72	0.78	78	water	Perm .6 Shaly
B73	0.78	78	water	Perm .6 Shaly
B74	0.78	78	water	Perm .6 Shaly
B75	0.78	78	water	Perm .6 Shaly
B76	0.78	78	water	Perm .6 Shaly
B77	0.78	78	water	Perm .6 Shaly
B78	0.78	78	water	Perm .6 Shaly
B79	0.78	78	water	Perm .6 Shaly
B80	0.78	78	water	Perm .6 Shaly
B81	0.78	78	water	Perm .6 Shaly
B82	0.78	78	water	Perm .6 Shaly
B83	0.78	78	water	Perm .6 Shaly
B84	0.78	78	water	Perm .6 Shaly
B85	0.78	78	water	Perm .6 Shaly
B86	0.78	78	water	Perm .6 Shaly
B87	0.78	78	water	Perm .6 Shaly
B88	0.78	78	water	Perm .6 Shaly
B89	0.78	78	water	Perm .6 Shaly
B90	0.78	78	water	Perm .6 Shaly
B91	0.78	78	water	Perm .6 Shaly
B92	0.78	78	water	Perm .6 Shaly
B93	0.78	78	water	Perm .6 Shaly
B94	0.78	78	water	Perm .6 Shaly
B95	0.78	78	water	Perm .6 Shaly

QUANTITATIVE ANALYSES



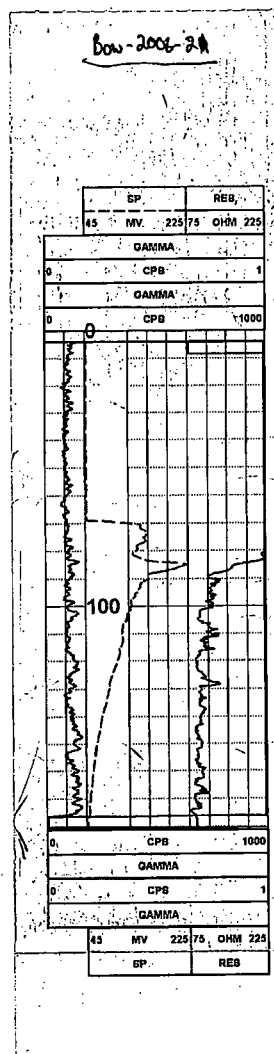


WDCSW 2006-1
 3915
 Sea-27 QUINE SW E2W
 60° E from CPD 2006-2

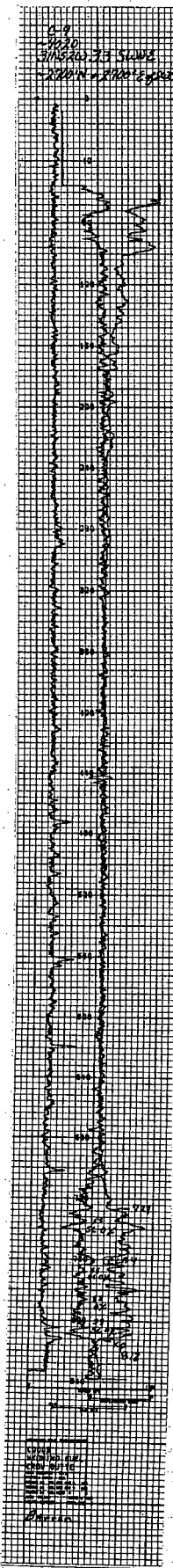


WDCSW 2006-1
 3915
 Sea-27 QUINE SW E2W
 60° E from CPD 2006-2

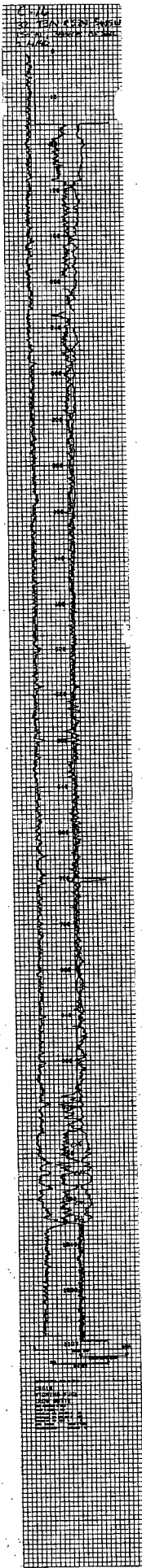
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1-1
1020
11/20/2019 11:51 AM
2020/11/20 11:51 AM



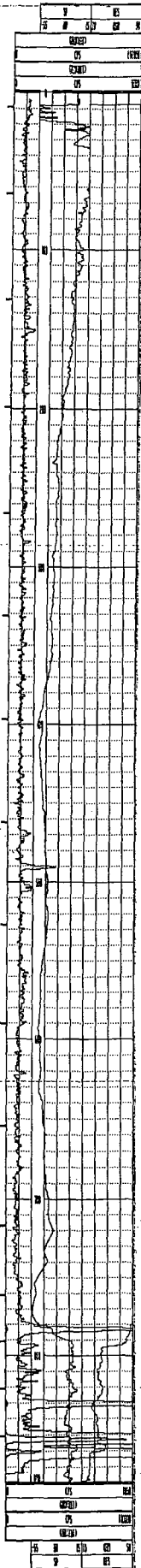
1-1
1020
11/20/2019 11:51 AM
2020/11/20 11:51 AM



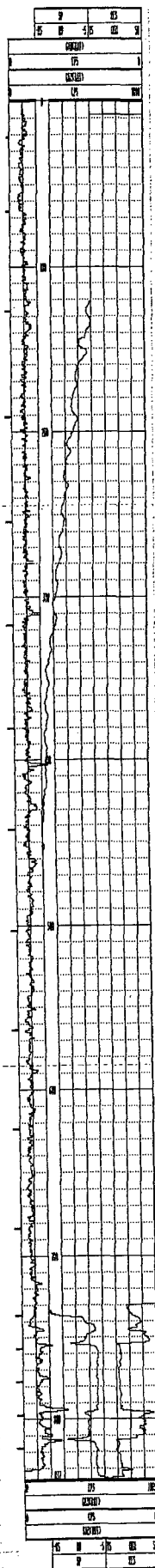
1

[illegible]

100-2006-2



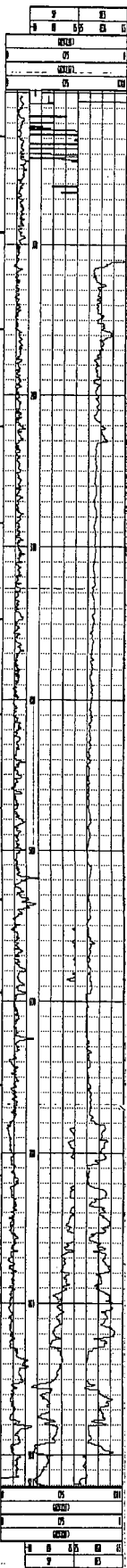
Contd. 2006-3



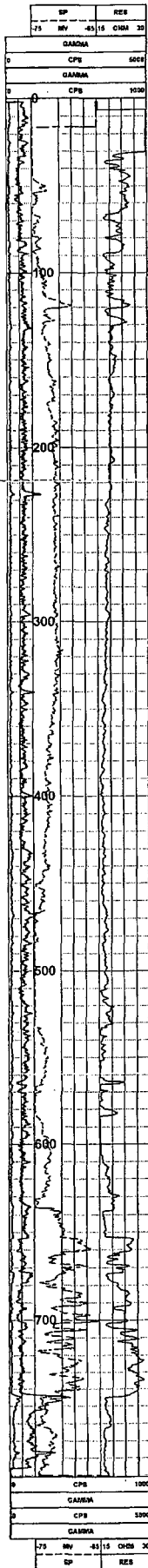
CNU-2006-4



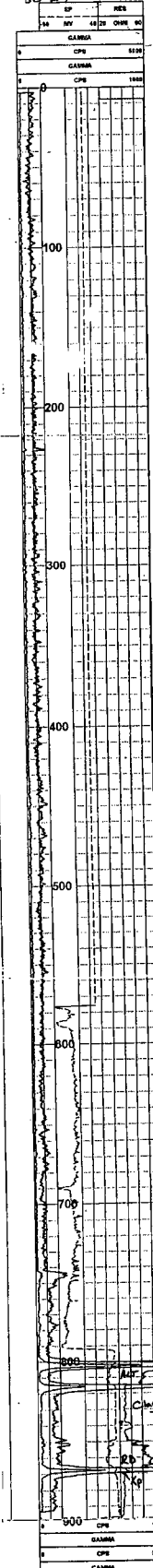
06-2006-5



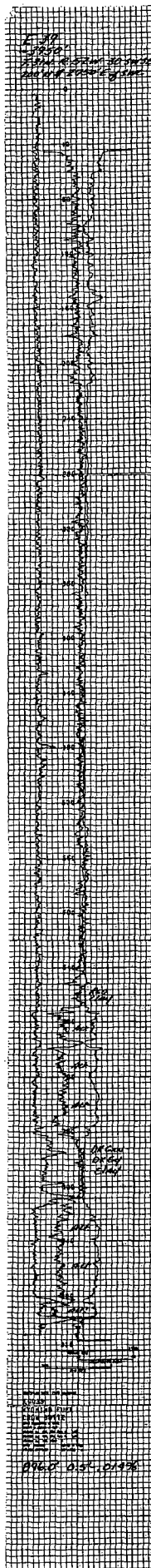
FD-200-1



2006-2
 3115
 Sec 20 SE 1/4 31N 52W
 50' E 50' N CROZON



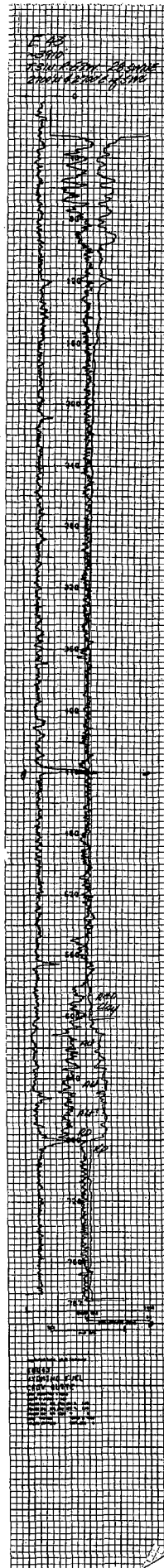
302.5 2.0 - .042
 316.5 2.0 - .042
 367.5 2.0 - .042



1-12
3800
1-12-12
1-12-12

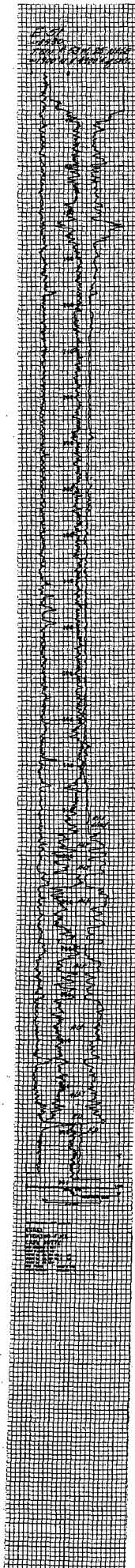
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1-12-12

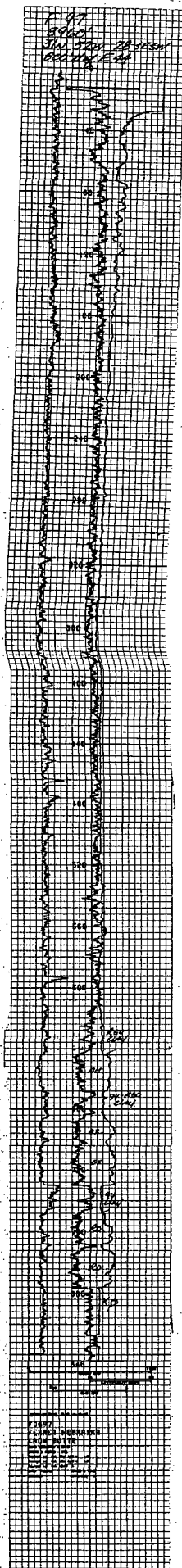
E 48
~5910
T 510 A 510 20 910
2100 4 2100 4 510



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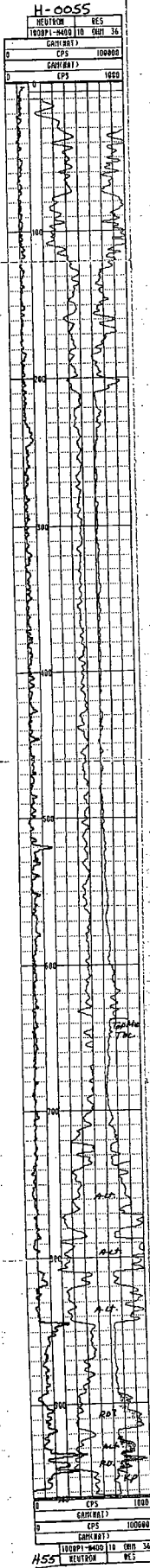
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98. 100
99. 100
100. 100





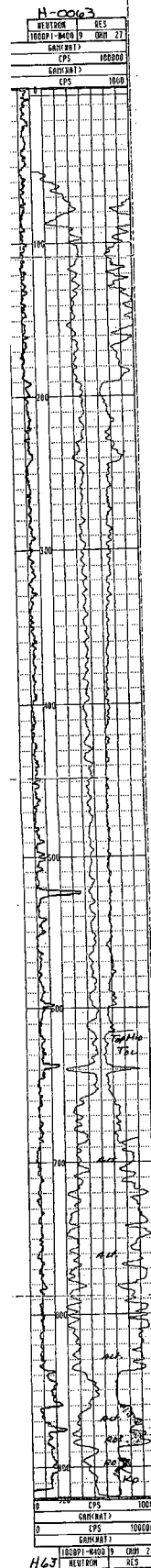
1155
 4000
 31N. 52W 29 SWNW
 200 E of 879

4
 3
 1



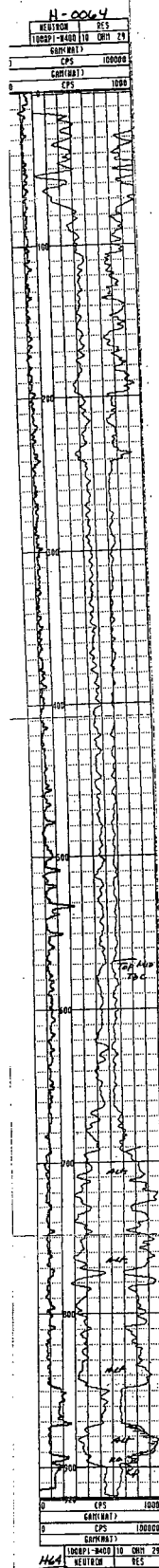
DIRET N.E. SW

63 3990'
 1W. 52N. 32 NEWN
 400 15/11/61



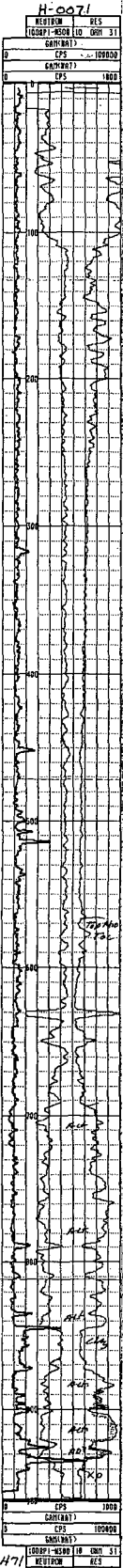
DRIFT 5.7' SE

H64
 4000'
 31N. 52W. 32 ANNW
 750' E of H57



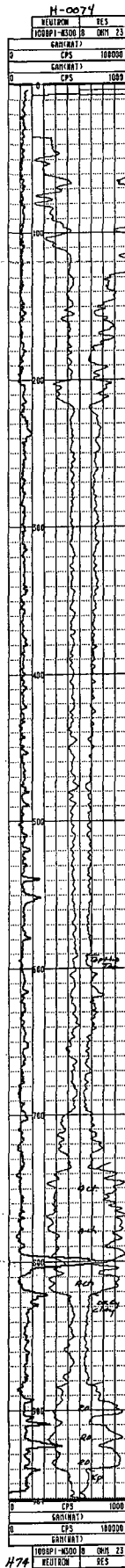
DEPT 46' 552

H-71
 3990
 31N. 52W. 291MM
 190' W. 1453



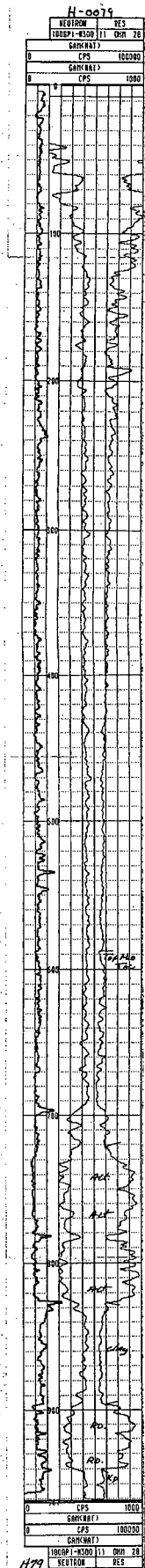
985.0' 1.5' - .008%
 DRIFT 19.0'S

H 74
 5770'
 214.52W. 29 N 44W
 200' of 077



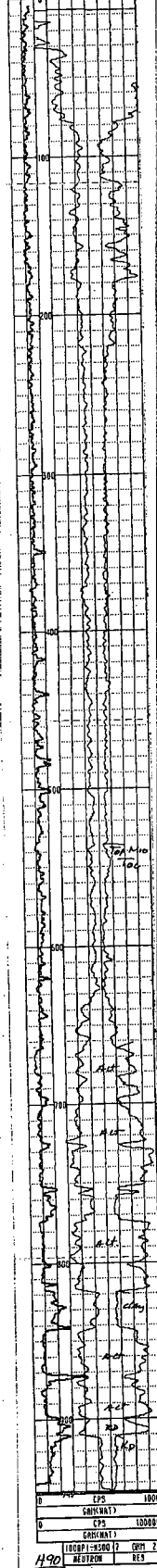
H 74
 800.5' 2.0'-.010%
 DRIFT H' WSW

H 79
 3990
 31N. 52W. 29 HNSW
 400' E of H 74



DRAFT 885N

H-0090	
NEUTRON	: RES
1000P1-H300	7 OHN 23
GAIN(RAT)	
0	CPS 100000
GAIN(RAT)	
0	CPS 1000



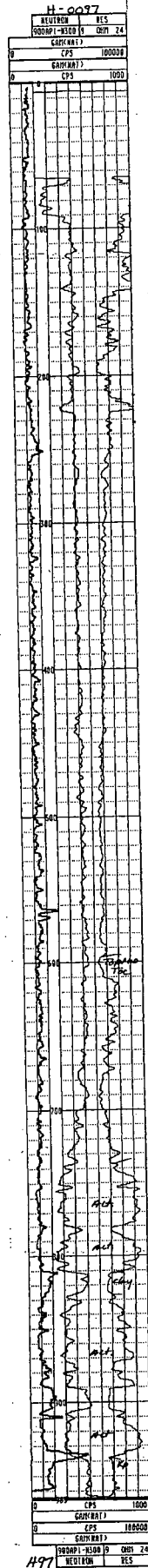
DRIFT 6.8'
AZIMUTH 158.6'

H95
 5960
 31N. 52W. 31 N&M
 100' WY H90



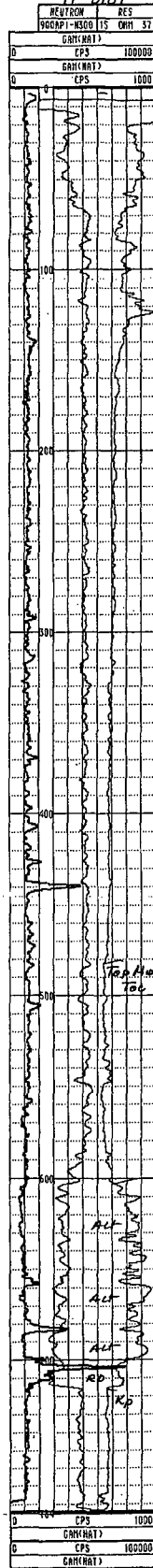
H95
 NEUTRON RES
 DRIET 8.5'S

H-97
 4024
 31W-52W 32S-14N
 600' 5" 491



H101
 3920'
 31N.52W. 28N65E
 ~2550'N 6500'E
 25 SWC

H-0101



H101
 709.0' 2.0'-009%
 DRIET 7.3' SE

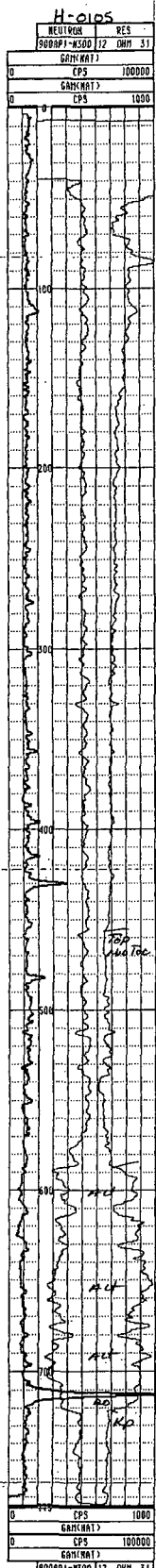
H 102
3740'
S/N. 52 W. 38 N. 84 W
~5050' N. E. 4050' E
of SWC

H-0102
NEUTRON RES
DODAP1-RESO 13 OUT 32
GAIN(RAT) CPS 100000
GAIN(RAT) CPS 1000



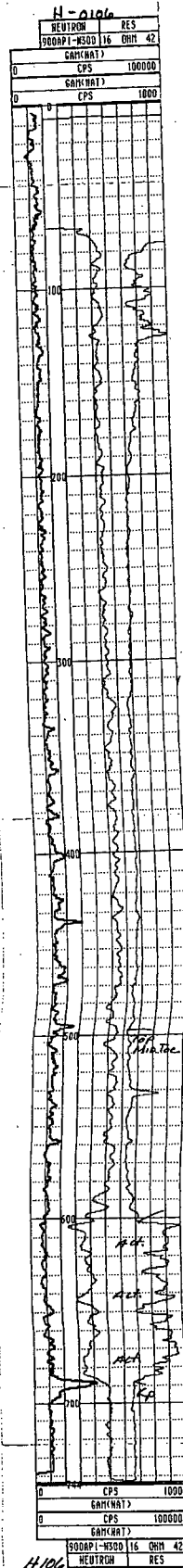
H102
NEUTRON RES
DAPRT H.7'S

H105
 3900'
 31W.52W. 27NWSW
 325'E of H 101

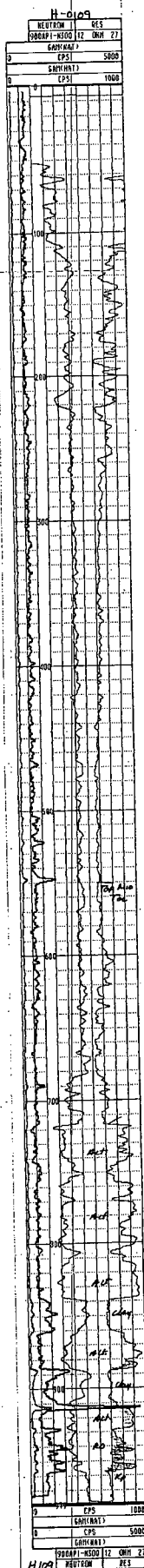


H105
 712.0' 3.0% 0.10%
 DEPT 20'S

H 106
 3900'
 31N. 62W, 28 N 65 E
 100' W of H 101



H109
 4000'
 81N.52W.29 SWSW
 200' S of N72

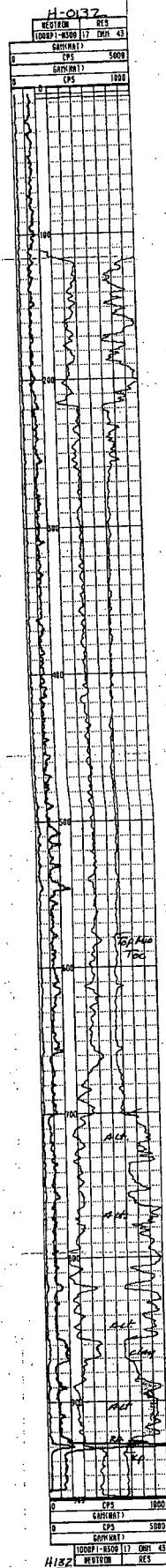


GAMKAT)			
10	EPS		100000
GAMKAT)			
1108P1-M300		15	OFFY 35
NEUTRON		RES	

888.0' ± 0'. 010%

DRIET 12.8' SW.

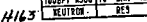
H132
 9000'
 51W. 52W. 32 N 1/4 NW 1/4
 180' 34' H 60



H-0132
 WESTERN RES
 1000' 1-1500' 17 CMH 43
 GARY HART
 CPS 5000
 GARY HART
 CPS 1000

H132
 929.5' 3.5'-.011%
 DRIFT 2.4 E

H163
3925'
3/4 N. 52 W. 30 S 6 NE
200' E of H161



DRIIFT 16.5' SSE

H-0118

MEANTON

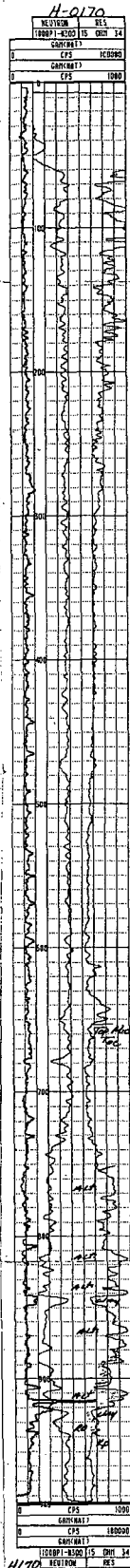
CAMPBELL

SQUAW

0 100 200

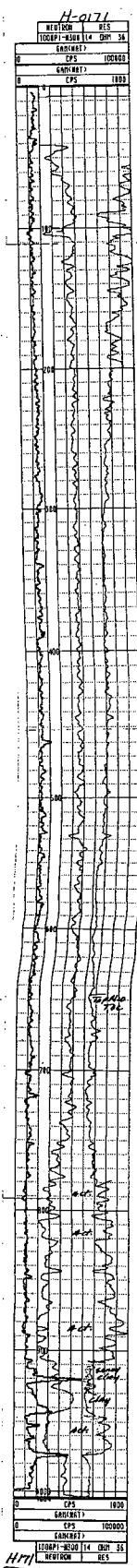
DRIFT 12.5'S

H170
 4049'
 31W. 52W. 92 NWSE
 ~2300' N 3700' E 5N



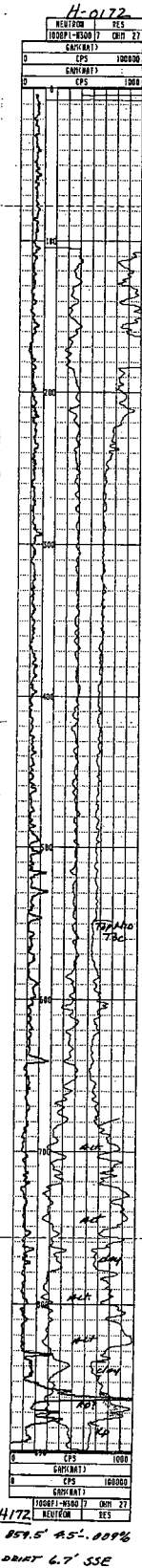
H170
 979.0' 10'-.010%
 DIRT 142' SE

H-171
 4052'
 3W. 52N. 32 SWS
 ~1200' N 12800' S
 SWC 0

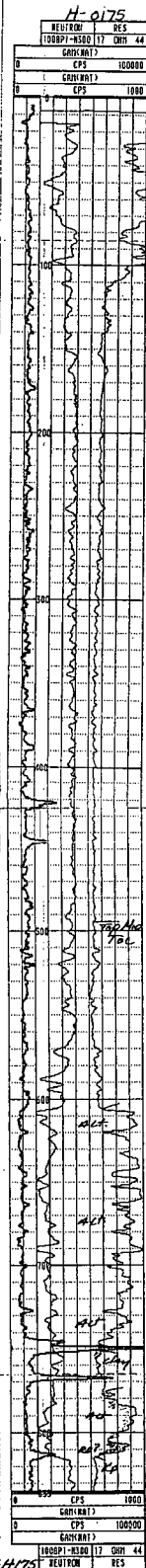


BRIET 166' 55E

H172
 3980'
 314.52N, 32.44W
 700' W of H103



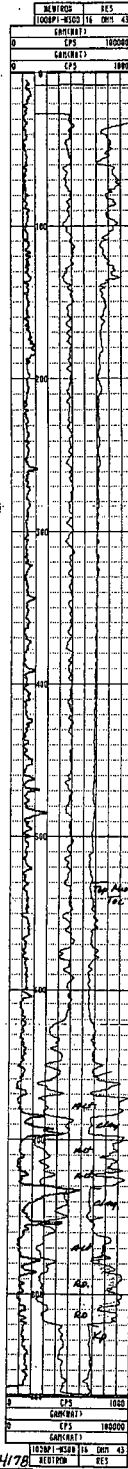
H175
 3870'
 341.53N. 25° 56W6
 375'W of F93



H175 NEUTRON RES
 749.6 2.0-0.13%
 747.5 2.0-0.09%
 DIRT 13.5' E

H178
 5950'
 31N.52W 33N.WNW
 ~1000 E of H176

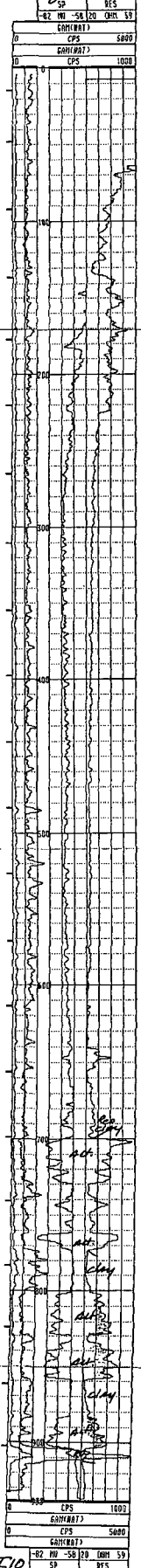
H-0178



H178
 5950'
 31N.52W 33N.WNW
 ~1000 E of H176

DRIFT 9.2' 5

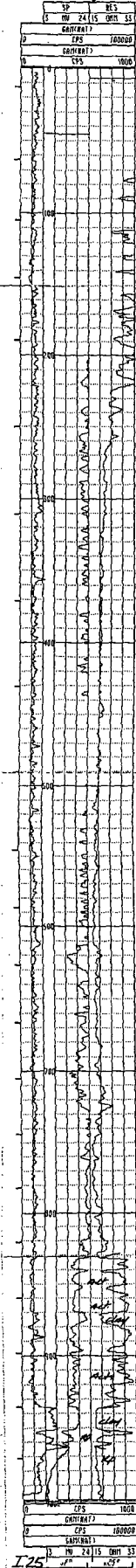
I-10
 31N. 52W. 32 NE NE
 200' CORNER



I-10
 904.5' 7.5' - .008%
 DRIFT 15.4' SE

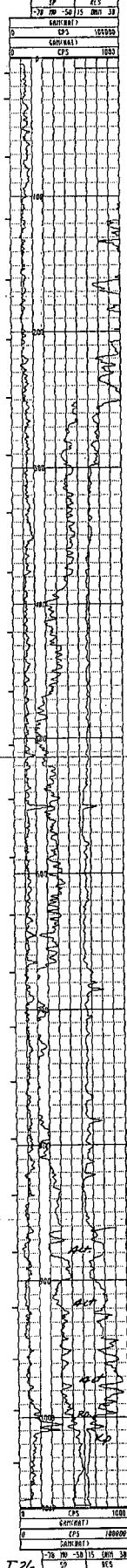
892.0' 5.0' - .011%
DRIFF 10'S

I-25
 4070
 S/N. S2W. S2E SWEE
 400'S & 250'E of H771



PRINT 44' NW

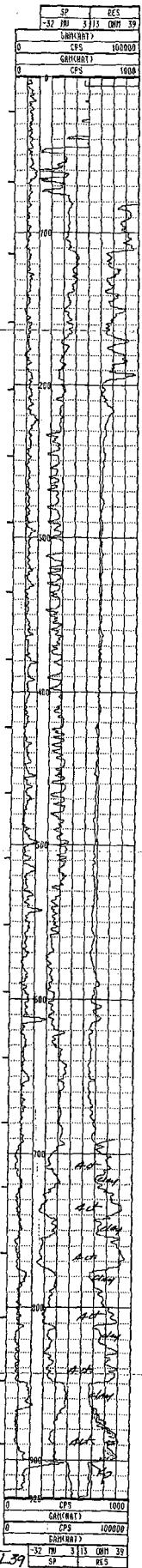
I-26
4100'
31°N. 52°W. 32°SWSE
200' S & 100' E of I-26



I 26

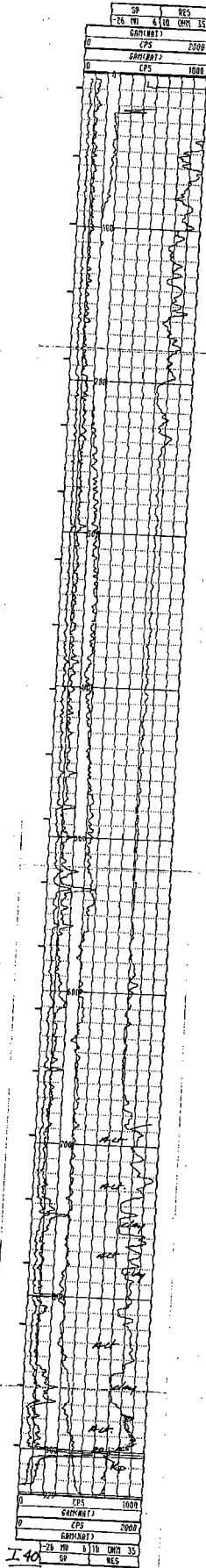
DRIFT 17' NNE

I-39
4000'
3/4 N. 52 W. Sec. 32 NE 1/4
400' E of H 91



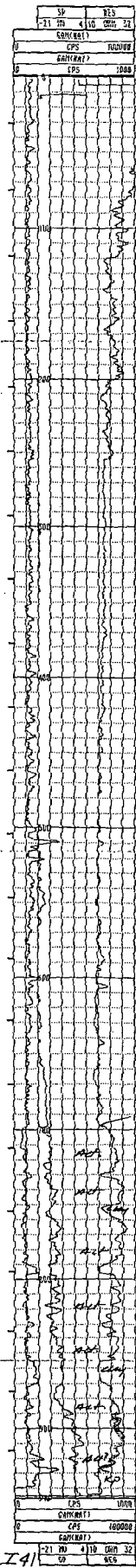
DRIFT 16.4' S

I-40
 4000'
 31W.52N.32NNW
 100' W of I 36



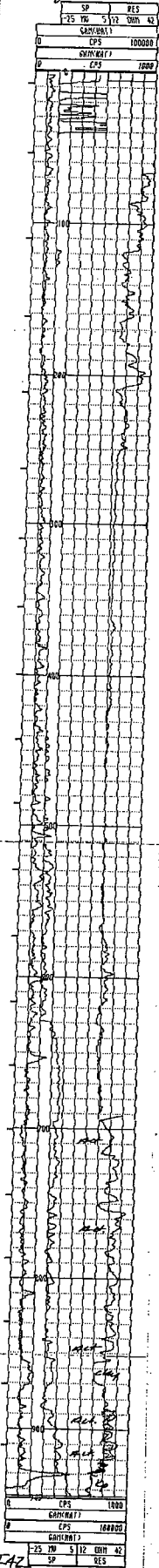
I 40
 902.5' 2.0' - 0.14%
 DRIFT 6.2' W

I-41
 4000'
 31N.52W.32NWNW
 100'W of H-59



I-41
 DRIFT 45° ESE

I-42
 4000
 314.52W. 32NWNW
 200' W. I. 33



I-42

DRAFT 72' SE

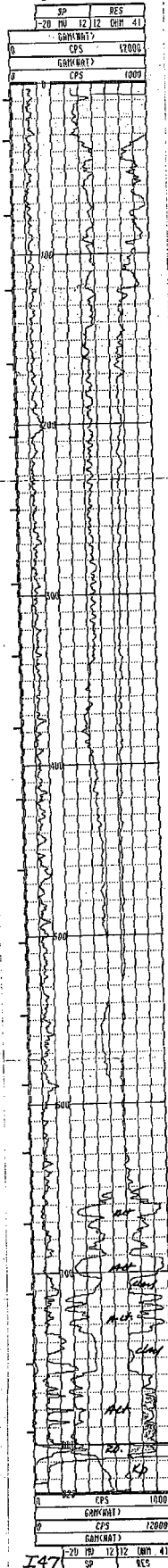
I-45
 5940
 31N.52W.33NNNW
 100' E of I 20



I 45

DIP 6.7' WSW

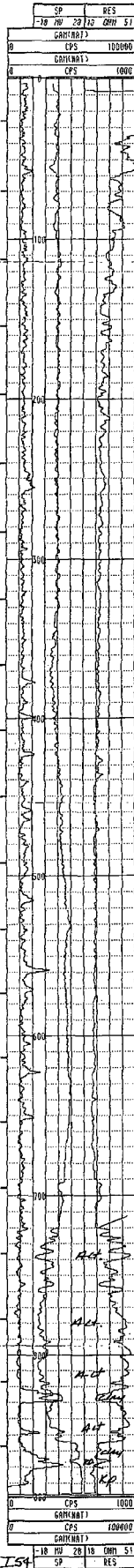
I-47
 3950'
 31W 52W 33NWNW
 200' E of I-43



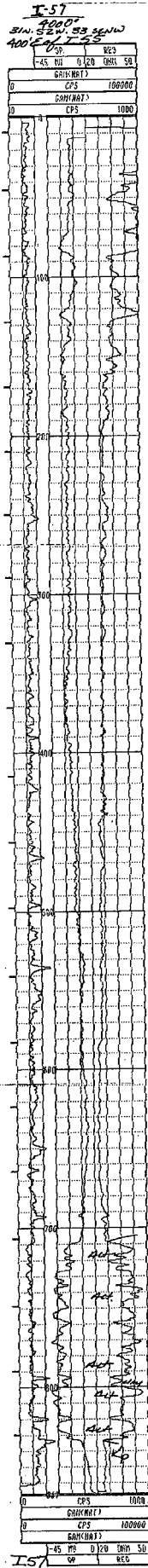
I-47
 802.5' 6.5' - 0.29%

DRIFT 4.3'E

I-54
 4000
 314.52 W. 33 SE NW
 400' S 400' E of L50

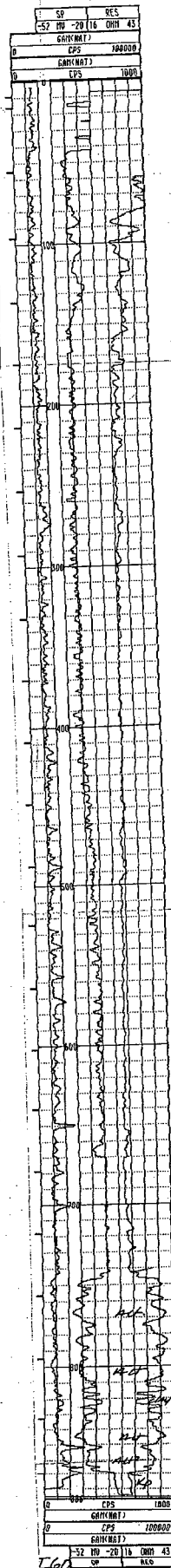


DRIFT 2.9' SE

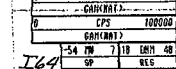


DRIFT 6.2' 55C

I 60
 4010'
 31N. 52W. 33 NESW
 400' S of I 54

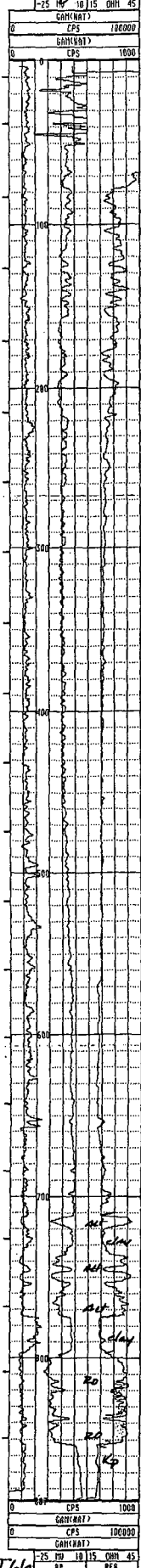


DRAFT 2.6' NNE



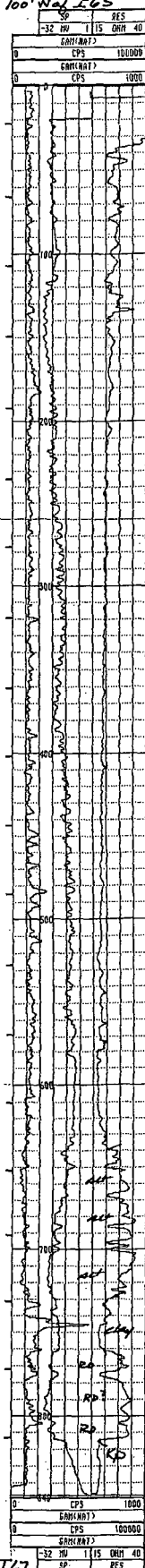
DRIFT 9.5' SSW

1-66
 9993
 31N. 52W. 28 SNEW
 200' W. 21.1 654



166
 DIRT 12.1 SSW

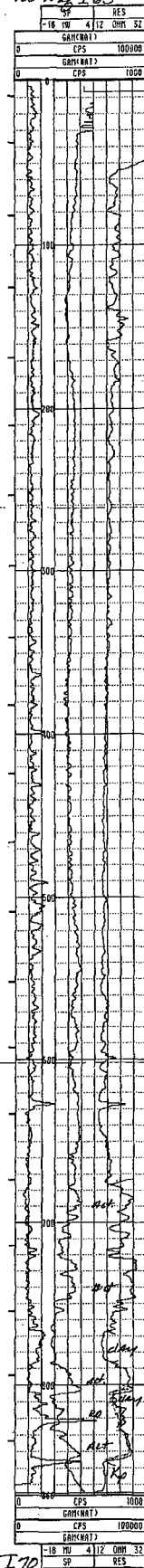
I-67
3935
31N 52N 28 SW SW
100' W of I-65



I67

DRIET 41 SSE

I-70
3950'
81N. 52W. 88 SWSW
100' W. I 63

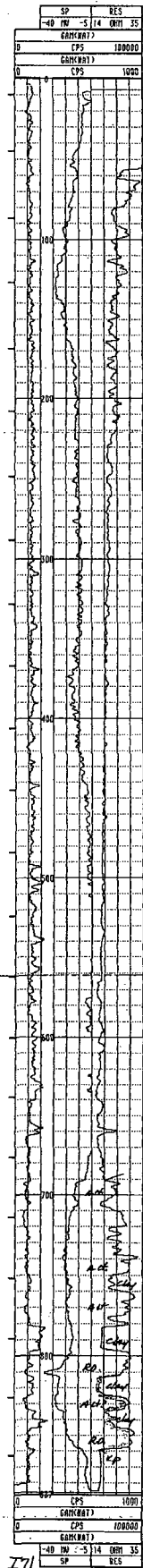


I70

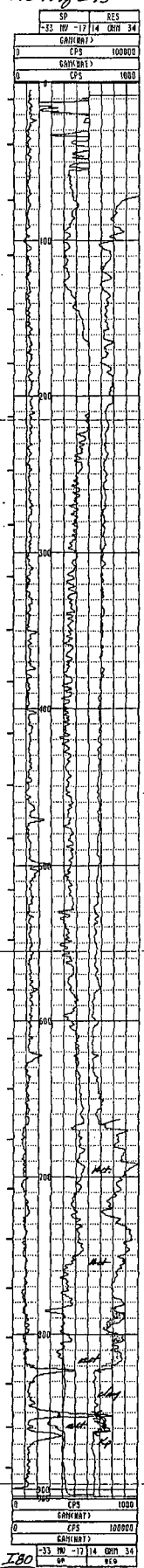
-16	HU	4	12	0
	SP			R

DRIFT 17.3' SSE

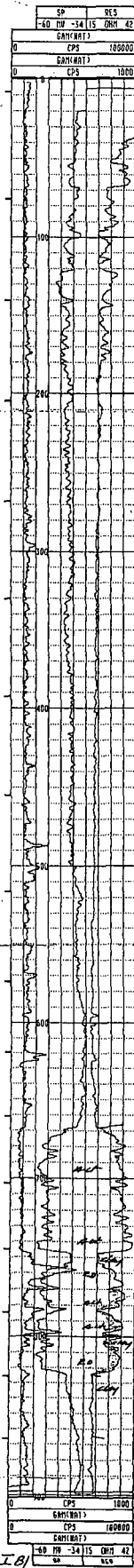
I 71
 5990
 31N.52W.29 SESE
 240' N of I 69



1-80
 5960
 31° 52' N 29° 55' E
 375' W of L75



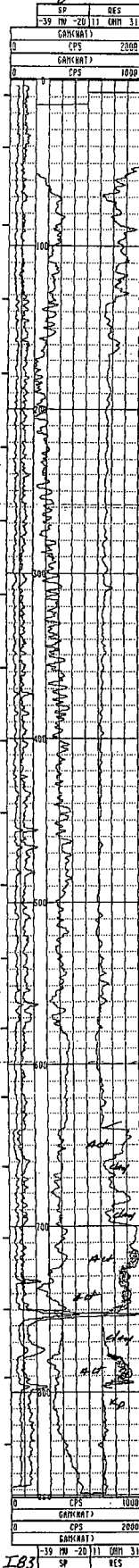
I-81
 3960'
 31N 52W 2956.52
 200' L of I-79



I-81

DRIFT 18.3' SL

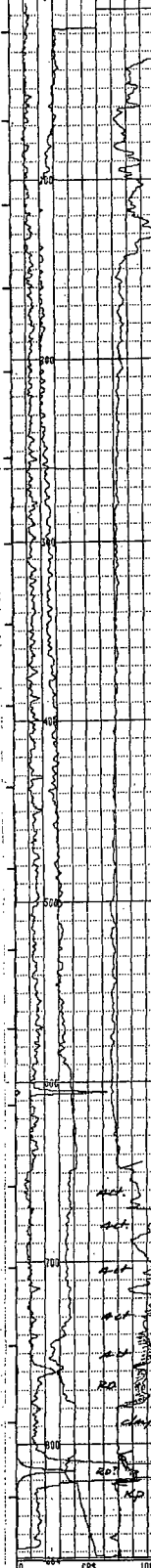
I-83
 314.40
 314.52-29.463E
 200' W of I 77



I-83
 753.0' 2.0' - 0.12%
 DRIET 7.4 E

I-87 1951
 314 52W 29N05E
 200' E of I-77

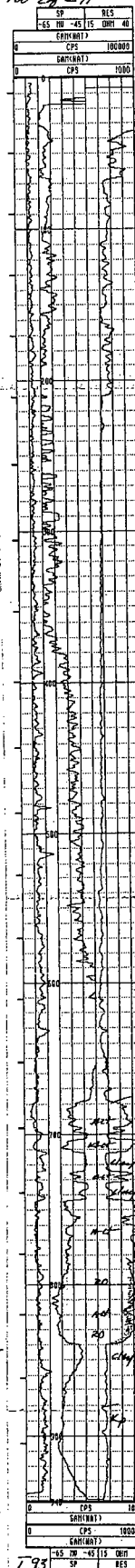
SP	RES
-50	100
DATA RATE	22000
CPS	1000
DATA RATE	22000
CPS	1000



SP	RES
-50	100
DATA RATE	22000
CPS	1000
DATA RATE	22000
CPS	1000

1.87
 813.0' 5.0' - 0.56%
 DRIFT 80 SE

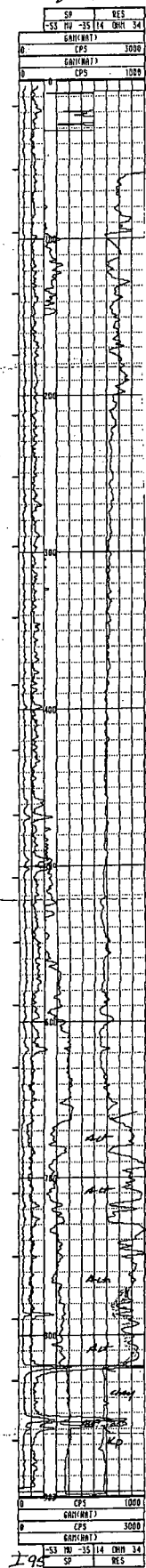
I-93
 31W 52N 29 SE SE
 100' E of I-91



I-93

DRIFT 4.5' ENE

I-95
 3160'
 SW 52W 2.9565E
 100'W of I-91



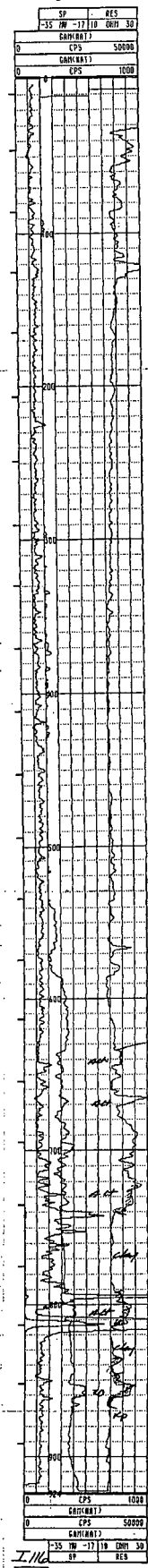
8200' 3.0'-.011%
 8545' 10'-.011%
 DRIET 6.2' 65E

I-109
 8940'
 31N 52W 30 SEAR
 300' E of I-106



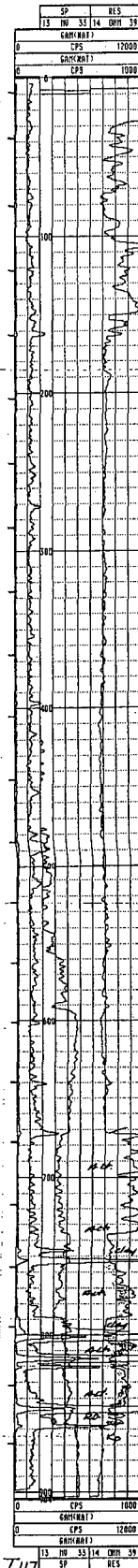
I-109
 7940' 2.0'-.008%
 8940' 3.6'-.051%
 DIRT 5.0' E

T-116
 3910
 311.52N, 30.82E
 200' E of 4154



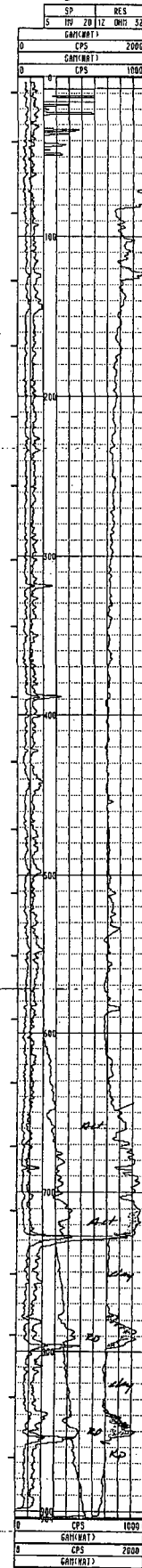
I-116
 794.5' 1.0-0.25%
 811.0' 3.5-3.47%
 DRIFT 10.7' N

I-117
3940
514 52W 30 SW 1/2
200' W of I 112



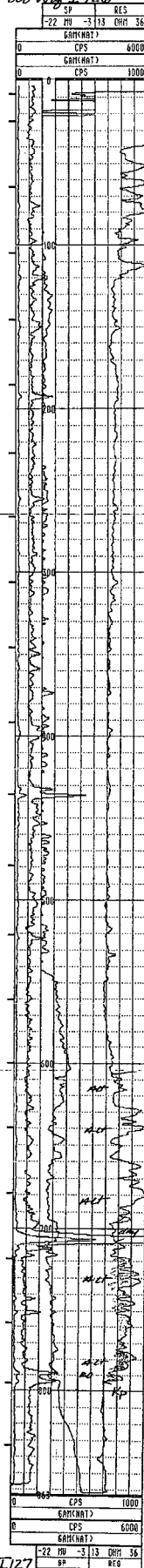
I-117
753.0' 2.0' - 0.12%
798.5' 1.5' - 0.11%
801.5' 1.5' - 0.07%
815.5' 2.5' - 0.07%
847.0' 3.5' - 0.03%
DRIFT 4.4' W

I 124
 8920'
 51° 52' N 30° SE
 200' W of I 122



728.5' 2.0'-.011%
 DIRT 12.4' SE

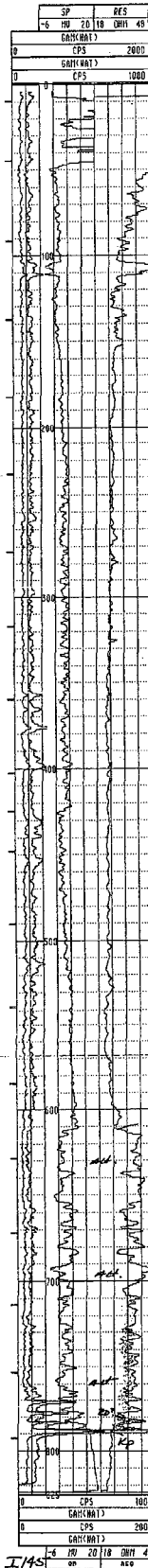
I-127
 3890
 310 52W 50 SWNW
 600 V. 12.6



I-127
 705.5 40'-0.29%
 DRIFT 13.7 NNE

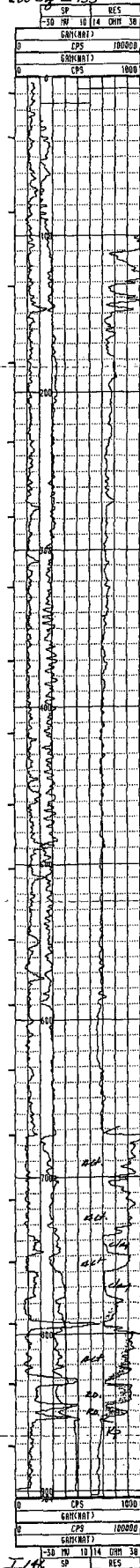
724.5' 1.0' - .015%
821.5' 3.0' - .010%
DRIFT 106'S

I-145
 5810
 31N. 52W. 30 NNNW
 100' N of I-128



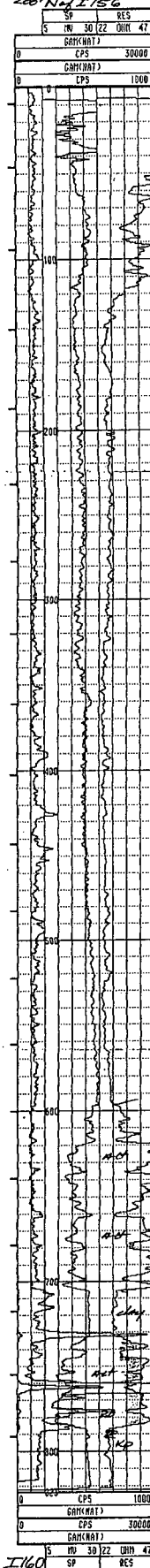
I-145
 788.5' 20'-0146
 DRIFT 6.5' NE

I-146
 3420
 31N 52W 30 NE NW
 200 24 133

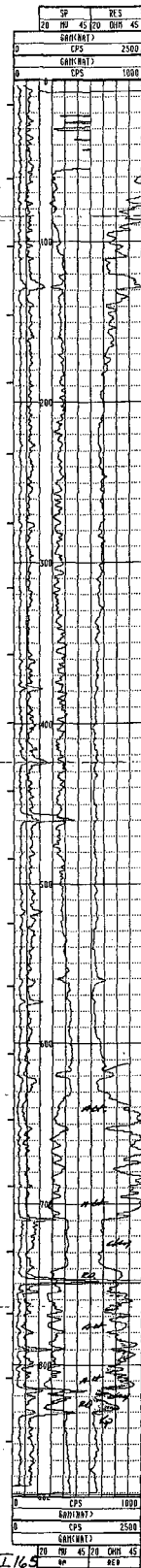


DRIFT 50' NNE

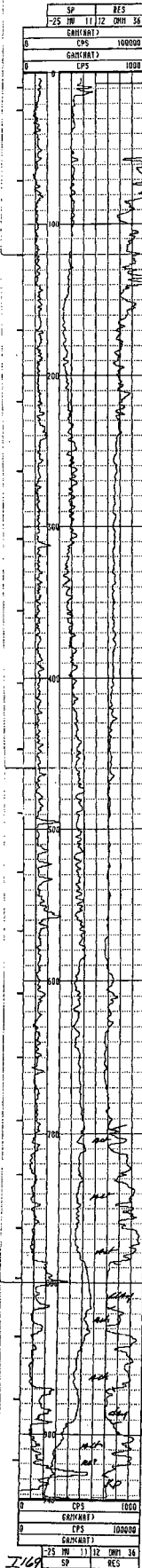
I-160
3880'
3/4 S 52 W 30 N N N W
200' N of I 156



I-165
 3710
 31N 52W 30 NENW
 200' N/I 126

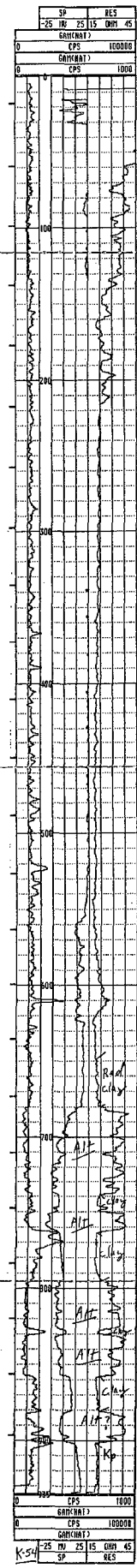


I-169
 1000'
 31°N 52°W 32.5mm/s
 1000' 5d 100' 14g



I170
 911.0' - 2.0' - .010%
 918.0' 4.0' - .012%
 DIRT 15.8' SE

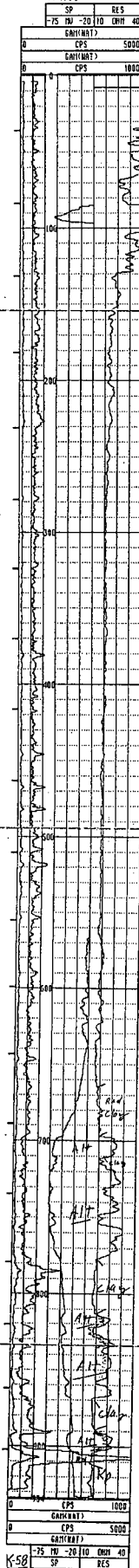
K-54
3970
31N 52W 32 NWNE
190' W of I 168



Drift 219' SSW

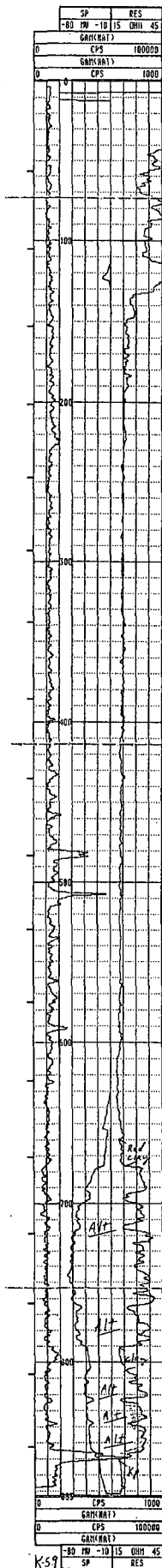
K-58
3990
31W 52W/ 32E
SW/NR

200' x 1' K56

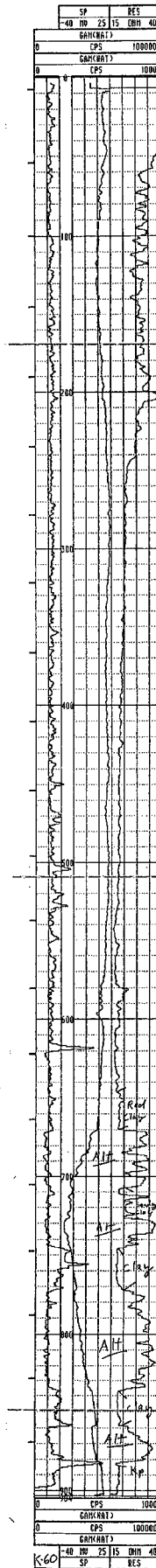


Dr. fr 9.1' SW
907.5 2.0'-0.0142

K-59
3970
31N 52W 135W/NW
400' E of J13

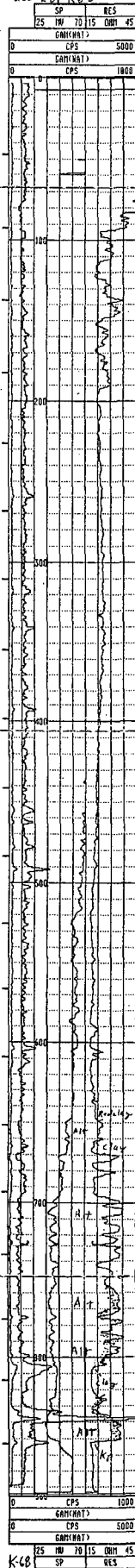


K-60
 3470
 11N 92W 32 NENE
 200' W of K 57

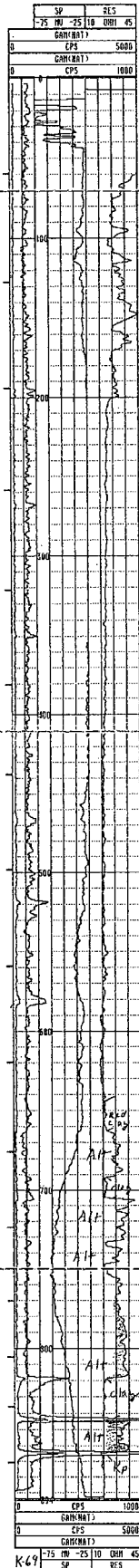


881.0 1.0'-0.011%
Drift 11.5' SSE

K68
 3750
 31N 62W 2956 SE
 200' E of K65



K-69
 3960
 11N 52W 29SW 9E
 200' W of K 66



843.5 2.0°-0.013 %
 864.0 2.0°-0.020 %
 D: 4+ 21.3' S

D: 4 + 10.2' SE



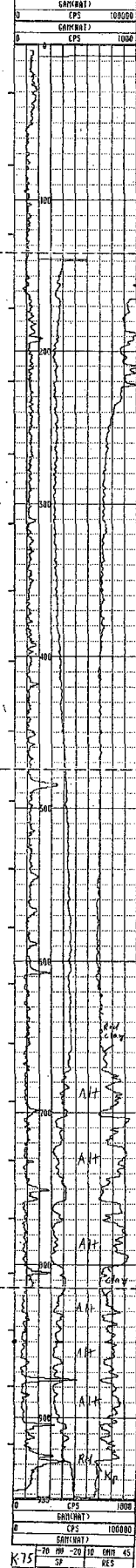
3955

K-75

3480

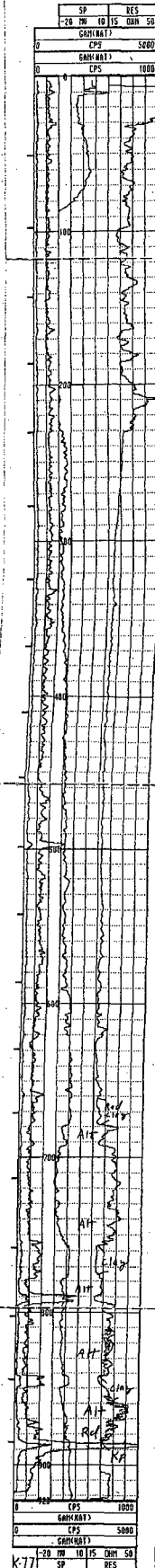
31W 53W 25SESE

600' N of K 74

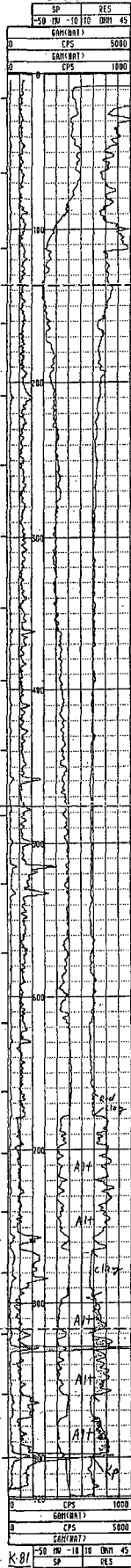


D. 4' R. 6' SSW

K-77
 3970
 31N 52W 30 SESE
 400' W of K 72

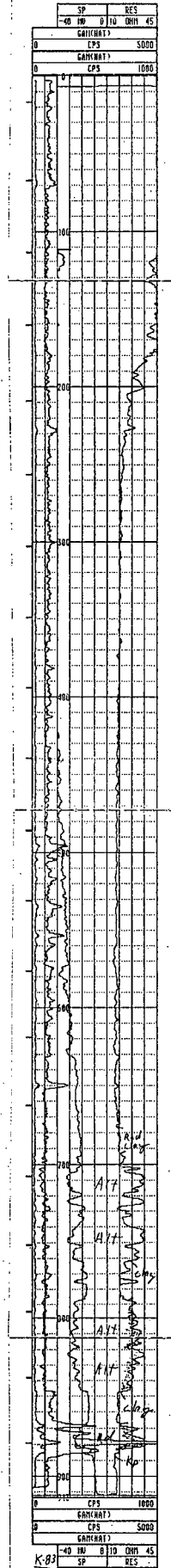


K-81
 3970
 21N 52W / 22.5W NE
 200' W of K63

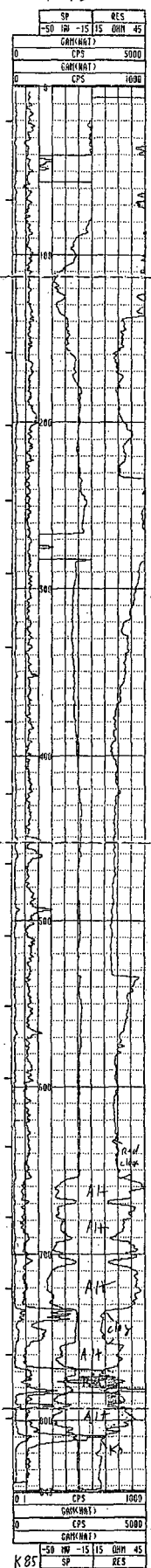


K-81
 D. 13.3' SW
 998.5 2.0' - 0.01%

K-83
 3990
 31N 54W 12N 12W
 100' E of K 80

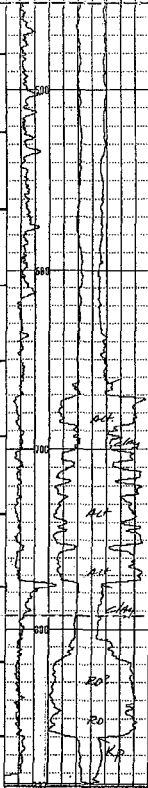
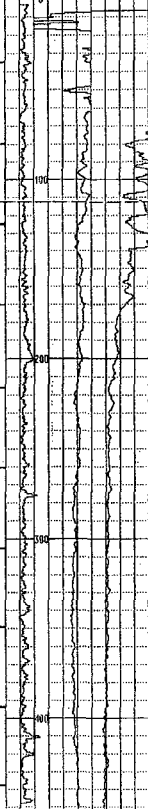


K-85
 3970
 T 31N 62W 33 NWNW
 200' W of I 44



792.0 2.0' 0.019%
 Dr. 5+ 8.6'
 Az 241.0

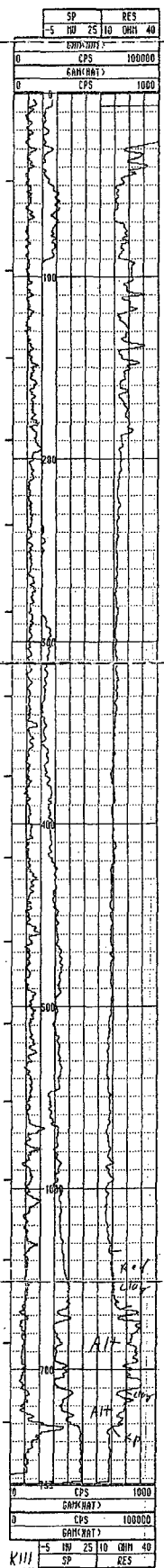
	SP	RES
	-55 18U -15	15 0MH 40
	GAIN(RAT)	
Q	CPS	100000
	GAIN(RAT)	
Q	CPS	1000



0	CPS	1000
1	GAM(NAT)	
0	CPS	100000
1	GAM(NAT)	
-55	MY	-15 15 QNH 40
1	SP	RES

Drift: 1.7' ENE

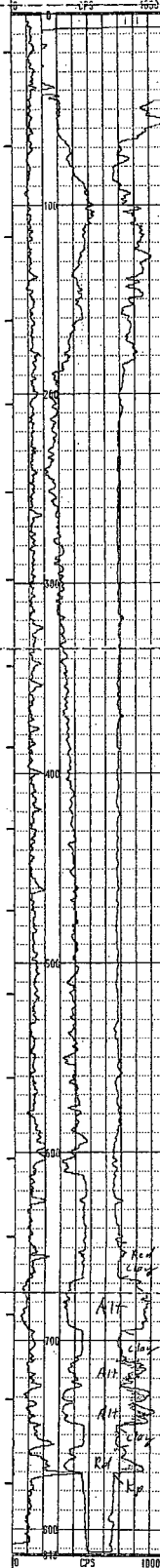
K III
 7945
 71N 62W 285WNW
 3720'N + 400'E 09
 SWC Sec 28



Drift 6.1' W

K112
 3960
 31N 62W 29 NESE
 200' W of I 97

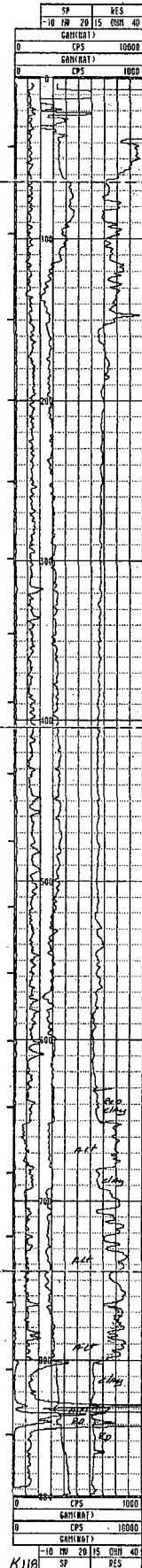
SP	RES
-45 IN -10 IS DM 50	
GAIN(NAT)	
0	CPS 100000
GAIN(RR1)	



SP	RES
-45 IN -10 IS DM 50	
GAIN(NAT)	
0	CPS 100000
GAIN(RR1)	

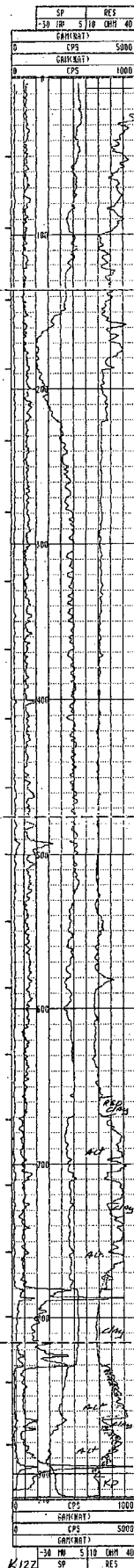
K112
 DIFT 9.6' ENE

K118
 3950'
 31N 51W 29.5WSE
 200' N of K71



K118
 829.0' 1.0' - 0.18%
 834.0' 8.0' - 0.37%
 DRIFT 11.5' S

K122
 3985'
 31N 52W 80 SNSE
 200' W of K92

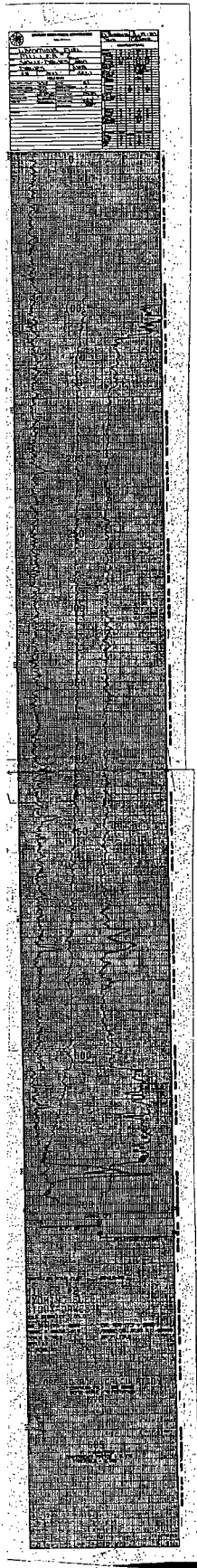


787.5' 10'-0.12%
 896.5' 2.0'-0.11%
 DIRT B4.5N

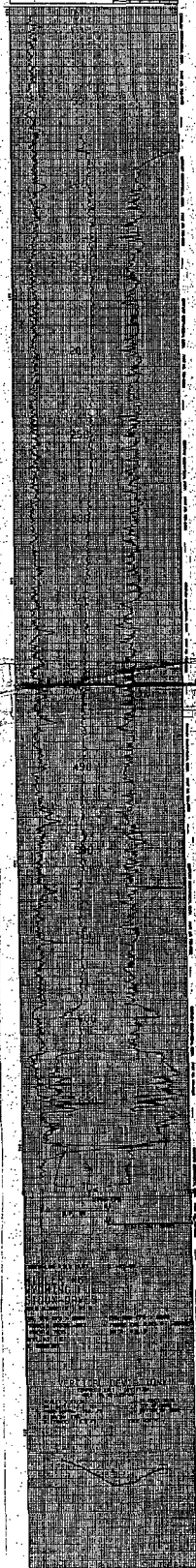
K130

ED	IN	13	13	UNIT	43
SP			RES		

DRIET 1.6' SE

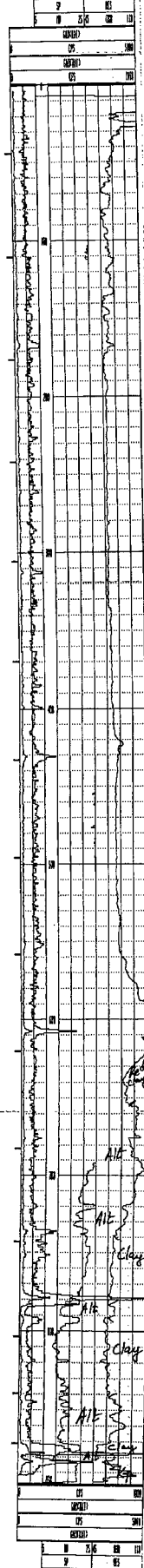


DATE		TIME	
NO. OF OBS.		NO. OF STATIONS	
NAME OF OBSERVER		NAME OF STATION	
NAME OF VESSEL		NAME OF COMMANDER	
NAME OF SURVEYOR		NAME OF ASSISTANT	
NAME OF ENGINEER		NAME OF BOATSWAIN	
NAME OF GUNNER		NAME OF BARBER	
NAME OF COOK		NAME OF BUTLER	
NAME OF STENOGRAPHER		NAME OF CLERK	
NAME OF TRANSCRIBER		NAME OF READER	
NAME OF CORRECTOR		NAME OF REVISOR	
NAME OF FINAL REVIEWER		NAME OF APPROVER	



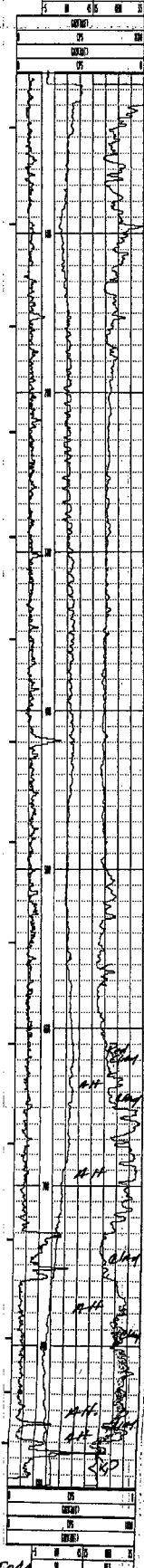


T-243
 3720
 3030 N 31 N 52 W
 2700 N + 100 E from SW



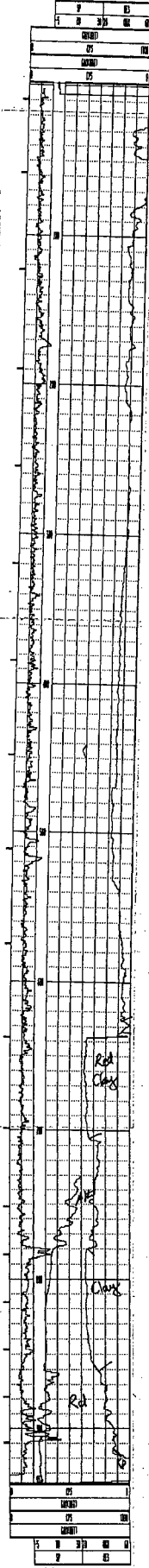
T-243
 D. ft 107'
 AB 207.8'
 779.5 1.0'-.019
 878.5 1.0'-.019

T-244
 3910
 80 300 500 (km)
 600 E / Jan 1982



T-244
 7670 1.0' 0.12
 4.15 24
 42 326

T-249
 3965
 30N85E 81N 52W
 200' N from T-248

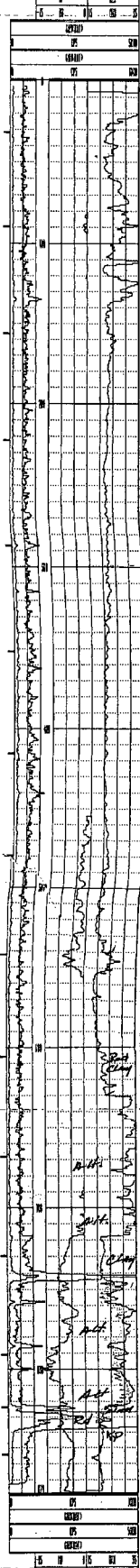


T-249
 Drift 5.0'
 Az 182°
 Barren

254
right 3.9'
AZ 39.7°
725.0 2.5' - .028
787.0 3.0' - .019

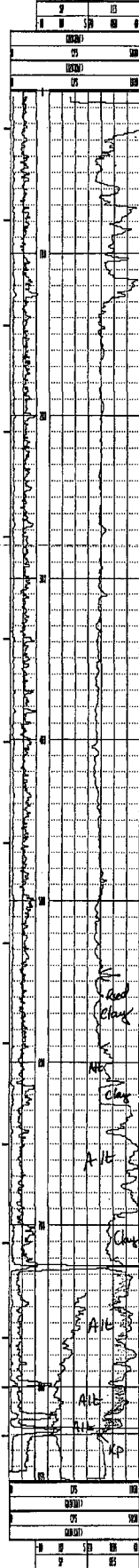
T-257

3900
Sec. 50 SW 52N
Apt. E from 7.45



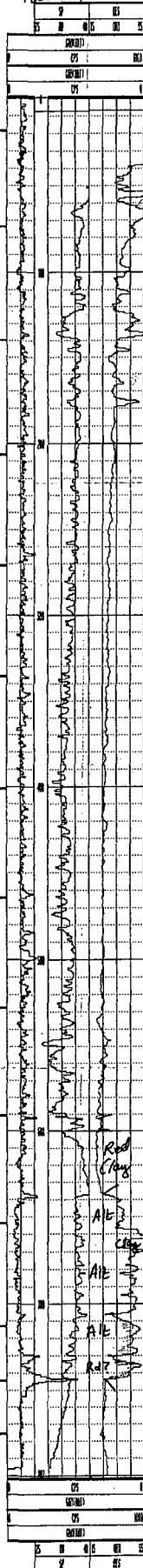
742.5 30-013
828.5 100-023
d-15 13.5
AL 13.8

T258
 3400
 3055 AND 315520
 400' N from T267



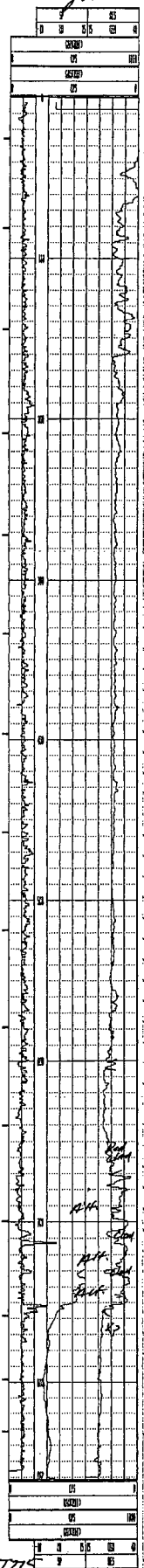
T258
 Grt 17.1'
 Az 45.4°
 726.0 2.0° - 0.13
 827.5 2.5° - 0.26

T-274
 3900
 2956 NE 214526
 1800' N from T273



T-274
 Drift 13.6'
 AZ 349.1'

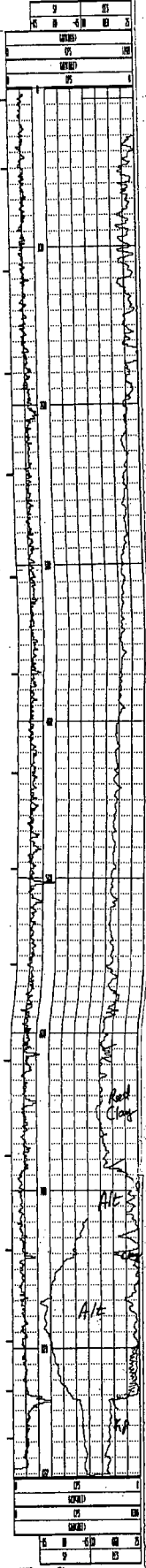
7-275
 3965
 3052N 29.50N
 1200 W from 7213



7215

dist 14.4
 MC 157.5

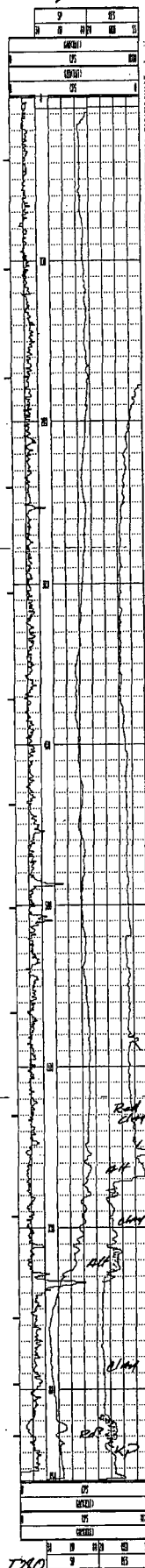
T-278
 5760
 27N55E 3.1N 62W
 200 N from T-273



T-278
 Drift 18.0'
 AZ 168.3'

drop 147
AZ 2524

T-280
3980
31°N 52°W 29°N 44°W
680'E from 7279



T280

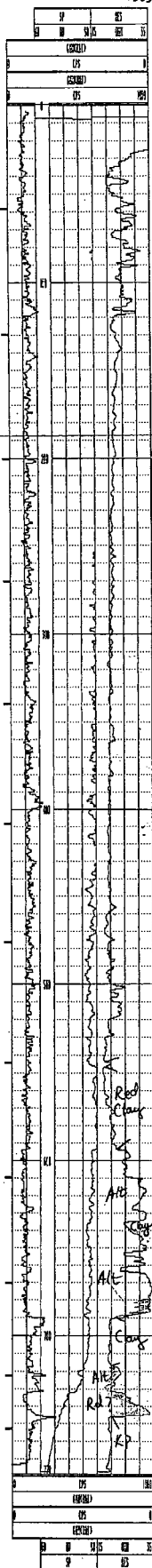
diat 103'
AZ 307.4

7-282
3920
21N 52W 28MM
600' E / 100' T



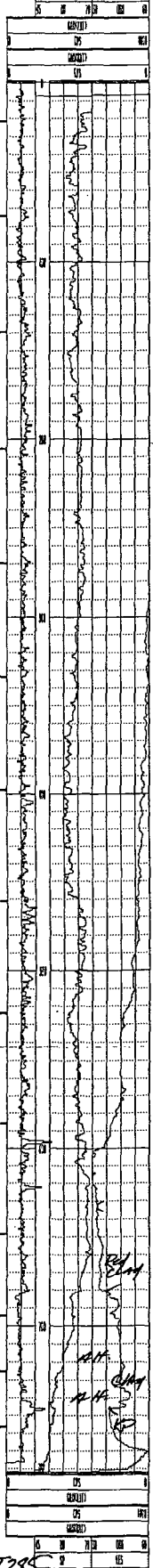
7-282
dies 10.4
172 287.4

T-284
 3880
 29 N 46° 31' W 520
 600' E + 75' S from
 T283



T-284
 Drift 11.4'
 Az 302.2°

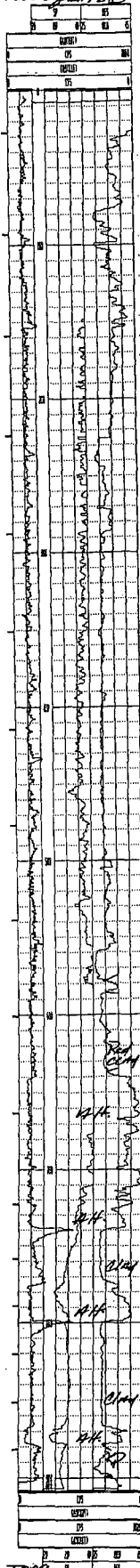
T-285
3860
31152N, 283000
700 5, 1000 722.4



T-285

drift 15.7
#2 272.3

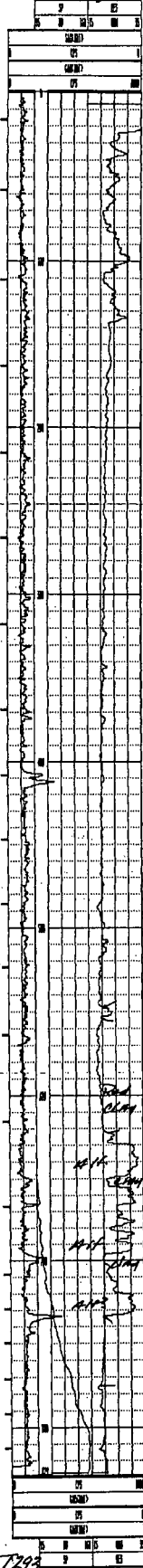
1-289
 3740
 30W EDN 29.5NHL
 1200.5 Jan 78 RS



7289
 diff 11.4
 Hz 274.6

T-233

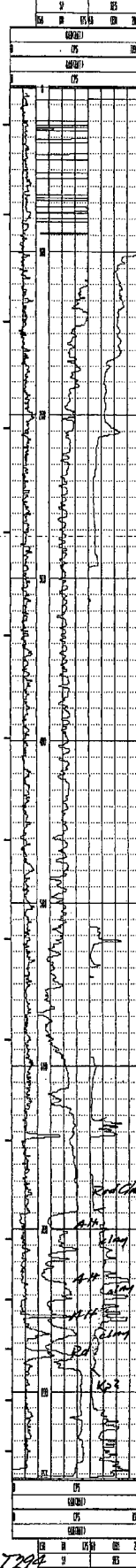
29 5000 34.5 52N
400' 5' 600' 2' 400' 2' 29



T293

d-125 7.5
10.7

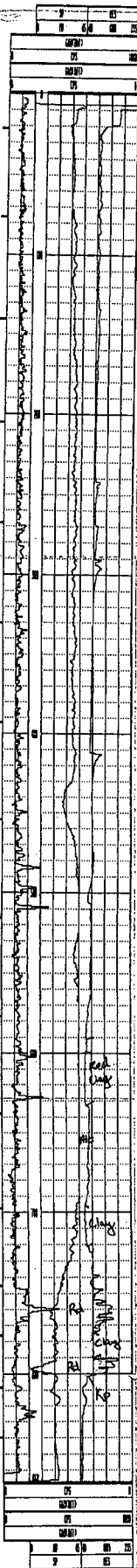
T-294
3975
20N65E 3W52N
100' from T288



T294
1540' 1.0'-01
d-1.17 3.0'
AZ 89.3

T-297

3770
27 NESE 314524
100' S from 27273

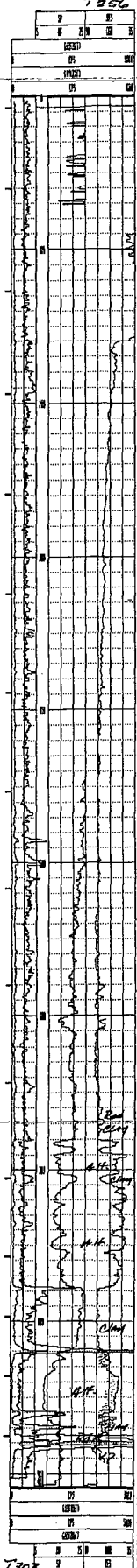


T-297

Dtft 24.5'
Az 155.2°

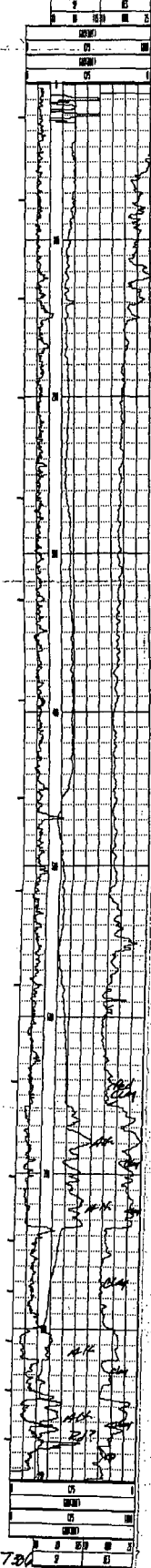
T-299
Drift 7.9
Az 153.2°
Barren

T-303
3955
31N 52W 30sec
400' 5420' N/ann
T-303



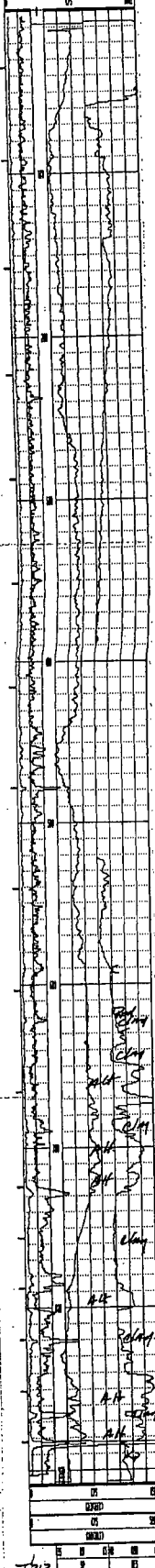
820.5' 1.0' - .025
876.5' 1.0' - .020
879.0' 1.0' - .026
883.0' 1.0' - .026
dist 10.5 to 195

T-306
3940
31W 52N 94W
400' N from T 255



Dist 1.9'
AZ 37.3

2	85
55	85
65	85
75	85
85	85
95	85
105	85
115	85
125	85
135	85
145	85
155	85
165	85
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1585	85
1595	85
1605	85
1615	85
1625	85
1635	85
1645	85
1655	85
1665	85
1675	85
1685	85
1695	85
1705	85
1715	85</



7813

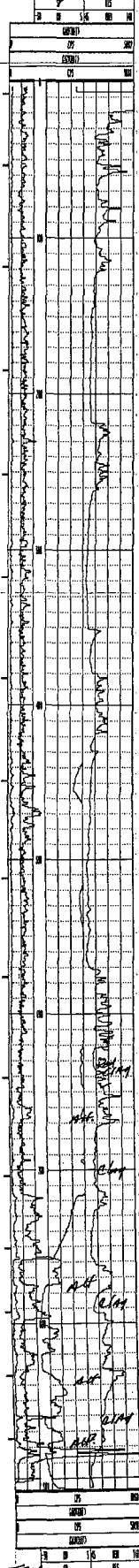
7	8
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883.5 20' - 025'

d.i.a.s 5.1

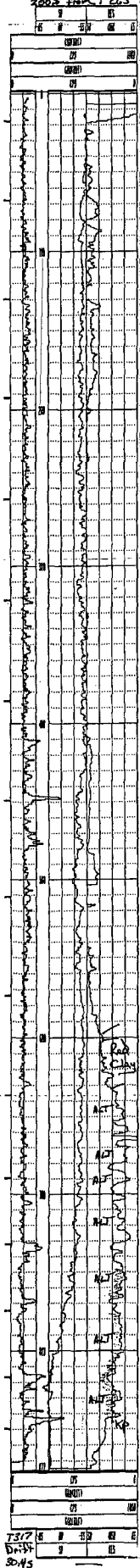
AZ 885.6

T-314
 34 80
 31N 61W 30Nuse
 840'N/100'W T-314



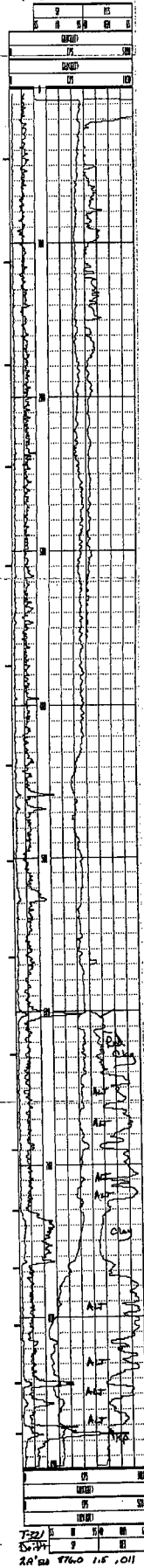
T-314
 8830' 10-014
 8855' 15-013
 d-11T 25.4
 N2 1313

T-217
 3410
 Sec 20 25510 310 420
 2005 Port T 263



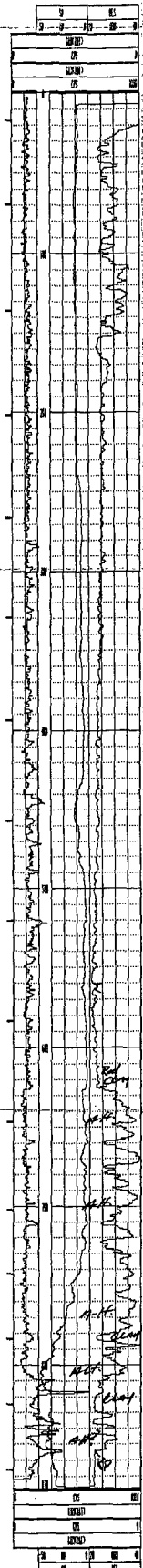
T-217
 3410
 3045

T-321
3730
Sec. 30 S26W 31N 52W
4000 ft. T-320

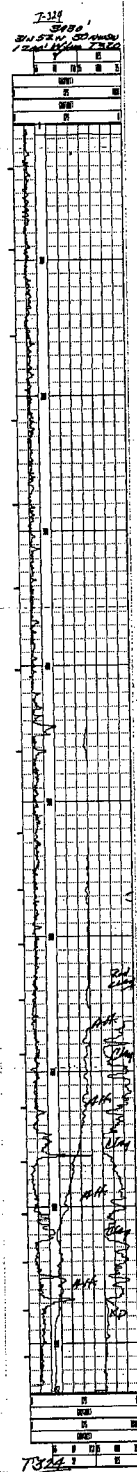


20' 00" 876.0 1.5 .011

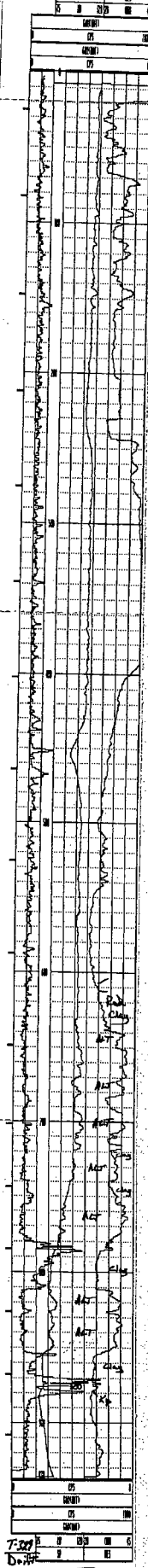
T-322
 37207
 3/15/52 IN ROMAN
 100' N/100' T-322



T-322
 818.0' 1.0' -0.1'
 dip 5.7
 AZ 205.7

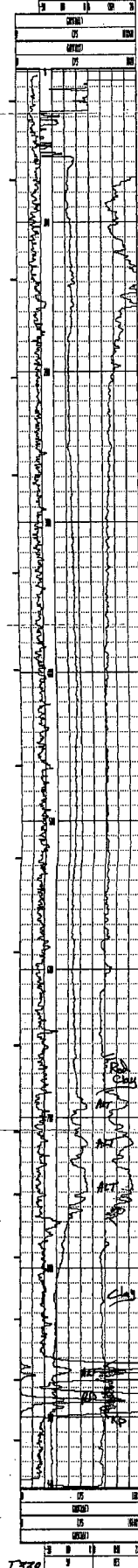


1-329
3975
200 to 215
SEA 300000 210 524



7-227
D-100
AP 210

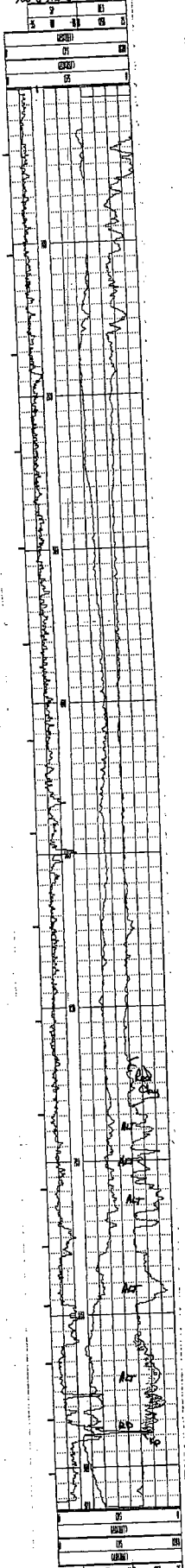
T-338
3920
Sec. 30 R656 S1N 52 W
200 W 800 T 336



7338

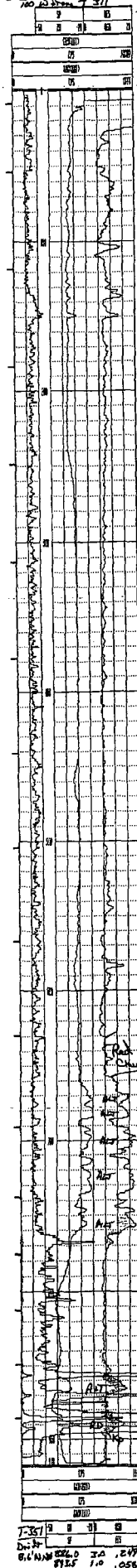
864.5	2.0'	-.081
872.0	2.0'	-.131
888.5	3.5'	-.969

T-348
5780
See to 5256 7M SZW
100 S 3256 T 304

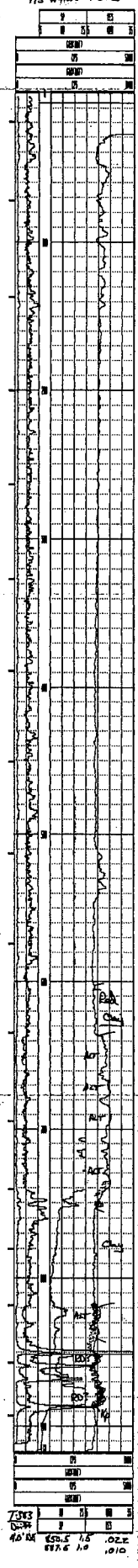


7-348
5780
100 S 3256 T 304
100 S 3256 T 304

T-351
 3925
 Sea to 0000 2143 5240
 100 10 10 20 7 311

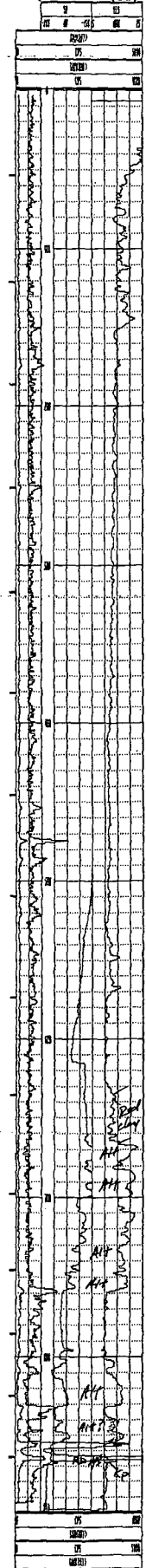


T.383
 3920
 Sea 20 MILES S.W. 820
 175 W from T.352



7.383
 3920
 Sea 20 MILES S.W. 820
 175 W from T.352

T. 388
 Sec. 30 SE 21 N 52 W
 600' S from T387

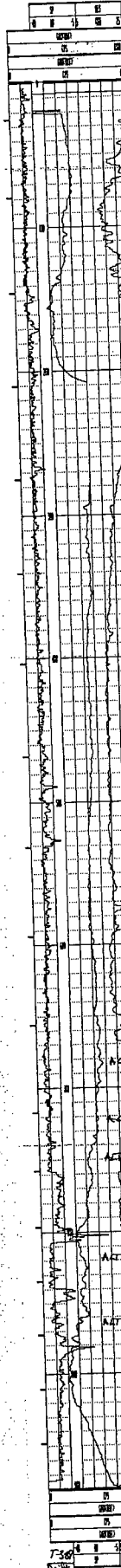


T389
 Ditch
 36' 856.0 2.0 .023
 54' 865.0 2.0 .073

2.0
 Sec



2000
 2000
 2000



13.4' NO

6.10.19
 42.196.1
 0 0 50 50 50
 T413 9 0
 716.0' 10' -014
 866.5' 2.5' -021
 902.5' 3.0' -031

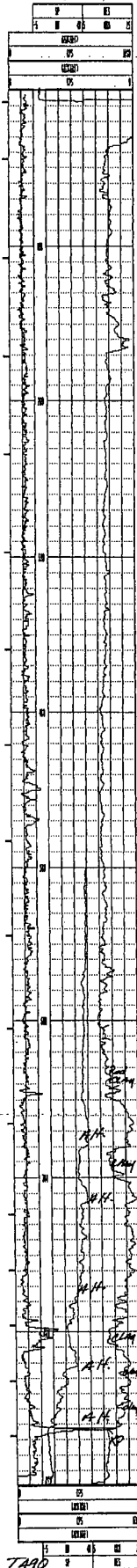
T-457
 2910
 Sec 30 NE1/4NW1/4SW
 20' N from T327

7	8	9
15	16	17
18	19	20
21	22	23
24	25	26
27	28	29
30	31	32



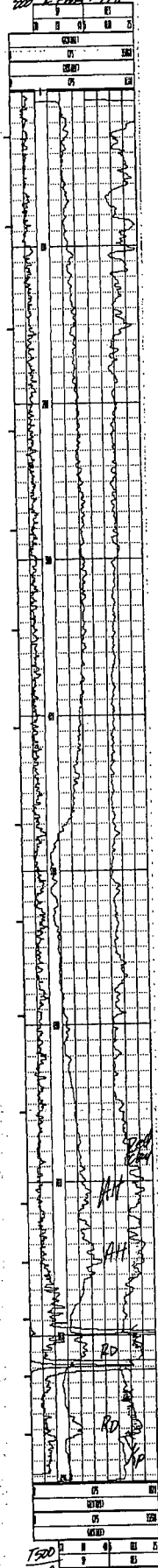
T327
 45' SW

T-490
 5450'
 3452N 30'W
 1000' depth 7435



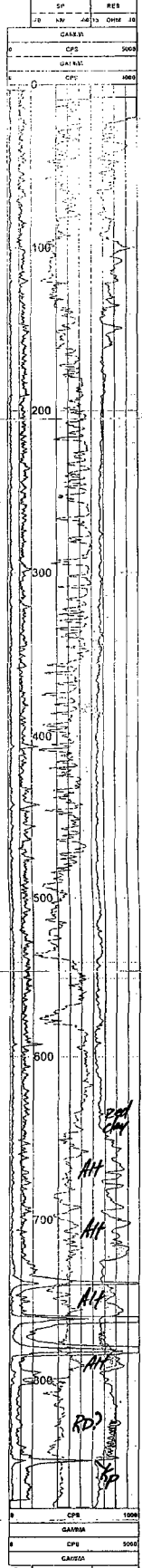
T-490
 8640' 10'-014
 DIST 109
 PL 3459

T-500
 7970
 Sec 30.00 W 1/4 E 1/4 S 24
 200' E from T-500



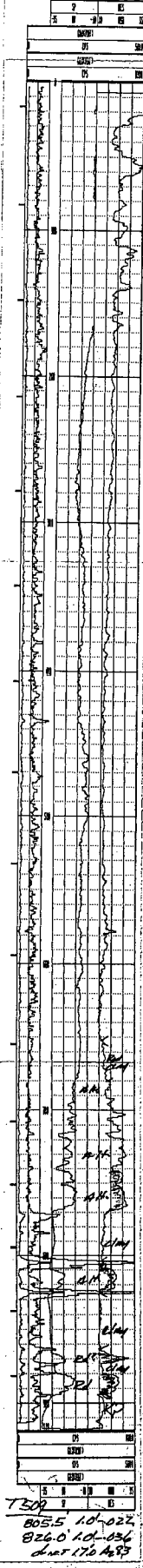
T-500
 7970
 7990 1.0 0.025
 NE 209.5 1.5 388

T-507
 3930
 SEC 3024 DE RINSEN
 200 SPIN 7506



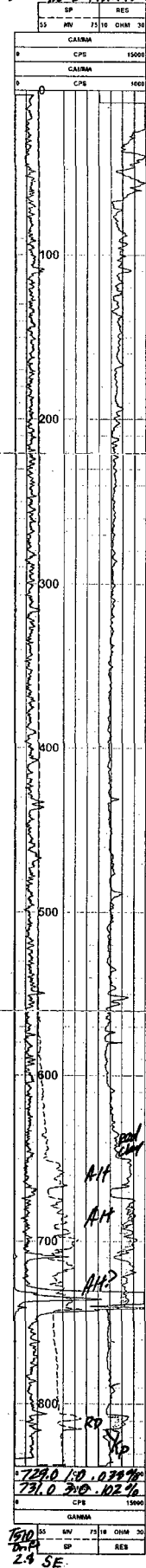
7507
 75.5 2.0 .04
 75.5 4.0 .03
 76.0 4.0 .03
 76.5 1.0 .03
 76.0 1.0 .01

T-509
 3955
 214524 215042
 220' 2' 220' 2'

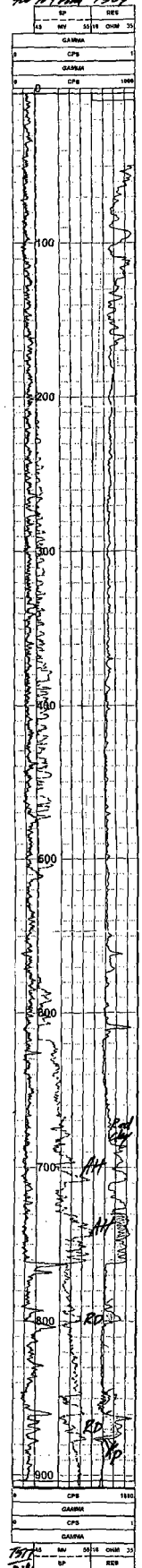


T-509
 805.5 10-022
 826.0 10-036
 847.1 10-043

T-510
3095
SEC 70, NENE 31' N 62' W
50' 3' 40" E from T-510

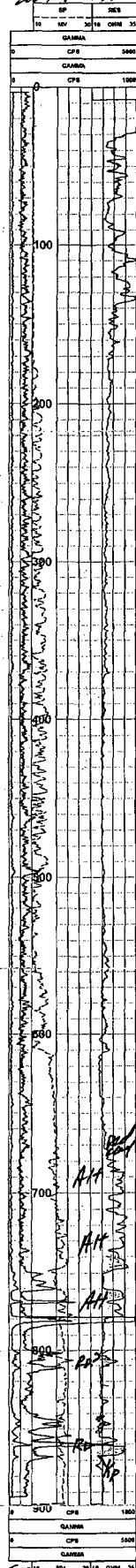


T-517
 3945
 For 300m NE 31N 67W
 400' N 100m T500



7507
 R.H.
 H.H.
 SE

T-522
 300 N 1/2 Sec 31 T15N 2W
 200 N 1/2 from T505

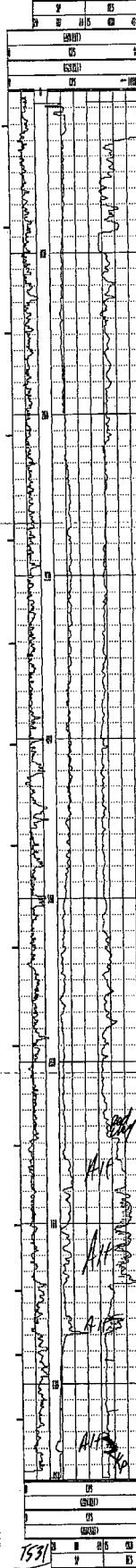


T-522
 0.4 7760 30 .024
 9.7 8570 1.0 .011
 SSN

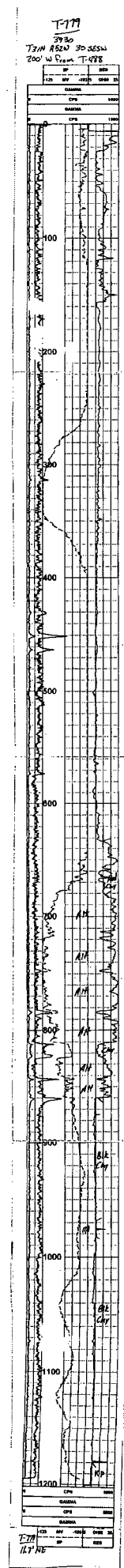
T-531
7/25

SECTION NEAR PIN 52W

200' E from T511



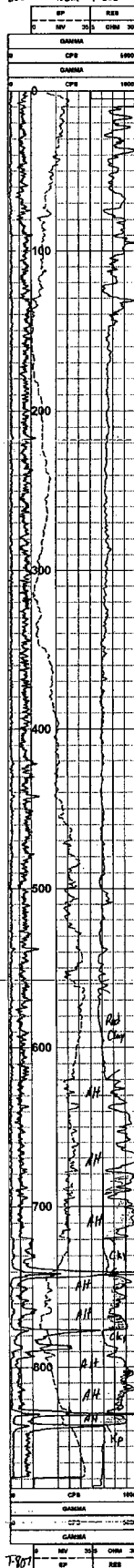
7/25
NE



[illegible]

23.8 ESS
789.5 1.0' - .014
844.0 1.5' - .021

T-807
 3720'
 T31N R62W 30S NE
 200' N 1/2 sec T-800

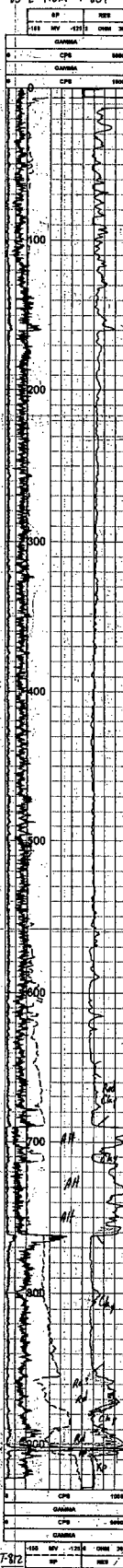


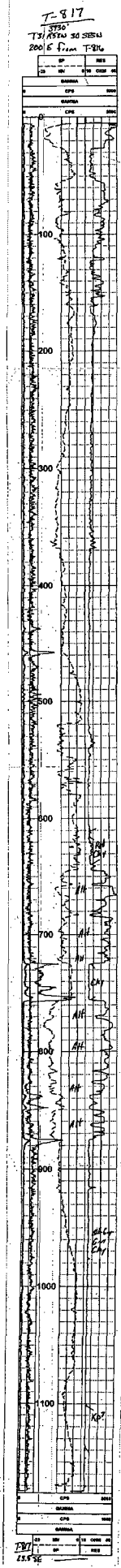
2.1' ESE
 741.0 1.5'-.027

T-812
3945
T31N R52W 30 SE NE
85 E From T-809

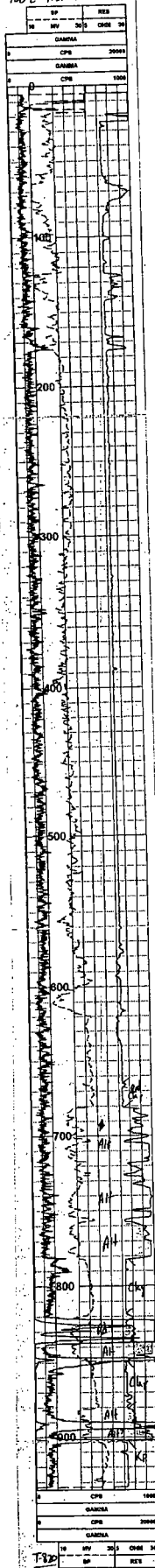
T31N R52W 30 SENE
85 E From T-809

85 E From T-809



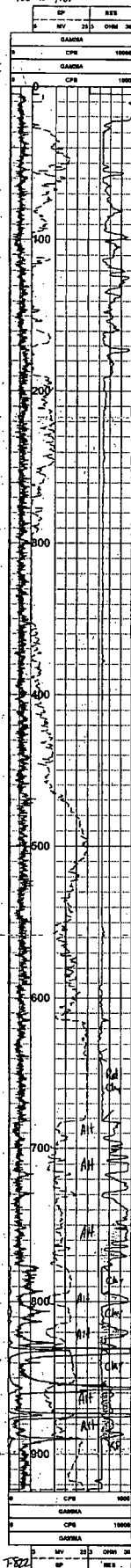


T-920
 340
 TRIN RSLW 30 SEHE
 100 E From H-155



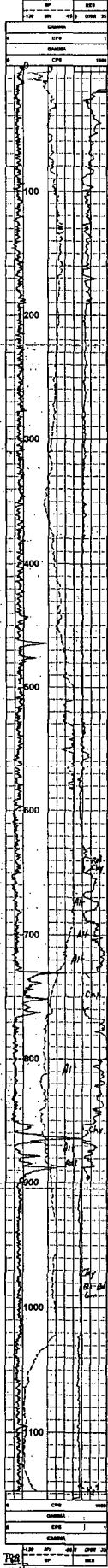
824.0 6.5 - .112
 829.0 2.0 - .209
 878.5 1.0 - .051

T-922
3755
T.M. R5240 30600E
100' W from H-158



10.6 SSW
881.0 1.5'-058
373.5 1.5'-037

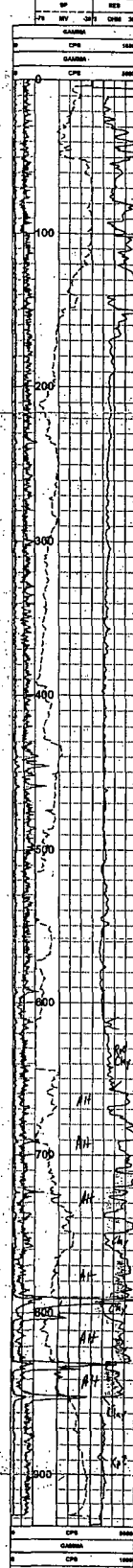
T-228
 3750
 T31N R52W Sec 30 S85W
 200' S from T227



11.1/245

T-831

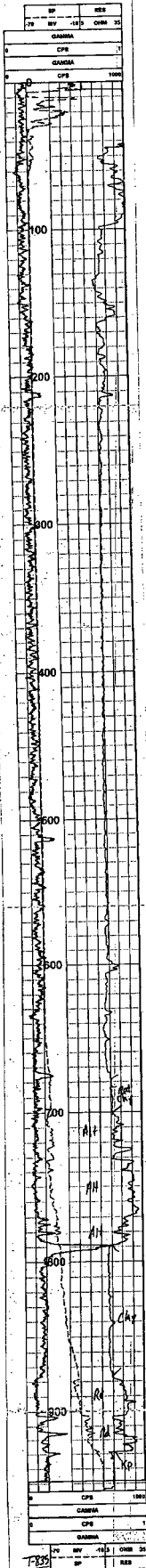
731N R22W 30'S
100' E Corn T-814



731
18.4 GNE
711.5 1.0' - 0.15
713.5 1.0' - 0.11
731.0 1.0' - 0.11

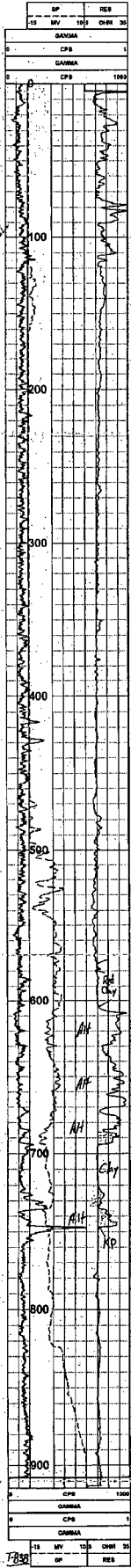
[illegible]

T-938
 3710
 T31N R52W 275mW
 400' W from T-934



17.1 ENE

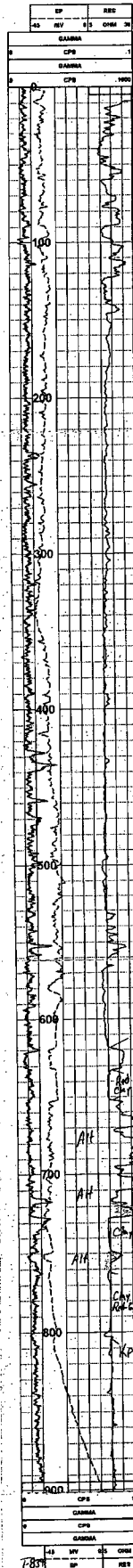
T-938
 3885
 T3N R52W 29SENE
 170' W from T-837



T-938
 3885
 T3N R52W 29SENE
 170' W from T-837

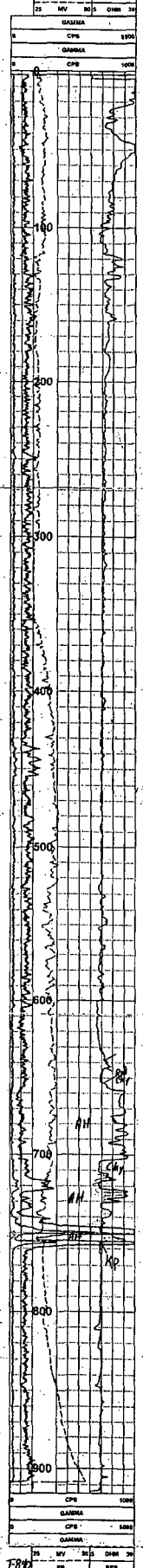
T-939

TSIN 3930
TSIN R52W 27 SENE
130 W + 30 S from T-939



8.354

7-240
 TWIN TISSUE SE 29 SENE
 100'S 1.5m 2.41 RES



7.41 SE
 747.0 3.5'-.023
 755.5 1.5'-.020

