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Signature _____ Date _____

RESEARCH DESIGN

1. The first step in the process of the investigation is the identification of the problem. This is done by the investigator who is responsible for the investigation. The investigator must identify the problem and the scope of the investigation. The investigator must also identify the objectives of the investigation and the methods to be used. The investigator must also identify the resources available for the investigation. The investigator must also identify the personnel who will be involved in the investigation. The investigator must also identify the timeline for the investigation. The investigator must also identify the risks associated with the investigation. The investigator must also identify the potential outcomes of the investigation. The investigator must also identify the potential impact of the investigation. The investigator must also identify the potential benefits of the investigation. The investigator must also identify the potential costs of the investigation. The investigator must also identify the potential risks to the organization. The investigator must also identify the potential risks to the public. The investigator must also identify the potential risks to the environment. The investigator must also identify the potential risks to the economy. The investigator must also identify the potential risks to the society. The investigator must also identify the potential risks to the culture. The investigator must also identify the potential risks to the politics. The investigator must also identify the potential risks to the religion. The investigator must also identify the potential risks to the education. The investigator must also identify the potential risks to the health. The investigator must also identify the potential risks to the safety. The investigator must also identify the potential risks to the security. The investigator must also identify the potential risks to the stability. The investigator must also identify the potential risks to the peace. The investigator must also identify the potential risks to the justice. The investigator must also identify the potential risks to the equity. The investigator must also identify the potential risks to the freedom. The investigator must also identify the potential risks to the dignity. The investigator must also identify the potential risks to the respect. The investigator must also identify the potential risks to the honor. The investigator must also identify the potential risks to the reputation. The investigator must also identify the potential risks to the image. The investigator must also identify the potential risks to the credibility. The investigator must also identify the potential risks to the trust. The investigator must also identify the potential risks to the confidence. The investigator must also identify the potential risks to the loyalty. The investigator must also identify the potential risks to the commitment. The investigator must also identify the potential risks to the dedication. The investigator must also identify the potential risks to the passion. The investigator must also identify the potential risks to the enthusiasm. The investigator must also identify the potential risks to the energy. The investigator must also identify the potential risks to the motivation. The investigator must also identify the potential risks to the determination. The investigator must also identify the potential risks to the perseverance. The investigator must also identify the potential risks to the resilience. The investigator must also identify the potential risks to the flexibility. The investigator must also identify the potential risks to the adaptability. The investigator must also identify the potential risks to the innovation. The investigator must also identify the potential risks to the creativity. The investigator must also identify the potential risks to the imagination. The investigator must also identify the potential risks to the intuition. The investigator must also identify the potential risks to the instinct. The investigator must also identify the potential risks to the gut feeling. The investigator must also identify the potential risks to the hunch. The investigator must also identify the potential risks to the premonition. The investigator must also identify the potential risks to the warning. The investigator must also identify the potential risks to the sign. The investigator must also identify the potential risks to the omen. The investigator must also identify the potential risks to the portent. The investigator must also identify the potential risks to the prophecy. The investigator must also identify the potential risks to the prediction. The investigator must also identify the potential risks to the forecast. 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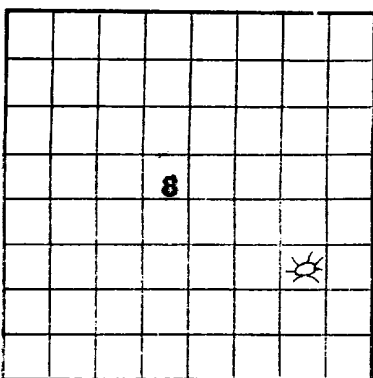
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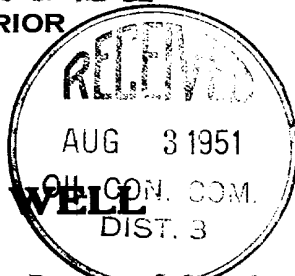
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LOCATE WELL CORRECTLY

U. S. LAND OFFICE **SANTA FE**
SERIAL NUMBER **080382-A**
LEASE OR PERMIT TO PROSPECTUNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**Schwerdtfeger #4**
C SW NE SE

LOG OF OIL OR GAS WELL

Company **The Frontier Refining Company** Address **410 Boston Bldg., Denver, Colorado**
Lessor or Tract **Schwerdtfeger-Government** Field **N. Anta Canyon** State **New Mexico**
Well No. **4** Sec. **8** T20N R. 11W Meridian **N.M.P.M.** County **San Juan**
Location **1650ft. (N.)** of **2** Line and **990** ft. **(W.)** of **2** Line of **Section 8** Elevation **6177** CC
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed **Glenn S. Calbraith**Date **July 30, 1951**Title **Glenn S. Calbraith, Geologist**

The summary on this page is for the condition of the well at above date.

Commenced drilling **May 21**, 19 **51** Finished drilling **June 6**, 19 **51**

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from **1926** to **1937** No. 4, from _____ to _____
No. 2, from _____ to _____ No. 5, from _____ to _____
No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

No. 1, from _____ to _____ No. 3, from _____ to _____
No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
9-5/8"	29.3	3rd.		100'					Art. 1926
5-1/2"	15.5	3rd.		1926					Production
1"	4.2	3rd.		1926					Plug

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
9-5/8"	102' KB	100 sacks	plug		
5-1/2"	1926' Ord	150 sacks	plug		

PLUGS AND ADAPTERS

Heaving plug—Material _____ Length _____ Depth set _____

Adapters—Material _____ Size _____

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
1x20	4	Liquid nitro	80 qts.	6/13/51	1931-1965	1967' KB

TOOLS USED

Rotary tools were used from **0** feet to **1937** feet, and from _____ feet to _____ feet

Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

Completed **6/15**, 19 **51** Put to producing **shut in**, 19 _____

The production for the first 24 hours was _____ barrels of fluid of which _____ % was oil; _____ % emulsion; _____ % water; and _____ % sediment. Gravity, °Bé. _____

If gas well, cu. ft. per 24 hours **280,000** Gallons gasoline per 1,000 cu. ft. of gas _____Rock pressure, lbs. per sq. in. **165- STP**

EMPLOYEES

Camden Drilling Company, Driller _____, Driller**English Drilling Company**, Driller _____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	773	773	Sand and shale. Top Ojo Alamo at 773'. Terrahon-Puerco at surface.
773	870	97	Sand. Top Kirtland shale at 870'.
870	1620 (?)	750	Shale and sand. Top Fruitland shale at 1620' (?).
1620	1903	283	Shale and sand. Top Pictured Cliffs formation at 1903'.
1903	1926	23	Shale and coal. Top Pictured Cliffs sandstone at 1926'.
1926	1937	61	Sand with shale breaks.
	1987' KB TD		

FORMATION RECORD—CONTINUED

