

New location    
 Drill Deeper    
 Abandonment  Issued 7,8,75 (SALT BRINE WELL)

Company FOOD MACHINERY & CHEMICAL CORP  
 Address SOUTH CHARLESTON, W.VA. 25303  
 Farm WESTVACO CHLOR-ALKALI DIVISION  
 Tract \_\_\_\_\_ Acres LOT Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. X-1  
 Elevation (Spirit Level) 600.86  
 Quadrangle CHARLESTON WC  
 County KANAWHA District LOUDON  
 Engineer C W Mudd  
 Engineer's Registration No. 2540  
 File No. PF-20003 Drawing No. \_\_\_\_\_  
 Date 10-24-55 Scale 1"=200'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

**WELL LOCATION MAP**  
 FILE NO. KAN-1636-D.D.-  
Plug

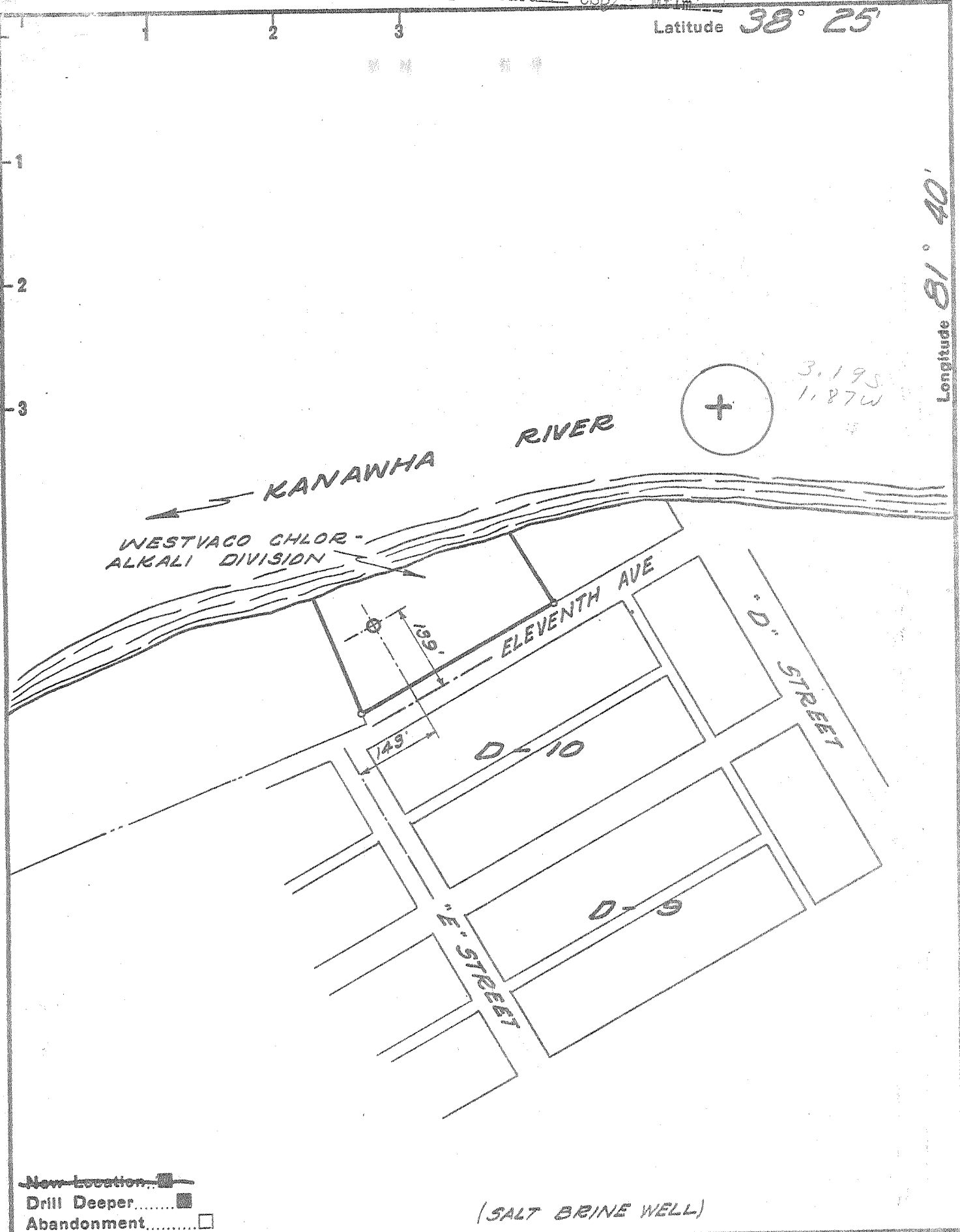
+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

47-039

Latitude 38° 25'

Longitude 81° 40'



3.195  
1.87W

- New Location
- Drill Deeper
- Abandonment

(SALT BRINE WELL)

Company FOOD MACHINERY & CHEMICAL CORP  
 Address SOUTH CHARLESTON, W. VA., 25303  
 Farm WESTVACO CHLOR-ALKALI DIVISION  
 Tract \_\_\_\_\_ Acres LOT Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. X-1  
 Elevation (Spirit Level) 600.85  
 Quadrangle CHARLESTON WC  
 County KANAWHA District LOUDDON  
 Engineer C W Mudd  
 Engineer's Registration No. 2540  
 File No. PF-20003 Drawing No. \_\_\_\_\_  
 Date 10-24-55 Scale 1"=200'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

**WELL LOCATION MAP**  
 FILE NO. KAN-1636-D.D.

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WF

1-0

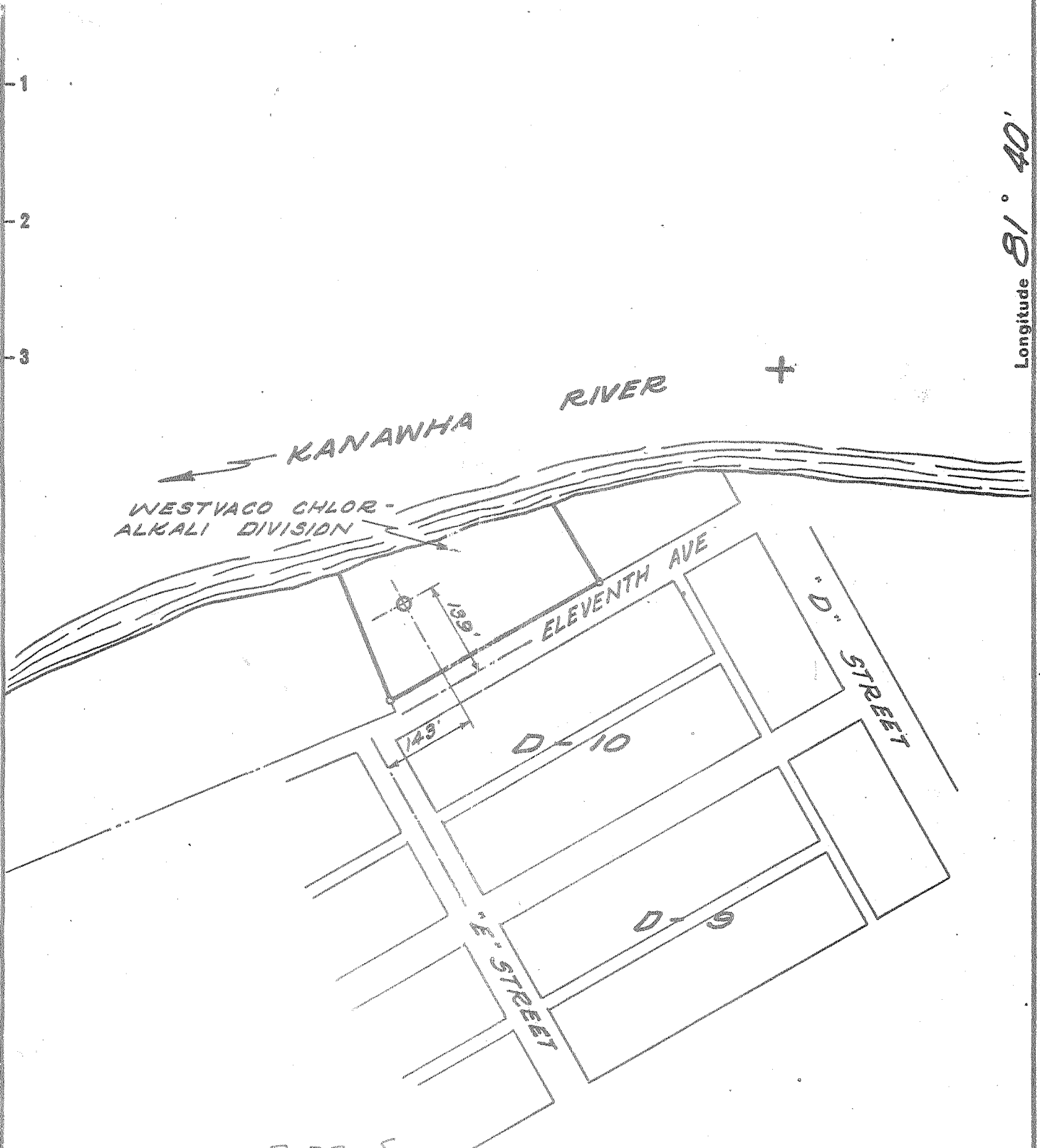
Deep Well (Newburg)

APR 27 1970

Return to Wally P

Latitude 38° 25'

Longitude 81° 40'



3.22 S.  
1.85 W.

New Location   
 Drill Deeper   
 Abandonment

4-C (J-5)

(SALT BRINE WELL)

No Samples or Cores

Company FOOD MACHINERY & CHEMICAL CORP  
 Address SOUTH CHARLESTON  
 Farm WESTVACO CHLOR-ALKALI DIVISION  
 Tract \_\_\_\_\_ Acres LOT Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. X-1  
 Elevation (Spirit Level) 600.86  
 Quadrangle CHARLESTON - W.C.  
 County KANAWHA District LOUDON  
 Engineer G.W. TULL  
 Engineer's Registration No. 2540  
 File No. PF-20003 Drawing No. \_\_\_\_\_  
 Date 10-24-55 Scale 1"=200'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

WELL LOCATION MAP  
 FILE NO. KAN-1636

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

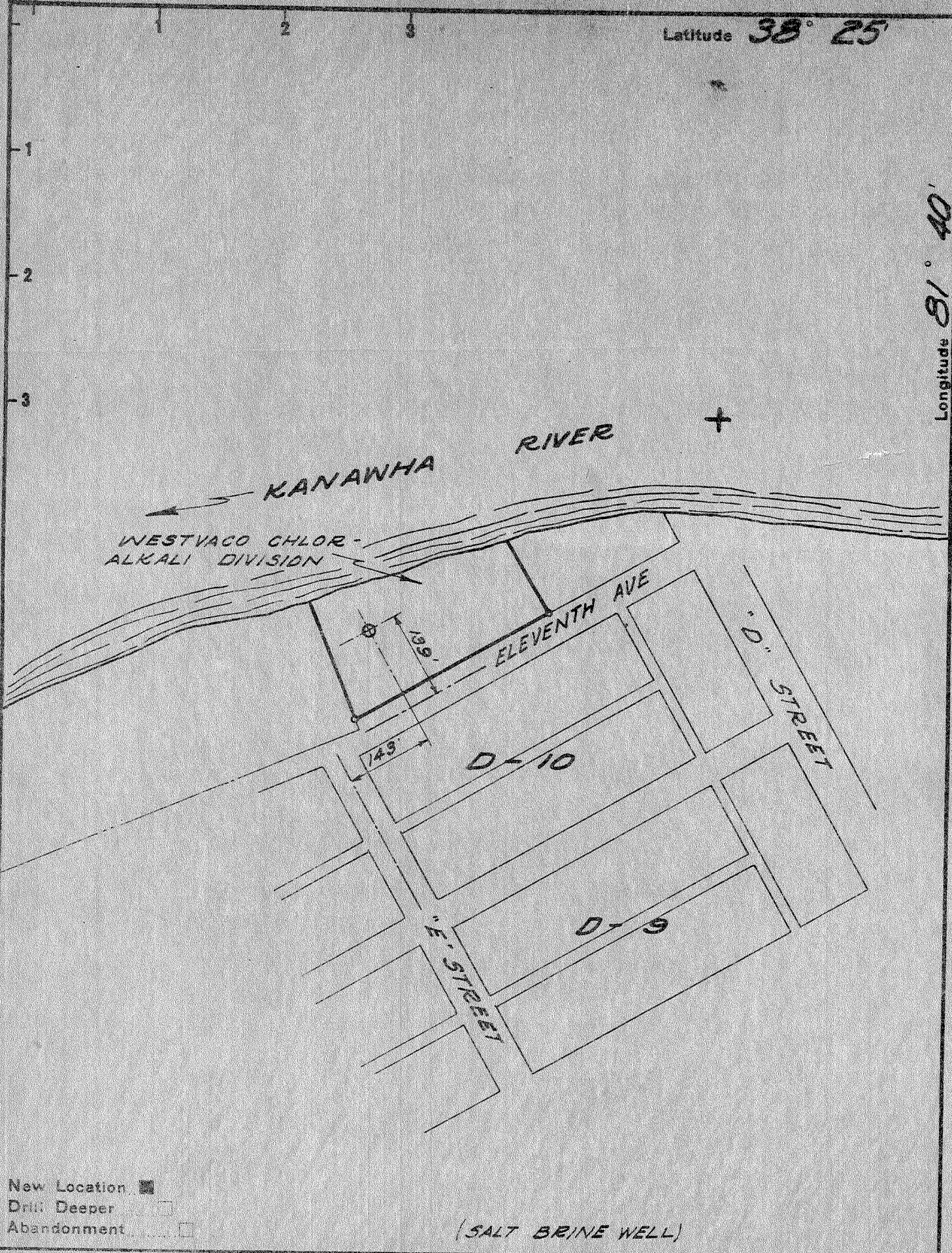
Well was cored all the way down.

Deep Well



Latitude **38° 25'**

Longitude **81° 40'**



New Location   
 Drill Deeper   
 Abandonment

(SALT BRINE WELL)

Company FOOD MACHINERY & CHEMICAL CORP  
 Address SOUTH CHARLESTON  
 Farm WESTVACO CHLOR-ALKALI DIVISION  
 Tract \_\_\_\_\_ Acres LOT Lease No. \_\_\_\_\_  
 Well (Farm) No. 1 Serial No. X-1  
 Elevation (Spirit Level) 600.86  
 Quadrangle CHARLESTON  
 County KANAWHA District LOWDON  
 Engineer C W Mudd  
 Engineer's Registration No. 2540  
 File No. PF-20003 Drawing No. \_\_\_\_\_  
 Date 10-24-55 Scale 1"=200'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

**WELL LOCATION MAP**  
 FILE NO. KAN-1636

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JUN 22 1971

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS WELLS DIVISION

Rotary   
Spudder   
Cable Tools   
Storage

Oil or Gas Well **DKY**  
(KIND)

Quadrangle Charleston  
Permit No. KAN-1636-DD

**WELL RECORD**

Company	FMC Corp., Natural Res. Dept.	Casing and Tubing	Used in Drilling	Left in Well	Packers
Address	633-3rd Ave., New York, N.Y. 10017	Size			Kind of Packer
Farm	Lot _____ Acres _____	16			Size of _____
Location (waters)	Kanawha River	13			Depth set _____
Well No.	X-1 Elev. 600.86	10			Perf. top _____
District	Loudon County Kanawha	8 1/4	4,627	4,627	Perf. bottom _____
The surface of tract is owned in fee by	FMC Corp.	6 5/8	(See KAN-1636)		Perf. top _____
Mineral rights are owned by	FMC Corp.	5 3/16	5,458	5,458	Perf. bottom _____
Drilling commenced	1 May 1970 (5,316 feet)	4 1/2			
Drilling completed	1 May 1970 (5,516 feet)	3			
Date Shot	From _____ To _____	2			
With		Liners Used			

Open Flow \_\_\_\_\_ /10ths Water in \_\_\_\_\_ Inch  
 \_\_\_\_\_ /10ths Merc. in \_\_\_\_\_ Inch  
 Volume Show of gas \_\_\_\_\_ Cu. Ft.  
 Rock Pressure not recorded lbs. \_\_\_\_\_ hrs.  
 Oil \_\_\_\_\_ bbls., 1st 24 hrs.  
 WELL ACIDIZED (DETAILS) \_\_\_\_\_

WELL FRACTURED (DETAILS) 13 May 1970 - Sand Frac. 500 gals. acid, 17,100 pounds  
20/40 sand, 591 bbls. water, 20 gals. Dowell Pre-Flo, 400 lbs. J-84, 500 lbs.  
J-111, 3500 lbs. CaCl<sub>2</sub>, 23.9 bpm average injection rate.  
 RESULT AFTER TREATMENT (Initial open flow or bbls.) \_\_\_\_\_

ROCK PRESSURE AFTER TREATMENT \_\_\_\_\_ HOURS  
 Fresh Water \_\_\_\_\_ Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet  
 Producing Sand \_\_\_\_\_ Depth \_\_\_\_\_

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
			0	5,312	See Well Record KAN-1636		
Sand (Newburg)	White	Hard	5,483	5,499		5483 607 4876	
Total Depth - 5,515 - 5,312 <u>203' new footage</u>							
		5483 607 4876					

Date: 15 June 1971  
 Approved: FMC Corporation, Owner  
 By: A. P. McCue  
 Process Development Engineer

NOV 22 1971



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION 7

Quadrangle Charleston

WELL RECORD

Brine Exploration

Permit No. KAN-1636

Oil or Gas Well

(KIND)

Company Food Machinery & Chemical Corp.  
Address Box 8127, So. Charleston 3, West Virginia  
Farm Research Building Property Acres 1 1/8  
Location (waters) Fluid drilled - not recorded  
Well No. X-1 Elev. 607.0  
District Loddon County Kanawha  
The surface of tract is owned in fee by Food Machinery & Chemical Corp. Address South Charleston  
Mineral rights are owned by Food Machinery & Chemical Corp. Address South Charleston  
Drilling commenced October 9, 1955  
Drilling completed July 3, 1956  
Date Shot ----- From ----- To -----  
With -----  
Open Flow /10ths Water in ----- Inch  
/10ths Merc. in ----- Inch  
Volume ----- Cu. Ft.  
Rock Pressure ----- lbs. ----- hrs.  
Oil ----- bbls., 1st 24 hrs.  
Fresh water ----- feet ----- feet  
Salt water ----- feet ----- feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			None
16	70'	70'	Kind of Packer
13			
10			Size of
8 1/2			
<del>6 1/2</del> 7"	4740	4740	Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED 16" SIZE 70 No. Ft. 10/16/55 Date  
7" size 940 No. ft. 4/18/56 Date

COAL WAS ENCOUNTERED AT 216 FEET INCHES  
263 FEET 6 INCHES 312 FEET INCHES  
320 FEET INCHES 323 FEET INCHES  
403, 451.5, 469, 481, 533, 826.5

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
SAND	Partly iron stained	Fine to coarse	40'	70'	-	-	-
NO SAMPLES			70	75	-	-	Core lost.
SANDSTONE		Soft	75	110	-	-	-
SHALE	Gray to green	Soft	110	115	-	-	-
SANDSTONE		Soft	115	120	-	-	Streaks of shale.
SANDSTONE		Soft	120	134	-	-	Thin coal streaks.
SANDSTONE	Light gray to gray	Soft	134	143	-	-	-
SANDSTONE	Light gray to gray to buff	Soft to medium hard	143	165	-	-	Oil stained scattered clay.
SHALE	Gray	Soft	165	169	-	-	-
MUDSTONE	Grayish buff	Soft	169	174	-	-	-
SHALE	Gray	Soft	174	178	-	-	-
SILTSTONE	Grayish brown	Soft	178	184	-	-	-

(Over)



Formation	Color	Hard or Soft	Top <sup>7</sup>	Bottom	Oil, Gas or Water	Depth Found	Remarks
SHALE	Buff gray to black	Soft	184'	216'	-	-	-
COAL	Black, shiny	Soft	216	217.5	-	-	Pyritic. Calcite films. <del>          </del>
SILTSTONE	Light brown to light gray	Soft to medium hard	217.5	221.5	-	-	Coaly fragments.
SHALE	Gray	Medium hard	221.5	226	-	-	-
SANDSTONE	Light gray	Medium hard to soft	226	261.5	-	-	-
SHALE	Dark gray	Soft	261.5	263.5	-	-	Coal streaks.
COAL <sup>Black?</sup>	Dull black	Soft	263.5	265	-	-	Pyritic streaks.
SILTSTONE & SANDSTONE	Light brown to light gray	Soft	265	273	-	-	-
SANDSTONE	Light gray to gray locally light brown	Soft	273	312	-	-	-
COAL	Dull to shiny black	Soft	312	314	-	-	Slightly pyritic.
SILTSTONE	Brownish gray	Soft	314	320	-	-	-
COAL	Dull to shiny black	Soft	320	321	-	-	-
SANDSTONE	Grayish brown	Soft	321	323	-	-	-
COAL	Dull to shiny black	Soft	323	323.5	-	-	-
SILTSTONE	Dark gray to gray	Soft	323.5	337	-	-	-
COAL	Dull to shiny black	Soft	337	337.5	-	-	-
SHALE	Black to dark gray		337.5	354	-	-	-

Date....., 19.....

APPROVED....., Owner

By..... (Title)

Food Machinery and Chemical Corp.  
Well No. X-1

Permit No. KAN-1636

*Kan-1636*

Formation	Color	Hard or Soft	Top	7 A Bot- tom	Oil, Gas or Water	Depth Found	Remarks
SANDSTONE SILTSTONE SHALE	Light gray Dark gray Dark gray to black	Soft	354	385	-	-	Scattered coal.
SANDSTONE	Light gray	Soft	385	403	-	-	Interbedded siltstone and coal streaks.
COAL		Soft	403	404	-	-	Pyritic.
SHALE	Light brown- gray	Soft	404	405.5	-	-	-
SANDSTONE		Soft to medium hard to hard	405.5	451.5	-	-	-
COAL	Dull and shiny black	Soft	451.5	453	-	-	Locally pyritic.
SHALE SILTSTONE SANDSTONE	Dark gray to black, Gray to dark gray, Light gray and gray	Medium hard	453	469	-	-	-
COAL	Dull and shiny black	Medium hard	469	469.5	-	-	-
SHALE	Dark gray to black	Medium hard	469.5	481	-	-	-
COAL	Dull and shiny	Medium hard	481	481.5	-	-	-
SANDSTONE	Light gray	Medium hard	481.5	484	-	-	-
NO SAMPLES			484	519			Cores lost.
SANDSTONE SILTSTONE	Light gray Gray to dark gray	Soft	519	533	-	-	-
COAL	Black	Medium hard	533	533.5	-	-	-
SILTSTONE	Light gray	Soft	533.5	552	-	-	-
SCATTERED COAL SILTSTONE SANDSTONE SHALE	Dull and shiny, Gray to black, Light gray, Black to dark brown	Soft	552	621	-	-	-
SANDSTONE	Light gray locally gray and brown	Medium hard to soft	621	646	-	-	-



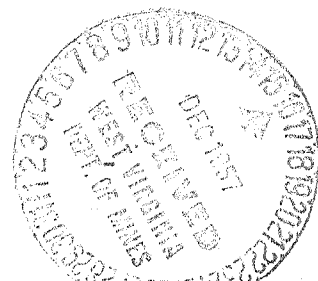


Food Machinery and Chemical Corp.  
Well No. X-1

Permit No. KAN-1636

*Kan-1636*

Formation	Color	Hard or Soft	Top	7 A Bot- tom	Oil, Gas or Water	Depth Found	Remarks
SILTSTONE SHALES SCATTERED COAL	Light gray to gray, Gray to black, Dull to shiny	Soft	646	759	-	-	-
SANDSTONE	Light gray locally gray	Soft to medium hard	759	803	-	-	Dark laminae of mica, clay, and coal, locally inclined 30°.
SILTSTONE	Dark gray	Medium hard to soft	803	826.5	-	-	Coal fragments.
COAL		Soft	826.5	827.5	-	-	Pyritic.
SHALES SANDSTONE SILTSTONE	Gray, Gray to light gray, Dark gray	Soft to medium hard	827.5	830	-	-	
SANDSTONE	Gray	Soft	830	839	-	-	Laminae of clay, mica, and plant fragments.
SANDSTONE	Gray	Medium hard	839	858	-	-	Mica flecks. Dark gray clay laminae.
SANDSTONE SILTSTONE SHALES	Light gray to gray, Dark gray to black, Black	Soft	858	860	-	-	
SANDSTONE	Light gray	Medium hard to hard	860	969	-	-	Local dark clay laminae inclined 15° to 20°.
CONGLOMER- ATE SANDSTONE	Clear and white, Light gray	Soft to medium hard	969	996	-	-	Sandstone thinly interbedded. Conglomerate, granules and pebbles to 1".
SANDSTONE	Nearly white	Soft to medium hard	996	1016	-	-	Sandstone gets brown at base.
SANDSTONE SILTSTONE	Brown, Dark gray	Medium hard	1016	1026	-	-	
SANDSTONE		Soft, medium hard and very hard	1026	1207	-	-	Locally coarse. Locally pebbly. Dark clay laminae inclined 25°. Local coal streaks. Local siltstone - dark gray to black. Local conglomerate light gray consisting of granules of pebbles of 1" clear to white quartz. Thin bed shale.
SANDSTONE	Light gray	Medium hard	1207	1234	-	-	Dark clay laminae.
SANDSTONE	Light gray	Hard to medium hard	1234	1270	-	-	Thin gray shale partings.



Food Machinery and Chemical Corp.  
Well No. X-1

Permit No. KAN-1636

Kan-1636

Formation	Color	Hard or Soft	Top	7B		Oil, Gas or Water	Depth Found	Remarks
				Bot- tom				
SANDSTONE	Light gray locally white	Hard to very hard	1270	1301	-	-	Thin black shale partings. Some black siltstone.	
SANDSTONE	Light gray to very light gray	Medium hard to soft	1301	1397	-	-	Scattered quartz pebbles. Local dark gray shale partings.	
SHALE	Dark greenish gray to black	Medium hard	1397	1403	-	-	-	
SHALE	Light greenish gray and red	Hard to very hard	1403	1443	-	-	Locally finely pyritic. Locally dolomitic. Gray siltstone and sandstone near base.	
DOLOMITE	Dark gray to gray	Very hard	1443	1480	-	-	Thin beds dark gray to black shale. Gray limestone near base.	
LIMESTONE	Buff to very light buff	Very hard	1480	1504	-	-	Thin gray shale partings.	
DOLOMITE	Buff dark brown	Very hard	1504	1527	-	-	Scattered thin shale partings.	
LIMESTONE	Light buff, Buff	Very hard	1527	1538	-	-	Shaly zones. Local dolomite.	
LIMESTONE	Light tan to buff	Very hard	1538	1544	-	-	-	
LIMESTONE	Light gray buff, Light buff	Very hard to medium hard	1544	1603	-	-	Thin gray shale partings.	
DOLOMITE	Very light gray to light greenish gray	Medium hard	1603	1616	-	-	Locally shale dark gray.	
LIMESTONE	Buff gray, light buff	Hard	1616	1641	-	-	Local oil stain.	
DOLOMITE LIMESTONE SHALE INTER- BEDDED	Buff to gray, Grayish, Very dark gray to buff gray	Soft to medium hard	1641	1661	Oil & Gas Salty	Near top. Local-ly	-	
SHALE	Gray to brick red	Medium hard	1661	1677	-	-	Some dolomite near base - gray.	
SANDSTONE	Gray to greenish gray	Soft	1677	1713	Salty	Local-ly	Local conglomerate, quartz, sub-rounded pebbles to $\frac{1}{4}$ ".	
SHALE	Greenish gray to black	Medium hard to hard to soft	1713	1725	-	-	Streaks of gray siltstone. A bed of sandstone light gray.	

Food Machinery and Chemical Corp.  
Well No. X-1

Permit No. KAN-1636

Formation	Color	Hard or Soft	Top	7B Bot- tom	Oil, Gas or Water	Depth Found	Remarks
SANDSTONE	Light gray	Medium hard	1725	1733	-	-	Bands of gray to black shale.
SHALE SILTSTONE	Dark gray Light gray	Medium hard	1733	1744	-	-	Streaks of light gray sandstone.
SHALE	Dark gray	Medium hard	1744	1786	-	-	Streaks of hard siltstone.
SHALE	Gray	Soft	1786	1878	-	-	Silty and sandy streaks.
SHALE	Dark gray	Soft	1878	2130	-	-	Streaks of light gray shale. Streaks of brown sandstone. Streaks of white to light gray sandstone. Local limestone, white.
SANDSTONE	Light gray	Soft	2130	2154	-	-	Some shale. <i>Berea</i>
SHALE	Gray to grayish green	Soft	2154	2200	-	-	
SHALE	Gray to grayish green	Soft	2200	2430	-	-	Stringers of gray, white, and brown sandstone.
SHALE	Light to dark gray	Soft	2430	2789	-	-	Little gray to grayish sandstone. Local grayish brown siltstone. Local milky sandstone.
SHALE	Gray	Soft	2789	2804	-	-	
SHALE	Light gray to dark gray	Soft	2804	3270	-	-	
SHALE	Gray	Soft	3270	3370	-	-	Streaks of grayish brown siltstone. Local light gray clay. Streaks of brown siltstone. Slightly sandy.
SILTSTONE	Brown and gray to brown	Soft	3370	3560	-	-	Streaks of light gray limestone.
SILTSTONE SHALE	Buff gray, Black	Soft	3560	3926	-	-	Streaks of gray to buff limestone near base.
SHALE SILTSTONE	Gray, Gray to buff	Soft	3926	4096	-	-	Local brown siltstone.
SILTSTONE SHALE	Gray, Gray to brown	Soft	4096	4440	-	-	Streaks of buff to brown sandstone. Dark brown siltstone near base.
SILTSTONE	Dark brown	Soft	4440	4546	-	-	Streaks of dark brown limestone.
SHALE SILTSTONE	Gray brown, Gray brown dark brown	Soft	4546	4580	-	-	Slightly sandy.

Food Machinery and Chemical Corp.  
Well No. X-1

Permit No. KAN-1636

Formation	Color	Hard or Soft	Top	7C Bot- tom	Oil, Gas or Water	Depth Found	Remarks
SHALE SILTSTONE	Gray, Brown and gray brown Dark brown	Soft	4580	4600	-	-	-
SHALE	Dark brown	Soft	4600	4620	-	-	Slightly sandy.
LIMESTONE	Brown	Soft	4620	4630	-	-	
LIMESTONE	Light to dark brown mottled	Soft to medium hard to hard	4630	4740	-	-	White, brown, some bluish tint chert. <i>Huntersville 112'</i>
NO SAMPLE			4740	4744			
SANDSTONE	Gray and gray to brown	Very hard	4744	4753	-	-	Thin bands and partings of black shale. Few bands of gray and blackish gray chert.
SANDSTONE	Clear to milky	Hard	4753	4761	-	-	Few scattered shale partings.
SANDSTONE	Gray to brown	Hard	4761	4766	-	-	Thin shale partings. Quartzitic.
SANDSTONE	Light gray to buff	Medium hard to hard	4766	4772	-	-	Slightly quartzitic. Thin shale partings.
LIMESTONE SANDSTONE	Brown, Clear to milky	Hard to very hard	4772	4886	-	-	Cherty. Shale partings. Bands of gray and blackish chert.
LIMESTONE	Brown to grayish brown	Very very hard	4886	4961	Gas oil	-	Some <u>anhydrite</u> , Gassy. Locally oil stained.
DOLOMITE	Brown brownish gray to buff	Very hard	4961	5011	Gas oil	-	Some <u>anhydrite</u> , gassy. Oil stained shale partings.
DOLOMITE	Dark brown to light brown	Hard to very hard	5011	5306	Gas oil	-	Oil stained. Local sulphur odor. <u>Anhydrite</u> interbedded.
DOLOMITE	Gray to brown	Very hard	5306	5313	Oil	-	Cores bleed some oil.
			5313	TOTAL	DEPTH		

Date December 13, 1957

APPROVED Food Mach. & Chem. Corp Owner

By C. L. HUNDLEY, Project Engr.  
(Title)

*Handwritten calculations:*  
 4620 4740 4772  
 607 607 607  
 ---  
 4013 4133 4165

*Vertical handwritten notes:*  
 Held. Oriskany  
 30'  
 520'  
 511'

*Handwritten calculations:*  
 5483  
 4740  
 ---  
 743