

Locality HTI
Core 68-2, Hydrocarbon Transportation Inc.
SW NW NE sec. 17, T78W, R23N, Polk Co., Iowa
Begin Box 1; depth in feet.

B. J. Witzke, 1989

SILURIAN
HOPKINTON FORMATION

1230-1241. Dol, pale and v.lt.org.brn.-lt.-lt.m.gr., vf-c xlln; alternating bands 0.1-0.3 ft thick of dense to moldic lighter colored, c xlln, crinoid moldic to replaced lithologies and darker (lt.lt.m.gr.) vf-c xlln lithologies; microporous mottled zones at 1234.6, 1236.4, 1237.3, 1238.4, 1240.3; scattered vugs, some voids filled with white vc xlln dol, some calcite fill; very crinoidal through; common vertical fractures.

1241-1253.5. Dol, pale-v.lt.org.brn-lt.gr. dol as above, mostly f-c xlln, more microporous mottled zones than above; scattered small vugs (m-c xlln dol-lined); darker swirls and bands outline nodular shapes of lighter dol through much; scattered vertical fractures; scattered stylolites at 1241.8, 1244.3, 1252.3, 1253.5, base is sharp stylo contact; badly recrystallized and fossils hard to see, apparently crinoidal through.

1253.5-1254.5. Dol, pale org.brn., xf-vf xlln, small fossil-moldic wackestone, crinoid debris; 1254.2 indet. small brachiopods; 1253.7 stylolite.

1254.5-1260. No sample.

1260-1260.6. Dol, lt.gr-lt.grn.gr., sl. arg.; 2 inch thick chert nodule (S) at top; sharp contact at base.

ORDOVICIAN
MAQUOKETA FORMATION
NEDA MEMBER

1260.6-1272.8. Sh, m.dk.maroon-m.red-brown, non-dolc, hard to chunky, part hematite-cemented; some intercalated lt.grn.gr. shale, top 0.2 ft red to green below; 1260.8-1261.6 red-brown shale with scattered iron ooids (flattened) in subhorizontal to subvertical burrows in top 0.4 ft, horizontal burrows lack ooids below; 1261.6-1261.9 green shale with horizontal burrows, intercalated red/green at base; 1261.9-1266 shale, red-brown to maroon dominated but with scattered grn.gr. and m.gr. mottlings through, common to abundant horizontal burrows, no ooids, apatite clasts at 62.6, 63.2 (to 4 cm), 63.4 (to 4 cm), 63.9, 64.5, thin green shale at 1263, 1265.8-1266 some scattered ooids in horizontal burrows.

1266-1269. Sh, maroon, some green mottles at 66.3, 66.6, 66.8, 67.9, 68.3; flattened iron ooids scattered to common through, all concentrated into horizontal and subhorizontal burrows (1-8 cm diameter), flattened ooids oriented with respect to burrow; common apatite clasts (1-20 cm) scattered through, in large 2 cm wide burrow at top and 67.6, 68.2, 68.6, 68.8,

68.9, 69.

1269-1272.8. Sh, maroon and red-green, green mottles near top, no ooids, scattered to abundant horizontal burrows through, sharp color change at base (base of Neda Mbr). Maquoketa Fm core sequence continues below (log on file at GSB).

County Polk

SW, NW, NE Sec. 17

T. 78 N

R. 23 W.

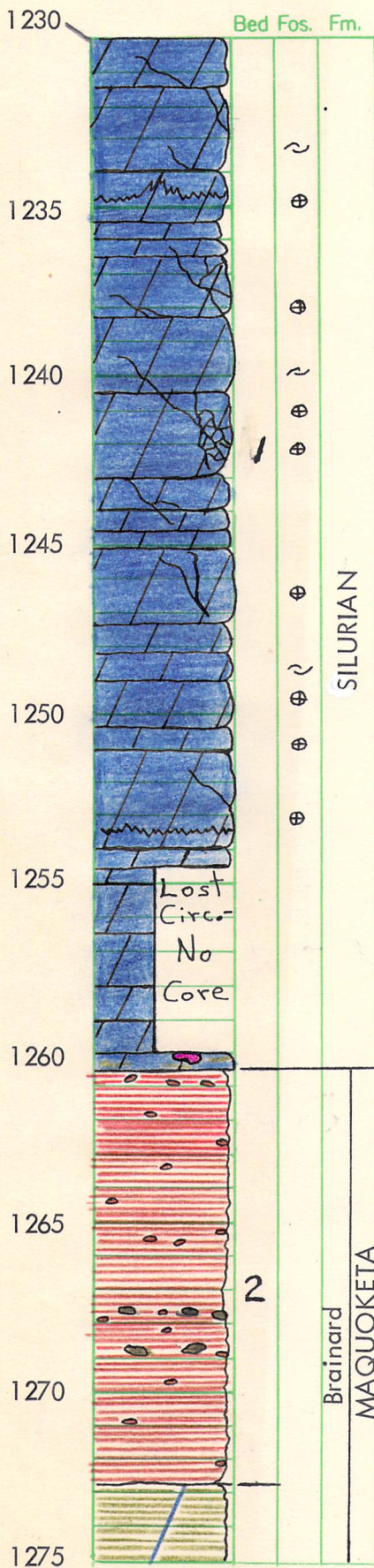
Location - Hydrocarbon Transportation, Inc.; Des Moines, Iowa Terminal
Property -- Exploratory Hole 68-2 (Ethane)

Altitude - 781.25 feet (ground level)

Measured by - D. L. Koch, J. Gilmore

Date - 11-14-68

Remarks - 2 1/4" O.D. Core; plugged 10-26-68; Gamma Single point Logs

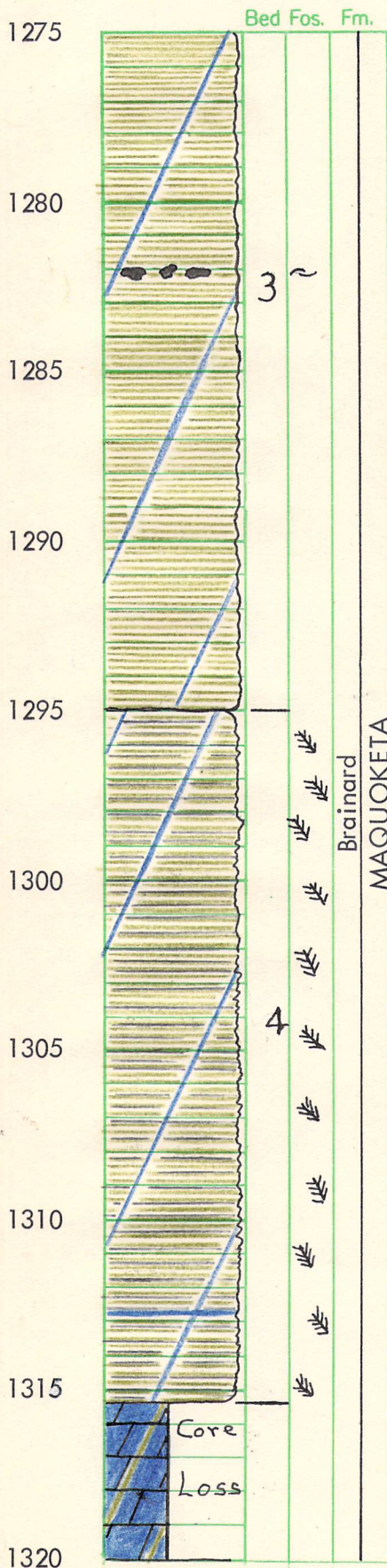


Bed	Description	Thickness (feet)
Cored Interval: 1230-1454 feet		
	Core # 1: 1230-1254; 100% Recovery	
	Core # 2: 1260-1282; Recovered 18.38 feet; Loss at base	
	Core # 3: 1282-1322; Recovered 33.31 feet; Loss at base?	
	Core # 4: 1322-1354; 100% Recovery	
	Core # 5: 1354-1394; Recovered 39 feet	
	Core # 6: 1394-1433; No recovery	
	Core # 7: 1433-1454; Recovered 20.76 feet	
1	1230-1260.5 Dol., yel-gr and yel-org. with scattered zones of med-gr. mottling, f. to med. sd. grde., euhedral to subhedral; inter-crystalline porosity, some porosity due to solution molds of fossil fragments (dom. crinoid ossicles), slightly vuggy; discontinuous high angle fractures, some open, some partially sealed with calcite; moderately brecciated zones; nodule of yel-gr. to v. lt. olive gr. chert at 1260; lower 0.4 ft. is lt. grn-gr. crse. silt grde. dolomite with some mixed grn-gr. clay.	30.5
2	1260.5-1272.8 Shale, dk. gr-red when dry, dusky red when wet, with a few irregular streaks of gr-grn.; weakly laminated; soft, discoidal limonitic clay pellets (1-1/2 mm) scattered throughout and concentrations of pellets in fucoidal markings; larger dk. gr. to olive slightly calcareous clay pebbles (up to 10 mm) in zones with the smaller pellets (especially from 1267.5-1269 ft.).	12.3
3	1272.8-1295 Shale, light to dk. grn-gr, weakly mottled zones, laminated, hard; 0.05ft. zone of blk. pebbles, some with Lingula and Lingulasma on one side (shells were worn off of their mud fillings by transportation, developing bizarre pebbles with mixed brachiopod fragments) at 1282.1 ft.; a few blk. phos. shell fragments scattered throughout.	22.5
4	1295-1315.3 Shale, olive gr., banded with dk. olive gr., laminated, hard, slightly dolomitic; scattered graptolites; color change is gradational with bed above; bands of dk. olive gr shale are much thicker below 1306; 0.1 ft. band of med. dk. gr. crse. silt grde. pyritic dolomite at 1312.8 ft.	20.3
	1315.3- 1322 -- core loss.	
5	1322-1333.4 Dolomite, lt. olive gr. with some med. gr. mottling, crse. silt grde., subhedral; slightly to moderately argillaceous (pitted outer surface of core due to washing out of more argillaceous material); nodules of lt. yel-gr. rough chert at 1331.3 and 1331.6; very shaley below 1329, grading to olive gr. color; gradational lower contact.	11.4

County Polk Sec. 17 T. 78 N R. 23 W

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Altitude -
Measured by - Date -
Remarks -



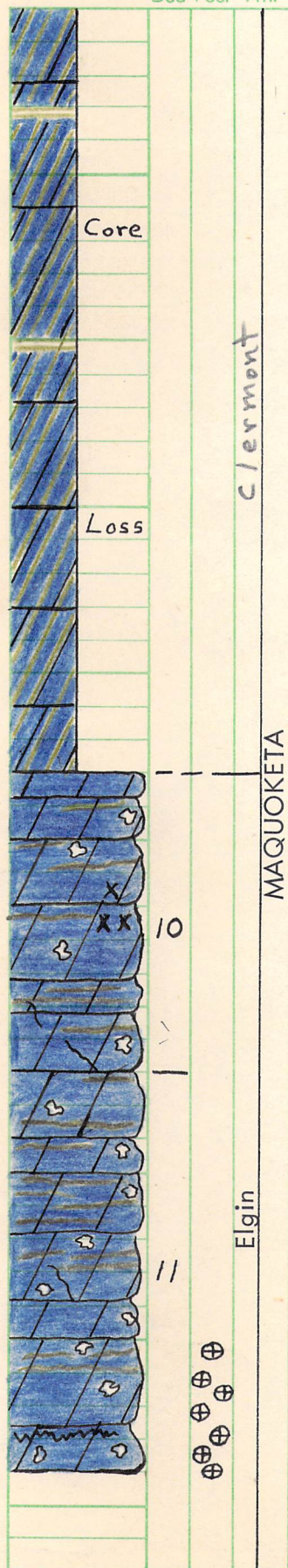
Bed	Description	Thickness (feet)
6	1333.4-1337.3 Shale, olive gr. to lt. olive gr., laminated, hard, dolomitic; occasional <u>Lingula</u> and other broken black, phosphatic shell fragments.	3.9
7	1337.3-1348.4 Dolomite, lt. olive gr., olive gr., and med. gr., mottled, crse. to medium silt grde., subhedral; scattered black phosphatic shell fragments; scattered pyrite films; a few small vugs.	11.1
8	1348.4-1386 Dolomite, med. gr. and lt. olive gr., weakly mottled, crse. silt to very fine sand grde., subhedral; contains nodular medium lt. gr. to yel-gr. rough, porous, partly tripolitic chert; somewhat arbitrary upper contact, but dolomite in bed 7 is more mottled; scattered phosphatic shell fragments; bedding planes generally indeterminate as breaks occur at chert-dolomite contact.	37.6
9	1386-1394 [†] --- No core recovery 1394-1433 ft. Dolomite, olive gr., medium silt grde., anhedral to subhedral, very argillaceous; a few bands of bedded (?) yel.-gr to med. dk. gr. rough, porous chert; scattered blk. phosphatic (?) specks and bars. to base of recovered portion;	8.0
10	1433-1442 Dolomite, pale yel-brn., med. to fine sand grde, subhedral to euhedral; scattered irregular, wavy clay partings; a few small to medium-sized vugs, some lined with euhedral calcite and minor pyrite; heavy pyrite content from 1437.9-1438.	9.0
11	1442-1454 TD Dolomite, med. gr. with minor lt. olive gr. mottling, med. to crse sd. grde., euhedral; intercrystalline and vugular porosity; occasional wavy band of dk. olive gray clay; zones with unaltered crinoid ossicles	12.0

County Polk SW, NW, NE Sec. 17 T. 78 N. R. 23 W.

Location -- Hydrocarbon Transportation, Inc.; Des Moines, Iowa Terminal Property -- Exploratory Hole 68-2 (Ethane)

Altitude --
 Measured by -- Date --
 Remarks --

1410
1415
1420
1425
1430
1435
1440
1445
1450
1455



Bed Description Thickness

Correlations:

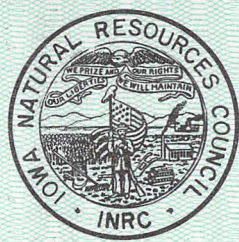
Bed 1	Silurian -- see note on correlation of bed 1 in core 68-1
Beds 2 - 6	Maquoketa --- Brainard
Beds 7 - 9	" --- Ft. Atkinson; 39 ft. core loss between bed 9 and 10
Beds 10 - 11	" --- Elgin; Ft. Atkinson-Elgin contact not recovered--

W-30792

State of Iowa

IOWA NATURAL RESOURCES COUNCIL

Drilling



Permit

Permit No. 125

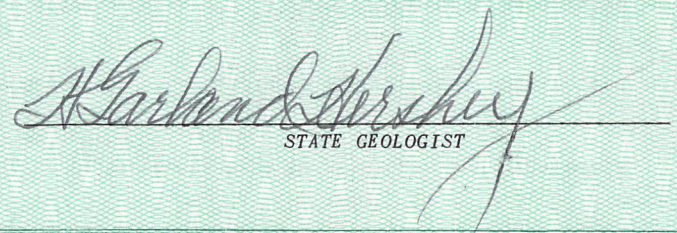
Lease Name Hydrocarbon Transportation, Inc.

Date Issued July 22, 1968

Well No. 2

Permission is hereby granted to Hydrocarbon Transportation, Inc., 2223 Dodge Street, Omaha, Nebraska,
to drill a well for geologic information located in the SW $\frac{1}{4}$ of NW $\frac{1}{4}$ of NE $\frac{1}{4}$, sec. 17 T. 78 N., R. 23 W.,
Polk County, Iowa.

This permit is granted subject to the provisions of Chapter 84, Code of Iowa, 1962, as amended, and the rules, regulations, requirements, and orders of the Iowa Natural Resources Council and the State Geologist.


STATE GEOLOGIST

CAUTION

DRILLING OPERATIONS ARE NOT TO BE COMMENCED until all the well location requirements have been completed and the permit has been posted in a conspicuous place at the well site.

WASTE IS PROHIBITED in the drilling, producing, and plugging of this well. This includes underground, surface, and market waste.

DAMAGE TO FRESH WATERS, both underground and surface, and unnecessary danger of damage to life or property is prohibited in the drilling, producing, or plugging of this well.

PERMITS EXPIRE six (6) months from the date of issuance if the work for which the permit was issued is not being actively pursued.

PERMITS MAY BE TRANSFERRED ONLY with the permission of the State Geologist.

All correspondence and inquiries regarding this permit should be addressed to:

STATE GEOLOGIST
Geological Survey Building
Iowa City, Iowa 52240
Phone: 338-1173 Area Code 319

CP.37055

W-30792

State of Iowa

IOWA NATURAL RESOURCES COUNCIL

Drilling



Permit

Permit No. 125

Lease Name Hydrocarbon Transportation, Inc.

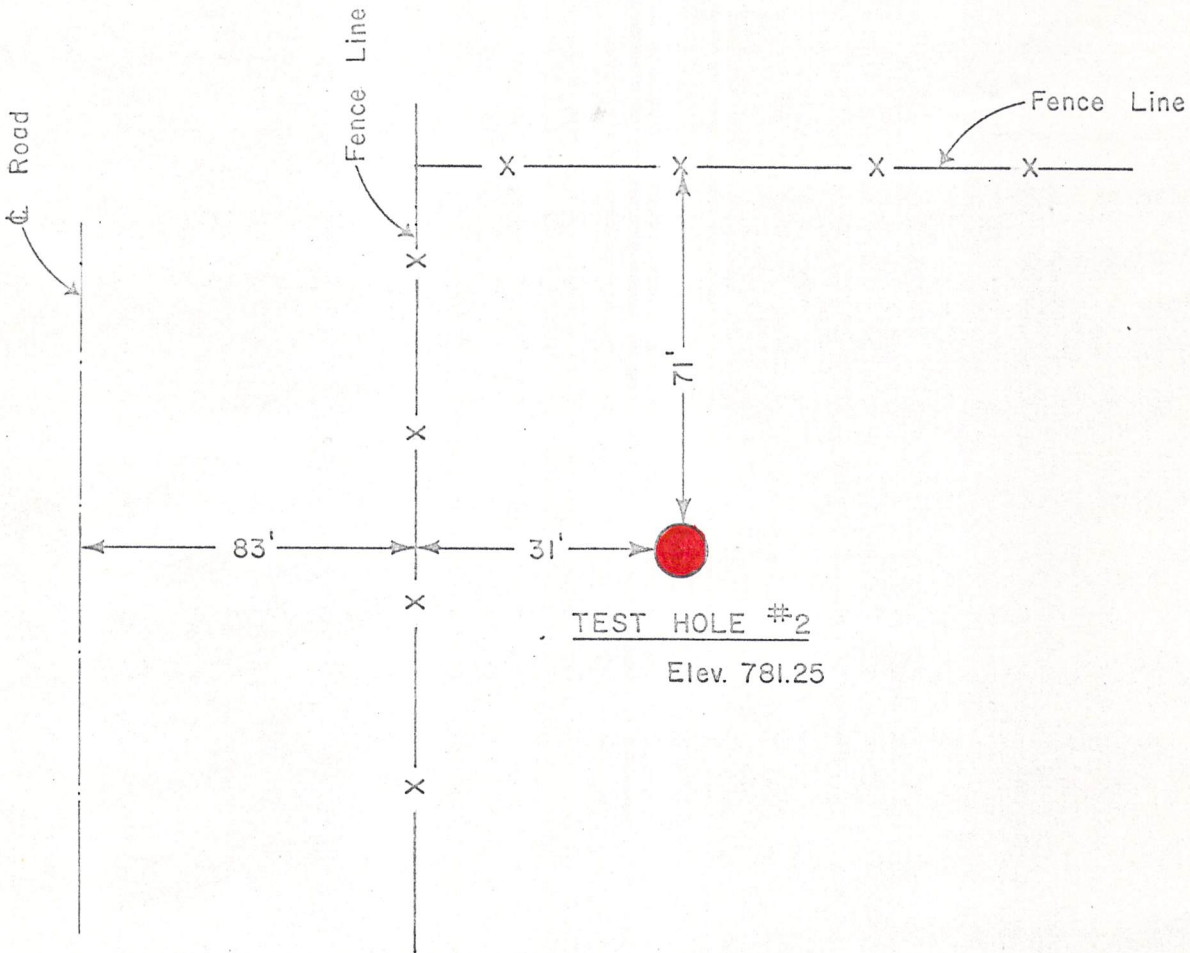
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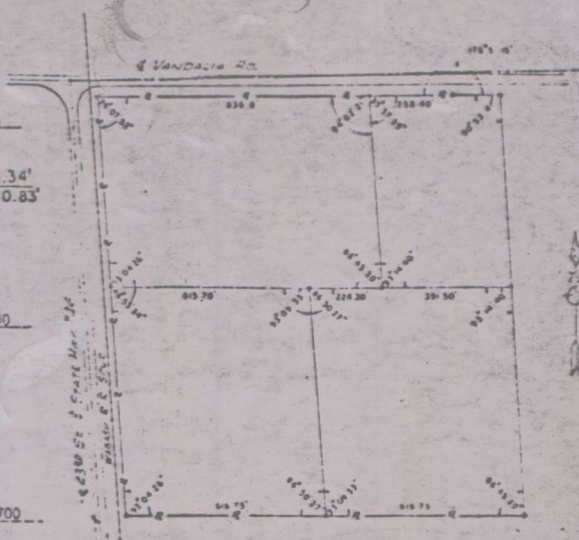
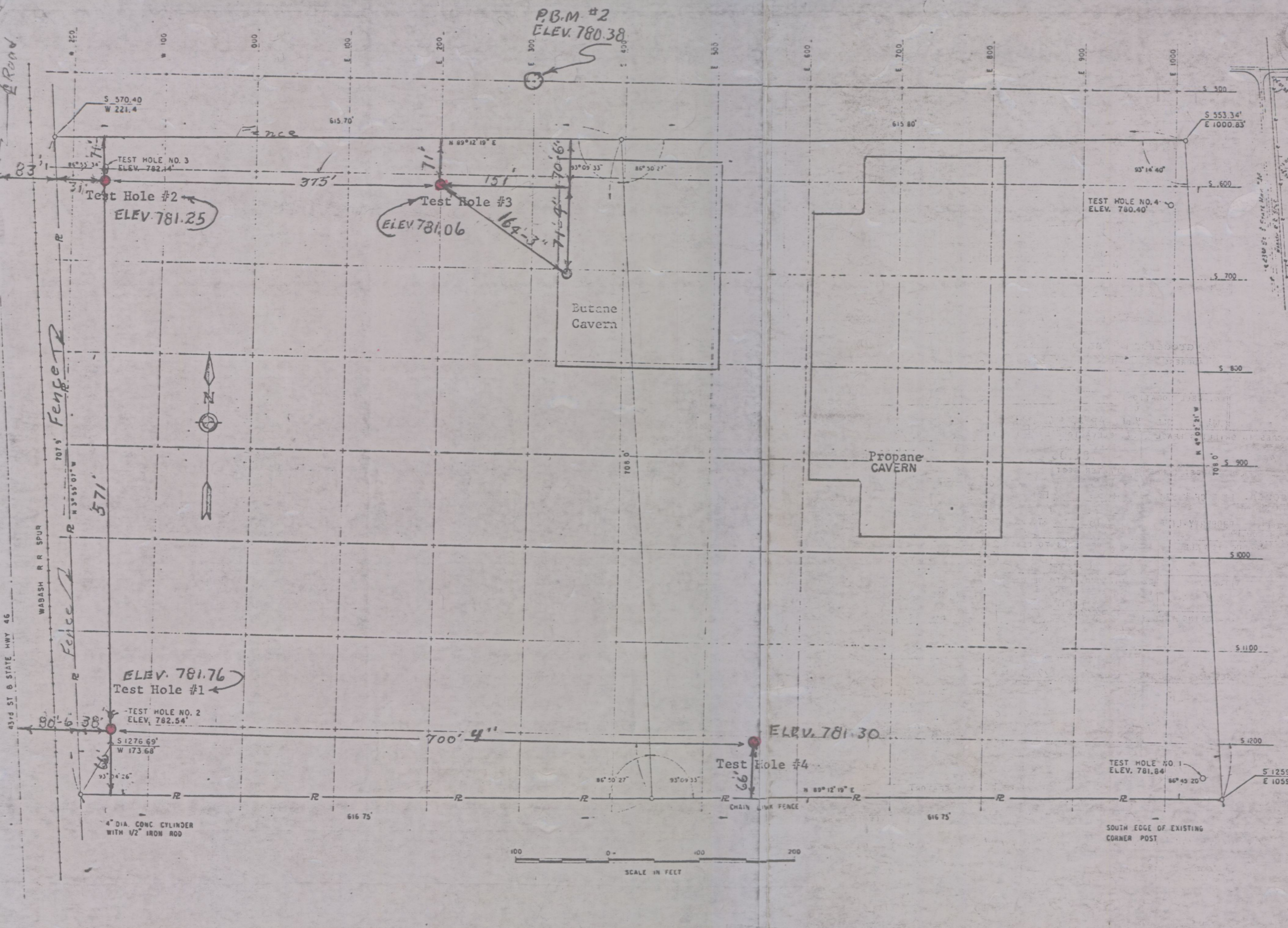
Harland Hershey
STATE GEOLOGIST



LOCATION

NW 1/4 of NE 1/4 of section 17
 T-78N, R - 23W of 5th PM
 Polk County, Iowa

NORTHERN NATURAL GAS CO.		REVIS	
OMAHA		NEBRASKA	
HYDROCARBON TRANSPORTATION INC.			
DE MOINES TERMINAL PROPERTY			
SCALE		DATE	
DR. BY	TR. BY	CHECKED	APPROVED



NOTE:
 BENCH MARK = TOP OF FIRE HYDRANT
 PLUG IN SW CORNER OF PHILLIPS '66'
 PROPERTY, ELEV. 783.65' U.S. & G.S. DATUM

PLATE NO. 3

PREPARED BY FENIX & SCISSON, INC. ENGINEERS AND CONTRACTORS TULSA, OKLA., U.S.A.	
FOR NORTHERN GAS PRODUCTS COMPANY DES MOINES, IOWA	
PROPERTY, TEST HOLE LOCATION AND TOPOGRAPHIC MAP	
DRAWN A. Gonzalez Jr.	DATE April, 1963
CHECKED R. S. Mayfield	SCALE As Shown
SHEET NO. 94	DRAWING NO. C

HYDROCARBON TRANSPORTATION, INC. -- HTI-68-2 elev. 781 ft.
SW NW NE sec. 17, T78N, R23W, Polk Co., Iowa
Sil. cont'd above

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