

32883

Marathon Oil Co. #BR-3

Wayne

32,883

APPLICATION FOR PERMIT TO DRILL A WELL FOR OIL, GAS, BRINE DISPOSAL, HYDROCARBON STORAGE OR FOR SECONDARY RECOVERY

Under Authority of Act 61, P.A. of 1939, As Amended.

FEB 9 1979 7207 Rev. 12/77

MAIL TO:
STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY DIVISION
Box 30028, Lansing, Michigan 48909

See Reverse Side Before Filling Out This Application

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT - 640 ACRES 	1. Application to drill a well for: BRINE, LPG OR HYDROCARBON STORAGE	2. Date JANUARY 29, 1979	3. Fee enclosed \$ 100.00
	4. Applicant's name(s) as it is on the surety bond(s) MARATHON OIL COMPANY		6. Phone (313) 843-9100
	5. Permanent address 1300 S. FORT ST., DETROIT, MICHIGAN 48217		8. Well No. BR#3
	7. Lease name (owner of mineral rights) MARATHON OIL COMPANY (WOODHAVEN, MICHIGAN)		
	9. Surface owner SAME		
	10. Address SAME		11. Phone
	12. Drilling contractor NOT CONTRACTED AS OF THIS DATE		
	13. Address		14. Phone
	15. Surface location 1/4 of 1/4 of 1/4 Section 22 T 4 S R 10 EAST		
	16. Township (CITY OF WOODHAVEN)		17. County
18. Locate well in two directions from nearest lines of quarter section and unit lines. (Surface location)			
1135.0' Ft. From NORTH Line of quarter section (north-south)		1158.0' Ft. From EAST Line of quarter section (east-west)	
695.0' Ft. From NORTH Unit line (north-south)		1125.0' Ft. From EAST Unit line (east-west)	
19. Kind of tools to be used (Cable, rotary, combination) ROTARY		20. Formation in which well is to be completed SALT SALINE	
		21. Intended depth of well 1,150 FEET	
22. Program of casing, sealing, cementing and completing well (SEE REVERSE SIDE)			

SEE ATTACHED WRITE-UP.

CASING IS NOT TO BE STRIPPED FROM THE HOLE AND NO CHANGE IS TO BE MADE IN THE PROGRAM OUTLINED ABOVE WITHOUT APPROVAL OF THE SUPERVISOR OF WELLS OR HIS AUTHORIZED REPRESENTATIVE

APPLICANT AGREES TO COMPLY WITH THE PROVISIONS OF ACT 61, PUBLIC ACTS OF 1939, AS AMENDED, AND RULES PERTAINING TO THE LOCATING, DRILLING, CASING, SEALING, COMPLETING, PRODUCING, AND PLUGGING OF WELLS. BEFORE COMMENCING DRILLING OPERATIONS, CONTACT THE NEAREST FIELD OFFICE. (See reverse side)

23. Send correspondence and permit to: MR. AL KRESSLEIN		24. Phone (313) 843-9100
25. Address 1300 S. FORT STREET, DETROIT, MICHIGAN 48217		
LEAVE BLANK		
Date Issued 3-8-79	Permit No. 32,883	26. Name of applicant's agent (Print) SYDNEY BLUM
		27. Signature of Agent

FOR CASHIER'S USE ONLY. DO NOT WRITE IN THIS SPACE

For Geological Survey Use Only

- 1. White - Lansing
- 2. Canary - Cashier
- 3. Blue - Field
- 4. Goldenrod - Field
- 5. Green - Applicant

**INSTRUCTIONS FOR PREPARING
APPLICATION FOR PERMIT**

1. Use form R-7207. (Five copies in set. Green will be returned when permit is issued.)
2. WELL LOCATION SURVEY. Use form R-7208. Submit five copies. (Surveyors plat may be substituted for form R-7208.) Submit supplemental information and maps if lakes, streams, swamps, buildings, roads, powerlines, etc., are within one quarter mile of location.
3. ENVIRONMENTAL IMPACT ASSESSMENT. Use form R-7616 or equivalent. Submit five copies. (See instructions and guidelines furnished with forms.)
4. WELL ELEVATION. Furnish with well location survey or submit certification that elevation will be run and submitted within fourteen days after drilling commences.
5. SURETY BOND. Proper bond coverage must be submitted with application or must have been filed previously. (See General Rules for details.)
6. PERMIT FEE. Must accompany application for permit. (See statute for applicable fee.) (Make check payable to STATE OF MICHIGAN.)
7. PROGRAM OF CASING, SEALING, CEMENTING AND COMPLETING WELL (SECTION 22). Include the different hole sizes and depths to be drilled; casing sizes, weights, grades and lengths; amount and type of cement and additives if used. Indicate the type, weight and viscosities of drilling fluids to be used. List blowout control equipment to be used; give size, type, pressure ratings and order of assembly. Indicate intended well logging and completion program, auxiliary equipment to be used (i.e. sour gas), if any, and general information and remarks not covered by the above.

**IF THIS APPLICATION IS FOR A HOLE TO BE DIRECTIONALLY DRILLED,
SUBMIT THE FOLLOWING SUPPLEMENTAL INFORMATION:**

(Five copies required.)

1. Give geographical description of intended bottom hole location.
2. Give correct footage measurements of intended bottom hole location from the NEAREST quarter section lines and from NEAREST unit lines.
3. Give RADIUS of intended bottom hole target area.
4. DIRECTIONAL DRILLING AND ENGINEERING PROGRAM. Include deviation kick-off points, degree of deviation intended, proposed depth and True Vertical Depth of the bottom hole. Specify the lateral distance and direction from the surface location to the proposed bottom hole location. Give name and address of the engineering company who will direct the deviation of the well bore and any general information and remarks not covered.

NOTICE: When drilling commences, the proper area field office MUST be notified!

FIELD OFFICES

Grayling	East Lansing	Mt. Pleasant	Imlay City
P.O. Box 507, 49738 Phone (A/C 517) 348-6371	8562 East Stoll Rd., 48823 Phone (A/C 517) 339-8638	204 Court St., 48858 Phone (A/C 517) 773-9965	P.O. Box 218, 48444 Phone (A/C 313) 724-2015

Plainwell	Cadillac	Gaylord
P.O. Box 355, 49080 Phone (A/C 616) 685-6851	P.O. Box 629, 49601 Phone (A/C 616) 775-9728	P.O. Box 576, 49735 Phone (A/C 517) 732-3521 732-3541

THE SUPERVISOR OF WELLS IS PROHIBITED BY LAW FROM ISSUING A DRILLING PERMIT TO ANY OWNER OR OPERATOR WHO IS IN VIOLATION OF ANY OF THE PROVISIONS OF ACT 61, P.A. 1939, AS AMENDED, OR ANY OF THE RULES OR ORDERS PROMULGATED THEREUNDER.

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES **Nº 5081**
 SUPERVISOR OF WELLS
PERMIT TO DRILL For Auditing Only
 (POST WHITE COPY OF PERMIT AT WELL LOCATION)

Permit No. 32,883 Issue Date March 8, 1979 Termination Date March 8, 1980

Permission is hereby granted to Marathon Oil Company
Owner
1300 S. Fort St., Detroit, MI 48217
Address

Lease Name Marathon Oil Company Well Number BR#3

Location S¼ NE¼ SE¼ Section 22, T.48., R.10E., Brownstown Township, Wayne County

Footages 1135' from north and 1158' from east line of quarter section
695' from north and 1125' from east unit line

Type of Well Brine, LPG, Hydrocarbon Storage Kind of Tools Rotary Objective Formation Salt Saline Intended Depth 1150'

This permit is issued subject to the provisions of Act 61, P.A. 1939, as amended, and rules, requirements, or orders issued by the Supervisor of Wells and Department of Natural Resources.

SUPERVISOR OF WELLS
 By *Carol R. Duszynski*

CASING AND SEALING REQUIREMENTS

Run 150' of 16" O.D., H-40, 55 lbs. per foot. Cement with 150' of accelerated portland cement. Run 1022' of 11 3/4" O.D., 47 lbs. per foot, J-55. Then cement the string with 600 sacks of cement. Core to depth of 1150'. Run 8 5/8" casing in Cavern BR#3 to 38' below top of salt (approximately 1080'). Run string of 4 1/2" casing to within 1' of bottom of salt (approximately 1123').

NOTICE

IT IS FURTHER MADE A REQUIREMENT OF THIS PERMIT that the applicant give notice to the Public Utilities in accordance with Act 53, P.A. 1974 C.L. 460.701 to 460.718 and comply with each of the requirements of the act.

DRILLING PERMIT ISSUED on the basis of the drilling, casing and sealing program as outlined on the application for permit and subject to requirements as set forth above. No change or alteration is to be made without the permission and approval of the Supervisor of Wells or his authorized representative.

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. The nearest field office of the Department of Natural Resources must be notified prior to the commencement of drilling, deepening, reworking, and plugging.

DEPARTMENT FIELD OFFICES

Region II, Roscommon Phone 517-275-5151	Region III, Lansing 517-322-1300
Cadillac Phone 616-775-9728	E. Lansing 517-339-8638
Gaylord Phone 517-732-3541	Imlay City 313-724-2015
Mt. Pleasant Phone 517-773-9965	Plainwell 616-685-6851
	Grand Rapids 616-456-5071

RECOMMENDED DRILLING PROGRAM FOR
MARATHON'S CAVERNS BR#2 AND BR#3 AT WOODHAVEN

1. Move in rotary rig.
2. Rig up and drill a 20" diameter hole to 150' depth from ground level, as required to completely penetrate the drift. Ream hole to 22" diameter.
3. Run 150' of 16" O.D., H-40, 55 lbs. per foot standard thread and coupled casing. Then cement with 150' of accelerated portland cement. Texas pattern shoe should be spot welded to the bottom of casing.
4. Wait on the concrete (W.O.C.) for 12 hours and then drill out with 15" bit.
5. Install 15" bit and surface blow-out preventer. Test preventer.
6. Go to total depth 1025' K.B. with 15" drill.
7. At this time a well logging company will run a formation Density Gamma-Gamma Ray Log and a Neutron Log.
8. After circulating long enough to condition the hole, approximately ^{Run} 1022' of 11-3/4" O.D., 47 lbs. per foot, J-55, standard thread and coupled, eight round thread, casing should be run. Casing equipment will consist of a Baker guide, shoe, a Baker float collar, and five Baker centralizers. Prior to running the casing, all thread protectors are to be removed and the casing threads are to be brushed and cleaned with solvent. After cleaning, dry the threads with a clean rag and visually inspect each thread. After inspecting threads, dope with lubricant as provided. The thread protector should be similarly cleaned, dried and replaced on the casing and not removed until the casing is run.
9. Upon landing the casing, mud circulation should be established and continued until 175 barrels (150% of casing capacity) or more has been circulated. Halliburton should then cement the string with 600 sacks of cement. Put $\frac{1}{2}$ # per sack flo-seal for the first 150 sacks of cement. Use fresh water or brine to pump the plug down.
10. Shut rig down for approximately 2½ days W.O.C.
11. After this 2½ days W.O.C., weld casing flange to 11-3/4" casing and test casing to 750 psi for 15 minutes.
12. Run a density Gamma-Gamma Ray and Neutron Log.
13. Core to depth of 1150'.
14. Ream hole to total depth of 1150', using a 10-3/4" bit.
15. Run 8-5/8" casing in Cavern BR#3 and ~~8-5/8" casing in Cavern BR#2~~ to 38' below top of salt (approximately 1080').
16. Run string of 4½" casing to within 1 foot of bottom of salt (approximately 1123').
17. After tree is installed, release rig.

State of Michigan
Department of Natural Resources
Geological Survey Division

MAR 6 - 1979

FIELD REVIEW OF PROPOSED WELL SITE

1. Date of Inspection: 2-22-79
2. Name of Applicant: Marathon Oil Co.
3. Well Name & Number: Marathon Oil Co. BR #3
4. Legal Description: SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 22, T4S, R10E, Brownstown Twp., Wayne Co.
5. Surface Owner: ---
6. Topography: Very minor relief 590-595 ft. 1/4 mile radius
7. Cover Type/Density: grass
8. Land Utilization: Industrial
9. State the type of and the direction and distance to surface waters within one-quarter ($\frac{1}{4}$) mile. None
10. Were soil erosion and sedimentation control measures adequately considered? If not, specify additional requirements. Soil erosion and sedimentation will be very minor if any at all due to the very minor relief.
11. Is it reasonable to expect to encounter H₂S while drilling this well? No
Are drilling practices proposed adequate for H₂S safety? If not, specify additional requirements. Yes, In addition to the annular preventer, there will be either a master gate or a blind ram preventer.
12. Is the Environmental Impact Assessment accurate and acceptable? Yes. Specify any other site construction requirements and/or restrictions. Comments, if any.
Drlg. pits must be filled in as soon as possible after operations cease. Drill cuttings and mud other than what is used for analysis must remain on site and be buried. Brine and other fluids must be disposed of in an authorized brine disposal well or taken to another site or pursuant to Sup. of Wells letter enclosed.

APPLICANT'S REPRESENTATIVE WAS NOTIFIED OF ALL REQUIREMENTS AND/OR RESTRICTIONS AND AGREES TO THEM. THEREFORE I RECOMMEND ISSUANCE OF A PERMIT TO DRILL FOR THE WELL SITE.

GEOLOGICAL SURVEY DIVISION: Imlay City BY: John T. Munnis 3-1-79
(signature) (date)

REGIONAL DIRECTOR: Region III BY: Bruce M. Aleskie 3-6-79
(signature) (date)

JRD

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
GEOLOGY DIVISION

SURVEY RECORD OF WELL LOCATION

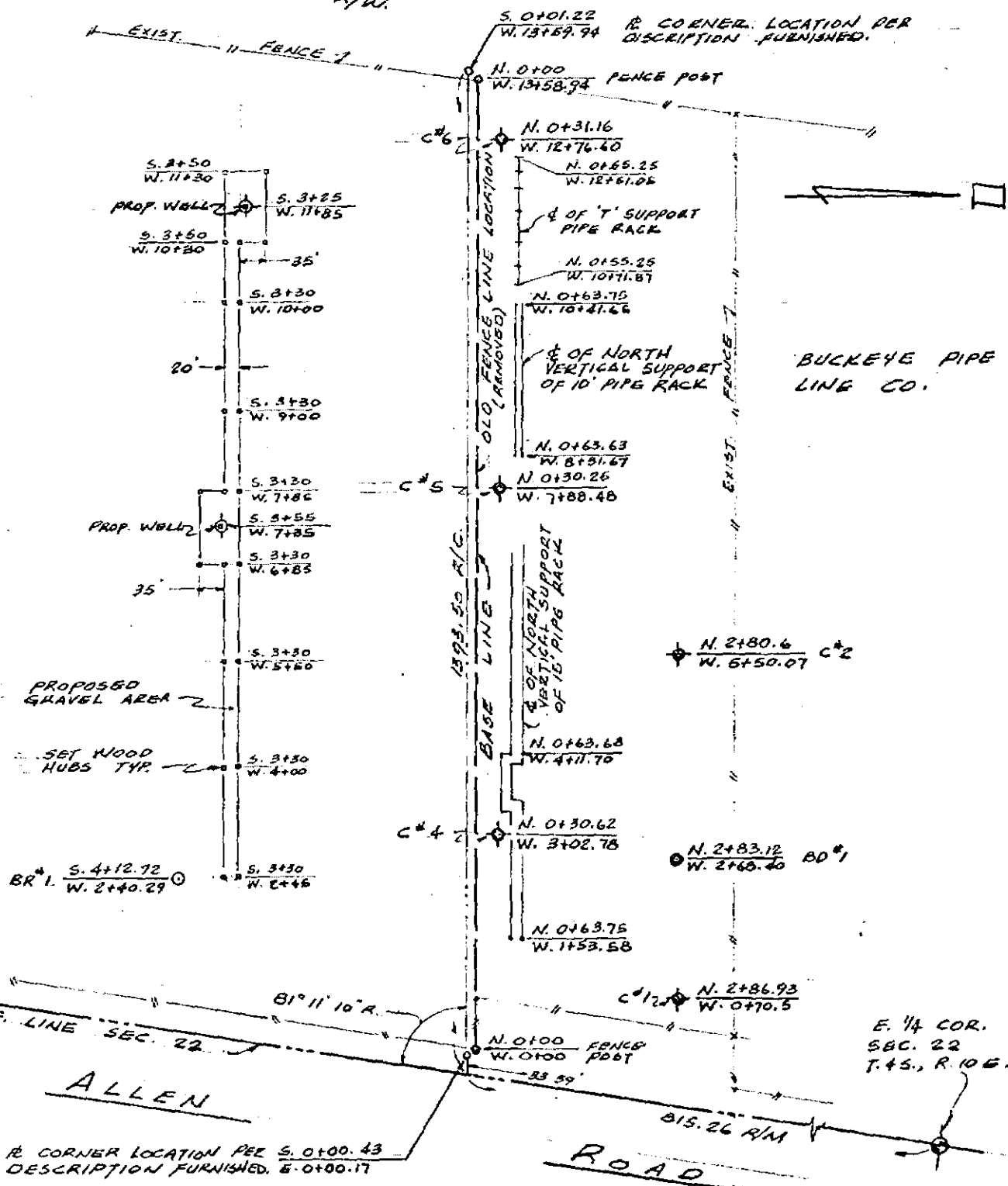
(Submit in quadruplicate with Application for Permit to Drill a Well for Oil or Gas, Brine Disposal, Secondary Recovery, or Gas or L.P.G. Storage)

LESSEE (OWNER OF LEASE RIGHTS) MARATHON OIL COMPANY (WOODHAVEN, MICHIGAN)		WELL NO. BR#3	
LESSOR (OWNER OF MINERAL RIGHTS) MARATHON OIL COMPANY (WOODHAVEN, MICHIGAN)			
LOCATION SW ¼ OF NE ¼ OF SE ¼ SECTION 22 T. 4 S. R. 10 EAST			
TOWNSHIP (CITY OF WOODHAVEN)		COUNTY WAYNE	
PLAT BELOW REPRESENTS ONE FULL SECTION (1 Mile Square)		<p>1. Outline drilling unit and spot well location on plat at left. Where drilling unit crosses section lines, divide the plat into an east half and a west half OR a north half and a south half (which ever applies). Outline the unit and locate the well in two directions from NEAREST quarter section and unit lines.</p> <p>2. Location of well in two directions from NEAREST quarter section and unit lines is:</p> <p style="margin-left: 40px;"><u>1135</u> ft. from <u>NORTH</u> line of Quarter Section <small>(north-south)</small></p> <p style="margin-left: 40px;"><u>1158</u> ft. from <u>EAST</u> line of Quarter Section <small>(east-west)</small></p> <p style="margin-left: 40px;"><u>695</u> ft. from <u>NORTH</u> line of unit <small>(north-south)</small></p> <p style="margin-left: 40px;"><u>1125</u> ft. from <u>EAST</u> line of unit <small>(east-west)</small></p> <p>3. Describe wellsite marker. Show or describe access route if it is not readily accessible.</p> <p style="margin-left: 40px;"><u>FIELD STAKED - ACCESS BY PROPOSED ROAD</u></p>	
<p style="text-align: center;">SEE MARATHON OIL COMPANY DRAWING D34-253 AND SURVEY (ATTACHED)</p>			
(Scale of Plat - 1 inch equals 1320 ft.)			
<p>4. ON SEPARATE PLAT OR PLOT PLAN:</p> <p>A. Locate, identify, and show distances to all roads, power lines, residences, farm buildings, and other structures within 300 feet of the stake;</p> <p>B. Locate, identify, and show distances to all lakes, streams, swamps, drainage-ways or any other surface water features within 1320 feet of the stake.</p> <p>5. In an ENVIRONMENTAL IMPACT ASSESSMENT describe all structures and surface features shown detailing plans for hazards prevention and erosion control (See instructions and guidelines for preparation of an environmental impact assessment).</p>			
NAME OF INDIVIDUAL WHO SURVEYED WELL SITE BOYD W. ARTHURS		DATE 1/25/79	TITLE REGISTERED LAND SURVEYOR #11358
ADDRESS 2521 WEST JEFFERSON TRENTON, MICHIGAN 48183			
I CERTIFY THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF			
SIGNATURE (LESSEE OR AUTHORIZED REPRESENTATIVE) <i>Boyd W. Arthurs</i>		ADDRESS (IF DIFFERENT THAN LESSEE) 1300 S. Fort, Detroit, MI 48217	DATE (MONTH, DAY, YEAR) 2/5/79

REPORT OF SURVEY FOR MARATHON OIL COMPANY

BEING PART OF THE S.E. 1/4 OF SECTION 22, T.4S., R.10E., CITY
OF WOODHAVEN, WAYNE COUNTY, MICHIGAN.

DETROIT & IRONTON R.R. R/W.



R. CORNER LOCATION PER S. 0+00.43
DESCRIPTION FURNISHED. E. 0+00.17

NOTE:
COORDINATES SYSTEM
BASED ON DWG. NO.
D-34-253 SUPPLIED BY
MARATHON OIL CO.

<p>LEGEND</p> <p>R. Recorded</p> <p>M. Measured</p> <p>C. Computed</p>	<p>Scale: one inch = 200 feet</p>	<p>JOB NO. <u>3-79</u></p> <p>DATE <u>1-25-79</u></p> <p style="text-align: center;"><i>Boyd W. Arthurs</i></p> <p>Boyd W. Arthurs Registered Land Surveyor No. 11358 2521 West Jefferson, P.O. 266 Trenton, Michigan 48183</p>
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Marathon
Oil Company

1300 South Fort Street
Detroit, Michigan 48217
Telephone 313/843-9100

January 29, 1979

Department of Natural Resources
Geological Survey
State of Michigan
Lansing, Michigan 48926

Attention: Messrs. Acker and Duszynsky

Subject: Marathon Oil Company Brine Recovery Caverns #2 and #3

Gentlemen:

Enclosed are applications for Permit to drill and develop (2) two underground storage caverns for brine and hydrocarbon storage in the City of Woodhaven, Wayne County.

It should be noted here, that in 1976 a permit was granted for one of these wells (Permit #31,007). This well was not drilled at that time, and because of new thinking, the location of that well has been somewhat altered. Therefore, the application is being resubmitted with the minor location change.

Also enclosed are:

1. Recommended Drilling Program.
2. Well Location Drawing D34-198.
3. Environmental Impact Statement.
4. Certified land survey of the property involved.

Any excess brine not needed for the operation of the existing caverns (which currently store LPG) is disposed of in a disposal well which has capabilities of injecting into the Mt. Simon level (3600').

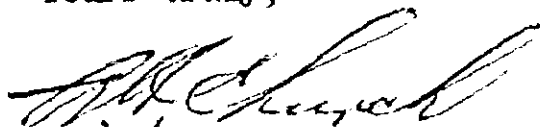
Marathon Oil Company's source of wash water is the API Effluent of the Mobil Oil Company, located at West and Allen Roads. This water has been treated and would normally be discharged to the river.

The wells, as indicated on the permit application, will be completed in the Salt Saline formation at an intended depth of 1150 feet.

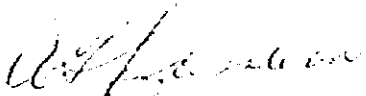
It is our intention that, upon approval of the permit application, we will commence drilling operations around the 1st of April, 1979.

If we can be of any further assistance to expedite the securing of this permit, please let us know.

Yours truly,



R. H. Church, P.E.
Manager, Engineering Department



A. G. Kresslein
Senior Refining Engineer

RHC/AGK/lmz

Enclosure

ENVIRONMENTAL IMPACT STATEMENT

Well Identification

Name of Applicant:	Marathon Oil Company
Address:	1300 S. Fort St., Detroit, MI 48217
Well Name and Number:	Brine Recovery #2 (BR #2) Brine Recovery #3 (BR #3)
Location:	City of Woodhaven

I. Description of Project:

Drill and develop two brine recovery caverns in the salina formation for the supply of saturated brine to the existing caverns. The two caverns will be washed in series to insure proper brine saturation. Saturated brine is necessary for controlling the growth of the existing caverns. The new caverns will be used for storage of LFG, brine, and other hydrocarbon liquids.

II. Environmental Impact Assessment:

The new caverns will be developed on the same premises of the existing caverns. There will be no effect on wild life or future population patterns as it is located in the zoned industrial area. The property (22 acres) is completely owned by Marathon, fenced in, and its sole purpose is for hydrocarbon storage and truck liftings. The property is not open to the public and is under a 24 hour-7 day week continuous surveillance. There are no future plans for any other type of usage on the above ground area. The land is bordered by Mobil Oil (Lube Oil Plant) to the north, the railroad/Detroit Edison easements to the west and south. Allen Road borders the property to the east.

The new caverns will have all of the same safety devices as the existing caverns. Excess brine will be disposed of in our existing brine disposal well as shown on the attached drawings. All piping and roadway additions will be branched off of the existing caverns, so nothing unusual or out of normal will exist in the area. We know of no adverse consequence to the environment.

III. Possible Alternative to the Proposed Well Location:

Use of an above ground brine pond (1,000,000 barrel capacity) is believed environmentally less desirable than the proposed brine wells.

As described in Part II, there are no adverse environmental effects, there is no need for an alternative.

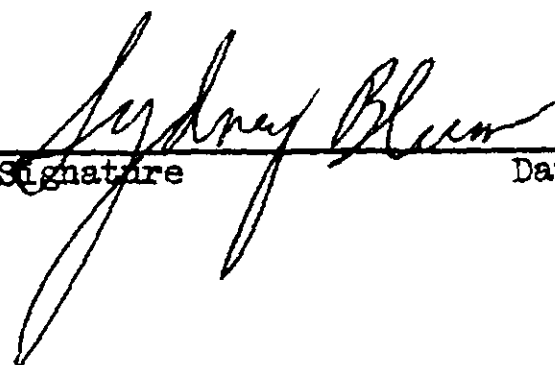
IV. Any Irreversible and Irretrievable Commitment of Resources:

The surrounding environment will not be effected by the additional caverns. Below ground level (1,050 feet), approximately 20-40,000 barrels per year of salt will be removed and replaced with brine.

V. Summary:

No detrimental environmental effects exist.

Applicant's Representative


Signature _____ Date 2-5-79

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

February 12, 1979

TO: Roger M. Rasmussen, Regional Director, Region III

FROM: James R. Duszynski, Region III Field Coordinator,
Geological Survey Division

SUBJECT: Marathon Oil Company, Marathon Oil Company #BR-3,
SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 22, T.4S., R.10E.,
(City of Woodhaven) Brownstown Twp., Wayne Co.

Enclosed are copies of the application, well survey record,
EIA, and supporting data for the subject well location.

Please have the required field review made of the well site
and forward your recommendations to this office.

JRD:jjk

Encl.

cc: J. Manners

JRD

STATE OF MICHIGAN
 DEPARTMENT OF NATURAL RESOURCES
IMLAY CITY HAS COPY LOG OF OIL, GAS, DISPOSAL OR STORAGE WELL (ACT 61)
 Submit in DUPLICATE Within 30 Days after Well Completion

PERMIT NUMBER **JUL 10 1980**
32883
 DEEPENING PERMIT NUMBER

NAME(S) & ADDRESS OF OWNER(S) SHOWN ON PERMIT Marathon Oil Company 1300 South Fort St. Detroit, MI 48217				NAME & ADDRESS OF DRILLING CONTRACTOR(S) L&G Drilling 3959 East River Road Mt. Pleasant, MI 48858			
LEASE NAME(S) & WELL NUMBER SHOWN ON PERMIT Marathon Oil Company BR#3				DIRECTIONALLY DRILLED YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			
SURFACE LOCATION SW NE SE		SECTION 22	TOWNSHIP 4S	RANGE R 10E	TOWNSHIP NAME Brownstown		
FOOTAGES (North/South) 1135 Ft. from North		Line and 1158		FOOTAGES (East/West) 1158 Ft. from East		Line of quarter section	COUNTY NAME Wayne
SUBSURFACE LOCATION		SECTION	TOWNSHIP	RANGE	TOWNSHIP NAME Brownstown		
FOOTAGES (North/South) 1135 Ft. from North		Line and 1158		FOOTAGES (East/West) 1158 Ft. from East		Line of quarter section	COUNTY NAME Wayne
DATE	DRILLING BEGUN 6/13/79	TOTAL DEPTH OF WELL Driller _____ Log 1169 ft.		TYPE WELL LPG Storage		ELEVATIONS	
	DRILLING COMPLETED 7/6/79	FORMATION AT T.D. Salina B-Salt		FT. DRLD. - ROTARY TOOLS From W.H. To 1173		K.B. 605	R.F.
	WELL COMPLETED 7/8/79	PRODUCING FORMATION(S) -		FT. DRLD. - CABLE TOOLS From _____ To _____		R.T.	Grd. 595

CASING, CASING LINERS AND CEMENTING

PERFORATIONS

SIZE	WHERE SET	CEMENT	Ft. Pulled	DATE	NUMBER HOLES	INTERVAL PERFORATED	OPEN	
							YES	NO
16"	145.88 ft.	Circ.						
11-3/4"	1017.13 ft.	Circ.						
8-5/8"	1065 ft.	None						
4 1/2"	1141.72 ft.	None						

GROSS PAY INTERVALS

ALL OTHER OIL AND GAS SHOWS OBSERVED OR LOGGED

FORMATION	OIL OR GAS	FROM	TO	FORMATION	OIL OR GAS	DEPTH	WHERE OBSERVED (X)						
							Sam- ples	Odor	Pits	Mud Line	Gas Log.	Fill Up	

STIMULATION BY ACID OR FRACTURING

WATER FILL UP (F.U.) OR LOST CIRCULATION (L.C.) (X)

DATE	Interval Treated	Materials and amount used	FORMATION	F.U.	L.C.	DEPTH	AMOUNT

MECHANICAL LOGS, LIST EACH TYPE RUN

DEPTH CORRECTION DEVIATION SURVEY PLUGGED BACK

Brand	(X)	LOG TYPES	LOGGED INTERVALS	DEPTH	CORRECT'N	RUN AT	DEGREES	YES	NO	DEPTH
Schlumberger										
Birdwell	X	Density & Neutron	20'-1015'							
Birdwell	X	3D Velocity	20'-1015'							

PRODUCTION TEST DATA

OIL - Bbls/day	GRAVITY - °API	COND. Bbls/day	GAS - MCF/day	WATER - Bbls/day	H ₂ S - Grains/100 cu. ft.	B.H.P. AND DEPTH
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I AM RESPONSIBLE FOR THIS REPORT. WITHIN MY KNOWLEDGE ALL FACTS ARE TRUE AND COMPLETE.

DATE 6/23/80	TITLE Manager, Engineering Department	SIGNATURE <i>[Signature]</i>
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FORMATION RECORD

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

ELEVATION USED: 605 K B	GEOLOGIST NAME: H. M. Kuchta	TOPS TAKEN FROM: <input checked="" type="checkbox"/> DRILLERS LOG <input type="checkbox"/> SAMPLE LOG <input type="checkbox"/> ELECTRIC LOG
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FROM	TO	FORMATION (TYPE, COLOR, HARDNESS)	FROM	TO	FORMATION (TYPE, COLOR, HARDNESS)
0	100	Top Bedrock	992	1047	"B" Dolomite Dolomite, Anhydritic in parts.
		<u>DEVONIAN</u>			
100	204	<u>Detroit River</u> Dolomite, scattered gyp. and anhydrite.			
204	292	<u>Sylvania</u> Sandstone			
292	502	<u>Bois Blanc</u> Interbedded dolomite and sandstone.			
		<u>SILURION</u>			
502	592	<u>Bass Island</u> Dolomite with Shale Streaks.			
592	732	<u>Salina "G"</u> Dolomite, Shaly, some white anhydrite.			
732	926	<u>"Fed"</u> Dolomite; anhydritic.			
926	992	<u>"C" Dolomite</u> Dolomite with shale.			

MUN 2 5 1980

IF WELL WAS CORED, ATTACH CORE DESCRIPTION

DRILL STEM TEST DATA

There is a map
too large for filming
included with these
original documents
at the record center.