

11 Location of Well  
 County: CALHOUN Township Name: CONVIS Fraction: NE 1/4 NE 1/4 NW 1/4 Section Number: 05 Town Number: 2-S Range Number: 6-W E/W: N/S

Distance and Direction From Road Intersection: 3  
 Owner of Well: DAVE DELANEY  
 Address: 12312 L DR. N. BATTLE CREEK MI 49017-

Street Address and City of Well Location: Address Same as Well Location? Yes

Sketch Map


4 Well Depth (Completed): 140 ft. Date of Completion: 01/26/95  
 Replacement Well

5 Drilling Method: ROTARY

6 Proposed Use: DOMESTIC

12 FORMATION DESCRIPTION	Thickness of Stratum	Depth to Bottom of Stratum	7 Casing PVC	Height Above Surface
CLAY	10	10	5 in. to 99 ft. depth	1 ft.
GRAVEL	20	30	Bore Hole Diameter	lbs./ft.
CLAY	50	80	8 in. to 99 ft. depth	Drive Shoe No
GRAVEL	10	90	in. to ft. depth	Shale Packer Yes
SANDSTONE	50	140	8 Screen Not Installed	Gravel-packed? No

9 Static Water Level: 40 Ft. Below Land Surface Flow

10 Pumping Level Below Land Surface: 140 ft. after 1 hrs. pumping at 20 G.P.M.  
 ft. after hrs. pumping at G.P.M.  
 Using AIR

11 Well Head Completion: PITLESS ADAPTER

12 Well Grouted? Yes From 00 to 99 ft.  
 QUIK-GROUT  
 No. of bags of cement: 4 Additives

13 Nearest Source of Possible Contamination: SEWAGE  
 Distance: 50 ft. Direction: Distance ft. Direction

15 Abandoned well plugged? No  
 Casing Diameter in. Depth ft.  
 Casing removed? No

14 Pump Installed: Pump Installation Only? No  
 Manufacturer's Name: MYERS  
 Model Number: HP 1/2 Volts: 230  
 Length of Drop Pipe: 85 ft. Capacity: 10 G.P.M.  
 Type: SUBMERSIBLE Jet

16 Remarks, elevation, source of data, etc.  
 Pressure tank: Manufacturer's Name: Pressure Tank Model: Capacity: 0 gal.

17 Drilling machine operator:  
 Employee Name: JOHN  
 Authority: Act 360 PA 1978  
 Completion: Required.  
 Penalty: Conviction of violation of any provision is a misdemeanor.  
 IMPORTANT: File with deed.

18 Water Well Contractor's Certification:  
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
 Registered business name: LJT WELL DRILLING, INC.  
 Registration number: 23-1077  
 Address: 462 THORNTON HWY., CHARLOTTE, MI 48813  
 Signed: Lloyd Cowd Date: 2-6-95  
 (Authorized representative)

RECEIVED  
 DIVISION OF WATER RESOURCES  
 JAN 26 1995

TAX NO:

MICHIGAN DEPARTMENT OF PUBLIC HEALTH  
WATER WELL AND PUMP RECORD

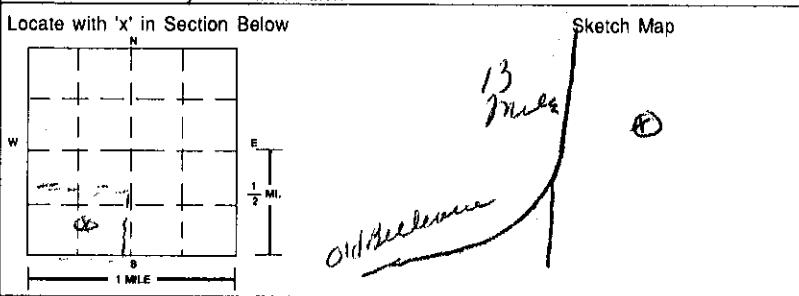
PERMIT NO:  
2030

1. LOCATION OF WELL  
County Cathoon

Township Name Convis Twp Fraction NW Sec 5 Twp 5 Section No. 5 Town No. 1-5 Range No. 6-4

Distance and Direction from Road Intersection  
Street Address & City of Well Location

3. OWNER OF WELL  
Address Centerline of Cathoon Co Ave  
22100 13 mile rd  
Address Same as Well Location  Yes  No



4. WELL DEPTH: 121 ft. Date Completed 6/6/96  New Well  Replacement Well

5.  Cable Tool  Rotary  Driven  Dug  
 Hollow Rod  Auger/Bored  Jetted

6. USE:  Household  Type I Public  Type III Public  
 Irrigation  Type IIa Public  Heat Pump  
 Test Well  Type IIb Public

7. CASING:  Steel  Threaded  Plastic  Welded  Other  
Diameter: 5 in. to 116 ft. depth  
BORE HOLE: Diameter: 7 1/8 in. to 116 ft. depth  
Height: 0 Above/Below Surface: 0 ft.  
Weight: 3 lbs./ft.  
 Drive Shoe  Shale Packer

2. FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
<u>0-7 SAND + BROWN CLAY</u>	<u>7</u>	<u>7</u>
<u>7-53 SAND W/ GRAVEL</u>	<u>46</u>	<u>53</u>
<u>53-79 SAND + GREY CLAY</u>	<u>26</u>	<u>79</u>
<u>79-90 GREY CLAY</u>	<u>11</u>	<u>90</u>
<u>90-114 CEMENTED GRAVEL</u>	<u>24</u>	<u>114</u>
<u>114-116 SAND</u>	<u>2</u>	<u>116</u>
<u>116-121 WATER BEARING SAND</u>	<u>5</u>	<u>121</u>

8. SCREEN:  Not Installed  Gravel-Packed  
Type STAINLESS Diameter 4"  
Slot/Grauze 0.015 Length: 4'  
Set Between 116 ft. and 121 ft.  
FITTINGS:  K-Packer  Bremer Check  
 Blank Above Screen 1 ft. Other

9. STATIC WATER LEVEL: 24 ft. Below Land Surface  Flowing

10. PUMPING LEVEL: Below Land Surface  
105 ft. After 1 hrs. Pumping at 50 G.P.M.  
 Plunger  Bailor  Air  Test Pump

11. WELL HEAD COMPLETION:  
 Pitless Adapter  12" Above Grade  
 Basement Offset  Well House

12. WELL GROUTED?  No  Yes From 0 to 116 ft.  
 Neat Cement  Bentonite  Other  
No. of Bags 8 Additives

13. NEAREST SOURCE OF POSSIBLE CONTAMINATION:  
Type SDS Distance 75 ft. Direction SE  
Type \_\_\_\_\_ Distance \_\_\_\_\_ ft. Direction \_\_\_\_\_

15. ABANDONED WELL PLUGGED?  Yes  No  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
PLUGGING MATERIAL:  Neat Cement  Bentonite Slurry  
 Cement/Bentonite Slurry  Concrete Grout  Bentonite Chips  
No. of Bags \_\_\_\_\_ Casing Removed?  Yes  No

14. PUMP:  Not Installed  Pump Installation Only  
Manufacturer's Name MC DONALD  
Model Number 21075R2 HP 3/4 Volts 230  
Length of Drop Pipe 50 ft. Capacity 18 G.P.M.  
TYPE:  Submersible  Jet  Other  
PRESSURE TANK:  
Manufacturer's Name MYERS  
Model Number MPD-36 Capacity 10.0 Gallons 36

16. REMARKS: (Elevation, Source of Data, etc.)

15. WATER WELL CONTRACTOR'S CERTIFICATION:  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
KATZ WELL DRILLING INC. 13-1593  
REGISTERED BUSINESS NAME REGISTRATION NO.  
Address 1479 E MKH AVE BATTLE CREEK  
Signed Marc McKeague Date 6-6-96  
AUTHORIZED REPRESENTATIVE

17. DRILLING MACHINE OPERATOR:  
 Employee  Subcontractor  
Name MARC MCKEAGUE

DEQ MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
DRINKING WATER & RADIOLOGICAL PROTECTION DIVISION

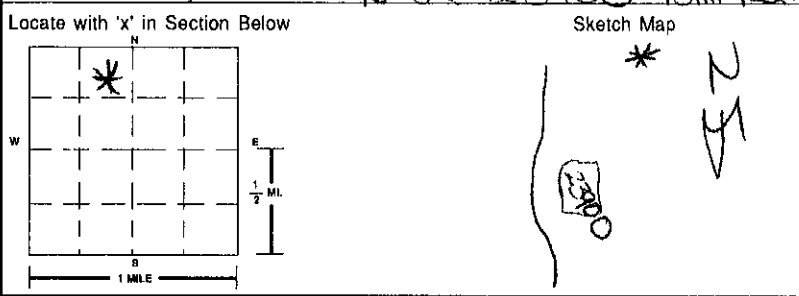
**WATER WELL AND PUMP RECORD**

Completion is required under authority of Part 127 Act 368 PA 1978  
Failure to comply is a misdemeanor

TAX NO: \_\_\_\_\_ PERMIT NO: **5259**

1. LOCATION OF WELL  
County: **CALHOON** Township Name: **CONVIS** Fraction: **NE 1/4 NE 1/4 NW 1/4** Section No.: **5** Town No.: **1-5** Range No.: **16-W**

Distance and Direction from Road Intersection \_\_\_\_\_  
Street Address & City of Well Location: **N of 23900 13mi Rd.**



3. OWNER OF WELL  
Address: **HOLDEN HONEY FARMS, 23900 13mi Rd., Bellevue, MI 49021**  
Address Same as Well Location  Yes  No

4. WELL DEPTH: **160** ft. Date Completed: **5-22-99**  
 New Well  Replacement Well

5.  Cable Tool  Rotary  Driven  Dug  
 Hollow Rod  Auger/Bored  Jetted  \_\_\_\_\_

6. USE:  Household  Type I Public  Type III Public  
 Irrigation  Type IIa Public  Heat Pump  
 Test Well  Type IIb Public  **OIL WELL**

7. CASING:  Steel  Threaded  Plastic  Welded  
 Other \_\_\_\_\_  
Height: **Above** Surface: \_\_\_\_\_ ft.

Diameter: **5** in. to **7.5** ft. depth  
Weight: **3** lbs./ft.  
BORE HOLE:  Drive Shoe  
Diameter: **8** in. to **7.5** ft. depth  Shale Packer  
**43 1/4** in. to **160** ft. depth

8. SCREEN:  Not Installed  Gravel-Packed  
Type \_\_\_\_\_ Diameter \_\_\_\_\_  
Slot/Gauze \_\_\_\_\_ Length: \_\_\_\_\_  
Set Between \_\_\_\_\_ ft. and \_\_\_\_\_ ft.  
FITTINGS:  K-Packer  Bremer Check  
 Blank Above Screen \_\_\_\_\_ ft. Other \_\_\_\_\_

9. STATIC WATER LEVEL: **7** ft. Below Land Surface  Flowing

10. PUMPING LEVEL: Below Land Surface **65** ft. After **1** hrs. Pumping at **80** P.M.  
 Plunger  Bailor  Air  Test Pump

11. WELL HEAD COMPLETION:  
 Pitless Adapter  12" Above Grade  
 Basement Offset  Well House

12. WELL GROUTED?  No  Yes From **0** to **7.5** ft.  
 Neat Cement  Bentonite  Other \_\_\_\_\_  
No. of Bags **9** Additives \_\_\_\_\_

13. NEAREST SOURCE OF POSSIBLE CONTAMINATION:  
Type \_\_\_\_\_ Distance \_\_\_\_\_ ft. Direction \_\_\_\_\_  
Type \_\_\_\_\_ Distance \_\_\_\_\_ ft. Direction \_\_\_\_\_

14. PUMP:  Not Installed  Pump Installation Only  
Manufacturer's Name: **MCDONALD**  
Model Number: **213005** HP **3** Volts **230**  
Length of Drop Pipe: **60** ft. Capacity **50** G.P.M.  
TYPE:  Submersible  Jet  Other \_\_\_\_\_  
PRESSURE TANK:  
Manufacturer's Name \_\_\_\_\_  
Model Number \_\_\_\_\_ Capacity \_\_\_\_\_ Gallons

2. FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
0-7 TOP SOIL + SAND	7	7
7-18 BROWN CLAY	11	18
18-32 GREY CLAY W/ GRAVEL	14	32
32-103 LIMESTONE, SHALE, SANDROCK	71	103
103-160 SANDROCK	57	160
BLANK LINER 72'-100'		
PERFORATED LINER 100'-160'		
JUN 15 1999		

15. ABANDONED WELL PLUGGED?  Yes  No  
Casing Diameter \_\_\_\_\_ in. Depth \_\_\_\_\_ ft.  
PLUGGING MATERIAL:  Neat Cement  Bentonite Slurry  
 Cement/Bentonite Slurry  Concrete Grout  Bentonite Chips  
No. of Bags \_\_\_\_\_ Casing Removed?  Yes  No

16. REMARKS: (Elevation, Source of Data, etc.)

17. DRILLING MACHINE OPERATOR:  
 Employee  Subcontractor  
Name: **MAX MCKEABUE**

18. WATER WELL CONTRACTOR'S CERTIFICATION:  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
**KATZ WELL DRILLING INC. 13-1593**  
REGISTERED BUSINESS NAME REGISTRATION NO.  
Address: **1479-E. MICH. AVE. BATTLE CREEK**  
Signed: **Max M. Keague** Date: **5-22-99**  
AUTHORIZED REPRESENTATIVE

DEC

JUL 13 1999

LOG OF OIL, GAS OR MINERAL WELL WATER

File as EQP2017 WELL

Required under authority of Part 615, Supervisor of Wells or Part 625 Mineral Wells, of Act 451 PA 1994, as amended. Non-submission and/or falsification of this information may result in fines and/or imprisonment.

Part 615 Oil/Gas Well Part 625 Mineral Well

1. Name and address of permittee shown on oil/gas drilling permit Matrix Exploration and Development, L.L.C. 2193 Northway Dr. Mt. Pleasant, MI 48858

Name and address of water well drilling contractor, Katz Well Drilling, Inc. #1593 1479 E. Michigan Ave, Battle Creek, MI

GEOLOGICAL SURVEY

JUL 19 1999

Well name and number on oil/gas or mineral well permit.

Holden 1-5

Permit number

5942015 & Bonding Unit

County Calhoun Township Convis Surface location NE 1/4 NE 1/4 NW 1/4 Sec 5 T 1S R 6W

2. Formation description Thickness of stratum Depth to bottom of 3. Well depth 160 ft. Date of completion 5-22-99

Soil and sand 0 7' 4. Cable tool Rotary Driven Dug Hollow rod Auger Jetted

Brown Clay 11' 18' 5. CASING Steel Threaded Diameter Plastic Welded

Gray clay w/ gravel 14' 32' Grouted Drill Hole Diameter 0 in. to 75 ft. depth

Limestone, shale, sandrock 71' 103' in. to ft. depth

Sandrock 57' 160' in. to ft. depth

6. Screen Type not installed Diameter Slot/Gauze Length Set between 100' ft. and 160 ft.

7. Static Water Level: 7 ft. below land surface. Flowing Yes gpm

8. Pumping water level: below land surface 65 ft. after 1 hours at 80 GPM

9. Well Grouted: Yes No From 0 to 75 ft. Neat cement Bentonite Other additives

10. Pump: Not installed Pump installation only Manufacturer's name McDonald Model number 213005 HP 3 Volts 235

Length of drop pipe 60 ft. capacity 50 G.P.M. Type: Submersible Jet

11. REMARKS (elevation, source of data, water quality, etc.) From water well drillers well record, attached

12. Authorized Representative Certification. (This well was drilled under my authority and this report is true to the best of my knowledge and belief.)

Name Stephen C. Lucas

Address 11749 W. Millbrook, Rd. Blanchard, MI 49310

Signature Stephen C. Lucas date 7-7-99

Submit original and 3 copies within 30 days after well completion. Dist. Original: Permit File Copies: Groundwater, District, DPH

Drinking Water & Surface Ground Water Protection Division WELL CONSTRUCTION UNIT

(use 2nd sheet if needed)

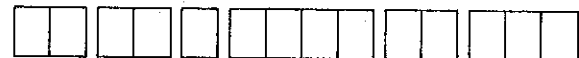
(Use a 2nd sheet or attach supplements if needed)

GEOLOGICAL SURVEY DIVISION MICHIGAN DEPT ENVIRONMENTAL QUALITY

BOX 30256 LANSING MI 48909-7756

DEC 14 1999

RECEIVED MICH DEPT OF ENVIRONMENTAL QUALITY



FEB 02 1981

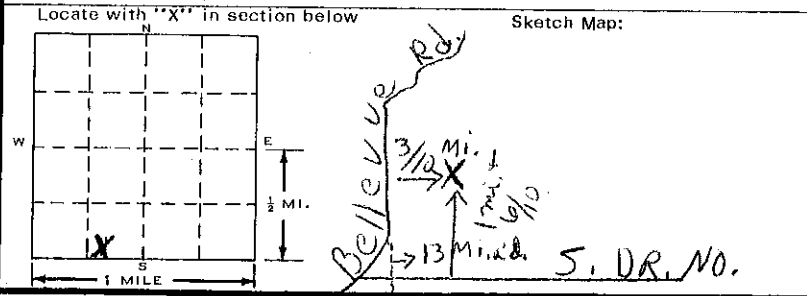
**WATER WELL RECORD**  
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

**1 LOCATION OF WELL**

County <b>Calhoun</b>	Township Name <b>Convis</b>	Fraction <b>SW 1/4 SE 1/4 SW 1/4</b>	Section Number <b>5</b>	Town Number <b>TIS N/S.</b>	Range Number <b>R6W E/W.</b>
--------------------------	--------------------------------	---	----------------------------	--------------------------------	---------------------------------

Distance And Direction from Road Intersections  
**3/10 Mile East Bellevue Road**  
**1 Mile & 6/10ths north S. Drive**  
 Street address & City of Well Location



**3 OWNER OF WELL:**  
 Eastern Star Drilling Company  
 Address: **120 Sunset Pointe Cadillac, Michigan 49601**

**4 WELL DEPTH:** (completed) Date of Completion  
**141** ft. **12/23/80**

**5**  Cable tool  Rotary  Driven  Dug  
 Hollow rod  Jetted  Bored

**6 USE:**  Domestic  Public Supply  Industry  
 Irrigation  Air Conditioning  Commercial  
 Test Well  **water well for oil rig.**

**7 CASING:** Threaded  Welded   
 Diam. **4" blk.** Height: Above/Surface **11" XX**  
**4"** in. to **123** ft. Depth Weight **11** lbs./ft.  
 Drive Shoe? Yes  No

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sandy Clay & Stones	17	17
Sand w/coal strips	42	59
Gravel & Lime	19	78
Sand & Coal Strips	33	111
Lime, Stones & Pyrite	8	119
Lime	5	124
Gray Shale	3	127
Gravel	1	128
Sandstone	13	141

**8 SCREEN:**  
 Type: \_\_\_\_\_ Dia.: \_\_\_\_\_  
 Slot/Gauze \_\_\_\_\_ Length \_\_\_\_\_  
 Set between \_\_\_\_\_ ft. and \_\_\_\_\_ ft.  
 Fittings: \_\_\_\_\_

**9 STATIC WATER LEVEL**  
**19'** ft. below land surface

**10 PUMPING LEVEL** below land surface  
**100** ft. after \_\_\_\_\_ hrs. pumping **45** g.p.m.  
 \_\_\_\_\_ ft. after \_\_\_\_\_ hrs. pumping \_\_\_\_\_ g.p.m.

**11 WATER QUALITY** in Parts Per Million:  
 Iron (Fe) \_\_\_\_\_ Chlorides (Cl) \_\_\_\_\_  
 Hardness \_\_\_\_\_ Other \_\_\_\_\_

**12 WELL HEAD COMPLETION:**  In Approved Pit  
 Pitless Adapter  **12" Above Grade**

**13 Well Grouted?**  Yes  No  
 Neat Cement  Bentonite  \_\_\_\_\_  
 Depth: From \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**14 Nearest Source of possible contamination**  
 \_\_\_\_\_ feet \_\_\_\_\_ Direction \_\_\_\_\_ Type \_\_\_\_\_  
 Well disinfected upon completion  Yes  No

**15 PUMP:**  Not installed  
 Manufacturer's Name \_\_\_\_\_  
 Model Number \_\_\_\_\_ HP \_\_\_\_\_ Volts \_\_\_\_\_  
 Length of Drop Pipe \_\_\_\_\_ ft. capacity \_\_\_\_\_ G.P.M.  
 Type:  Submersible  Jet  Reciprocating

RECEIVED  
 JAN 15 1981

Calhoun County Health Department  
 USE A 2ND SHEET, IF NEEDED

**16 Remarks, elevation, source of data, etc.**  
 Lease: **Campbell 1 - 5**  
 \*CORRECTED BY  
 \*\*ADDITION BY  
 ELEVATION  
 DEPTH TO BOTTOM

**17 WATER WELL CONTRACTOR'S CERTIFICATION:**  
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
**Hart Well Drilling Company** **522**  
REGISTERED BUSINESS NAME REGISTRATION NO.  
 Address **1154 S. Jefferson, Mason, Mi. 48854**  
 Signed *S. W. Hart* Date **12-26-80**  
AUTHORIZED REPRESENTATIVE